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INDEX

Sr. No	Particular	Page No.
1	UGC care List Research Paper	01
2	List of Peer Reviewed Research Papers 2021-22	09
3	List of Peer Reviewed Research Papers 2020-21	86
4	List of Peer Reviewed Research Papers 2019-20	137
5	List of Peer Reviewed Research Papers 2018-19	224
6	List of Peer Reviewed Research Papers 2017-18	310

UGC Care List Research Paper

Sr. No.	Year	Author	Paper Title	Link
	2020	**R. B. Pedhekar**	**Thick film gas sensors made from Mn doped zinc oxide nanorods for H2S gas**	**https://www.sciencedirect.com/journal/materials-today-proceedings**

Materials Today: Proceedings 28 (2020) 1865–1871

Contents lists available at ScienceDirect

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Thick film gas sensors made from Mn doped zinc oxide nanorods for H_2S gas

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ABSTRACT

Nanorods of pure and Mn doped ZnO were synthesized by precipitation method. Thick films of synthesized materials were prepared by screen printing method. Structural and morphological characterizations were carried out by XRD, FESEM and EDAX. The gas sensing characteristics of prepared thick films were checked for different gases i.e. Hydrogen Sulfide (H_2S), Carbon dioxide (CO_2) and Liquefied Petroleum Gas (LPG). XRD analysis showed hexagonal wurtzite structure and high crystallafline nanorod of ZnO and Mn doped ZnO. The FE-SEM showed similar morphology. Mn doped ZnO thick films showed enhanced response to H_2S gas than pure ZnO thick film for 600 ppm gas concentration. Among all Mn doped ZnO thick films, 6% Mn doped ZnO film showed good sensitivity and selectivity towards H_2S as compared to the other test gases like CO_2 and LPG.
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1. Introduction

Our environment is polluted due to toxic gases released in the atmosphere by activities of humans. Among the different toxic gases present in the atmosphere Hydrogen sulphide (H_2S) is one of the toxic gas which affect the adverse effect on living organism. Hydrogen sulfide gas oxidized to sulfur dioxide by molecular oxygen, atomic oxygen or ozone when it is burnt [1]. Petroleum and coal combustions create the gases containing sulfer which are responsible for harmful deceases like lung cancer and infection to respiratory track causes difficulty in breathing thus it is essential to monitor traces of such gases. There are different techniques are used to detect the gas concentration in atmosphere, out of which metal oxide gas sensor are more effective, economic and eco-friendly technique [2,3]. There are number of semiconductor metal oxide materials for example SnO_2, ZnO, Ga_2O_3, Fe_2O_3 etc. are reported by the researchers to detect the gases. Some researchers may used mixed metal oxides, addition of selective elements to control the various properties like electrical conductivity, band gap and carrier concentration which needed for electronic applications. As ZnO shows the significant optical and electrical properties it has been studied and used extensively because of low cost of precursors, simplicity and high efficiency. Due to different morphologies and different properties at various synthesis conditions ZnO nano-materials are bio safe, eco-friendly, harmless, etc hence they are used in day to day life [4–19].

The magnetic semiconductors have specific attention due to its features and a polarized electron spin state associated with a substituted transition metal ion. The half filled 3d-shell of Mn^{2+} ions, which have the largest ionic moment is important in theoretical and experimental studies of semiconductors because of many interesting applications: conductive windows, gas sensors, surface acoustic wave systems etc. ZnO based magnetic semiconductors give the possibility of tuning the lattice constant and band parameters. Incorporation of Mn^{2+} into the large band gap ZnO lattice promises to lead to new magnetic, transport and optical properties. Hence, Mn doped ZnO compounds have been used in many applications i.e. pulsed laser deposition, molecular beam epitaxy, isothermal sintering, RF magnetron sputtering. Influence on the structure of band gap, giving rise to changes in electrical and optical properties of pure ZnO. Hence Mn doping in ZnO is highly significant among other transition metals to enhanced gas sensing performance of ZnO [20–27]. As we know bulk materials are hav-

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Unfiled Notes Page 1

49

ing limited surface-to-volume ratio, they detects the limited gas response at low gas concentrations as compare nanomatreials, nanaotubes, nanrods which having large surface to volume ratio for enhancement of gas sensing parameters [28–32].

As we know, H_2S gas having unpleasant odor and it causes adverse effect on human health it is necessary to detect H_2S gas at ppm level at room temperature as well as at higher temperature. In the present work, precipitation method was employed to obtain pure and Mn doped ZnO nanorods. The morphology of the synthesized materials was studied by XRD, FESEM, EDAX and the electrical properties of synthesized material's thick films also investigated. The sensing response of pure and Mn doped ZnO thick films towards different gases such as H_2S, CO_2 and LPG are reported.

2. Experimental

2.1. Synthesis of pure and Mn doped ZnO

All the chemicals used in the experiment were of AR grade. Zinc nitrate hexahydrate $Zn(NO_3)_2{\cdot}6H_2O$ and manganese acetate tetrahydrate $Mn(CH_3COO)_2{\cdot}4H_2O$; were purchased from S.D. fine Chem. Ltd, and Sodium hydroxide was purchased from Fisher Scientific Ltd.

Zinc oxide and Mn doped zinc oxide nanorods were synthesized by precipitation method. For synthesis of pure ZnO, suitable amount of zinc nitrate hexahydrate and for (1%, 3%, 6%, 9% and 12%) Mn doped ZnO suitable amount of zinc nitrate hexahydrate and manganese acetate tetrahydrate were dissolved in deionized water at room temperature. The precursor solutions were then stirred on magnetic stirrer for 30 min. For mixing of zinc and Mn precursors. The NaOH solution were prepared at room temperature and heated at about 328 °K with continuously stirred by magnetic stirrer. Then the prepared precursor solution was drop wise added in NaOH solution with high speed continuous stirring. The flask was sealed and allowed to cool down at room temperature. The precipitates obtained were filtered and then washed many times with deionized water and absolute ethanol to remove the impurities. The prepared zinc oxide samples were named as pure ZnO (S0), 1% Mn doped ZnO (S1), 3% Mn doped ZnO (S2), 6% Mn doped ZnO (S3), 9% Mn doped ZnO (S4) and 12% Mn doped ZnO (S5).

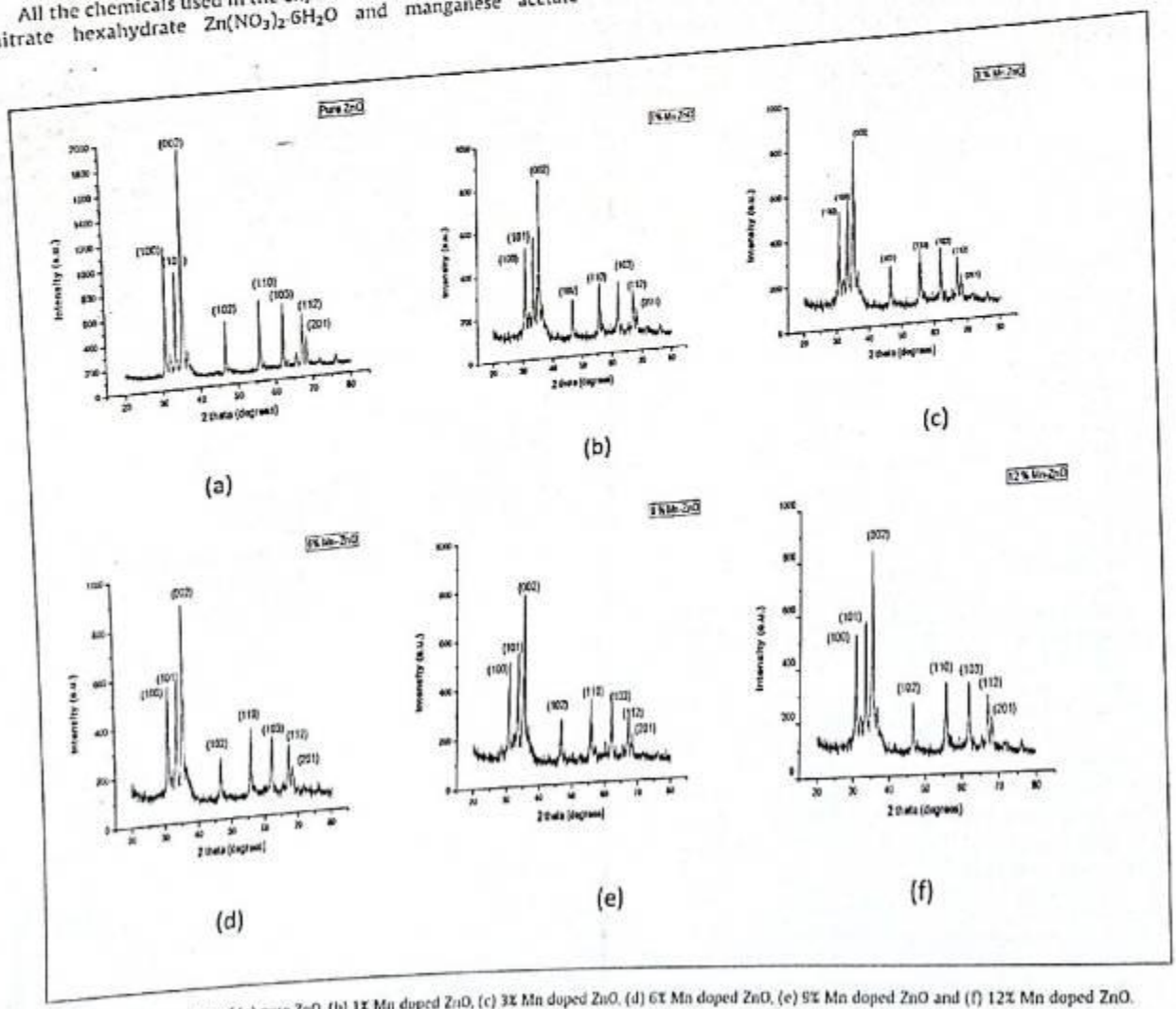


Fig. 1. XRD spectras of (a) pure ZnO, (b) 1% Mn doped ZnO, (c) 3% Mn doped ZnO, (d) 6% Mn doped ZnO, (e) 9% Mn doped ZnO and (f) 12% Mn doped ZnO.

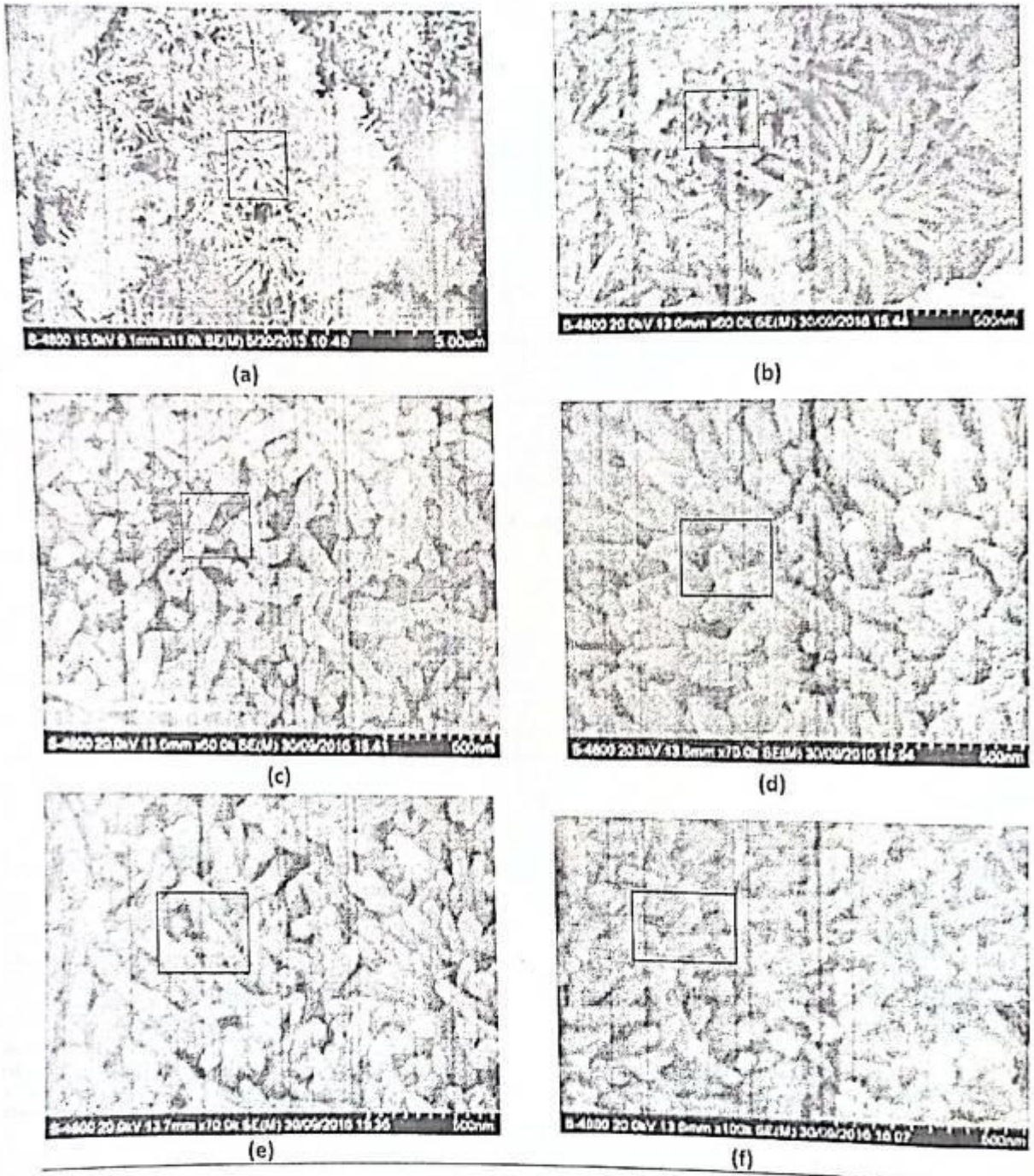


Fig. 2. FE-SEM images of (a) pure ZnO, (b) 1% Mn doped ZnO, (c) 3% Mn doped ZnO, (d) 6% Mn doped ZnO, (e) 9% Mn doped ZnO and (f) 12% Mn doped ZnO.

2.2. Fabrication of thick films and gas sensing measurements

For preparation of thixotropic paste, ethyl cellulose is used as temporary binder with mixture of organic solvents such as butyl carbitol acetate, butyl cellulose and turpineol. The synthesized materials were mixed with solution of ethyl cellulose and mixture of organic solvents. The ratio of organic to inorganic part was maintained as 20:80 in formation of paste. The binder was

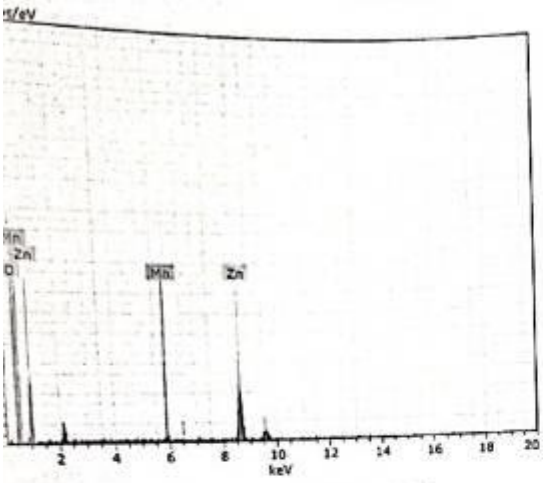


Fig. 3. EDAX spectrum of 6% Mn dooped ZnO.

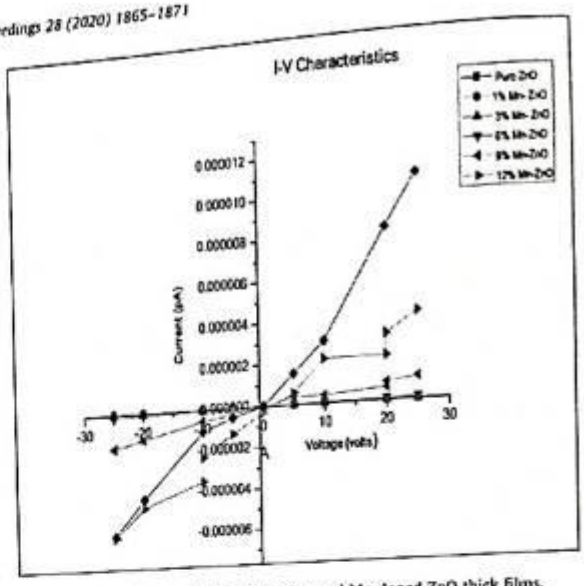


Fig. 4. I-V characteristics of pure Zno and Mn doped ZnO thick films.

sed for binding of material with glass substrate. Then the thick lms were prepared by screen printing method. In this method, aste was robbed on the glass substrate by applying uniform ressure. The fabricated thick films were then fired at 773 °K or 30 min.

For gas sensing measurements, static gas sensing system was sed. The electrical contacts on thick films were made by using sil- er electrodes to measure gas sensing properties. The gas concen- ration for experiment was fixed at 600 ppm and measures the response of sensor element in presence of air and in presence of target gas. The sensor response (S) was defined as the ratio of resis- tance of the film in air (Ra) to its resistance in target gas (Rg) [33].

$$S = Ra/Rg \quad (1)$$

3. Results and discussion

3.1. Thick film characterization

3.1.1. X-ray diffraction

The crystal structure of pure and Mn-doped ZnO was investigated by X-ray diffraction (XRD) analysis. Fig. 1 shows the XRD patterns of (a) pure ZnO, (b) 1% Mn doped ZnO, (c) 3% Mn doped ZnO, (d) 6% Mn doped ZnO, (e) 9% Mn doped ZnO and (f) 12% Mn doped ZnO. When result of X-ray diffraction patterns of pure and Mn doped ZnO nanorods are compared with published data it is verified that all the diffraction peaks obtained in XRD patterns confirms the hexagonal wurtzite structure. Lattice parameters presents the linear increase of a and c parameters with the content of Mn and this Vegard's law behavior give an evidence of Mn in Zn site. The increase of a and c lattice parameters are related with the larger effective ionic radius (0.091 nm) of Mn^{2+} ion compared to that of the Zn^{2+} ion (0.083 nm) [22]. As per the earlier reported data it is observed that due to incorporation of Mn in ZnO, intensity of diffraction peaks decreases and the strong diffraction peaks are obtained because of synthesized materials are well crystalline [34,35]. The crystallite size (D) was determined by using Debye-Scherrer formula [36]:

$$D = 0.9\lambda/\beta Cos\theta \quad (2)$$

Where, λ – Wavelength of incident beam (1.5406 A°),β – Full width at half maxima (FWHM) of the peak in radiansθ – Diffraction angle.

The average crystallite size of the synthesized samples was found to be in the order of 21–22 nm.

3.1.2. Field emission scanning electron microscopy (FE-SEM)

Fig. 2(a)–(f) shows FE-SEM images of pure, 1%, 3%, 6%, 9% and 12% Mn doped ZnO thick films respectively. The images (a) to (f) shows that there is formation of nano-rods. The diameter of the rods is changes for different % of Mn doping. By incorporating Mn, agglomeration of ZnO nano rods is prevented. From figure it is seen that, the surface of 6% Mn doped ZnO nano rods is slightly rough as compared with other Mn doped ZnO nanorods materials and it provided the more surface area for adsorption of oxygen.

We can also speculate that there is distortion in Mn doped ZnO nanorods by addition of Mn^{2+} ions in pure ZnO. When Mn doped in ZnO nanorods, Mn^{2+} ions fill only Zn sites, by forming spin-antiparallel pairs and inducing a large structural distortion, e.g. a contraction of the Mn–Mn distance and a reduced bond angle of Mn–O–Mn. The Mn doped ZnO compound shows substantial paramagnetic behavior and the strong AFM interaction arises due to formation of a configuration with spin antiparallel pairs and these results the lattice distortion in the Mn-doped ZnO compound [22,37].

3.1.3. EDAX – Energy dispersive X-ray analysis

The elemental analysis of synthesized materials were analyzed by using EDAX (JOEL, JED-2300, Germany). Fig. 3 shows EDAX patterns of 6% Mn doped ZnO. It is shows that there is presence of Zn, O and Mn as predicted and no other impurity elements were prominently present.

3.2. Gas sensing characteristics

3.2.1. I-V characteristics

Volt-ampere characteristic of pure ZnO, 1% Mn doped, 3% Mn doped, 6% Mn doped, 9% Mn doped ZnO and 12% Mn doped ZnO thick films were carried out by using Keithley 6487 picoammeter cum voltage source. Fig. 4 shows the I-V characteristic of pure ZnO, 1% Mn doped, 3% Mn doped, 6% Mn doped, 9% Mn doped ZnO and 12% Mn doped ZnO thick films. While studying V-I char-

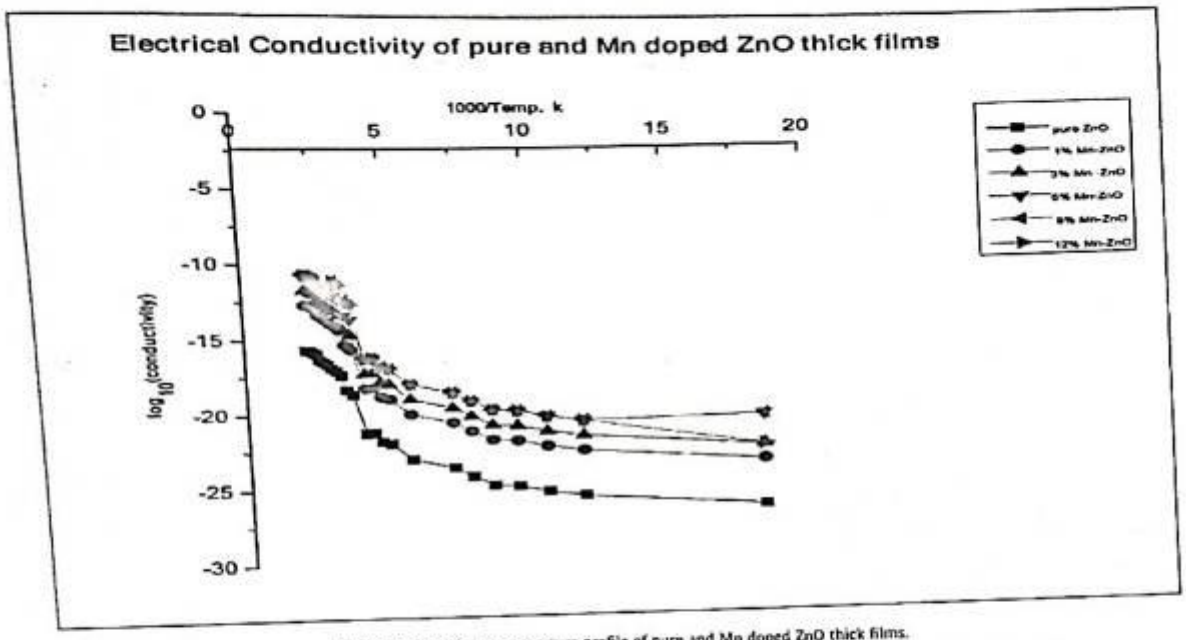


Fig. 5. Conductivity - temperature profile of pure and Mn doped ZnO thick films.

acteristics of prepared thick films the bias voltage was increased from 0 to 25 V and the corresponding current was noted. The voltage was increased in steps of 5 V. The same process was performed for negative voltage. I-V characteristics graph shows that the curves for pure and all Mn doped ZnO thick films shows symmetry and the silver contacts between the films and the probes of the system is ohmic in nature [38].

3.2.2. Electrical conductivity

Electrical conductivity of pure ZnO, 1% Mn doped, 3% Mn doped, 6% Mn doped, 9% Mn doped ZnO and 12% Mn doped ZnO thick films is shown in Fig. 5. From the graph it is found that there is increase in conductivity with increase in operating temperature. The conductivity values for pure and Mn doped ZnO thick films are found to be increased linearly due to negative temperature coefficient of resistance and confirm the semiconducting nature of thick films.

3.2.3. Gas sensing response

Fig. 6(a–c) shows the variation of gas response of of pure ZnO, 1% Mn doped, 3% Mn doped, 6% Mn doped, 9% Mn doped ZnO and 12% Mn doped ZnO thick films at different operating temperature for 600 ppm H_2S, CO_2 and LPG gases respectively. Form figure it is observed that the Mn doped ZnO thick films are sensitivte toward H_2S gas at room temperature as compare to CO_2 and LPG gas. The maximum response of thick films was found at temperature 373 °K. Among all Mn doped ZnO thick films, 6% Mn doped ZnO thick film showed maximum response toward H_2S gas at temperature 373 °K.

The gas sensing mechanism involves gas–solid interaction at the surface of the material [39]. In gas sensing, adsorption of oxygen species from the atmosphere on the surface of the gas sensor occurs and electrons are trapped and then chemisorbed. Depending on the operating temperature of gas sensor, the electrons are chemisorbed in the form of O_2^-, O^- and O^{2-}. At lower temperature, chemisorbed oxygen state changes as follows [40]:

$$O_{2(gas)} + e^- \leftrightarrow O^-_{2(ads)} \quad (3)$$

$$O_{2(ads)} + e^- \leftrightarrow 2O^-_{(ads)} \quad (4)$$

When the electrons from the conduction band of sensing material get trapped by chemisorbed oxygen form ionized adsorbed oxygen ions. This leads to the formation of a thick space-charge layer and increase the resistance of n-type sensing material until the equilibrium is attained with the ambient oxygen atmosphere. Thus when Mn doped ZnO thick films are exposed to air, there is interaction between thick films and oxygen molecules forming the adsorbed oxygen ions by capturing electrons from conduction band due to which concentration of electron in conduction band decreases.

When H_2S gas is exposed to Mn doped ZnO thick film sensor, there is interaction between the H_2S gas with adsorbed oxygen and hydroxyl species of the thick film sensor. During the interaction electrons are released into the conduction band and resistance of the film decrease. The 6% Mn doped ZnO thick film showed maximum response among all the Mn doped ZnO films due to more interaction of H_2S molecules with film surface and in this interaction oxygen species are consumed and sensor resistance decrease. In 6% Mn doped ZnO thick film there could be uniform distribution of Mn species on the surface of thick film due to which internal resistance of the film may increase and this amount could be enough to promote the reaction effectively. Also the rough surface of 6% Mn doped ZnO thick film may helps to increase the contact area. The larger specific surface area may provide more position for gas molecules which help to enhance gas response. As a result of these, there is increase in sensing response of 6% Mn doped ZnO thick film toward H_2S gas.

3.2.4. Selectivity of H_2S gas as compare to CO_2 & LPG

Fig. 7 shows the sensing response of the 6% Mn ZnO thick film for 600 ppm towards different tested gases i.e. H_2S, CO_2 and LPG at 373 °K operating temperature. From graph, it is concluded that 6% Mn doped ZnO shows highest sensing response towards H_2S among the other tested gases CO_2 and LPG at temperature 373 °K. Also the 6% Mn doped ZnO thick film is highly selective to H_2S gas due to the uniform and specific distribution of Mn species

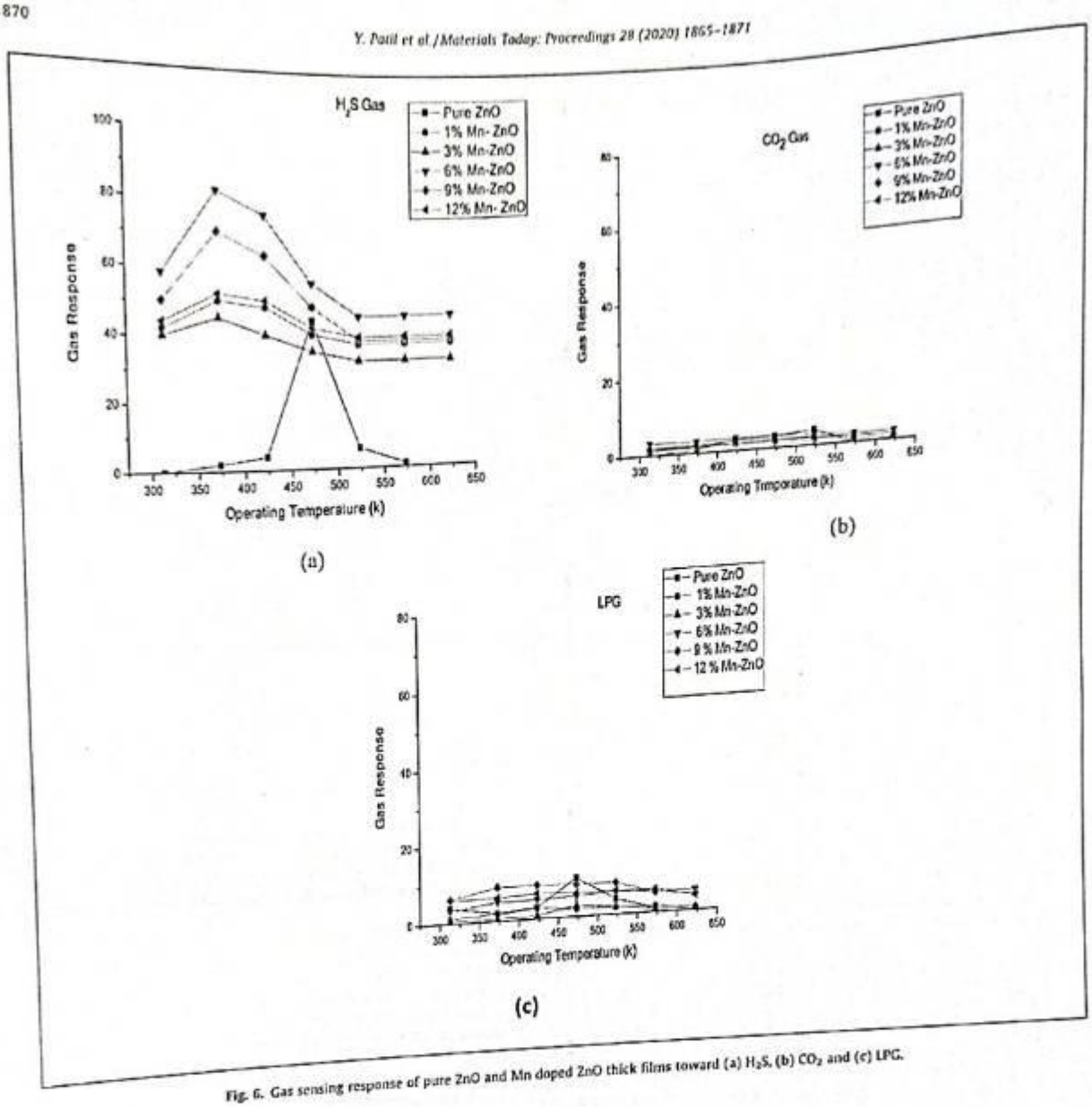


Fig. 6. Gas sensing response of pure ZnO and Mn doped ZnO thick films toward (a) H_2S, (b) CO_2 and (c) LPG.

in ZnO nanorods which may leads to adsorption of H_2S gas as compared to other test gases.

3.2.5. Response and recovery time of sensor

Sensing response time and recovery time of 6% Mn doped ZnO thick film for 600 ppm towards H_2S gas at 373 °K operating temperature is shown in Fig. 8. The gas response and recovery time for a particular gas are the important parameters of gas sensors. Response and recovery times are defined as the time reaching 90% of the final stable values. The response time and recovery time of 6% Mn doped ZnO thick film towards 600 ppm of H_2S gas at 373 °K operating temperature is 84 s and 96 s respectively. Because of less response time and rapid recovery of sensor element it may be useful for practical application of H_2S gas detection.

4. Conclusions

On the basis of experimental results and the discussion, the following conclusions can be made:

(i) Pure ZnO and 1% Mn doped, 3% Mn doped, 6% Mn doped, 9% Mn doped and 12% Mn doped ZnO nano rods are successfully synthesized by precipitation method. The average crystallite size of the synthesized samples was found to be in the order of 21–22 nm.

(ii) When synthesized pure ZnO and 1% Mn doped, 3% Mn doped, 6% Mn doped, 9% Mn doped and 12% Mn doped ZnO nano rods material's thick films were tested for different gases i.e. H_2S, CO_2 and LPG at different operating

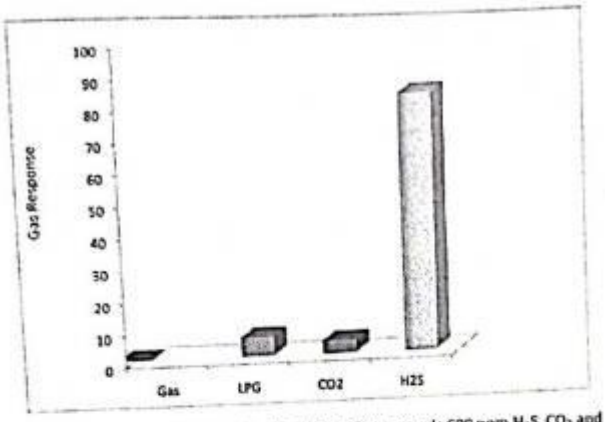


Fig. 7. Gas response of 6% Mn doped ZnO thick film towards 600 ppm H_2S, CO_2 and LPG at 373 °K operating temperature.

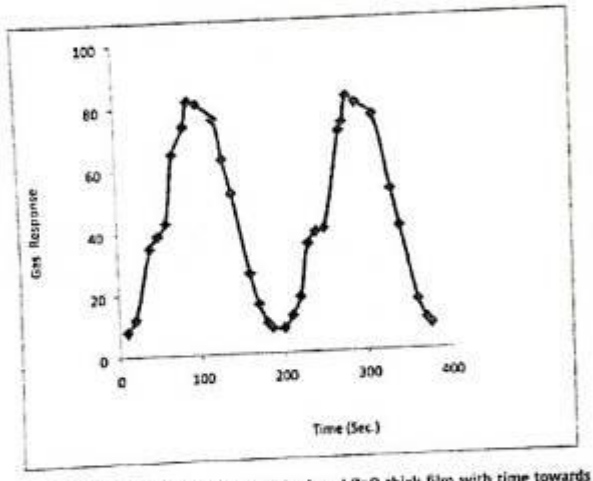


Fig. 8. Variation of gas response 6% Mn doped ZnO thick film with time towards 600 ppm of H_2S gas gas at 373 °K operating temperature.

temperature it is observed that Mn doped ZnO thick film shows higher sensing response as compare to pure ZnO thick films towards 600 ppm H_2S gas at room temperature.

(iii) Sensing response of 6% Mn-doped ZnO nanorod's thick film toward H_2S gas was higher than pure ZnO and 1% Mn doped, 3% Mn doped, 9% Mn doped and 12% Mn doped ZnO thick films at room temperature and it show excellent sensing response toward H_2S gas at operating temperature 373 °K.

(iv) Also it was observed that the sensor element made from 6% Mn-doped ZnO nanorod's thick film was highly slective and sensitive towards H_2S gas as compare to other tested gases with very small response time and rapid recovery time.

With this quality, the sensor elements made from 6% Mn-doped ZnO nanorod's thick film fulfils the necessary practical requirements of H_2S gas detection.

CRediT authorship contribution statement

Yogita Patil: Conceptualization, Data curation, Formal analysis, Writing - original draft. **R.B. Pedhekar:** Writing - review & editing, Supervision, Validation, Visualization, Methodology. **Swaraj Patil:** Resources, Software. **F.C. Raghuwanshi:** Supervision, Validation, Visualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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List of Peer Review Research Paper 2021-22

Sr. No.	Year	Author	Paper Title	Link
1	**2021-22**	Dr. S.S. Somvanshi	Women Emporment India In 21 century	http://igsrst.com
2	**2021-22**	Dr. M.M. Pimpale	Impact of Covid -19 On Indian Economy	www.researchjourny.net
3	**2021-22**	Dr. S.S. Somvanshi	Bhartachya Vikasat Sahakari Chalvadiche Yogadan	www.tecnoscienceacademy.com
4	**2021-22**	Dr. S P Kalbende,	Phytochemistry and Pharmacological activities of *Caesalpinia crista* L: A Review	www.rjpbcs.com
5	**2021-22**	Dr. Vivek R. Narkhedkar	Diversity Assessment in Some Cassia Species Based on Pollen Morphological Characters from Vidarbha Region of Maharashtra, India.	https://www.annalsofplantsciences.com/index.php/aps
6	**2021-22**	Dr. AU Ghaware	Isolation And Identification Of Bacteria From Local Market Fresh Water Crab Paratelphusa Jacquemontii From Amravati District, Maharashtra, India	www.aiirjournal.com
7	**2021-22**	Dr. A B Ingole	Co-relation of BMI with nutritional status observed in tribal people of Chikhaldara region.	www.aiirjournal.com
8	**2021-22**	Dr. S.D. Mahalle	Customer Satisfaction toward Education Service after post covid- 19	
9	**2021-22**	Dr. L. D Bodile	Customer Satisfaction toward E- Banking service provided by private sector banks	
10	**2021-22**	Dr. L. D Bodile	Opportunities Challenges in Commerce Higher Education in India prespective	www.aadharsocial.com
11	**2021-22**	Dr. MM. Pimpale	Study on Customer Satifactioon towards life Indurance copration of India	https://portal.issn.org/resource/issn/2348-7143
12	**2021-22**	Dr. M.M. Pimpale	Impact of Covid -19 On Agriculture Seetor in India	
13	**2021-22**	Dr. M.M. Pimpale	Customer To words Online Banking Sevices in India	
14	**2021-22**	Dr.Kiran R. Belurkar	Bhartatil Kuposhan Ek Gambhir Samasya	www.aadharsocial.com
15	**2021-22**	Dr.I.M Rajput	Maharashtratil Bhandavali Bajar- Aarthik Sthitiche Adhyayan	www.irasg.com
16	**2021-22**	Dr.I.M Rajput	Bhartiya Krushi Mulya Dhoran Ani Krushi Mulya Aayog	www.irasg.com
17	**2021-22**	Dr.I.M Rajput	Bhartachya Krushi Vikasamadhe Pik Vima Yojnechi Bhumika	www.irasg.com

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Research Paper -

Women Empowerment : India in 21st Century

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ABSTRACT *The concept of women's empowerment appears to be the outcome of several important critiques and debates generated by the women's movement throughout the world, and particularly by third world feminists. At earlier time they were getting equal status with men. But they had faced some difficulties during post-Vedic and epic ages. Many a time they were treated as slave. For centuries women were not treated equal to men in many ways. They were not allowed to own property, they did not have a share in the property of their parents, they had no voting rights, and they had no freedom to choose their work or job and so on. After the independence of India, the constitutional makers and national leaders strongly demand equal social position of women with men. Today we have seen the women occupied the respectable positions in all walks of the fields. They have not absolutely free some discrimination and harassment of the society. A few numbers of women have been able to establish their potentialities. Each and every should be careful to promote the women empowerment.*

Key words: Discrimination, women empowerment, women in India, globalization

Introduction:

The origins of the concept of empowerment go back to the civil rights in the USA in the 1960. Since the mid-1980s the term empowerment has become popular in the field of development, especially in reference to women. In grassroots programs and policy debates alike, empowerment has virtually replaced terms such as welfare, upliftment, community participation, and poverty alleviation to describe the goal of development and intervention. Women constitute almost 50% of the world's population but India has shown disproportionate sex ratio whereby female's population has been comparatively lower than males. As far as their social status is concerned, they are not treated as equal to men in all the places. Even today gender disabilities and discriminations are found in India.

Empowerment is related to the word power. In English, the concept leans on its original

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meaning of investment with legal power permission to act for some specific goal or purpose (Rappaport, 1987).

Barbara Solomon (1976, 1985) emphasized empowerment as a method of social work with oppressed Afro-Americans. Peter Berger and Richard Neuhaus (1977) proposed empowerment as a way of improving the welfare services by means of mediating social institutions. Julian Rappaport (1981) developed the concept theoretically and presented it as a world-view that includes a social policy and an approach to the solution of social problems stemming from powerlessness

Empowerment can be defined in many ways, however, when talking about women's empowerment, empowerment means accepting and allowing people (women) who are on the outside of the decision making process into it. This puts a strong emphasis on participation in political structures and formal decision-making and, in the economic sphere, on the ability to obtain an income that enables participation in economic decision-making. Sharma writes that from structural view point, women's empowerment approach is intrinsically psychologistic, structural and elitist (Sharma, 2000:26).

Friedman's theory of alternative development' is derived from the concept of empowerment that arises from indigenous, political and social cultures of society. According to Friedman, There are three kinds of power, social, political and psychological. Social power consists in processing knowledge, information and skills. Political power is a mechanism that influences policy changes both at the micro and macro level. It's the result of the power of voice and collective action (Friedman, 1992: 32-34). Today, when empowerment approachreigning supreme, there is need for a cool and dispassionate scrutiny from liberal perspective, women's empowerment approach suffers from three fallacies; exclusionary bias, adversarial orientation and subversive logic (Sharma, 2000:21).

Many scholars have analyses empowerment through gender lens and establish it for judging women development. It has also found in Chen and Mahmud's (1995) clarification when they have conceptualized also empowerment as women's advancement. As Chen and Mahmud (1995) writes that,

'Empowerment is a process of positive change that improves women's fallback position and bargaining power within a patriarchal structure, and identify different causal pathways of change; material, cognitive, perceptual and relational'.

In short, empowerment is a process of awareness and capacity building leading to greater participation, to greater decision-making power and control, and to transformative action. In addition, empowerment is a process that is both individual and economic dependency of woman is built into the structure of property relations which are dominated by man. For sure, developmental approach has failed to make a dent into the structure of gender-based property relations (Caplan, 1985:26). According to Stromquist,

'Empowerment in its emancipatory meaning is a serious word one which brings up the question of personal agency rather than reliance on intermediaries, one that links action to needs, and one that results in making significant collective change. It is also a concept that does not merely concern personal identity but brings out a broader analysis of human rights and social justice (Stromquist, 1993:401).

It is a fact that women have been suffering in every age and country from their protectors i.e., fathers, brothers, uncles, neighbours and others in childhood; boyfriends and lovers in youth; husbands and in-laws in married life; while from sons and others in old age. Man has inflicted an unspeakable injury upon woman by subjugating her indifferent phases in their lives and through the ages. Thus 'this question of woman's rights was a world question, and as old as the human

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race. In all ages, woman has regarded by men as inferior, and had robbed of the rights, with which God had endowed her, in common with every human being' (Langley & Fox, 1994:100-101). Bhadra (2001) discuss that,

Empowerment has both intrinsic as well as instrumental value. The most common use of the term empowerment refers to increasing the power of the low-power group, so that it more nearly equals the power of the high power group (Bhadra, 2001:61).

The status of Women in India has been subject to many great changes over the past few millenniums. In early Vedic period Women enjoyed equal status with men. Rigved& Upanishads mention several names of women sages and seers notably Gargi&Maitrey. Later the status of women began to deteriorate approximately from 500 B.C., the situation worsened with invasion of Mughals and later on by European invaders. Indian cultural history has a very old and long roots, it can be traced back to thousands of years. Sociologists have analyzed the status of women from these early ages to the present day by different methods. Scholars have believed that women of ancient India enjoyed equal status with men in all aspects of life.

The real change came after independence. Constitution of India guarantees equality to women (Article 14). There are other articles too which ensure rights of women e.g. no discrimination by the state [article 15 (1)] equality of opportunity (Article 16) etc. Feminist activism picked up momentum in India during later 1970's. Later on many groups and NGO's have been working for the Empowerment of women. We are proud that in Indian Women got voting right much before USA and some other European countries.

Empowerment of Women in India

Women's empowerment in India is heavily dependent on many different variables that include geographical location (urban or rural). educational status, social status (caste and class), and age. Policies on women's empowerment exist at the national, state, and local (Panchayat) levels in many sectors, including health, education, economic opportunities, gender-based violence, and political participation. However, there are significant gaps between policy advancements and actual practice at the community level.

The concept of empowerment flows from the power. It is vestingwhere it does not exist or exist inadequately. Empowerment of women would mean equipping women to be economically independent, self reliant, have positive esteem to enable them to face any difficult situation and they should be able to participate in development activities. The empowered women should be able to participate in the process of decision making. In India, the Ministry of Human Resource Development (MHRD- 1985) and the National Commission for Women (NCW) have been worked to safeguard the rights and legal entitlement of women. The 73rd &74th Amendments (1993) to the constitution of India have provided some special powers to women that for reservation of seats (33%), whereas the report HRD as March 2002 shows that the legislatures with the highest percentage of women are Sweden 42.7%, Denmark 38%, Finland 36% and Iceland 34.9%. In IOndia "The New Panchayati Raj" is the part of the effort to empower women at least at the village level.

Last few years the most positive development has been the growing involvement of women in the Panchayati Raj institutions. There are many elected women representatives at the village council level. At present all over India, there are total 20, 56, 882 lacs village panchayat members, out of this women members are 8,38,244 (40.48%), while total Anchalikpanchayat members are 1,09,324, out of this women members are 47, 455, (40.41%) and total Zillaparisad members are 11,708, out of this women members are 4, 923 (42.05%). At the central and state levels too women are progressively making a difference.

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Today we have seen women chief ministers, women president, different political parties leader, well establish businessmen etc.

Different Levels of Empowerment:

In line with most theorists on empowerment the one has to view empowerment as taking place on different levels and that change on all levels is necessary if the empowerment of women is really to occur. We have to relate empowerment at three levels: empowerment on the individual, group, and societal/ community-level and the interaction between these.

The individual level deals with individual women's abilities to take control over their lives, their perceptions about their own value and abilities, their abilities to identify a goal and work towards this goal. The group level deals with the collective action and sense of agency that woman experience together, in a group. The societal level deals with the permissiveness of the political and social climate, the societal norms and the public discourse on what is possible andimpossible for women to do, how women should behave etc.

Steps Undertaken Government of India for Women Empowerment:

The Constitution framers were very much conscious of the problem of women empowerment hence they ensured that the Principle of Gender Equality is enshrined inthe Indian Constitution in its Preamble, Fundamental duties and Directive Principles. The various articles mentioned in the earlier paragraph are meant for ensuring gender equality. Moreover the Constitution also empowers the states to adopt measures of positive discrimination in favour of women.

The National Policy for the Empowerment of women (2001) was an important step taken by the Government of the time for accelerating the pace of women empowerment. The policy was aimed at ensuring women empowerment through positive economic and social policies for the full development of women. The policy assured equal access to women to health care, quality education, participation and decision making in Social, Political and Economical life of the nation. The National Policy also aims at strengthening legal system for eliminating discrimination against Women. It also visualizes strengthening partnership with Civil Society, particularly Women's organizations. States have also taken various measures forempowerment of women. For an Indian woman and citizen, freedom does not just mean those guaranteed under the Constitution. It also means more jobs, opportunities for entrepreneurship, increased safety, ease in day-to day living, and protection of the girl child. In short, the road to women's empowerment has several factors dotting its path.

To ensure women are empowered, the government and the public sector need to play important roles to enable their welfare in various sectors. Whether it's providing free cooking gas and education schemes or enabling women to leverage technology, a slew of schemes have been launched in recent years to empower women to be independent in their lives. Here are a few that are breaking new ground and improving the lives of women, and encouraging them to think big, both in urban and rural areas.

Beti Bachao Beti Padhao Yojana:

This Yojana Launched on January 22, 2015, in Panipat, Haryana, it aims to generate awareness and also improve the efficiency of welfare services for the girl child. The initial aim of the campaign was to address the declining Child Sex Ratio (CSR) but has come to include gender-based sex-selective eliminations, and propagating education, survival, and protection of the girl child.

It is being implemented through a national campaign and focussed multi-sectoral action in 100 selected districts low in CSR, covering all states and UTs. The Beti Bachao Beti Padhao Yojana is a joint initiative of the Ministry of Women

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and Child Development, Ministry of Health and Family Welfare, and Ministry of Human Resource **Development. Mahila-E-Haat:**

Under the purview of the Ministry of Women and Child Development, the government launched Mahila-E-Haat in 2016. It is a bilingual online marketing platform that leverages technology to help aspiring women entrepreneurs, self-help groups, and NGOs to showcase their products and services. Among the many services provided by Mahila-E-Haat is facilitating direct contact between the vendors and buyers, sensitisation, advocacy, training, packing and soft intervention workshops, and offering a web-based approach.

Open to all Indian women above the age of 18, this platform offers an easy sign-in process and convenient payment modes. Everything can be handled on a mobile with no other intervention required. The portal claims to have attracted 17 lakh visitors since its launch and featuresover 2,000 products and services across 18 categories from 24 states

Conclusion:

The Empowerment of women has become one of the most important Concerns of 21" century not only at national level but also at the international level. Efforts by the Govt. are on to ensure gender equality but Government initiatives alone would not be sufficient to achieve this goal. Society must take initiative to create a climate in which there is no gender discrimination and women have full opportunities of self decision making and participating in the Social, Political and economic life of the Country with a sense of equality.

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Impact of Covid 19 on Indian Economy

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Abstract -

From April to June 2020, India's GDP fell by 24.4%. According to the latest national income estimates, in the second quarter of the fiscal year 2020/21 (July-September 2020), the economy shrank another 7.4%. The recovery in the third and fourth quarters (October 2020 to March 2021) remained weak, with GDP growing by 0.5% and 1.6%, respectively. This means the overall contraction rate in India (in real terms) is 7.3% for the entire 2020/21 financial year. The use of research methods for research leads to research. The research data has been used in these research articles and the research structure and research conclusions have been drawn.The second piece of information has been compiled. This includes research articles published nationally and internationally, and related articles published in various newspapers.

Keywords - GDP, Covid-19,fiscal year,financial year.

Introduction -

From April to June 2020, India's GDP fell by 24.4%. According to the latest national income estimates, in the second quarter of the fiscal year 2020/21 (July-September 2020), the economy shrank another 7.4%. The recovery in the third and fourth quarters (October 2020 to March 2021) remained weak, with GDP growing by 0.5% and 1.6%, respectively. This means the overall contraction rate in India (in real terms) is 7.3% for the entire 2020/21 financial year. During the post-independence period, India's national income fell only four times before 2020 - in 1958, 1966, 1973, and 1980 - with the largest decline occurring in 1980 (5.2 %). This means that 2020/21 is the worst year of economic decline in the country's history, and much worse than the overall decline in the world. The decline is only responsible for reversing a trend in global inequality, which had fallen but started to rise again after three decades (Deaton, 2021; Ferreira, 2021).

With over a billion connections in 2019, the telecommunications sector contributes about 6.5% of GDP and employs nearly 4 million people. The increase in broadband usage has directly impacted and put pressure on the network system. The quantity demanded increases by about 10%. However, telecom operators are preparing for a sharp drop in new subscribers. According to a policy recommendation, the government can help the sector by easing regulations and putting a moratorium on spectrum rights, which can be used by companies to expand their networks.

Pharmaceuticals -

The pharmaceutical industry has boomed since the start of the Covid-19 pandemic, particularly in India, the world's largest producer of generic drugs. With a market size of $55 billion at the beginning of 2020, it has exploded in India, especially in exporting hydroxychloroquine to the world. in the United States, United Kingdom, Canada, and the Middle East.There has been a recent increase in the price of raw materials imported from China due to the pandemic. Generic drugs have been hit the most due to their heavy reliance on imports, supply chain disruptions, and labor shortages in the industry due to social distancing. At the same time, the pharmaceutical industry is struggling due to the government imposing a ban on the export of essential drugs, PPE equipment, and kits to ensure sufficient quantities for the country. The growing demand for these drugs, coupled with hindered access, makes things more difficult. Easing financial stress for pharmaceutical companies, lowering taxes, and addressing labor shortages could be the factors that make all the difference in such desperate times.

Oil and Gas -

India's oil and gas industry is quite large in a global context - the country is the third-largest energy consumer after the US and China and contributes 5.2% of the demand. global oil. Total nationwide shutdowns have slowed demand for transportation fuels (which account for two-thirds of demand in the oil and gas sector) due to shrinking industrial and auto production and the movement of goods. goods and passengers (bulk and individual) décor although crude oil prices fell during this time, the government raisedexcise andexcise taxes to make up for the loss of

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revenue. In addition, the road tax was also increased. According to a policy recommendation, the government could consider passing the benefits of lower crude oil prices to end consumers at retail stores to stimulate demand.

Beyond Covid - The New Normal - Given the magnitude of the disruption caused by the pandemic, it is clear that the current recession is fundamentally different from the recession.A sudden drop in demand and a rising unemployment rate will change the business landscape. Adopting new principles such as "move to localization, save cash, resiliency, and innovation of the supply chain" will help businesses chart a new path in this uncertain environment.

Research Problem - India is a developing nation. The Indian economy was severely threatened after the Corona epidemic. The whole effect of which was employed on various industries. The Indian economy is of great importance which is why these research articles have studied the impact on the economy.

Objective - Research objectives need to be set to shape and shape the research work.

1) To study the effects of these research articles on the Indian economy.
2) These research articles provide insights into the relevant areas of the Indian economy.
3) To formulate important conclusions based on the information obtained.

Hypothesis - The Corona epidemic has hurt the Indian economy

Review of literature - (Pravakar Sahoo, 2020)COVID-19 and Indian Economy: Impact on Growth, Manufacturing, Trade, and MSME Sector, concluded that The study aims to provide an assessment of COVID19 on the Indian economy by analyzing its impact on growth, production, trade, and the micro, small and medium enterprise (MSME) sector.), while highlighting important policy measures to control fallout that may occur on the economy. The impact of the pandemic on sectors and under various full, prolonged and partial closure scenarios, and at different levels ofcapacity utilization, is enormous for the Indian economy. . The Indian economy is unlikely to grow positive0.5% in an optimistic scenario, but it also faces the possibility of negative growth of 3-7% in the worst case for India in 2020. The calendar year 2020. Very serious impact on 4, commercial, manufacturing, and MSME sectors.

Research Methodology - The use of research methods for research leads to research. The research data has been used in these research articles and the research structure and research conclusions have been drawn.The second piece of information has been compiled. This includes research articles published nationally and internationally, and related articles published in various newspapers.

Limitation -

1) Secondary information has been compiled in the proposed research articles.
2) Findings from research articles will be based on available information only.

Conclusion - The raging and widespread COVID19 pandemic has turned the world's booming economy into 4, unpredictable and ambiguous terms. But it's an important sign that the current recession looks largely different from past recessions that have rocked the country's economic order. As countries, corporations, corporations, and multinationals continue to understand the importance of the pandemic, it will certainly take time to prepare for a more structurally viable and sustainable future. The government should take a two-pronged approach to deal with the economic crisis. It will have to speed up its machinery to ensure a quick and robust recovery. First, these will involve major contributions from central banks, commercial banks, financial institutions, and other agencies in administering policies as the situation calls for. Second and foremost, it will have to promote and engage public and private companies, in general, to respond to the situation. The huge nature of the problem requires strong support from all parties involved. The government should make it pretty clear that not everything should be left to the government. A high sense of responsibility should be aroused among the public, private companies, industrialists, workers, and all other non-governmental stakeholders. There is a limit to which only the government can make war. It is therefore important that the government content itself, in the first stage, with preparing other stakeholders to take charge of the restoration process.

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प्रस्तावना :-

"भारतातील सहकारी चळवळ ही जगातील सर्वात मोठी सहकारी चळवळ असून देशातील एकूण ग्रामीण भागातील ९९% खेड्यांपर्यंत सहकारी चळवळ पोहचली आहे. विशेष पाहता जगातील विकसीत देश असो की विकसनशील असो. अशा सर्व देशामध्ये सहकारी चळवळीची भूमिका महत्त्वाची आहे. विकसीत देशाचे राष्ट्रीय उत्पन्न जास्त असले तरी समाजामध्ये आर्थिक विषमता दिसून येते (गरीब आणि श्रीमंत) आणि म्हणून आर्थिक दृष्ट्या दुर्बल घटक व्यक्तींना सहाय्य करण्याच्या दृष्टीने सहकारी संस्था तिथे उपयुक्त ठरत आहे. तसेच विकसनशील देशातील लोकाचे उत्पन्न कमी असते बचतीचे प्रमाण अल्प असते त्यामुळे त्या देशात भांडवलाची मोठ्या प्रमाणात निर्मीती होऊ शकत नाही. त्यामुळे देशातील आर्थिक विकासाची गती अपेक्षेएवढी ठेवता येत नाही अशा ह्या महत्त्वाच्या समस्यांवर शेती मात करण्याचा एक महत्त्वाचा मार्ग म्हणून सहकार संस्था ठरतात आणि हा मार्ग आपल्या देशाने स्विकारला आहे.

शेतीच्या दृष्टीने आर्थिक नियोजन :-

भारतातील ६८% जनता ही ग्रामीण भागात असून त्यांचा मुख्य व्यवसाय हा शेती आहे अशा ह्या ग्रामीण भागातील शेतीवर नियोज अवलंबून असणाऱ्या शेतकरी आणि आर्थिकदृष्ट्या दुर्बल घटक व्यक्तींच्या विकासासाठी, ग्रामीण भागाच्या विकासासाठी सहकाराचा अवलंब केल्याने देशाच्या विकासाला जलद गतीने चालना मिळेल हा दृष्टीकोन समोर ठेवून ग्रामीण भागात सहकारी चळवळीचा विकास, झाला पाहिजे ह्या दृष्टीने आपल्या देशात आर्थिक विकासाचे एक साधन म्हणून सहकारी चळवळीला महत्त्वाचे स्थान प्राप्त झाले आहे. भारत सरकारने स्वातंत्र्योतर काळात म्हणजे नियोजनाच्या काळात भारतीय अर्थव्यवस्थेत सहकारी चळवळीच्या विकासास प्राधान्य दिले त्यामुळे तिला एक स्वतंत्र असे महत्त्व प्राप्त झाले आणि भारतीय राज्यघटनेच्या मार्गदर्शक तत्त्वांच्या बेचाळीसाव्या आणि छेचाळीसाव्या कलमात असे नमूद करण्यात आले की, ग्रामीण भागात वैयक्तीक किंवा सहकारी संस्थाच्या साहाय्याने कुटीर उद्योग वाढीसाठी शासनाने प्रयत्न करावा आणि समाजातील दुर्बल घटकांच्या विशेष म्हणजे अनुसूचित जाती जमाती इत्यादीच्या आर्थिक निष्ठेची जोपासना करण्याकरीता शासनाने प्रयत्न करावा घटनेच्या त्या मार्गदर्शक तत्त्वाच्या पार्श्वभूमीवर विचार करता सहकारी हे सामाजिक, आर्थिक विकास व समाजीक न्याय प्रस्थापित करण्याचे एक साधन आहे आणि त्यानुसार देशातील आर्थिकदृष्ट्या दुर्बल घटक व्यक्तीच्या शेतकऱ्याच्या ग्रामीण भागाच्या विकासासाठी नियोजनबद्ध पद्धतीने सहकारी संस्था जोमाने कार्य करीत आहे.

महाराष्ट्रातील सहकारी चळवळ :-

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सहकारी संस्थाच्या निर्मितीमुळे आजूबाजूच्या परिसरातील लोकांना रोजगार उपलब्ध झाला. त्यामुळे बेकारी कमी होऊन अनेकांचे आर्थिक प्रश्न सुटण्यास मदत झाली. त्यामुळे ग्रामीण भागातील लोक व्यावसायाच्या अवतीभोवती रहायला लागले.

लोकांच्या गुणवत्तेत वाढ :

सहकारी संस्थामुळे शेतकऱ्यांना शिक्षण मिळायला लागले. त्यामुळे त्यांच्यात चांगल्या सवयी आणि चांगल्या गुणांची जोपासना होण्यास मदत झाली. अनाठायी खर्चाला आळा बसला. लोकांमध्ये बचतीची सहकार्याची भावना वाढीस लागली.

अन्नधान्याची नासाडी थांबली :

धान्य ठेवण्यासाठी गोदामांची सोय झाली. फळे साठविण्यासाठी शीतगृहे निर्माण झाली. खरेदी - विक्रि योग्य प्रमाणात झाली वास्तूक व्यवस्थेत वाढ झाली. त्यामुळे पूर्वी अन्नधान्याची होणारी नासाडी थांबली उदा. दुध वारा लागत विकण आवश्यक असते. मात्र आता सहकारी दुग्ध संस्थातून विशिष्ट पक्रियेच्याद्वारे ते साठवून विकले जाते.

सहकारी चळवळीच्या समस्या :

१. सहकारी चळवळीत उत्स्फूर्त पुढाकाराचा अभाव दिसून येतो.
२. मोठया प्रमाणात असलेली निरक्षर जनता मूलभूत सहकारी तत्वाबाबत अजाती असल्याचे आढळते.
३. थकबाकी वसुलीचा प्रश्न ही एक मोठी व गंभीर समस्या आहे. त्यामुळे अनेक प्राथमिक पतसंस्था धोक्यात आल्या आहेत.
४. सहकारी क्षेत्रासाठी प्रामाणिक, निष्ठावंत व सामाजिक जाणीव असलेले वितराजकिय नेतृत्व आढळत नाही.
५. सहकारी चळवळीमध्ये शिखर व संघ संस्था या 'पालक संस्था' आहेत सदस्य संस्थांच्या विकासाची संपूर्ण जबाबदारी या शिखर व संघ संस्थाकडे असते, पण प्रत्यक्षात या संस्था आपल्या सदस्य संस्थांच्या आर्थिक हिताकडे दुर्लक्ष करताना आढळून येतात.
६. अकार्यक्षम व्यवस्थापन असल्यामुळे बऱ्याच वेळा अध्यक्ष व कार्यवाह यांच्याकडे अधिकाराचे केंद्रीकरण होते.
७. अपुरे भांडवल सहकार क्षेत्रातील एक मोठी समस्या आहे त्यामुळे काही सहकारी संस्था आर्थिकदृष्टया दुर्बल बनल्या आहेत.
८. सदोष कर्जव्यवहारचे प्रमाण जास्त असल्यामुळे कर्जाचा दुरूपयोग व थकबाकीचे प्रश्न निर्माण होतात.
९. हे सहकारी चळवळ अयशस्वी होण्याच्या कारणांमध्ये सदोश देखरेख व नियंत्रण-व्यवस्था हे एक कारण महत्त्वाचे ठरते.

निष्कर्ष :-

आपल्या देशामध्ये सहकारी चळवळीची भूमीका ही अत्यंत महत्वाची असून देशाच्या विकासाच्या दृष्टीने कार्य करीत आहे. आणि ग्रामीण भागाच्या विकासासाठी आर्थिक दृष्ट्या दुर्बल घटकांच्या उत्पादनात वाढीसाठी महत्त्वाची भूमिका बजावत असताना आजच्या 6 आधुनिक जागतिकीकरणाच्या स्थितीत सहकारी संस्थेसमोर अनेक आव्हाने निर्माण झाली असली तरी तिला चांगले भवितव्य असून जागतिकीकरणाच्या

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भारतातील सहकारी चळवळीमध्ये महाराष्ट्राचा अत्यंत महत्त्वाचा सहभाग आहे. महाराष्ट्रात सहकारी चळवळ 80 वर्षापासुन अस्तित्वात आहे. भारतीय सहकारी चळवळीला योग्य दिशा देण्याचे मौलाचे कार्य महाराष्ट्राने केलेले आहे असे म्हटल्यास अतिशोक्ती ठरणार नाही. महाराष्ट्रात सहकारी चळवळीचा विकास घडवुन आणण्यासाठी वैकुंठलाल मेहता, डॉ. धनजयराव गाडगीळ, पद्मश्री विखे पाटील, विठ्ठलदास ठाकरसी, आर. जी. सरैय्या, वामनराव वर्दे, डॉ. डी. जी. कर्वे, तात्यासाहेब केळकर यांच्या सारख्या समाज सुधारक प्रगतीशील उद्योगपति आणि व्यापारी व्यक्तिचे समर्थ नेतृत्व सहकारी चळवळीस लाभले यांच्या प्रयत्नातुन अहमदनगर जिल्ह्यात प्रवरानगर, लोणी येथील सहकार क्षेत्रातील देशातील पहिला साखर कारखाना 1948 साली काढण्याचे श्रेय महाराष्ट्र राज्यास मिळाले.

भारताचे नवीन आर्थिक धोरण :-

भारताचे नविन आर्थिक धोरणाचा अवलंब केल्या पासूनमध्ये १९९१ पासून जागतीकीकरण, उदारीकरण, खाजगीकरणाच्या आर्थीक धोरण पार्श्वभूमीवर विविध क्षेत्रात विदेशी प्रत्यक्ष गुंतवणूकीला वाव दिला आहे घ्या प्रत्यक्ष थेट परकीय गुंतवणूकीमुळे सहकार क्षेत्रावर उद्योगावर काही चांगले आणि काही वाईट परिणाम सुद्धा दिसून येताहेत परंतु सध्याच्या खुल्या अर्थव्यवस्थेमध्ये सहकारी संस्थेची गरज ही अत्यंत महत्त्वाची आहे अलीकडच्या काळात जागतीक आर्थिक पेच प्रसंगाला तोड देण्याची ताकद सहकारी संस्थेमध्ये आहे ती सक्षम आणि टिकाऊ आहे.

सहकार चळीवळीचे लाभ :-

कमी व्याजाने कर्ज पुरवठा :

पूर्वी कर्ज पुरवठा सावकार करत असत. त्यांच्या व्याजाचा दर 25 टक्के पासून से 100 टक्के पर्यंत होता, त्यामुळे होतकरी कर्जबाजारी राहत, आज सहकारी पतसंस्थेमार्फत कर्जवाटप केले जाते. त्या व्याजाचा दर 12 ते 14 टक्के आहे. त्यामुळे शेतकऱ्यांची आर्थिक पिळवणूक थांबण्यास मदत झाली.

आधुनिक पध्दतीने शेती :

आधुनिक बी-बीयाणे, अवजारे, तंत्रजान, इ. सहकारी संस्थामार्फत शेतकऱ्यांना मिळतात. शेतमालाला योग्य भाव मिळतो. त्यांचा माल सरकार विकत घेते. पेतमाल साठवण्याची सहकारी सोय आहे. त्यामुळे मालाची नासधूस होत नाही. पूर्वी बैलजोडी नसल्याने शेत-नांगरणी थांबत होती. आता शेतकऱ्यांना आधुनिक पध्दतीने शेती करता येते.

ग्रामीण नेतृत्वात वाढ :

महाराष्ट्राच्या कानाकोपऱ्यात सहकारी साखर कारखाने, सुतगिरण्या पसरल्या आहेत. या लोकाशाहीच्या तत्वावर आधारीत आहे "एक व्यक्ती एक मत" या तत्वामुळे ग्रामीण नेतृत्वात वाढ झाली आहे.

अल्प उत्पन्न गटातील लोकांना मदत :

कर्ज उपलब्ध झाले आहे. त्यामुळे जमीन घेणे, घर बांधणे, जोडधंदे करणे, आधुनिक यंत्रसामुगीचा वापर करणे शक्य झाले आहे. शेतकऱ्यांना मिळणाऱ्या या आर्थिक मदतीमुळे शेतकऱ्यांच्या विकसात हातभार लागला.

रोजगारीत वाढ :

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आव्हानाचा मुकाबला करून उपलब्ध संधीचा लाभ घेऊन आपले महत्वाचे उद्दीष्ट पार पाडतील आणि देशात आर्थिक व सामाजीक विकासात महत्वाची भूमिका बजावतील यात तीळ मात्र शका नाही.

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REVIEW ARTICLE

Phytochemistry and Pharmacological activities of *Caesalpinia crista* L: A Review

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ABSTRACT

Caesalpinia crista L. is an important medicinal plant in Ayurveda due to its applications in curing wide range of disorders. Phytochemically *C. crista* is rich in tannins, flavonoids, proteins, reducing sugars, carbohydrates, saponins, phytosterols and triterpenoids. It is the richest source of various cassane and norcassane-type of diterpenes. Various extracts derived from leaves, seeds and flowers of *C. crista* revealed antimicrobial, antioxidant, hepatoprotective, anthelmintic, cytotoxic, antimalarial, anticancer, anti-ulcer, anti-inflammatory, antidiabetic, insecticidal activities. Present paper comprehensively accounted for phytochemical diversity and various pharmacological activities of *C. crista*.

Keywords: Ayurveda, *Caesalpinia crista*, Medicinal Plant, Phytochemistry, Pharmacology

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64

INTRODUCTION

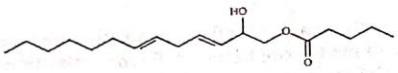
Caesalpinia crista L. is an important member of subfamily Caesalpinioideae coming under Fabaceae family. It is a prickly shrub with huge medicinal potential and commonly distributed in tropical and subtropical regions of Southeast Asia [1]. It is quite prominently scattered in Maharashtra, Kerala and West Bengal states of India [2]. In Bangladesh, it locally known as Kutum Kanta [3], while Indian trivial names are Katikaranja or Natakaranja [4], in Myanmar it locally called as "Ka-Lain", whereas "Bagore" in Indonesia [5], "Taepee" in Thai [6] and "Shirotsubu" in Japanese [7]. Phytoconstituents like phenolics and flavonoids impart several medicinal properties to many medicinal and aromatic plants. In ayurvedic preparations seeds, leaves and stem of *C. crista* are mostly used to cure constipation, gynecological disorders, piles and ulcers and skin diseases [1, 4]. Present review provides detailed insides about phytoconstituents diversity and pharmacological activities of medicinally important *C. crista* plant.

PHYTOCONSTITUENTS

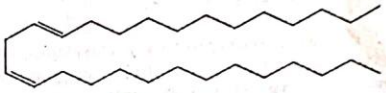
Ethanolic extract of *C. crista* seeds is rich in flavonoids, tannins, alkaloids, triterpenoids and proteins [8]. Aqueous and ethanolic extract of *C. crista* seeds tested positive for alkaloids, carbohydrates, flavonoids, phytosterols, proteins, reducing sugars, saponins, triterpenoids and tannins [9, 10]. *C. crista* seed coats methanol extract showed presence of alkaloids, steroids, flavonoids, phenols, glycosides and triterpenoids [11]. HPLC analysis documented seven polyphenolics and six flavonoids in ethyl acetate, methanol and aqueous extracts of *C. crista* leaves [12]. Aqueous extract of *C. crista* leaves reported gallic acid, gentisic acid, chlorogenic acid, protocatechuic acid, ferulic acid, *p*-coumaric acid and caffeic acid [13]. Three novel norcassane diterpenes were isolated from dichloromethane extract of *C. crista* seeds, of which norcaesalpinin A and B showed 17-norcassane skeleton whereas, norcaesalpinin C is with 16-norcassane skeleton [14]. Dichloromethane extract of *C. crista* seeds documented total twenty three diterpenes of which ten viz. caesalpinins H-P and norcaesalpinin F were new furanocassane-type diterpenes [15]. Ethanolic and dichloromethane extract of stems and roots of *C. crista* documented total fourteen diterpenes viz. ent-11b-hydroxy-rosa-5,15-diene, vinhaticoic acid, methyl vinhaticoate along with taepeenin A–I and nortaepeenin A–B which were newly recognized cassane and norcassane-type of diterpenes[15]. Acetone extract of *C. crista* seeds reported (5a,8b)-vouacapane, (5a,6b,8b)-vouacapan-6-ol, (5a)-vouacapa-8(14),9(11)-diene, taepeenin J, taepeenin K and taepeenin L. The taepeenin J was a dimer and taepeenin K and L belongs to cassane-type diterpenes [6]. Two new diterpenoids viz. 6b-cinnamoyloxy-7b-acetoxyvouacapen-5a-ol and 6b,7b-dibenzoyloxyvouacapen-5a-ol were extracted from aerial parts *C. crista* using 1:1 ratio chloroform and methanol [16]. Fresh sub-cultured callus of *C. crista* accounted maximum 61.4% of Glutamine, cultured medium showed 21.3% of Alanine and protoplast found with 45% of Arginine [17]. 17-methylvouacapane-8(14),-9(11)-diene a new marker cassane furanoditerpene was successfully extracted from n-hexane extract of *C. crista* seed kernel [18]. Cassane-type diterpenes like 2-acetoxy-3-deacetoxycaesaldekarin e, 14(17)-dehydrocaesalmin F, 7-acetoxybonducellpin C, 6-acetoxy-3-deacetoxycaesaldekarin e caesaldekarin e, caesalmin C, caesalmin E, 2-acetoxycaesaldekarin e, caesalpinin E, caesalpinin C, caesalmin B, norcaesalpinin B, along with newly isolated caesalpinins MA-ME and norcassane-type diterpenes, norcaesalpinins MA-MC were isolated from dichloromethane extract of *C. crista* seed kernels collected from Myanmar [19]. Dichloromethane extract of *C. crista* seed kernels collected from Myanmar yielded cassane-type diterpenes like 2-acetoxycaesaldekarin e, bonducellpin C, 1-deacetylcaesalmin C, caesalmin C, caesaldekarin e, 2-acetoxy-3-deacetoxycaesaldekarin e, norcaesalpinin E, 1-deacetoxy-1-oxocaesalmin C, in addition to this normal cassane-type furanoditerpenes viz. caesalpinins MO, MP and rare methyl migrated cassane-type furanoditerpenes caesalpinins MM and MN were also extracted [20]. Along with sixteen already reported cassane-type diterpenes, newly found caesalpinin MF—ML and one new norcassane-type diterpene, norcaesalpinin MD was successfully isolated from dichloromethane extract of Myanmarese *C. crista* seed kernels [21]. Neocaesalpins H and I, new cassane diterpene-acids were isolated from acetone extract of *C. crista* leaves with rare α, β-butenolide hemiacetal ring and 5-hydroxy group deficiency [7]. GC-MS and LC-MS investigations of *C. crista* leaves methanolic extract accounted twenty six and fourteen compounds respectively and HPLC analysis of methanol extract found with rutin hydrate, myricetin, sinapic acid, quercetin, *p*-coumaric acid, caffeic acid, cinnamic acid, vanillin, chlorogenic acid, kaemperol, protocatecheuic acid, catechin, epicatechin and gallic acid [22]. In addition to familiar compound 3-*O*-methylellagic acid-3'*O*-α-

rhamnopyranoside, unique compounds such as 2-hydroxytrideca-3,6-dienyl-pentanoate and octacosa-12,15-diene (Figure 1.) were isolated from methanolic extract of *C. crista* seeds [23]. Dichloromethane extract of Indonesian *C. crista* seed kernels produces new caesalpinins C-G and norcaesalpinins D and E (furanocassane-type diterpenes) and norcaesalpinins A-C along with other known eleven compounds [24]. Phangininoxys D and E, identified as new cassane-type diterpenes isolated from methanol extract of *C. crista* seeds along with caesalpinin MP, phanginin I, caesalpinista A, caesalpinilinn and caesalpinista B [25]. *C. crista* flower methanolic extract yielded four flavonoid compounds isolated first time in plants [26]. A new cassane-type diterpene named as 1α-acetoxy-5α, 7β-dihydroxycassa-11,13(15)-diene-16,12-lactone was extracted from methanol extract of *C. crista* seed kernels [27]. Caesalpinista A, caesalpinista B, caesaljapin B, caesaljapin C and caesalpinilinn were the five new cassane-type diterpenes isolated from methanolic extract of *C. crista* seeds [28]. Two cheilanthane-type tricarbocyclic sesterterpenoids viz., cristasesterterpenoic acid and cristasesterterpinol glucoside were isolated from methanolic fraction of *C. crista* leaves [29].

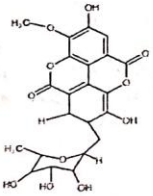
Figure 1 Structures of phytoconstituents isolated from *C. crista* [23, 25, 26, 30].



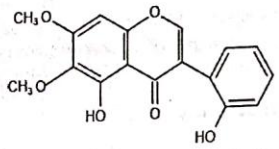
2-Hydroxytrideca-3,6-dienyl pentanoate



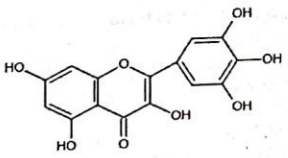
Octacosa-12,15-diene



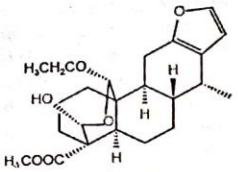
3-O-Methylellagic acid-3'O-α-rhamnopyranoside



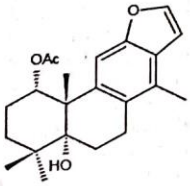
5,2'-digydroxy-6,7-dimethoxy isoflavone



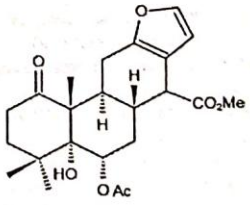
3,5,7,3',4', 5'-hexahydroxy flavone



Phangininoxys D



Caesalpinin MP



Caesalpinin F

PHARMACOLOGICAL ACTIVITIES

Antibacterial activity

C. crista leaves methanolic extract inhibited seven bacterial strains and highest antibacterial activity was recorded at 500 µg/disc against *S. aureus* and *E. coli* with 14.8 mm and 14.5 mm of zone of inhibitions respectively; on contrary chloroformic extract failed against all tested bacterial strains [31]. Against all tested bacterial strains, crude methanolic extract of *C. crista* seeds revealed most vigorous and significant antibacterial activity compared to other fractions and isolates [23]. Flavonol fraction of *C. crista* seed coat demonstrated significant antibacterial activity against *S. aureus* with 27 ± 0.14 mm zone of inhibition; however least activity was recorded towards *E.coli* having 10 ± 0.15 mm zone of inhibition [32]. All compounds derived from methanolic extract of *C. crista* flower revealed antimicrobial action against all examined strains; compound C showed maximum effect against *M. lutens* with 16.64 mm zone of inhibition [26].

Antifungal activity

Phenolic acid fraction of *C. crista* seed coat showed activity against all strains and highest antifungal potential recorded against *A. flavus* with 30 ± 0.90 mm zone of inhibition; however flavonol fraction revealed moderate activity against *C. albicans* only [32]. Three out of four compounds extracted from methanolic extract of *C. crista* flower revealed activity against all fungal strains and compound B revealed best action against *F. oxysporum* with 18.1 mm zone of inhibition [26].

Antiviral activity

Aqueous and ethanol extract of *C. crista* completely inhibited paramyxovirus and revealed substantial inhibition of orthomyxovirus (87.5% each); on the contrary chloroform extract failed to inhibit paramyxovirus and showed half efficacy (50% inhibition) against orthomyxovirus [51].

Antioxidant efficacy

In DPPH assay, methanolic extract of *C. crista* leaves revealed higher (IC_{50}= 103.7 µg/ml) free radical scavenging activity than chloroformic (IC_{50}= 201.92µg/ml) extract; In FRAP assay, methanolic extract revealed stronger (70.4 ± 0.031) antioxidant activity than chloroformic extract (35.4 ± 0.023) [31]. Ethanolic extract of *C. crista* seeds showed highest (73.9 ± 0.84% and 77.7 ± 0.05%) activity in DPPH and hydrogen peroxide assay respectively [8]. *C. crista* leaves methanol extract showed higher inhibition potential (93.01± 0.33%) as compared to aqueous extract (55.74 ± 0.09%) at 400 µg/ml concentration in DPPH assay [22]. Hydro-methanolic extract of *C. crista* leaves showed ROS scavenging activities for hydroxyl, superoxide, nitric oxide, singlet oxygen and hypochlorous acid assays and *in vivo* analysis of extract illustrated significant raise in superoxide dismutase, catalase, glutathione S-transferase, whereas glutathione level get reduced [2]. Aqueous extract of *C. crista* leaves demonstrated very high antioxidant activity in DPPH assay with IC_{50}= 24.35±1.1 µg/ml as compared to *C. asiatica* IC_{50}= 139.5±2.01 µg/ml [13]. Poor antioxidant activity was revealed by hydro-ethanolic extract of *C. crista* leaves in ABTS assay with 0.152 ± 0.002 TEAC value; also very low free radical scavenging capacity was measured in superoxide, nitric oxide, peroxynitrite, singlet oxygen and hypochlorous acid assays (IC_{50}= 139.4± 17.23; 52.21± 7.28; 4229.17± 522.79; 425.24 ± 48.27 and 410.48 ± 81.2 µg/ml respectively) as compared to other medicinal plants [33]. In DPPH method, hydro-ethanolic extract of *C. crista* seeds revealed concentration dependent antioxidant activity and highest (71.6±0.42%) inhibition was recorded at 300µg/ml concentration [34]. *C. crista* seed coat methanol extract revealed 76% of inhibition with IC_{50}= 71.89 mg/ml in DPPH assay; the extract also trim down level of $NaNO_2$ induced lipid peroxidation and protein carboxylation. In oxidative stress-induced RBCs, dose dependent usual level of superoxide dismutase and catalase was observed [11]. Ethyl acetate extract of *C. crista* leaves showed strong antioxidant activity in DPPH, ABTS methods with IC_{50}= 23.9 ± 1.8 µg GAE, 38.9 ± 1.8 µg respectively; however in hydroxyl radical scavenging assay methanol extract perform better (IC_{50}= 76.8 ± 2.4 µg/mL) than rest of the extracts [12].

Anthelmintic efficacy

Methanol extract of *C. crista* seeds revealed 70.83% of efficacy against *Ascaridia galli* infected broilers and concentration dependant vermicidal effect [37]. *C. crista* seeds extracted with methanol showed low efficacy (70.83%) as compare to oxfendazole (90.83%) against *Ascaridia galli* infected broilers [38]. Ethanol and aqueous seed extract at 15% w/v concentration recorded least time of paralysis and death for *Pheretima posthuma* and *Ascaridia galli* [39]. Aqueous-ethanol extract of *C. crista* seeds was less effective in terms of faecal egg and adult worm counts of *H. contortus*, although it showed second best (8.8%) effectiveness of drug against *H. contortus*. In the case of *T. colubriformis* it failed to control adult worm count with no effectiveness of drug [40]. Ethanolic seed extract of *C. crista* seeds showed 92.1% of effectiveness against *Haemonchus contortus* third stage larvae with 0.08% of parasitic survival rate [41]. Crude aqueous methanolic extract of *C. crista* seed kernels revealed dose as well as time-dependent anthelmintic effects by killing worms and preventing egg hatching with LC_{50} = 0.134 mg/mL; also declined (93.9 %) eggs per gram of faeces *in vivo* condition at 3.0 g/kg on day 13 of post-treatment [42]. 4% petroleum ether extracts of *C. crista* seeds showed excellent paralytic and lethal time (2.2 and 15.3 min respectively) against earthworms compared to other extracts [43].

Antimalarial activity

Two furanocassane diterpenes, caesalpinin N and norcaesalpinin F isolated from dichloromethane extract of *C. crista* seeds showed very high inhibitory action against *P. falciparum* FCR-3/A2 with IC_{50} value of 120 and 140 nM as compared to chloroquine [5]. From dichloromethane extract *C. crista* collected form Myanmar and Indonesia, cassane and norcassane-type diterpenes were isolated which showed concentration dependent manner inhibitory action against *Plasmodium falciparum* FCR-3/A2; among these, norcaesalpinin E showed most potent antimalarial activity (IC_{50} = 0.090 µM) as compared to known drug chloroquine (IC_{50}= 0.29 µM) [44]. Dichloromethane extracted compounds from *C. crista* kernels revealed dose dependent action against *P. falciparum* FCR-3/A2 and compound norcaesalpinin E showed strong activity with IC_{50} = 90 nM [24].

Anticancer activity

70% ethanol extract of *C. crista* root bark at a dose of 150mg/kg revealed reduction in tumor volume and packed cell volume (1.9±0.28 and 2.2±0.14 ml respectively) whereas, it recorded elevated mean survival time, increase life span (22±0.28 days and 62.9±0.2 % respectively) in Ehrlich ascites carcinoma bearing mice; Haematologically, *C. crista* ethanol extract at 150 mg/kg dose significantly raised RBC count and hemoglobin content whereas, it reduces WBC count as compared to EAC control [45].

Anti-ulcer activity

Although aqueous and ethanolic extracts of *C. crista* declined pylorus ligation and indomethacin induced ulcer occurrence in rats through drop off ulcer score and ulcer index, the maximum effect was recorded at 200 mg/kg b.w. dose of ethanolic extract [9].

Anti-inflammatory activity

In carrageenan induced rat paw edema assay, ethanolic extract of *C. crista* seeds revealed significant anti-inflammatory activity (74.2%) at 300mg/ml dose after 3 hours as compared to diclofenac [8]. Aqueous extract of *C. crista* leaves revealed strong inhibition of 5-lipoxygenase with IC_{50} = 23±1.1 µg/mL [13].

68

Analgesic activity

Ethanolic extract of *C. crista* seeds showed potent analgesic effect (71%) at 300 mg/kg dose in writhing reflexes assay while, in tail immersion assay significant activity was observed at 60 min (5.30 ±0.05 sec) at same dose. In both assays, extract showed concentration dependent activity [8].

Antidiabetic activity

In streptozotocin induced diabetic rats, aqueous as well as ethanolic extract of *C. crista* seeds significantly declined serum glucose, cholesterol and triglycerides however, it results in decreased average body weight and increased water and food intake demand. Histopathological investigation observed structural changes in islets of pancreas. Comparatively aqueous extract is more effective than ethanolic extract [10].

Anti-amyloidogenic property

Aqueous extract of *C. crista* leaves worked at three levels to reveal anti-amyloidogenic property. The aqueous extract restrains Aβ(42) aggregate formation from monomers; it also inhibits combining of Aβ(42) from oligomers and it can separate earlier developed Aβ(42) fibrils [48].

Antineoplastic activity

In MTT assay, phanginin I isolated from methanol extract of *C. crista* seeds revealed significant action against HeLa, HT-29 and KB cell lines, however it showed excellent activity against KB cell lines with IC_{50} = 17.1 ± 2.4 μM [25]. From methanol extract of *C. crista* seed kernels, newly isolated compound 1α-acetoxy-5α, 7β-dihydroxycassa-11,13(15)-diene-16,12-lactone revealed modest antiproliferative activity against T47D and DU145 cell lines with IC_{50} = 16.5 and 8.2 mg/mL respectively [27].

Antiplatelet activity

Methanol extract of *C. crista* seed coat at 150 μg concentration showed low antiplatelet activity (28 and 23% respectively) by inhibiting ADP and epinephrine agonists [11].

Antipyretic activity

Pyrexia induced in rabbits due to yeast, TAB vaccine and boiled milk was reversed with oral administration of ethanolic and aqueous extract of *C. crista* seeds at a dose of 100 mg/kg b.w. It significantly brings down body temperature to normal, however in all cases ethanolic extract proved much more significant than aqueous [53].

Cytotoxic activity

Methanolic extract of *C. crista* leaves showed stronger cytotoxic activity (LC_{50} = 2.972 and 5.794 μg/ml) than chloroformic extract in brine shrimp lethality bioassay [31]. Two new diterpenoids isolated from *C. crista* aerial parts showed significant cytotoxic activity against HL-60 (IC_{50} = 17.37 ± 0.88 and 19.77 ± 1.54 μM) and HeLa cell lines (IC_{50} = 33.41 ± 0.75 and 33.90 ± 0.66 μM) [16].

Cholinesterase inhibition

Acetylcholinesterase and butyrylcholinesterase activity of *C. crista* methanol extract showed 51.19% and 63.86% inhibition respectively [22].

Cardio-protective effect

In isoproterenol triggered myocardial infarction, aqueous and ethanol extract of *C. crista* seeds at 400 mg/kg b. w. dose significantly declined serum and heart homogenates based elevated marker enzyme levels [54].

Hepatoprotective activity

Paracetamol and carbon tetrachloride induced liver toxicity in albino rats was lowered on treatment with aqueous and ethanolic extract of *C. crista* seeds. Both extracts showed significant reduction of serum aspartate aminotransferase, alkaline phosphatase, alanine transaminase, total bilirubin and significantly enhanced total proteins in serum [35]. In excess iron induced liver toxicity, methanolic extract of *C. crista* leaves inhibit lipid peroxidation, protein oxidation and liver fibrosis by dose dependent manner and best results were observed at 200 mg/kg b.w dose; on treatment with same extract serum marker enzymes level declined, however liver antioxidant enzymes showed elevated concentrations [36].

Insecticidal activity

Methanol extract of hexane defatted *C. crista* seeds caused utmost antifeedance in *Helicoverpa armigera* (AI_{50}=0.0186%) and feeding of extract introduced abnormalities in *H. armigera* larvae, pupae and adults; extract treated larvae recorded 50% growth reduction (GI_{50}=0.0151%). The extracts proved biologically safe against predator beetle, *Coccinella septempunctata* up to nine days of treatment [49].

Inhibition of erythrocytes hemolysis

Hydrogen peroxide induce erythrocyte hemolysis was strongly inhibited by ethyl acetate, methanol and aqueous extracts of *C. crista* leaves following dose-dependent pattern, however ethyl acetate extract proved better (IC_{50}= 88.56 ± 1.88 µg) than rest of the extracts [12].

Inhibition of DNA damage

Damage caused to λ-DNA due to fenton reaction generated radicals was overcome by ethyl acetate, methanol and aqueous extracts of *C. crista* leaves. λ-DNA damaged with hydroxyl ion, significantly lower down the fluorescence intensity; however, higher fluorescence intensity 47.7, 41.98 and 45.96 was recorded on treatment with above three extracts of *C. crista* leaves [12].

Nootropic activity

In the radial arm maze model, *C. crista* seed kernels aqueous extract showed dose dependent memory retention and averagely 57.552 ± 5.768 seconds to complete three successful trials at 150 mg/kg p.o. While working with morris water maze model, aqueous extract at 150mg/kg, p.o. showed increased memory retention percentages and 22.495 ± 1.138 seconds averagely for three successful trials, very near to standard drug Piracetam [46].

Neuroprotective effect

Methanol extract of *C. crista* leaves dose dependently improve the cognitive damage occurs due to aluminum, acetylcholinesterase hyperactivity and oxidative stress in hippocampus and frontal cortex of rat brain, also extract declined aluminium triggered neuronal injury revealed by decreased neuron loss and degeneration of nucleus in certain areas of rat hippocampus [52].

70

Toxicology Study

Ethanol extract of *C. crista* seed kernels showed a non toxic effect on body and organ weights of mice, also no significant variation is detected in hematological analysis. During this study no mortality was observed [47].

Wound healing activity

Amongst the six fractions of *Caesalpinia crista* seed kernels, ethyl acetate fraction revealed superior wound healing activity [50].

Conflict of Interest

The authors declare no conflict of interest.

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Research Article

Diversity Assessment in Some *Cassia* Species Based on Pollen Morphological Characters from Vidarbha Region of Maharashtra, India

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Abstract

The inert nature of pollen characters towards strong selective forces favored its utility as a taxonomic tool. The present work assessed the diversity among the selected species of *Cassia* using pollen morphological characters. Pollen morphology of ten *Cassia* species was studied by Scanning Electron Microscope and Light. A total of 23 pollen morphological characters were observed. All the species showed distinct variations in terms of shape, size, aperture, and exine ornamentation characters. In all ten *Cassia* species, a major similarity in aperture type was observed having tricolporate to trizonocoplorate. Size ranges between 23-40 µm, while, shapes were oblate, spheroidal-prolate, spheroidal. Psilate or psilate perforate, reticulate, or microreticulate tectum was noted in SEM observation.

Keywords: *Cassia, Caesalpiniaceae, LM, Pollen morphology, SEM.*

Introduction

The genus *Cassia* L. is widely distributed and consists of about 500 to 600 species (Airy-Shaw 1973; Singh 2001). It is probably the largest of the leguminous genera in the sub-family Caesalpinioideae. The genus *Cassia* is categorized among the 25 largest genera of the dicotyledonous plants (Irwin &Turner, 1960). *Cassia* L. has been recognized as a heterogeneous group. The taxonomy and nomenclature of *Cassia* L. species are quite complex and intriguing. Bentham (1871) divided the genus *Cassia* into three genera and nine sections. Britton & Rose (1930) split the genus *Cassia* into twenty-eight genera. Irwin and Baneby (1982) realizing diversity and complexity raised the genus *Cassia* L. to the levels of subtribe (Cassiinae) and raised the sub-genera *Senna* Mill. and *Chamaecrista Moench* to genetic level. Currently, this genus has followed several probing lines of classification, because of the extreme morphological resemblances and ambiguous boundaries between taxa (Soladoye *et al.*, 2010). This unstable taxonomic boundary is mainly due to difficulty in the taxonomic identification and interpretation of similar morphological features in the genus *Cassia*. Marazzi *et al.*, (2006) noted that the high degree of specialization typical of the buzz-pollinated *Cassia* flowers complicates the identification of characters that can be unambiguously used for their taxonomic identification and delineation.

The advances in micro-diagnostic techniques endorsed palynology as a significant field of study. Different features of pollen external surface such as apertural pattern, exine pattern, shape, and symmetry are very conventional for the taxonomic judgment of the plants (Perveen, 2006; Bera *et al.*, 2007; Keshavarzi *et al.*, 2012). The external surface features of pollen are often overlooked by many taxonomists due to the fact that they are so small (ca. 0.3 µm in diameter) for their identification (Faegri *et al.*, 1989), and hence microscopic (both electron and light) techniques are prerequisite tools for

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discrimination among the plant species. The importance of pollen features in the discrimination of different taxon and the significance in evaluating the systematic position of some species of the Leguminosae including the genus *Cassia* has been provided by many authors such as Erdtman (1952); Nair and Sharma (1962); El Ghazali (1989); Jumah (1991-1996) & Aftab and Perveen (2006). Labouriau *et al.*, (1965) studied the pollen variation of polar axis and equatorial diameters in two species of *Cassia* viz., *C. cathartica* and *C. rugosa*. Wherein, magnitude of polar axis was reported to be more than the equatorial axis. Singh (2001) in a monograph on Indian sub-tribe Cassiinae, pinpointed the variations in ectine surface that may be used as a base for delimiting certain related taxa. Recently, Abdalla (2014) made an attempt to elucidate the taxonomical relation between seven *Cassia* sp. from Sudan using pollen surface features as a reference diagnostic character.

The high level of magnification for the evaluation of pollen features was achieved by the electron microscope. The present investigation assessed the diversity among available species of *Cassia* based on pollen morphology evaluation using Scanning Electron Microscopy (SEM) and Light Microscopy (LM).

Materials and Methods

The pollen grains from ten genera of *Cassia* (Table 1) was collected from the campus of Sant Gadge Baba Amravati University, Amravati (Maharashtra), and stored in 70% alcohol. The studied taxa were identified from Floras (Naik, 1998 and Yadav, 2005). The collected material was crushed with a glass rod in a plastic centrifuge tube and crushed material was filtered through fine meshes to isolate pollen grains. The methods described by Erdtman (1960) and Arora & Modi (2008) were utilized for the preparation of pollen and subsequent analysis by electron and light microscopy. Pollen grains mounted in glycerin jelly were taken for observations by Carl Zeiss's Trinocular Fluorescence Microscope (Axiostar HBO 50/AC). For Scanning Electron Microscopy (SEM) studies, pollen grains were suspended in a drop of ethanol and directly transpired with a fine pipette to a metallic stub using double-sided cello tape and coated with gold-palladium in a sputtering chamber (POLARON SPUTTER COATER). The SEM examination was carried out on a LEO electron microscope (LEO 430). The measurements are based on data from 10 pollen collected by an ocular micrometer. For the diversity assessment, pollen grain size, colpi size, pore size was measured (Table 1). The terminology used is in accordance with Faegri and Iverson (1964), Erdtman (1971), Bhattacharya *et al.*, (2006), Agashe (2006), and Punt *et al.*, (2007). A total of 23 features of *Cassia* sp. were observed separately for morphological analysis.

Results

Description of pollen morphological characters:

Cassia alata L.

Pollen grain features showed Polar Axis (PA) 31.30-32 µm, Equatorial Axis (EA) 28-30 µm, radially symmetrical, prolate spheroidal, polar outline triangular obtuse, equatorial outline elliptic, trizonocolporate, colpi 19.19 µm long and 4.5-5 µm wide, colpi tapering towards the end, separated into two by ori, mesocolpium 18.1-19.21 µm, apocolpium 5.51-6.66 µm, pori circular, 5.5-6.6 µm in diameter, exine 1.65-2.0 µm, tectum psilate [Fig. 1 (LM, Polar View (PV)), Fig. 2 (SEM, PV, Mag. 2.23 KX) Table 1].

Cassia auriculata L.

Pollen grain PA 25.2 (26.04) 27µm, EA 29.97(34.86) 36.52, radially asymmetrical, prolate spheroidal-sub-prolate, polar outline triangular-obtuse, equatorial outline rhombic acuminate „obtuse, trizonocolporate, colpi 26.56 µm long and 3.99 µm wide at equator, colpi broad, sides parallel with rounded ends, pori 2.66-3.16 µm in diameter, mesocolpi 23.56-26.09 µm, exine 1.76-2.40 µm thick, tectum fossulate-rugulate or rarely coarsely reticulate [Fig. 3-4 (LM, PV and Equatorial View (EV)), Fig. 5 (SEM, EV, Mag. 4.31 KX) Table 1].

Cassia bicapsularis **L.**
Pollen grain PA 23.97 µm, EA 27.66 µm, radially symmetrical, suboblate-oblate spheroidal, polar outline triangular, equatorial outline elliptic, trizonocolporate, colpi 21.20 µm long and 3.22-3.68 µm wide, mesocolpium 18.90 µm, apocolpium 8.75 µm, pori circular, 2.30 µm wide, colpi linear to narrowly elliptic, tips obtuse, exine 1.93-2.44 µm thick, tectum microreticulate perforate, N3P4C5 [Fig. 6-7 (LM, PV and EV), Fig. 8-9 (SEM, PV and EV, Mag. 4.03 KX and 5.40 KX) Table 1].

Cassia biflora **L.**
Pollen grains, PA 23.43-25 µm, EA 26.98-32.66 µm, radially symmetrical, sub-oblate, Polar Outline triangular, equatorial outline elliptic, trizonocolporate, colpi 22.72 µm long and 2.84-3.55 µm wide, colpi narrowly elliptic, mesocolpium 15.2 µm, apocolpium 6-6.8 µm, pori circular, 3.55µm in diameter, exine 1.47-2.31 µm thick, tectum psilate to perforate N3P4C5 [Fig. 10(LM, EV), Fig. 11 (SEM, EV, Mag. 1.38 KX) Table 1].

Cassia fistula **L.**
Pollen grain PA 34.86-36.92 µm, EA 32.69-33.43 µm, radially symmetrical, prolate spheroidal, polar outline triangular, equatorial outline elliptic, tricolporate, colpi linear to narrowly elliptic, tips acute, colpi faint, 22.5-24.57 µm long and 5.6-5.76 µm wide, pori 3.22-3.72 µm wide, mesocolpi 26.8-28.55 µm, apocolpi 15.7-18.3 µm, exine 1.86-2.40 µm thick, punctitegillate or tectum microreticulate perforate, N3P4C5 [Fig. 12(LM, PV), Fig.13 (SEM, PV, Mag. 5.46 KX) Table 1].

Cassia javanica **L.**
Pollen grain PA 24.32- 26.86 µm, EA 36.8-37.2 µm, radially symmetrical, oblate-sub-oblate, polar outline triangular, equatorial outline elliptic, tricolporate, colpi narrowly elliptic, 30-32 µm long and 5.28-5.77 µm wide, pori circular, mesocolpi 19.96-21.83 µm, apocolpi 12.76-13.69 µm, exine 2.24-3.17 µm in thickness, tectum psilate- microreticulate perforate, N3P4C5 [Fig. 14-15 (LM, PV and EV), Fig. 16 (SEM, EV, Mag. 3.58 KX) Table 1].

Cassia occidentalis **L.**
Pollen grains, PA 32.92 µm, EA 37.63 µm, radially symmetrical, sub-oblate-oblate spheroidal, polar outline triangular, equatorial outline elliptic, trizonocolporate, colpi 29.52-38 µm long and 3.52-4.70 µm wide, colpi narrowly elliptic, tips acute, mesocolpium 27.04 µm, apocolpium 8.82-9.40 µm, pori circular, 4.70 µm in diameter, exine 1.77-2.62 µm in thickness, tectum finely reticulate, N3P4C5[Fig. 17-18(LM, PV and EV), Fig. 19-20 (SEM, PV and EV, Mag. 1.14 KX and Mag. 1.14 KX) Table 1].

Cassia obtusifolia **L.**
Pollen grain PA 36.45-38.80 µm, EA 41.16-42.84 µm, radially symmetrical, oblate spheroidal, polar outline triangular obtuse, equatorial outline elliptic, trizonocolporate, colpi 34.10 µm long and 3.52-4.70 µm wide, colpi narrowly elliptic, separated into two by a bridge formed over ori, tips acute, ori circular-elliptic, 5.88 µm wide, mesocolpium 31.75-32.92 µm, apocolpium 13.52-15.87 µm, exine 2.08-2.31 µm thick, tectum microreticulate perforate,N3P4C5 [Fig. 21-22(LM, PV and EV), Fig. 23-24 (SEM, PV and EV, Mag. 1.21 KX and Mag. 1.21 KX) Table 1].

Cassia siamea **Lam.**
Pollen grains, PA 33.32-34.15 µm, EA 35.11-37.48 µm, radially symmetrical, oblate-spheroidal, polar outline triangular obtuse, equatorial outline elliptic, trizonocolporate, colpi 28.99-30.82 µm long and 6.8 µm wide, colpi tapering towards the end, separated into two by pori, mesocolpium 26.4-28.4 µm, apocolpium 6-7.2 µm, pori circular, 5.8-6.4µm in diameter, exine 2.73-3.30 µm in thickness, tectum psilate to perforate, N3P4C5 [Fig. 25-26 (LM, PV and EV), Fig. 27-28 (SEM, PV and EV, Mag. 3.27 KX and Mag. 3.27 KX) Table 1].

Cassia tora **L.**
Pollen grain PA 29-30 µm, EA 34-36 µm, radially symmetrical, prolate spheroidal-Sub-prolate, polar outline triangular obtuse, equatorial outline elliptic, trizonocolporate, Colpi linear to narrowly elliptic, colpi 27-29 µm long and 4.59-5.35 µm wide, mesocolpium 25.24 µm, apocolpium 8.41-9.18 µm, pori

circular, 3-5 µm wide, exine 1.44-2.04 µm thick , tectum psilate- verrucate, heterobrochate, N3P4C5 [Fig. 29-30(LM, PV and EV), Fig. 31-32 (SEM, PV and EV, Mag. 1.32 KX and Mag. 1.32 KX) Table 1].

Table 1: Pollen grain characteristics of *Cassia* species.

Sr. No.	Name of taxon	Pollen grain size (µm) P×E	Pollen shape	Aperture pattern	Colpi/pori size (µm)	Exine ornamentation
1	*Cassia alata*	31.30 × 28	Prolate Spheroidal	Trizonocolporate	19.19 × 4.5	Psilate
2	*Cassia auriculata*	26.04 × 34.86	Prolate spheroidal-Sub-prolate	Trizonocolporate	26.56 × 3.99	fossulate-rugulate or rarely coarsely reticulate.
3	*Cassia bicapsularis*	23.97 × 27.66	Suboblate-oblate spheroidal	Trizonocolporate	21.20 × 3.68	Microreticulate perforate
4	*Cassia biflora*	23.43 × 26.98	Sub-oblate	Trizonocolporate	22.72 × 2.84	Psilate perforate
5	*Cassia fistula*	24.5 × 27.25	Oblate spheroidal	Tricolporate	9.81 × 2.18	Punctitegillate?
6	*Cassia javanica*	24.32 × 36.8	Oblate-sub-oblate	Tricolporate	30-32 × 1.81	Psilate-microreticulate perforate
7	*Cassia occidentalis*	32.92 × 37.63	Sub-oblate-oblate spheroidal	Trizonocolporate	28 × 3.52	Finely reticulate
8	*Cassia obtusifolia*	36.45 × 42.84	Oblate spheroidal	Trizonocolporate	34.10 × 4.70	Microreticulate perforate
9	*Cassia siamea*	33.32× 35.11	Oblate-spheroidal	Trizonocolporate	28.99× 6.8	Psilate perforate
10	*Cassia tora*	29 × 34	Prolate spheroidal-Sub-prolate	Trizonocolporate	4.59 × 5.35	Psilate

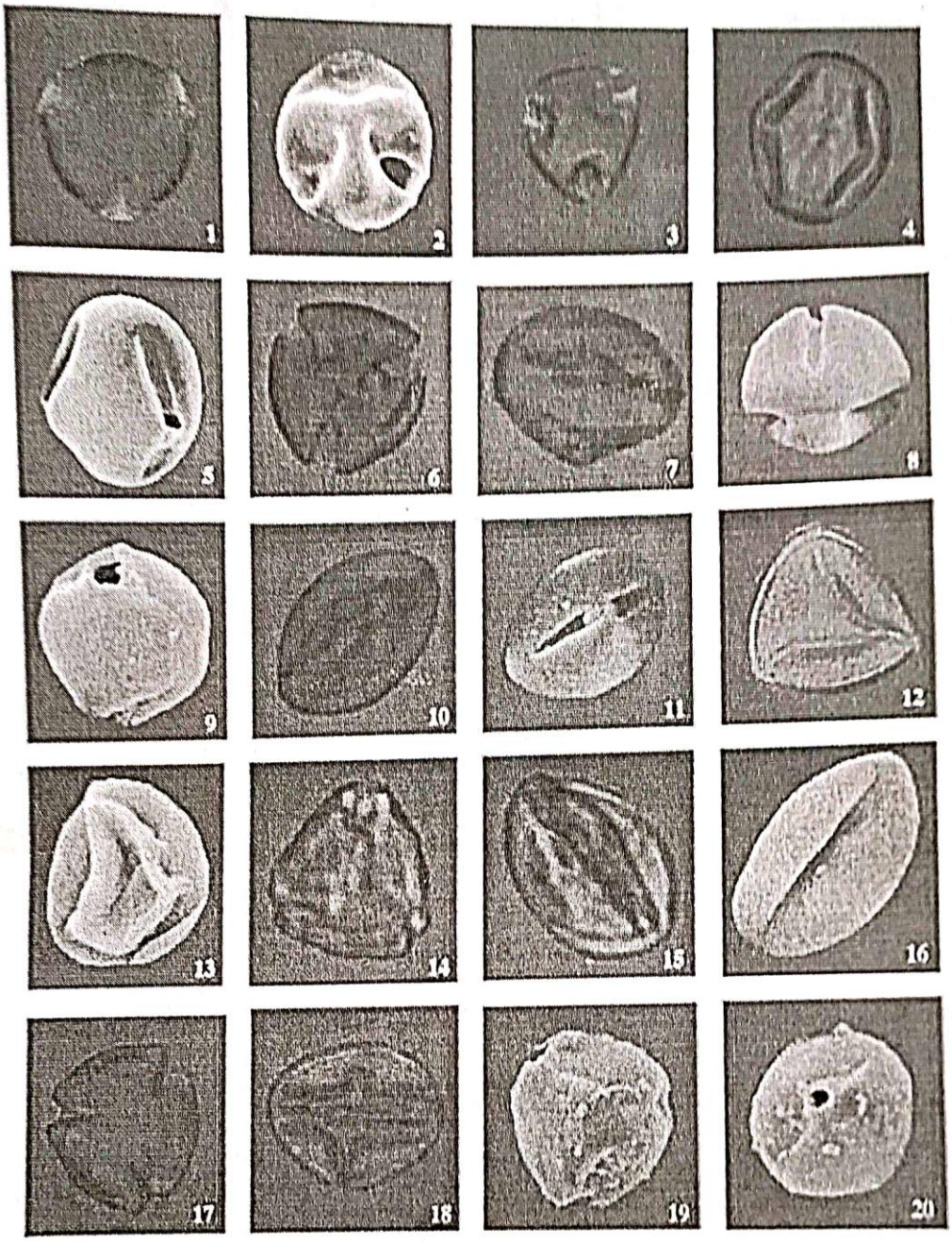


Fig. 1-20 Light and Scanning Electron Micrograph showin structure and exine sculpture of pollen grain: Fig. 1-2 *Cassia alata* (PV), Fig. 3-5 *Cassia auriculata* (PV and EV), Fig. 6-9 *Cassia bicapsularies* (PV and EV), Fig. 10-11 *Cassia biflora* (EV), Fig. 12-13 *Cassia fistula* (PV), Fig. 14-16 *Cassia javanica* (PV and EV), Fig. 17-20 *Cassia occidentalis* (PV and EV). PV- Polar view, EV- Equatorial view.

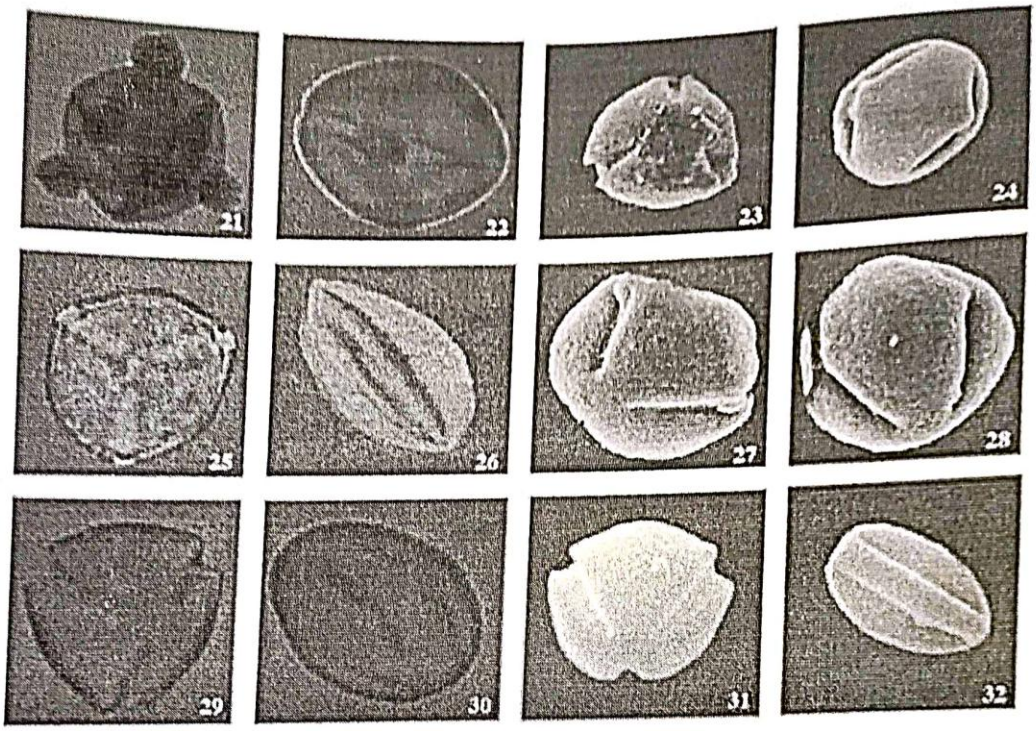


Fig. 21-32 Light and Scanning Electron Micrograph showin structure and exine sculpture of pollen grains: **Fig. 21-24** *Cassia obtusifolia* (PV and EV), **Fig. 25-28** *Cassia siamea* (PV and EV), **Fig. 29-32** *Cassia tora* (PV and EV). PV- Polar view, EV- Equatorial view.

Discussion

Pollen morphological characteristics study is a precise method of relating and differentiating one plant genus from another. The present investigation on pollen micro-morphological characters suggests that qualitative and quantitative features of the pollen could be used to discriminate species.

In all ten *Cassia* species, many similarities in aperture type were observed, i.e. having feature tricolporate to trizonocoplorate. Psilate or psilate perforate tectum is noted in *Cassia tora, Cassia alata, Cassia siamea, Cassia javanica, Cassia biflora*, whereas reticulate or microreticulate exine pattern occurred in *Cassia occidentalis, Cassia auriculata, Cassia bicapsularis, Cassia obtusifolia*. In contrast to the above, *Cassia fistula* showed punctitegillate exine ornamentation. Rao and Lee (1970) and Aftab and Perveen (2006) reported similar exine ornamentation i.e. reticulate-rugulate tectum within *Cassia fistula, Cassia javanica* and *Cassia siamea* based on LM. Whereas, in the present investigation, SEM observation reveals more clear reports showing different tectum namely punctitegillate or microreticulate perforate in *Cassia fistula*, psilate- microreticulate perforate in *Cassia javanica*, and psilate perforate in *Cassia siamea*. Besides, the other characters were found to be similar. Nayar (1990) studied pollen morphology of five genera of *Cassia* viz. *Cassia auriculata, Cassia fistula, Cassia mimosoides, Cassia occidentalis* and *Cassia tora*; and noted psilate tectum in all of them. While, in the present study, the same taxon of *Cassia* showed variable exine ornamentation, and the remaining characters showed homology.

Pollen morphological descriptions of various species of the genus *Cassia* L. were provided by a number of authors e.g. Vishnu-Mittre & Sharma (1962), Barth and Bouzada (1964),

Smith (1964), Maley (1970), Fredoux (1977). Most of these previous studies were based on LM techniques only. As a result, some discrepancies in their description from the present study were noticed. In addition, the use of different terminology is another factor that leads to differences in pollen morphological description between the present and previous studies. These differences may be due to different use of the same term or the same use of different terms, as previously noticed by El Ghazali (1993).

Conclusion

In the genus *Cassia* L., all ten species showed major similarity in aperture type i.e. tricolporate to trizonocoplorate. Pollen micro-morphological characters suggest diversity in the studied genus *Cassia*. Among all studied characters SEM based surface structure was found to be most significant for the identification of species. The qualitative and quantitative micro-morphological features considered in this study have the potential utility to discriminate the species.

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International center for research on women (ICRW) studies sting was highly prevalent in adolescent boys and girls, ranging . In contrast the rate of low body mass indices indicative of current under nutrition under nutrition in early childhood may diminish a person's even tautly body size malnourished children are typically shorter and lighter than their well nourished peers at the end of adolescent growth, s Cameron (1996). Several studies from India (yadav et al (1999), Gogoi and Sengupta(2002) have utilized BMI to study nutritional status of tribal populations. The basic causes of under nutrition in developing countries are poverty, poor hygienic conditions and little access to preventive and health care Mitra(1985), WHO(1990,1995).

Conclusion:

Therefore BMI has strong association with nutritional status in present study low level of BMI and under nutrition was observed which may be responsible for life threating diseases, higher ratio of maternal mortility. Also poverty illiteracy, very less facilities for health, blind beiefs, socio, economic status was affecting each and every as part of tribal people of Chikhaldara region.

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April 2022

Isolation And Identification Of Bacteria From Local Market Fresh Water Crab *Paratelphusa Jacquemontii* From Amravati District, Maharashtra, India

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Abstract

The present study was conducted to evaluate the hygienic quality and freshness of crab Paratelphusa jacquemontii (Rathbun) through the investigation of the occurrence of bacteria which is an indicator for crab quality. Crabs were collected every week from local crab market. Carapace and gills of the crab was examined. Escherichia coli, Proteus vulgaris, Bacillus subtilis, Klebsiella pneumonia, Pseudomonas aeruginosa, Vibrio parahaemolyticus and Staphylococcus aureus were identified by Biochemical tests (IMViC Tests). The result of this study revealed that raw crab sold in local crab market has high contamination of human pathogenic bacteria, so strongly suggested that there is need for innovative measures to discourage the local population from eating improperly cooked crabs.

Keywords: *P. jacquemontii, Bacterial isolation, Fresh water crab.*

Introduction

Fresh water crab provides high quality protein and it also contains Omega-3 fatty acids that afford potential health benefits. Crab meat contains several essential vitamins and minerals, such as vitamin B12, which is necessary for proper nerve function. These crustaceans are rich in the minerals, zinc and copper, which are important for various vital bodily functions. Consumption of infected crab may cause diseases due to infection or intoxication. Some of these diseases are caused by the microorganisms present on the external surfaces including carapace, gills and the gut of the crab. In water microorganisms are kept away from invading by the normal defense mechanism of crab, when they are alive. Outside the water or on death, the microorganisms or the enzymes they secrete are free to invade or diffuse into the body parts where they react with complex mixture of natural substances present resulting in a well- defined sequence of changes in odoriferous and flavourous compounds. The bacteria present on the crab are normally associated with those found in their natural environment and influenced by the season and the harvesting conditions (ICMSF 2007). The outlined and discussed the hazards and challenges associated with handling crab during farming, capture and the environmental contaminants in seafood that may pose a risk to human health (Yagoub 2009). The quality of the raw crab (fresh or iced) at markets varies so widely that there is an obvious need for developing quality standards. There is no study on Microbial identification of these crabs. Therefore this study was carried out to identify certain microbial analysis to assess the quality and freshness of raw crab (*P.jacquemontii*) sold at a market in Amravati, Maharashtra, India.

Materials and methods

Laboratory analysis

Crab samples

Crabs (P.jacquemontii) were collected from a local crab market in Amravati. Totally 10 numbers of sample animals were collected every week from November 2019 to February 2020. The collected samples were aseptically and immediately transported in a thermal bag to the laboratory and processed within 3 h of acquisition, and samples were kept in the refrigerator (4–8 °C).

Sample preparation

The 10 g of the crab body parts sample was cut with a sterile knife. The cut body parts were crushed into small pieces in a sterile mortar with about 10 ml sterile water. From the crushed sample, 1 ml aliquot volume was measured out and homogenized in a clean, dry sterile beaker containing 9 ml of distilled water giving a 1:10 dilution. This was done for the 10 crab samples.

Isolation and identification bacteria form crab body sample of *P.jacquemontii*

The collected samples were processed in the laboratory according to the standard microbiological methods under complete aseptic conditions. The swabs were inoculated on nutrient agar and incubated at 37 °C under aerobic condition. The isolated bacterial colonies were identified on the basis of their morphological, physiological and biochemical characters. These culture were subjected to various biochemical tests such as gram staining, motility, indole, methyl red, voges proskauer, citrate, Triple sugar ion, oxidase, carbohydrate fermentation, hydrogen sulfide production tests for identification of phosphate solubilizing bacteria using

Bergey's manual of systematic bacteriology (Holt et al.1994). The bacteria such as *E. coli, K. pneumonia, P. vulgaris, B. subtilis, P. aeruginosa, Vibrio parahaemolyticus* and *S. aureus* were isolated from the crab samples.

Results and discussion

In bacteria, bio-oxidation reactions are very important. These reactions help bacteria to provide energy by oxidation of organic substances or by fermentation. Based on these reactions, the bacteria were identified and the results were presented in (Tables: 1, 2, 3, and 4)

Table-1: Bacteria isolated from fresh water crab *P.jacquemontii* purchased on first week of November 2019.

Testing	Microorganisms			
	Escherichia coli	*Vibrio parahaemolyticus*	*Klebsiella pneumonia*	*Pseudomonas aeruginosa*
Gram staining	–	-	–	+
Motility	+	+	–	–
Indole production	+	+	–	+
Methyl red	+	-	–	–
Voges-Proskauer	–	-	+	–
Citrates	–	+	+	+
Triple sugar iron	–	+	–	–
Oxidase	–	+	–	D
Carbohydrate fermentation	+	+	D	D

+: Positive, –: negative, D: different

Table-2: Bacteria isolated from fresh water crab *P.jacquemontii* purchased on first week of December 2019.

Testing	Microorganisms				
	Escherichia coli	*Vibrio parahaemolyticus*	*Klebsiella pneumonia*	*Proteus vulgaris*	*Bacillus subtilis*
Gram staining	–	-	–	–	+
Motility	+	+	–	+	–
Indole production	+	+	–	+	+
Methyl red	+	-	–	+	–
Voges-Proskauer	–	-	+	–	–
Citrates	–	+	+	+	+
Triple sugar iron	–	+	–	+	–
Oxidase	–	+	–	D	D
Carbohydrate fermentation	+	+	D	D	D
Catalase	+	+	+	+	+

+: Positive,–: negative, D: different

Table-3: Bacteria isolated from fresh water crab *P.jacquemontii* purchased on first week of January 2020.

Testing	Microorganisms			
	Escherichia coli	*Vibrio parahaemolyticus*	*Klebsiella pneumonia*	*Proteus vulgaris*
Gram staining	–	-	–	–
Motility	+	+	–	+
Indole production	+	+	–	+
Methyl red	+	-	–	+
Voges-Proskauer	–	-	+	–
Citrates	–	+	+	+

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April 2022

Triple sugar iron	–	+	–	+
Oxidase	–	+	–	D
Carbohydrate fermentation	+	+	D	D
Catalase	+	+	+	+

+: Positive, –: negative, D: different

Table-4: Bacteria isolated from fresh water crab *P.jacquemontii* purchased on first week of February 2020.

Testing	Microorganisms				
	Escherichia coli	*Vibrio parahaemolyticus*	*Klebsiella pneumonia*	*Pseudomonas aeruginosa*	*Staphylococcus aureus*
Gram staining	–	-	–	+	+
Motility	+	+	–	–	–
Indole production	+	+	–	+	–
Methyl red	+	-	–	–	–
Voges-Proskauer	–	-	+	–	–
Citrates	–	+	+	+	+
Triple sugar iron	–	+	–	–	–
Oxidase	–	+	–	–	–
Carbohydrate fermentation	+	+	D	D	D
Catalase	+	+	+	+	+

+: Positive, –: negative, D: different

In this study, *E. coli, Vibrio parahaemolyticus ,K. pneumonia, P. vulgaris, B. subtilis, P. aeruginosa* and *S. aureus* were identified from the crab. *E. coli, Vibrio parahaemolyticus* and *K. pneumonia* were found in all the monthly samples (Tables: 1, 2, 3, and 4) Whereas, *B. subtilis* (Tables: 2) and *P. aeruginosa* (Tables: 1 and 3) were identified two times. *P. vulgaris* (Tables: 2 and 3) and *S. aureus* (Tables: 4) was identified. The crabs are highly consumable and prone to vast variations in quality due to differences in species, environmental habitats, and feeding habits. They can also function as carriers of several microbial and other health hazards. Therefore maintenance of quality is most important in production and trade of crab products. Although only a few infectious agents in crab are able to infect humans, some exceptions exist that may result in fatalities. However, the greatest risk to human health due to the consumption of raw or insufficiently processed crabs and crab products. In this study, *E.coli., Vibrio Parahemolyticus,* and *Klebsiella pneumonia* sp. were isolated from all of collected crab samples is of highly importance because this bacterium plays a considerable role as potential pathogenic bacteria for human and as an indicator of food quality as spoilage organism. The consumption of these disease or infected crabs possesses greater health risks than the consumption of apparently healthy ones. The general public and consumers of crabs should therefore ensure that they do not buy or consume disease or injured crabs. Organic materials of any type are suitable foodstuffs for bacteria growth. A case of cholera occurred in a patient in Maryland, who had eaten crab harvested commercially along the Texas coast in October 1984. Findings of *Vibrio sp.* in the tissue of crabs of present studies are considered to be correlated with the epidemiology and transmission of cholera in the aquatic environment.

This is previously mentioned by (Jeyasekaran *et al.* 2006, and Koutsoumanis and Nychas 2000). In this study seven bacterial species were isolated form *P.jacquemontii.* Among the seven bacterial species *E. coli. V. parahaemolyticus* and K. *pneumonia* were found in all the samples and others were not found. Apart from the enteric- organisms, *S. aureus* encountered in this study are known enterotoxin producing agent and a microorganism which is poisonous. This is in agreement with the previous study by some authors in Nigeria and outside Nigeria (Okonko et. al.2008, 2009).

The results from this study and according to published microbiological guidelines as cited by (Gilbert et al.1996) suggest that the microbiological quality of the crab examined is unacceptable and pose a potential risk to public health. The diversity of potential pathogens from the samples of crab is of concern particularly at a time when many in our communities are immunologically compromised as a result of various illnesses (Mhango et al.2010). From this investigation, it can be concluded that these characteristics of water bodies are influenced by seasonal variations. It is recommended that the proper maintenance of the captured crabs is

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necessary. Proper sanitation measures and environmental education to public care essential to keep these water bodies clean and safe. There is need for innovative measures to discourage the local population from eating improperly cooked crabs.

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Co-relation of BMI with Nutritional Status Observed in Tribal People of Chikhaldara Region (Melghat)

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Abstract

The present cross-sectional study was undertaken among the tribal people of Chikhaldara region (Melghat) Dist. Amravati. This study used to investigate body mass Index (BMI) among male and female tribes of Chikhaldara region. Total 254 males and 288 females were taken for examination commonly used indicators. i.e. weight (wt), height (ht) and body mass index (BMI) were used to evaluate nutritional status. Results also reveal that prevalence of under nutrition among these peoples of both sexes. Tribal people are mostly illiterate and malnourished.

Key words – Body Mass Index (BMI), nutritional status, Tribes, Chikhaldara, India

Women and preschool children are known to be most vulnerable group for under nutrition, adolescents girls are also being recognized as a potential group during which the nutrient requirements are relatively high under nutrition during adolescence, confounded by childhood marriages, leads to higher mortality and morbidity among women and young children. (Studied carried out by National Nutritional monitoring Bureau. (2003) World Health Organization (1995) has recommended that anthropometry could be used to assess the nutritional and health status of adults. One such measure now in widespread use in Quetel index which is weight (in kg) divided by height in (m^2). Several scholars have emphasized the importance of body mass index as an nutritional assessment (Gupta et al (1979, (Yadav et al (2011) observed that tribal preschool children of Gond community had low Hb% with low BMI due to certain adverse realities like insufficient food intake, adverse cultural practice, micronutrientdeficiency disorders such as anaemia.

It is established fact that body mass index (BMI) is a useful anthropometric indicator of measuring nutritional status of the population (FAO, 1996) and is specifically suitable for large scale surveys (Ulijaszek and Kern 1999, WHO 1995).

The prevalence of chronic energy deficiency (CED) measured through BMI (James et al (1988) Ferro-Luzzi et al (1992), can be used in the standard of living between population groups Nube et al (1998). The appropriateness of using BMI less than 18.5 kg/ m^2 as under nutrition are validated by many authors to predict poor demographic economic, social and environmental conditions of the population (Pryer and Rogers, 2006), Subramanian and Smith (2006) under nutrition reduces physical capacity James (1994) increases mortality (Harris T.B. 1995), morbidity (khongsdier (2002).

In India, the most underprivileged group is the tribal communities both in terms of socioeconomic condition as well as nutritional status (Basu 1994). Several studies shows these reflection as high under nutrition among tribals across India (Adak et al 2006)

Material and Method :

A cross sectional study was performed to evaluate BMI and nutritional status of tribal people of Chikhaldara region Dist. Amravati.

Hight and weight were measured weight was calculated by weigning balance and height by stadiometer. The nutritional status and background information was collected from each individual through questionnaire as well as tribal community informed consent was obtained for carrying out survey. The age groups were distributed into 0-20, 21-40, 41-60 and 61□ respectively.

The BMI was computed using the following standard equation.BMI = Weight (kg)/height (m^2).

Nutritional status was evaluated following BMI cut off points to define trimness. The age and sex specific cut-off values were established based oninternational survey.

This classification categories the prevalence of under nutrition according to percentage of population with BMI under 18.5 low, medium and very high critical situation (WHO 1995).

Result and Observation :

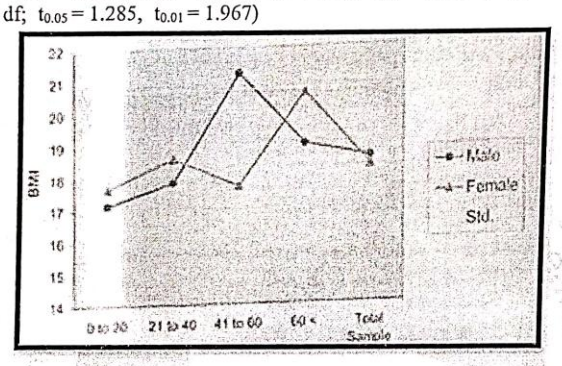
Table 1 BMI observed in male and female tribes of Chikhaldara (Melghatregion)

Age Group		Df	Pm	M	SD	SE	T
0 to 20	Male	54	20.7	17.15	4.596	0.62	5.74**
	Female	85	20.7	17.68	4.438	0.48	6.31**
21 to 40	Male	108	20.7	17.86	2.472	0.24	11.99**
	Female	140	20.7	18.59	2.925	0.25	8.58**

41 to 60	Male	51	20.7	21.20	3.718	0.52	0.98
	Female	45	20.7	17.71	5.074	0.75	3.99**
61□	Male	38	20.7	19.00	4.593	0.74	2.31*
	Female	15	20.7	20.58	4.407	1.10	0.11
Total Sample	Male	254	20.7	18.56	3.889	0.24	8.77**
	Female	288	20.7	18.29	3.937	0.23	10.41**

(*-Significant at 0.05; **-Significant at 0.05 & 0.01 level of significance)

(Critical values for 15 df; $t_{0.05}$ = 1.7530, $t_{0.01}$ = 2.6025, for 38 df; $t_{0.05}$ = 1.6859, $t_{0.01}$ = 2.4286, for 45 df; $t_{0.05}$ = 1.6794, $t_{0.01}$=2.4121, for 51 df; $t_{0.05}$ = 1.6753, $t_{0.01}$ = 2.4017, for 54 df; $t_{0.05}$ = 1.6736, $t_{0.01}$ = 2.3974, for 85 df; $t_{0.05}$ = 1.6630, $t_{0.01}$ = 2.3710, for 108 df; $t_{0.05}$ = 1.6591, $t_{0.01}$ = 2.3614, for 140 df; $t_{0.05}$ = 1.6558, $t_{0.01}$ = 2.3533, for 254 & 288 df; $t_{0.05}$ = 1.285, $t_{0.01}$ = 1.967)



Result & Discussion : Co relation of BMI with nutritional status observed inTribal Males and Females

The above table-1 reveal that the calculated T values between standard range mean and Obtained BMI mean for various groups i.e. 0-20, 21-40, 41-60, 5.74, 11.99, 0.98, 2.31 and 8.77 respectively, for male. All these values are greater than critical values of 't' at 0.05 and 0.01 level of significance. Hence there is a significant difference in BMI and standard range of male except for age group 41-60. From the table it is also observed that in all the groups BMI range is within 17 to 19, which is quite less than the standard range mean value for men 2C.8 except for age group 41-60 i.e. 20.3 which is above average.

For different groups of female i.e. 0-20, 21-40, 41-60, above 60 and total sample the calculated Y values are 6.31, 8.58, 3.99, 0.11 and 10.41 respectively. All these values are greater than critical values of 't' at 0.05 and 0.01 level of significance except for age group 61□ which is non-significant. Hence there is a significant difference in BMI and standard range mean of female. From the table it is also observed that in all the groups BMI range is within! 7.8 to 18.8, which is quite smaller than the standard range mean value for female 20.8 except for age group of 61□ i.e. 20.8 which is required value of BMI for females.

Hence from the table and graph it is concluded that, the BMI in both male and female tries of Chikhaldara region is below the standard range mean.

Discussion:

Malnutrition was wide spread phenomenon in tribal area Carlson and Waterlaw (1991) have studied the child malnutrition problem at global, regional as wells country level. (Khandare, et al 2008) studies on tribals of Thane district of Maharashtra, India. The result revealed that majority of population belonging to schedule tribe community were malnourished. Socio-economic factors have been contributory to malnutrition.

Meghadas (2010) studied on nutritional status of Korku tribes in Betul district of Madhya Pradesh observed that there was prevalence of protein energy malnutrition anemia, because Korku tribes obtained mean intake of nutrients. Several studies Sonwal CJ. (2010), Dhore and Joshi (1988), Rajesh Sing, Preeti Singh (2008) reported that tribal children suffered from highest percentage of severe malnutrition with inadequate nutrition.

Sing Bhupinder (1994), Nagdda B.L. (2004), examine and assess the tribal health situation which is related to their economic pursuit, nutritional availability medicines etc. Nutritional anemia is major problem for women in India and so morein rural and tribal belt.

International center for research on women (ICRW) studies sting was highly prevalent in adolescent boys and girls, ranging . In contrast the rate of low body mass indices indicative of current under nutrition under nutrition in early childhood may diminish a person's even tautly body size malnourished children are typically shorter and lighter than their well nourished peers at the end of adolescent growth, s Cameron (1996). Several studies from India (yadav et al (1999), Gogoi and Sengupta(2002) have utilized BMI to study nutritional status of tribal populations. The basic causes of under nutrition in developing countries are poverty, poor hygienic conditions and little access to preventive and health care Mitra(1985), WHO(1990,1995).

Conclusion:

Therefore BMI has strong association with nutritional status in present study low level of BMI and under nutrition was observed which may be responsible for life threating diseases, higher ratio of maternal mortility. Also poverty illiteracy, very less facilities for health, blind beiefs, socio, economic status was affecting each and every as part of tribal people of Chikhaldara region.

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Issue:XXV,Vol.V,Jan.2022 To June 2022

12

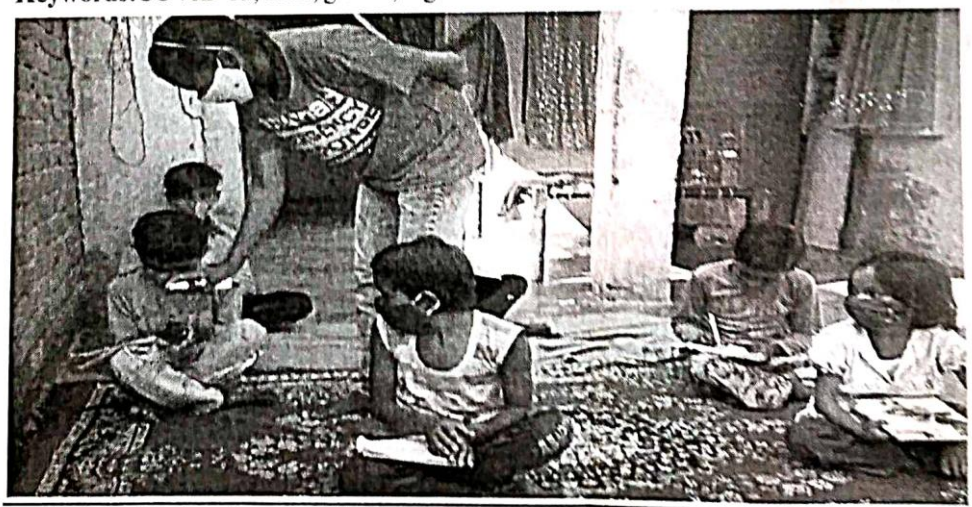
Customer satisfaction toward education services after post covid - 19

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ABSTRACT

COVID-19 has affected a large number of students in every province, class, class, gender and region. School closures and the decision to switch traditional classrooms to digital platforms not only increase learning inequality among children but also push for a greater number of children in school due to digital diversity. Besides learning, a lack of schooling can also have a long-term effect on the health and nutrition of children. The role of the budget in the current environment and beyond the epidemic is crucial to ensure inclusive education.In developing countries like India, education has been studied in terms of the cost incurred for online education after the global pandemic and the resulting consumer satisfaction. For this, secondary information has been relied upon.

Keywords:COVID-19, class, gender, region



46

Introduction:

COVID-19 has affected a large number of students in every province, class, class, gender, and region. School closures and the decision to switch traditional classrooms to digital platforms not only increase learning inequality among children but also push for a greater number of children in school due to digital diversity. Besides learning, a lack of schooling can also have a long-term effect on the health and nutrition of children. The role of the budget in the current environment and beyond the epidemic is crucial to ensure inclusive education.

In this context, CBGA in conjunction with CRY has prepared a policy brief. It highlights some of the problems associated with school closures that need immediate attention. It also proposes some of the interim policy measures that can be applied to the future budget of the Union and the Region. However, the complete direction of distribution should not be limited to solving problems arising from the epidemic but should go beyond that. Therefore, this policy report has prioritized a set of long-term measures that government must take over time.

Objectives:

1) Studying consumer satisfaction with regard to online education after the pandemic in a developing country like India.

Review of Literature:

Ram Gopal, Varsha Singh, and Arun Aggarwal, Impact of online classes on the satisfaction and performance of students during the pandemic period of COVID 19, Educ Inf Technol (Dordr). 2021; 26(6): 6923–6947, The purpose of the study was to identify factors that affect students' satisfaction and performance regarding online classes during the COVID-19 epidemic and to establish relationships between these variables. The survey was volume by nature, and data were collected from 544 respondents for online surveys who studied business management (B.B.A or M.B.A) or hotel management courses at Indian universities. The structural mathematical model was used to analyse the proposed ideas. The results show that four independent factors were used in the study namely. teacher level, lesson design, prompt response, and student expectations contribute positively to student satisfaction and continuous student satisfaction has a positive impact on student performance.

Hypothesis:

The customer is satisfied with online education after the global pandemic.

Research Methodology:

In developing countries like India, education has been studied in terms of the cost incurred for online education after the global pandemic and the resulting consumer satisfaction. For this, secondary information has been relied upon.

Limitations:

1) Secondary information has been relied upon while writing the research article.

RNI. MAHMUL02805/2010/33461 IMPACT FACTOR 6.20 ISSN 0976-0377 60
Interlink Research Analysis Issue:XXV,Vol.V,Jan.2022 To June 2022

2) On the basis of secondary information, the search for customer satisfaction with regard to education after the global pandemic has been done only on the basis of the information received.

Conclusion:

In a developing country like India, only upper- and middle-class students could benefit from online education during the pandemic. Poor students could not avail the required benefits as the resources required for online education were expensive.But the customer learning online has realized its importance. It proves so.

Reference:-

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RNI. MAHMUL02805/2010/33461 IMPACT FACTOR 6.20 ISSN 0976-0377
Interlink Research Analysis Issue:XXV,Vol.IV,Jan.2022 To June 2022 64

13

Customer satisfaction toward E-Banking Services provided by Private sector banks

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ABSTRACT

Customer satisfaction is a very important factor in all service industries to improve and enhance profitability and financial efficiency of anxiety. The banking sector is the only financial services sector and customer satisfaction is critical to running a successful banking business. The level of customer satisfaction varies due to the different types of banking services and their benefits to customers. Many factors contribute to the discrimination of services of different types of bank customers and that leads to an unequal satisfaction level. Secondary information has been relied upon for this search account. Only private banks have been considered while selecting the study area. In a developing country like India, there is competition between public and private sector banks.

Keywords: E-banking Services Quality, Customer Satisfaction,

Introduction:

The quality of E-Banking service is very important for banks to ensure the satisfaction of all customers. This research paper aims to focus on what customers think about Public and Private banking services. In this study, preliminary data were collected from 236 respondents in a systematic questionnaire. The main purpose of this paper is to learn about the important impact of gender and age on customer satisfaction in the quality of E-Banking service. The scope of the survey is limited to Jalandhar City clients. Key data was collected for customer satisfaction surveys regarding the quality of E-Banking service in Public and Private Sector Banks. In this study, descriptive statistics are used and independent t-tests are used with SPSS. This study confirms that at a 5% value, the null hypothesis is accepted. There is no significant effect on age, gender, and private and public bank choice in terms of ease of use, time-saving, ease of use, security, accuracy, reliability, responsiveness, online application management, regular updates

RNI. MAHMUL02805/2010/33461 Interlink Research Analysis IMPACT FACTOR 6.20 ISSN 0976-0377 Issue:XXV,Vol.IV,Jan.2022 To June 2022

and overall efficiency.

The following services and products at many banks offering private banking:

- Preferential rates and pricing on deposit accounts. ...
- General financial planning. ...
- Investment advice and wealth management. ...
- Estate planning. ...
- Lending. ...
- Tax planning. ...
- Credit.

Electronic banking services are a range of banking and other services or facilities that use electronic equipment and include:

- online banking.
- ATM and debit card services.
- phone banking.
- SMS banking.
- electronic alert.
- mobile banking.
- fund transfer services.
- Point of sales banking.

Objectives:

1) To study that private sector banks provide a large number of facilities to customers
2) Verifying whether customer satisfaction is through a private sector bank

Review of Literature:

Dr. S. Sangeetha, K. Myilswamy, Customers Satisfaction Towards E-Banking Services with Special Reference To Coimbatore City, INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 9, ISSUE 01, JANUARY 2020, The banking sector serves as the backbone of the modern industry. The progress of any country is largely dependent on the banking system. Icon an electronic payment system that helps customers in a bank or other financial institution to try to create a cash register transaction is always a website for investment. It has attracted interest from policymakers, researchers, and bankers. Electronic Payment has been identified as a key factor in the backlog of rapid technological change, the impact of market forces, and regulatory development. Attempts exist to make electronic payments more affordable and integrated. It is a new phenomenon that has a huge impact on the growth of the banking sector. E-Banking is the result of E-commerce and information technology. This study identifies factors that contribute to customer satisfaction in E-Banking services.

RNI. MAHMUL02805/2010/33461 Interlink, Research Analysis IMPACT FACTOR 6.20 ISSN 0976-0377 Issue:XXV,Vol.IV,Jan.2022 To June 2022 66

Hypothesis:

They are satisfied with the facilities provided to customers through private sector banks.

Research Methodology:

Secondary information has been relied upon for this search account. Only private banks have been considered while selecting the study area. In a developing country like India, there is competition between public and private sector banks.

Limitations:

1) Secondary information has been relied upon for this research.
2) Based on secondary information, conclusions have been presented on the basis of information obtained from various articles and research articles

Conclusion:

Banks provide better facilities to customers as the proportion of private sector banks is less. As a result, the customer remains satisfied. And tells other people that the service of this bank is very excellent so the private sector banks are seen to be putting in a lot of effort for business growth.

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Opportunities and Challenges in Commerce Higher Education in Indian Perspective

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Introduction :-

Commerce is anything that involves an online transaction. This can range from ordering online, to financial transactions e.g. movement of cash, from one branch to other branch all over the country. The e-business is one of the biggest things that have taken the Indian business by Storm. It is creating an entire new economy, which has a huge potential and is fundamentally changing the way. The e-business is one of the biggest things that have taken the Indian business by storm. It is creating an entire new economy, which has a huge potential and is fundamentally changing the way businesses are done. It has advantages for both buyers as well as sellers and this win-win situation is at the core of its phenomenal rise. The e-business is one of the biggest things that have taken the Indian business by rising income and a greater variety of goods and services that can be bought over the internet is making buying online more attractive and convenient for consumers all over the country. Electronic commerce is presently an essential ingredient of India's trade fundamentally changing the e- business and e-commerce the is one of the biggest things that have taken the Indian business on new scenario.

Advantages

- Rising incomes and a greater variety of goods and services that can be bought over the internet is making buying online more attractive and convenient for consumers all over the country. Electronic commerce is become essential part of India's trade.
- Lower prices compared to brick and mortar retail driven by disintermediation and reduced inventory and real estate costs.
- Increase use of online sites .The selling buying of second had goods' are also increasing on large scale.
- Evolution of the online market place model with sites like E-buy, Snapdeal, Flip kart, Infibeam quetinina.in and Tradus. The evolution of E_ business has come a fulhcircle with market place models taking center position again
- The all transaction of banking are performing with help of internet banking software. No banking is possible if internet facility is out of order. Withdrawal of cash, ATM operation credit cards, debit cards are operated only with internet facility.

History of Internet:

India has an internet user base of about 168 million as of June 2016. The access of e-business is low as compared to markets like the United States and the United Kingdom but is growing at a much faster rate with a large number of new entrants. Cash on delivery is a unique thing to India and is a preferred payment method. India has a vibrant cash economy as a result of which around 80% of Indian e-business tends to be Cash on Deliverymen-business in India is still in burgeoning stage but it offers extensive opportunity in developing countries like India. Highly in tensed urban areas with very high literacy rates, huge rural population with fast increasing literacy rate, a rapidly growing. Internet user base, technology advancement and adoption and such other factors make India a dream destination for e-business players. Moreover, squat cost of personal.

Computers, an emergent installed base for Internet use and a progressively more competitive Internet Service Provider (ISP) market has added fuel to the fire in augmenting e-commerce growth in Asia's second most populous nation. India's e-Business industry is on the growth curve and experiencing

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a surge in growth. The Online Travel Industry is the biggest segment in e business and is flourishing largely due to the Internet-survey urban population. The other segments, categorized under online non-travel industry, include e-Tailing (online retail), online classifieds and Digital Downloads (still in a blossoming stage). The online travel industry has some Private companies such as Make my trip, Clear trip and Yatra as well as a strong government presence in terms of IRCTC, which is a successful Indian Railways initiative. The online classifieds segment is broadly divided into three sectors; Jobs, Matrimonial and Real Estate. A description by the Internet and Mobile Association . of India has exposed that India's e-business market is mounting at an average rate of 70 percent' -annually and has grown over 500 percent since 2007.Apparently, more online users in India are' willing to make purchases through the Internet. Overall e-commerce industry is on the edge, to ' experience a high growth in the next couple of years. The e-commerce market in India was largely , dominated by the online travel industry with 80% market share while electronic retail (E-Tailing) held second place with 6.48% market share-Tailing and digital downloads are expected to grow at a faster rate, while on line travel will continue to rule the major proportion of market share. Due to increased ecommerce initiatives and awareness by brands, e-Tailing has experienced decent growth. According to the Indian Ecommerce Report released by Internet and Mobile. Investment Bank specializing in digital media and technology sector, the Indian ecommerce.

Opportunities and challenge of E- Commerce in India :

As per "India Goes Digital", a report by Avendus Capital, a leading Indian market was estimated at Rs 28,500 Crore for the year 2011 Online travel constitutes a sizable portion (87%) of this market today. Online travel market in India is expected to reach Rs 54,800 Crore by 2015.1ndian e-tailing industry is estimated to grow toRs 53,000 Crorein2015,Overall e-commerce market is expected to reach Rs 1,07,800corers by the year 2015 with both online travel and e-tailing contributing equally. Another big segment in e-commerce is mobile/DTH recharge with nearly 1 million transactions daily by operator websites.

Conclusion:

1. Indian customers return much of the commodities they purchase online business in India has many first time buyers. This means that they have not yet made up their mind about what to expect from e-business websites. As a result, buyer some -times fall prey to hard sell. But by the time the product is actually delivered, they reveal remorse and return the goods. Though consumer remorse is a global problem, but it is all the more prevalent in a country like India, where much of the growth comes from new buyers. Returns are expensive for e-business companies, as reverse logistics presents unique challenges. This becomes all the more complex in crossbreed-business.

2. Cash payment is made on-line:

Low credit card access and low trust in online transactions has led to cash on delivery being the preferred payment choice in India. Unlike electronic payments, manual cash collection is painstaking, risky, and expensive.

3. Payment gateways have a high failure rate :

As if the preference for cash on delivery was not bad enough, Indian payment gateways have an unusually high failure rate by global standards. E-business companies using Indian payment gateways are losing out on business, as several customers do not attempt making payment again after a transaction fails.

4. Internet penetration is low :

Internet penetration in India is still on very small scale as compared to the western country. On top of that, the quality of connectivity is poor in several regions. But both these problems are on their last legs. The day is not far when connectivity issues would not feature in a list of challenges to e-business in India

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Study on Customer Satisfactioon Towards Life Indusrance Corporation of India

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Abstract -

The Life Insurance Corporation of India popularly known as the "LIC of India" was formed on September 1, 1956, forming 245 Indian and foreign national companies. It was founded 52 years ago to provide insurance against various health risks. The intellectuals who led the initiative at the time envisioned a company that would provide life insurance to the people of India, especially many rural people, at economic expense and provide savings for the betterment of the nation. It is the largest health insurance company in India and also the largest investor in the country. Research is based on secondary data. Second data was collected in journals, newspapers, and online. The survey revealed that most customers are satisfied with LIC.

Keywords - insurance,largest investor,

Introduction -

The Life Insurance Corporation of India popularly known as the "LIC of India" was formed on September 1, 1956, forming 245 Indian and foreign national companies. It was founded 52 years ago to provide insurance against various health risks. The intellectuals who led the initiative at the time envisioned a company that would provide life insurance to the people of India, especially many rural people, at economic expense and provide savings for the betterment of the nation. It is the largest health insurance company in India and also the largest investor in the country. It is fully owned by the Government of India with its headquarters in Mumbai. Today LIC works with 2048 computerized branch offices, 100 division offices, 7 Zonal offices, and a business office. The LIC wide area network includes 100 divisional offices and connects all branches via the Metro local network. LIC has liaised with other Banks and service providers to provide premium collection services in specific cities. LICs ECS and premium ATM payment system are additional customer convenience. In addition to online kiosks and IVRS, information centers are enabled in Mumbai, Ahmedabad, Bangalore, Chennai, Hyderabad, Kolkata, New Delhi, Pune, and many other cities. With a view to providing easy access to its policy managers, LIC has launched its SATELLITE SAMPARK offices. The digital record of satellite offices will help with any future operations and luxuries. The LIC has surpassed many milestones and set the record straight for use in various aspects of the life insurance business. The same goals that inspired our ancestors to make insurance available in this country encourage us at LIC to take this message of protection to turn on the safety lights in many homes and help people in providing security in their families.

The formation of the L.I.C .: Government In 1955, MP Feroz Gandhi raised the issue of insurance fraud by the owners of private insurance companies. In a subsequent investigation, one of India's richest businessmen, Ramkrishna Dalmia, owner of the Times of India, was sentenced to two years in prison. The Indian Parliament passed the Indian Health Insurance Act on 19 June 1956 and created the Indian Life Insurance Association, which came into effect in September of that year. Consolidates the business of 245 private health insurance companies and other organizations providing health insurance services; this included 154 health insurance companies, 16 foreign companies, and 75 provident companies. The government's creation of a health insurance business in India as a result of the Industrial Policy Resolution of 1956, which created a policy framework to extend state control to at least 17 economic sectors, including health insurance.

Plan	Five Year	Investment in Cr.
1	1956-1961	Rs.184 Cr
2	1961-1966	285 Cr
3	1969-1974	1,530 Cr
4	1974-1979	2,942 Cr
5	1980-1985	7,140 Cr
6	1985-1990	12,969 Cr
7	1992-1997	56,097 Cr
8	1997-2002	1,70,929 Cr
9	2002-2007	3,94,779 Cr
10	2007-2012	7,04,720 Cr
11	2012-2017	14,23,055 Cr
12	2017-2022	28,01,483 Cr

Source: Secondary data

Why Health Insurance Is Important -

Not only does your life insurance not provide you with security, but there are various other reasons why life insurance is so important to you. You should know some of the benefits of life insurance and based on that purchase plan.

Among the many things we know about life, its unpredictability is determined by one of the most important qualities that one can never forget. While one minute may be the happiest thing you could ever dream of, the next moment can bring unimaginable sadness. One can never know or predict what will happen next. And this uncertainty is the reason why even life insurance has been established.

Although it may seem overwhelming to do so, people rarely think about the time when they may not be. What happened to their family? Who will support the family expenses? Who will pay for education or raise children? Who will take care of household expenses? This is just an important factor when it comes to protecting your family's future, and it is especially important for single people earning a living for their family and for dependents such as spouses, children, or elderly parents. In the sad case of the loss of a family income, not only is there a deep emotional pain that you have to deal with, due to the loss of a loved one but also financial problems to come, following a loss of income.

While you may not eliminate emotional pain, life insurance can help, in particular, help a traumatized family to care for their financial needs during such an assessment. With the goal of life insurance, you can not only protect the future of your family, but also help protect your business in difficult times. Here are some reasons, which highlight the importance of health insurance.

The Importance of Life Insurance -

Debt settlement: Many people, when they are young, end up borrowing money to meet various needs such as buying a house or a car. Some end up taking out a loan to finance their child's marriage, or pay off large debts. However, in the unlikely event that you are suddenly passing away, the burden of all these debts and debts will fall directly on your family members whom you trust. Even if your spouse is employed, the financial responsibility for paying the bills falls directly on him. With the policy of health insurance, this is not so much a concern as the guaranteed amount of health insurance can help a family to take care of such debts, without compromising their needs.

Taking care of your family's needs: The primary purpose of life insurance is to help your loved ones take care of their needs, especially at a time when you may not be able to care for them. The dependent spouse, children, or elderly parents will continue to depend on the income you receive, as well as the savings left over even after your death. With the loss of a normal income, however, it may be difficult to take care of all the expenses, and families often have to compromise their lifestyle to ensure that basic needs are met. This is where health insurance comes in, to help the family take care of their needs such as children's education, such as changing income, creating more savings or investments,

and providing much-needed financial stability to family members.

Your business insurance: The purpose of life insurance is not only to protect the financial future of your loved ones, but also to your business concerns. There are health insurance policies specifically designed for business owners where surviving business partners receive a share of the deceased business partner, while a guaranteed benefit amount is provided to the deceased's nominee.

Caring for short-term and long-term needs: Depending on the policy you choose, and the payment option, proper health insurance may be important in helping your loved ones care for their short, and long-term care. -the requirements of time. Temporary requirements may include immediate costs such as loans, or loans, which need to be repaid immediately. Over time, the family will need funds to take care of children's education, invest, or save for the future, in order to care for ongoing home expenses, etc. Some insurances are also accompanied by built-in investment components. allow for investment in a variety of funds, as determined by the policyholder. Some policies also have integrated payments where part of the guaranteed amount is provided immediately after death, the total amount. The remainder is provided for a fixed future in fixed installments and serves as an exchange for income.

Peace of mind: Having peace of mind is essential to living a healthy, stress-free life. With life insurance, that's exactly what you get. You no longer have to worry about what happens to your family's financial well-being when you are away. Considering that the tragedy could strike at any time, having life insurance at least will give you the peace of mind that your loved ones have.

Tax saving: In addition to providing protection, another major reason why people buy insurance to save taxes. In accordance with the current provisions of Section 80C of the Income Tax Act, 1961, policyholders may receive tax benefits of up to Rs.1.5 lakh on life insurance premiums. Also, income earned on death / growth benefit is also taxable under Section 10 (D) of the Income Tax Act, 1961. These are just some of the reasons why life insurance is a complete necessity, especially for a person who is the only leading member in their family. If the future of your family is good for you, then you should not forget to buy life insurance, after properly considering your needs.2

Research Objective -

1) To identify the factors affecting customer satisfaction in the life insurance sector.
2) To evaluate the reason stated by the policyholders for the purchase of a life insurance policy.

Review of Literature -

1) Ghosal Monalisa, The title of the research paper, "The Role of Insurance on India's Economic Development, Zenith International Journal of Business Economics & Management Research, Vol.2 Issue 7, July 2012, ISSN 2249-8826, PP81-92, the researcher concluded that insurance will also play an important role in helping and maintaining growth. Life insurance today has become the backbone of many market economies as it provides a great source of income for a long time. A well-regulated life insurance industry that provides its customers with products designed to meet their financial needs and is therefore essential if we wish to advance to a carefree future3

2) Yadav Ms. Babita, Tiwaridr. Ahuja's research paper article, "Consumer Investment Research in Health Insurance Policies", International Journal of Marketing, Financial Services & Management Research, Volume 1 Issue 7, July 2012, ISSN 2277 3622, PS106-123 and protection for individuals and also promotes savings among individuals. India's LIC plays an important role in human well-being by providing insurance to millions of people against life-threatening risks such as uncertain death or accident. Current analytical and descriptive research has been selected to identify those factors that influence customer policy purchasing decisions and to analyze customer preferences while making health policy investment decisions. Various issues affecting insurance in the paper have been discussed. Research data was collected from both primary and secondary sources. The study area is limited to Jabalpur district, Madhya Pradesh and the sample size is 150 LIC policyholders and various private health insurance providers have been selected in the form of refined and purposeful samples. Finally, the researcher concluded that demographic factors play a key role in determining the purchase of health insurance policies4

Research Methodology -

The study is the foundation of secondary data. Secondary data was collected from journals, newspapers, and the Internet.

Hypothesis -

1) H0 - LIC's plan is not anefficient plan to increase income to customers.
   H1 - LIC's plans areefficientplans to increase income to customers.

Limitation -

1. The study is limited to the Amravati district and is based on information/data available at these LIC Offices.

2. The study period is fixed for ten years only from 2010-11 to 2020-21.

Conclusion -

Customer satisfaction, too, can lead to additional revenue. Customers are an economic asset; however, it is not enough to satisfy customers alone; for a business to be successful over time, it must satisfy customers with a profit. While there are many insurance companies in the health insurance industry, with the exception of a few all others are struggling to survive. Innovation in every aspect is needed to survive and increase the entry-level of insurance, campaigns should be introduced to raise awareness of the benefits and importance. Instead of pushing policies on customers through agents, a need should be created for the customer to pull out policies.

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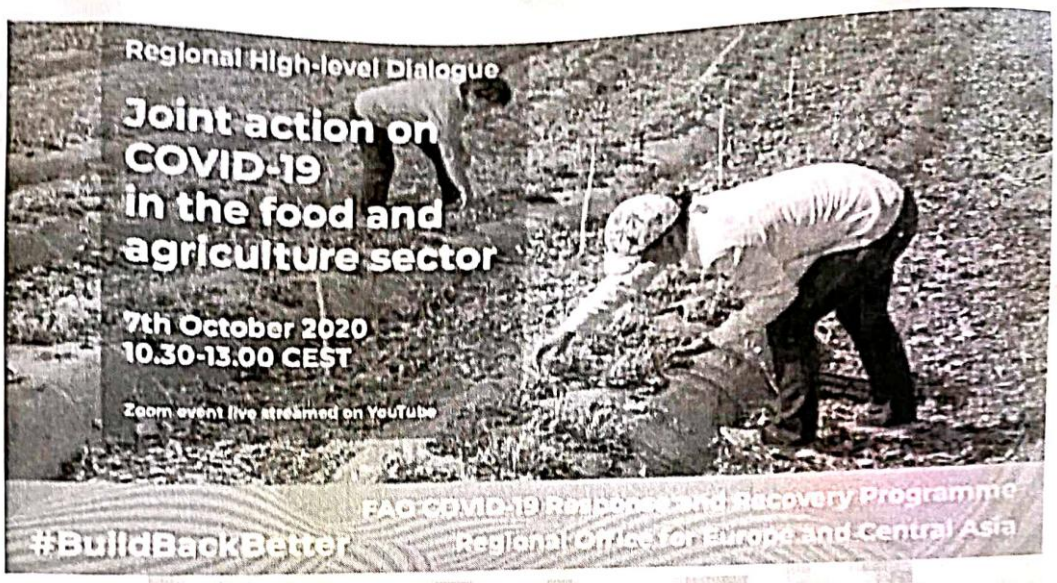
"Impact of Covid 19 on Agriculture Sector In India"

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Abstract: When India hit the first wave of COVID-19 from January to June 2020, agriculture became a bright spot. The Economic Survey estimates that India's GVA for the rest of the economy will contract 7.2 percent by 2020-21, largely due to the sharp decline in the first half of FY. In this catastrophe caused by the closure of the country, agriculture is the only area of interest and it is estimated that agricultural GVA has grown by 3.4 percent in normal terms (2011-12). India is at the forefront of the agricultural sector. The Indian economy is heavily dependent on agriculture. Therefore, this search title was created based on secondary information based on the title of this search article. In this regard, various books and materials have been used in national and international research.

Keywords: Agriculture, COVID-19, Economy, GVA, Rabi Crop.

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Introduction:

When India hit the first wave of COVID-19 from January to June 2020, agriculture became a bright spot. The Economic Survey estimates that India's GVA for the rest of the economy will contract 7.2 percent by 2020-21, largely due to the sharp decline in the first half of FY. In this catastrophe caused by the closure of the country, agriculture is the only area of interest and it is estimated that agricultural GVA has grown by 3.4 percent in normal terms (2011-12). Can the agricultural sector be a savior again when the second wave of COVID-19 strikes India with greater force than the first wave? In this regard, it seems that rural India has not been preserved.

The news report highlighted the deplorable state of affairs in various states of Uttar Pradesh; although state officials have repeatedly denied the seriousness of the epidemic. In addition, a recent CRISIL report also sounded alarming about a second wave rising in rural India as its share of infection increased from 21 percent in March to 30 percent in April.

In large parts of India, the rabies crop has been widely harvested. As of April 30, 28.039 million tons of wheat have been purchased. UP was far behind in its target of 5.5 million tons, while Bihar, as of 2020, had purchased only 3,000 tons of wheat.

The outbreak of the epidemic and the subsequent impact on supply chains have significantly affected new products such as fruits and vegetables. With long locks and restricted movements across the country, moving agricultural production from one area to another was

a challenge. Considering the decay of products, many products began to rot while consumers paid higher prices. However, this disruption also underscores the need for strong, secure / new plant storage areas for a long time. It also gave us an idea of the need for additional investment in the field of food processing which is a long-term requirement for farmers.

In terms of floriculture, the need for flowers, as buyers are afraid of anything that could be a place / object of transfer. As wedding ceremonies and other ceremonies / activities become more common, the demand for previously popular flowers such as rose petals and marigold flowers has diminished considerably. In addition, flower transport has also declined due to travel restrictions. On the other hand, as fear of man gradually fades, people have begun to consider keeping flowers for longer or exporting them.

In terms of milk supply, the lockdown closure had a moderate impact, leading to a 30% drop in purchase prices. But egg consumption increased significantly as people focused more on protein utilization. At the same time, fishing grounds were also affected moderately, as water treatment allowed fish to live longer. However, the cost of poultry meat is declining, as poultry prices have dropped by more than 25%, due to widespread concerns about the use of animal products.

As the supply or supply of agricultural inputs was disrupted in the early days as the distribution of shares in all areas was restricted and there was a shortage of assets and they continue. In addition, the ban on work coincided with the rabies harvest, which affected cereal crops. However, the input movement increased when closing the lid was lowered, which was beneficial for the following seasons for Rabbi and Kharif.

The effect of COVID-19 was also observed on farm machinery; sales of tractors have declined sharply due to the availability of cheap labor, which has created inequality in the loan sector. Disruption was also seen in funding young people.

The biggest change in employment has taken place with more than 50 million migrants, working in provinces such as Delhi, Punjab and Haryana, returning home. There are several variations in employment levels and staff availability, but it is not a skilled agricultural worker. Therefore, even in the presence of low labor costs, skills issues remain a major challenge. And deciding how many of them will return is also daunting.

22

Steps to address the challenge

In the meantime, there are some changes in government perspective. In line with a number of benefits, the government has announced a budget increase for PM-KISAN Yojna, where INR 6,000 a year is transferred to farmers' accounts through three INR 2,000 installments.

Another initiative was the launch of the Agri Infrastructure Fund 1 lakh crore for farmer infrastructure. This will support farmers, PACS, FPOs, agribusinesses, etc., building community agricultural products and post-harvest agricultural infrastructure. In addition, Small Food Companies (MFE) was established to assist 200,000 MFEs in improving their technical skills and to provide financial assistance to individual units to improve food processing facilities.

A number of CSR programs aimed at assisting farmers in dealing with the COVID crisis, are backed by strong government support. On the other hand, Yara International worked with local government officials in India as well as their suppliers, suppliers, and transporters to continue the work that was important in distributing seeds and supplies to farmers for the upcoming planting season. The epidemic acted as a catalyst, forcing various industries, including Agri-tech, to build and come up with quick solutions to overcome the uncertainty of housing closures. Overall, Agri-tech companies embraced the challenges of the epidemic and were able to create products and services that would meet the needs, giving Indian farmers opportunities to grow with open and open evolution.

Objectives:

1) To study that the Indian agriculture sector has been affected to a great extent during the pandemic.
2) To study what has changed in the agriculture sector during the pandemic
3) Studying whether India's GDP grew or declined during the Corona pandemic

Review of Literature:

(AG Adeeth Cariappa, 2021), Impact of COVID-19 on the Indian agricultural system: A 10-point strategy for post-pandemic recovery, findings indicates that the pandemic has affected production and marketing through labor and logistical constraints, while the negative income shock restricted access to markets and increased prices of food commodities affecting the consumption pattern. The pandemic wreaked substantial physical, social, economic, and emotional havoc on all the stakeholders of the Indian agricultural system. Seizing the crisis as an opportunity, the state announced a raft of measures and long-pending reforms. We propose a 10-point strategy ranging from social safety nets, family farming, monetizing buffer stock, staggered procurement to secondary agriculture to revive and prosper post-pandemic.

Hypothesis:

- The agriculture sector in India has been affected during the Corona pandemic.

Research Methodology: India occupies a leading position in the agriculture sector. The Indian economy is largely dependent on the agriculture sector. Therefore, this search article has been created on the basis of secondary information depending on the title of this search article. For this, various books and other materials have been used in national and international research.

Limitations:

1) Secondary information has been used for this search article
2) The findings obtained from this research article are presented only on the basis of available information.

Conclusion: The agriculture sector in India suffered huge economic losses during the pandemic period. Because the transport for transporting agricultural goods was closed, it was not sold to keep the goods lying with the farmers. Since the things produced in the agricultural sector are perishable, it needs to be sold immediately, but due to the people's down, the agricultural goods have suffered the most and its impact has been seen on the Indian economy.

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15

Customer satisfaction toward online banking services in India

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ABSTRACT

Customer satisfaction refers to the way you, as a product or service provider, best meet the needs and expectations of your customers. This applies to any transaction before and after the sale and at your time. The following definition of customer satisfaction comes from the Cambridge Dictionary: "A measure of how happy customers are when they do business with a company." Sounds easy enough, doesn't it? But the problem comes in measuring customer satisfaction. It is not enough to think that a customer is satisfied because he walks away smiling and does not complain about you online. Some people may be dignified.The use of information technology has increased tremendously since the nationalization of banks in India. Today, in a developing country like India, customer satisfaction with respect to e-banking is a very important issue. For this, the research method is writing a research article based on secondary information. The whole is written on this basis.

Keywords: Customer satisfaction,e-banking, NEFT.

Introduction:

The five factors which can influence customer satisfaction toward Internet banking include service quality, web design and content, security and privacy, convenience, and speed.Customer satisfaction refers to the way you, as a product or service provider, best meet the needs and expectations of your customers. This applies to any transaction before and after the sale and at your time. The following definition of customer satisfaction comes from the **Cambridge Dictionary:**

"A measure of how happy customers are when they do business with a company." Sounds easy enough, doesn't it? But the problem comes in measuring customer satisfaction. It is not enough to think that a customer is satisfied because he walks away smiling and does not complain

about you online. Some people may be dignified.

National Electronic Fund Transfer (NEFT): National Electronic Funds Transfer (NEFT) is a national payment system that facilitates the transfer of individual funds. Under the Scheme, individuals, firms, and companies can transfer funds electronically from any bank branch to any person, firm, or company with an account or any other bank branch in the country participating in the Scheme. Individuals, firms, or companies that maintain accounts and a bank branch can transfer funds using NEFT. Even such people who do not have a bank account (customers who come in) can also deposit cash at NEFT-empowered branches with transfer instructions using NEFT. However, such remittances will be limited to Rs.50,000 / - per job. Therefore, NEFT assists developers or remitters to initiate transfers without having a bank account. Currently, NEFT operates in hourly groups - there are 12 seating from 8 am to 7 pm on weekdays (Monday through Friday) and six seating from 8 am to 1 pm on Saturday.

Real-Time Gross Settlement (RTGS): RTGS is defined as a continuous (real-time) payment of each transfer by order (without a net). 'Real Time' means the processing of instructions at the time they are received instead of the period; 'Gross Settlement' refers to the payment of transfer orders in a separate order (according to the order). Considering that payments are made in the books of the State Bank of India, payments are final and irrevocable. The RTGS system is primarily designed for high-value payments. The minimum amount to be sent via RTGS is 2 lakh. There is no additional roof for RTGS operations. The RTGS customer service is available at banks from 9.00 to 16.30 hours during the week and from 9.00 hours to 14:00 hours on Saturdays for payment at the end of the RBI. However, banking times may vary depending on the customer's times.

Electronic Clearing System (ECS): ECS is a different way of making payments in respect of service payments such as telephone bills, electricity bills, insurance premia, credit card payments, loans, etc., which may avoid the need to issue and manage paper tools and thus facilitate improved customer service by banks/companies. / companies / government departments, etc., to collect / accept payments.

Instant Payment Service (IMPS) :IMPS offers a fast electronic wallet transfer service, 24X7 for mobile. IMPS is an acclaimed fast money transfer tool for Indian banks, the Internet, and ATMs that are not only secure but also economical from both financial and non-financial perspectives.

IMPS objectives:

So that bank customers can use mobile tools as a channel to access their bank accounts and withdraw funds

1. Simplifying payment by beneficiary mobile phone number
2. To fulfill the Reserve Bank of India's (RBI) policy on electrifying store payments

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3. To assist mobile payment systems already introduced in India with the Reserve Bank of India Mobile Payment Guidelines 2008 to work collaboratively with all banks and mobile operators securely and securely.
4. To lay the groundwork for a comprehensive list of mobile-based Banking services.

Objectives:

Review of Literature:

Dr. Geeta Sharma, Mr. Surendra Malviya, Internet Banking Service Quality and Its Impact On Customer Satisfaction In Indore District Of Madhya Pradesh, International Journal of Business and Management Invention ISSN (Online): 2319–8028, ISSN (Print): 2319–801 www.ijbmi.org Volume 3 Issue 3, March. 2014, PP.01-06, the impact of the quality of online banking service on customer satisfaction in the Indore district of Madhya Pradesh. In addition, research shows that the ease of use of the Website, comfort, accessibility, confidence, and responsiveness are all important factors in the quality of online banking services. Evidence-based results indicate that there is a direct relationship between the quality of online banking service and customer satisfaction in the banking industry. Understanding the issues raised in this study allows bank managers and policymakers to direct their efforts and resources more efficiently and effectively to grow the banking business over time and encourage new customers to use online banking.

Hypothesis:E-banking services in India are seeing an increase in customer satisfaction

Research Methodology:

The use of information technology has increased tremendously since the nationalization of banks in India. Today, in a developing country like India, customer satisfaction with respect to e-banking is a very important issue. For this, the research method is writing a research article based on secondary information. The whole is written on this basis.

Limitations:

1) This research article has been prepared on the basis of secondary information
2) The findings of the research article will be received on the basis of the information received.

Conclusion:

Research paper findings show that honesty, efficiency, responsiveness, communication, security, and privacy have a significant and positive impact on customer purchasing goals. Customer purchasing targets increase significantly when customers are satisfied with the quality of E-banking service.Customer satisfaction is a very important issue as the use of internet banking has increased tremendously in India. On the basis of this, the time of the customer is being saved, the impact of which is being seen on their efficiency growth. The business growth graph of banks seems to be on the rise from within customer satisfaction.

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२) संशोधक, प्राध्यापक यांच्या M.Phil, Ph.D. संशोधनात्मक पुस्तकांना विशेष प्राधान्य.

३) यु.जी.सी. च्या नवीन मार्गदर्शक तत्त्वानुसार उच्च शिक्षणामध्ये कार्यरत संशोधनार्थी व प्राध्यापक यांना आपले पुस्तक ISBN नुसारच प्रकाशित करणे आवश्यक आहे. तरी, संशोधनार्थी व प्राध्यापक यांनी आपले मौलिक साहित्य ISBN नुसार प्रकाशित करून घ्यावे, ही विनंती.

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भारतातील कुपोषण एक गंभीर समस्या

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महात्मा ज्योतिबा फुले महाविद्यालय, भातकुली, जि.अमरावती.

उत्तम आरोग्य हा जीवनाचा पाया आहे. आपले स्वास्थ्य उत्तम असेल तर व्यक्तीची कार्यक्षमता वाढते. उत्साह, चैतन्य राहते. दैनिक आहाराद्वारे आवश्यक त्या प्रमाणात कॅलरीजचा पुरवठा झाला नाही तर कुपोषणाला सुरूवात होते. हिच परिस्थिती दीर्घकाळ राहिल्यास कुपोषणाची गंभीर समस्या निर्माण होत. गरीबी, अज्ञान, आहारविषयक चुकीच्या सवयी, अन्न शिजविण्याच्या चुकीच्या पद्धती यामुळे अपुरे पोषण होऊ शकते. कुपोषणामुळे विविध अन्नघटकांचा अभाव निर्माण होऊन निरनिराळे विकार संभवतात. याचा परिणाम सामाजिक स्वास्थ्यावर होतो.

कुपोषण ही एक जागतिक समस्या आहे. भारत देश सुद्धा त्याला अपवाद नाही. भारतात अतिदुर्गम भागात राहणाऱ्या लोकांमध्ये कुपोषणाची समस्या आढळून येते. ० ते ६ वर्षे वयोगटातील बालकांमध्ये कुपोषणामुळे होणाऱ्या मृत्युची संख्या बरीच जास्त आहे. नॅशनल न्युट्रीशन मॉनिटरींग ब्यूरो (एन.एन.एम.बी.) द्वारे २००२ मध्ये महाराष्ट्रामध्ये केलेल्या पाहणीनुसार तीव्र कुपोषणाचे प्रतिशत प्रमाण ७.२ टक्के होते.मध्यम कुपोषित बालके ४५ प्रतिशत तर अल्प कुपोषित बालके ३९.६ प्रतिशत इतकी आढळून आली. (फरकाडे आणि सुलभा गोंगे, २०१५)

गेल्या ५० वर्षात भारतीय बालकातील कुपोषणाचे प्रमाण ४७ टक्क्यांवरून ४० टक्क्यांपर्यंत कमी झालेले आहे. कुपोषणामुळे व्यक्तीची रोगप्रतिकारक शक्ती कमी होते आणि त्यामुळे तिला सांसर्गीक रोगाची लागण लवकर होते. सांसर्गीक रोग झाल्याने अन्न सेवन, त्याचे पचन व पोषण यावर विपरीत परिणाम होऊन शरीरातील रोगप्रतिकारक शक्तीचा ऱ्हास होतो. हे कुपोषण दृष्टचक्र बालकाच्या मृत्युपर्यंत सुरूच असते. कुपोषणाची अनेक कारणे आहेत. आईच्या पोगंडावस्थेपासून सुरू होणाऱ्या या कारणांची मालिका जन्मानंतर बाळाला मिळणारे दूध, इतर आहार तसेच पर्यावरणातील विविध रोगकारक घटक या सगळ्यांना सामावून घेते.

आईमधील कुपोषण, रक्तक्षय, गरोदरपणातील अपुरा आहार, प्रसुतीपूर्व आरोग्य सेवांचा अभाव, कमी वयातील लग्न व बाळंतपण, आरोग्याविषयी अज्ञान व अनास्था हे सर्व घटक बालकातील कुपोषणाला जबाबदार असतात. पोषणाचा अभाव हे कारण उपाययोजनेच्या दृष्टीने सोपे आहे हे खरे परंतु तेवढ्याने या समस्येवर मात करता येणार नाही. गेल्या ५० वर्षात जन्मत: वजनाने कमी असलेली बालके यांचे प्रमाण ३०% वर स्थिर आहे. ही बालके पुढेही कुपोषित राहण्याची शक्यता बळावते. भारतासारख्या खंडप्राय देशामध्ये केवळ कुपोषणच नाही तर इतर सर्वच बाबतीत स्वत:चे निकष निर्माण केले पाहिजे. कुपोषण नियंत्रणाच्या कार्यक्रमात सध्या सर्वात जास्त भर पुरक आहारावर आहे. १९७५पासून एकात्मिक बालविकास सेवा कार्यक्रम अंतर्गत सहा वर्षापर्यंतच्या मुलांना पुरक आहार दिला जातो, मात्र तो कुपोषण दूर करण्याचा तात्पुरता मार्ग आहे. आजपर्यंत केवळ पुरक आहारामुळे कुपोषणाच्या समस्येमध्ये लक्षणीय घट झालेली नसेल तर इतरही उपायांकडे गांभीर्याने लक्ष देण्याची गरज आहे.

व्याख्या :-

पुरेसा व योग्य आहार न घेतल्यामुळे जी अशक्तपणाची व आजारपणाची परिस्थिती निर्माण होते तीला कुपोषण म्हणतात.

कुपोषण ही अशी अवस्था आहे जी एक किंवा अधिक पोषक घटकांच्या कमतरतेमुळे किंवा आधिक्यामुळे निर्माण होते व त्याचा परिणाम म्हणजे अल्पपोषण, अतिपोषण किंवा असमतोल निर्माण होतो.

डॉ. आशा देऊस्कर यांच्या मते, "जेव्हा शारीरिक आवश्यकतेनुसार काही घटक अजिबात मिळत नाहीत, तर काही घटक कमी किंवा जास्त प्रमाणात मिळतात तेव्हा त्याचे जे परिणाम शरीरावर होतात त्याला कुपोषण म्हणतात."

कुपोषणामध्ये आरोग्य, आहार, उपासमार, जीवनसत्त्वांचा सतत अभाव याचा परिणाम मुलांच्या शरीरावर होतो. अशी मुले लहानशा आजाराने अशक्त बनतात. उदा. अंगावर सुज येणे, मुल रडके होणे, बाळाची वाढ खुंटणे, वजन व उंची वयानुसार न वाढणे यालाच कुपोषण म्हणतात.

संशोधनाची उद्दिष्टये :-

- कुपोषणाची कारणे अभ्यासणे
- कुपोषणाची समस्या जाणून घेणे
- कुपोषणाचे दुष्परिणाम अभ्यासणे

गृहीतकृत्य :-

- कुपोषणाची अनेक कारणे आहेत.
- कुपोषणाची समस्या ही गंभीर स्वरूपाची आहे.
- कुपोषणाचे अनेक दुष्परिणाम आढळून येतात.

वाङ्मयालोकन :-

कुठल्याही समस्येची माहिती मिळविताना संबंधित वाङ्मयाचा आढावा घेणे क्रमप्राप्त ठरते. करिता प्रस्तुत संशोधनाच्या दृष्टिकोनातून यापूर्वी झालेल्या संशोधनपर अभ्यासाचा आढावा घेण्यात आला आहे.

राज्यातील आदिवासी क्षेत्रात ग्राम बालविकास केंद्र (VCDC) योजना रावविण्यासाठी अपेक्षित रूपये १७.११ कोटी एवढी रक्कम प्रदान करण्यात शासनाने मान्यता दिली आहे. तसेच ग्रामविकास केंद्र (VCDC) ही योजना २०१६-१७ गृहीत धरून पुढील ३ व आर्थिक वर्षाकरिता सुरू करण्यात आली.

२०१३ पासून भारताच्या जीडीपीत ५०% वाढ झाली असूनही जगातील कुपोषित बालकांपैकी १/३ मुले भारतात राहतात. यापैकी तीन वर्षाखालील निम्या मुलांचे वजन कमी आहे. जागतिक बँकेच्या अंदाजानुसार कुपोषणग्रस्त मुलांच्या संख्येसाठी भारत हा जगातील सर्वोच्च क्रमांकाचा देश आहे. भारतातील कमी वजनाच्या मुलांचा प्रसार जगात सर्वाधिक आहे.

आय.एफ.पी.आर.आय.च्या (IFPRF)२०१७ च्या ग्लोबल हंगर इन्डेक्स जी.एच.आय. अहवालास उपासमारीची गंभीर परिस्थिती असलेल्या ११८ देशांपैकी भारत १०० व्या स्थानावर आहे. दक्षिण आशियायी देशांपैकी ते फक्त अफगाणिस्तान व पाकिस्तानच्या तुलनेत तिसऱ्या क्रमांकावर आहे.

जागतिक बँकेच्या अंदाजानुसार कुपोषणग्रस्त मुलांच्या संख्येसाठी भारत हा जगातील सर्वोच्च क्रमांकाचा देश आहे. भारतातील कमी वजनाच्या मुलांचा प्रसार जगात सर्वाधिक आहे.

संशोधन पद्धती :-

प्रस्तुत संशोधनाकरिता लिखित स्वरूपातील साहित्याचा आधार घेण्यात आला आहे.

परिणाम व चर्चा :-

भारतातील कुपोषणाचे एक प्रमुख कारण म्हणजे आर्थिक असमानता होय. वहुसंख्य लोकसंख्येची सामाजिक स्थिती कमी असल्यामुळे त्यांच्या आहारात गुणवत्ता आणि प्रमाण दोन्ही नसतात. पौष्टिकतेच्या कमतरतेमुळे व्यक्ती आणि समाज या दोघांनाही दीर्घकालीन नुकसान होते. अशा लोकांना क्षयरोग, न्युमोनिया यासारखे संसर्गजन्य रोग होण्याची शक्यता वळावते. ज्यामुळे मृत्युचे प्रमाण वाढते. या व्यतिरिक्त पोषण कमतरता असलेल्या व्यक्ती कमी उत्पादनक्षम असतात.

कुपोषणाची कारणे :-

पुरेसा व योग्य आहार न घेतल्यामुळे जी अशक्तपणाची व आजाराची परिस्थिती निर्माण होते तिला कुपोषण म्हणतात. या कुपोषणाची अनेक कारणे आहेत जसे-

१. बाळाला अंगावरील दूध पाजणे लवकर बंद करणे.
२. बाळाला भरपूर व वेळेवर आईचे दूध न देणे.
३. पुरक पोषक आहारास उशिरा सुरूवात करणे.
४. आहारात 'अ' जीवनसत्त्वाचा अभाव असणे.
५. सतत आजारी पडणे.
६. दोन मुलांमधील अंतर कमी असणे.
७. आहारविषयक गैरसमजुती

लक्षणे :-

कृश अंगकाठी, वजन कमी, पोटाचा नगारा, हातापायाच्या काड्या, पिंगट केस, उदास व खिन्न चेहरा, वजनात घटक येणे, त्वचेवर काळे डाग किंवा फोड येणे, पायावर सूज, माती खाण्याची इच्छा होणे, ओठाच्या कोपऱ्यात भेगा पडणे, नेहमी सर्दी व तत्सम जंतूजन्य आजार होणे, रातांधाळेपणा, केस गळणे, डोळ्यात बिटॉट स्पॉट पडणे ही लक्षणे दिसून येतात.

कुपोषणाचे दुष्परिणाम :-

वजनात सतत घट होते. चालणे-बोलणे, विचार शक्ती या क्रिया मंदावतात. चेहरा उदास व निरूत्साही होतो. ॲनेमिया रोगप्रतिकारक शक्ती कमी होते. जंतुदोषाचे प्रमाण वाढते. टि.बी. क्षयासारखे आजार होतात. अनेक माता आपले मुल आजारी पडले असताना किंवा त्याला जुलाब होत असताना सकस आहार देण्याचे थांबवतात परिणामी मुलाचा अशक्तपणा अधिकाधिक वाढून ते मृत्युमुखी पडण्याचा सुद्धा धोका असतो. आजारी मुलाला पोषक आहाराची जास्त गरज असते म्हणून असा आहार देण्याचा सतत प्रयत्न करावा.

कुपोषणावरील प्रतिबंधात्मक उपाय :-

- बाळाला एक ते दीड वर्षपर्यंत स्तनपान करावे.
- बाळाला दूध पाजण्याच्या वेळा नियमित असाव्यात
- सहा महिन्यानंतर लगेचच स्तनपानासोबत पुरक आहार दयावा.
- दोन मुलांमधील अंतर कमीत कमी तीन वर्ष असावे.
- मुलांचे सर्व लसिकरण वेळेवर करावे.
- अंगणवाडीचा पोषक आहार मुलांना वेळेवर नियमित दयावा.
- बालकाच्या दंडाचा घेर १३ सेमी.च्या खाली असेल तर कुपोषण गंभीर स्वरूपाचे आहे असे समजावे.

जेव्हा एखाद्या व्यक्तीच्या आहारात जीवनसत्वे आणि इतर पोषक घटकांची कमतरता होते तेव्हा ती व्यक्ती कुपोषित होऊ शकते. कुपोषण ही भारतातील मोठी आरोग्य समस्या आहे. कुपोषणाचे मूळ बाल्यावस्थेत आढळून येते. भारतातील एकंदर बालमृत्युमध्ये ६९% मृत्यु हे कुपोषणामुळे होतात असे २०१९ च्या युनिसेफच्या अहवालात दिसून आले आहे. जागतिक आरोग्य संघटनेने केलेल्या व्याख्येनुसार कुपोषण म्हणजे एखाद्या व्यक्तीच्या पोषण आहारातील कमतरता अतिरेक किंवा असंतुलन होय.

निष्कर्ष :-

कुपोषणाच्या समस्येवर मात करण्यासाठी शासनाने गेल्या काही वर्षात विविध उपाययोजना केल्या आहेत. वेळीच पुरक आहार देणे आणि आवश्यक आरोग्य सेवा पुरविणे या दोन्ही महत्त्वाच्या बाबी आहेत. किंबहुना पोषण आणि आरोग्य या दोन्ही सेवा एकत्रितपणे आणि समन्वयाने पुरविल्या तरच हा प्रश्न सोडविता येईल. १९७५ पासून एकात्मिक बालविकास सेवा कार्यक्रम अंतर्गत सहा वर्षपर्यंतच्या बालकांना पुरक आहार दिला जातो मात्र तो कुपोषण दूर करण्याचा तात्पुरता मार्ग आहे. आजपर्यंत केवळ पुरक आहारामुळे कुपोषणाच्या समस्येमध्ये लक्षणीय घट झालेली नसेल तर इतरही उपायांकडे गांभीर्याने लक्ष देण्याची गरज आहे.

कुपोषणाच्या बाबतीत स्वयंसेवी संस्थांनी मोलाचे योगदान दिले आहे. मेळघाटसारख्या कुपोषणग्रस्त भागात शेकडो स्वयंसेवी संस्था आहेत असे असून सुद्धा तेथील कुपोषणाची समस्या व बालमृत्युचा प्रश्न यामध्ये फारसा फरक पडलेला दिसत नाही. यावर अंर्तमुख होऊन विचार करण्याची गरज आहे.

संदर्भ सूची :-

१. डॉ. संगीता जवंजाळ आणि डॉ. किरण बेलुरकर (२०१८)- 'मानवी पोषण आणि आहारशास्त्र', श्री साईनाथ, प्रकाशन, नागपूर.
२.पोषंण आणि आहार- माहिती व शिक्षण मार्गदर्शक पुस्तिका, वॉटरशेड ऑर्गनायझेशन ट्रस्ट
३.संजय बोराळकर- जिल्हा माहिती कार्यालय, धुळे, स्त्रोत महान्यूज.
४. लेख- लोकसत्ता

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Feb. 2020 To July 2020
28

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महाराष्ट्रातील भांडवली बाजार : आर्थिक स्थितीचे अध्ययन

इंद्रजीत मानसिंग राजपूत
अर्थशास्त्र विभाग,
महात्मा फुले वाणिज्य,विज्ञान व विठ्ठलराव राऊत
कला महाविद्यालय, भातुकली, जि. अमरावती

Research Paper - Economics

प्रस्तावना:

वित्तीय संस्थांची उत्तम संरचना व कार्यक्षम जाळे आर्थिक विकासास चालना देण्यास उपयुक्त ठरतात. या संस्था समाजातील सर्व घटकांना तसेच पायाभूत प्रकल्पांना किफायतशीर दरात वित्तपुरवठा करतात. उदारीकरणानंतर झालेल्या अंतराष्ट्रीय वित्तीय संस्थांच्या प्रवेशामुळे वित्तीय क्षेत्राचे पारंपारिक स्थिती मधून गतिशील क्षेत्रात परिवर्तन झाले.

भारतात बँकिंग संस्था ह्या मुख्य वित्तीय संस्था आहेत. संयुक्त भांडवली संस्था, विमा संस्था, म्युच्युअल फंड्स इत्यादी वित्तीय संस्थादेखील पतपुरवठा करण्यात लक्षणीय भूमिका बजावतात. या संस्था सामुदायिक (कॉर्पोरेट क्षेत्राच्या वाढत्या वित्तीय गरजा भागविण्याच्या तसेच असंघटीत क्षेत्रास पुरवठा करण्याच्या बँकिंग क्षेत्राच्या भूमिकेस पूरक ठरतात.

भांडवली बाजार हे उद्योग तसेच शासनास निधी उपलब्ध करून देणारे महत्त्वाचे व कार्यक्षम साधान आहे. तसेच ते अर्थव्यवस्थेमधील परिणामकारक साधन आहे. राज्यात मुंबई शेअर बाजार (बीएसई) राष्ट्रीय शेअर बाजार (एनएसई) असे दोन प्रमुख बाजार आहेत. याशिवाय, ओटीसी स्टॉक एक्स्चेंज ऑफ इंडिया, इंटर कनेक्टेड स्टॉक एक्स्चेंज ऑफ इंडिया लि., युनायटेड स्टॉक एक्स्चेंज ऑफ इंडिया लिमिटेड, पुणे स्टॉक एक्स्चेंज लि. व एमसीएक्स स्टॉक एक्स्चेंज लि. असे इतर पाच भांडवली बाजारसुद्धा कार्यरत आहेत. महाराष्ट्रातील भांडवली बाजाराची आर्थिक स्थिती अभ्यासण्याच्या दृष्टीने सदर शोधनिबंध सादर केला आहे.

शोध निबंधाची उद्दिष्टये :

१. भांडवली बाजाराचा अर्थ अभ्यासणे.

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२. भांडवली बाजारात समाविष्ट घटकांचा अभ्यास करणे.

३. भांडवली बाजारातील आर्थिक उलाढालीचा अभ्यास करणे.

भांडवली बाजार :

अल्पकालीन व्यवहारांसाठी वित्तपुरवठा करुन एका देशातून दुसऱ्या देशात होणाऱ्या अल्पकालीन निधीच्या हालचालींबाबत सवलती देणे, हे नाणेबाजाराचे प्रमुख कार्य आहे. नाणेबाजारात खूप मोठा निधी गोळा होत असल्यामुळे राष्ट्रीय, सरकार, महामंडळे आणि राज्य सरकारांना कर्जे देणे उभारणे सुलभ जाते. नाणेबाजारातील परिस्थितीचा दिर्घकालीन भांडवलाच्या व्याज दरावर परिणाम होतो आणि त्यामुळे दीर्घकालीन भांडवल गुंतवणूकीकडे वळणारा पैशाचा ओघही प्रभावित झालेला दिसून येते.

भांडवली बाजाराचे कार्य -

दीर्घकालीन भांडवली व्यवहारांना वित्तपुरवठा करणे, हे भांडवली बाजाराचे कार्य आहे, तसेच एका देशातून दुसऱ्या देशाकडे होणाऱ्या दीर्घकालीन भांडवलाच्या हालचालींसाठी सवलती पुरविणे हेही भांडवली बाजाराचे कार्य आहे. भांडवली बाजारातील व्यवहार मुख्यतः दोन प्रकारचे असतात.

१. नवीन विदेशी कर्जरोख्यांनी विक्री करणे.

२. पूर्वीच विकलेल्या कर्जरोख्यांची निरनिराळ्या देशातील गुंतवणूक करणाऱ्यांसाठी खरेदीविक्रि किंवा पुनवर्वाटणी करणे.

भांडवली बाजाराची रचना :

स्थूलमानाने भारतातील भांडवली बाजाराचे दोन घटक दिसतात.

१. वित्तीय संस्था

२. रोखे बाजार

उपरोक्त घटकांपैकी रोखेबाजाराचे अध्ययन प्रस्तुत शोधनिबंधात केले असून रोख्यांच्या प्राथमिक आणि द्वितीयक बाजाराची स्थिती अभ्यासली आहे. सन १९९१ पासमून भारतातील सरकारी रोख्यांच्या गुंतवणूकीत जलद गतीने विस्तार झाल आहे. बँका आणि विमा कंपन्यांच्या व्यतिरिक्त, वित्तीय कंपण्या, वित्तीय संस्था, आणि इतर महामंडळांनीही सरकारी रोख्यामध्ये गुंतवणूक करणे सुरु केले आहे.

रोख्यांचा प्राथमिक बाजार :

१९९०-९१ मध्ये प्रथम खाजगी क्षेत्राने राखे,बाजार विक्रिसाठी काढले होते. राष्ट्रीय शेअर बाजार व मुंबई शेअर बाजारात २०११-१२ मध्ये उलाढाल झालेल्या एकूण समभागांचे भांडवली मूल्य अनुक्रमे रू. ६०,९६,५१८ कोटी व रू. ६२,१४,९१२ कोटी इतके होते. २०१२-१३ मध्ये जानेवारी

Issue - XX, Vol. II
HI-TECH RESEARCH ANALYSIS
IMPACT FACTOR 6.05
ISSN 2231- 6671
Feb. 2020 To July 2020

२०१३ पर्यंत राष्ट्रीय शेअर बाजार व मुंबई शेअर बाजारांचे भांडवली मूल्य अनुक्रमे रू. ६८,५८,६५३ कोटी व रू. ७०,२४,५७७ कोटी इतके होते.

२०११-१२ मध्ये राज्यात २० समभागांद्वारे (१५ सार्वजनिक समभाग व पाच हक्क समभाग) रू. ६,०८० कोटीची तर मागील वर्षी रू. १८,१५९ कोटींची उलाढाल झाली. खालावलेल्या आर्थिक व गुंतवणूक परिस्थितीमुळे प्राथमिक बाजारातील उलाढाल २०११-१२ मध्ये मंदावली. २०१२-१३ मध्ये डिसेंबर, २०१२ अखेरपर्यंत राज्यात १६ समभागांद्वारे (१२ सार्वजनिक समभाग व चार हक्क समभाग) रू. २,७१८ कोटीची उलाढाल झाली.

दुय्यम बाजार

भारतातील सर्व रोखे बाजारांच्या समभाग उलाढालीत घट दिसून आली. राष्ट्रीय शेअर बाजाराचा ८३ टक्के इतका हिस्सा आहे. शेअर बाजारनिहाय उलाढाल तक्ता क्र १ मध्ये दिली आहे. राजीव गांधी रोखे बचत योजना ही एक आयकर बचत योजना असून ती छोट्या/किरकोळ गुंतवणूकदारांना स्थानिक भांडवली बाजारात सहभाग घेण्यास प्रोत्साहित करण्यासाठी दि. २३ नोव्हेंबर, २०१२ रोजी अस्तित्वात आली. सदर योजनेची काही प्रमुख वैशिष्ट्ये खालीलप्रमाणे आहेत.

१) केवळ स्थानिक वैयक्तिक करदाते पात्र
२) नवीन किरकोळ गुंतवणूकदारासाठी
३) पात्र रोख्यांमधील एकूण गुंतवणूकीच्या ५० टक्के रक्कम करसवलतीस पात्र
४) रू. ५०,००० पर्यंत (आयकर कायदा १९६१ मधील कलम ८० सीसीजी नुसार)
५) म्युच्युअल फंड तसेच सूचीबद्ध रोख्यात पहिल्यांदा गुंतवणूक करणाऱ्या गुंतवणूकदारांना सलग तीन वर्ष गुंतवणूक करण्याची मुभा
६) तीन वर्षाचा बंध कालावधी

शेअर बाजारातील उलाढालीचा अभ्यास दर्शविणारा तक्ता पुढीलप्रमाणे

Issue - XX, Vol. II
Hi-TECH RESEARCH ANALYSIS
IMPACT FACTOR 6.05
ISSN 2231- 6671
Feb. 2020 To July 2020

तक्ता क्र १

शेअर बाजारातील उलाढाल

(रू. कोटी)

शेअर बाजार	२०१०-११	२०११-१२	२०१२-१३+
राष्ट्रीय	३५,७७,४१० (७६.४)	२८,१०,८९२ (८०.७)	१९,७३,६२४ (८२.८)
मुंबई	११,०५,०२७ (२३.६)	६,६७,४९८ (१९.३)	४,१०,२३० (१७.२)

आधार : सेबी (+ डिसेंबर २०१२ मधील शेवटचा उलाढालीचा/व्यवहाराचा दिवस)
(टिप : कंसातील आकडे टक्केवारी दर्शवितात.)

म्युच्युअल फंड

समान आर्थिक उद्देश असलेल्या विविध गुंतवणूकदारांच्या बचतीचे एकवटीकरण करण्याचे काम म्युच्युअल फंड करतात. ३१ डिसेंबर २०१२ रोजी राज्यात एकूण ४८ तर भारतात एकूण ५१ म्युच्युअल फंड कार्यरत होते.

म्युच्युअल फंडाद्वारे झालेली उलाढाल दर्शविणारा तक्ता

तक्ता क्र २

म्युच्युअल फंडाद्वारे झालेली उलाढाल

(रू. कोटी)

वर्ष	नवीन म्युच्युअल फंड	अस्तित्वात म्युच्युअल फंड
२०१०-११	१,२४,८९०	८७,३४,६२५
२०११-१२	१,२१,३५७	६६,९८,३२२
२०१२-१३+	२०,१२१	४२,३०,५५४

(आधार : असोसिएशन ऑफ म्युच्युअल फंड्स इन इंडिया + ऑक्टोबर २०१२ पर्यंतची स्थिती)

विक्रेय वस्तू व्यापार केंद्र

चैतन्यपूर्ण, कार्यक्षम व पारदर्शी विक्रेय वस्तू व्यापार केंद्र असणे विकसनशील अर्थव्यवस्थेचे लक्षण आहे, म्हणून देशात कार्यक्षम विक्रेय वस्तू व्यापार केंद्र असणे आवश्यक आहे. आवश्यकतेनुसार विविध वस्तूंचा देशांतर्गत तसेच देशबाहेरील व्यापारास विक्रेय वस्तू व्यापार केंद्रे सहाय्यभूत ठरतात. सोनेचांदी, फेरस व नॉन-फेरस धातू, उर्जा व कृषि अशा विविध प्रकारच्या विभिन्न गटामध्ये मोडणा-या उत्पादनांचा व्यापार होतो.

किरकोळ गुंतवणूकदारांच्या सहाय्यासाठी भारतात मल्टी कमोडिटी एक्स्चेंज ऑफ इंडिया लिमिटेड, नॅशनल कमोडिटी अँड डेरिव्हेटिव्हज् एक्स्चेंज लि. व नॅशनल मल्टी कमोडिटी एक्स्चेंज

Issue - XX, Vol. II
Hi-TECH RESEARCH ANALYSIS
IMPACT FACTOR 6.05
ISSN 2231- 6671
Feb, 2020 To July 2020

ऑफ इंडिया लिमिटेड या तीन प्रमुख विक्रेय वस्तू व्यापार विनिमय केंद्राची स्थापना करण्यात आली आहे. मल्टी कमोटिडी एक्स्चेंज ऑफ इंडिया लिमिटेड व नॅशनल कमोटिडी अँड डेरिव्हेटिव्हज् एक्सेंज लि. या विक्रेय वस्तू व्यापार विनिमय केंद्राची उलाढाल पुढील तक्त्यामध्ये दिली आहे.

विक्रेय वस्तू व्यापार केंद्राची उलाढाल दर्शविणारा तक्ता

तक्ता क्र ३

विक्रेय वस्तू व्यापार केंद्राची उलाढाल

(रू. कोटी)

विक्रेय वस्तू व्यापार केंद्र	विक्रेय वस्तूंची संख्या				उलाढाल			
	२०१०-११	२०११-१२	एप्रिल -ऑक्टोबर २०११	एप्रिल - ऑक्टोबर २०१२	२०१०-११	२०११-१२	एप्रिल - ऑक्टोबर २०११	एप्रिल - ऑक्टोबर २०१२
मल्टि कमॉडिटी एक्स्चेंज ऑफ इंडिया लि.	४२	४७	४७	४७	९९,६८३	३१,९९४	१८,६८२	१७,५६६
नॅशनल कमॉडिटी अँड डेरिव्हेटिव्हज् एक्स्चेंज लि.	५९	४४	४४	४४	१,४९१	१,८१०	९७०	१,०७९

(आधार : मल्टि कमॉडिटी एक्सेंज ऑफ इंडिया लि. आणि नॅशनल कमॉडिटी अँड डेरिव्हेटिव्हज् एक्स्चेंज लि)

विमा

जागतिकीकरणानंतर (सन २००० नंतर) भारतातील विमाक्षेत्र जलद गतीने वाढले आहे. भारत सरकारने विमा संस्थांना त्यांच्या प्रगतीत सुधारणा व्हावी व आर्थिक उद्दिष्टांसह स्वतंत्र म्हणून कार्य करता यावे यासाठी मोठ्या प्रमाणात स्वायत्तता देण्यासाठी विमा नियामक व विकास प्राधिकरणाची स्थापना केली. भारतातील बहुतांश लोकांना विमा सुरक्षा कवच नसल्याने भारतात विमा उद्योग क्षेत्रात वाढ होण्यास वाव आहे. जीवन विमा निगम व्यतिरिक्त भारतात इतर २३ खाजगी विमा संस्था कार्यरत आहेत.

Issue - XX, Vol. II
HI-TECH RESEARCH ANALYSIS
IMPACT FACTOR 6.05
ISSN 2231- 6671
Feb. 2020 To July 2020
33

नवीन वैयक्तिक जीवन विमा पॉलीसीज दर्शविणारा तक्ता पुढीलप्रमाणे

तक्ता क्र ४

नवीन वैयक्तिक जीवन विमा पॉलिसी

(रू. ००० कोटी)

बाब		२०१०-११		२०११-१२	
		संख्या (०००)	हप्ता	संख्या (०००)	हप्ता
महाराष्ट्र	खाजगी #	१,३५०	४,७४७	१,१९३	३,५६३
	जीविनी	४.२७८	७,८२४	३,९७५	७,१७७
एकूण		५,६२८	१२,५७१	५,१६८	१०,७४०
भारत	खाजगी #	११,०९४	३०,४४२	८,४३६	२२,०३४
	जीविनी	३७,०१२	५२,७३२	३५,७२५	४२,७३८
एकूण		४८,१०६	८३,१७४	४४,१६१	६४,७७२

(आधार : विमा नियामक व विकास प्राधिकरण जिविनि - जिवन विमा निगम

खासगी संस्थामध्ये बिर्ला सनलाईफ, अविवा, एगन रेलिगेयर, इत्यादी संस्थाचा समावेश आहे.)

भारतात चार सार्वजनिक क्षेत्र, २१ खाजगी क्षेत्र व दोन विशेष बिगर जीवन विमा संस्था कार्यरत आहेत. २०११-१२ मध्ये बिगर जीवन विमा पोटी प्राप्त झालेल्या स्थूल विमा हप्त्याच्या रकमेत १५.७ टक्क्यांनी वाढ झाली. आरोग्य विम्यापोटी सर्वाधिक (२७.५%), त्या खालोखाल अनुक्रमे मोटार (स्व हानी) (१७.२%) यावरील हप्ता गोळा झाला. राज्यातील बिगर जीवन विमा धारकांकडून प्राप्त झालेला स्थूल विमा हप्ता पुढील तक्त्यात दिला आहे.

तक्ता क्र १.५

विगर जीवन विमा धारकांकडून प्राप्त झालेला स्थूल विमा हप्ता

(रू. ००० कोटी)

वर्ष	अग्नी	मरीन (कार्गो)	मरीन (हल)	अभियांत्रिकी	मोटार (स्व हानी)	मोटार (तृतीय पक्ष)	दायित्व विमा	खाजगी अपघात	आरोग्य विमा	पीक विमा	इतर सर्व संकीर्ण #	एकूण
२०१०-११	१,४८८	४३६	७५९	५५१	१,८८३	८८१	३५९	३६२	३,२६८	१४५	१,४२२	११,५५४
२०११-१२	१,६६०	५४५	५७३	५७३	२,२९४	१,४४२	३९९	३७८	३,६८२	२०८	१,५२०	१३,३७१

(आधार : विमा नियामक व विकास प्राधिकरण

कर्ज विमा, विदेशी वैद्यकिय विमा इत्यादींचा समावेश आहे.)

Issue - XX, Vol. II
Hi-TECH RESEARCH ANALYSIS
IMPACT FACTOR 6.05
ISSN 2231- 6671
Feb. 2020 To July 2020
34

निष्कर्ष :

उपरोक्त अध्ययनावरुन असे दिसून येते की,

१) भांडवली बाजार हे उद्योग तसेच शासनास निधी उपलब्ध करून देणारे महत्त्वाचे व कार्यक्षम साधान आहे.

२) राज्यात मुंबई शेअर बाजार (बीएसई) राष्ट्रीय शेअर बाजार (एनएसई) असे दोन प्रमुख बाजार आहेत.

३) दीर्घकालीन भांडवली व्यवहारांना वित्तपुरवठा करणे, हे भांडवली बाजाराचे कार्य आहे, तसेच एका देशातून दुसऱ्या देशाकडे होणाऱ्या दीर्घकालीन भांडवलाच्या हालचालींसाठी सवलती पुरविणे हेही भांडवली बाजाराचे कार्य आहे.

४) २०११-१२ मध्ये राज्यात २० समभागांद्वारे (१५ सार्वजनिक समभाग व पाच हक्क समभाग) रू. ६,०८० कोटीची तर मागील वर्षी रू. १८,१५९ कोटींची उलाढाल झाली. खालावलेल्या आर्थिक व गुंतवणूक परिस्थितीमुळे प्राथमिक बाजारातील उलाढाल २०११-१२ मध्ये मंदावली.

५) सन २०११ च्या तुलनेत नवीन म्युच्युअल फंड आणि अस्तित्त्वात असलेले म्युच्युअल फंड यांच्या प्रमाणात घट झाली आहे.

६) सन सन २०१२-१३ मध्ये भारतातील विमाधारकांच्या संख्येच्या तुलनेत ११.७० टक्के विमाधारक महाराष्ट्रात होते.

७) बिगर जीवन विमा धारकांकडून प्राप्त झालेला स्थूल विमा हप्त्यामध्ये सन २०१०-११ च्या तुलनेत वाढलेला दिसून येतो.

एकंदरीत, भांडवली बाजाराच्या रचनात्मक आणि संस्थात्मक सुधारणांमुळे एक व्यापक, सखोल आणि उत्साहवर्धक अशा सरकारी रोखे बाजाराचा उदय अर्थव्यवस्थेत झाला आहे असे म्हणता येईल.

संदर्भ सूची :-

१. महाराष्ट्राची आर्थिक पाहणी, २०१२-१३
२. श्रीधर देशपांडे आणि, विनायक देशपांडे., वित्तीय संस्था आणि वित्तीय बाजार, हिमालया पब्लिशिंग हाऊस, मुंबई.

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URA Issue : XXI, Vol . II
UNIVERSAL RESEARCH ANALYSIS
IMPACT FACTOR 6.10
ISSN 2229-4406
Sept. 2020 To Feb. 2021 42

7

भारतीय कृषी मुल्य धोरण आणि कृषी मुल्य आयोग

डॉ. इंद्रजीत एम. रजपूत
अर्थशास्त्र विभाग,
महात्मा फुले वाणिज्य,विज्ञान व पिट्ठलराव राऊत कला
महाविद्यालय, मातुकली, जि. अमरावती

Research Paper - Economics

कृषी मूल्य धोरण म्हणजे सरकारमार्फत कृषी मूल्याच्या संबंधीत असे धोरण आहे. ज्यांचा उद्देष कृषी मूल्यातील स्थिरता आणणे होय. शेतकऱ्यांना शेती उत्पादनासाठी तसेच शेतात आधुनिक तंत्रज्ञान वापरण्यासाठी प्रेरित करून उपभोक्तांना योग्य मूल्य आणि योग्य भावेत कृषी पदार्थ उपलब्ध करणे होय.

भारतातील कृषी मूल्याची प्रवृत्ती :–

1) स्वातंत्रकाळापूर्वीची कृषी मूल्य प्रवृत्ती:

भारतातील शेती ही मान्सूनवर आधारीत आहे आणि मान्सुनची हमी कोणीही देऊ शकत नाही. अशा परिस्थितीमुळे भारतातील कृषी उत्पादनात वाढ आणि घट होत राहते. त्यामुळे कृषी मूल्यामध्ये स्थैर्य राहत नाही. कारण स्वातंत्रकाळापूर्वी लागवडी खालील क्षेत्र भारतीय लोकसंख्येच्या मानाने कमीच होते त्यामुळे भारतात दुष्काळ, उत्पादनक्षमता कमी इ. कारणामुळे गारतात अन्नधान्याचा तुटवाडा नेहमी पडत होता. सन 1943 ला बंगालमध्ये दुष्काळ कारणामुळे तांदुळच्या किंमतीत अत्याधिक वाढ झाली होती.

2) स्वातंत्र्यानंतर कृषी मूल्याची प्रवृत्ती:

स्वातंत्र प्राप्तीनंतर देशात सन 1950–51 पासुन आर्थिक नियोजनास सुरवात झाली. या काळापासुन ते आजपर्यंत देखील भारतात कृषी मूल्य हा अत्यंत जिव्हाळ्याचा विषय आहे. या आर्थिक नियोजन काळापासुन भारतातील कृषी मूल्य अस्थिर राहीले आहे. कृषी मूल्यात खुप चढ उतार झाले. प्रथम योजनेवेळी कृषी मूल्यात खुप वाढ झाली होती परंतु नंतर शेती उत्पादनात नंतर जस जशी वाढ झाली तस तसे कृषी मूल्यात घट होऊ लागली. प्रथम योजनेत कृषी मूल्यात 20: घट झाली तर द्वितीय योजनेत अपेक्षेप्रमाणे कृषी उत्पादन वाढ न झाल्यामुळे व मुद्रा स्फितीमुळे कृषी मूल्यात 27: वाढ झाली. हीच प्रवृत्ती तृतीय योजना पासुन ते आजपर्यंत तशीच चालु आहे.

उद्दिष्टचे :

1) भारतातील कृषी मूल्याचा अभ्यास करणे

Issue : XXI, Vol , II
URA UNIVERSAL RESEARCH ANALYSIS
IMPACT FACTOR 6.10
ISSN 2229-4406
Sept. 2020 To Feb. 2021 43

2) कृषी आयोगाचा धावता आढावा घेणे

संशोधन पद्धती:

प्रस्तुत संशोधन पेपर हा फक्त दुय्यम साधनावर अभ्यासलेला असुन सदर संशोधन पेपर तयार करण्यासाठी विविध पुस्तके, शेतीविषयक मासिके, वृत्तपत्र, वेबसाईट, विविध प्रकारचे शासनाचे अहवाल इ. चा उपयोग करण्यात आला आहे.

भारतातील कृषी पदार्थाची मूल्यनिती आणि कृषी मूल्य आयोग:

सन 1965 पर्यंत सरकारची कृषी मूल्यातील भूमिका सक्रीय तर वृधी असक्रीय अशीच राहीली आहे. कारण सरकारची कृषी मूल्यातील भूमिका ही कृषी उत्पादनातील उत्पादन क्षमतेवर अवलंबुन राहीली आहे. ज्या वर्षी कृषी उत्पादन अपेक्षेप्रमाणे झाले त्या वर्षी सरकारने कृषी मूल्यनिती मधील आपली भूमिका असक्रीय पणे निभावत होती. तर याउलट कृषी उत्पादन कमी झाले तर सरकार आपली कृषी मूल्यातील भूमिका सक्रीय करित होती. प्रथम पंचवार्षिक योजनेत कृषी मूल्यात स्थिरता आणणे ही सरकारची भूमिका नव्हती कारण प्रथम पंचवार्षिक योजनेत अपेक्षेपेक्षा जास्त अन्नधान्याची निर्मिती झाली. परंतु द्वितीय पंचवार्षीक योजनेत कृषी मूल्यात वाढ झाली कारण द्वितीय पंचवार्षीक योजनेत अन्नधान्याची टंचाई निर्माण झाली. याच कारणासाठी सार्वजनिक वितरण प्रणाली लागु करण्यात आली. तसेच विदेषातुन अन्नधान्याचे आयात करण्यात आले. तिसऱ्या योजनेत पहिल्या वेळेस कृषी उत्पादनाचे हित लक्षात घेऊन कृषी मूल्य आयोग स्थापन करण्यावर विचार सुरू झाला आणि सन 1965 ला कृषी मूल्य आयोगाची स्थापना करण्यात आली.

कृषी मूल्य आयोग:

दुसऱ्या पंचवार्षिक योजनेच्या उत्तरार्धात, म्हणजे 1961 साली भारतीय शेतीचे अतोनात नुकसान झाले होते. हे नुकसान भरून काढण्यासाठी जानेवारी 1965 मध्ये प्रो. दंतवाला यांच्या अध्यक्षतेखाली कृ पी व मूल्य आयोगाची स्थापना करण्यात आली. 1965–66 साली देशात भीषण दुष्काळ पडला होता. त्यातच चीनबरोबर झालेल्या युध्दामुळे भारतीय अर्थव्यवस्था खिळखिळी बनली होती. 1985 पासून या संस्थेला कृषी खर्च व मूल्य आयोग म्हणून ओळखले जाऊ लागले. सध्या हा आयोग केंद्र शासनास मुख्य पिकांच्या किमान आधारभूत किमती ठरवण्यात मदत करतो. राभापती, सचिव, एक कार्यालयीन सदस्य, बिगर कार्यालयीन सदस्य असा एकूण पाच जणांचा आयोगात समावेश आहे. राज्याला जेव्हा हा अहवाल बनवायचा असतो, तेव्हा प्रत्येक राज्य प्रत्येकी एक शेतमाल किंमत समिती निर्माण करत असते, ज्यात त्या राज्यातील कृषी विद्यापीठाच्या काही तज्ज्ञ व्यक्तींचा समावेष असतो. सध्या खरीप हंगामातील 18, रब्बी हंगामातील 6 व 4 व्यापारी पिकांचा शेतमाल किंमतीत समावेश आहे. यात कदाचित बदलही झाला असेल.

स्वामिनाथन आणि कृषी मूल्य आयोग:

शेतीची दुरवस्था आणि शेतकऱ्यांच्या आत्महत्या यावरील महत्त्वाचा उपाय म्हणून भारतीय

Issue : XXI, Vol . II
URA UNIVERSAL RESEARCH ANALYSIS
IMPACT FACTOR 6.10
ISSN 2229-4406
Sept. 2020 To Feb. 2021 44

हरित क्रांतीचे जनक डॉ. एम. एस. स्वामिनाथन यांच्या अध्यक्षतेखालील आयोगाने अनेक शिफारशी केल्या. शेती समस्येचा अभ्यास करण्यासाठी 18 नोव्हेंबर 2004 रोजी डॉ. एम.एस. स्वामिनाथन यांच्या अध्यक्षतेखाली कृषी मूल्य आयोगाची स्थापना करण्यात आली ऑक्टोबर 2006 मध्ये या आयोगाने त्याचा अहवाल सरकारला सादर केला. त्या वेळी शरद पवार साहेब केंद्रात कृषिमंत्री होते. या आयोगाच्या अनेक शिफारशी मान्य केल्याचे पवार साहेब सांगतात. त्याची कितपत अंमलबजावणी झाली हा संशोधनाचा भाग आहे. कृषी मूल्य आयोग हमीदराशिवाय शेतकऱ्यांच्या विकासासाठी केंद्र सरकारला अनेक शिफारशी करीत असतो. कॉंग्रेसच्या सरकारने त्याची कधीच अंमलबजावणी केली नाही.

राज्य कृषी मूल्य आयोगः

शेतकऱ्यांचे खर्च वजा जाऊन उत्पन्न सरकारी कर्मचाऱ्याप्रमाणे असावे, शेतीमालाचा हमी भाव उत्पादन खर्च वगळता 50 टक्के असावा, शेतीमालाची आधारभूत किंमत लागू करण्याची पद्धत सुधारून गहू आणि इतर खाद्यान्न पिकांना आधारभूत किंमत मिळायची व्यवस्था करावी, बाजाराच्या चढउतारापासून शेतकऱ्यांचे संरक्षण व्हावे म्हणून मूल्य स्थिरता निधीची स्थापना करण्यात यावी अशी मागणी सातत्याने होत होती. तत्कालीन आघाडी सरकारच्या काळात राज्य कृषी मूल्य आयोगाची स्थपना करण्यात आली. त्या सरकारच्या काळात हा निर्णय अंमलात आला नाही. राज्यात कृषी मूल्य आयोग करण्यात यावा, अशी युतीची मागणी होती. देवेंद्र फडणवीस सरकार सत्तेवर आल्यानंतर 23 एप्रिल 2015 रोजी राज्य आयोग स्थापन करण्यात आला. महाराष्ट्र हे हा आयोग स्थापन करणारे देशातील दुसरे राज्य. या आयोगावर कृषी क्षेत्रातील तज्ज्ञ व्यक्ती तसेच कृषी मूल्य/शेतीमाल या संबंधीची जाणकार व्यक्ती नियुक्त करण्यात यावी, असे शासन आदेशात नमूद केले आहे. आयोगावर चारही कृषी विद्यापीठांचे कुलगुरू व कृषी अर्थशास्त्र विभागांचे प्रमुख, कृषी खात्याचे सचिव व आयुक्त, प्रत्येकी एक लोकप्रतिनिधी, शेतकरी यांचा समावेष आहे. या आयोगाची कार्यकक्षाही व्यापक करण्यात आली आहे.

कृषी मूल्य आयोगाची उपयुक्तताः

शेतकऱ्यांच्या उत्पादनाला योग्य हमी भाव मिळावा, अशी सर्वच पक्षांची इच्छा राहिली आहे. एखाद्या पिकाचे भरघोस उत्पादन झाल्यास त्या पिकाच्या भावात मोठी घसरण होते. यामुळे होणारे नुकसान टाळण्यासाठी सरकार त्या त्या पिकाचा किमान हमी भाव ठरवते. कीटकनाशकांच्या भावात झालेली वाढ, गेल्या वर्षाचा बाजारभाव, शेतकऱ्यांच्या घरची मजुरी, पीक कर्जावरील व्याज याचा प्रामुख्याने विचार करून जिल्हानिहाय माहिती गोळा करून कृषी मूल्य आयोग पिकांचे हमी भाव ठरवते. नाफेड, व्यापारी संघटना, महत्त्वाची मंत्रालये यांच्याकडे माहिती मागवते व आपल्याकडील घटकांचा अभ्यास करून हमी भाव निश्चित करते. शेतीमाल भावातील चढउतारांचा अभ्यास करून शासनाला बाजारात हस्तक्षेप करण्यासाठी वेळोवेळी सल्ला देण्याचा, पिकाचे उत्पादन, मागणी, पुरवठा, किंमत, कृषी धोरणाविषयी या आयोगाला सल्ला देण्याचा अधिकार आहे.

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Sept. 2020 To Feb. 2021 45

साबळेंचा मूल्यविषयक दृष्टीकोन:

राज्य कृषी मूल्य आयोगाचे अध्यक्ष पाशा पटेल यांना आपल्या कामाचा ठसा उमटवण्यासाठी विविध कृषी शास्त्रज्ञांची व कृषी अर्थतज्ज्ञांची मते जाणून घेणे आवश्यक आहे. कृषी मूल्याविषयी विविध तज्ज्ञांची मते आहेत. प्रसिध्द हवामान शास्त्रज्ञ रामचंद्र साबळे यांनी एके ठिकाणी कृषी मूल्याविषयी मूलगामी विचार व्यक्त केले आहेत. ते विचारात घ्यावे लागतील. हमान बदलाच्या काळात जगभरचा शेती व्यवसाय अडचणीत सापडला आहे. त्याचप्रमाणे भारतातील शेती व्यवसायदेखील अडचणीतून वाटचाल करीत आहे. हवामान बदलाच्या काळात शेती क्षेत्रासाठी स्वतंत्र विचाराची आणि धोरणाची गरज आहे. प्रामुख्याने शेतीमालाच्या उत्पादन खर्चाच्या दीडपटीहून अधिक भाव मिळाल्याविवाय हा सर्व बदल दिसणार नाही. गेल्या दीड वर्षात रिझर्व्ह बँकेने रेपो रेट आठ टक्क्यांवरून 8.25 टक्के केल्याने पेट्रोल, डिझेल, खते, कीटकनाषके, बियाणे, मजुरी, पाणी आणि अन्य बाबींवरील खर्च सातत्याने वाढत आहे. महागाई निर्देषांक सातत्याने वाढत असताना शेतीमालाच्या किमतीत फारशी वाढ झालेली नाही. या परिस्थितीमुळे शेतकरी मोठ्या प्रमाणात कर्जबाजारी होताना दिसत आहे. ही परिस्थिती देशासाठी खचितच हितावह नाही. कारण एकूण कर्जबाजारी व्यक्तींची देशातील संख्या आणि त्यातील शेतकरी वर्गाचे प्रमाणे अभ्यासल्यास ती कितीतरी पटीने अधिक असेल. या सर्वाचा अर्थशास्त्रीय अभ्यास होणे गरजेचे आहे. शेतीमालाच्या भावाची दर वर्षी पुनर्रचना होणे त्यासाठी गरजेचे आहे. त्यासाठी केंद्र सरकार आणि राज्य सरकार यांच्याकडे कायमस्वरूपी कृषी मूल्य आयोगांची गरज असून, ते राबवण्याची योजना असायला हवी. यावरून कृषी मूल्य आयोगाचे महत्त्व लक्षात येते.

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Issue : XX, Vol. V
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ISSN 2250-169X
Dec. 2020 To May 2021 42

8

भारताच्या कृषि विकासामध्ये पीक विमा योजनेची भूमिका

इंद्रजीत मानसिंग राजपूत
अर्थशास्त्र विभाग,
म. फुले वाणिज्य, विज्ञान व विठ्ठलराव
राऊत कला महाविद्यालय, भातुकली, जि. अमरावती

Research Paper - Economics

प्रस्तावना :-

भारतीय अर्थव्यवस्था विकसनशील अर्थव्वस्था होय. भारताच्या आर्थिक विकासात शेतीची भूमिका महत्त्वाची आहे. भारतीय अर्थव्यवस्थेचा कणा म्हणजे शेती व्यवसाय होय. जोपर्यंत शेती क्षेत्रात आमुलाग्र बदल होत नाहीत तोपर्यंत भारताच्या आर्थिक विकासास चालना लामणार नाही. भारतीय अर्थव्यवस्थेत शेती क्षेत्राची भुमिका महत्त्वाची असली तरी तिचे स्वरुप आणि वैशिष्टये यामध्ये इतर देशाच्या शेतीच्या तुलनेने भिन्नता दिसून येते. भारतीय शेतीमध्ये अनिश्चितता व धोका मोठया प्रमाणात आहे. शेतीवर निसर्गाचे प्रभुत्व अधिक आहे. त्यामुळे भारतीय शेतीची उत्पादकता व उत्पादन दर्जा इतर देशाच्या शेतीच्या तुलनेने कमी दिसून येतो.

भारतीय शेतीमध्ये अनिश्चितता, धोका टाळण्यासाठी व शेतकऱ्याच्या उत्पन्नात सातत्य टिकवून ठेवण्यासाठी पीक विमा योजनेची काळानुसार अत्यंत आवश्यकता आहे, ज्याशिवाय शेती विकासाला गती लामणार नाही.

उद्दिष्टये :-

१. पीक विमा योजनेच्या स्वरुपाचा अभ्यास करणे.

Issue : XX, Vol. V
VISION RESEARCH REVIEW
IMPACT FACTOR 6.20
ISSN 2250-169X
Dec. 2020 To May 2021

संदर्भ ग्रंथ, पुस्तके, नियतकालीके, वर्तमानपत्र इत्यादीचा वापर करण्यात आलेला आहे.

भारताच्या कृषी विकासात पीक विमा योजनेची भूमिका :-

भारताची शेतीचे स्वरुप आणि वैशिष्टये लक्षात शेती व्यवसायात अनिश्चितता व धोका अधिक जाणवतो. त्यामुळे शेती उत्पादकाच्या उत्पन्नात सातत्य व नियमितपणाचा अभाव दिसुन येतो. भारतीय शेतीमधील अनिश्चितता व धोका टाळण्यासाठी उपाययोजना आवश्यक आहे. व्यक्तिची जिवितहानी टाळण्यासाठी जिवन विमा योजना जशी महत्त्वाची योजना आहे.

पीक विमा म्हणजे शेती क्षेत्रात शेती उत्पादकांची नैसर्गिक व इतर कारणांमुळे पीकांचे झ ालेले नुकसान भरुन काढण्यासाठी योजलेली विमा योजना म्हणजे पीक विमा योजना होय. या योजने अंतर्गत इतर क्षेत्रातील उत्पादकाप्रमाणे हानी टाळण्यासाठी धोक्याच्या स्वरुपानुसार नियमितपणे विम्याचे हाफते भरुन घेतले जातात आणि अनअपेक्षित नैसर्गिक व इतर कारणांमुळे जर पीकांची हानी झाली तर नुकसानीच्या प्रमाणात भरपाई या योजने अंतर्गत शेती उत्पादकांना मिळते.

महत्त्व व उद्देश :-

१. शेतकऱ्यांना शेती क्षेत्रात अनिश्चितता निर्माण झाल्यामुळे उत्पन्नात सातत्य निर्माण करण्यासाठी व कृषी विकासासाठी या योजनेची भुमिका महत्त्वाची आहे.

२. शेती व्यवसायात शेतकऱ्यांची अनअपेक्षित व नैसर्गिक कारणामुळे पीकाचे नुकसान झाल्यास त्याची भरपाई मिळण्यासाठी ही योजना महत्त्वाची आहे.

३. शेती क्षेत्रात उत्पादन, उत्पादन साधन वापर व लागवडी पध्दतीच्या संदर्भात नविन प्रयोग करण्याची आवश्यकता असते. त्यासाठी उत्पन्नात सातत्य टिकुन राहावे म्हणून ही योजना महत्त्वाची आहे.

४. शेती क्षेत्रात उत्पादन संतुलन व उत्पादनाची प्रेरणा शेतकऱ्यात निर्माण करण्यासाठी भांडवलाची आवश्यकता असते म्हणून ही योजना आवश्यक आहे.

५. शेतकऱ्याची पत टिकवून ठेवण्यासाठी व शेती व्यवसायात एक प्रकारची स्थिरता निर्माण करण्यासाठी उत्पन्नातील अनियमितपणा व अस्थिरता कमी होणे आवश्यक आहे. त्यासाठी या योजनची भुमिका महत्त्वाची आहे.

६. शेतीचे निसर्गावरील परावलंबित्व कमी करण्यासाठी व शेती क्षेत्रात गुंतवणीला चालना देवून शेतीचा विकास घडवून आणण्यासाठी ही योजना महत्त्वाची आहे.

फायदे :-

१. पीक विमा योजनेमुळे शेतकऱ्यांच्या उत्पन्नात सातत्य व नियमितपणा निर्माण होत

Issue : XX, Vol. V
VISION RESEARCH REVIEW
IMPACT FACTOR 6.20
ISSN 2250-169X
Dec. 2020 To May 2021 44

अराल्यामुळे नैसर्गिक व इतर आपत्तीमुळे होणाऱ्या नुकसानीस शेतकऱ्यांना तोंड देता येते.

२. शेती क्षेत्रात विविध कारणामुळे पीकांच्या झालेल्या नुकसानीची विमागणी देशातील अनेक शेतकऱ्यायर विमागली जाते त्यामुळे अल्प नुकसान वाटयाला येते तसेच विमा योजनेचा अल्पसा हफ्ता देवून नुकसान भरपाई मात्र धोक्याच्या प्रमाणात मिळते.

३. पीक विमा योजनेमुळे शेतकऱ्यांचा शेतीकडे बघण्याचा पारंपारिक व दैववादी दृष्टिकोन बदलून त्यामध्ये इतर उत्पादकाप्रमाणे शेतीकडे पाहण्याचा व्यावसायिक दृष्टिकोन निर्माण होतो. त्यामुळे शेतकऱ्यात एक प्रकारचा आत्मविश्वास वाहून त्यांच्यात प्रयोगशिलता निर्माण होते. याचा परिणाम कृषी विकासाला चालना मिळते.

४. पीक विमा योजनेमुळे शेतकऱ्यांच्या उत्पन्नातील खंड कमी होतो. त्यामुळे त्यांची कर्जबाजारीपणाची वृत्ती कमी होते.

पीक विमा योजनेची वैशिष्टये :-

१. पीक विमा योजनेत केंद्र सरकार, राज्य सरकार व राष्ट्रीय महामंडळाचा वाटा असतो.

२. सरकारने ही योजना शेती क्षेत्रातल्या सर्व पीकांच्या संदर्भात लागु केलेली आहे.

३. या योजनेचा फायदा वित्तीय संस्थाकडून कर्ज घेणाऱ्या व कर्ज न घेणाऱ्या शेतकऱ्यांना होतो.

४. पीकाची संरक्षित रक्कम कमीत कमी १०० पट व जास्तीत जास्त १५० पट या योजनेनुसार निश्चित करण्यात आलेली आहे.

५. ज्या शेतकऱ्यांना या योजनेचा लाभ घ्यावयाचा असतो त्याने पीक विम्याचा हफ्ता दरवर्षी भरणे आवश्यक असते.

६. सीमांत शेतकऱ्याचा पीक विम्याचा हफ्ता ५०% राज्यसरकार भरते व राहिलेला हफता शेतकऱ्यांना भरावा लागतो.

पीकविमा योजनेतील दोष :-

ही योजना शेतकऱ्याच्या दृष्टिने महत्त्वाची आहे कारण यामुळे शेतकऱ्याची प्रयोगशिलता वाढते. पीक नुकसानीची विभागणी अनेक शेतकऱ्यात होते. तसेच शेतकऱ्याचा कर्जबाजारीपणा कमी होण्यास मदत होते. परंतु या योजनेत पुढील काही महत्त्वाचे दोष आहेत.

१. ही योजना सर्वच पीकांना सर्वच राज्यात लागू करण्यात आलेली दिसून येत नाही.

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IMPACT FACTOR 6.20
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Dec. 2020 To May 2021 45

२. या योजने अंतर्गत नुकसान भरपाई देण्याची पध्दत क्लिष्ट व अयोग्य आहे.
३. या योजनेची अंमलबजावणी कार्यक्षमपणे केली जात नाही असे दिसून येते.
४. या योजने अंतर्गत नुकसान भरपाई शेतकऱ्यांना मिळण्यास अधिक विलंब होतो.
५. या योजनेत नुकसान भरपाई देण्यासाठी किमान उत्पन्न किंवा उंबरठा उत्पन्न ठरविण्याची पध्दत क्लिष्ट आहे.

निष्कर्ष :-

१. पीक विमा योजनेची भुमिका भारतीय शेतीच्या विकासामध्ये महत्त्वाची आहे.
२. पीक विम्यामुळे शेतकऱ्यांच्या आर्थिक व सामाजिक समस्या सुटण्यास मदत होते.
३. शेतकऱ्यामध्ये उत्पादन प्रेरणा, प्रयोगशिलता, आत्मविश्वास निर्माण होवून शेतीकडे पाहण्याचा दृष्टिकोन बदलण्यास मदत होते..
४. शेती क्षेत्रात गुंतवणुकीला चालना मिळवून आधुनिक आदाने वापरण्यास प्रोत्साहन मिळते. त्यामुळे शेतीची उत्पादकता, उत्पादन प्रमाण दर्जा वाढेल.

शिफारशी :-

१. देशात ही योजना सर्वच पीक व राज्यांच्या संदर्भात सरकारने लागू करावी.
२. ही योजना प्रभावी कार्यक्षमपणे अंमलात आणून अंमलबजावणीमधील विलंब टाळावा.
३. शेतकरी अशिक्षित व अल्पशिक्षित असल्यामुळे या योजनेचे त्यांना महत्व पटवून द्यावे.
४. नुकसान भरपाई देण्याची पध्दत व किमान उत्पन्न ठरविण्याची किंवा उंबरठा उत्पन्न यामध्ये बदल करण्यात यावा ज्यामुळे सर्वांना फायदा होईल या योजनेमुळे अधिक शेतकरी आकर्षित होतील.

संदर्भ सूची :-

१. कृषी अर्थशास्त्राची मुलतत्वे - विजय कवीमंडन
२. कृषी अर्थशास्त्र - लिला पाटील
३. भारतीय अर्थशास्त्र - एन.एल.चव्हाण
४. कृषी अर्थशास्त्र आणि भारतातील शेती व्यवसाय - निर्मल भालेराव
५. कृषी अर्थशास्त्रे - आर.एन.सोनी
६. कृषी अर्थशास्त्रे - जयप्रकाश मिश्रा
७. भारतीय व्यवस्था - के.एम.भोसले.

List of Peer Review Research Paper 2020-21

Sr. No.	Year	Author	Paper Title	Link
1	2020-21	R. B. Pedhekar,	Chemically synthesized ZnO and Cd-ZnO thick films as Ethanol sensor	https://iopscience.iop.org/journal/1757-899X
2	2020-21	Dr. A B Ingole	Impact of ICT on teaching learning and evaluation.	www.ycjournal.net
3	2020-21	Dr. Vivek Narkhedkar	Inductive effects of carbohydrates and plant regeneration via anther culture in Madagascar Periwinkle.	https://www.hrpub.org/journals/jour_info.php?id=14
4	2020-21	Swapna P. Kalbende	Algal Bio-Diversity of Pedhi River of Amravati Distric, Maharashtra, India	www.irjmets.com
5	2020-21	Dr. Swapna P. Kalbende	Effect of *Callistemon citrinus* (Curtis) Skeels on the growth of *Aspergillus niger* and *Aspergillus fumigatus*	www.ijmer.in
6	2020-21	Dr.M.K. Phule	Quest for Identity in' Chetan Bhagat's, 'One Indian Girl'	www.vishwabharti.in
7	2020-21	Dr.M.K. Phule	The Theme of Hunger in Bhattacharya ' So Many Hungers' and 'He Who Rider a Tiger'	
8	2020-21	Dr.Kiran R. Belurkar	Ghankachara V Sandpani Vevasthapan - Samsya Ani Upay	www.aadharsocial.com
9	2020-21	Dr. L. D Bodile	International Trade Growth in Retail Sector	www.vidyawarta.com

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Chemically synthesized ZnO and Cd-ZnO thick films as Ethanol sensor

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Abstract: In this paper, we report precipitation method for preparation of pure and Cd-ZnO nanorod using different doing concentration. Thick films are fabricated by screen printing technique. For structural, morphological, compositional and optical characteristics of fabricated thick films X-ray diffraction technique (XRD), field-emission scanning electron microscopy (FESEM), energy dispersive X-ray technique and UV–visible spectroscopy were used. To check gas sensing properties, hydrogen sulphide (H_2S), carbon dioxide (CO_2), liquid petroleum gas (LPG), ammonia vapour (NH_3), ethanol vapour and hydrogen (H_2) gases were used. The excellent gas response was obtained for 3.0 wt.% Cd- ZnO towards ethanol among all Cd-ZnO thick films at operating temperature 573 °K.
Keywords: Cd doped ZnO, nanorods, gas sensor

1. Introduction:

Ethanol is high odorous gas and is explosively used for scientific, industrial applications and for beverages. Ethanol is toxic in nature [1-5]. There is heavy risk of cancer upon disclosure and use of alcoholic beverages [6]. There is a risk of digestive track cancer and respiratory system for the workers working for the synthesis of ethanol. Commercially important area is accurate detection of ethanol vapour. One of the applications of ethanol sensor is to detect ethanol vapour level in human breathing (breathalyser) which is linked to the concentration of alcohol in blood.

In recent years, the study of gas sensors has given great attention in order to detect harmful gases because of their effect on medical diagnosis, personal security, detection of toxins and pollutants, industrial transport [7, 8]. It is known that gas sensing performance of gas sensors not only depends on their gas response, selectivity, response or recovery speed and stability but also its reproducibility. Hence, sensors with low cost, increasing sensitivity and selectivity are in demand for safety in an industrial areas and residential areas [9–15], semiconductor metal oxide gas sensors are in demand now a day. They are widely used for detection of inflammable and poisonous gases [16–22] because of their low cost. From literature review, pure metal oxide materials have lower gas sensing performance as compared with doped metal oxide materials [23-26]. Metal oxide semiconductors, SnO_2, ZnO, Fe_2O_3 etc. are commonly used as gas sensing materials from ten years back because of their enhanced sensitivity to the target gases and simple synthesis process. Researchers have showed that the crystallite size, surface morphology and chemical composition of metal oxide nanoparticles are related to their gas sensing properties [27-29].

Zinc oxide is associated with II–VI group semiconductor with larger band gap and larger exciton energy of 60 meV [30]. The properties of ZnO such as its chemical stability, piezoelectricity, and visible region optical transparency, biocompatibility and high voltage current non-linearity etc. make it's position unique among all the materials. The resistivity of ZnO can be varied in large range (10^{-3} Ωcm to 10^5 Ωcm) it is used in many industries in solar cells, transport electrodes, photodiodes, gas sensors, surface acoustic wave devices and transistors, etc [31-35]. The high chemical and physical stability, low cost, easy methods of preparation are the cause of attraction in the practical gas

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sensors [36]. Sensing mechanism of ZnO is surface control type of reaction. There is change in resistivity of metal oxide semiconductors with adsorption/desorption for gas molecules of target gas on material's surface. By decrease in concentration of adsorbed oxygen, resistance of zinc oxide sensor decreases and electron concentration increases when exposed to target gas. The surface states are correlated to grain size and surface morphology [37-39], both are important for gas sensing performances.

In the meantime, the different morphologies, porosity and impurity-doping are two effective ways to considerably increase the gas sensing response of ZnO [40-46]. In majority of the papers, ZnO is doped with noble metals that are platinum (Pt) and palladium (Pd) for improving gas performances of sensor [47-49]. In many papers, the properties of pure ZnO and doped ZnO have been reported but the results of Cadmium doping in zinc oxide is less reported.

The present work deals with synthesis of ZnO and Cd-ZnO by precipitation method, screen printing fabrication method for preparation of thick films and studies on their various properties such as structural, morphologic, optical and gas sensing for H_2S, CO_2, LPG, Ammonia, Ethanol vapour and H_2 gases.

2. Experimental

2.1 Synthesis process for ZnO and Cd- ZnO

Zinc nitrate hexahydrate [$Zn(NO_3)_2.6H_2O$] and cadmium nitrate tetrahydrate [$Cd(NO_3)_2.4H_2O$] used in the experiment were of AR grade. Precipitation method was used for preparing ZnO and Cd-ZnO nanorod. Pure ZnO and cadmium doped ZnO were synthesized by dissolving certain amount of $Zn(NO_3)_2.6H_2O$ and $Cd(NO_3)_2.4H_2O$ in deionized water. The doping concentration was varied as 1, 3, 6, 9 and 12 wt.%, these solutions were stirred magnetically for half an hour for homogeneous solution of zinc and cadmium precursors. Sodium hydroxide solution was prepared in deionised water with continuous stirring, heated at about 328 °K. At room temperature sodium hydroxide solution added in prepared precursor solution at high speed constant stirring. The precipitates were obtained in this reaction and washed with absolute ethanol and deionised water many times to remove the contaminations and then obtained powders were dried in oven at 343 °K. Then the prepared powders were annealed at 523 °K. and named as pure zinc oxide, 1wt.% Cd - ZnO, 3wt.% Cd - ZnO, 6wt.% Cd - ZnO, 9wt.% Cd - ZnO and 12 wt.% Cd -ZnO.

2.2. Fabrication and gas sensing measurements of thick films

Ethyl cellulose mixed with mixture organic solvents such as butyl carbitol acetate, butyl cellulose and turpineol for preparing thixotropic paste [50]. Then the prepared samples were mixed with this paste. The inorganic to organic part was maintained as 80:20 while formation of the paste. The material binding with class substrate was performed by this temporary binder. The screen printing technique was used for fabricating the thick films. The uniform pressure was applied while robbing the paste on glass substrate. . The made-up thick films were then fired at 773 °K for half hour.

In Gas sensing system silver electrodes were used for electrical contacts between thick films and gas sensing system. The experiment was performed for fixed gas concentration 600 ppm. The gas sensor response was noted in presence of air and the target gases and the sensor response was calculated as the ratio of resistance of the film in air (R_a) to its resistance in target gas (R_g) [51].

$$S = R_a/R_g \quad (1)$$

3. Results and discussion

3.1. Characterization of thick film sensors

3.1.1. Structural analysis by XRD:

For examining crystalline structure of pure and Cd-ZnO, XRD analysis was performed.

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IOP Conf. Series: Materials Science and Engineering 1126 (2021) 012046 doi:10.1088/1757-899X/1126/1/012046

Figure 1 shows the XRD patterns of (a) pure ZnO, (b) 1 wt.% Cd -ZnO, (c) 3 wt.% Cd -ZnO, (d) 6 wt.% Cd -ZnO ,(e) 9 wt.% Cd -ZnO and (f)12 wt.% Cd -ZnO.

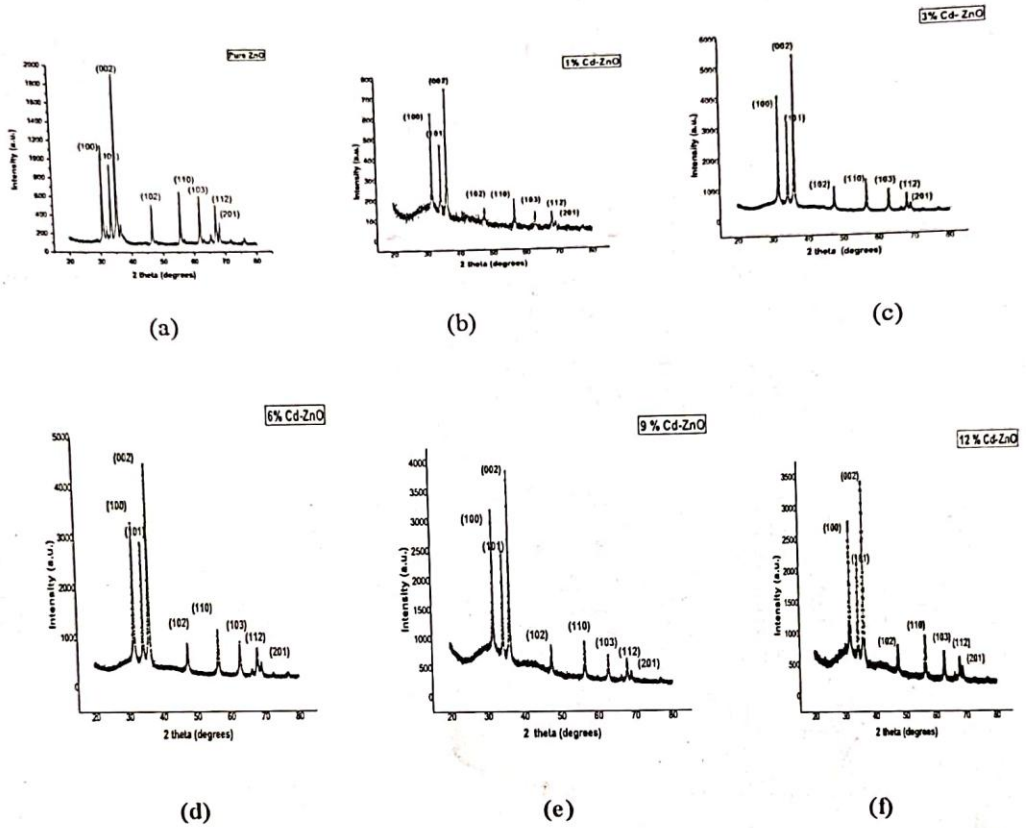


Fig. 1:XRD pattern of (a) ZnO, (b) 1 wt.% Cd-ZnO, (c) 3 wt.% Cd-ZnO, (d) 6 wt.% Cd-ZnO , (e) 9 wt.% Cd-ZnO and (f)12 wt.% Cd-ZnO.

From XRD spectras, polycrystalline nature of the thick films are having wurtzite crystal structure with a preferential oriented growth along (0 0 2) plane. No significant detection of Cd or CdO phase is observed in all films as Cd content is very small. Single ZnO phase is observed for all thick films. From XRD spectras, it is observed that intensities of peaks (002) decrease with slight broadening of full width half maxima. For 3% Cd doped ZnO maximum intensity of peak (002) is 5401a.u. which is greater than intensity of 002 peak of other Cd doped ZnO thick films which suggest that 3% Cd doped ZnO thick film is more crystalline as compared to other Cd doped ZnO thick films. In addition to this, increase of Cd content increases FWHM, lattice defects and grain boundary defects due to Cd doping [52, 53]. The crystallite size was calculated by using Debye Scherrer equation [54]:

$$D = \frac{0.9\lambda}{\beta \cos\theta} \qquad (2)$$

In above formula, λ= 1.5406 A°, β = Full width at half maxima, θ =Bragg's angle

The average crystallite size of fabricated films was of the order of 24 nm - 42nm. As the doping cadmium doping concentration in zinc oxide increases, the grain size is observed to be decreased.

ICTMIM 2021
IOP Conf. Series: Materials Science and Engineering 1126 (2021) 012046 doi:10.1088/1757-899X/1126/1/012046
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3.1.2. Morphological analysis FE-SEM

Figure 2 shows FE-SEM images of (a)ZnO, (b)1wt. % Cd-ZnO, (c)3wt. % Cd-ZnO, (d)6wt. % Cd-ZnO, (e)9wt. % Cd-ZnO, (f)12 wt. % Cd-ZnO thick films.

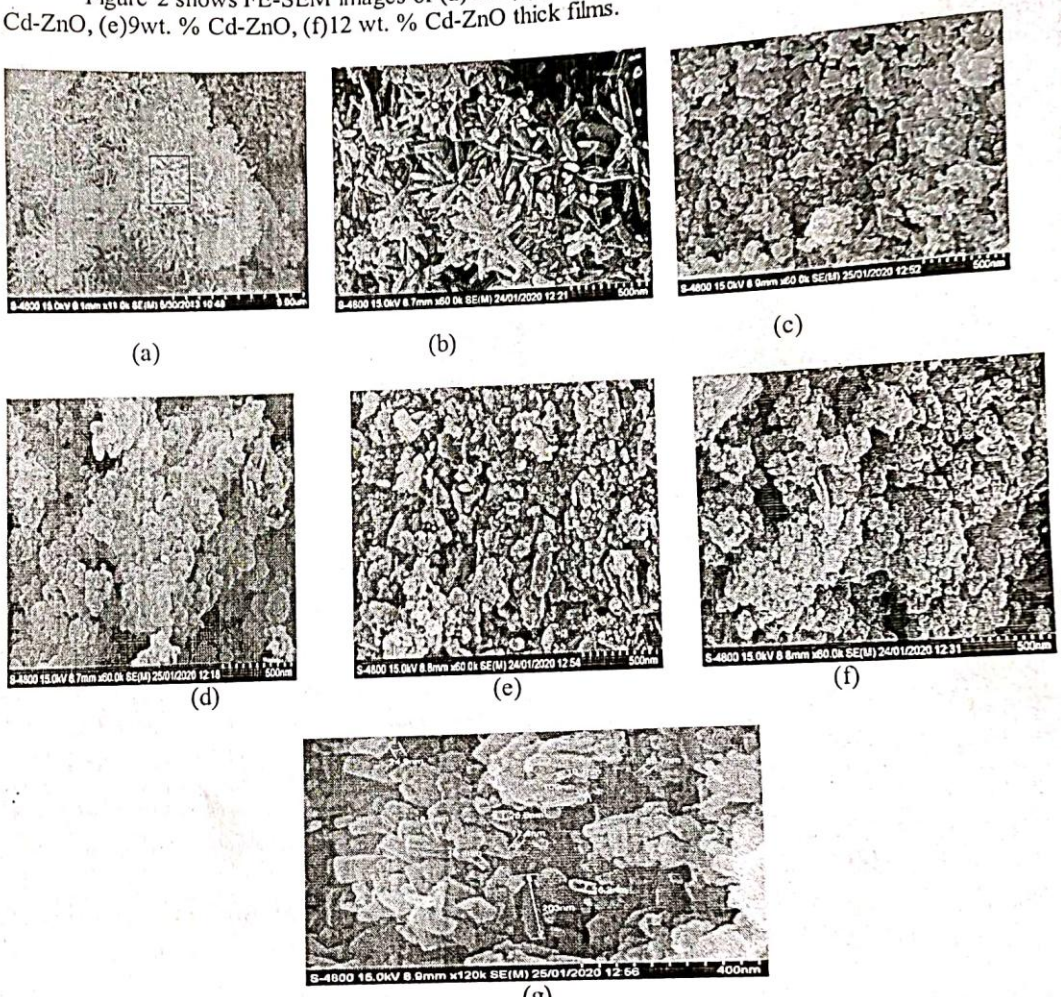


Fig.2: FE-SEM pictures of (a) pure ZnO, (b) 1 wt.% Cd -ZnO, (c) 3 wt.% Cd -ZnO, (d) 6 wt.% Cd -ZnO, (e) 9 wt. % Cd -ZnO and (f)12 wt.% Cd-ZnO, (g) Size of 3 wt.% Cd –ZnO

The images show that there is formation of nano-rod like structures for both pure and Cd doped ZnO thick film samples and Cd-doped ZnOnanorods are obviously very small than pure ZnO nanorods. The nanorods are randomly distributed in samples and the diameter and length of the nanorods changes with change in concentration of Cadmium doping. The maximum length and diameter of the rod is 203 nm and 26.3 nm respectively (fig. g). As concentration of doping increases, length of the rods decreases. Creation of sub nanometre crystallites of various sizes are also observed in SEM images that shows agglomeration in Cd doped thick films.

3.1.3. Elemental analysis by EDAX

The elemental analysis of pure and Cd-ZnO thick films were investigated by using EDAX. Fig. 3 shows EDAX patterns of ZnO and Cd-ZnO thick films. From these graphs, it can be concluded that no other impurity elements are present except Zn, O and Cd.

ICTMIM 2021
IOP Conf. Series: Materials Science and Engineering 1126 (2021) 012046 doi:10.1088/1757-899X/1126/1/012046
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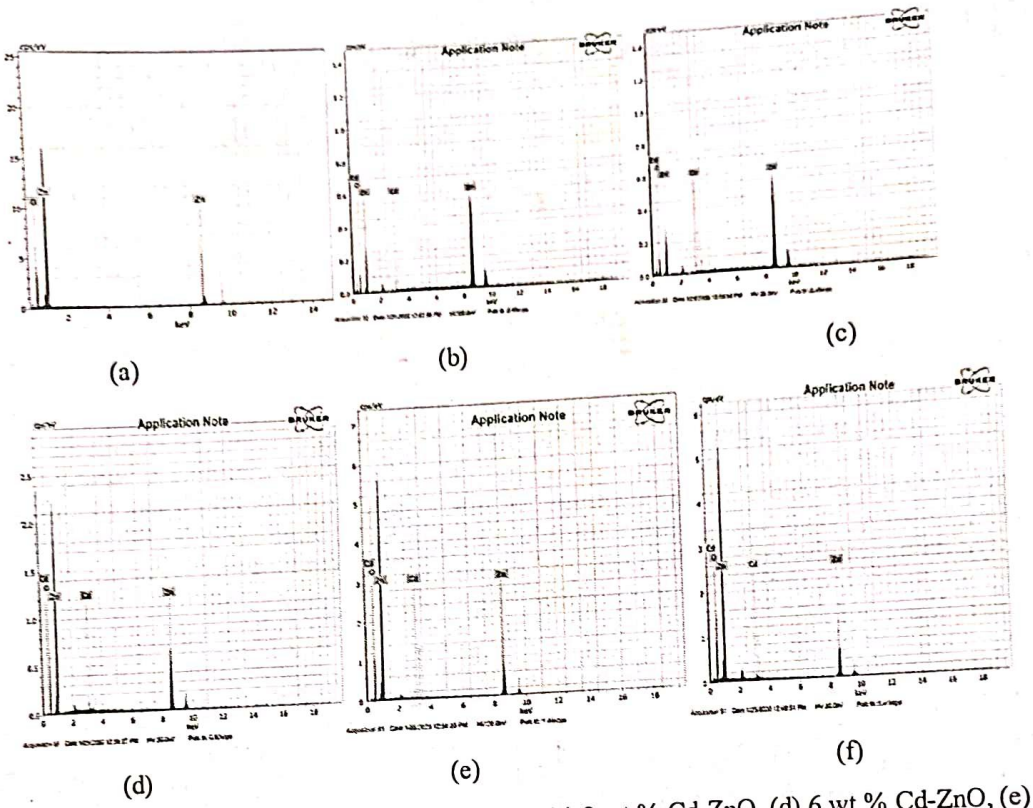


Fig. 3. EDAX of (a) ZnO, (b) 1 wt. % Cd-ZnO, (c) 3 wt.% Cd-ZnO, (d) 6 wt.% Cd-ZnO, (e) 9 wt.% Cd-ZnO, (f)12 wt.% Cd-ZnO.

From figure 3, it was observed that sharp signals were found for zinc and oxygen which confirms the formation of ZnO nanoparticles. For 1wt. %, 3wt. %, 6wt. %, 9wt. %, and 12wt. % along with zinc and oxygen, Cadmium signals are also found which confirms the Cd doping in ZnO. As the Cd doping percentage is increasing, the intensity of peaks in EDAX is increased.
The elemental composition of the ZnO and Cd-ZnO are shown in table 1.

Table 1: EDAX of ZnO and Cd-ZnO thick films

Element (mass %)	Cd doping in ZnO					
	0 wt. %	1 wt. %	3 wt. %	6 wt. %	9 wt. %	12 wt. %
Zn	68.88	76.46	76.87	66.04	68.18	60.17
O	31.12	22.63	19.59	27.96	23.55	28.68
Cd	00	0.91	3.54	6.00	8.27	11.15

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3.1.4 Optical Properties by UV-vis. Spectroscopy:

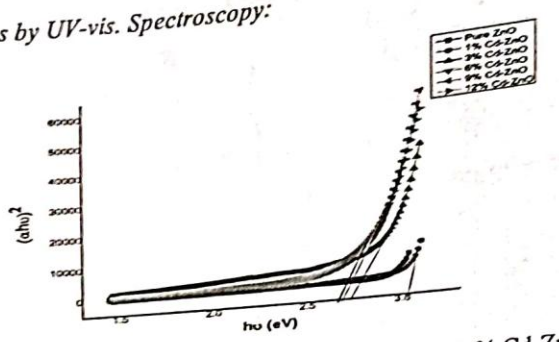


Fig. 4 .Absorbance spectras of $(\alpha h\nu)^2$ versus (hν) for ((a) ZnO, (b) 1 wt. % Cd-ZnO, (c) 3 wt.% Cd-ZnO, (d) 6 wt.% Cd-ZnO, (e) 9 wt.% Cd-ZnO and (f)12 wt.% Cd-ZnO.

Figure 4 depicts Absorbance spectres of pure and Cd -ZnO thick films. The pure ZnO and Cadmium doped ZnO , both are the materials with direct band gap [55]. The band gap energies calculated by extrapolating the linear portion of an $(\alpha h\nu)^2$verses (hν) graph. Thus from these results, it can be concluded that the band gap is decreased with increase in Cd concentration in ZnO thick films.

3.2 Study of gas response:

3.2.1 Current-voltage measurements:

Figure 5 depicts volt-ampere characteristics of pure and cadmium doped zinc oxide thick films. By increasing biased voltage the corresponding current was observed and noted after every 5 volts. The same procedure was carried out for negative voltage. The I-V characteristics graph was plotted for both positive and negative voltages and the I-V characteristics curves obtained in the graph for pure and cadmium doped ZnO are same in nature. Hence it can be concluded that the silver contacts made between probes of the static gas sensing system and the thick films having ohmic contact [56].

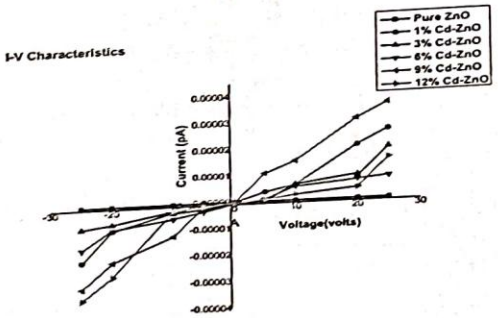


Fig.5: Current voltage graph of (a) ZnO, (b) 1 wt.% Cd-ZnO, (c) 3 wt.% Cd-ZnO, (d) 6 wt.% Cd-ZnO , (e) 9 wt.% Cd-ZnO, (f)12 wt.% Cd-ZnO thick films.

3.2.2Electrical conductivity:

Figure 6 indicates electrical conductivity of ZnO, 1, 3, 6, 9 and 12 wt.% Cd–ZnO thick films. It is observed that as operating temperature increase, electrical conductivity increase. The semiconducting nature of ZnO and Cd-ZnO thick films is confirmed from the linear increase in conductivity.

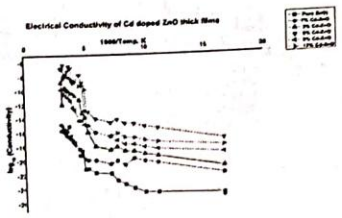
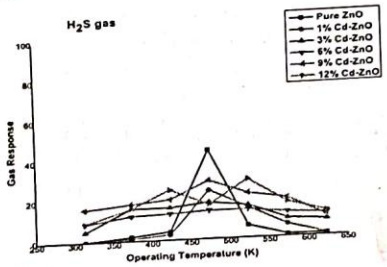


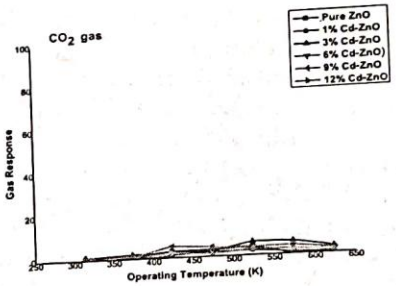
Fig. 6: Conductivity- temperature profile of (a)ZnO, (b) 1 wt.% Cd-ZnO, (c) 3 wt.% Cd-ZnO, (d) 6 wt.% Cd-ZnO ,(e) 9 wt.% Cd-ZnO and (f)12 wt.% Cd-ZnO films.

3.2.3 Gas Sensing:

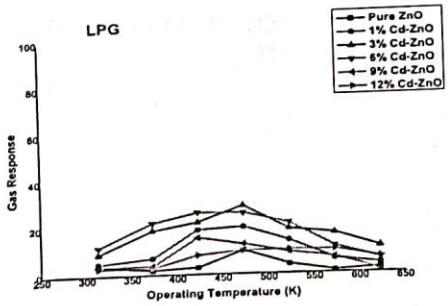
Figure 6(a-f) gives the gas response of ZnO and Cd-ZnO thick films as a function of operating temperature upon exposure of 600ppm H_2S, CO_2, LPG, Ammonia, Ethanol and H_2 gases. From figure it was seen that Cd doped ZnO thick films are respond to Ethanol vapour than other gases H_2S, CO_2, LPG, Ammonia, and H_2 gases. Among all Cd - ZnO thick films, 3 wt.% Cd doped ZnO thick films showed maximum response to Ethanol vapour at 573 K. The higher gas response of 3 wt.% Cd doped ZnO may be due to larger effective surface area of 3 wt.% Cd doped ZnO thick film to react with gas molecules and optimum porosity of film. There may be optimum number of CdO misfits in 3 wt. % Cd doped ZnO thick film to adsorb oxygen.



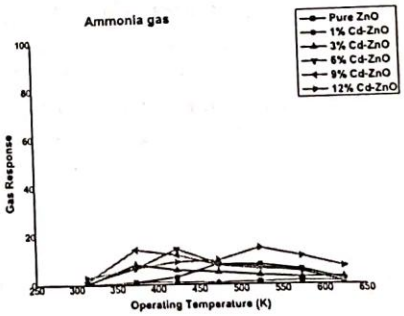
(a)



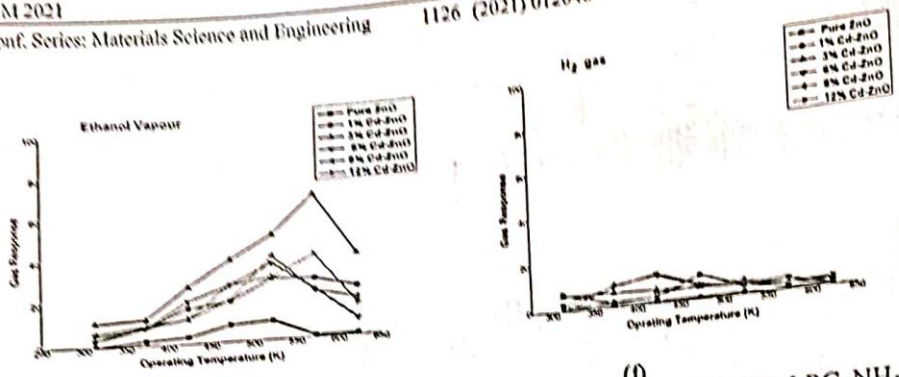
(b)



(c)



(d)



(e) (f)

Fig. 7 (a-f): Gas response of ZnO and Cd-ZnO thick films for 600 ppm H_2S, CO_2,LPG, NH_3, Ethanol, and H_2 gas.

3.2.4 Ethanol vapours sensing mechanism:

The gas sensing mechanism to detect ethanol vapours can be described by two different ways. The first way includes formation of CH_3CHO intermediate due to oxidation of ethanol by dehydrogenation and second way includes formation of C_2H_4 due to dehydration of ethanol. The acidbase properties of metal oxide surface helps to determine the selectivity of these two reactions. For basic oxide surfaces, dehydrogenation process is suitable while for acidic surfaces dehydration process is favoured. Dehydrogenation process take place at higher temperatures while dehydration processes takes place at lower temperatures. The possible reactions are as follows [57, 56]:

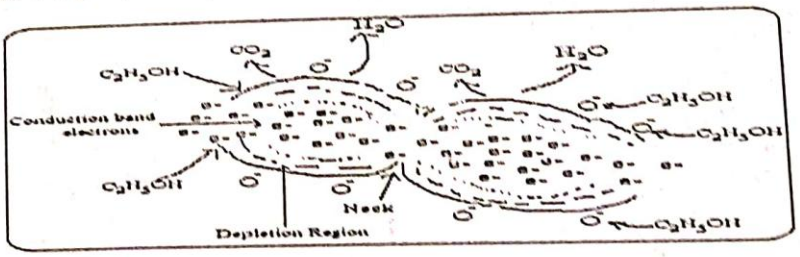
$$CH_3CH_2OH_{(gas)} + [O]_{(ads)} \rightarrow CH_3CHO(ads) + H_2O \quad (1)$$

$$CH_3CH_2OH_{(gas)} + [O]_{(ads)} \rightarrow C_2H_4 + H_2O \quad (2)$$

Where surface oxygen species are represented by $O_{(ads)}$. Ethanol dehydrogenates and the formation of acetaldehyde (CH3CHO) took place by dehydrogenation of ethanol at about 573 K and adsorbed hydrogen atom is produced [56]. Then oxidation of adsorbed hydrogen occurs at ZnO surface. The produced protons associate with the surface-adsorbed oxygen ions forming OH(ads).Elimination of a H_2O molecule occurs due to condensation of two adsorbed OH groups, leaving an adsorbed oxygen anion. In the conduction band of ZnO, one net electron is released during the above dehydrogenation process and thus reduction in resistance take place [57]. The adsorbed O on the sensor surface reacts with the ethanol and releasing electrons back to the conduction band of the material which contribute to the decrease in resistance of the sensor material [58, 59].

In air ambient, as temperature increases, activation energy decreases and hence it can be concluded that less energy is required to activate the material at higher temperature in air ambient. But in gaseous medium, as operating temperature increases activation energy also increases and hence upon exposure of ethanol, larger energy is acquired by electrons. The sufficient energy releases for trapped electrons due to decomposition of ethanol molecules to jump into the conduction band of 3% Cd-ZnO thick film.

$$C_2H_5OH + 6\,O^- \rightarrow 2\,CO_2 + 3\,H_2O + 6\,e^- \quad (3)$$



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3.2.5 Ethanol vapour seelctivity compared to H_2S, CO_2, LPG, Ammonia, and H_2 gas:

From Figure 8, it is observed that 3 wt.% Cd-ZnO sensor provides maximum response to ethanol vapours at 573 K. The thick film sensors indicated highest selectivity for ethanol among all other targeted gases viz. H_2S, CO_2, liquid petroleum gas and H_2.

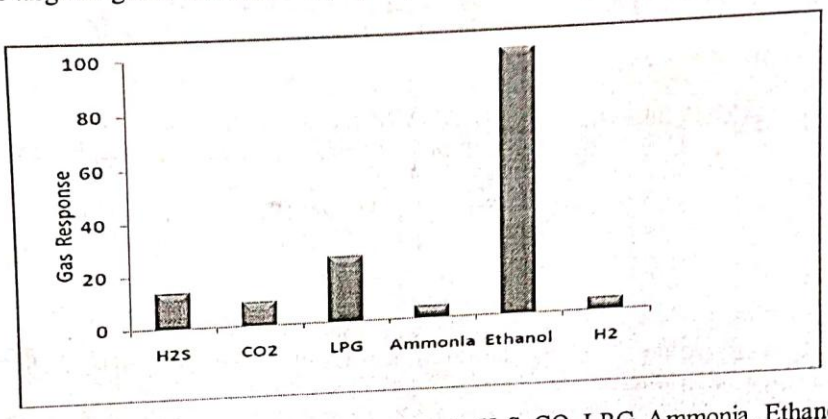


Fig. 8 : Gas response of 3 wt.% Cd-ZnO film towards H_2S, CO_2,LPG, Ammonia. Ethanol and H_2 at 573 °K.

3.2.6 Response time and Recovery time of thick film sensor

The response time of 3 wt. % Cd-ZnO film and recovery time 3 wt. % Cd-ZnO film are represented in Figure 9. The response was quick (~ 19 s) for 600 ppm concentration of ethanol while the recovery time was fast (~ 30 s). Because of the fast oxidation of gases, the response may be fast.

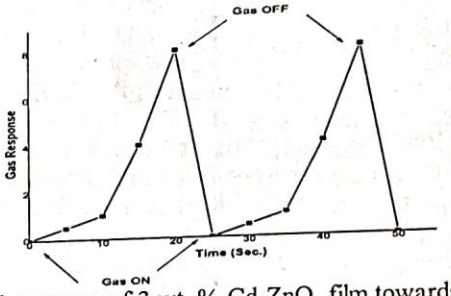


Fig. 9: Response and recovery of 3 wt. % Cd-ZnO film towards Ethanol at 573 °K.

4. Conclusion:

Following are the conclusions are drawn on the basis of experimental results

- Pure ZnO was less sensitive to ethanol vapours.
- Cd doping in ZnO is good to promote the ethanol sensing.
- 3 wt% Cd -ZnO was found to be most sensitive to ethanol vapour at 573 °K.
- 3 wt. % Cd-ZnO film respond ethanol highly at 573 °K temperature with quick response time and rapid recovery.
- 3 wt. % Cd-ZnO film was found to be selectivity for ethanol vapour at 573 °K against H_2S, CO_2, liquid petroleum gas and H_2.

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RESEARCH PAPER

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IMPACT OF ICT ON TEACHING, LEARNING AND EVALUATION

ABSTRACT:

Information and Communication aims Technology or ICT, is often used as an extended synonymfor Information Technology (IT), but is a more specific term that stresses the role of unified communications. Information communication technology has the power to transform society. The impact of ICT on business is particularly significant . It empowers people to share knowledge and advice .ICT can enhance the quality of education in several ways by increasing learner motivation and engagement by facilitating the of basic skills and by enhancing the teacher training.

KEYWORDS: ICT, learning process, teaching and learning

INTRODUCTION :

Now a days the role of information & Communication technology (ICT) in the education sectors plays an important role especially in the process of empowering the technology into the educational activities. Various tools of ICT'S such as T.V , Cassettes, Print, Audio-Video, radio &computer & internet are used for presentation demonstration.

ICT can be used effectively in a range of different ways to improve teaching learning by individual pupils, by groups and by the teachers to focus attention. Modern educational chnology can improve the social, economic d political development.

OBJECTIVES:

1 To find out usage of ICT by teachers during the teaching and learning process.
2 To analyze the present status of use of ICT .
3 To identify the barriers and supporting features on use of ICT

APPLICATION OF ICT:

1. Industry, agriculture and natural resources sector.
2. Social sector which consist of health and education.
3. Infrastructure which covers the both the vertical and horizontal infrastructure projects.
4. Private sectors.

BENEFITS OF ICT :

1. Promotes Learning Enables self paced learning
2. Provides access to wide range of upto date learning materials.
3. Enriches learning through a combination of video, audio, images text and animation.
4. Enhances learning through interaction & collaboration.
5. Provides a platform to the students.

SUGGESTIONS:

1. The government may use a range of methods to encourage teachers to use ICT in their teaching to ensure equal learning opportunities for all students.
2. This study identifies a need for more training opportunities.
3. Digital learning environment in the form of model or ICT learning platform should be offered to teachers.
4. Provide suggestion box & recommendation to be read by principals involved with ICT decisions and proper action follow.
5. Discussion with college website.
6. Organize staff development programme regularly to share knowledge & skill on ICT.
7. Conduct Monthly meetings on discussion regarding ICT use.
8. Each classroom should have at least one computer with internet and LCD projector.
9. Teachers should be aware of the benefits of ICT.

CONCLUSION:

1. As the evidence, it does seem that we are

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witnessing the reconfiguration of preexisting learning activities and opportunities for the majority of children and young people.

2. Here once children went to the library to get a book for their homework, now they also search online.
3. Considering how fast the world is moving in the development procurement & of information & communication technologies. It should make immediate step to catch upit. It want to keep in track.
4. ICT brings lot of advantages & it brings a great impact for human & business daily life.Therefore ICT development is the best choice in helping to stay in track.

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Inductive Effects of Carbohydrates and Plant Regeneration via Anther Culture in Madagascar Periwinkle

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Abstract Anther culture has emerged as an alternative for traditional plant breeding practices for homozygosity development, which in the case of medical plants resulting in increased yield of phytoconstituents. The response of anthers during culture is governed by the various constituents of the nutrient media. The carbohydrate in the nutrient media plays a pivotal role as it acts as a source of carbon skeleton and maintains the osmoticum. In the present research, anthers of *Catharanthus roseus* (L.) G. Don. at early to late uninucleate stage of development were selected for the experiment. The anthers were cultured to evaluate the androgenic potential under the influence of different types and concentrations of carbohydrates viz. sucrose, glucose, maltose, and galactose. It was found that out of four carbohydrates except maltose, all performed best at 30 gm/l. The maximum rate of androgenic callus induction was noted in sucrose at 30 gm/l (69.66±1.52%). All the carbohydrates showed the least rate of calli induction at high concentration i.e. 70 gm/l. The embryo like structures were able to develop on the media supplemented with the combination of 1 mg/l BAP, 0.5 mg/l Kinetin and 0.5 mg/l NAA (13.33±5.77%). The ploidy analysis of randomly selected 30 calli and 10 leaves revealed that *Catharanthus roseus* has haploid regeneration tendencies and also possesses a tendency for spontaneous double haploid formation.

Keywords Sucrose, Haploids, Anther, Maltose, *Catharanthus roseus*, Carbohydrates

1. Introduction

The strong and growing demand in today's marketplace for natural, renewable products has refocused attention on *in vitro* plant materials as potential factories for secondary phytochemical production. Double Haploid (DH) technology is valuable in the breeding of medicinal plant species [1] and for generating resources to develop new varieties showing enhanced vigor and yield i.e. high levels of medicinal compounds [2]. In this context, raising *in vitro* haploids in *Catharanthus roseus* (L). G. Don. offers anticipated benefits which would have been remained unexpressed in natural heterozygous diploid population.

Anther culture is still restricted by many factors which govern the phenomenon of androgenesis. Among the many decisive factors, media constituents are some of the invincible factors which determine the success rate in androgenesis [3]. *In vitro* cultures of plant tissues including those which turn green when exposed to light are not autotrophic with respect to carbonaceous nutrition [4]. Cultures require an external source of organic carbon for

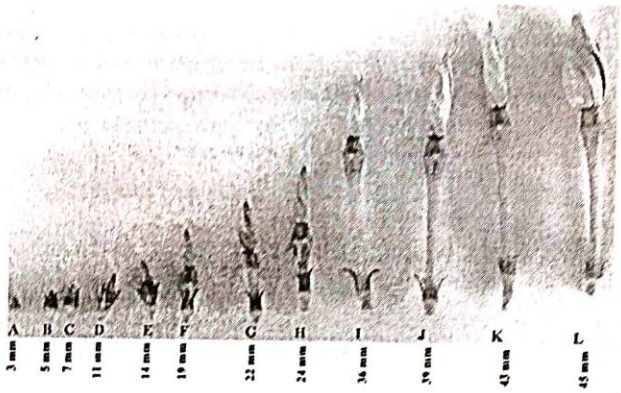
energy and biosynthesis; the type and the concentration needed for the best possible growth vary with different cultures [5]. Thus, in nutrient media, sugar provides the carbon skeleton and energy and it also acts as an osmoticum in the induction medium. High concentration of the sucrose in the medium is responsible for maintaining osmotic pressure of the nutrient medium [6]. Gene expression induced by sugar plays an important role in the diversion of microspore from the gametophytic to the sporophytic pathway [7]. The higher applicability of sucrose as a carbon and energy source in *in vitro* culture is because sucrose is a disaccharide that has high solubility in water with a role as a molecule transporter. Sucrose can be easily penetrated through the plasma membrane [8, 9].

In *C. roseus* the reports available on *in vitro* cultures mainly focused on the plant regeneration through somatic tissues [10-12], some reported phytochemical production via callus culture [13, 14] and a very few studies are performed on androgenesis [15-18]. Since the reports of androgenesis success in *Catharanthus roseus* have been limited and also lacking the experiments on the factors influencing the androgenesis, this study is undertaken to investigate the potential of various carbon sources to act as an efficient energy source and optimal osmoticum.

2. Materials and Methods

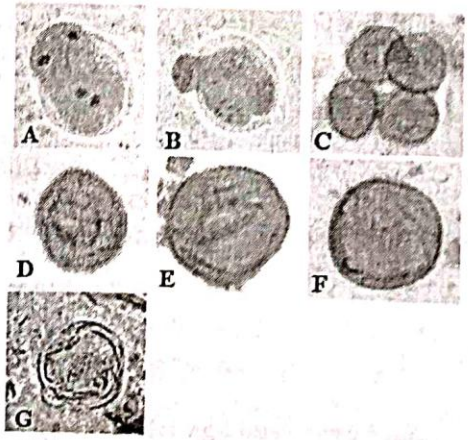
2.1. Plant Material

The *Catharanthus roseus* plants were raised in the pots in the greenhouse at the Departmental botanical garden. The plants were grown at 27°C and 65% humidity without the application of any fertilizers and pesticides. The explant donor plants were selected on the basis of floral buds having microspores at the early to late uninucleate stage of development (Figure 1 and 2). The developmental stages of microspores inside the anthers were determined by 1% acetocarmine staining. The floral buds (Figure 1) and the microspore developmental stages (Figure 2) belong to the same plant.



(A: Meiotic bud; B: Pollen tetrad stage; C to F: Uninucleate stage; G to L: Mature pollen)

Figure 1. (A-L): Morphological variations in floral buds with respect to the microspore developmental stages



(A to B: Meiotic bud; C: Pollen tetrad stage; D to F: Uninucleate stage; G: Mature pollen)

Figure 2. (A-G): Variations in microspore developmental stages in floral buds of *Catharanthus roseus*

2.2. Explant Preparation

The floral buds having anthers at early to late uninucleate stage of development were subjected to optimal cold pretreatment at 8°C for 10 days [19]. The pretreated floral buds were surface sterilized in 1% labogent, 0.1% mercuric chloride and 50% ethanol for 5 minutes, 2 minutes and 2 minutes respectively, followed by two successive wash by distilled water for 2 minutes each.

2.3. Anther Culture

The pretreated anthers were excised from surface sterilized floral buds. Anthers were cultured in agar solidified MS media having variables as different types and concentrations of carbon source i.e. sucrose, glucose, maltose, and galactose at 30 gm/l, 50 gm/l and 70 gm/l. A constant pre-optimized growth regulators combination i.e. 7 mg/l 2,4-D, NAA 0.5 mg/l and BAP 1.5 mg/l was utilized for calli induction [20]. In every experimental set, 100 anthers were inoculated to evaluate the rate of androgenic callus induction. Culture conditions were maintained at 25±1°C temperature, 50–60% relative humidity and complete 24 hours dark period. Control set without carbohydrate was also run.

The Embryo Like Structures (ELS) developed on induced callus were maintained on Himedia's MS media PT100 supplemented with ABA 0.01 mg/l, GA_3 5.0 mg/l, and myo-inositol 100 mg/l for 10 days under 16 hours light period. Later, such ELS were cultured on MS media supplemented with BAP, Kinetin (KIN) and NAA. Culture conditions were maintained at 25±1°C temperature, 50–60% relative humidity and 16 hours light period. Control set without growth regulators was also run. All the experiments were repeated three times.

2.4. Ploidy Analysis

The ploidy status of induced callus and leaves from plant regenerated was analyzed. The selection done was random; 30 callus samples and 10 leaves were examined by Applied Biosystems attune acoustic focusing flow cytometer.

2.5. Data Analysis

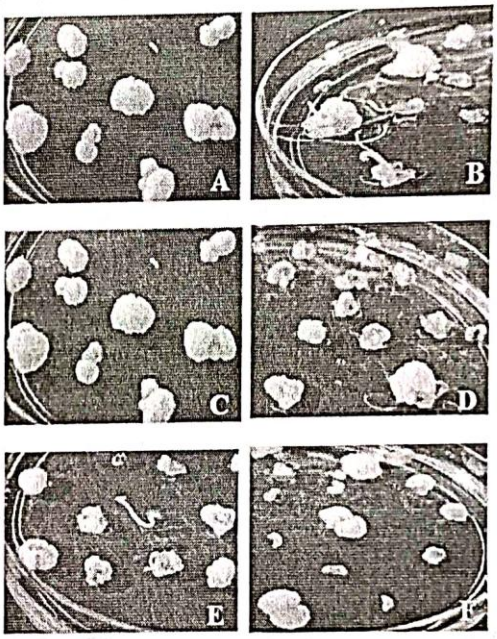
All experiments were repeated thrice and the data obtained were subjected to ANOVA at 95% confidence interval through Graphpad Prism version 6.

3. Results

3.1. Inductive Effects of Carbohydrates

The obtained results for the callus induction experiments confirmed the influential inductive effect of studied carbohydrates. The derived data subjected to two-way ANOVA with Dunnett's multiple comparison test with control showed that all the means were significant at $P<0.05$ for calli induction.

The first response in callus induction was noted after 21 days in glucose at 50 gm/l. An indirect androgenesis was observed as the anther culture responded by forming callus via repeated divisions of microspore. The maximum percentage of callus induction was found in sucrose at 30 gm/l at i.e. 69.66 ± 1.52% (Figure 3 A, Figure 4) and least was observed in galactose at 70 gm/l i.e. 40.33 ± 4.16% (Figure 4). The time required to respond in maximum and minimum callus inducing concentration was 25 and 28 days respectively.

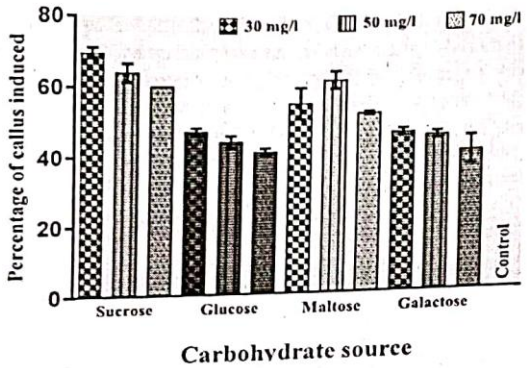


(A: 30 gm/l Sucrose; B: 30 gm/l Maltose; C: 50 gm/l Sucrose; D: 50 gm/l Maltose; E: 30gm/l Glucose; F: 30 gm/l Galactose)

Figure 3. (A-F): A variable response in androgenic callus induction in *Catharanthus roseus* (L.) G. Don. in different types and concentrations of carbohydrates

In the performed experiment, all four carbohydrates showed inhibition in callus induction at high concentration i.e. 70 mg/l (Figure 4). Except for maltose at 50 gm/l (Figure 3 D, Figure 4), all three carbohydrates performed well at 30 gm/l concentration as compared to other two concentrations (Figure 3 A, E, F and Figure 4). At high induction rate among all four carbohydrates order of influence is sucrose > maltose > glucose > galactose. With an increase in the concentration of each source, although there is a difference among induction efficiency at each level but no significant notable differences were observed in all carbohydrate sources except maltose (Figure 3 A-F and Figure 4). All the carbohydrates showed the decreased

rate of calli induction with increasing concentration of carbohydrate source from 30 gm/l, 50 gm/l, and 70 gm/l, except maltose. In maltose, rate of influence was 50 gm/l > 30 gm/l > 70 gm/l.



The experiment was repeated three times and two-way ANOVA with Dunnett's multiple comparison test with control showed that all mean were significant at $P < 0.05$ for calli induction

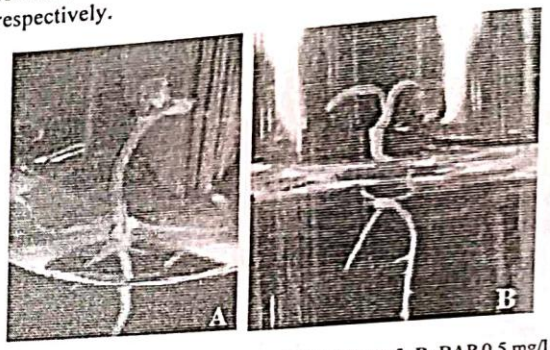
Figure 4. Percentage of calli induction in various types and concentrations of carbohydrates in anther culture of *Catharanthus roseus* (L.) G. Don

3.2. Plant Regeneration via Embryo Like Structures

All experimental sets resulted in the formation of calli which sometimes bears the embryo like structures. Such developed ELS were utilized for plant regeneration. The developed ELS were incubated for maintenance of viability and vigor and then cultured on twelve combinations of plant growth regulators along with one control set.

The obtained results showed an inadequate response in plant regeneration and instability of culture, as the plantlets developed could not reach the maturity. In the observations for plant regeneration, the shoot induction/initiation assumed to be differing from plant regeneration. The shoot induction means the stage when ELS show bifurcation or development of green coloration at the apical position. Whereas, shoot regeneration means conversion of bifurcation or developed green coloration into the green leaf like structures.

The first response was noted after 40 days in 1.5 mg/l BAP. Out of thirteen sets, only eight combinations showed shoot induction by forming bifurcation at the apical tip. But out of those, only two combinations i.e. BAP, Kinetin and NAA at 0.5 mg/l, 1.0 mg/l and 0.5 mg/l respectively along with BAP, Kinetin and NAA at 1.0 mg/l, 0.5 mg/l and 0.5 mg/l respectively were found to be beneficial for plantlets formation (Figure 5 A,B). These regenerated plantlets were able to attain a maximum of 3.0±0.2 cm shoot length. Establishment of prolonged culture was not possible. Among all twelve combinations, seven sets were responded by shoot initiation but the rate of initiation was found to be low. The best induction and best regeneration response were noted in the same combination i.e. BAP, Kinetin, and NAA at 1.0 mg/l, 0.5 mg/l and 0.5 mg/l respectively.



(A: BAP 1.0 mg/l, Kinetin 0.5 mg/l and NAA 0.5 mg/l; B: BAP 0.5 mg/l, Kinetin1.0 mg/l and NAA 0.5 mg/l).

Figure 5. (A-B) The response of ELS showing shoot regeneration in *Catharanthus roseus*(L.) G. Don. in MS media

3.3. Ploidy Analysis

The flow cytometry analysis of randomly selected thirty calli and ten leaves samples revealed 78% haploid callus, whereas diploids were 12.24% and aneuploids were 9.76%. While out of ten randomly sampled leaflets of the plants regenerated from ELS, nine showed haploid status i.e. 99%.

4. Discussion

Earlier reports on anther culture of *Catharanthus roseus* don't perform experiments to deduce the efficient carbon source [15-18].

The obtained dominance of sucrose over maltose in callus induction can be due to the fact that maltose is hydrolyzed 20 times slower than sucrose, so the absorption and metabolism of maltose as compared to sucrose required more time. Such effect of maltose leads to the decline in level of carbohydrates and consequently low available carbon skeleton and energy for growth and development. Also, the slow growth of callus under the influence of maltose was reported to be associated with the enhanced protein synthesis and decline in starch and hexose endogenous levels [21]. Like present report for maltose, in barley anther culture, a relatively high concentration of maltose i.e. 62 gm/l in the induction medium has been proven successful. Also, maltose could be used from 60 gm/l to 90 gm/l in anther culture of rye, rice, and wheat [22]. Studies on *Petunia* anther culture reported the inhibitory effect of fructose and glucose to pollen [23]. For *Clementine* anther culture, galactose at 9 gm/l and lactose at 18 gm/l are frequently used [24]. Similar to present findings, sucrose was found to be the

excellent carbohydrate source, compared to glucose in the anther culture of two mandarin cultivars and two *Clementine* [25]. In contrast to the present findings, glucose performed better than sucrose in rye culture [26].

Parallel to a current study, results noted by Mousa [27] revealed that in Broccoli (*Brassica oleracea* var italica), higher percentage of androgenic embryoids (90%) was produced on MS medium with sucrose concentration (30 gm/l). Results obtained for the choice of carbon source in anther culture of *Brassica oleracea* L. for callus and shoot development are in accordance with the present study [28]. Ismaili and Mohammadi [29], reported maximum embryogenesis in YPm basal medium supplemented with 60 gm/l sucrose and the lowest rate was observed in medium with 60 gm/l maltose. High concentrations of sucrose or maltose were found to be essential for embryogenesis in anther culture of maize.

In the case of plant regeneration, Kim *et al.*, [17] reported the low frequency of plant regeneration via embryogenesis in *Catharanthus roseus*. But all the developed plants were somatic in origin and diploids, no haploid regeneration was reported. Unlike this, Lee *et al.*, [18] obtained efficient plant regeneration via embryogenesis in *C. roseus* but the ploidy analysis for knowing the somatic or gametic origin of regenerants was not reported. George, [16] obtained no embryogenesis and no plant regeneration in anther culture of *C. roseus* and reported only 5% response for calli production. Calli thus obtained was all reported to be diploid.

In contrast to the efficiency of the present report, Lantos *et al.*, [30] reported an efficient anther culture protocol for spelt wheat. The number of ELS was produced 62.2 per 100 anthers. The culture of ELS regenerated 30.6 green plantlets per 100 cultured anthers. The rate of green plantlets generation was 89.0%. Whereas, Kahrizi *et al.*, [31] reported a low success rate of androgenesis is on *Hordeum vulgare* L. The results obtained showed the effect of genotype on embryo induction and total plant regeneration. The best results for embryo production, green and total plant regeneration were reported to be 74.792%, 7.293%, and 17.29%, respectively. This relation between high rates of embryoids induction with low rate of plant regeneration is also evident in the present report.

The obtained ploidy variation during culture is also affirmative with respect to the ploidy variation occurs during culture period in various genotypes. Along with haploids or DHs, non-haploids i.e. diploid, triploid, tetraploid, pentaploid, hexaploid, aneuploid have also been reported for various genotypes in anther culture studies [32].

5. Conclusions

In the studies on androgenesis in *Catharanthus roseus* (L.) G. Don. various conclusions were drawn from the experiments conducted. It was concluded that sucrose at 30 gm/l was more beneficial than other three carbon sources, except in maltose. The ELS produced required incubation on media were designed for maintenance of vigor and viability. But still, a low regeneration rate was achieved with the combination of 1 mg/l BAP, 0.5 mg/l Kinetin and 0.5 mg/l NAA. In the ploidy analysis, it is concluded that *Catharanthus roseus* showed haploid regeneration tendencies and also possessed the tendency for spontaneous double haploids production.

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ALGAL BIO-DIVERSITY OF PEDHI RIVER OF AMRAVATI DISTRICT, MAHARASHTRA, INDIA

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ABSTRACT

Freshwater algae belong to numerous evolutionary lineages and the flora of any aquatic system has many species from some or all of these lineages. These algae have a range in morphology from single cells, flagellates, colonies and unbranched or branched filaments. This study was undertaken to know the algal diversity and population in Pedhi river of tahsil Bhatkuli belongs to Amravati district. The samples were collected during the year 2018-2019 for three consecutive months. 71 algal taxa were recorded from this site. Of these, 9 belonging to cyanophyceae, 36 belong to chlorophyceae, 24 belong to Bacillariophyceae, 1 belongs to Xanthophyceae and 1 belongs to Euglenophyceae.

Keywords: Algae, Pedhi river, Cyanophyceae, Chlorophyceae, Bacillariophyceae, Xanthophyceae, Euglenophyceae.

I. INTRODUCTION

Some 3.5 billion years ago prokaryotic life began on the planet in the absence of oxygen. The cyanobacteria (blue–green algae) arose and began releasing oxygen into the atmosphere as the waste product of chlorophyll a-mediated photosynthesis. Algae in the oceans, rivers, and lakes of the world are thought to produce about half of all the oxygen produced on the planet (Strateg, 2013). They play a crucial role in the aquatic ecosystem to absorb nutrients, toxic material, heavy metals and convert it into simplest form. There is no easy definition of an alga. Algae are generally single celled to multicellular microscopic organism, are usually thought of simple aquatic plants which do not have roots, stems, or leaves and have primitive methods of reproduction. They fix the carbon dioxide from air and release valuable oxygen for the living organism.

Algae live in a wide range of aquatic environments and are a natural component of the most aquatic ecosystems. They occur in the lentic (standing water) as well as lotic water (running water). And many of them terrestrial which is living in soil and snow or in association with other organisms, especially fungi (as lichens) and animals, Aquatic algae are found in both fresh and marine waters, they rang in large size (kelp) to those visible only under a microscope. Some algae have an economic importance because they are a source of carotene, glycerol, and alginates and can be converted into a food source for aquaculture. Algae vary considerably in size, shape, and growth form. They can be single celled either colonial or as filamentous cells.

Algae have been intimately connected directly or indirectly with human beings as a source of food, fodder and manure. Other countries of the world are actively engaged in exploring ways to exploit algae as a potent source of food to combat the problem of rapidly growing world population and also as a possible source in space flight.

In our area, there is a water body namely Pedhi river which is utilized by peoples leaving there for various purposes. Pedhi river situated at Bhatkuli region come under district Amravati. If we explore algal flora from denoted river we can able to know the algal variations from this reservoir and that can be useful for future generation. It is a need of hours and today world to know the each and every thing of this plant world. For this, we have taken this investigation for research study. Through this study the people will come to know about the flora of their district and flora of this river in particular. It may be the boon for school students, Colleges students, Researchers, Teachers, Scientist etc. and can be benefited. From this study the data can be available for all the readers who came to know about this type of study.

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Different authors reported the freshwater algae from different regions of India, (Dwivedi and Pandey,2002); (Jena M *et al.*,2006); (Kalwale and Savale,2012); (Dalal *et al.*,2012); (Sarode and Kamat,1983); (Tarar *et al.*,1998) and (Agrawal, 2018).

II. MATERIAL AND METHOD

The research was conducted in the year 2018-2019 for three consecutive months. The study was under taken on Pedhi river of Amravati District, Maharashtra, India. The analysis of samples was carried out at Dept. of Botany, M.J.F. Comm., Sci. and V.R. Arts College, Bhatkuli. Pedhi river rises in hills near Rithpur in Morshi tahsil. The Pedhi flows in easterly direction, after crossing the district it turns westwards and north-westwards to join the Purna river, Rithpur,Walgaon and Bhatkuli are few important villages at banks of the river. It is one of the water-supply sources to the city of Amravati.

The water samples was collected at a depth of more than one feet with the help of sterilized forceps & employing new unused polythene bags/cans of two liter capacity. The samples were washed with 2-3% Acetic acid in order to clear the algal material from organic matter, sand and silt particles. Then it was preserved in the 3-4% formalin at the spot in glass bottles and flasks. A common method of obtaining pure culture is serial dilution. To identify the algal material, it was stained with 1% iodine solution and examined under research microscope. The photography was made with the help of micro image projection system (MIPS) and identification of different taxa was done with the help of standard keys given by Cyanophyta (Desikachary,1959) and also with the help of available literature like textbook on algae (Kamat,1975), Handbook of algae (Forest,1954). The freshwater algae (Prescott, 1954) and Different Journals, Research papers. Identified algal floras of three months during the period July 2018 to October 2018 are listed in the following table belonging to algal groups Cyanophyceae, Chlorophyceae, Bacillariophyceae, Xanthophyceae and Euglenophyceae.

III. RESULT AND DISCUSSION

Table-1: Algal Bio-diversity during the period July 2018 to October 2018

Algal group (Family)	Name of the algae	Total number of species
Cyanophyceae	*Gloeocapsa puctata* *Gloeothece samoensis* *Anabaena cylindrica* *Spirulina subtilissima* *Spirulina laxissima* *Nostoc commune* *Phormidium sp.* *Merismopedia punctata* *Scytonema sp.*	9
Chlorophyceae	*Chlorela regularis* *Mougeotia sp.* *Cosmarium reniforme* *Cosmarium contractum* *Cosmarium depressum* *Cosmarium supergranatum* *Cosmarium turpinii* *Cosmarium subcucumis* *Cosmarium botrytis*	36

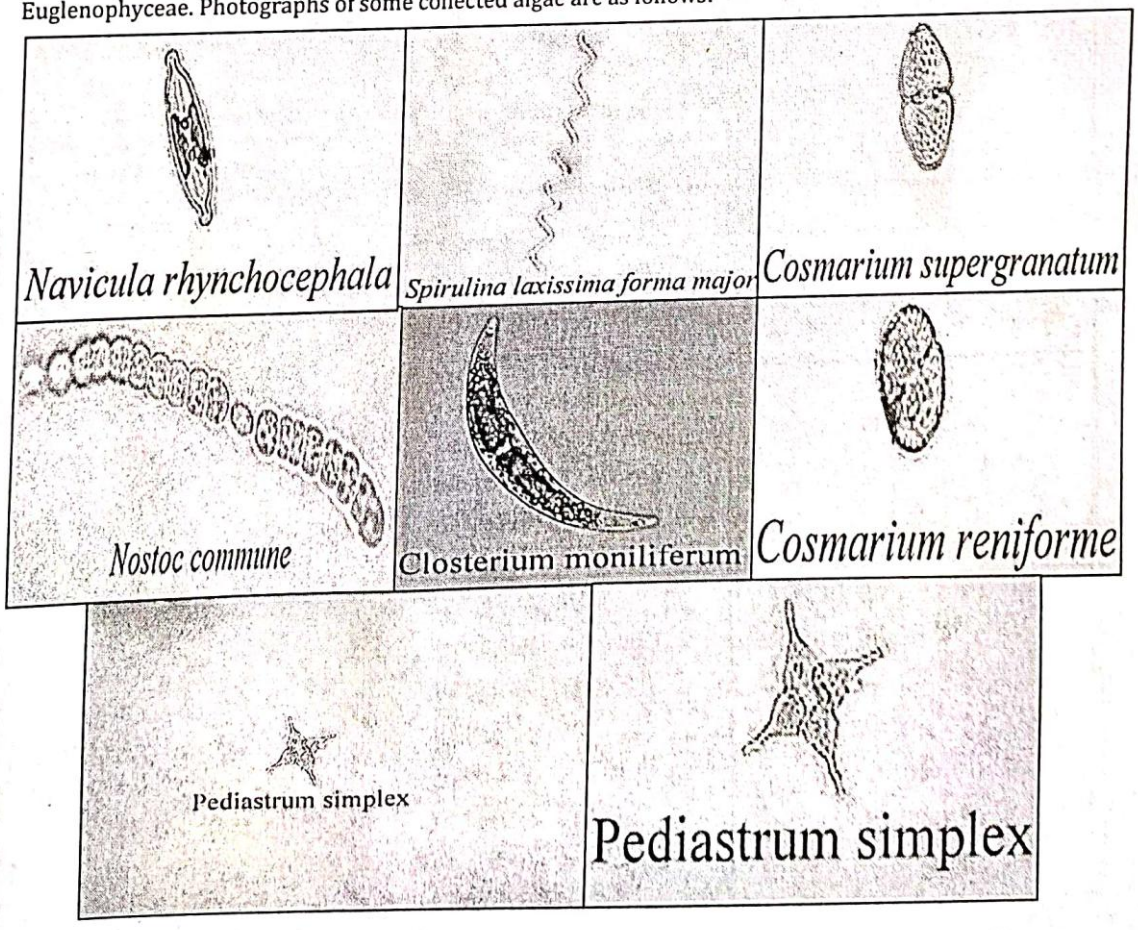
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	Oedogonium sp. *Closterium moniliforme* *Closterium galeria* *Closterium acutum* *Closterium pronum* *Hydrodictyon reticulatum* *Pediastrum biradiatum* *Pediastrum boryanum* *Pediastrum simplex* *Pithophora sp.* *Scenedesmus obliquus* *Scenedesmus bijuga* *Scenedesmus acuminate* *Scenedesmus quadricauda* *Scenedesmus dimorphus* *Scenedesmus opoliensis* *Volvox sp.* *Eudorina sp.* *Spirogyra sp.* *Staurastrum natator* *Staurastrum gracile* *Staurastrum orbiculare* *Pseudostaurastrum lobulatum* *Planktosphaeria gelatinosa* *Quadrigula closterioides* *Crucigenia tetrapedia* *Euastrum ampullaceum*	
Bacillariophyceae	*Navicula radiosa* *Navicula gregaria* *Navicula cryptocephala* *Navicula rhyncocephala* *Pinnularia nobilis* *Pinnularia major* *Pinnularia acrosphaeri* *Pinnularia interrupta* *Pinnularia trevelyana* *Pinnularia actinosphaerium* *Actinosphaerium sp.* *Amphiplura pellucida* *Stauroneis anceps*	24

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	Epithemia zebra *Hantzschia amphioxys* *Gyrosigma sp.* *Tabellariafenestrata sp.* *Melosira variance* *Amphora ovalis* *Fragilaria construens* *Gomphonema affine* *Coconeis* *Cyclotella meneghiniana* *Synedra sp.*	
Xanthophyceae	*Chlorobotrys regularis*	1
Euglenophyceae	*Euglena*	1

From the above table, it was observed that this river has a collection of so many algal genera of different classes. 71 algal taxa were recorded from this site. Of these, 9 belonging to cyanophyceae, 36 belong to chlorophyceae, 24 belong to Bacillariophyceae, 1 belongs to Xanthophyceae and 1 belongs to Euglenophyceae. Photographs of some collected algae are as follows:



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This river shows the presence of various algal forms. These results were in conformity with (Anilkumar, 2000); (Rai and Kumar, 1979) and (Zafar, 1967).

IV. CONCLUSION

From the above results, it was concluded that this river had a diversified algal flora in which 36-chlorophycean members was more dominant in water area followed by 24-members of Bacillariophyceae and 9-members of Cyanophyceae i.e. chlorophyceae group was dominated algal group. On the basis of total number of algal species recorded during investigation *Cosmarium sp.* followed by *Scenedesmus, Pinnularia, Closterium, Navicula etc.* were found to be the most dominant algae in this reservoir.

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Effect of *Callistemon citrinus* (Curtis) Skeels on the growth of *Aspergillus niger* and *Aspergillus fumigatus*

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Abstract
Most of us spend about 90 percent of our time indoors, so the quality of the air we breathe is very important. Concerns about health issues, most commonly allergic reactions from inhaling fungal spores has prompted some homeowners to hire professionals to sample the air in their homes. The indoor fungal spore concentration varies with the season of the year and climate. In the last year i.e. 2013, heavy rain was recorded. Due to this most of the parts of indoor walls of the homes or buildings were damaged by fungal growth. *Aspergillus niger* and *Aspergillus fumigatus* was mainly isolated from the walls of selected home and antifungal activity was performed against isolated fungi by using different solvent extracts of *Callistemon citrinus*. Antifungal activity was done by disc diffusion method. Acetone extract of *Callistemon citrinus* showed highest antifungal activity.

Key-Words: *Aspergillus niger, Aspergillus fumigatus, Callistemon citrinus,* Antifungal activity, Disc diffusion method.

I] Introduction

Normal indoor conditions provide a suitable environment for the growth of a wide range of fungal spores. The presence of moisture or high relative humidity (RH) is a sufficient catalyst for the germination and growth of fungal spores. Fungal spores are found everywhere inside and outside and can grow on almost any substance when moisture is present. Spores, which can be carried by air currents. When these spores land on a moist surface that is suitable for life, they begin to grow. Fungi are normally found indoors at levels that do not affect most healthy individuals.

Common building materials are capable of sustaining fungal growth and fungal spores are ubiquitous. Fungal growth in an indoor environment is typically related to water or moisture indoors. Fungal growth may also be caused by incomplete drying of flooring materials such as concrete. Flooding, leaky roofs, building maintenance problems or indoor plumbing problems can lead to mold growth inside. For significant fungal growth to occur there must be a source of water, a source of food and a substrate capable of sustaining growth. Common building materials such as plywood, drywall, furring strips, carpets and carpet padding are food for fungi. After a single incident of water damage occurs in a building, fungi grow inside walls and then become dormant until a subsequent incident of high humidity; this illustrates how fungi can appear to be a sudden problem long after a previous flood or water incident that did not produce such a problem.

If there is fungus problem in a house only during certain times of the year then it is probably either too airtight or too drafty. Mold problems occur in airtight homes more frequently in the warmer months (when humidity reaches high levels inside the house and moisture is trapped) and occur in drafty homes more frequently in the colder months (when warm air escapes from the living area into unconditioned space and condenses). Just as fungi grow behind walls you can also sometimes find fungi growing on the other side of ceilings. Fungal colonies growing above ceilings are usually fed by water from a leaking roof. For clues that, fungi could be growing above the ceiling in home look for sign of water damage in the ceiling. Small patches of mold growth visible from under the ceiling can be a sign of large colony of mold on the other side. Common sources or causes of water or moisture problems include roof leaks, deferred maintenance, condensation associated with high humidity or cold spots in the building, localized flooding due to plumbing failures or heavy rains, slow leaks in plumbing fixtures and malfunction or poor design of humidification systems[1-3]. Uncontrolled humidity can also be a source of moisture leading to mold growth particularly in humid climates. Grayson, (1972) conducted indoor airborne microfungi during twelve months from forty four Danish homes[4]. Miller *et al.*, (1988) reported fungi and fungal products in some Canadian houses[5]. Li and Kuo, (1994) stated characteristics of airborne microfungi in subtropical homes[6]. Emberlin *et al.*, (1995) observed incidence of fungal spores in the ambient air and inside homes in London[7]. Majumdar and Barui, (2005) observed intramural aeromycoflora of residential houses in Kolkata, West Bengal [8].

II] Methodology

Our home is a very important part of our life where we spend our most of the time. We always want to keep our home as clean as possible. In this year 2013, during the rainy season heavy rain was recorded. Due to heavy rain most of the part of indoor walls of the homes or buildings was damaged by fungal growth. In our investigation, we

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mainly isolated two fungal species from the damaged walls of home and carried out antifungal activity on that fungal species. For this work we selected one home of Wardha city, which is at North-South direction (Figure 1).

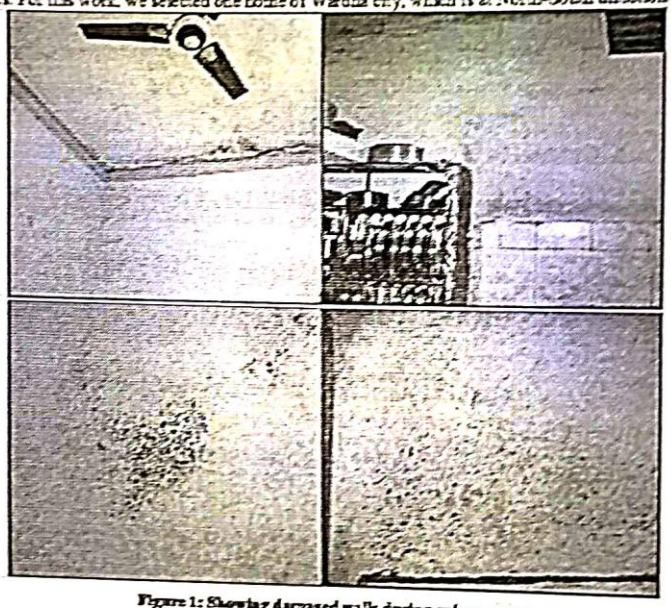


Figure 1: Showing damaged walls during rainy season.

i) Fungi isolated from damaged walls

Fungi were isolated from the inside part of walls of selected home by scratching it with the sterilized needle or cotton swabs on the petri-plate containing Potato Dextrose Agar (PDA) and Czapek Dox Agar (CzA). The plates were sealed with paraffin tapes and kept for 4-5 days in the biological incubator at 28 ± 1°C. After the occurrence of number of colonies on mother plates, each colony was inoculated on the separate petriplates containing the PDA and CzA media. The plates were sealed with paraffin tapes and kept for 4-5 days in the biological incubator at 28 ± 1° C, to allow fungal growth[9,12]. Then the fungal isolates were transferred to slants. For species identification, specimen microscopic slides were prepared by employing glycerin jelly as mounting media and lacto-phenol cotton blue as the standard stain. The fungal species were identified with the help of available literature.

Our home is very valuable for all of us and so, it deserves to be maintained in its original condition. Thus the further investigation is to find out the remediation on isolated fungal species. The leaves of *Callistemon citrinus* (Curtis) Skeels was selected for the antifungal activity on isolated fungal species. Antifungal activity was determined by disc diffusion method [13].

ii) Collection of plant material

The leaves of *Callistemon citrinus* was collected from the college campus and nearby areas of J.B. College of Science, Wardha (M.S.). The collected leaves were separately shade dried at room temperature, finely powdered and used for the experimental work.

iii) Extraction

For solvent extract, 20 grams of plant powder was filled in the thimble and extracted successively with the solvents n-Hexane, Petroleum ether, Ethanol, Acetone and Chloroform. This process was employed by soxhlet extractor till the solvent in the siphon tube of an extractor becomes colorless. After extraction, extracts was filtered through Whatman No.1 filter paper then all extracts was evaporated to dryness under reduced pressure at 40° C in oven and preserved at 5°C in airtight brown bottles for further use.

iv) Antifungal activity assay by disc diffusion method

To evaluate the antifungal activity, sterile agar plates were used according to the disc diffusion method[14]. Isolated cultures of fungal strains of *Aspergillus niger* and *Aspergillus fumigatus* in Sabouraud's broth were adjusted to 1x 108 cfu/ml as per Mcfarland standard. 100 ml of the inoculums was introduced to molten sabouraud dextrose agar

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and poured in the sterile petri plates. Sterile filter paper discs (7.0 mm diameter) were impregnated with 250 mg/disc of the plant extract dissolved in the selected solvents and dried. The discs were placed on fungal seeded plates and incubated at 28°C for 48 h. Discs impregnated with only pure solvents served as the negative control. As a positive control, Clotrimazole (10 mcg/disc) was used. Following an incubation period of 7 days, plates were removed from the incubator and antifungal activity was evaluated by measuring zones of inhibition of fungal growth. Clear zones within which fungal growth was absent were measured and recorded as the diameter in mm of complete growth inhibition. The whole experiment was performed in triplicates to minimize error.

III] Results and Discussion

Effect of the 250mg/disc concentration of *Callistemon citrinus* plant solvent extracts were tested against isolated fungal species. *Callistenon citrinus* was found to be effective against *Aspergillus niger* but all solvent extracts of *Callistemon citrinus* have not shown any zone of inhibition against *Aspergillus fumigatus*. Acetone solvent extract of *Callistemon citrinus* shows highest zone of inhibition against *Aspergillus niger* and lowest zone of inhibition was recorded by n-Hexane and Ethanol solvent extract against *Aspergillus niger*. Chloroform extract of *Callistemon citrinus* have not shown any type of activity against *Aspergillus niger*. Clotrimazol was used as standard antifungal agent. The antifungal activity of the screened plant extracts against isolated *Aspergillus niger* and *Aspergillus fumigatus* fungal species is depicted in Table 1. Zone of inhibition of *Aspergillus niger* are as shown in Figure 2.

Table 1: Screening of solvent extracts of *Callistemon citrinus* for antifungal activity against isolated fungi.

Plant used	Inhibition zone (mm)	
Callistemon citrinus (Curtis) Skeels	*Aspergillus niger*	*Aspergillus fumigatus*
n-Hexane	9	-
Pet-ether	10	-
Ethanol	9	-
Acetone	11	-
Chloroform	-	-
Clotrimazole	24	22

(-) = No distinct zone of inhibition, Values is the mean of three replicates.

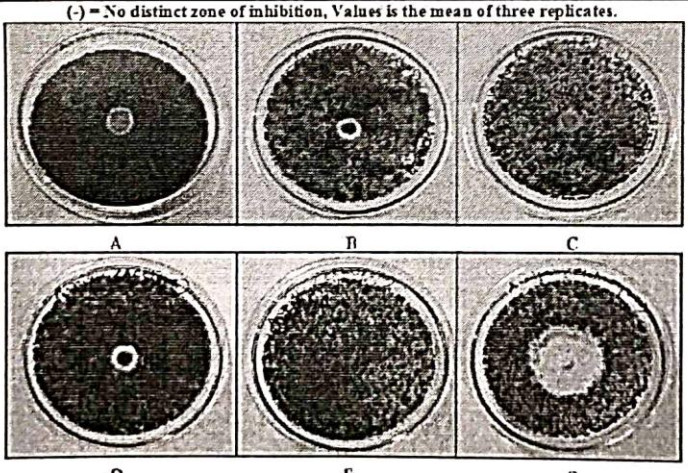


Figure 2: Showing zone of inhibition of *Aspergillus niger*.

A= Zone of inhibition of n-Hexane extract of *Callistemon citrinus*, B= Zone of inhibition of Petroleum ether extract of *Callistemon citrinus*, C= Zone of inhibition of Ethanol extract of *Callistemon citrinus*, D= Zone of inhibition of Acetone extract of *Callistemon citrinus*, E= Zone of inhibition of Chloroform extract of *Callistemon citrinus*, F= Zone of inhibition of Clotrimazol

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IV] Conclusion

From the results obtained, it was concluded that chloroform solvent extract was found to be less effective against both the isolated fungal species than the other solvents extracts. The growth of *Aspergillus fumigatus* was not inhibited by all the used plant solvent extracts. It shows that *Aspergillus fumigatus* needs to treat with some other or stronger doses of plant extracts.

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Quest for identity in Chetan Bhagat's 'One Indian Girl'

Shashikant Shinde & Madhuri Phule

Abstract:

Feminism is basically defined as fair conduct that does not propose gender discrimination. 'Woman' the most beautiful creation of God on the Earth has always been crafted as 'Secondary' in this male dominant world. Though she has proved her excellence in all phases of life, she is not treated at par her capabilities. This paper aims at revealing the same feminine sensibilities of every woman who is still searching her place as individual in this patriarchal social system through Radhika, a female protagonist in 'One Indian Girl' written by Chetan Bhagat.

Introduction:

Chetan Bhagat is an Indian writer, journalist, and screenwriter. Chetan Bhagat's novels are adjusted into fruitful motion pictures. A large portion of his perspectives are centered around youth and issues dependent on national improvement which involves the most significant part in the general public. He additionally assumes the

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job of inspirational orator which superbly working out by getting a handle on the psyches of youthful age with great deeds and considerations. He is one of the best creators and his novels granted as top of the line novels. He quit his financial profession in 2009 so as to get changes the general public. He chose to lead as long as he can remember as an essayist. Chetan Bhagat has presented some one of kind patterns in the Indian English writing. He has written six successful novels before 'One Indian Girl'.

Every human being is supposed to be born as free by birth. Humans are considered the most wonderful creation of God and have been bestowed upon equal rights to both Men and Women. But actual situation of both men and women has a vast difference in real life. One is considered superior and another inferior. This inferiority has been imposed on women by men considering them submissive, weak, and oppressive. To bring change in this status quo of women some reformists came forward and started a movement called 'Feminism'.

Feminism is basically defined as fair conduct that does not propose gender discrimination. 'Woman', the most beautiful creation of God on the Earth has always been crafted as 'Secondary' in this male dominant world. Though she has proved her excellence in all phases of life, she is not treated at par her capabilities. Indian writers in English have been depicting in their novels, awful conditions of subjugation, desperate dependence and above all denial of domestic, social and economic freedom by men.

This novel of Chetan Bhagat 'One Indian Girl' reveals the same situation about a middle class Indian girl Radhika Mehta who gets job in a world renowned investment bank 'Goldman Sachs' soon after completing her education. She soon earns dollars and is considered as an independent girl by her parents.

Even though Chetan Bhagat has portrayed Radhika Mehta as educated, independent, self-opined girl, she has inner feeling of suppression that reveals her quest for identity. In the very beginning of the story she says,

> Hi, I am Radhika Mehta and I am getting married this week, I am twenty seven years old, I grew in Delhi, I now work in London at Goldman Sachs, an investment bank. I am vice president in distressed debt group. Thank you for reading my story. However, let me warn you cannot like me much. One - I make lot of money, Two - I have an opinion on everything, Three - I have had sex. Now if I was a guy you would be ok with all of this but since I am girl these three things don't really make me too likeable, do they? 1 (P.7 OIG).

Though, here Radhika seems to be very confident and successful but her inner strain being the 'Second sex' clearly reflects her quest for identity as an individual.

The novel itself speaks about female psyche in India where women have always been considered secondary as compared to men. Even though women in India are given so called status of Goddess but in reality they are not treated at par the status of God. On the contrary, event like 'Save Girl Child' needs to be campaigned.

Feminine Sensibilities in Radhika Mehta:

Chetan Bhagat has presented Radhika under the flag of feminism. He has also become successful in doing so to some extent but woman in her does not seem to be satisfied. No matter how successful a girl can be, how she is unwelcomed in the Indian families is stated by her in this novel. Radhika Says,

> My parents wanted a son for their first born when Aditi (her elder sister in the novel) came, they had to undo the damage as soon as possible. Hence my father, SBI Naraina Vihar Branch Manager Sudarshan Mehta decided to have another child with his homemaker wife Aprna Mehta, sadly for them; the second was also a girl, which was me.2 (P.7 .OIG)

If we closely observe her feelings we come to know that how unhappy and frustrated she is being a girl. Even the words

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she uses to express her feelings like 'undo damages' and 'first born' tell us how she compares masculine superiority of her father stating his designation and feminine inferiority stating her mother as 'house maker wife'.'Radhika wants to be an individual identity who will live her life as per her own choice. Even though she has successful career but how difficult it is to make choices for a successful women has been stated by Chetan Bhagat in one of his interviews when he was being asked questions on 'One Indian Girl'. He says,

> When a woman becomes super successful; she becomes bit of a mystic in society. They find it hard it get a boyfriend. We know very well what to do with a girl if she conforms to traditional routine, domestic routine. But the moment a woman gets empowered, is successful, they find it difficult to get a man who accepts her as she is.

Here in this novel Radhika Mehta faces the same problem when her mother asks her to marry when Radhika joins IIMA. Radhika always refuses to marry early as she wants to make her career. After completing her studies in IIMA, she is selected in very first interview for a world renounced investment bank. She calls her mother and says,

> I got an offer to be an associate at Goldman Sachs, New York. The job paid an annual compensation of 120,000 dollars. Forty Eight lakhs rupees a year, four lakhs a month, I heard nothing in response. Most likely she had fainted. Radhika again asks her mom, Are you there mom? Her mother says, how will I ever find a boy for you? What she cares about was its impact on her groom'shunt.3 (P.9 OIG.).

This is again a very strange situation where even the most successful women in India find very difficult to cope with. For a woman, to be successful also push them into identity crisis and make them realizes of their secondaryness in this patriarchal system. Radhika's approach and thinking is revolt against male-oriented society from the beginning. Radhika does not want to tolerate anything in the name of girl's side. It is her wish to see everything

on equal term. Her reaction against her mother is the ultimate sign of her strong will and determination. Even on the occasion of her marriage ceremony when she is advised by her mother to behave like other daughters or bridges, submissive and secondary. She replies,

> Do not use this girls' side and boy's side logic with me again. I don't like it, I said. Mom and I were sitting in the lobby, ensuring that the staff readied the special check-in desk for the Gulatis. Can you stop waving your feminism flag for a week? This is a wedding not an NGO activist venue, my mother said. 4 (P. 5 OIG.).

Every time throughout the novel we find that Radhika's ego is always crushed by her mother and her two boy friend sat certain situations and she is also advised not to express her feminist type of views by her mother. She is not allowed to behave as free individual.

In 'One Indian Girl 'Chetan Bhagat has portrayed Radhika as a feminist. She is successful, bold, over expressive. In his opinion Radhika Mehata represents the true spirit of feminism through her character. Even though it may be right to same extent but the real woman in Radhika still struggles for her own identity. Many situations in the novel are the evidences of her restlessness that prove; she may be successful professional but is not a successful woman. At the end of the story she denies both her ex-boyfriends Debu and Nil to marry her.

She calls both face to face and makes them realize that how they treated her, more over insulted her when she asked for her rights. She made Debashish Sen (Debu) realize how he could not digest her promotion when she had celebrated the success of him. She says him,

> Debashish Sen, you remember our walk in New York? You said women could do anything, you quoted feminist text. Essentially you said, women could and should fly, nice theory! In real life the girl throws a party for her guy's promotion but the guy cannot handle the girl's bonus. Yes?

BISC Vol 7 • Issue 6 • June 2020 • ISSN 2395-3748

> You said fly, but when I flew high, you wanted to clip my wings. Fly, as long as you fly beneath me, is it?5(P. 258 OIG).

Similarly she explains the reason for denying her another boyfriend Neel by saying,

> Neel, you loved me as the flying bird. You wanted me to fly higher and higher, but you know not where you went wrong? You did not want me to have nest. Equal rights to get what they want, rather than equal rights to the same things men want! 6(P. 258 OIG).

In these lines she made him realize, how he used her just for physical pleasure but when she asked him to marry her, he rejected. These sensibilities in her mind made her realize her importance as an individual at the end of the novel. Radhika's feelings reveal the pathetic attitude of males towards females. Here I would like to quote Arundhati Roy's statement on feminist consciousness. She says, "We truly do live in the age of Irony, in an age when Satire has become meaningless because real life is more satirical than Satire can ever".

This is what exactly happens in Radhika's case. Debu (her boyfriend) could never expect his girlfriend to have gone beyond his expectations of earning money and this was something that he could not digest and so ditches her. Neel, on the other hand wanted Radhika to fly high but rejects to offer her family which is dream of every woman. At last she gives them a clear message when she denies both to marry that a woman wants to be wife and mother on the top of everything but she also wants to be 'herself' as well.

Radhika is quite conscious about her own existence and also quite candid in her approach. She seems to be possessing strong individuality. R.K. Narayan in his novel *The Painter of Signs* has created a strong individual like *Daisy* who would like to lay several grounds before Roman for her marriage. Similarly, Radhika in this novel shows her strong will and determination to retain her individuality and singularity.

Conclusion:

The accomplished woman in the 21st century is strong and independent. She exercises great control over herself and her circumstances seeking to bring transformation in her status. Radhika Mehta is also a 21st century woman and possesses the qualities of a modern and bold woman yet her struggle against this traditional and patriarchal culture for seeking her respective position among them can be stressed in this novel. Though Radhika Mehata lives her life the way she likes but she could never be successful in her attempt to establish her identity as a independent individual in true manner. Woman in her remains thirsty for love and respect what she deserves.

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THE THEME OF HUNGER IN BHATTACHARYA'S *'SO MANY HUNGERS'* AND *'HE WHO RIDES A TIGER'*

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Abstract

Bhabani Bhattacharya is a prominent Indo- Anglian novelist. He is a social realist and great humanist. His novels move around the contemporary era. He has ruthlessly exposed various social evils and aspects of hunger in his novels. The present paper brings out the theme of hunger portrayed in Bhattacharya's two renowned novels 'So Many Hungers' and 'He Who Rides a Tiger'. Under the title of hunger different shades of need, hunger, desire, greed, obsession and lust are brutally revealed in these novels. The novelist has brought forth the horrific era of the Great Bengal Famine of 1943. Both the novels are written on the same backdrop but with fundamental difference in respect of people's attitude towards it. The innocent preys of hunger grab the role of hunters and try to change the whole social set up. This is an effort to explore the different reaction and changed attitude for the same.

Keywords: *peasants, artisans, hunger, poverty, exploitation, starvation, misery, freedom, revolt, etc.*

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THE THEME OF HUNGER IN BHATTACHARYA'S *'SO MANY HUNGERS'* AND *'HE WHO RIDES A TIGER'*

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- Dr. Madhuri K. Plule

INTRODUCTION:

Bhabani Bhattacharya an outstanding Indo-Anglian novelist occupies an important place in the galaxy of Indo-Anglian literature. He belongs to the group of social realist and has rejected the diction of *Art for Art's sake*. The brutal realities of the time brought out the sensitive man and brilliant artist in him. The novelist has witnessed one of the most upheaval period of Indian history. It was a period of 1940s. Indian society was on the threshold of social and political change. The Gandhian Movements had given a progressive step towards *Swaraj* and social reformers were fighting hard for social equality. At this positive start, India had to go through the hideous period of Bengal famine of 1943. The collective outcomes of the events are found in the marvellous fictional creation of Bhabani Bhattacharya's *So Many Hungers* and *He Who Rides a Tiger*. Though both novels project the era of Bengal famine but are portrayed with different perspectives. Starving destitute in *So Many Hungers* are the silent sufferers whereas in *He Who Rides a Tiger* the famine victims raise their voice against social apathy. Both the novels are predominantly woven round the theme of hunger. Professor Chandrasekharan remarks:

> *'He Who Rides a Tiger*, marks a departure from *So Many Hungers* in the sense that though the background is common the former highlights the growing protest in the country. The protest is chiefly against two evils - the evil of exploitation which results in hunger and degradation and the evil of castes.'[1] (J. Prasad. TNOBB Pg.72)

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In the first novel *So Many Hungers* the author discloses the circumstances behind the Bengal famine of 1943. The famine was not a natural disaster due to flood or drought but was man-made scarcity; the actual reasons were rooted in the dark chapter of Second World War. It was a time when the entire world was set on the fire of war. Under the preparational strategy of British Government, the coastal part of Bengal was forcefully evacuated and their boats and stock of rice were snatched away. Without food, shelter and boats these rural people became paralyzed and village economy collapsed. The poor peasants turned into helpless beggars. The novel talks about the horror of period.

Bhattacharya has used two plots to scrutinize the causes and effects of hunger. First plot shows the rich family of Samarendra Basu who lives at Calcutta with his two sons and second plot portrays the story of a peasant girl Kajoli. Two plots are connected by Devesh Basu, father of Samarendra Basu who lives with peasant folks at Baruni. The author reveals slowly, dark to darker shade of hunger through the moving story of Kajoli and her family. Kajoli is the heroine of the present novel. A peasant girl of fourteen has a beautiful dream for her future life, but it breaks horribly, as it says 'it never rains but pours.' Her father and elder brother are sent to prison due to their active participation in India's freedom struggle. In absence of backbone of the family, Kajoli shoulders the responsibilities of her younger brother and aged mother. She works hard in the field; in a course of action she gets wed with city youth Kishore. Unfortunately, her sweet dream of future life breaks again with the arrival of tempest of famine. Finding no hope in village for work and food, Kishore follows the path of other villagers to city. But as it says 'man proposes and God disposes' he is killed by sentry on his way to Calcutta by mistaken identity. The fact remains unrevealed to Kajoli, she waits for her Godot, Kishore till the end of the novel. Pregnant Kajoli stands for any maiden of the village. She tries to fight back but demon of hunger grows bigger with every passing moment. The story portrays the utter helplessness in the wake of famine.

Nothing edible was left around. Without rice and money, Kajoli decides to follow the millions of destitute kith and kin towards the lighthouse 'Calcutta' to get a mouthful and some work. Kajoli, isolated from her husband and excluded from society, suffers the anguish of a tortuous state of loneliness. She leaves the village but misfortune follows her.

JHERS OCT 2020

JOURNAL OF HIGHER EDUCATION AND RESEARCH SOCIETY: A REFEREED INTERNATIONAL
VOL-8 / ISSUE- 2 ISSN- 2349 0209

Hunger turned a peasant girl into a beggar. In exchange of food Kajoli is brutally raped by an Indian soldier and goes through painful abortion. The hunger debases the humanity at the lowest. Kajoli decides to sell her body to feed her ioved once. Fortunately she changes her mind and decides to earn an honest living by turning a newspaper vender.

The hunger for food and its deadly impacts are keenly portrayed in the novel. The innocent people become animals, they start eating what the animal refuse to have. The novel is full of heart-rending scenes of utter helplessness. Bhattacharya pens down the horror of hunger by depicting the incident, a starving mother wants to bury her living child to save him from the torture of hunger and slow death; in the second picture, the readers come across the painful scene of a child clinging and sucking a dead mother's breast. Countless peasant maidens and women were forced to accept prostitution. The novel is full of disturbing incidents. When humiliation becomes a fate of hungry, the rich people treat destitute as a mode of entertainment, soldiers get fun by enjoying helpless gestures of maidens for a coin, they stand bare in front of them, some people feel amazed by getting naked photo of destitute maiden and some licentious demand to show the breast. Bhattacharya in his *So Many Hungers* presents 'What hunger really means'.

Bhattacharya realistically presents the tragedy of Bengal famine of 1943, along with brutal consequences; he also brings into light the actual causes behind devastating famine. Besides alien preparation for war, greedy Indians are found the second culprit behind the Bengal famine. It was the result of obsession for money and power that took millions of innocent lives. The callous people like Sir Lakshminath and Samarandra Basu satisfy their hunger for wealth by holding stock of rice for long time and creating artificial scarcity. The web is created from small trader of village to main director of 'Company *sarkar*', and the web becomes woollier with additional self-interests. And peasants become silent sufferers of this inhuman greed.

Through the character Samarendra Basu and Sir Lakshminath, we come across the hunger for more money, social prestige, titles, riches and sex. The name Sir Lakshminath reveals itself his interest in money, he is called 'the prince of the black market' and also business partner of Samarendra in rice trade. He comes from Western province in order to exploit the famine situation for making money. The character also reveals sexist social

JHERS OCT 2020

JOURNAL OF HIGHER EDUCATION AND RESEARCH SOCIETY: A REFEREED INTERNATIONAL
VOL-8 / ISSUE- 2 ISSN- 2349 0209

stance for destitute maidens. At time of famine rice and women were in demand. Destitute maidens became an easy prey to satisfy hunger for sex. In the name of social service, Lakshminath seduces helpless girls. He is presented as an expert player in flesh trade who takes advantage of the destitute' dilemma: whether to starve or sell one's body. He is the head of the brothel, one of the fastest growing businesses of the city.

The selfless hunger for human betterment and political freedom bring the positive note in the novel. Rahoul wants to form a new world on higher values. He is a scientist and great patriotic soul. He has strong feeling for humanity and betterment for common people. His constant hunger for people's welfare never allows him to sit quiet. He is deeply influenced by his grandfather, Devesh Basu, a true follower of Gandhian ideology. We find the shade of humanism in his hunger for human betterment. The theme of the novel touches the core of human heart. The novel mirrors the naked horror of famine, ruthlessness of society and above all the psychological and superstitious temperament of the people.

So Many Hungers came out in 1947 just two months after Independence of India. In this novel Bhattacharya speaks about hunger for political freedom. The character of Devesh Basu brings out hunger for political freedom. Though his primary interest is village reconstruction work, he awakes the people for their political responsibilities. For his participation in the freedom movements, he spends more than seven years in the prison. He equally fulfils his duties as social mentor and political guide. Utter indifference on the part of British Government towards famine victim was due to fast spreading National awareness for freedom. Without discrimination old, young, women jump into the war of freedom with great fervour. The unity creates restlessness among British Government and to subdue its effect, they put leaders behind the bar. Even from the early part of the novel, we witness the devotion for freedom. Devesh is arrested for his active participation in freedom movements but before he is taken to the prison, he advices his beloved villagers to follow the way non-violence:

'Friends and comrades do not betray the flag. Do not betray yourselves. There is violence in your thoughts; that is evil enough. Do not make it worse by violence in action..... ours is the

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VOL-8 / ISSUE- 2 ISSN- 2349 0209

harder task. If we use the weapons of our enemy, we play into their hands. The supreme test has come. Be strong, Be true. Be deathless.'[2] (SMH Pg.101)

Bhattacharya's *So Many Hungers* is primarily devoted to man's hunger for food, it also closely analyses man's other yearnings. It is a story not about many hungry people, but also about many types of human hunger.

Though Bhattacharya's *He Who Rides a Tiger* dwells upon the Bengal Famine of 1943 it is portrayed with difference in attitude. The novel depicts the story of Kalo, a simple artisan of Jharna town. He is as an honest and hard-working *kamar*. He is happy go lucky man who has total faith in aged long caste system and its hierarchy. He leads a happy life with his only daughter, Chandra Lekha at Jharna town. But his simple set of values get disturbed with bitter experiences of life. His daughter Chandra Lekha is portrayed as an intelligent and studious girl. She makes 'Jharna', a proud town by earning laurels. She wins first prize in essay writing competition by defeating even the candidates of the great Calcutta city. Kalo find cold social attitude towards her brilliant achievement. None take heed of her extraordinary intelligence. Moreover they become the target of social criticism. Kalo feels upset but is happy for his golden daughter. He had great pride for his daughter, for him Lekha was '*devi* in human form'. But the wake of hunger hammers the calm picture of Jharan town. Through the character of Kalo the novelist once again brings out the horror of hunger in Bengal.

As a last option for survival people start migrating towards the nearest dreamland Calcutta city. Skilled artisan Kalo follows the same path to get rid of haunting hunger. Journey from Jharna to Calcutta was itself a great ordeal. After a long struggle and strong resistance Kalo got succeeded to enter in the train. But hunger brought misfortune to him. Kalo could not control his hunger and steals three bananas to satisfy the burning ache of hunger. He is caught and sent to the jail. His dream of better future for his daughter gets destroyed due to his petty offence of stealing bananas. With tag of thief he comes out from the jail house and continues his bread of honesty. With broken heart, he works as corpse sweeper for municipal office, while doing the job, he comes across with bitter experience of social hypocrisy of high caste people. He finds the worst condition of the dead destitute

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on the road. The unclaimed bodies were evacuated from the road by sweepers and dumped them carelessly, whereas the rich were treated with all the respect and funeral rituals. The questions consciously haunt him. But his set target was to feed his daughter. He started working as a harlot agent. He was working hard for his only daughter Chandra-Lekha. But his anger for caste system busts out as he finds his *'devi'* in the same harlot house. He cannot bear his object of purity was defiled. Chandra Lekha's humiliation and degradation in the harlot house turn Kalo in a social rebel. The heinous situation reminds him the scornful words from Biten a fellow prisoner in jail house to hit back.

In *So Many Hunger* we find the destitute at helpless situation, they are passive, timid and submissive whereas in the present novel the famine victims raise their voice against the wrong. Number of characters are portrayed with Marxist colour, who take a stand against injustice. Kalo, Biten and Viswanath belong to the group. Along with these characters the revolutionary sound of protest is recorded on many pages of the novel.

Kalo takes the grim decision to hit back not at an individual but to whole society. He holds the entire society responsible for creating such an inhuman situation. Kalo vows revenge on so called upper caste and rich people of society, who reject the fundamental rights of humanity. The question *'Why do you have to live'* haunts Kalo throughout. The revolt was not against an individual but against the whole society. He holds the upper class responsible for devastating famine and uncountable death. Kalo becomes a Brahmin, he wears nine-stranded sacred thread. He creates a temple with false story. People accept him as a holy man. He makes the upper caste to bow-down and touch the feet of untouchable. He earns name, fame and money by deception. He becomes a hunter from prey. Similarly the character of Biten is portrayed with the same revolutionary sound. Bitter experiences of life, shake his humanism. He raises question on so called caste hierarchy and upper caste status of Brahmin. He becomes the flag bearer for social equality. He forsakes his Brahmin status for ever and becomes a common man who fights for rights of lower people. Viswanath fights for the hungry destitute. He raises his voice against callous attitude of rich. He faces the wrath of rich. He fearlessly joins procession demanding food and justice. Kalo, Biten and Viswanath are the examples of revolt. The

JHERS OCT 2020

JOURNAL OF HIGHER EDUCATION AND RESEARCH SOCIETY: A REFEREED INTERNATIONAL
VOL-8 / ISSUE- 2 ISSN- 2349 0209

novel echoes with the fearless demand: '"Food for all!" "Work for all!" "Jail for the rice profiteers!"'[3] (HWRAT Pg.160-161)

The novel vividly portrays how the wealthy people are callously indifferent to the hungry and greatly responsible for their unspeakable miseries. Besides hunger for food Bhattacharya also dealt with man's unending hunger for worldly pleasures, material possessions and economic profits in this novel. The hunger for worldly pleasures made the condition of famine deadlier. The callous attitude towards the needy is beautifully brought out in the novel. The reality of these people shows how these so called prosperous people engage themselves to build a temple when entire Bengal province was badly inflected by famine, millions of people were dying on road without food and on the contrary the rich pouring their money for sheltered 'stone God'. Through the characters of Sir Abalabandhu and Motichand the novelist shows shameless attitude of the rich towards the poor. Sir Abalabhandhu is a merchant who always seeks an opportunity of gaining profit. He stocked the great amount of rice with the thought that the artificial scarcity will increase the margin of their profit. The following line reveals social apathy: 'As scarcity grew, as masses of people died of hunger, his margin of profit increased.'[4] (HWRAT Pg.125)

The novelist has revealed brutal psychology of money minded people. he has exploited the sarcasm to rebuke the society. Dorothy B. Shimer says: 'According to Bhattacharya', while *So Many Hungers*! is a 'straight story'. *He Who Rides a Tiger* is a satire.'[5] (J. Prasad. TNOBB Pg.76)

CONCLUSION:

Bhabani Bhattacharya has discussed the causes and effects with reactions. *So Many Hungers* and *He Who Rides a Tiger* have an excellence of their presentation. Though both novels are written on the same backdrop, are designed with different attitude. If there is any protagonist in both the novels it is hunger. In *So Many Hungers* the novelist has given the detailed description of cause, consequences and effects of the Great Bengal Famine. The victims were innocent, ignorant and timid, didn't fight back. The passive sufferers were found unknown about the causes of their own doom. It fills the readers with disgust and anger. The novelist has exploited the same anger to present the revolutionary spirit

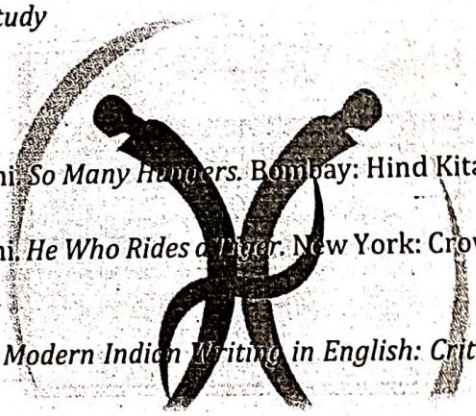
JHERS OCT 2020

JOURNAL OF HIGHER EDUCATION AND RESEARCH SOCIETY: A REFEREED INTERNATIONAL
VOL-8 / ISSUE- 2 ISSN- 2349 0209

in the destitute. *He Who Rides a Tiger* brings the revolutionary picture coloured with Marxist ideology. As a social realist it might be his dream or expectation from the neglected part of society to stand and ask for their rights. Bhattacharya wanted to rebuke the society for their wrong done. Of course the way selected by Kalo can be criticised in the theory of right and wrong. The impulsive decision to avenge on the society shocks the readers at the same time convinces them with law of action. The novel is set as an alarm to the rest of society. The class discrimination leads to moral chaos. We need to work on equality and no room for exploitation. The novel *So Many Hungers* successfully documents the hunger and exploitation through the behavioral pattern of various characters.

Thus Bhattacharya has a thorough grasp of his basic theme of hunger and he has dealt it with most of its significant aspects.

- Abbreviation **SMH** is used **for So Many Hungers, HWRAT** is for ***He Who Rides a Tiger*** and **TNOBB** for **The novels of Bhabani Bhattacharya,** *A Historical and Sociological study*



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घनकचरा व सांडपाणी व्यवस्थापन – समस्या आणि उपाय

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प्रस्तावना

देशातील वाढत्या लोकसंख्येमुळे गेल्या काही वर्षांत कारखान्यात तयार होणारी प्रदुषके आणि घन कचऱ्या बरोबर तयार होणाऱ्या सांडपाण्याचे प्रमाण शुध्दीकरणाच्या क्षमतेबाहेर वाढलेले आहे. भारतामध्ये ग्रामीण व शहरी भागामधून टाकाऊ पदार्थ अथवा घनकचरा व सांडपाणी यामुळे सार्वजनिक आरोग्याला फार मोठा धोका निर्माण होतो. ग्रामीण आरोग्याच्या दृष्टीने देखिल या कचऱ्याचे व्यवस्थापन हा फार मोठा प्रश्न आहे. त्यावर समाधान कारक उपाययोजना केल्याशिवाय ग्रामीण परिसर निरोगी व पर्यायाने सुखी होणार नाही. ग्रामिण परिसरात तयार होणारा घनकचरा व सांडपाणी प्रामुख्याने सेंद्रिय व विघटनक्षम असले तरी पर्यावरणाच्या दृष्टीने ते हानिकारकच आहे. याच्या योग्य व्यवस्थापनावर पर्यावरणाचा समतोल अवलंबून आहे.

या घन आणि द्रव कचऱ्याचे योग्य पध्दतीने व्यवस्थापन झाले नाही तर अनेक आरोग्य विषयक समस्या निर्माण होतात. सांडपाणी घरातून, उद्योगातून वाहेर पळते व हे पाणी पिण्यास अयोग्य असते घराभोवती रस्त्याने आणि गटारीत तूंबलेले सांडपाणी आरोग्यास घातक असते तसेच त्याचा घाण वास येतो. डासांना अंडी घालायला जागा मिळते. या डासांमुळे मलेरिया, डेंगू यासारखे आजार शिवाय हगवण, कावीळ, पोलीओ, टायफाईड इत्यादी संसर्गजन्य रोग पसरतात. अशा सांडपाण्याची व घनकचऱ्याची योग्य विल्हेवाट लावण्याकरिता विविध पध्दतींचा अवलंब केला जातो. सांडपाणी हे शौचालय, न्हाणीघर, स्वयंपाक घर, धूणी भांडी, कारखाने इत्यादी ठिकाणी होणाऱ्या वापरातून निर्माण होते तर घन कचरा प्रत्येक घराघरातून निघणारा कोरडा व ओला कचरा, कारखान्यातील निरुपद्रवी पदार्थ, हॉटेल्स, खाणावळी, खाद्यपदार्थांच्या गाडया यासारख्या विविध मार्गाने तयार होतो अशा घन व द्रव कचऱ्याची विल्हेवाट योग्य रितीने लावली गेली तर नागरीकांचे आरोग्य धोक्यात येते.

व्याख्या -

- सांडपाणी - सांडपाणी म्हणजे विविध कामाकरिता वापरलेले अशुध्द पाणी होय.
- सांडपाणी व्यवस्थापन- विविध मार्गाने तयार होणारे सांडपाणी सुरक्षितरित्या एकत्र करुन त्याची साठवण केल्यावर त्यावर प्रक्रिया केल्यावर त्याची निट विल्हेवाट लावणे म्हणजेच सांडपाणी व्यवस्थापन होय.
- घनकचरा- घरातील, कार्यालयातील, शेतातील, रस्त्यावरील व कारखान्यातील टाकाऊ म्हणून एकत्रित केलेल्या घटकांना घनकचरा म्हणतात.

गृहितके -

- घनकचरा व सांडपाणी व्यवस्थापन ही सामाजिक समस्या आहे.
- घनकचरा व सांडपाण्याच्या योग्य व्यवस्थापनाकरीता विविध पध्दतीचा अवलंब केला जातो.

उद्दिष्टये-

- घनकचरा व सांडपाणी व्यवस्थापनाचे महत्व जाणून घेणे.
- घनकचरा व सांडपाण्याच्या पुर्नचक्रीकरण व पुर्नवापराच्या दृष्टीन प्रयत्न करणे.
- पर्यावरणाचे प्रदुषण कमी करुन परिसर स्वच्छ व प्रसन्न करणे.

संशोधन पध्दती-

प्रस्तुत शोधनिबंधाकरीता ग्रंथालयीन माहितीचा आधार घेण्यात आला आहे.

वाङ्मयावलोकन-

संशोधनाचे महत्व पटवून देण्याकरिता संबंधीत विषयावर झालेल्या संशोधनांचा आढावा घेणे क्रमप्राप्त ठरते. **प्रा. रंगनाथ कोकणे (२०१९)**- यांचेनुसार निती आयोगाने नुकताच एक अहवाल प्रसिध्द केला आहे. या अहवालानुसार, देशभरातील ७० टक्के पिण्याचे पाणी दुषित आहे. सेफ वॉटर नेटवर्कच्या अहवालानुसार सुध्दा पाण्याच्या गुणवत्ता निर्देशांकाच्या यादीत १२२ देशांमध्ये भारताचा क्रमांक १२० वा आहे. या अहवालानुसार २०५० पर्यंत वाढती लोकसंख्या आणि पाण्याच्या

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अत्याधिक व्यावसायिक वापरामुळे प्रतीव्यक्ती पाणी वापरात ४० ते ५० टक्के घट होण्याची भिती आहे. वॉटर एडच्या अहवालानुसार, भारतात १६.३ कोटी लोकसंख्या स्वच्छ पाण्यापासून वंचित आहे. शहरी भागात विशेषत: झोपडपट्ट्यामधून राहणाऱ्यांना पिण्याचे स्वच्छ पाणी मिळू शकत नाही.

डॉ.सु.वि.मापूसकर यांचे नुसार, सुमारे १५०० मुले दरदिवशी केवळ जुलाब व हगवणीमुळे मरतात ५ वर्षा खालील मुलांचा मृत्यूदर यामुळे वाढतो. ग्रामिण भागात हा दर ६२ आहे तर शहरी भागात हा मृत्यूदर ४२ आहे. (राष्ट्रीय कुटुंब आरोग्य सर्वेक्षण-३)

परिणाम व चर्चा-

भारतामध्ये ग्रामिण व शहरी भागातून सांडपाणी व घनकचरा यामुळे सार्वजनिक आरोग्याला फार मोठा धोका निर्माण होतो. ग्रामिण आरोग्याच्या दृष्टीने देखिल या कचऱ्याचे व्यवस्थापन हा फार मोठा प्रश्न आहे याचे योग्य व्यवस्थापन झाले नाही तर अनेक आरोग्य विषयक समस्या निर्माण होतात घन कचरा व सांडपाण्याच्या अयोग्य व्यवस्थापनाशी निगडीत रोगांमुळे मुलांच्या पोषणदर्जावर परिणाम होतो. तसेच त्यांची शाळेतील उपस्थिती ही कमी होते.

घनकचरा सांडपाणी यांचे व्यवस्थापन केल्यास त्याचा पुर्नवापर करता येतो शिवाय नागरिकांचे ओराग्य सुधारते. नदी, नाले, तलाव यांचे संरक्षण होते, सांडपाणी व घनकचऱ्यावर प्रक्रिया करणे ही स्थानिक स्वराज्य संस्थांची जवाबदारी आहे. वाढती लोकसंख्या आणि मोठया प्रमाणात होणारे शहरीकरण यामुळे ही समस्या उग्ररुप धारण करीत आहे. अपुऱ्या सोईमुळे विकसनशील देशात अंदाजे १८ लाख लोकांचा अतिसारामुळे मृत्यू होतो. त्यापैकी ८०% ही ५ वर्षाखालील मुले असतात. लोकांचे स्वास्थ चांगले राहावे यासाठी मैल पाण्याचे योग्य पध्दतीने नि:सारण होणे गरजेचे आहे. प्रक्रिया न केलेले सांडपाणी मुख्य प्रवाहात आल्याने आणि पावसाच्या स्वच्छ पाण्यात मिसळल्याने आरोग्याच्या उद्भवणाऱ्या अनेक समस्यांना आळा घालण्याकरिता आपल्या परिसरातील नदी, नाले, तलाव स्वच्छ ठेवण्याचा प्रयत्न करावा. घनकचरा व सांडपाण्यावर प्रक्रिया करुन त्याचे शुध्दीकरण पुर्नवापर करण्याची पुरेशी सुविधा पुरवायला हवी त्याचप्रमाणे पावसाच्या पाण्याचे साटवण करुन आणि पुराच्या पाण्याच्या व्यवस्थापनातून उपलब्ध होणाऱ्या अतिरिक्त पाण्याचा शेतीसाटी उपयोग करण्यात यावा.

घनकचरा व सांडपाण्याच्या निष्कासनाचे महत्व

घरातील घनकचरा व सांडपाणी यांचे योग्य निष्कासन करणे ही काळाची गरज आहे कारण त्यावर मानवी आरोग्य सदृढ राहणे अवलंबून आहे. त्याकरिता देशातील प्रत्येक नागरीकाला या बाबींचे महत्व जाणून घेणे अपरिहार्य आहे.

- योग्य सांडपाणी निष्कासन पध्दतीमुळे कुटूंबात आरोग्य व प्रसन्नता राहते.
- घरातील सदस्यांच्या कार्यक्षमतेत वाढ होते. मानसिक स्वास्थ लाभते.
- संसर्गजन्य आजारांना आळा बसतो.
- सांडपाण्याच्या योग्य निष्कासनाने परसबाग फुलविता येते.
- सांडपाणी वर्गीकृत करुन त्याचा उपयोग विविध कामाकरिता होवू शकतो, परिणामी पाण्याचे दुर्भिक्ष कमी होण्यास मदत होते.
- घनकचऱ्याची योग्य विल्हेवाट लावल्यास मानवी आरोग्य चांगले राहण्यास मदत होते.

उपाययोजना

घनकचरा आणि सांडपाण्याची विल्हेवाट लावण्याकरीता काही पध्दतींचा अवलंब केला जातो.

❖ **घनकचऱ्याची विल्हेवाट लावण्याच्या पध्दती.:-**

- खत तयार करणे
- गांडुळ खत निर्मिती
- पुर्ननिर्मिती
- खड्डे भरणे
- भस्मीकरण

❖ **सांडपाण्याचे निष्कासन करण्याच्या पध्दती :-**

- सांडपाणी सौम्य करणे

- सांडपाणी शुध्द करणे
- शोषखड्डे करणे
- परसबाग लावणे.

❖ **याशिवाय काही प्राथमिक उपाययोजना सुध्दा केल्या जातात.**

- गावामध्ये प्रभात फेरी, पथनाटय, महिला मेळावे, शाळेमधून स्पर्धा घेवून जनजागृती करणे.
- गावामध्ये नदी प्रदुषण न करणेबाबत ठळक फलक लावणे.
- उत्सव काळात मुर्ती दान करणे किंवा कृत्रिम तलावाचा वापर करणे.
- रक्षा विसर्जन नदीत न करता शेतात करणे.
- सांडपाण्याचा शेतीसाठी वापर करणे.
- सेप्टीक शौचालय, शौषखड्डे करणे.
- सांडपाण्याच्या योग्य व्यवस्थापनासाठी बंदिस्त गटारांचा वापर करणे.
- कोरडा कचरा व ओला कचरा वेगवेगळा करणे.
- काच, प्लास्टीक, धातू, रबर यासारख्या वस्तुपासून पुर्नचक्रीकरण करुन नवीन वस्तू तयार करणे.

घरगुती सांडपाण्यावर प्रक्रिया करुन त्यातील दुषित घटकांना नैसर्गिक पाण्यात सोडण्यायोग्य करण्यासाठी पराकाष्ठेचे प्रयत्न चालू आहेत अनेक देशांमध्ये शेती बागकाम आणि जलसंवर्धन याद्वारे सांडपाण्याचे शुध्दीकरण करण्याच्या पारंपारिक पध्दती लोकप्रिय आहेत शासनाच्या पाणी व स्वच्छता विभागाव्दारे केंद्रशासन पुरस्कृत घनकचरा व सांडपाणी व्यवस्थापन ही योजना केंद्र व राज्य यांच्या अनुक्रमे ७५:२५ टक्के सहभागावर राबविली जाते. या योजनेचे फायदे म्हणजे सांडपाणी व्यवस्थापनामुळे गाव डासमुक्त होण्यास मदत होते. शिवाय कुजणाऱ्या कचऱ्यापासुन खत निर्मिती व आर्थिक उत्पन्न मिळते.

सारांश -

उपरोक्त चर्चेच्या आधारे व्यक्ती जेथे वास्तव्य करतो तेथे घनकचरा व सांडपाण्याच्या समस्या उद्भवणारच मात्र अशा द्रव घन कचऱ्याच्या विल्हेवाट लावण्याच्या योग्य पध्दतींचा अवलंब केल्यास त्यापासून मानवी आरोग्याला होणारा धोका टाळता येईल शिवाय साथ रोगांना आळा बसल्यामुळे मृत्यदर कमी होण्यास मदत होईल. कचरा आणि सांडपाण्याची निर्मिती ही मानव निर्मित असल्यामुळे त्याची योग्य विल्हेवाट लावणे ही आपली सर्वस्वी जबाबदारी नव्हे तर ते एक कर्तव्य आहे. त्याकरिता प्रत्येकाने आपले नैतिक कर्तव्य पार पाडुन देशाला सुजलाम् सुफलाम् करण्यात मदत करावी. तरच समस्याचे निवारण होईल.

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49

International Trade Growth in Retail Sector

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Introducation:

Indian retail has undergone a repaid transformation over the past decade and this process expected to strengthen in coming years with the rise in population, per capita income and urbanization. Potential to be the real growth engine of a country's economy .Growing consumerism, changes in consumers' tastes and preferences, and heightened brand consciousness has been fast replacing traditional mom and pop stores with organized retail malls that house lifestyle and luxury brands from national and international retailers. Indian retail industry is the biggest industry in comparison to other industries. It occupied 14% of India's Gross Development Product and near about 8% of the employment. Foreign Direct Investment (FDI) as defined in Dictionary of Economics is investment in a foreign country through the acquisition of a local company or the establishment there of an operation on a new site. In short FDI refers to capital inflows from abroad that is invested in or to enhance the production capacity of the economy. In November 2011, India's central Government announced retail reforms for Multi Brand Stores and Single Brand Stores. The announcement sparked intense activism. In 2011 the GOI has recommended FDI in retail sector as

(A) 51 % in Multi - Brand Retail. (B) 100% in Single - Brand Retail.

Keeping in view the country's share in the total FDI inflow of developing countries and the share of Indian's FID in its total private investment, the FDI inflow in the country has been quite weak. This is in spite of the fact has a large domestic market and open-door policy towards FDI. The present study on FDI in retail sector and the partners in it is undertaken with the following objectives.

To identify the major territory partners in Indian retail sector of FDI.

To study the growth in total FDI inflow during post reform period.

The data on total FDI inflow for the period 1991-1992 to 2013- 2014 has been collected from various source used for descriptive and growth analysis.

During first of eleven years FDI inflow growth is substantially higher than the second period of eleven China is the major investor territory interested in capturing Indian market with the highest growth of 13% per annum. Compound growth rate for both the periods are significant, however periods should not be combined.

1. Retail Workers: Presently, retail, market' structure in India-is, just the opposite of West, with no-single player dominating, any segment of the market. This, structure tends to benefit both consumers and: suppliers. The multinational players can superimpose their retail model, on the Indian, markets due to strong financial muscle and global, sourcing. In the process millions, of jobs will, be displaced not merely in the self-

organized sector but, also in the .corporate retail sector as they, will, find: it, difficult to survive the onslaught of big retailers such as Walmart, Unlike developed countries, 51 percent of the India's total workforce are self-employed. One of the biggest avenues of self-employment is in, retail trade due to very little entry barriers. For a vast majority of unskilled and poor people, retailing offers an excellent safety valve; Given the -lack- of alternative employment' opportunities available, it is highly 'unlikely that thedisplaced unemployed (post foreign investment in the retail sector) will be absorbed in agriculture

2. Local Shopkeepers &Retailers : Allowing FDI in multi-brand retail will lead to the growth in number and sales for India's modern retail outlets and these stores will compete both with formal domestic retailers and with the informal sector, including kirana as and hawkers. Retail giants' entry into the Indian retail market is likely to put many of those involved in the informal retail sector out of business and likely lead to increased market consolidation in the informal sector. As, small, less capitalized retailers are less able to absorb losses in the face of unsustainablylow prices charged by big competitors, these small business will be forced to close their doors.

3. Wholesale Shopkeepers: Supply chain intermediaries, like wholesalers, supplier companies and other middlemen, will feel immediate effect of the entry of multinational retailers. While this may lower the cost of goods in the short term, it will rapid mass dislocation of workers involved in the supply chain. The Indian: government must be prepared to address the coming unemployment of these workers if FDI restrictions are relaxed. Multinational retailers do not hide the fact that they plan to cut out the middle men and overhaul existing supply chains. Even the government and some farmers have argued that FDI in retail will remove middlemen, according to multiple reports in the press.

4. Producers: The biggest beneficiary of FDI in retail would be farmers who will be able to improve their productivity. The farmers will not only be able to increase their output but will also get better rewards in terms of supplying to organized retailers by tying up long term contracts with them. The foreign retailers will purchase raw materials from the farmers and various other goods from the original producer directly. The farmers across India's 6, 00,000 villages stand to gain with higher profits and better market access. The farmers would be getting good prices for their harvest. The original producers will get a higher price since the profit will flow to them directly, leaving behind the middle men. This can happen as the giant retailers have capital and high buying power. Direct purchase from farms will hugely benefit small fanners who are not getting good returns by selling the local mandi. Investment in back end infrastructure will help reduce wastage of farm produce, improve livelihood of farmers, lower the prices of products and ease supply side inflation, food safety, hygiene and quality.

Conclusion: The-conclusion of study as follows:

1. Multi brand retailers are confuse regarding FDI policy.
2. Indian Government should implement FDI policy in effective manner.

3. FDI is benefited to multi brand in India if it is implementing properly.
4. There are some applications as well as challenges for FDI in India.
5. During first of eleven year FDI inflow growth is substantially higher than the Second period of eleven year.
6) Compound growth rate for both the periods are significant. However period should not be combine.

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2	2019-20	Dr. A.J. Tidake	Indian Constitution and Article -370	
3	2019-20	Dr. N.P. Deshamukh	Varhad Prantatil homrul Andolanacha Itihas	www.adharsocial.com
4	2019-20	Dr. S.S. Somvanshi	Mahatma Gandhichi Samajik Vichar Sarni : ek Kalachi Garaj	www.aadharsocial.com
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1

Role of Small Scale Industries in Economic Development

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Research Paper - Economics

Introduction -

Small scale industries are important because it helps in increasing employment and economic development of country. It improves the growth of the country by increasing urban and rural growth. Role of Small and medium scale enterprises are to help the government in increasing infrastructures and manufacturing industries, reducing issues like pollution, slums, poverty, and many development acts. Small scale manufacturing industries and cottage industries play a very important role in the economic development of India. If any amount of capital is invested in small scale industries it will help in reducing unemployment in country and increasing self-employment. The industry is a sector in which the production of goods is a segment of the economy. The present paper is focused on the role of Small Scale Industries in economic development in country.

Meaning of SSI:

According to Micro, Small and Medium Enterprises Development (MSMED) Act 2006, the micro, small and medium enterprises (MSMEs) are classified into two classes, namely, manufacturing enterprises that are engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the Industries (Development and Regulation) Act, 1951 and service enterprises. The limit for investment in plant and machinery equipment for manufacturing/service enterprises is shown in Table.

Limit for Investment in Plant and Machinery

	Manufacturing sector Service sector	
	Manufacturing sector	**Service sector**
Micro enterprises	<` 2.5 million	<` 1 million
Small enterprises	>` 2.5 million but up to ` 50 million	>` 1 million but up to ` 20 million
Medium enterprises	>` 50 million but <` 1 million	>` 20 million but <` 50 million

Role of SSIs in India :

Economic development of a country is directly related to the level of industrial growth. India has also been striving to develop the country's industrial base since independence. SSIs have played a key role in planned development with its advantages of low investment and high potential for employment generation. SSI has emerged as a dynamic and vibrant sector of the economy. At the national level, this sector has performed extremely well and enabled our country to attain industrial amplification and diversification. The small-scale industries have been playing an important role in the growth process of Indian economy since independence in spite of stiff competition from the large sector and not very encouraging support from the government. After implementation of 1991 new industrial policy resolution, there was a threat for the very survival of small scale industry in India during the post reform periods. The government apart from encouraging high rate of foreign investment in the Indian industries it has been also liberal in extending relatively more number of foreign good is available everywhere in India at cheaper rate. Small scale industrial sector to contribute to increase of industrial productivity, rise of exports,

generate more employment opportunity and also contribute very impressive of the GDP. In view of this, the government of India has rightly recognized small scale industries as the engine of growth in the present millennium.

1) Employment Generation:

The basic problem that is confronting the Indian economy is increasing pressure of population on the land and the need to create massive employment opportunities. This problem is solved to larger extent by small-scale industries because small- scale industries are labour intensive in character. They generate huge number of employment opportunities. Employment generation by this sector has shown a phenomenal growth. It is a powerful tool of job creation Small-scale industries generates large number of employment opportunities. At present, the small-scale industries sector is providing employment to over 40 million people.

2) Improvement of standard of living:

The expansion of industrial sector also leads to improvement in the general standard of living.

3) Distribution of income:

The Small-scale industries ensure equally distribution of income and wealth in the Indian society which is largely characterized by more concentration of income and wealth in the organized sector keeping unorganized sector undeveloped.

4) Reduce regional disparity of industries:

There has been massive concentration of industries in a few large cities of different states of India. This problem of Indian economy is better solved by Small-scale industries which utilize local resources and bring about dispersion of industries in various parts of the country thereby promoting balanced regional development.

5) Mobilization of resources:

Small-scale industries can mobilize a good amount of savings and entrepreneurial skill from rural and semi-urban areas which remain untouched from the clutches of large industries and put them into productive use by investing in small-scale units.

Suggestions:

The Indian government has given due importance to SSIs in the five-year plans because of their immense advantages. All five-year plans have stressed the need to develop SSIs in India. Today, the status of SSI is better than the past years.

1) Financial assistance and training programme through the industrial promotional agencies (IPAs) must be improved in order to generate employment opportunity.
2) Credit rating agencies need to improve their credibility and promote this awareness amongst entrepreneur an effective monitoring mechanism, creation of credit rating facilities, adoption of standards for quality and environmental management, promotion of SME brands and development of appropriate capital markets can improve the situation.
3) The banks must become more liberal to strengthen the SMEs and efforts are needed to achieve a high degree of success by focused programmes and policies.
4) Focus on cluster development and innovations must be encouraged.
5) If the potential of SSI is properly harnessed, it can help in accelerating the pace of socio-economic development and balanced regional growth apart from creation of employment opportunities.
6) It is very essential to develop the industrial sector of India mainly through the development of SSI sector.

Conclusion:

The small scale sector forms a dominant part of Indian industry and contributing to a significant proportion of production, exports and employment. For sustainable higher growth of the small scale industrial sector, top priority should be given to financial support state and central government should facilitate the growth of small scale industry mainly through creating conducive environment for producing and marketing of products and services of small scale sectors.

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भारतीय संविधान आणि कलम ३७०

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प्रस्तावना :

भारतातील जम्मू-काश्मीर राज्यासाठी २०१९ हे वर्ष ऐतिहासिक ठरले. जम्मू-काश्मीर पुनर्रचना विधेयकाला राष्ट्रपती रामनाथ कोविंद यांनी ५ ऑगस्ट २०१९ ला मंजुरी दिली आणि जम्मू-काश्मीर पुनर्रचना कायदा २०१९ या नावाने हा नवा कायदा ओळखला जाऊ लागला.

जम्मू-काश्मीरला घटनेतील ३७० च्या कलमा नुसार विशेष दर्जा देण्यात आला होता. मात्र या नव्या जम्मू-काश्मीर पूनर्रचना कायदा २०१९ या कायद्याने तो विशेष दर्जा रद्द करण्यात आला आणि जम्मू-काश्मीरचे विभाजन करून लढाख आणि जम्मू-काश्मीर असे दोन केंद्र शासित प्रदेश करण्यात आले.

भारतीय राज्य घटनेच्या कलम ३७० मधील उपकलम (३) नुसार ३७० कलम रद्द करण्याचा अधिकार भारताच्या राष्ट्रपतीला देण्यात आला आहे. राष्ट्रपती सार्वजनिक सूचना त्याला जम्मू-कश्मीर घटना परिषदेच्या शिफारशीची अट संविधानात घालण्यात आली होती. मात्र आता ती घटना परिषद ही अस्तित्वात नाही. मात्र हिन्दू मुस्लीम दोन्ही जातीयवाद्यांनी कलम ३७० चा प्रश्न आजवर सतत तेवत ठेवलेला होता. या मागील दोन कारणे सांगता येतील :- १) की, आपली राजकीय सत्ता स्थापन करण्यासाठी हिंदू-मुसलमान मतदारांचे ध्रुवीकरण करणे आणि २) दुसरे म्हणजे, पाकिस्तानशी असलेल्या वैरभावनेला वाढविण्यासाठी काश्मीर प्रश्न आणि ३७० व्या कलमाचा एक हत्यार म्हणून उपयोग करणे. या कलमाचा विचार वास्तवतेवर होण्याऐवजी तो नेहमी भावनिक पातळीवर आजवर होत गेला., त्यामुळे संविधानात काय आहे. तेथील वस्तुस्थिती काय आहे हे जाणून घेण्याऐवजी हिंदू-मुस्लीम भावना भडकवण्यासाठी त्याचा कसा उपयोग होईल याला अधिक महत्त्व दिले गेले. तेव्हा पासून या ३७० कलमाकडे संशयाने पाहिले गेले.

भारतीय राज्य घटनेच्या भाग २१ मधील पहिल्या कलमात या ३७० कलमाचा समावेश आहे. भारतीय राज्यघटनेने कलम ३७० हे काश्मीरला लागू केले आहे. भारतीय राज्यघटनेतील उरलेली कलमे जम्मू-काश्मीर राज्याला लागू करण्याचे अधिकार जम्मू-काश्मीर राज्याशी विचार विनिमय करून राष्ट्रपतींना देण्यात आले.

कलम ३७० मधील महत्त्वाच्या तरतुदी :-

१. कलम ३७० नुसार जम्मू काश्मीरची एक वेगळी राज्यघटना होती.
२. या कलमानुसार सुरक्षा, परराष्ट्र धोरण, अर्थ दळणवळण या बाबी सोडल्या तर इतर कोणत्याही कायद्याची अंमलबजावणी करण्यासाठी जम्मू-काश्मीर विधानसभेची संमती घ्यावी लागत होती. तेथील रहिवाशांसाठी नागरिकत्व आणि मालमत्ते संबंधी मालकी, मूलभूत हक्क या संपूर्ण तरतुदी वेगळ्या होत्या.
३. भारतातील इतर राज्यातील लोक जम्मू-काश्मीर मध्ये मालमत्ता घेऊ शकत नव्हते.
४. आर्थिक आणीबाणी जम्मू-काश्मीर मध्ये लागू होत नव्हती. बाह्य हल्ला किंवा अंतर्गत समस्या असतील किंवा कुठल्याही धोका असेल तर तिथल्या विधानसभेच्या संमतीनंतर केंद्र सरकार आणीबाणी जाहीर करू शकेल.
५. इतर राज्यांप्रमाणे राज्य सुचीतील तरतुदी जम्मू-काश्मीरमध्ये लागू होत नव्हत्या.
६. इतर राज्यांमध्ये हे सर्वोच्च अधिकार संसदेचे असतात पण जम्मू-काश्मीरला हे अधिकार त्याच्या विधानसभेला आहेत.
७. राज्यघटनेची मार्गदर्शकतत्त्वे आणि मूलभूत कर्तव्य जम्मू-काश्मीरला लागू होत नाहीत. अशा अनेक तरतुदी ह्या भारताच्या संघराज्य व्यवस्थेवर गदा आणणाऱ्या होत्या. भारत स्वतंत्र झाल्यानंतर जम्मू-काश्मीरचे तत्कालीन

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राजा हरिसिंग यांनी भारतासोबत केलेल्या करारा च्या अनुषंगाने भारताच्या संविधानामध्ये अनुच्छेद ३७० च्या आधारे जम्मू-काश्मीर राज्याला विशेष दर्जा मिळाला.

भारतीय जनता पक्षाने २०१९ च्या लोकसभा निवडणुकीमध्ये आपल्या जाहीरनाम्यामध्येच भारतीय संविधानातील अनुच्छेद ३७० आणि ३५-A बाबत बदल करण्याचा निर्णय घेण्याचे स्पष्टपणे नमूद केले होते. पंतप्रधान मोदी यांना भारतीय मतदारांनी केंद्रामध्ये सत्ता स्थापनेची पुन्हा संधी दिली. खरे तर १९५१ च्या जनसंघाच्या स्थापने पासूनच ३७० कलम रद्द करण्याची मागणी राहिलेली आहे. भाजप, जम्मू-काश्मीर आणि कलम ३७० हे अतूट नाते तेव्हापासूनचे आहे. या राज्याला दिलेल्या विशेष दर्जा आणि त्याच्या संरक्षणामुळे या राज्याचा विकास झाला नाही म्हणून ३७० रद्द केल्या शिवाय या राज्याची दुर्दशा संपणार नाही, असे भाजप मानतो.

१९४७ साली देश स्वतंत्र झाला त्यावेळी जम्मू-काश्मीर हे भारतात विलीन होण्यास तयार नव्हते. भारताचे स्वतंत्र होणे देशाच्या फाळणीशी निगडित होते. त्या वेळी भारतात ६०० संस्थाने होती. त्याच्यासमोर तीन पर्याय देण्यात आले होते. १) भारतात विलीन होणे २) पाकिस्तानमध्ये जाणे, ३) स्वतंत्र राहणे. त्यामध्ये काश्मीरचे राजे हरिसिंग यांनी स्वतंत्र राहणे हा पर्याय निवडला, परंतु काही दिवसातच पाकिस्तानी फौजा काश्मीरमध्ये घुसल्या, त्यांचा इरादा स्पष्ट होता. त्यामुळे हरीसिंग राजाने भारताकडे मदतीची याचना केली, आपण ती मान्य केली पण त्या बदल्यात राजाने भारतात विलीन व्हावे, अशी अट घातली. राजा हरिसिंगजवळ दुसरा पर्याय नव्हता त्यामुळे २६ ऑक्टोबर १९४७ ला राजाने या करारावर सही केली

त्यानंतर राज्याची कायदा आणि सुव्यवस्था सुधारण्यानंतर या मुद्दाबर जनेतेचे सार्वमत घेतले जाईल आणि विलीनीकरणाचा निर्णय हा एकतर्फी होणार नाही हे स्पष्ट केले. तोपर्यंत हे विलीनीकरण हा तात्पुरत्या स्वरूपाचे मानले जाईल असे ठरले होते. तत्कालीन पंतप्रधान पंडित जवाहरलाल नेहरु, सरदार वल्लभभाई पटेल आणि काश्मीर खात्याचे मंत्री गोपाल स्वामी अय्यंगार यांनी त्याला मान्यता दिली होती. त्यानुसार जम्मू-काश्मीर जनमत घेऊन त्याच्या भविष्याचा निर्णय घेण्याची प्रक्रिया होईपर्यंत हे विलीनीकरण कायमस्वरूपी आहे. असे मानले जाणार नव्हते. पुढे या संदर्भात ठराव मांडला गेला. त्या वेळी जम्मू-काश्मीरने भारतापासून विलग होण्याचा निर्णय जरी घेतला तरी आम्ही त्यांच्या आड येणार नाही असे आश्वासन खुद्द अय्यंगार यांनी दिले होते. त्या राज्यात विलीनीकरणाच्या मुद्दावर जनमत घेण्याची तयारी दर्शविली. त्यानुसार भारताच्या संविधान सभेत २७ मे १९४९ या दिवशी घटनेत समावेशाविषयी हे एक नवे कलम सादर केले गेले. तेच पुढे अनुच्छेद ३७० या नावाने ओळखले गेले.

त्यानुसार जम्मू-काश्मीर राज्याला भारतीय घटनेशी फारकत घेण्याची मुभा तत्कालीन नेत्यांनी दिली होती. त्या वेळी प्रांताच्या आणि संसदेच्या अधिकारावरही मर्यादा आणल्या गेली. त्यामुळे या राज्याला इतर राज्यांच्या तुलनेत विशेष अधिकार देण्यात आले. त्यावेळी जम्मू-काश्मीर भारताच्या अविभाज्य भाग झाला खरा पण त्याचे नाते ३७० कलमाशी जोडल्या गेले म्हणून ३७० कलम नेहमी चर्चेत राहिले. आणि ३७० कलमाला महत्त्व प्राप्त झाले. हे कलम संविधानातील ''टेम्परी ट्राझियंट अॅन्ड स्पेशल प्रोव्हीजन'' या शीर्षकाच्या प्रकरणाचा एक भाग आहे. त्यामुळे हे कलम रद्द करता येते असे भाजपचे म्हणणे होते. त्या धोरणानुसार त्यांनी हे कलम रद्द केले.

परंतु हा प्रश्न कलम रद्द करण्याचा नाही. कारण हे कलम रद्द करायचे असेल तर मूळ कायद्यानुसार तो ठराव जम्मू-काश्मीर विधानसभेने करणे अपेक्षित होते. तसा ठराव राज्य विधानसभेने संमत केल्यानंतर संसद त्यावर निर्णय घेईल, अशी तरतूद होती. पण मोदी, अमीत शहाच्या जोडीने या प्रक्रियेला तिलांजली दिली. असा कुठलाही ठराव राज्याच्या विधानसभेने मांडला नाही. उलट रद्द करण्याची प्रक्रिया सोपी व्हावी म्हणून त्या ठिकाणी राष्ट्रपती राजवट लागू केली. आणि राज्याच्या वतीने केंद्र सरकारनेच हा ठराव सभागृहात मांडला आणि राष्ट्रपतींच्या अनुमतीने तो ठराव सभागृहात मांडला आणि केंद्रसरकारच्या भूमीकेत राहून तो मांडण्याचा, अनुमोदन देण्याचा अधिकार या दोन्ही भूमिका केंद्रानेच वठविल्या.

परंतु संविधानानुसार सभागृहाची प्रथा अशी आहे की, एखादे विधेयक सभागृहात मांडायचे झाल्यास सभागृहातील सदस्यांना त्या विधेयकाबाबत आपले विचार मांडण्यासाठी त्यावरील अभ्यास करण्यासाठी दोन

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दिवसांचा तरी अवधी दिला जातो आणि हे विधेयक महत्त्वाचे विधेयक असून या विधेयकावर अभ्यास करण्यासाठी, भाष्य करण्यासाठी कुणालाही वेळ दिला गेला नाही. मोदींच्या काळात प्रत्येकच विधेयकाला तिलांजली देण्यात आली. मोदींनी ही प्रथाच मोडीत काढली. सभागृहातील सदस्यांना वेळेवरच विधेयकाबाबत माहिती दिली जाते व ती मंजूरही केली जातात. सामान्य विधेयकाच्या बाबतीत ही प्रक्रिया ठीक असेल पण इतक्या महत्त्वाच्या विधेयकाबाबत अवलंबिलेला हा मार्ग चुकीचा वाटतो. आणि तिसरे म्हणजे राज्यात विधानसभा अस्तित्वात नसताना त्या राज्याच्या अस्तित्त्वाचा निर्णय घेण्याची प्रथा पडली. राज्याच्या विधानसभेच्या वतीने केंद्राने एखादा निर्णय घेणे हे भारताच्या संघराज्य व्यवस्थेच्या दृष्टीने अत्यंत घातक आहे. घटनाकारांना हे अपेक्षितच नव्हते. यामुळे केंद्राविषयी राज्यांच्या मनात अविश्वास निर्माण होऊ शकतो. हे संघराज्याच्या दृष्टीने घातक ठरू शकते. म्हणून ३७० कलम काढण्याचा निर्णय हा फार धाडसी निर्णय आहे. हा निर्णय जर आणखी योग्य पध्दतीनी लोकशाही पध्दतीचा आदर करून झाला असता तर त्याचे आणखी योग्य पद्धतीने स्वागत झाले असते.

निष्कर्ष :-

यावरून लोकशाहीची घटनात्मक चौकट भाजप मानायला तयार नाही. संघराज्य वादाची पायमल्ली केली गेली आहे. विरोधकांची या वेळी कुठलीही सूचना स्वीकारली नाही. हे विधेयक छाननीसाठी पाठविले नाही. एकदम राज्यसभा सभागृहात मांडल्या गेले. त्याविषयी विरोधी पक्षासोबत सल्ला मसलत केली नाही. विरे दिलेली सूचना स्वीकारली गेली नाही. अतिशय ही विधेयक मांडण्यात आले. केंद्रसूची राज्यसूची भानगड ठेवली नाही. राष्ट्रपतींनी सरळ ३ अधिकारात घेऊन ३७० कलम रद्द केले. परंतु पाहता काश्मीर भारताचे नंदनवन आहे. नैसर्गिक नटलेला आणि भारतालाच नव्हे तर जगातल्या लं पर्यटनाच्या आकर्षणाचा केंद्र बिंदू ठरलेल्या या बाबत सर्व सामान्य भारतीय जनतेला आकर्षण साहजिकच आहे. त्यामुळे नैसर्गिक सौंदर्याने नटले सौंदर्यवान भाग जर आपल्याला मिळाला तर को आनंदच होईल. परंतु तेथील जनतेच्या भावनेचा, मानसिकतेचा संविधानातील तरतुदींचा, घटनाव डोळ्यासमोर असलेल्या स्वप्नांचा विचार केला सत्तारूढ सरकारने अवलंबिलेला मार्ग योग्य नाही. बदल करताना कुठल्याही राज्याला विश्वासात घेत आणि राज्यानेही याबाबत प्रतिकार केला नाही. बाब आहे. यावरूनच संघराज्यासाठी असे मार्गक्रम अतिशय धोकादायक आहे. लोकशाहीवर गदा आहे.

संदर्भ :

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३. लोकसत्ता- ६ ऑगस्ट २०१९ (संपादकीय)

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व-हाड प्रांतातील होमरूल आंदोलनाचा इतिहास

डॉ.निलय देशमुख

महात्मा ज्योतिबा फुले महा.भातकुली

पहील्या महायुद्धाच्या काळात हिंदुस्थानातील जनतेने इंग्लडच्या जो पाठपुरवठा केला होता, त्याबद्दल हिंदुस्थानला इतर वसाहती प्रमाणे स्वायतता मिळेल, अशी आशा प्रकट केली होती. अर्थात ही आशा फोल ठरली कारण सरकारने इ.स.१९१५ च्या मार्च महिन्यात भारत संरक्षण कायदा पास करून शेकडो व्यक्तींना तुरूंगात डांबले होते. अशा परिस्थतीत इ.स.१९१५ मध्ये काँग्रेस आणि लीग यांची अधिवेशने मुंबईत भरली व दोन्हीमध्ये एकच तात्विक भूमिका मांडून होमरूल लीगची स्थापना २२ एप्रिल १९१६ रोजी करण्यात आली होती. ब्रिटिश साम्राज्याच्या अंतर्गत भारताला सांसदीय माध्यामातुन स्वयंशासीत करणे हा लीगचा उद्देश होता. ॲनी बेझंट यांनी स्थापन केलेल्या होमरूल लीगचे या प्रदेशातील अध्यक्ष डॉ.हरिसिंग गौर तर सचिव डॉ.मुंजे होते. अशा प्रकारे होमरूल लीगचा विस्तार मध्यप्रांत व व-हाड मध्ये घडुन आले. या संघटनेत प्रत्येक जिल्ह्याचे प्रतिनिधी पुढीलप्रमाणे घेण्यात आले.

१) अमरावती जिल्हा : श्री.दादासाहेब खापर्डे, वाय.जी.देशपांडे, एस.व्ही.तांबे, एस.एस.देशमुख, व्ही.वाय.वाटाणे, एस.डी.बापट, एस.के.दुराणी, एस.व्ही.गोखले.

२) यवतमाळ जिल्हा : मा.बापुजी अणे, जतकर वकिल, एस.के.भाने, दामोदरराव पुराणीक.

३) अकोला जिल्हा : आर.व्ही.महाजणी, एस.एस.दाते, परशराम मामा जोगळेकर, देवराव बाबा दिगंबर.

४) बुलढाणा जिल्हा : पन्नालालजी व्यास, दादासाहेब पिंपरीकर, बाबासाहेब काळे.

प्रत्येक जिल्हातुन सदस्य घेण्यात आल्यामुळे होमरूल लीगचा विस्तार संपुर्ण व-हाड प्रांतात झाला होता. त्यामुळे सरकार चिडुन त्यांनी दडपशाहीचे धोरण अमलात आणले. मुधोळकर सारखे मवाळ पुढारी सरकार विरोधी बनले. या ठिकाणी एक फरक लक्षात ठेवावयास हवा, ज्यावेळी प्रांत म्हणुन शब्द येईल, तेव्हा मध्यप्रांत व व-हाड असे समजावे. विदर्भ नावाचा वेगळा प्रांत नव्हता. या प्रांतात पूर्ण विदर्भ तर होताच पण त्याशिवाय छत्तीसगडपर्यंतचा महाकोसल हा भाग समविष्ट होता. ज्यावेळी भारत देश स्वतंत्र झाला त्यावेळी भाषीक तत्वाच्या आधारे १ मे १९६१ रोजी महाराष्ट्राची निर्मिती झाली. तेव्हा विदर्भाच्या निर्मिती साठी इ.स. १९६५ ला नागपुर परिषद भरली होती. या नागपुर परिषदेत बापूजी अणे, ब्रिजलाल बियाणी, जांबुरावजी धोटे उपस्थित होते. बापूजी अणेच्या अध्यक्षतेखाली विदर्भ निर्मितीचा ठराव पास झाल. तेव्हा व-हाड प्रांताला नाग प्रदेशाचा भाग जोडल्या गेला, व विदर्भाची निर्मिती झाली.

होमरूलचा प्रचार होण्याकरिता यवतमाळ डिस्ट्रीक्ट असोसिएशन चे अधिवेशन ६ आणि ७ मे १९१६ रोजी यवतमाळ येथे भरिवण्यात आले होते. नागपुरहुन नरेश द्रविड आणि बॅ.गोपाळराव द्रविड या अधिवेशनात उपस्थित होते. या अधिवेशनात शस्त्रबंदी कायदा करा अशी मागणी करण्यात आली. सरकारने कायदा रद्द करण्याएवजी दडपशाही चालू केली. म्हाराष्ट्रड या दैनिकाकडुन दोन हजार रूपये अमानत रक्कम मागण्यात आली, याचवर्षी लोकमान्यांनी स्थापन केलेल्या महाराष्ट्र होमरूल लीगची नागपुरात एक शाखा दादासोहेब उधोजी यांच्या अध्यक्षतेखाली स्थापन झाली. नोव्हे.महिन्यात अमरावतीत डॉ.गौर यांच्या अध्यक्षतेखाली जी प्रांतीक परिषद झाली त्याकरिता डॉ.ॲनी बेंझट येणार होत्या परंतु त्यांना सरकारने नजरकैदेत टाकल्यामुळे त्या येऊ शकल्या नाहीत.डॉ.ॲनी बेंझट यांनी स्वतंत्र होमरूल लीग १ सप्टे.१९१६ रोजी स्थापना केली होती. त्या संबंधात त्यांना स्थापनबद्ध करण्यात आले होते.

व-हाड प्रातांत होमरूल आंदोलनाची सुरूवात

काँग्रेस व मुस्लीम लीग यांनी सुद्धा इ.स.१९१६ च्या लखनौ करारानुसार सांप्रदायीक तडजोड होउन काँग्रेस व मुस्लीम लीग यांच्यात प्रेमाचे वातावरण निर्माण झाले होते. परंतु या करारान्वये मुसलमानांच्या जास्तीत जास्त मागण्या असल्यामुळे, डॉ.मुंजेसारख्या नेत्यांना लखनौकरार पसंत नव्हता वास्तिवीक पाहता टिळकांनी लखनौ काँग्रेस अधिवेशनात हिंदु मुसलमान ऐक्याला मजबूत करण्यासाठी अत्यंत परिचय घेतले व हा करार पारित करवीला होता.पण त्यांना त्यांची फार मोटी किंमत मोजावी लागली. हे मात्र विसरता कामा नये. जसे १) मुसलमानांच्या स्वतंत्र मतदार संघाला मान्यता २) मुस्लीम प्रतिनिधीत्वात लोकसंख्येपेक्षा आधिक वाढ ३) मुसलमानांना जास्त सोयी सवलती या अटी डॉ.मुंजे यांना मान्य नसल्याने त्यांनी आपला असंतोष जाहीर

भारतीयांना राजकीय सुधारणा दिल्या.परंतु सुधारणावरून काँग्रेसमध्ये दोन गट पडले होते. लो.टिळकांनी युद्धाच्या काळात स्वराज्य प्राप्तीसाठी कसोशीने प्रयत्न चालविले होते.

संदर्भ ग्रंथ सुची

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महात्मा गांधीजीची सामाजिक विचार सारणी : एक काळाची गरज

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सारांश :

मोहनदास करमचंद गांधी अर्थात महात्मा गांधी महात्मा गांधीबद्दल ऐकले नाही वाचले नाही. किबहुंना महात्मा गांधी माहित नाही. असा व्यक्ती सापडणे अवघडच महात्माजीच्या कार्याची महती भारताची सीमारेषा ओलांडून कधीच जगभरात पोहचली आहे. आज महात्मा गांधी सर्वांचे झाले आहेत महात्मा गांधीनी दाखविलेल्या वाटेवर अनेक जग वाटचाल करत आहेत. कुणी त्यांचा विचार स्वीकारला, तर कुणी जीवन पद्धती कुणी त्यांची अंहिसा तत्वे स्वीकारली कुणी त्याचे सत्याचे प्रयोग स्वीकारले कुणी त्यांनी सर्वधर्म समभाव वृत्ती स्विकारली. एक ना अनेक गोष्टी महात्माकडून अनेकांनी घेतल्या आहेत. आणि घेत राहतील. कारभार हाती घेऊ पाहणाऱ्या नव्या पिढीला या महात्म्याच्या विचार सरणीची अत्यंत आवश्यकता आहे. २ ऑक्टोंबर १९८६ रोजी गुजरातील पोरबंदर येथे जन्मलेले गांधीजी हे धार्मीक व वैष्णव पथांच्या संस्कारात वाढलेले असले तरी आई वडिलांची शिकवणच अशाप्रकारे दिली गेली की सर्वधर्म समभावाचे तत्व त्यांनी आपल्या जीवनात आचारणात आणले इंग्लडमध्ये शिक्षणासाठी राहत असतांना तेथील आधुनिक संस्कृतीच्या झगमगाटाने ते दिपून गेले नाहीत. तेथेही त्यांनी श्रीमतभगवत गीतेचा तसेच कुराण, बायबल ई. धर्म ग्रथांचा पुरेपुर अभ्यास केला.

गांधीची हे प्लेटो, ॲरिस्टॉटल आणि इतर विचार वंतांप्रमाणे किंवा त्या अर्थने राजकीय विचारवंत नव्हते म्हणून गांधीवाद नावाची सुसंबध्द अशी शास्त्रीय विचार सारणीवर शंका घेण्यात येते. महात्मा गांधीचे विचार म्हणजे जीवनाकडे पाहण्याची एक दृष्टी असून भारताच्या विशिष्ट सामाजिक, आर्थिक अशा परिस्थितीतून निर्माण झालेला तो एक विचार आहे. गांधीजीची विचार सारणी ही एक काळाची गरज आहे.

सामाजिक विचार सारणी ::

समाजाचे कल्याण हा गांधीच्या विचाराचा मूळगाभा आहे. त्यामुळे राजकारणाचा विचार करताना समाजकारण टाळता येत नाही किंवहुना समाजकारणावरच अर्थकारण जाधारलेले असते, असे त्यांचे मत होते. सामाजिक क्षेत्रात भारतीय समाज फारच मागासलेला आहे, असे त्यांचे मत होते. त्यामुळे स्वातंत्र्यप्राप्तीच्या दृष्टीने ते एक मोठेच संकट आहे असे ते मानीत. देशाचे स्वातंत्र्य हा महत्त्वाचा विषय आहेत पण त्याच बरोबर सामाजिक मुक्ती हा देखील दखल घेण्यासारखा विषय आहे असे ते मानीत आणि समाज जर खरोखरच बदलला नाही तर आलेले स्वराज्य आपल्याला

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शाश्वत ग्रामिण विकास एक महत्वाचा टप्पा

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भारताला स्वातंत्र्य मिळाल्यानंतर ग्रामिण समुदायाच्या विकासाचे गांभिर्य आणि महत्व सरकारने ओळखले होते. ग्रामिण भागाकडे दुर्लक्ष करुन देशाचा विकास साधने अशक्य आहे ही गोष्ट तात्कालिन नेत्यांच्या लक्षात आली म्हणून पंडीत जवाहरलाल नेहरु आणि महात्मा गांधी यांनी ग्रामिण विकासावर अधिक भर दिला. गांधीजींचे स्पष्ट मत होते की, 'भारत हा खेडयांचा देश आहे जो पर्यंत खेडयांना लक्षात घेवून योजना बनविल्या जात नाहीत तो पर्यंत खेडयांचा विकास होवू शकत नाही.' ग्रामिण भागाचा सर्वांगिण विकास घडवून आणण्यासाठी भारत सरकारने सामुदायिक विकास योजनाचा कार्यक्रम आखला.

सर्व जगभर शहरांचा सतत विकास होत असून सुध्दा जागतिक लोकसंख्येपैकी ग्रामिण भागात राहणाऱ्यांचे प्रमाण १९७१ मध्ये ८०.१ टक्के होते. आर्थिक नियोजनाव्दारे राष्ट्रीय विकास साधण्यासाठी ग्रामिण विकास अत्यंत आवश्यक ठरतो आणि म्हणूनच ग्रामिण समस्यांचेस्वरुप समजावून घेवून त्या सोडविण्याचा प्रयत्न करावा लागतो.

इच्छित किंवा हेतूपूर्वक दिशेने होणारे परिवर्तन हा संपूर्ण भारतात सुरु असलेला विकास कार्यक्रमांचा महत्वपूर्व पैलु आहे. ग्रामिण लोकांच्या जीवनशैलीत काही गुणात्मक स्वरुपाचे बदल वा परिवर्तन घडवून आणणे हे ग्रामिण विकास कार्यक्रमाचे ध्येय आहे.

व्याख्या :

कार्ल टायलर यांच्या नुसार सामुदायिक विकास योजना पध्दतीमध्ये ग्रामवासी आपले आर्थिक व सामाजिक परिस्थिती सुधारण्यासाठी मदत करण्यासाठी सहभागी होतात आणि त्यामुळे समर्थपणे काम करणाऱ्या लोकांचा समुह बनुन राष्ट्रीय विकास कार्यक्रमास हातभार लावतात.

उद्देश : १) ग्रामिण विकासाच्या संदर्भात समस्यांची माहिती जाणून घेणे.
२) ग्रामिण विकासाच्या योजनाचा आढावा घेणे.

गृहितकृत्य : १) शाश्वत ग्रामिण विकासाच्या संदर्भात अनेक समस्या येतात.
२) शासनाव्दारे विविध ग्रामिण विकासाच्या योजना राबविल्या जातात.

वाङ्मयावलोकन :

कोणत्याही विषयाचा अभ्यास करतांना विषयाशी संबंधित वाङ्मयाचे सिंहावलोकन करणे क्रमप्राप्त ठरते. करिता ग्रामिण विकासाच्या संदर्भात झालेल्या संशोधनांचा आढावा घेण्यात आलेल्या आहे.

डॉ. स्पेंसर हॅच यांनी १९२८ मध्ये मद्रास प्रांतातील माधच्यांड येथे यंग मेन्स क्रिश्चन असोसिएशन च्या सहकार्याने ग्रामिण विकासाचे कार्य सुरु केले. या प्रकल्पाअंतर्गत लोकांमध्ये बौध्दिक, आध्यात्मिक, भौतिक, आर्थिक व सामाजिक असा पाच प्रकारचा विकास घडवून आणण्याचा उद्देश निश्चित केलेला होता त्यानुसार डॉ. हॅच यांनी आपले कार्य सुरु करुन ग्रामिण समुदायाचा विकास करण्याचा प्रयत्न केल्याचे दिसते.

बडोदा संस्थानचे दिवाण श्री. व्ही. टी. कृष्णमाचारी यांनी १९३३ मध्ये ग्रामिण विकासाची एक व्यापक योजना तयार करुन ग्रामिण विकासाची एक व्यापक योजना करुन ग्रामिण जीवनाचा सर्वांगिण विकास करणे हे उद्दिष्ट निश्चित केले. या योजनेनुसार शेती उत्पादन वाढविणे, ग्रामपंचायत, सहकारी संस्था, शाळा यांचा विकास कार्यात सहभाग वाढविणे ही कार्ये बडोदा संस्थाअंतर्गत करण्यात आली.

महात्मा गांधीच्या कार्यक्रमाचा मुख्य उद्देशच भारतातील प्रत्येक व्यक्ती स्वयंपूर्ण स्वायत्व व स्वावलंबी करण्याचा असल्यामुळे त्यांनी प्रथमपासूनच त्यासाठी अधिक कार्यक्रम हाती घेतलेले दिसुन येतात सेवाग्रामयेथे गांधीजींनी अखिल भारतीय विणकर संघटना, गोसेवा संघ, हरिजन सेवासंघ इत्यादी संघटना स्थापन करुन ग्रामिण विकासात सुधारणा करण्याचा प्रयत्न केल्याचे दिसुन येते.

संशोधन पध्दती :

प्रस्तुत संशोधनाकरिता ग्रंथालयीन माहितीचा आधार घेण्यात आला आहे.

परिणाम व चर्चा :

कोणत्याही राष्ट्रात ग्रामिण समाज उल्लेखनिय कामगिरी करतो शहरांची अन्नधान्याची गरज ग्रामिण उत्पादनातूनच भागविली जाते शिवाय शहरातील औद्योगिक व्यवसायांना श्रमिक पुरविण्याची जबाबदारी ग्रामिण भागावरच पडते. भारतासारख्या विकसनशिल राष्ट्रांना तर ग्रामिण विकासाची गरज तिव्रतेने भासले परंपराप्रिय ग्रामिण जनतेला शास्त्रीय दृष्टिकोन पटवून देवून त्यांना आर्थिक विकासाच्या मार्गावर आणण्यासाठी प्रयत्न करावे लागतात. आर्थिक विकासाच्या आड येणाऱ्या सामाजिक रुढी, चालीरिती यांचे ग्रामिण जीवनातील वर्चस्व कमी व्हावे म्हणून शिक्षणाच्या व दळणवळणाच्या सोई भरपूर प्रमाणावर पुरवून ग्रामिण जनतेला विकासोन्मुख केल्यानंतरच ग्रामिण विकासाचे पाऊल पूढे पडू शकते.

ग्रामिण भागात अजुनही सार्वजनिक स्वच्छता व आरोग्याच्या सोई, स्वच्छ पिण्याचे पाणी यांचा अभाव दिसुन येतो औषधोपचाराची सोय तालुक्याच्या ठिकाणी असते. शिक्षणाबाबतही अधिकच दुरावस्था आहे. प्राथमिक शिक्षणाची सोय सुध्दा सर्वच खेडयातून नाही शिक्षण व आरोग्य या सोई चांगल्या सुखी जीवनासाठी आवश्यक आहेतच शिवाय आर्थिक विकासाच्या प्रक्रियेतही त्यांचे स्थान महत्वपूर्ण आहे. शिक्षणाचा प्रसार झाला तर शेती व इतर व्यवसायाच्या सुधारणेला निश्चितच हातभार लागु शकतो आणि आरोग्य चांगले असेल तर उत्पादन क्षमता वाढते म्हणूनच आर्थिक विकासाइतकेच महत्व या गोष्टींना दिले गेले पाहिजे असा दृष्टिकोन समाजविकास योजनांची आखणी करतांना स्विकारला गेला.

समग्र ग्रामिण विकास हा शाश्वत ग्रामिण विकासाचा महत्वाचा टप्पा आहे. शाश्वत ग्रामिण विकास करायचा असेल तर ग्रामिण भागातील लोकांची मानसिकता बदलली पाहिजे. ग्रामिण भागात जावून सरकारने नवनवीन तंत्रज्ञानास वाव दिला पाहिजे. तेथील लोकांच्या विविध समस्या जाणून घेवून त्याअंतर्गत उपाययोजना राबविल्या पाहिजेत ग्राम सुधारणेत व्यक्ती ही प्रमुख घटक असल्यामुळे व्यक्तीला वगळून भौतिक विकास शक्य होणार नाही. म्हणून व्यक्तीच्या गरजांची पूर्तता हाच खरा विकास आहे. याकरीता पूढील बाबी लक्षात घ्याव्यात.

- ✓ग्रामिण विकासाची संकल्पना व्यापक असुन त्यामध्ये शेती, उद्योग इत्यादी सारख्या ग्रामिण जीवनाशी संबंधित अनेक गोष्टींचा अंतर्भाव होतो.
- ✓ग्रामिण जनतेच्या आर्थिक व सामाजिक जीवनात सुधारणा घडवून आणणे हे ग्रामिण विकासाचे मुलभुत उद्दिष्ट आहे.

✓ग्रामिण विकास जलद व प्रभावी होण्यासाठी शासन स्तरावर व लोकांनी संघटीतपणे प्रयत्न करण्याची गरज आहे.

✓विकास कार्यक्रमात सहभागी होण्यासाठी लोकांना प्रवृत्त करणे ही महत्वाची बाब आहे.

✓शेतीचा सर्वकष जलद विकास, ग्रामिण जीवनात आधुनिक नितीमुल्यांची रचना, जनतेच्या विचारसरणीत आमुलाग्र बदल ही या प्रक्रियेची महत्वाची उद्दिष्टे सांगता येतील.

ग्रामिण विकासातील समस्या:

ग्रामिण भागातील जनतेचा विकास करण्यासाठी स्वातंत्र्योत्तर काळात सर्वकष प्रयत्न केलेले आहेत. ग्रामिण समाजाचा विकास करण्यासाठी भारताने ७३ वी घटनादुरुस्ती करुन पंचायत राज व्यवस्थेला घटनात्मक दर्जा देवून यादृवारे ग्रामिण विकास जाणीवपूर्वक करण्याचा प्रयत्न केल्याचे दिसुन येते. तरीसुध्दा पूर्णपणे विकास झाल्याचे आढळून येते नाही. ज्यांच्याकरीता विकास योजना राबविल्या जातात त्यांच्यापर्यंत त्या मुळरुपात पोहचत नाहीत पर्यायाने विकास होतांना दिसत नाही.

या विकासप्रक्रियेत येणाऱ्या समस्या पूढीलप्रमाणे देता येतील.

- गावातील लोकांचा असहभाग व निरक्षरता
- गावातील लोकांचे दारिद्रय व गरिबी
- अनिष्ठ रुढी परंपरा व अंधश्रध्दा
- दळणवळणाच्या साधनांचा अभाव
- नैसर्गिक आपत्ती
- औद्योगिक दुष्परिणाम
- साधन सुविधांचा अभाव

ग्रामिण विकासाच्या योजना आणि कार्यक्रम :

१) रोजगार हमी योजना :

राज्यात १९७२ मध्ये दुष्काळात रोजगार हमी योजनेचा जन्म झाला आज मात्र या योजनेने राष्ट्रीय स्तरावर मोठे स्वरुप धारण केले आहे. महात्मा गांधी ग्रामिण रोजगार हमी योजना या नावाने ती भारतभर प्रचलित आहे.

२) ग्रामिण आवास योजना :

भारतामध्ये घरांची टंचाई दुर करणे ही गरीबी हटविण्यासाठी असलेले एक रणनिती आहे.

३) दिनदयाल उपाध्याय ग्रामिण कौशल्य विकास योजना :

राष्ट्रीय ग्रामिण जीवन उन्नती अभियानाचाच एक भाग म्हणून ही महत्वाकांक्षी योजना केंद्रशासनाने सुरु केली आहे.

४) मुख्यमंत्री ग्राम सडक योजना :

राज्यातील न जोडलेल्या वाड्या वस्त्या असलेल्या परंतू दुरावस्था झालेल्या रत्यांचा दर्जा सुधारण्यासाठी राज्यात 'मुख्यमंत्री ग्राम सडक योजना' ग्रामविकास विभागामार्फत राबविली जाते.

५) स्मार्ट ग्राम योजना :



पर्यावरण संतुलीत समृध्द ग्राम योजना अर्थात ईको व्हिलेज ही योजना शासनाने बंद करुन त्याचा स्वतंत्र ही योजना आणली आहे.

६) मुख्यमंत्री ग्रामिण पेयजल कार्यक्रम स्वतंत्र

राज्यातील ग्रामिण जनतेस पुरेसे व शुध्द पिण्याचे पाणी उपलब्ध करुन देण्याकरीता ही सन्न पुरस्कृत योजना आहे.

७) आम आदमी विमा योजना :

ही ग्रामिण भागातील भूमिहीन कुटुंबातील प्रमुख कमावत्या व्यक्तीच्या विम्याचे संरक्षण देणारी तसेच शिक्षण घेणाऱ्या पाल्यांना दरमहा शिष्यवृत्ती देणारी ही योजना आहे.

८) सौर ऊर्जा पथदिवे उभारणे :

ग्रामपंचायतीच्या स्तरावर सौर ऊर्जा पथदिवे उभारणे ही योजना राज्यशासन, केंद्र शासन व ग्रामपंचायतीच्या सहभागातून राबवावयाची आहे.

९) मुक्त वसाहत योजना :

ग्रामिण भागातील विमुक्त जाती भटक्या जमाती या प्रवर्गातील घटकांसाठी राज्यात यशवंतराव चव्हाण मुक्त वसाहत योजना राबविण्यास सुरुवात आलेली आहे.

यावरुन असे निदर्शनास येते की, ग्रामिण विकासाच्या संदर्भात येणाऱ्या समस्यांच्या निराकरणासाठी शासन स्तरावर विविध योजनांच्या माध्यमातून विकास साधण्याचा प्रयत्न करण्यात येत आहे. मात्र या योजनांची यशस्वीता योजना राबविणारे अधिकारी आणि जनतेचे सहकार्य मिळण्यावर निर्भर आहे. योग्य रितीने ग्रामीण विकासाची पाऊले उचलल्या गेली तर निश्चित देश सुजलाम् सुफलाम् होण्यास वेळ लागणार नाही.

संदर्भ ग्रंथ सूची

१) रा. ज. लोटे (२०१०) : ग्रामिण व नागरी समाजशास्त्र तिसरी आवृत्ती, प्रकाशक पिंपळापुरे अॅण्ड कं. पब्लिशर्स, मालवीय नागपूर–४४०००२.

२) डॉ. प्रदिप आगलावे (२०१९) : ग्रामिण आणि नागरी समाजशास्त्र दुसरी आवृत्ती प्रकाशन श्री साईनाथ प्रकाशन ९ भगवागर कॉम्प्लेक्स, भरतपेठ नागपूर–४४००१०.

३) प्रो. विवेणी पारखडे आणि सुलभा गोमे (२०१२) : ग्रामीण समाजशास्त्र द्वितिय आवृत्ती प्रकाशक विद्या प्रकाशन रहाटकर रोड, मालवीय नागपूर–४४०००२.

४) ग्रामीण विकास को समर्पित अंक ११ पृष्ठ ६० सितंबर २०१९ प्रकाशन विभाग सूचना और प्रसारण मंत्रालय, नई दिल्ली–११०००३.

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बालकामगार एक ज्वलंत समस्या

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'या कोवळ्या कळ्यामाजी खरोखरे असतील आनंदघन शिवाजी' या ओळीला फाटा देवून आज बालकामगारांची समस्या भयावह स्वरूप धारण करते आहे. बालपण हे खेळण्या बागडण्याचे वय या वयातच जीवनातील संघर्षाला सोबी सामोरा जातात अनुभवना येतात नवे काहीतरी जीज्ञासेने जाणून घेता येते. शिक्षण सोडून पुढील आयुष्याची स्वप्ने रंगविण्याचे वय पण घरात अठरविश्वे दारिद्रय वाढली महागाई, अज्ञान आणि पैशाच्या लोभापाई अनेक लहानग्यांना कामात जुंपल्याचे विदारक चित्र आजही ठिकठिकाणी दिसून येते. गरीबी अनेक सामाजिक समस्यांना जन्म देते त्यापैकी एक महत्वाचे बालमजुरी प्रशासनाच्या वतीने दरवर्षी बालमजुरांची सुटका होत असल्याने दाखविण्यात येत असले तरी ही केवळ बालमजुरी विरोधी दिनापूरतीच मर्यादीत असल्याचे नुकत्याच घडलेल्या घटनेतून समोर आले आहे. त्यामुळे बालपण कोमेजुन टाकणारी मजुरी आणि या मागची कारणे व वास्तव वेगळे आहे.

संशोधनाची उद्दिटये :

१) बालकामगाराची समस्या जाणून घेणे.
२) बालकामगाराची समस्येची कारणे समजुन घेणे.
३) बालकामगाराच्या समस्येवर उपाययोजना सुचविणे.

गृहितकृत्य :

१) बालकामगाराची समस्या ही एक जागतिक समस्या आहे.
२) बालकामगाराची विविध कारणे आहेत.
३) बालकामगाराची समस्या दूर करण्याकरीता काही उपाययोजना सुचविता येतात.

व्याख्या :

होमर फोक यांच्यानुसार, 'बालकामगार म्हणजे मुलांनी केलेले असे कोणतेही काम की ज्यामुळे त्यांच्या पूर्ण शारीरिक विकासामध्ये किमान शैक्षणिक पातळी गाठण्याचा संधीमध्ये किंवा आवश्यक मनोरंजनामध्ये बाधा उत्पन्न होते'.

दि कमिटी ऑन चाईल्ड लेबरने केलेली व्याख्या– ''बाल लोकसंख्येतील असा भाग की जो सवेतन किंवा विनावेतन काम करतो त्याला बालकामगार म्हणावे''.

शिरीन मिलर यांचेनुसार–'मुलांच्या शारीरिक मानसिक, शैक्षणिक किंवा सामाजिक विकासावर परिणाम करणारे धोकादायक आणि शोषणावर त्यांच्याकडुन काम करवून घेणे म्हणजे बालकामगार प्रथा'.

वाङ्मयावलोकन–

प्रस्तुत संशोधनाच्या दृष्टिकोनातून संशोधनाशी संबधित पूर्वी झालेल्या संशोधनाचा आढावा घेणे क्रमप्राप्त ठरते.

माने माणिक (२००७) यांचे नुसार उत्तर प्रदेशातून ६ ते ११ वर्षे वयोगटातील मुलांची एक पाहणी करण्यात आली या पाहणीनुसार ३३.४ टक्के मुली कोणत्याना कोणत्या प्रकारच्या कामात गुंतलेल्या होत्या उत्तर प्रदेशमध्ये गलिच्या विणण्याच्या कारखान्यात २५ टक्के कामगार मुले आहेत तर सिवाकासी येथील कारखान्यातून २०,००० कामगारांपैकी ८००० कामगार मुले आहेत तर काश्मिरमध्ये भरतकाम करावयाच्या व्यवसायात लहान मुलांची संख्या प्रचंड असून त्यामुळे मुलांच्या पाठीला पोक येतो शिवाय दृष्टीदोष निर्माण होत असल्याचे दिसून येते.

शिंदे एस. व्ही आणि गुरव ए. एम. (२००८) यांचे अभ्यसनानुसार, 'बालकामगार हा फक्त भारतातीलच प्रश्न आहे असे नाही जागतिक श्रम संघटनेच्या अहवालानुसार जगामध्ये २४५ दशलक्ष बालकामगार काम करीत आहेत भारतातील बालकामगाराची स्थिती भयावट आहे भारतामध्ये जवळजवळ १२ दशलक्ष ते ४४ दशलक्ष बालकामगार आहेत ही संख्या जगामध्ये सर्वात जास्त आहे'.

म्हात्रे अनिल (२००८) यांचे नुसार, 'महाराष्ट्रातील मराठवाडयात राज्यातील सर्वाधिक बालमजूर असून एकटया नांदेड जिल्हयात १,१४,२८७ इतके बालमजुर असल्याचे आणि बालमजुरांच्या क्रमवारीत भारतात महाराष्ट्रात तिसऱ्या क्रमांकावर असल्याचे १९९६–९७ मध्ये केंद्रीय श्रम मंत्रालयाने केलेल्या वार्षिक अहवालातून उघड झाले या अहवालानुसार देशातील एकुण बालमजुरांच्या ११.४ टक्के म्हणजेच १० लाख ६८ हजार ४१८ बालमजुर महाराष्ट्रात असल्याचे आढळुन आले होते'.

जी मुले शारीरिक आणि मानसिक श्रमाची कामे करण्याची उद्योगधंद्यामध्ये, शेती व्यवसाय काम करतात आणि त्यांची वयाची १४ वर्षे पूर्ण झालेली नाहीत त्यांना बालकामगार असे म्हणतात (शिंदे एस.व्ही. आणि सहकारी २००८)

बालकामगाराचे प्रकार :

इंटरनॅशनल लेव्हल ऑर्गनायझेशन (I.L.O) व्दारा आयोजित बालकामगार परिषदेमध्ये अत्यंत घटनाखेचे प्रकार गुलामगिरी, बेठविगारी, व्यश्याव्यवसाय, बेकायदेशिर कृत्य नशिले पदार्थासाठी वापर, धोकादायक कामाचे स्वरुप हें सुध्दा हालाखीच्या प्रकारात मोडतात याशिवाय बालकामगाराचे वर्गीकरण पूढील प्रकारात करता येते.

- बालकामगार– सेवा क्षेत्रातील धोकादायक कामे करणारे.
- रस्त्यावरील बालके–बुटपॉलिश, वर्तमानपत्र वाटणारी, भिक मागणारी
- दास्य बालके–पालकांनीच पैशाकरीता, कर्ज फेडण्याकरीता बालकांना कामावर ठेवणे.
- शेती, कुटुंबात काम करणारी बालके– अन्य सदस्या प्रमाणे शिक्षण सोडुन १२–१४ तास काम करणे.
- लैंगिक शोषणासाठी या कारणाकरीता बालकांचा वापर पुरुषांकडुन होतो तेव्हा त्यांना लैंगिक रोग जडतात.
- स्थलांतरीत बालके–हंगामी स्थलांतराचा परिणाम बालकाच्या शिक्षणावर होतो.
- घरगुती काम करणारी बालके– बहुसंख्य लहान मुली घरगुती कामे करतात यामध्ये मुलांचे संगोपण, सफाई करणे, घरकाम करणे यांचा समावेश होतो.

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बालकामगार समस्येची कारणे

- घरची बेताची परिस्थिती
- शिक्षणाचा अभाव
- दारिद्र्य
- परिसरातील लोकांचा प्रभाव
- कमी वेतन
- वेतनात कपात केल्याने उत्पादन खर्च कमी
- आज्ञाधारकपणा

बालमजुरीला कायदयाने बंदी आहे पण त्या कायद्यांची प्रभावी अंबलबजावणी होतांना दिसून येत नाही त्यामुळे अनेक मुलांना मोळ्यान्या वयातच कामाला जुंपले जाते. बालमजुरी ही अनेकदा घरातील बेताच्या परिस्थितीनुनही लादली जाते. घरात अठराविश्वे दारिद्र्य अशातच मिळेल ते काम करण्याशिवाय त्यांच्याकडे पर्याय राहत नाही. त्यामुळे ते पुन्हा पुन्हा त्याच दृष्टचक्रात अडकतात. मुंबई, ठाणे यासारख्या शहरात ही मुले मिळेल ते काम करीत दिवस ढकलत असतात. चर्मकार, जरीकाम, लघूउद्योगामध्ये तसेच भंगार, प्लॉस्टीक कचरा गोळा करणे यासारखी कामे करतात या सारखे कामे करुन घेणारे त्यांना पुरेसा पैसाही देत नाहीत.

या टोळीच्या म्होरक्यापर्यंत पोहचणे पोलीस किंवा सरकारकडे शक्य होत नाही मात्र त्याकरीता आवश्यक मानसिकता नसल्यानेच बालमजुरीचे समुळ उच्चारण करणे शक्य झालेले नाही. हॉटेल चहाटपरी व इतर आस्थापनामध्ये बालमजुर ठेवण्यास कायद्याने अटकाव करण्यात आलेला असून अनेक ठिकाणी बालमजुर आपल्याला कामे करतांना पहायला मिळतात. देशातील बालकामगारांची प्रथा समुळ नाष्ट होण्यासाठी बालकामगार कायद्यात सकारात्मक दुरुस्ती होईल अशी अपेक्षा असतांना मात्र केंद्रीय मंत्रीमंडळाने मंजुरी दिलेल्या दुरुस्ती कायद्याने मुलांना कौंटुबिक व्यवसायात कामाची मुक्तता कायद्यानेच दिल्याने शाळाबाहय मुलांची संख्या वाढण्याची भिती आहे. सरकारचा हा निर्णय म्हणजे वेढबिगारीला प्रोत्साहन देणारा आहे.

बालकामगार समस्येवरील उपाययोजना :

बालकामगार प्रथेला प्रतिबंध करण्यासाठी सक्तीचे वैश्विक शिक्षण, सामान्य लोकांचे उत्पादन वाढविण्यासाठी उपाययोजना, स्त्रीयांचे सबलीकरण, बालकामगार विषयक व किमान वेतन कायद्याची योग्य अंमलबजावणी, बालकामगार प्रतिबंधामुळे आर्थिक नुकसान झालेल्या कुटुंबाचे पुर्नवसन हे उपाय वाढत्या प्रमाणात स्विकारले जात आहेत मात्र शिक्षण, आरोग्य व दारिद्र्य निर्मुलन या व्यतिरिक्त असलेल्या प्रश्नांचाही विचार झाला पाहीजे.

घटनात्मक उपाययोजना – शोषणविरुध्दच्या अधिकारानुसार १४ वर्षाखालील मुलामुलींना धोक्याच्या ठिकाणी काम करण्यासमनाई करण्यात आली आहे.

वैधानिक तरतुदी –कंपनी कायदा १९४८ नुसार १४ ते १८ वयोगटातील कामगारांना ओळखपत्रे देणे आणि प्रत्येक दिवशी ४ १/२ तास काम देणे व रात्री १० ते ६ यां वेळात कामास मनाई करण्यात आली आहे.

मुले कामगार कायदा (१९३३)—नुसार १२ वर्षाखालील बालकांना सक्तीचे काम करण्यास मनाई करण्यात आली आहे.

खाणकामगार कायदा (१९४२)— नुसार खाणीतकाम करणाऱ्या कामगाराचे वय १८ वर्षापेक्षा जास्त असणे आवश्यक आहे.

बालकाम प्रतिबंध व नियामक कायदा (१९८६)—नुसार वयाच्या १६ वर्षा आतील व्यक्तींना धोकादायक उद्योगात काम करण्यावर बंदी घालण्यात आली आहे.

बालकामगार विषयक राष्ट्रीय धोरण (१९८७)—नवनुदी नुसार बालकामगार व त्यांच्या पालकांना साक्षर करण्यावर भर देणारा बालकामगारांना त्यांच्या व्यवसायाशी निगडीत प्रशिक्षण देण्यात यावे. बालकामगारांची समस्या सोडविण्यासाठी आधी गरीबीचे उच्चाटन करावे.

दारिद्र्य निर्मुलन व शैक्षणिक साधनता हे दोन कार्यक्रम बालमजुरीचा प्रश्न सोडविण्याचे उपाय आहेत. बालकामगारांच्या समस्येच्या गांभिर्याची जाणिव आंतर राष्ट्रीय पातळीवर झालेली आहे. मुलांचे सर्वच क्षेत्रात होणारे शोषण थांबवून त्यांच्या सर्वांगीण सामाजिक विकासासाठी आवश्यक सर्व सुविधा साधनसामग्री उपलब्ध करून देण्याची आवश्यकता आहे असे राष्ट्रसंघाने विकासलेल्या जागतिक मानवी हक्काच्या जाहीरनाम्यामध्ये म्हटले आहे.

अर्थात दारिद्र्य निर्मुलन, शिक्षण आणि बालकामगार मुक्त करण्याचे त्रिकोणात्मक प्रयत्न समांतर पध्दतीने केले गेले तर ते दृष्टचक्रमोडता येईल. सोबत दर्जेदार, अर्थपूर्ण आणि बंधनकारक शिक्षण हा बालकामगार समस्येवरील सर्वात प्रभावी उपाय आहे. दारिद्र्य निर्मुलनाच्या कार्यक्रमामध्ये सर्वांसाठी शिक्षण आणि बालकामगार समस्या निवारणाला महत्वाचे स्थान दिले गेले पाहिजे.

एकंदरीत दारिद्र्य निर्मुलन आणि शिक्षणविषय ध्येय धोरणाची बालकामगार समस्या निवारणाचे काम सोडण्यासाठी जनजागृती, जाणीव वृध्दी, सामुदायिक सहभाग, पर्यायी आणि व्यवहारी सामाजिक आर्थिक पुर्नवसन आणि मुलांसाठी राष्ट्रीय व आंतरराष्ट्रीय कायदेशीर तरतुदींची अंमलबजावणी यांचा समावेश असलेले बहुआयामी धोरण असणे आवश्यक आहे.

संदर्भ ग्रंथ सूची

१)माने माणिक (२००८) — 'भारतातील समकालीन सामाजिक समस्या' पृष्ठ क्र. १९३, विद्या प्रकाशन, रर्डकर मार्ग, महल नागपूर ४४०००२.

२) म्हात्रे अनिल (२००८) — 'बालमजुरांची समस्या', लेख योजना मे २००८ पृष्ठ क्र. १३—१५

३) मिलर गिरीन (२००५) — 'बालमजुरीचे नैतिक कोडे, आता नाही केव्हा सोडविणार', लेख, योजना मे २००८ पृष्ठ क्र. १०—११.

४) सत्यरथी कैलास (२००८)— 'कोवळ्या हातांना कामात बांधू नका', लेख, योजना मे २००८ पृष्ठ क्र. ६—८.

५) टंडन निती आणि टंडन संहलता (२००८)— 'बालकामगार प्रतिबंधासाठी उपाययोजना' लेख, योजना मे २००८ पृष्ठ क्र. १०—१३.

६) www.google.in

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बालकाचा बौध्दीक विकास एक अध्ययन

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सहयोगी प्राध्यापकएम.जे. एफ वाणिज्य विज्ञान व व्ही. आर. कला महाविद्यालय, भातकुली

प्रभावी व्यक्तीमत्वाचा एक अविभाज्य घटक म्हणून बुध्दीमत्तेला महत्व आहे. वाढत्या वयानुसार व्यक्तीमत्वामध्ये विविध विकसनशील बदल होत जातात. अध्ययन, स्मरण, तर्क प्रक्रिया, विचार आणि भाषा ही बौध्दीक विकासाची वेगवेगळी अंगे आहेत. या सर्व बौध्दीक अंगांचा व्यक्तीच्या कारक आणि भावनिक विकासाशी अत्यंत जवळचा संबंध असतो. भुतकाळातील घटना आणि वर्तमानकाळ यांची सांगड घालुन भावनिक प्रतिक्रीया दयायला मुले शिकतात. चूकीची शिक्षा झाल्यावर ती चूक पून्हा होवू नये हे मुले शिकतात आणि अशा अनुभवातूनच शिकत शिकत मुलांचा बौध्दीक विकास होतो. बौध्दीक शक्ती ही जन्मजात देणगी आहे. मुलाच्या वयाची पहिली ८ वर्षे अतिशय महत्वाची असतात त्यातही पहीली ३ वर्षे भावी काळातील आरोग्य, वाढ आणि विकासाचा पाया हया वर्षामध्ये घातला जातो या कालावधीत मुलांचा शिकण्याचा वेग सर्वाधिक असतो. सुरुवातीच्या विशेषत: ३ वर्षामध्ये घेतलेली काळजी आणि योग्य संगोपन याचा बालकाच्या आयुष्यावर फार मोठा प्रभाव पडतांना दिसुन येतो. पहिल्या वर्षात घेतलेल्या काळजीने व मिळालेल्या प्रेमामुळे मुल भरभरुन वाढते आईच्या कुशीत असलेल्या बालकाचा भावनिक विकास चांगला होतो.

बालकाच्या सर्वांगिण विकासातील एक महत्वाचा पैलु म्हणजे बौध्दीक विकास होय. बालकाच्या शारीरिक कारककिया नियंत्रित करण्याकरीता शिवाय भाषा व मानसिक विकास योग्य पध्दतीने होण्याकरीता बौध्दीक विकास योग्य पध्दतीने होणे आवश्यक आहे. बुध्दी ही एक शक्ती, क्षमता किंवा योग्यता नसुन जी सर्व परिस्थितीमध्ये सामान्य स्वरुपात कार्य करणाऱ्या विविध योग्यतांचा संयोग आहे. बुध्दी मुळे शिकण्याची योग्यता, अनुभवाचा फायदा, अमुर्त चिंतन समस्या सोडविण्याची क्षमता, वातावरणाशी समायोजन करण्याची योग्यता मुल्यमापन क्षमता, स्मरण, सृजनशिलता इत्यादी योग्यता मानवाच्या अंगी येतात.

व्याख्या : अनेक मानसशास्त्रज्ञांनी केलेल्या बुध्दीच्या व्याख्यामधून विविध पैलूंचा उलगडा होतो.

- टर्मन यांचे नुसार, 'अमुर्त पातळीवर विचार करण्याची क्षमता म्हणजे बुध्दी होय.'
- बीने यांचे नुसार, 'उद्दिष्टांच्या दिशेने वर्तन करण्याची क्षमता आवश्यकतेनुसार समायोजनाची क्षमता व उद्दिष्ट साध्य झाले आहे हे कळण्याची कुवत म्हणजे बुध्दीमत्ता होय.'

संशोधनाची उद्दिष्टये :—

- बुध्दीची वैशिष्टये जाणून घेणे.
- बालकाच्या बौध्दीक विकासावर होणाऱ्या विविध घटकांचा परिणाम अभ्यासणे.
- बालकाच्या बौध्दीक विकासात पालकाची भुमिका अभ्यासणे.

गृहितकृत्य :—

- बुध्दीची काही वैशिष्टये असतात.
- बालकाच्या बौध्दीक विकासावर विविध घटकांचा परिणाम होतो.
- बालकाच्या बौध्दीक विकासात पालकाची भुमिका अत्यंत महत्वपूर्ण असते.

संशोधन पध्दती :—

प्रस्तुत संशोधनाकरीता ग्रंथालयीन साहित्याचा आधार घेण्यात आला आहे.

वाङ्मयावलोकन :—

प्रस्तुत संशोधनाच्या दृष्टीकोनातून संशोधनाच्या संदर्भात पूर्वी झालेल्या संशोधनाचा आढावा घेणे क्रमप्राप्त ठरते. करीता काही संशोधनाचा उहापोह करण्यात आलेला आहे.

पिन्टर यांचे नुसार, १४ ते २२ वर्षाचे काळात केव्हाही बालकाचा बौध्दीक विकास थांबू शकतो. गर्भावस्थेमध्ये आईचे आरोग्य, आहार चांगला, असल्यास बालकाच्या मेंदुची वाढ चांगली होते. जन्मानंतर स्वच्छ परिसर, आईचे दुध, लसिकरण, व्यायाम निरोगी वातावरण व पुरक आहार याचा अप्रत्यक्ष परिणाम बौध्दीक विकासावर होतो. (मानव विकास—डॉ. लिना कांडलकर २०००)

बीने यांनी १९०५ मध्ये पहिली बुध्दीमापन कसोटी प्रसिध्द केली या कसोटीला बीने सायमन बुध्दीमापन कसोटी म्हणतात. सायमन यांच्या पध्दतीने यांनी व्यवहारीक, परिस्थितीजन्य प्रश्नाव्दारे बालकांचे निरीक्षण व मुल्यांकन केले. मंदबुध्दी बालकाच्या बुध्दीमापनासाठी त्यांनी अनुभवलेल्या कृती व वर्तनप्रकार शोधून अनुभव हा घटक सर्वमान्य केला. बीने यांचेनुसार,'उद्दिष्टांच्या दिशेने वर्तन करण्याची क्षमता, उद्दिष्ट साध्य होत असतांना जरुर पडली तर समायोजन करण्याची क्षमता आणि उद्दिष्ट साध्य झालेले आहे हे कळण्याची कुवत म्हणजे बुध्दीमत्ता होय.'(बालविकासाची मुलतत्वे—त्रिवेणी फरकाडे/सुलभा गोंगे २०१०)

परिणाम व चर्चा

बुध्दी ही अशी मानसिक शक्ती आहे की त्यामध्ये सर्व मुलभुत मानसिक प्रक्रियांचा समावेश होतो आणि या प्रक्रियांच्या अविष्काराला संधी मिळाली तर बुध्दीचा विकास होत जातो संवेदन हा बुध्दी अविष्काराचा पहीला अविष्कार आहे. बुध्दी विकासात स्मरण प्रक्रिया अतिशय महत्वाची आहे. बालकाच्या कल्पना शक्तीवरुन त्याची बौध्दीक पातळी लक्षात येते.

तज्ज्ञांच्या अभ्यासानुसार बुध्दीची पूढील काही वैशिष्टये आढळुन येतात.

- बुध्दी ही व्यक्तीची जन्मजात क्षमता असते.
- बुध्दीमुळे अमुर्त चिंतनाची योग्यता प्राप्त होते.
- बुध्दीमुळे व्यक्ती पूर्वानुभवाचा फायदा घेवू शकतो.
- बुध्दीमुळे समायोजनाला मदत होते.
- बुध्दीमुळे चांगलेवाईट/खरेखोटे समजण्याची क्षमता येते.
- बुध्दीमुळे व्यक्ती विविध गोष्टी आत्मसात करतो.
- आनुवांशिकता व वातावरण दोन्ही गोष्टींचा प्रभाव बुध्दीवर पडतो.

बुध्दीचे प्रकार :— गॅरट यांनी बुध्दीचे तीन प्रकार सांगितले आहे.

१. मुर्त बुध्दी
२. अमुर्त बुध्दी
३. सामाजिक बुध्दी

बुध्दीगुणांक :—

(Intelligenic Quotient) -IQ बुध्दीमत्तेचे मापन करण्यासाठी बुध्दीगुणांकाचा आधार घेतात यासाठी प्रथम बालकाकडून चाचण्या सोडवून घेतल्या जातात व त्यानुसार त्याला गुण दिले जातात. या मिळण्याऱ्या गुणांना त्याचे मानसिक वय म्हटले जाते.

बुध्दीगुणांक काढण्यासाठी पूढील सूत्र वापरतात.

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$$\text{बुध्दीगुणांक} = \frac{\text{मानसिक वय}}{\text{शारीरिक वय}} \times १००$$

बुध्दीगुणांकावरुन विविध श्रेणीनुसार बालकाचा स्तर ठरविला जातो.

बालकाच्या बौध्दीक विकासावर परिणाम करणारे घटक :–

बौध्दीक विकास हा व्यक्तिमत्व विकासातील एक महत्वाचा पैलू आहे. या विकासावरच बालकाच्या भावी जीवनाची यशस्वीता अवलंबून असते. या विकासावर अनेक घटकांचा प्रत्यक्ष अप्रत्यक्षपणे चांगला वाईट परिणाम होत असतो हे घटक पुढीलप्रमाणे.

- अनुवंशिकता
- समाजार्थिक परिस्थिती
- वातावरण
- जन्मक्रत्य
- कुटुंबाचा आकार व प्रकार
- आरोग्य
- संगोपन पध्दती
- शालेय वातावरण

बालकाच्या बौध्दीक विकासात पालकाची भुमिका

बालकाचा सुरुवातीचा विकास हा प्रौढांच्या अनुकरणातूनच होतो आईवडील बालकांवर जेवढे निकोप प्रेम करतील तेवढा त्याचा बौध्दीक विकास चांगला होण्यास मदत होते. ज्या मुलांवर भावनात्मक ताण असतो अशी मुलेदुर्लक्षलेली आढळतात अशा मुलांचे व्यक्तीमत्व विषम समायोजित होते. मुले ही अनुकरण प्रिय असतात मुलांच्या वाढ व विकासासाठी सर्वात महत्वाचा मार्ग म्हणजे मार्ग म्हणजे त्याचा इतरांशी येणारा संपर्क पालक व संगोपनकर्ते जितक्या जास्त वेळा मुलांशी बोलतील आणि त्यांच्या शंकांना प्रतिसाद देतील,तितक्या अनेक गोष्टी मुले चटकन शिकतात संवादातून त्यांच्या भाषा कौशल्य व आकलन क्षमतांचा विकास होतो पर्यायाने बौध्दीक विकासास चालना मिळते.

शक्तीपेक्षा बुध्दी श्रेष्ठ ही म्हण आजच्या काळात सुध्दा शंभर टक्के खरी आहे. कोणत्याही क्षेत्रात उत्तम यश मिळविण्यासाठी कुशाग्र बुध्दीला पर्याय नाही ज्ञान ग्रहण करण्यासाठी शरीर पाच ज्ञानेंद्रियांचा उपयोग करतो. कान, त्वचा, डोळे, जिभ, आणि नाक या इंद्रीयामुळे मेंदुपर्यंत ज्ञानसंवेदना पोहचविण्याचे कार्य शरीर सहज करु शकते आणि हे कार्य योग्य प्रकारे होण्याकरीता बुध्दीच्या विकासासाठी समजलेला विषय पुन्हा पुन्हा वाचल्यास तो कधी ही न विसरण्या इतपत पक्का होतो.

मुले जन्म घेतल्याक्षणीच शिकु लागतात त्यांना योग्य अयोग्य संगोपन व पोषक आहार तसेच प्रेम वात्सल्य प्रोत्साहन व मानसिक पातळीवरील चालना मिळाल्यास त्यांचा बौध्दीक विकास चांगला होतो. मुलांना खेळण्यास प्रोत्साहन दिले व त्यांचे कौतुक जागृत ठेवले की त्यांचा सामाजिक, भावनिक तसेच बौध्दीक वाढ व विकास चांगला होतो.

- बालकांचा मेंदु विकसित करण्याच्या दृष्टीने त्यांच्याकडुन ब्रेनचे व्यायाम करुन घ्यावे.

- स्मरण शक्ती वाढविण्यासाठी त्यांनी विविध प्रकारची बौध्दीक विकासाला मदत करणारी खेळणी उपलब्ध करुन दयावी. बालकाच्या बौध्दीक विकासाकरीता त्याला संपूर्ण पोषक घटक युक्त आहार दयावा.
- आईवडील व बालक यांच्यात विश्वास निर्माण व्हावा याकरीता मुलांना पालकांनी भावनिक रित्या समजावून घ्यावे.
- बालकाच्या मानसिक, सामाजिक गरजा प्रौढांपेक्षा वेगळया असता ही जाणीव पालकांनी ठेवावी.
- बालकांच्या जीवनाला गती प्राप्त करुन देण्यासाठी योग्य शिस्त लावावी.
- बालकांच्या बौध्दीक विकासाकरीता त्यांचा आत्मविश्वास वाढविणे गरजेचे आहेत्र
- शक्यतोवर वेळेचे व्यवस्थापन करुन बालकांना पुरेसा वेळ देण्याचा प्रयत्न करावा.
- जेव्हा बालक एखादी गोष्ट स्वत: करण्यास पुढाकार घेतो तेव्हा त्याला संधी दयावी, प्रेरणा दयावी.
- आपण सुध्दा कुटुंबातील एक महत्वपूर्ण सदस्यश आहोत ही जाणीव बालकाला इतरांच्या वर्तनातून व्हावी.
- उपरोक्त बाबींचा बालकांच्या बौध्दीक विकासाच्या दृष्टीने पालकांनी विचार करावा.

अर्थातच बालकांची सर्वांगीण प्रगती ही आईच्या प्रेमावर, स्पर्शावर, तसेच कुटुंब सदस्यांच्या मायेवर अवलंबुन असते हे निर्विवाद सत्य असहे. बुध्दी ही जन्मजात असते. हे जरी खरे असले तरी अनुभव आणि शिक्षण यांचा परिणाम बुध्दी विकासावर होतो. यावरुन बालकाच्या विकासात पालकांची भुमिका अत्यंत महत्वपूर्ण असल्याचे दिसुन येते.

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VOLUME - IX, ISSUE - I - JANUARY - MARCH - 2020
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३२. वंदनिय राष्ट्रसंतांच्या स्वप्नांतील भारताची जडण घडण

प्रा. डॉ. अनिता ज. तिडके
राज्यशास्त्र विभाग प्रमुख, महात्मा ज्योतिबा फुले वाणिज्य, विज्ञान व स्व. विठ्ठलराव राऊत कला महाविद्यालय, भातकुली.

प्रस्तावना

राष्ट्रसंतांच्या विचारांमध्ये राष्ट्र विकासाची खरी तळमळ दिसुन येते. आपल्या मानवतावादी दृष्टीकोन वैश्वीक एकता, लोकशाही, स्त्री-पुरुष समानता या सारख्या विचारांचा प्रचार आपल्या भजन, किर्तन, भाषणाद्वारे गावोगावी जावून केला. म्हणून राष्ट्रसंत हे श्रेष्ठ प्रतिचे राष्ट्रकार्य करणारे समाज धुराण होते. म्हणूनच भारताचे पहीले राष्ट्रपती डॉ. राजेंद्र प्रसादांनी त्यांना राष्ट्रसंत ही पदवी दिली.

दैनंदिन छोट्या छोट्या गोष्टीत ही राष्ट्रसंत उत्तम विचारांची बिज पेरतात. त्यामध्ये राष्ट्रीय वृत्ती जोपासतात. समाजातील सण उत्सव, लग्न, विधी, रुढी परंपरा, कर्तव्ये, जबाबदारी आपली शक्ती, संपत्ती, शिक्षण श्रम, उत्पादन या सगळ्या गोष्टी मध्ये राष्ट्रीय हित जोपासण्याचा प्रयत्न राष्ट्रसंतांनी केला. देश हाच देव हिच राष्ट्रीय मुल्य त्यांच्या विचारात आहे.

उद्दिष्टये

1) विज्ञान आणि तंत्रज्ञानाच्या क्षेत्रात भारताने कितीही गरुडझेप घेतली असली तरी माणसा माणसात पडत चाललेले अंतर, भारतीय संस्कृतीचा पडत चालेला विसर, बोकाळलेला भ्रष्टाचार, नैतिकतेचा होत असलेला ऱ्हास, चारीत्र्य संपन्न व्यक्तीच्या अभाव ह्या सर्व समस्या भारतीय राजकीय व्यवस्थेला खीळ घालणाऱ्या आहेत. म्हणून राष्ट्रसंतांच्या राष्ट्रीयत्व च्या विचारांची भारताला खरी गरज आहे.

2) मात्र आज संपूर्ण व्यवस्थाच आत्मकेंद्रीत व स्वार्थी झालेली आहे. राजकीय पुढारी ढोंगी, स्वार्थी आहेत. देशाप्रती कर्तव्य जबाबदारी न बाळगता किंवा कुठल्याही ठोस निर्णय न घेता केवळ स्वत:ची खुर्ची सांभाळत वेळ निभावून नेत आहेत. राष्ट्रसंतांना याची खंत दिसुन येते म्हणून ते म्हणतात एवढ्या कष्टाने मिळालेले स्वराज्य हे जर सुराज्य करायचे असेल तर राष्ट्राला पोषक असे वातावरण तयार केले पाहीजे हे उद्दिष्टय आहे.

सर्व विकासाचे केंद्र हे गाव असायला पाहीजे शेतकऱ्यांच्या कच्या मालाचे शोषण करणे थांबले पाहीजे त्याच्या मालाला बाजार पेठेत स्थान मिळाले पाहीजे.

गृहीतके

1) राष्ट्रसंतांचे राष्ट्रविकासाचे कार्य सत्ताधारी वर्गाला दिपस्तंभा प्रमाणे दिशादर्शक ठरु शकते.

2) राष्ट्रसंतांचे राष्ट्रवादी विचार भारतीय एकात्मतेसाठी अतिशय पोषक आहेत.

आजच्या जागतिकी करणाच्या युगामध्ये अनेक राष्ट्रे एकमेकांशी जोडल्या गेली आहेत. परस्पर सहकार्य व्यवसाय उद्योग विषयक करार, मालाची देवाण घेवान या शिवाय शिक्षण, नोकरी संदर्भात लोकांची येणे जाणे त्यामुळे सर्व राष्ट्रे ही एकमेकांशी जोडल्या गेली आहेत. परंतु त्यासोबतच राष्ट्रवादी वृत्ती ही सुध्दा जोपासली जाते. विज्ञान तंत्रज्ञानाने क्षेपणास्त्राच्या क्षेत्रातही खूप प्रगती केली आहे. त्यामुळे युध्दाचा धोका होण्याचा संभव निर्माण होतो. ही भिती प्रत्येक राष्ट्राला आहे. म्हणून जागतिक शांततेची गरज ही सर्व राष्ट्रांना आहे. त्यासाठी UNO ही संघटना कार्यरत आहे. पण तरी सुध्दा आज आतंकवाद, दहशतवाद, नक्षलवाद, गुन्हेगारी यांचे प्रमाण वाढलेले आहे. या सर्व परिस्थितीवर राष्ट्रसंतांचे विचार राष्ट्राला तारु शकतात.

VOLUME - IX, ISSUE - I - JANUARY - MARCH - 2020
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1) **धार्मीक आधार** :- समाजाला काळानुसार परिस्थिती नुसार ज्यांनी वळण दिले त्याच व्यक्ती देव, अवतार, ऋषि किंवा संत ठरलेत. आणि आम्ही आजपर्यंत फक्त त्यांचे गोडवे गातो. आम्ही स्वत:ला रामाचे भक्त समजतो त्यासाठी आम्ही राजकीयांचा आधार घेवून लोकांना भडकविण्याचा प्रयत्न करतो. आपली सत्ता राखण्यासाठी लोकांना आपसात लढायला शिकवतो. आमच्यात रामनिर्माण होत नाही. रामाचे सत्पुरूषी विचार आम्ही अवगत करु शकत नाही. आम्ही राम बनु शकत नाही आम्ही आपल्या स्वार्थी वृत्तीचे गुलाम आहोत धार्मीक आधारावर समाजात सुख शांती निर्माण करणे याने आमची प्रगती होईल. पण आम्ही ही धार्मिकता विसरत चाललो आहोत. धर्माचा अर्थ बदलवतो आहोत. हिंसकवृत्तीला प्रवृत करणारी विचारसरणी ही जगातील कुठल्याही धर्माची नाही राष्ट्रसंत म्हणतात-

धर्म नही कहता है, किसके बहुबेटी पर निगा करो।
धर्म नही कहता है, किसके जिवोपर हथियार धरो।
धर्म नही कहता है, किसके मजहब पर आघात करो।
धर्म नही कहता है, किसके घर लुटो बरबाद करो।

या नव लोकशाहीच्या व्यवस्थेमध्ये दुर्दैवाने हिंसेचे नियमीतीकरण होतांना दिसते व नागरीकांच्या आयुष्यातील जगण्याचा एक भाग बनु पाहते हिंसा, दहशत रोजच्या जगण्याचा भाग बनली आहे.

राष्ट्रसंतांना हे माहित होते की, देशाचा विकास करावयाचा असेल तर खेड्यापासून सुरवात करावी लागेल कारण भारताचा पाया म्हणजे ग्राम आहे आणि धर्मश्रध्दा हा भारतीय संस्कृतीचा मोठा गुण आहे. गुरूदेव सेवा मंडळाच्या माध्यमातून म्हणजे धार्मीकतेतून खेड्याची सर्वांगीण सुधारणा व्हावी हा त्याचा उद्देश होता. ध्येय शून्यतेकडे वाटचाल करणारी आजची पीढीला शिस्त लावणे आणि जाती, संप्रदायांना प्रार्थनेच्या आधारावर संघटीत करणे, स्वावलंबी जीवनाचा आदर्श त्यांच्या डोळ्यासमोर ठेवून त्यातून उद्योग निर्मीती करणे, व्यायाम व आयुर्वेदिक ज्ञान सर्वांना देणे. धार्मीकतेच्या नावावर वाढलेल्या विवाह खर्च आणि अनिष्ट रुढ्यांना घालवणे. साक्षरता, गोरक्षण, ग्रामसफाई या गोष्टींना उत्तेजन देणे. सक्रिय ज्ञानाच्या आधारे राष्ट्रीयता व मानवता यांची समाजात पेरणी करणे ही आजची राष्ट्रसेवा, धर्मसेवा व देश सेवा आहे. राष्ट्रसंतांची ही राष्ट्रनिर्मीतीची ज्वलंत तळमळ सदैव नवप्रकाश देणारी आहे. धार्मीक आधारावर लोकांना संघटीत करुन झोपी गेलेल्या समाजाला जागृत केले धर्मकारण आणि राजकारण यांना एकसुत्रात घेवून देशाला मार्गदर्शन करण्याचे कार्य राष्ट्रसंतांनी केले. लोकांचे मनोबल उंचावण्याचे कार्य केले. राष्ट्रीय कर्तव्याची जाणीव लोकांमध्ये निर्माण केले.

राष्ट्रसंतांच्या मते देशापुढे दोनच प्रश्न अत्यंत महत्वाचे आहे. एक म्हणजे देशाचे संरक्षण करणे त्यासाठी देशाला शस्त्र सज्ज करणे. दुसरे म्हणजे अन्न धान्याचे उत्पादन वाढवून देशाचे पोषण करणे. देश अन्नधान्याबाबत आत्मनिर्भर असायला पाहीजे.

शैक्षणिक

आजच्या उच्च शिक्षणासंबंधी बोलतांना राष्ट्रसंत म्हणतात की, फक्त डिग्री मिळवून सुशिक्षित बनणार नाहीत अंगुठा छाप माणूस सुध्दा शीलवान, गुणवान असला तर तो सुशिक्षित आहेत असे म्हणता येईल.

शिक्षणाच्या माध्यमातून चांगले संस्कार करणे महत्वाचे आहे. दु:संस्कार नष्ट केल्या शिवाय समाज सुखी होवू शकणार नाही. नाही समाजाचा आजवर विज्ञानाने केलेला विकास त्याचा विनाश व्हायला क्षणाचाही वेळ लागणार नाही म्हणून मनावरील दुसंस्कार दुर करण्याचे कार्य शिक्षकांनी शिक्षणाच्या माध्यमातून केले पाहीजे. शिक्षक हे राष्ट्राचे भाग्य विधाता आहेत. आज विद्यार्थी शिक्षण घेण्यासाठी किंवा नोकरी साठी परदेशात जातात पण राष्ट्रसंत म्हणतात तुम्ही परदेशातील दास होवू नका आपल्या जवळ जे काही आहे यातून भारताला उन्नत करा दहशतवाद, आतंकवाद, नक्षलवाद निपटून काढण्याचे मुळ आधार भारतात आहे भारतीय अध्यात्माचा जर अभ्यास केला तर जगातील सर्व प्रश्न सुटलील इतकी ताकद भारतीय

VOLUME - IX, ISSUE - I - JANUARY - MARCH - 2020
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अध्यात्मात आहे. म्हणून विज्ञाना सोबतच शिक्षणाला अध्यात्मीक जोड महत्त्वाची आहे. राष्ट्रसंतांची प्रार्थना ही मानवी शिक्षणाची पाठशाळा आहे. अध्यात्माच्या पायावर विज्ञानाची इमारत उभारली गेली तर विज्ञानरुपी महालात सुख शांतीने जगता येईल अन्यथा या महालात भूतांचा संचार होवून महालच कोसळून पडतील. म्हणून विद्यार्थ्यांना विश्वव्यापी धर्माची शिकवण देणे हेच विद्या मंदीराचे कार्य आहे.

स्वराज्याचे सुराज्य व्हायचे असेल तर प्रत्येक माणसाने आपणास राष्ट्राचे मालक व जनतेचे जबाबदार सेवक समजुन वागले पाहीजे. ज्या दिवशी राष्ट्राचे नवजवान हे राष्ट्र माझे आहे असे मनापासून म्हणतील त्या दिवशी राष्ट्रात नवचैतन्य निर्माण होईल.

स्वत:ला राष्ट्राच्या बऱ्या वाईटाचे जबाबदार समजून आपल्या संपूर्ण शक्तीचा राष्ट्रकार्याकडे उपयोग करणारे लोकच नेहमी राष्ट्र बनवीत असतात. केवळ उपदेश करून रामराज्य, सुराज्य, सत्ययुग येत नाही राष्ट्रधर्म हाच माझा धर्म आहे देवाच्या नावाने टिळा लावून देव बरोबर करतो म्हणून बसू नका. इथला प्रत्येक माणूस मग तो कुठल्याही धर्म, पंथाजातीचा असो प्रथम तो भारतीय माणूस आहे. त्याच्या प्रतिष्ठेशी आणि सुख दु:खाशी एकनिष्ठ राहणे हा माझा धर्म आहे. देशासाठी जे जे करता येईल ते ते केले पाहीजे. लढणाऱ्या दोन हातामागे खपणारे वीस हात असतात. त्या वीस हातामध्ये माझे दोन हात असले पाहीजे. भारत हे विजयीराष्ट्र आहे ते कायम चे विजयी कसे राहील या साठी दक्ष असणे आपले कर्तव्य आहे. श्रम हिच खरी राष्ट्राची संपत्ती आहे. त्यावर राष्ट्राचा गुणाचा भिस्त आहे. राष्ट्राला दोन व्यक्तींची गरज आहे. एक महात्मा आणि दुसरा हुतात्मा हे दोघे ही स्वत:च्या व्यक्तीगत उध्दारासाठी देवपुजा करणाऱ्या साधुपेक्षा लाखपटीने श्रेष्ठ आहेत. देशाला साधुंची गरज नाही ते जहरा प्रमाणे आहेत. समाजात सच्चा माणुस निर्माण करण्याची प्रतिज्ञा घ्या कुण्याही साधुसंताची गरज पडणार नाही. गावाला तिर्थ बनविले पाहीजे. सेवा बुध्दीने सर्वांशी वागले पाहीजे.

आज जगात ॲटम बॉम्ब, हायड्रोजन बॉम्ब, तयार करण्याची स्पर्धा सुरू आहे. अद्यावत क्षेपणास्त्र स्पर्धा सुरु आहे. तर दुसरी कडे जगा आणि जगवा असा ही प्रयत्न आहे.

मोठेपणा संग्रहात नाही तो त्यागात आहे. ऐतखाऊपणा हा राष्ट्रीय गुन्हा आहे. जो देश सेवा करेल कष्ट करेल, जमीन, खोदेल, गाव झाडील तोच पुढारी अशी लोकांची धारणा असली पाहीजे. आज देशाचा डोलारा जो उभा आहे तो स्वातंत्र्या लढ्यात लढणाऱ्या हुतात्मा होणाऱ्या लोकांच्या बलिदानावर उभा आहे. राष्ट्रासाठी हाडाची काडं करणाऱ्या थोरपुरुषांवर उभा आहे हे आपण विसरु शकत नाही म्हणून आपण ही जर राष्ट्र सेवेचे व्रत घेतले तरच उदयाचा भारत हा विकसीत भारत किंवा महासत्ता म्हणून आपण उदयाच्या भारताची स्वप्न पाहू शकतो यावरुन राष्ट्रसंतांनी ग्रामगीते मध्ये जे जे सांगीतले त्या प्रमाणे जर लोकांचे आचरण असेल तरच देश विकसीत होवू शकतो. संविधान हे जसे साधन आहे साध्या प्रत पोहोचण्यासाठी त्या प्रमाणे त्या संविधानाची अंमलबजावणी जर ग्रामगीते मध्ये सांगीतलेल्या आचरणा प्रमाणे जर केली तर भारत विकासाच्या टप्प्यात प्रथम असेल. म्हणून राष्ट्रसंतांच्या स्वप्नातील भारत कसा असावा हे ग्रामगीते मध्ये बालसंस्कारापासून तर विकसीत भारता पर्यंतचे सगळे संस्कार राष्ट्रसंतांनी सांगीतले आहेत. त्याची अंमलबजावणी करणे गरजेचे आहे पण मनुष्याचा स्वार्थीपणा आणि आजची बदलती परिस्थिती जागतीकरण उदारिकरणामुळे संस्कृती आणि सभ्यतेची सरमिसळ त्यामुळे आज लोकांना खऱ्या योग्य अशा मार्गदर्शकाचा गरज आहे ते मार्गदर्शन ते दिशा दर्शन राष्ट्रसंतांच्या विचारात आहे पण हे लोकांनी ओळखले पाहीजे. प्रचारक, नेत्यांनी अंगीकारले पाहीजे. समाजात विचाराची पेरणी केली पाहीजे.

आज मात्र जनसामान्यांच्या आशा आकांक्षांना कवेत घेणारी आणि त्यांच्या पंखांना अधिक बळकट करणारी भारतातील लोकशाही ची गळचेपी होतांना दिसत आहे. घसाला कोरड पडे पर्यंतची भाषणे प्रसिध्दीचा आणि हुकूमशाही धोरणे राबवतांना लोकशाहीचा रोज मृत्यु होतांना आम्ही सगळे उघड्या डोळ्यांनी पाहत असतो. लोक काट्याने काटा काढावा असे म्हटले जाते.

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तसेच आज लोकशाही व्यवहारातून लोकशाही व्यवस्था नष्ट करण्याचा सपाटा लावला आहे. पण नागरीकांच्या लक्षात मेतोय असे नाही. कारण ही लोकशाही विरोधी क्रांती ही मतपेटीतून घडते. पण लोकांच्या लक्षात येत नाही. लोकशाही चा देखावा करून निवडणूक ही होतात पक्षाचे नेते निवडून येतात. संसद न्यायालये ही आपली कामे करता. प्रतिनिधीत्वाचे दावे केले जातात आणि कल्याण कारी राज्यासाठी योजना आखल्या जातात परंतु या देखाव्या मागे एक भोकळपणा भरला असतो. या शासन व्यवस्थेच्या तीनही शाखा कायदे, विभाग न्यायालये आर्थिक कार्यकारी विभाग आणि प्रसार माध्यम या संस्था आतून पोखरल्या जातात. ही आजच्या वर्तमान लोकशाही ची शोकांतीका आहे. या तीनही शाखा एकमेकांना नियंत्रित ही करतात व स्वानियंत्रीतही असतात. परंतू आजच्या लोकशाही च्या मुखवट्याआड लपलेली हुकूमशाही वृत्तीमुळे संस्थात्मक कामकाजातील समतोल बिघडलेला आहे.

यावर उपाय राष्ट्रसंतांचे विश्वव्यापी विचारच देवू शकतात. कारण राष्ट्रसंतांची भारताकडे पाहण्याची दृष्टी विशाल होती त्यांच्या विचाराचा पाया समानतेच्या आधारावर उभा होता. लाखो खेड्यांच्या पुनरूज्जीवनाची तळमळ होती. शहरातील पाश्चात्य संस्कृतिच्या अंधानुकरणामुळे बदलती जीवन मुल्ये स्विकारणारी नवी पीढी समाजाला काय दिशा देवू शकेल हा प्रश्न उभा होता. आपल्याला भावी भारताचे नियोजन करायचे आहे म्हणून प्रथम माणसा मधील माणूस निर्माण झाला पाहीजे. राजकीय नेत्यांना ही दृष्टीनिर्माण झाली पाहीजे. प्रगतीचे नवनवीन प्रयोग करावे खेडी स्वायलंबी सुखी करे होईल याचे नियोजन करावे. राष्ट्रसंतांनी भारताच्या विकासामध्ये स्त्रीयांनाही मागे ठेवले नाही तिने ही आपल्या पती सोबत खांद्याला खांदा लावून काम केले पाहीजे ही भूमिका राष्ट्रसंतांची होती.

निष्कर्ष

1) माणसामध्ये माणूस निर्माण व्हावा ही अपेक्षा
2) देश हाच देव असावा.
3) खेड्यांना स्वयंपूर्ण व आत्मनिर्भर करावे.
4) देशसेवा समाजसेवा हेच धर्माचा अर्थ असावा.
5) विद्यार्थ्यांना उत्तम गुणवान धैर्यवान आणि शिस्तप्रीय शिक्षण द्यावे.
6) प्रत्येकाचे देशाप्रतीचे जे कर्तव्य आहे तोच प्रत्येकाचा धर्म असावा.

असा भारत राष्ट्रसंतांना अभिप्रेत होता.

संदर्भ

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2. लोकसत्ता वृत्तपत्र सन 2020.
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Naxalisem And Government Policy

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Introduction:

As many as GSS reports (255 civilians and 200 security personal) have been killed in naxal violence in 2009 renal figure released by the Home Ministry. The Naxal infested states of Chhattisgarh and Jharkhand accounted for 60% of the total death in the country in this period. The figures also reveal that Chhattisgardh is the state worst hit by Naxal violence. In the last three years, the state had topped the list. In 2008, 242 of the toal 721 naxal related deaths in the country were reported from the, state. In 2007. 369 out of 1565 naxal related deaths in the country were reported for Chhattisgard and in 2006. 388 out of 678 deaths.
Democracy has been hailed as the true and authentic voice of people, tangible and intangible interests. In a meaningful democracy, political stability the conventional framework of law and ethics are the two most desired continents have long cherished the dream of living under healthy governance their reaffirming the mandate for constitutionally approved governments efficiency levels or experience. Sometimes there is a limit to all that people in legal system fails them, the popular government becomes a toy in bourgeoisie and capitalist entrepreneurs, they lost the power to govern even own lives and there is asense of simmering anarchy. This is not a passing out of a strong sense of being wronged and alienated amidst their land.
Naxalism : Expressino of Socio-Economic View / Law & Order Problem place, Naxalbari. The young and fiery ideologies of the Marxist-Leninist move the (CPI)(M-L), envisioning a spontaneous mass upsurge all over India liberated zone. The Naxalite movement was born.
The year was 2008 Prime Minister Manmohan Singh warned, "Naxalism is our internal security." The credit for the survival of the movement for over the government, which has failed abysmally in addressing the causes and movement. The problem has been in the Indian stat's perception of the movement.

Naxalisem is a crucial problem now a day's facing by tribal's as well as common person. Typically this problem has been raised in current scenario. After 60 years of independence, India could not sort out this problem. It has various aspects and causes. This problem has been started from the various movements. Meanwhile violence added in this movement and called as a Xaxalisem. This problem has particular type of history. This problem has various names in different states. In short Naxalisem is organization of aggressive communities. Tribal area and communities are the main parasites of Naxals. Ideologically they are belonging to various trends of Maoism.

There is a basic difference between Naxalisem and Terrorism. But target of ' both the activities is common i.s. hurt and spread the terror in society. If we do the study seriously, we observe that the basic laccunas and drawbacks in government and administration system May be also we can say that one side government and society are the responsible for thi problem. Even local politicians and ministers are also involve in this process of Naxalisen problem. Money, wealth, weapons also sometimes provided by them.

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Women Empowerment and Human Rights

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Introduction:

Women's rights around the world is an important indicator to.understand global well-being. A major global women's rights treaty was ratified by the majority of the world's nations a few decades ago. A report from Human Rights watch, also describes how women's rights have not been observed in some countries as much as expected; in some places claims are made that women's rights will be respected more, yet policies are sometimes not changed enough— or at all — thus still undermining the rights of women. Yet, despite many successes in empowering women, numerous issues still exist in all areas of life, ranging from the cultural, political to the economic. For example, women often work more than men, yet are paid less; gender discrimination affects girls and women throughout their lifetime; and women and girls are often are the ones that suffer the most poverty.

Traditionally, grade of woman remained misconceived, as inferior being, so much that. Some ecclesiastics debated whether woman had soul and even concluded that she had not! She could legally be discriminated, and denied rights of vote, property, equal wages, etc. It was silent that patriarchal order was natural, as John Stuart Mill said, it existed since "the very earliest twilight of human society" .Discrimination based on race and gender existed side by side. Parallels were being drawn between women and slaves: both expected to be passive, cooperative, and dutiful. A court did not allow a woman to cast ballot in Missouri, stating: "women were excluded from suffrage" by laws Illinois Supreme Court' deprived of a woman to practice law, due to "timidity and delicacy", that her "mission" was "to fulfill the noble and benign offices of wife and mother. This is the law of the Creator." Violations of women's rights are still severe in much of the world, all indicators worse and reproductive rights are not recognized in international human rights law.

Problem focused :

The global awareness about the Human rights protections of the marginalized sections of the society in modem era is increasing, and the violations of it are also increasing but, with much greater speed. The theme is incomplete without covering women in the marginalized sections of Human Rights. Explaining human rights, they are regarded as those fundamental and inalienable rights which are essential for life as human being, which are basic rights or natural rights or common rights but analyzing female gender with male gender one founds that they are not being followed equally between the two genders. Being marginalized sections of society from girl to women, the formal and informal exploitation of them by the society will be discuss, with the available Legal parameters for there protection will also be the theme of paper. Hence the paper will try to highlight the legal protections of human rights of women and their empowerment.

Position of women in modern society :

Hon,ble Justice K Ramaswamy of Supreme Court in, Madhukiswar -V- State of Bihar (1966) 5 SCC 148 has stated the position of women in reality, that, women have always been discriminated against and have suffered and are suffering discrimination in silence. Self sacrifice and self denial are their nobility and fortitude and yet they have been subjected to all inequities, indirguites, inequality and discrimination.

Woman's Human Rights and the Legislations:

The Universal Declaration of Human Rights, 1948 declares that it is applicable without any discrimination of race , colour, sex, language or status. In its Article 3 it is said that everybody has a

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डॉ.एस.एस.सोमवंशी
सहयोगी प्राध्यापक, (समाजशास्त्र) महात्मा ज्योतिबा फुले महाविद्यालय भातकुली, जि.अमरावती

विसाव्या शतकातले असामान्य, अतुलनीय, बुद्धिजीवी व्यक्तिमत्त्व म्हणजे डॉ. बाबासाहेब आंबेडकर होय. त्यांनी जग आकलनाचा दूरदर्शीपणा बुद्धीच्या सामर्थ्यावर मिळविला होता. सुप्रसिद्ध मार्क्सवादी अर्थशास्त्रज्ञ पाल बरण यांनी हुशार आणि बुद्धजीवी मध्ये फरक केला आहे. आणि तो फरक म्हणजे हुशार माणसे त्यांची हुशारी स्वतःकरिता, स्वतःच्या भल्याकरिता उपयोगात आणतात, तर बुद्धिजीवी आपल्या बुद्धीच्या सामर्थ्यावर परिस्थितीचे सुयोग्य विश्लेषण करून समाज–बदल घडवून आणतात. डॉ. बाबासाहेब आंबेडकर पाल बरणच्या व्याख्येप्रमाणे सर्वोत्तम बुद्धिजीवींमध्ये मोडतात. Antonio Gramsci म्हणतात की, डॉ. बाबासाहेब आंबेडकर मूलतः बुद्धिजीवी व्यक्तिमत्त्वाचे एक असामान्य उदाहरण होय. त्यांच्या व्यक्तिमत्त्वाचा प्रत्येक पैलू पूर्णतः समाजाचे न्याय्यहक्क जोपासणारा आहे.

डॉ. आंबेडकरांचे कृषिविषयक विचार देशाला आणि शेतकऱ्याला आर्थिकदृष्ट्या सक्षम करणारे आहेत. शेतकऱ्यांच्या समस्या वरील उपाय त्यांनी 'Small Holdings in India and Their Remedies and Stats and Minorities मधून व्यक्त केले आहेत.

डॉ. आंबेडकरांची मुख्य कल्पना अशी होती की, स्वतंत्र भारतात ग्रामजीवनाचा स्तर उंचावण्यासाठी शासन जे जे प्रयत्न करील, त्याच पाया सामाजिक न्याय हाच असला पाहिजे. म्हणून औद्योगीकरण आणि शेती यांचे अतूट नाते असले पाहिजे. शेतीमालावर प्रक्रिया करणारे उद्योग शेतकऱ्यांच्या, शेतमजुरांच्या लाभासाठी निर्माण करणे आवश्यक आहे. विकास कार्यक्रमातून मिळणाऱ्या लाभांची न्याय्य तत्त्वावर समान वाटणी आणि आजवर जे वंचित म्हणून जगत आले त्यांना अग्रहक्क देण्याची गरज त्यांनी वारंवार प्रतिपादन केलेली आहे. डॉ. आंबेडकरांचा भर स्वावलंबनावर होता.

डॉ. बाबासाहेब आंबेडकरांनी ब्रिटिश सरकारला परखडपणे बजावले की, भारतावरील कर्जाचा बोजा काही अंशी तरी शिरावर घ्यावा. आपल्या विश्लेषणात बाबासाहेब म्हणतात, "1958 च्या कायद्यापासून लाभ होईल तो इंग्लंडच्या खिशात आणि कर्जाचा डोंगर भारताच्या डोक्यावर" डॉ. आंबेडकराचे हे विश्लेषण त्यांच्या प्रखर राष्ट्रीय बाण्याचे प्रतीक होते.

दामोदर नदी प्रकल्प

1944 मध्ये बंगाल सरकारने स्थापन केलेल्या दामोदर नदी पूर चौकशी कमेटी समोर डॉ. बाबासाहेब आंबेडकरांनी भारत सरकारचे मजूर प्रतिनिधी म्हणून केलेले भाषण शेतकऱ्यांना हितावह ठरले. दामोदर नदीच्या पुरामुळे हजारो लोकांचे प्राण जात आणि लाखो रुपयांचे नुकसान होत असे. दामोदर नदीला पूर येऊ नये, त्या पाण्याचा उपयोग शेती, विद्युत आणि वाहतुकीसाठी करता यावा म्हणून दामोदर नदी प्रकल्पाला मान्यता मिळविण्याची शिफारस केली. जलमार्ग आणि रेलमार्ग यात काहीच फरक नाही ह्या सत्याची आपण पुरेपूर दखल घेतली नाही आणि जर का रेलमार्ग हा राज्यानुसार विभागला जाऊ शकत नाही, तर जलमार्ग सुद्धा कोणत्याही हालतीत राज्या–राज्यांमध्ये विभागला जाऊ शकत नाही. ह्याच्या उलट आपण आपल्या घटनेला जलमार्ग व रेलमार्ग ह्यात फरक करण्याचा हक्क दिला आहे. ज्यामुळे रेलमार्ग तर केंद्रीय समजले जातात, पण जलमार्ग हे राज्याचे समजले जातात आणि ह्या चुकीचे खूप सारे वाईट परीणाम दिसून येतात. उदाहरणादाखल, जर एखाद्या राज्याला विद्युत निर्माण करायची आहे आणि त्यासाठी त्याला पाण्याची गरज आहे, पण ते पाणी ते राज्य वापरू शकत नाही. कारण जिथे बांध घातला आणि पाणी अडविले असे ठिकाण दुसऱ्या राज्यात आहे व ते राज्य कृषीप्रधान आहे. त्या राज्याला विद्युत निर्माण करण्यात कोणताच रस नाही किंवा त्या प्रकल्पासाठी तेवढा पैसा नाही आणि त्यामुळे दुसऱ्या गरज

प्रोग्रॅम नाही. जे काही आहेत ते अनेक व्यापरसनी भरलेला पातकी प्रोग्रॅम । (डिजिटल फॉर्ट्रेस कादंबरीमधून पृष्ठ क्र. ३३४)

डिजिटल फॉर्ट्रेस कादंबरीचे कथानक शोधण्यात अरो सांगता येईल. एन.एस.ए. या संस्थेने एका महासंगणकाच्या साहाय्याने कोणताही गुप्त मजकुराचा भेद करून उलगडा करणारी यंत्रणा निर्माण केली. एका गूढ मजकुराचा भेद मात्र त्यांच्या महासंगणकाला करता येईना. पाच मिनिटात होणारे त्याचे काम दिवस उलटून गेला तरी संपेना. ह्या संस्थेत सुसान नावाची एक सुंदर गणितज्ञ स्त्री होती. तिला त्या बेळी जे सत्य सापडले ते हादरणारे होते. सत्याला ओलीस धरले गेले होते. बॉम्बने नव्हे, शस्त्रांने नव्हे, तर फक्त एका अगम्य अशा सॉफ्टवेअरच्या कार्यक्रमाने सुसान संस्था वाचवण्यासाठी शर्थीचे प्रयत्न करत होती. सारे अमेरिका राष्ट्र पांगळे होण्याची वेळ जवळ येत चालली होती. शेवटी तिलाच आपला जीव वाचवण्यासाठी धडपड करत पळापळ करावी लागली. तिची सर्व बाजूंनी फसवणूक झाली होती. याच गडबडीत तीचा बॉस स्ट्रॉथमोरने तिच्या प्रियकराला डेव्हीडला स्पेन मध्ये पाठविले होते. या कादंबरीचा अनुभव एखाद्या वॉंड चित्रपटासारखा आहे. ज्यात प्रेम, खून, मारमाऱ्या, बौद्धिकता, संवादाची रसमिसळ, उत्कृष्ट कथानक सर्व मालमसाला जागच्या जागी डॅनने यथोचित भरून ठेवला आहे. कादंबरी अतिरंजक होणार नाही,जास्त तांत्रिक होणार नाही, अतिरोमांटिक होणार नाही. याची पुरेपुर खबरदारी घेत, या सर्व गोष्टीचा तोल सांभाळात एक वाचकप्रिय उत्कृष्ट कादंबरीची निर्मिती डॅनने केली असे म्हणता येईल.

स्ट्रॉथमोर हा एन.एस.ए. संस्थेचा मुखिया आहे. कादंबरीचे कथानक यांच्या भोवती खेळत राहते. त्याच्याशिवाय स्ट्रॉथमोर शिवाय ही कादंबरी जमूच शकली नसती, सुसान, डेव्हिड, हेल, ब्रिकरहॉफही सगळी पात्रे स्ट्रॉथमोरच्या भांडणात अडकून पडतात. अमेरीकेसारखा देश आणि त्यांच्या गुंतागुंतिच्या संरक्षण गुप्तचर संस्था हा खरोखरच नावीण्यपूर्ण विषय आहे. हिमनगासारखा फक्त अगदी बारीकसा कडा आपल्याला दिसतो पण त्या कड्याखाली असंख्य माणसे अविरत काम करीत असतात. याची सर्व प्रचीती प्रस्तूत कादंबरीत येते. ट्रान्सलेटर नावाच्या संगणाभोवती कादंबरीचा विषय फिरत राहतो.

टंकाडो हा जपानी मनुष्य आहे. हिरोशीमा आणि नागासाकी वर अमेरिकेने केलेला अनुबॉम हल्ल्यात त्याची आई वचावते आणि हाताला तिनच बोटे असणारा टंकारो जगतो व ती मरण पावते. या सर्वाचा बदला म्हणून टंकाटो अमेरिकेच्या द्वेशाला बळी पडतो. त्याला हे माहित आहे की, आपण एन.एस.ए. च्या महासंगणकाला जर संपविले तर अमेरिका एका मिनिटात संपून जाईल. कारण या संगणकात अमेरिकेचे हृदय ठेंटावॅक लपलेली होते. त्यासाठी डिजिटल फॉर्ट्रेस नावाचा तो प्रोग्राम तयार करतो. जो गुप्त मजकूर उलगडणाऱ्या ट्रान्सलेटर या महासंगणात गॉन्टलेट ला वगळून (गॉन्टलेट म्हणजे ॲन्टी व्हायरस प्रणाली) आत सोडतो. स्ट्रॉथमोरला त्यातील अल्गोरिदम उलगडून आपल्या जवळच्या काही ओळी त्या प्रोग्राम मध्ये घालून त्याला नेहमीसाठी अभेद्य ठेवायचा होता. जेणेकरून साऱ्या जगाची गोपनीय माहिती स्वत: वाचू शकत होता पण त्याच्या ट्रान्सलेटरचा भेद कोणीही करू शकले नसते. आणि साऱ्या जगातील संगणकात आपला प्रोग्राम घुसवून त्यातील सर्व माहितीवर तो नजर ठेवू पाहत होता. पण टंकाडोने या प्रोग्रामचा लिलाव मांडल्याने त्याची सर्व योजना फसली. डेव्हीडला टंकाडोच्या शोधार्थ त्याने स्पेनला पाठविले. स्पेनमध्ये डेव्हीड अनेक बुचकळ्यात पाडणाऱ्या आणि रोमांचकारी प्रसंगात अडकतो. इकडे टंकाडोच्या प्रोग्रामचा भेद करण्यासाठी ट्रांसलेटर सलग २० तास सुरु असतो..पण त्याला टंकाडोच्या प्रोग्रामचा भेद करता येत नाही. ट्रांसलेटर एका पास-की ची मागणी करतो, पास-की मिळाली की आपोआप ट्रांसलेटरची सुटका या प्रोग्रामधून होणार असते. या सर्व प्रकारामध्ये हेल आणि चतुरकोन मरून पडतात. क्रिप्टालॉजी (ट्रांसलेटरची लॅब) लाईट जाते. त्यात स्ट्रॉथमोर आणि सुसान उडकतात लाईट गेलल्याने ट्रांसलेटरला थंड करणारा वायू कमी पडल्याने ट्रांसलेटर गरम व्हायला लागतो. ट्रांसलेटर मधील सुरु असलेला टंकाडोचा प्रोग्राम सर्व फाईल नष्ट करायला सुरवात करतो तसेच सर्व जगातील हॅकर्स त्या संगणकावर हल्ला करुन त्यातील बहुमूल्य माहिती चोरण्याचा प्रयत्न सुरु करतात. इकडे स्पेनमधील टंकाडोच्या शोधात गेलेला डेव्हीड त्याला टंकाडोचा मृत्यू झालेला दिसतो.

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त्याच्या जवळ असणारी पास-की ही एका अंगठित असते हे त्याला कळते ती अंगठी घेण्यासाठी त्याच्या मृतदेहाजवळ तेव्हा डेव्हीड पोहोचतो. तेव्हा अंगठी तिथून गायब झालेली असते. त्याच्या शोधात डेव्हीड जातो. ना त्या अंगठीच्या शोधात अजून एक अज्ञात व्यक्ती लागते अंगठीशी संबंधीत सर्व व्यक्तींना तो फिल्मीस्टाईलमध्ये मारून टाकतो. शेवटी, तो डेव्हीडच्या मागे लागून त्यालाही मारून टाकण्याचा प्रयत्न करतो, पण मारेकऱ्यांचा गेम उलटा होतो. तो स्वतः त्या झटापटीत मृत्यू पावतो. डेव्हीडला टंकाडोची अंगठी मिळते पण स्टोरमोर आणि सुसान टंकाडोच्या प्रोग्रामपासून ट्रांसलेटर वाचविण्याचा आटोकाट प्रयत्न करीत असतात. एकसाथ सर्व सिक्रेट्सॉजी विभाग त्या कामाला लागलेला असतो. सर्वांना टंकाडो, ट्रांसलेटर, पास-की बद्दलची माहिती झालेली असते. अनेक शब्दात फेरफार करून ट्रांसलेटरला पास-की देण्यात येते, परंतु त्याला अंकाच्या स्वरूपात पास-की हवी असते. जशीजशी चुकीची पास-की त्या संगणकाला देण्यात येऊ लागली तसतसी डेडाबॅक दुप्पट वेगाने चोरीला जाऊ लागली. आता सर्वांची चिंता वाढायला लागली. त्या अंगठीवर कोरून ठेवलेली किल-कोड हा सांकेतीक भाषेत होता तो उलगडण्याकरिता एकंदरीत सर्व मंडळी विचार करायला लागली पण ट्रांन्सलेटरमधील माहिती संपूर्ण चोरी जायला आणि ट्रांसलेटर नष्ट व्हायला आता फक्त पंधरा मिनिटाचा अवधी उरला होता. सगळ्यांच्या चेहऱ्यांवर चिंतेचे ढग स्पष्ट दिसायला लागतात. पंधरा मिनिटात संपूर्ण अमेरिका उद्धस्त होईल. त्यातील गोपनीय माहिती चोरीला जाऊन टंकाडोचा विजय समोर दिसायला लागतो. टंकडोच्या प्रोग्राममध्ये असणारे बग (प्रोग्राममधील अतिरिक्त विनकामाची अक्षरे) सोशीने शोधून काढले. त्या अक्षरांचा प्रोग्राममध्ये तसा काहिही उपयोग नव्हता. परंतु त्यातील तर्कसंगतपना डेव्हीडने ओळखला. सुसान त्या अक्षरांमधील किलकोड ओळखण्याचा प्रयन्त सुरू ठेवला. आता ट्रान्सलेटर बंद पडायला फक्त एक मिनिट उरला होता. बगमधील तर्कसंगतपणा सुसानला थोडा-थोडा कळायला लागला होता. नागासाकी आणि हीरोशीमा यावर टाकलेल्या अनुबॉम्बमधील फरक अंकात ओळखायचा होता तो अंक म्हणजेच किला कोड होता. क्षणभराचाही वेळ न लावता तो फरक तिन होता हे सुसानला कळला, संगणकाच्या पळ्यावर तिन हा किल कोड टाईप केल्या बरोबर ट्रांसलेटर पूर्वीप्रमाणे चालू लागला. हॉकर्सचा हल्ला परतून लावण्यात आला. एकामोठ्या संकटातून अमेरीका वाचली होती. त्याचे सर्व श्रेय सुसानलाच जाणार होते. रोमहर्षक विजय सगळ्यांचा झाला होता.

निवडक पात्रे, कमी संवाद, निवडक स्थळ काळाची वर्णने आणि विशेष म्हणजे कादंबरीचा कालखंड फक्त २४ तासाचा अशा अफाट आणि अद्भूत विश्वाची सफर घडवून आणनारी कादंबरीचे वर्णन करायला हरकत नसावी. अमेरीकेतील प्रतिथयश कादंबरीकार डॉ ब्राऊन हा इंग्रजीचा प्राध्यापक आहे. पण त्याने लिहिलेल्या या कादंबरीचा आवाका एखाद्या संगणक विज्ञान कादंबरीला लाजवणारा आहे. संगणक बद्दलच्या सर्व बारीकसारीक तपशीलावर या कादंबरीत लेखकाने प्रकाश टाकला. वाचकाला उत्तेजीत करून आपल्या मागे कथानकासोबत नेणारा अनुभव ही कादंबरी वाचताना येतो. लेखक अनेक पातळ्यावर पात्रांचा आणि संवादाचा विचार करतो. तो करताना कादंबरी तांत्रिक तपशीलात अडकून बसू नये व त्या तांत्रिकतेमुळे वाचकाचा हिरमोड होऊ नये याची संपूर्ण दक्षता कादंबरीभर लेखकाने घेतली आहे. एखादा हॉलिऊड चित्रपट थ्रीडी चष्म्यातून पाहावा व अंग थरारून जावे असा जबरदस्त अनुभव कादंबरी वाचतांना येतो. या कादंबरीच्या लिखानात अमर्याद चुंबकत्व भरून आहे, ज्यामुळे वाचक कादंबरीला चिटकून राहतो हलत नाही. त्यामुळेच अनेक दिग्दर्शकाच्या हातून डॅन. ब्राऊन यांच्या कादंबरीचे चित्रपट झाले आहेत.

संदर्भ :- डिजिटल फॉर्ट्रेस, डॅन. ब्राऊन, अनुवाद : अशोक पाध्ये, मेहता पब्लिकेशन हाऊस, पुणे.

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7

भारतीय सेवा क्षेत्राच्या कामगिरीचा आढावा

डॉ. इंद्रजीत मोतीसिंग राजपूत
अर्थशास्त्र विभाग,
महात्मा फुले वाणिज्य, विज्ञान व विठ्ठलराव राऊत कला
महाविद्यालय, भातुकली, जि. अमरावती

Research Paper - Economics

प्रस्तावना :-

सेवा क्षेत्राचे वाढते महत्त्व हे भारताच्या वाढत्या आर्थिक विकासाचे एक महत्त्वाचे वैशिष्ट्य आहे. भारतात शेतीक्षेत्र आणि उद्योग क्षेत्रापेक्षा सेवा क्षेत्राची वाढ झपाट्याने घडून येत आहे. त्यामुळे स्थूल देशांतर्गत उत्पन्नातील सेवा क्षेत्राचा हिस्सा वाढत असल्याचे दिसून येते. राज्य स्तरीत विकासामध्ये देखील ही बाब पराावर्तीत झाल्याचे दिसून येते. भारताच्या सेवा क्षेत्रात व्यापार, दळणवळण, वाहतूक, बँकिंग, विमा, पर्यटन, सार्वजनिक प्रशासन, संरक्षण, वास्तव मालमत्ता, सामाजिक व व्यक्तिगत सेवा इत्यादी व्यवहारांचा समावेश होतो. या सर्व व्यवहारांची भारताच्या आर्थिक विकासात अत्यंत महत्त्वाची भूमिका आहे.

बहुतांश गरीब अर्थव्यवस्थांमध्ये कृषीक्षेत्र हे क्षेत्र प्रमुख क्षेत्र आहे. अर्थव्यवस्थेचा जस-जसा विकास घडून येत राहतो तसतसे आर्थिक क्रियांमध्ये औदयोगिक क्षेत्राचा हिस्सा वाढत जातो. उदयोगाच्या विकासाबरोबरच सेवा क्षेत्राच्या क्रियांना देखील प्रोत्साहन मिळते विविध देशांमधील अशा प्रकारच्या विकास आकृतीबंधास (Development Pattern) समोर ठेऊन काही अर्थतज्ञांनी (फिशर-१९३९, क्लार्क-१९४०, रोस्टो-१९६० आणि सायमन कुझनेट्स - १९७१) असे प्रतिपादन केले आहे की, विकास ही तीन चरणांमध्ये घडून येणारी प्रक्रिया आहे. विकास प्रक्रियेमध्ये सेवा क्षेत्राचे प्रभुत्व विकासाच्या तिसऱ्या चरणाशी जोडले आहे. परंतु भारतामध्ये अलीकडील वर्षांत आर्थिक वृध्दीमध्ये जी गती आली आहे तिचे कारण सेवा क्षेत्रातील गत्यात्मकता आहे. याउलट औदयोगिक क्षेत्राचे योगदान मागील तीन दशकांमध्ये जवळपास स्थिर राहिले आहे. सेवा क्षेत्राचा सध्या भारताच्या स्थूल देशीय उत्पन्नातील हिस्सा हा जवळपास ५७ % आहे आणि मागील दिड दशकात भारताच्या

वृद्धीमध्ये या क्षेत्राचे ६०% पेक्षा अधिक योगदान राहिले आहे. काही अर्थशास्त्रज्ञांच्या मते, भारतीय अर्थव्यवस्था एका भरीव विकास पथावर / मार्गावर (Unique Growth Path) चालली आहे. ज्यामध्ये एका मागास कृषी व्यवस्थेपासून ती झेप घेऊन थेट सेवा क्षेत्राच्या चरणात मोहरेल की जेथे सेवा क्षेत्राचा बोलबाला आहे. अर्थात अर्थव्यवस्था विकासाच्या दुसऱ्या चरणाच्या (औद्योगिकरणाचे प्रभुत्व असणाऱ्या) मध्यवर्ती अवस्थेला ओलांडून थेट सेवा क्षेत्राच्या प्रभुत्वाच्या तिसऱ्या चरणात पोहचते.

स्थूल देशीय उत्पादनातील सेवांचा हिस्सा (Service - GDP) :-

घटक खर्चानुसार (चालू किंमतीवर) भारताच्या स्थूल देशीय उत्पादनात सेवांचा हिस्सा सन १९५०-५१ मध्ये ३०.५% यामध्ये जलद गतीने वाढ घडून येऊन सन २००९-१० मध्ये हा हिस्सा ५५.२ % असा राहिला. जर निर्माणाचा देखील या क्षेत्रात समावेश केला तर या क्षेत्राचा हिस्सा वाढून सन २००९-१० मध्ये ६३.४% राहिला आहे.

भारतीय अर्थव्यवस्थेचा समग्र वृध्दीदर (मिश्रित वार्षिक वृध्दी दर) १९९० च्या दशकात ५.७% इतका होता तो वाढून सन २००४-०५ ते २००९-१० या दरम्यान ८.६% असा राहिला आहे. याचे कारण सेवा क्षेत्रात घडून आलेली वृध्दी हे आहे. सेवा क्षेत्रातील वृध्दी दर १९९० च्या दशकात ७.५% होता तो वाढून २००४-०५ ते २००९-१० या दरम्यान १०.३% असा राहिला. सेवा क्षेत्रातील वृध्दी ही या दरम्यानच्या कालावधीत कृषी आणि उदयोग क्षेत्रातील संयुक्त वार्षिक उत्पन्नामधील ६.६% वृध्दी दरापेक्षा बरीच गतिमान आहे. २००९-१० या वर्षी सेवा वृध्दी १०.१% ची होती. आणि २०१०-११ (अग्रिम अनुमान) मध्ये ही वृध्दी ९.६% राहिली.

भारतात सेवा रोजगार (Service Employment in India) :-

यदयपि प्राथमिक क्षेत्र (प्रामुख्याने कृषी) एक प्रमुख नियोक्ता आहे आणि या क्षेत्रानंतर सेवा क्षेत्राचा क्रम लागतो. मागील काही वर्षांपासुन सेवांचा हिस्सा वाढतच आहे. मात्र प्राथमिक क्षेत्राचा हिस्सा घटत आहे. सन १९९३-९४ ते २००४-०५ याच्या दरम्यान रोजगारामध्ये प्राथमिक क्षेत्राच्या हिश्यात बऱ्याच प्रमाणात घट घडून आली आहे. यदयपि दुय्यम व तृतीय क्षेत्रात ही प्रवृत्ती समान राहिली होती. २००४-०५ या वर्षाच्या तुलनेत २००७-०८ या वर्षी प्राथमिक क्षेत्रातील रोजगारी मध्ये घडून आलेली घट (-१.१%) ही इतर दोन क्षेत्रामधील रोजगारीमध्ये नाममात्र प्रमाणतील वृध्दीच्या तुलनेत कमी होती. जी इतर दोन क्षेत्रांच्या दरम्यान पुन्हा जवळपास सम-रामान विभागली गेली ही बाब खालील पत्रकात दर्शव्यली आहे.

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तक्ता क्रमांक - १ रोजगारीत प्रमुख क्षेत्रांचा हिस्सा

क्षेत्र	हिस्सा			हिश्यामधील परिवर्तन		
	१९९३-९४	२००४-०५	२००७-०८	२००७-०८ Over १९९३-९४	२००७-०८ Over २००४-०५	२००७-०८ Over १९९३-९४
प्राथमिक	६४.५	५९.०	५५.९	-७.५	-१.१	-८.६
द्वितीय	१४.३	१८.२	१८.७	३.९	०.५	४.४
तृतीय	२१.२	२४.८	२५.४	३.६	०.६	४.२

Source :- Economic survey - २०१०-११ Page No. २३८

भारत सेवांमध्ये प्रत्यक्ष विदेशी गुंतवणूक (FDI in Services in India)

प्रत्यक्ष विदेशी गुंतवणुक प्रवाहामध्ये सेवांच्या हिश्यांची गणना करण्यात काही रागरया आहेत. कारण Computer Hardware and Software, दुरसंचार आणि निर्माण यासारख्या काही क्षेत्रात सेवांमध्ये आणि वस्तूंमध्ये कार्याचा स्पष्ट स्वरुपात भेद करणे हे अत्यंत कठीण काम आहे. तरी देखील चार संयुक्त क्षेत्रांच्या सेवा (वित्तीय आणि बिगर वित्तीय) Computer Hardware and Software Telecommunications, Housing and Real Estate हिश्यात मुख्यस्वरुपात सेवा समाविष्ठ आहेत. एप्रिल २००० पासून डिसेंबर २०१० पर्यंत प्रत्यक्ष विदेशी गुंतवणूक रानभाग प्रवाह जवळपास ४४% आहे जर निर्माणास यामध्ये सामाविष्ट केले तर हा हिस्सा ५% होतो. वित्तीय आणि बिगर वित्तीय सेवाक्षेत्र की जे पुर्ण स्वरुपात सेवा वर्गात येते से २१% हिश्याच्या बरोबरीने अधिक प्रत्यक्ष विदेशी गुंतवणूक समभाग प्रवाह प्राप्त करणारा वर्ग आहे. दुसऱ्या स्थानावर Computer Hardware and Software Telecommunications, हे दोन वर्ग आहे ज्यामध्ये प्रत्येकाचा हिस्सा ८% आहे. यानंतर गृह व अचल संपत्ती आणि निर्माण सेवांचा क्रम लागतो. ज्यामध्ये प्रत्येकाचा हिस्सा ७% आहे. ही बाब खालील पत्रकामध्ये दर्शविली आहे.

पत्रक क्रमांक - २ महत्तम प्रत्यक्ष विदेशी रामबाग प्रवाह आकर्षित करणारे क्षेत्र
(यादेटी रुपयांमध्ये)

क्रमांक	क्षेत्र	२००८-०९ (एप्रिल-मार्च)	२००९-१० (एप्रिल-मार्च)	२००८-०९ (एप्रिल-डिसें)	संचित प्रवाह (एप्रिल-२००० डिसें २०१०)	एकुण प्रवाहाची टक्केवारी (अमेरिकन डॉलर्स मध्ये)
१	सेवा क्षेत्र (वित्तीय व वित्तर वित्तीय)	२०५९८ (६९३८)	२८७७८ (४४५३)	१३५४४ (२८५३)	१८२७४ (२६४६)	२१%
२	Computer Software and Hardware	७३२९ (१३७६)	४३५१ (९१९)	३०५४ (६३०)	४७७४ (१०८९)	८%
३	दुरसंचार (रेडिओ पेजिंग, सेल्युलर मोबाईल, बेसिक टेलिफोन सेवा)	१०२७ (२५५८)	१२३८ (२५१७)	६८२१ (१४२१)	४६४७ (९८५७)	८%
४	गृह व अचल संपदा	१६८२१ (३८०१)	१३५६ (२८४४)	४८८० (९०२४)	५०८९ (९३८१)	७%
५	निर्माण कार्य (रस्ते व राजमार्गांसहित)	७१९२ (२०१८)	१५१६ (२८८२)	४७०९ (९९५)	३९८२ (८१६४)	७%

वैश्विक आपत्तीच्या कारणाने २००९-१० या वर्षांमध्ये ५.५% च्या घटीबरोबरच भारतासाठी प्रत्यक्ष विदेशी गुंतवणूक प्रवाहामध्ये घट घडून आल्याचे दिसून आले. अश प्रकारे सेवा क्षेत्रामध्ये देखील प्रत्यक्ष विदेशी गुंतवणूक प्रवाहात २९% ची (अमेरिकन डॉलर्सच्या संदर्भात) घट दिसून आली २०१०-११ या वर्षीच्या पहिल्या नऊ महिन्यामध्ये देखील एकुण मिळून प्रत्यक्ष विदेशी गुंतवणूकींच्या दिशेने आणि सेवा क्षेत्रात कोणतीही सुधारणा दिसून आली नाही.

राज्यनिहाय तुलना (State - Wise Comparison) :-

निरनिराळी राज्ये आणि संघ राज्य क्षेत्रांच्या स्थूल राज्य देशीय उत्पन्नातील सेवांच्या हिश्याची तुलना केली असता आपणांस अशी माहिती प्राप्त होते की, सेवा क्षेत्र भारतातील अधिकांश राज्यांत प्रमुख क्षेत्र आहे. दिल्ली, चंदीगड, केरळ, महाराष्ट्र, बिहार, तामिळनाडू आणि पश्चिम बंगाल सारख्या राज्यांचा हिस्सा अखिल भारतीय हिश्याबरोबर किंवा त्यापेक्षा अधिक आहे. स्थूल राज्य देशीय उत्पन्नाची राज्यनिहाय वृध्दी ही तृतीय क्षेत्राच्या अपेक्षित तीव्र वृध्दीशी घनिष्ठ स्वरुपात जोडली आहे. बिहारने सन २००८-०९ मध्ये उच्चतम सरासरी वृध्दी दर साध्य केला होता. सेवांमध्ये देखील सर्वात जलदगतीने वाढणाऱ्या राज्यांमध्ये बिहारचा समावेश आहे. निम्न आधार हेच बिहारच्या जलदगतीने प्रतीचे कारण आहे. छत्तीसगड सारखी छोटी राज्ये आणि ओरिसा व राजस्थान सारख्या

Unfiled Notes Page 4

अपेक्षित निम्न उत्पन्न असणाऱ्या राज्यांनी की ज्यांचा अपेक्षित निम्न रागप्र वृध्दीदर आहे. त्यांनी प्रगतीच्या शीखरावर चढण्यासाठी आपल्या सेवा क्षेत्राच्या घांगल्या कामगिरीवर भर देण्यारा सुरुवात केली आहे. अशा प्रकारे भारतात सेवा क्रांती ही काही राज्यांपुरतीच केंद्रित राहण्याऐवजी आणखीनच अधिक व्यापक आधारित बनली आहे.

सेवा निर्यात (Service Exports) :-

भारत सेवा प्रधान निर्यात वृध्दीच्या दिशेन देखील वाढत आहे. शोधन शेषाच्या संदर्भातील आकडेवारीनुसार २००४-०५ पासून २००८-०९ पर्यंतच्या दरम्यान माल आणि सेवा निर्यात क्रमश: २२.२% आणि २५.३% ने वाढली. जागतिक मंदीच्या कारणाने २००९-१० मध्ये सेवा वृधीत घट घडून आली परंतु ही घट माल निर्यात वृध्दीमधील घटीच्या तुलनेत कमी होती आणि २७.४% च्या वृध्दी दराने २०१०-११ च्या प्रथम राहा महिन्यात यामध्ये जलदगतीने सुधारणा घडून आली. स्थूल देशीय उत्पन्नाच्या टक्केवारी स्वरुपात सेवांच्यासहीत एकुण व्यापाराने प्रदर्शित अर्थव्यवस्थेचे खुलेपण २०००-०१ मध्ये २९.२% वरुन उल्लेखनीयरित्या वाढून २००८-०९ मध्ये ५३.९% झाले. यद्यपि जागतिक आपतीच्या कारणाने २००९-१० मध्ये हा दर घटून ४६.१% असा खाली आला.

भारतासाठी महत्वपूर्ण सेवा (Important Service for India) :-

भारतामध्ये या सुधारित कार्यप्रणालीसाठी काही सेवा विशेष स्वरुपात महत्वपुर्ण राहिल्या आहेत. सॉफ्टवेअर (Software) क्षेत्रात भारताने उल्लेखनीय वैश्विक बँडथी ओळख साध्य केली आहे. भारतीय सेवांमध्ये पर्यटन आणि यात्रेशी संबधित सेवा व परिवहन सेवा हा देखील महत्वपुर्ण विभाग आहे. याच्या अतिरिक्त संभावित आणि वाढत्या सेवांमध्ये अनेक विशेषज्ञ सेवा, मूलभूत संबंधित सेवा आणि वित्तीय सेवांचा समावेश होतो.

केंद्रीय सांख्यिकी संघटनेने (CSOs) सेवा क्षेत्राचे चार वर्गात वर्गीकरण केले आहे असे १. व्यापार, हॉटेल्स आणि रेस्टॉरन्ट २. वाहतूक, दळणवळ आणि भांडारण ३. वित्तपोषण, विमा, अचल संपदा आणि व्यापारी सेवा ४. सामुदायिक, सामाजिक आणि खाजगी सेवा यामधील वित्तपोषण, विमा, अचल संपदा, व्यापारी सेवा, व्यापार हॉटेल्स आणि रेस्टॉरन्ट्स हे सर्वात मोठे समूह आहेत. या समूहांचा सन २००९-१० मध्ये राष्ट्रीय स्थूल देशांतर्गत उत्पन्नात क्रमश: १६.७ % आणि १६.३% हिस्सा होता. सामुदायिक, सामाजिक आणि खाजगी सेवा वर्गाचा हिस्सा १४.४% आहे तर वाहतूक दळणवळण आणि भांडारण यांचा हिस्सा ७.८% आहे. सीमेवरल स्थित सेवांचा (निर्माणाचा) हिस्सा ८.२% आहे. विविध सेवांचा स्थूल देशीय उत्पन्नातील हिस्सा खालील पत्रकात दर्शविली आहे.

Unfiled Notes Page 5

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Role of banks in agriculture & Rural development

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Introduction :

In the last few years, the Indian economy has, emerged as one of the fastest growing economics in the world. However, the vulnerability of the Indian economy with respect to the performance of the agricultural sector despite ollici macroccoriomic indicators and sectors gaining in urength is well known. For example, the Indian economy grew at an estimated 4.7 per cent in 2012-13 against 5.6 per cent during 2012-13. This was largely because of the negative ative growth of 6.5 per cent in the agriculture sector. Many economists and policy-makers increasingly believe that the future growth of the domestic economy, to a large extent, will depend on die robust performance of the agricultural and rural sector. The manufacturing and service sectors-cannot sustain the economy's growth if the rural sector underper forms.

The contribution of the banking and financial sector to the current economic growth of the Indian economy "IK very significant. This is reflected in the growth in aggregate deposits and advances for scheduled commercial hanks, which stood at 15:4 per cent and 28.9 per cent during 004-200. However, the access of banking services to the rural, agriculture and the common man in general is not as promising.

As Mr. V. Leeladhar (Deputy Governor, RBI, on the occasion of the Commemorative lecture at the Fedbank Hor-mis Memorial Foundation, Ernakulam) said "Despite making significant improvements in all the areas relating to financial viability, profitability and competitiveness, there are concerns that banks have not been able to include a vast segment of the population, especially the underprivileged sections of the society, into the fold of basic banking services.

The focus of Indian banks on financial inclusion i.e. delivery of banking services at an affordable cost of the low-income groups has been dismal. In India, the focus of the financial inclusion at present is more or less confined to ensuring a bare minimum access to a savings bank account without frills to all. Having a current account/savings account on its own, cannot be regarded as an accurate indicator of financial inclusion.

Need for Banking in Rural and Agricuitu ral Areas: The rural population in India sutlers from a great deal of indebtedness and is subject to exploit 11 tion in the credit market due to high interest rates and die lack of convenient act-oss to credit. Rural households need credit for investing in agriculture and smoothen-ing out seasonal fluctuations in earnings. Since cash flows and savings in rural areas for the majority of households are small, rural households typically tend to rely on credit for other consumption needs like education, food, housing, household functions, etc. Rural households need access to financial institutions that can provide them with credit at lower rates and at reasonable terms than the traditional money-lender and thereby htlji them avoid debt-traps that arc common in rural India.

Agricultural Credit : An dually important concern at needs attention is the flow of institutional credit to agriculture. The progress of agricultural credit in India has depended crucially on government intervention over the years i.e. package of incentives policy measures, which the and the Centre formulate and implement the growth of commercial banks' landing to agriculture and allied activities witnessed a substantial decline in the 1990s as compared to the 1980s. Credit flow to the agriculture sector from all for sources amounted to Rs. 70,810 crore in 2012-13 and Rs. 86,981 crore in 2003-04, much below the levels envisaged in the Tenth Plan. Agriculture's share in scheduled

commercial banks' total outstanding credit as on 31st March 2015 was only Rs. 1,12,475 crore. The total agricultural lending by commercial banks is lower than credit in "Personal loans" which stood at Rs. 2,66,988 crore, comprising advances for housing and consumer durables.

Promoting Micro-finance/Micro enterprise : Micro-finance refers to the provision of small-scale savings, credit, insurance and any other financial services to those who cannot access them from formal financial institutions. Due to issues of risk and cost associated with servicing the larger numbers of small low capital in out businesses, the formal sector lending to micro enterprises is low. Banks offer a variety of potential advantages for financing micro-enterprises like commercial outlook and relatively sophisticated skills. A part from acting as a credit provider, the banks should act as agents of change by helping people in acquiring the basic knowledge of business, policy environment, etc.

Well-defined investment policy: RBI/NABARD should also provide a well-defined in-vesc ment policy for the above-mentioned institutions. This will help these institutions in better deployment of surplus funds. In comparison to PSB's and Private Sector banks these institutions can't afford to have statistically sophisticated models for investment and treasury management. In that regard they se the guidance and as stance from the supervisor in this area.

Learning from other counc ries /Adopting new models: Banks also need to look at the models followed by banks in other countries. For example, Bangladesh Grameen Hank model and micro-finance experience of Philippines are quite well-known. Banking Correspondents in Brazil is another successful model where banks can create a network of "banking correspondents". These banking correspondents are small outlets, which provide basic banking services, example drug stores, petrol pump, small stores in the neighbourhood, etc. The widely spread post-offices network in the country can also be used to deliver banking services. Banks and regulators need to look at these models and their feasibility in the Indian scenario to bridge the banking divide.

Widening the reach: Of the 155 million farm households merely 36% have been covered by institutional credit, leaving a majority of them out of the scope of farm credit. Banks need to broaden their coverage so that the rural households can also reap the benefits of institutional credit. The Chartered Accountants can assist the banks and institutions in devising strategies to increase the reach of credit.

Risk-based pricing: Risk based pricing for rural and agricultural credits can expose minorit.es, low-income families and first-time creditors to higher interest costs and hence further keeping them economically vulnerable. Hence, then- is a scope for Chartered Accountants who can assist Rural a Agro-Financing institutions in balancing principles .of social justice and profit while assessing comprehensive risks of the borrower.

New product innovation & development for the agriculture/rural sector: Chartered Accountants should focus on developing new products suited to agricultural and rural requirements for better fund mobilisation and credit disbursement. They should look at more non-food crops and also offer more flexibility in repayment schedules in order to bring rural credit to the mainstream. Owing to their reach, banks are in a better position to cross-sell other products like crop insurance in the rural sector too. This will help alleviate the farmers in times of distress. A wider network of specialised ATMs suited to rural needs may make the spread of rural banking easier. For example, as part of its rural initiative, some banks are developing a low cost ATM to cater to the needs of villages in India. Products like Kisan Credit Cards (KCC), which address the needs of farmers and cultivators, have been very successful. Similar products should be designed to provide banking services to artisans, agricultural labour, and household entrepreneurs. Chartered Accountants should not limit their thinking only to designing the products for microcredit. A lot of innovation needs to be done for designing micro-savings products also.

Target SME : Small and Medium Enterprises (SMEs) nave an important role to play, which is evident from their contribution to GDP, employment generation and export earnings, etc. The Third Census of SSI Sector conducted by the Government of India reveals that SSI sector (registered and unregistered units) comprised 1,05,21,190 units in 2012-13. About 57.0 per cent of these units were located in rural India. So, a strong focus of the banks on rural credit will have a positive impact in strengthening the SME sector Chartered Accountants Can play a crucial role both in the development of SME's

Reduce cost : The overhead cost of operations for banks in Rural India will be more because of low business per employee and the large number of small clients. However, mechanisation and centralisation of accounting, cheaper office premises, engagement of external agents for recovery of loans and marketing of products will make up for the other drawbacks. Cross-selling of products can also help banks to reduce the cost. For example, the cost to serve a customer who takes a loan is as high as 25 per cent. Chatered Accountants can assist the banks in selling health insurance, weather insurance and other financial products to the same customer, which will substantially reduce the cost to serve the customer to 7-8 per cent.

Know your customer norms : If banks can offer housing and car loans through simple procedures in urban markets, it is unreasonable of have complicated procedures in the rural sector. Simplification of loan procedures and credit accessibility will attract quality and high net worth borrowers. Chartered Accountants can assist both the borrowers and lenders in fulfilling the desired know your Customer norms.

Training requirements : Chartered Accountants can assist the banks in improving the skills of the farm lending managers for better assessment and disbursement of credit. They can also help in sensitising people engaged in agriculture and alied activities, regarding usage of credit.

Micro-finance institutions : Commercial banks are now allowed to appoint MFIs as "banking correspondents". Banks can now delegate some of their routine banking functions to the MFIs. This can help them extend their coverage at far lower costs than would be possible with their own networks. The MFIs. too will gain as they will get to handle a variety of sophisticated financial products and earn a fee income. The Self Help Groups-bank linkage has several benefits like lower transaction costs, negligible NPAs and generation of goodwill among the rural populace. Chartered Accountants can play a crucial.

Conclusion :

To achieve the ambitious average GDP growth of 9 per cent per annum target set in the Tenth Plan, it is important to revitalise and revamp not only the agricultural sector but also rural financial institutions. The directed lending norms that require commercial banks to allocate 40 per cent of their lending to the priority sector have not generate the intended results, since most of the banks get around this requirement by subscribing to other eligible instruments. Large farmers and agri-businesses seem to be able to obtain financial services from modern financial institutions but small and marginal farmers continue to depend, largely, on indigenous money-lenders.

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ई–कॉमर्स क्षेत्र आणि सेवा

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महात्मा ज्योतिबा फुले वाणिज्य, विज्ञान
व विठ्ठलराव राऊत कला महाविद्यालय भातकुली, जि. अमरावती.

प्रस्तावना :

ई कॉमर्स म्हणजे मोबाईल व संगणकाद्वारे खरेदी व पैश्याच्या व्यवहार, भारतात त्याची सुरुवात संथ झाली असून मात्र जगात याची झपाट्याने वाढ झाली. भविष्यकाळात ई–कॉमर्स च्या पावलावर पाऊल ठेवून एम–कॉमर्स खरेदीचे मोठे माध्यम ठरणार आहे. आणि ते लवकरच देशाला व जगाला पहायला मिळणार आहे. एम–कॉमर्स सेवेचा उपयोग बँकींग, ट्रव्हल, तिकीट, चित्रपटाचे तिकीट आणि युटीलीटी बिल पगारासाठी वापरण्यात येणार आहे. एम–कॉमर्सने अनेक मोठमोठ्या कंपन्यांशी कनेक्शन जोडले आहे. भारताला आणि जगाला देखील नवीन बदल हवा आहे. बदला मुळे ग्राहकांच्या व व्यापाऱ्यांच्या सेवा तात्काळ घडून येणार आहे. ई–कॉमर्सद्वारे वस्तु खरेदी करणाऱ्यांची संख्या 4 कोटीपेक्षा जास्त. 6.5 कोटीपर्यंत पोहोचली आहे. ही सेवा जगातील नागरिक सहजरित्या करू शकतील. सध्याच्या स्पर्धेच्या युगात कोणाच्या जवळ वेळ शिल्लक राहीला नाही. प्रत्येक व्यक्ति आपल्या दैनंदिन कामासाठी ते काम व्यैयक्तिक असो अथवा सामुहीक असो धावपळ करीत असतोच मात्र ई–कॉमर्स ही सेवा उपलब्ध करण्यासाठी थोडा खर्च करावा लागतो. ई कॉमर्स सेवा उपलब्ध झाली असून सन 2014 मध्ये ई–कॉमर्स ची भरपूर डिमांड राहिली देशात पिल्लपकार्ड आणि स्नॅपडील सारख्या कंपण्या ई कॉमर्सचे मोठे खिलाडू अमेजॉनसारख्या ग्लोबल कंपन्यापेक्षा अग्रेसर ठरल्या आहेत. इंटरनेटचा वापर करणारी लोकांची संख्या झपाट्याने वाढत आहे. आता ई–कॉमर्स आणि त्याच बरोबर एम–कॉमर्सचा सुध्दा वापर चांगल्या प्रकारे केला जात आहे.

एम–कॉमर्सचा उपयोग :

एम कॉमर्स वित्तीय व्यवहारात खरेदीचे मोठे आव्हान व माध्यम बनले आहे. भारतीयांचा ऑनलाईन शॉपींगवरील (खरेदी विक्री) खर्च सुध्दा मोठ्या प्रमाणत वाढला आहे. आता एम–कॉमर्स कडे मोठमोठ्या कंपण्या वळत आहे. या व्यक्तिरिक्त स्मार्ट फोन आणि टॅबलेटच्या खरीदया सुध्दा वाढल्या आहे. जसे कॅलक्युलेटरचा उपयोग प्रत्येक व्यक्ति सहजपणे हिशेब करण्यासाठी करतो तसावा काही दिवसाने टेबलेटचा (मीनी लॅपटॉप) उपयोग प्रत्येक व्यक्ति व्यवहारात करणार आहे. जागतिकीकरणने अख्ये जग जवळ आले आहे. प्रत्येक देश इतर देशासोबत खरेदी विक्रीच्या वाटाघाटी वाढल्या त्यांच्या देशाच्या रूपयाचे अवमुल्यात तावडतोब होवू लागले ग्राहकाच्या अपेक्षा वाढल्या नवीन–नवीन इलेक्ट्रॉनिक्सचे माध्यम सहज व कमी पैश्यात उपलब्ध होवू लागले ते सरळ व सोपे झाले, लोक सहज वापरू लागले त्यामुळे प्रत्येक व्यक्ति आपल्या कामात मग्न झाला.

ई–कॉमर्सचे महत्व :

सध्याच्या वर्तमान काळात संगणक व मोबाईचाच वापर मोठ्या प्रमाणात नेटवर्कींग साठी उपयोग केला जात आहे. हे सर्व इंटरनेट व नेटवर्कमुळे जास्तीत जास्त व सहजरित्या काम होत आहे. यामध्ये वस्तु व सेवेचा देण्याघेण्याचा व्यवहार सुरळीत होईल. ई–कॉमर्सद्वारे ग्राहक व व्यापारी वर्ग जोडला गेला आहे. त्यासाठी सरकारने देखील व्यापारी व ग्राहकाला सुध्दा कमी खर्चात सर्वात जास्तीत जास्त फायदा कसा करता येईल या माध्यमाचा विकास करता येईल ते सुध्दा भारताचे टेक्नॉलाजींच्या माध्यमातून प्रत्यन चालु आहे. उदा. काही दिवसापूर्वी भारताने मंगलयान ग्रह सोडला तो ग्रह अवकाशत उत्तमरित्या जसे

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भारताला हवे होते तसाच काम करत आहे. हा महामुळे संगणक नेटवर्कींग क्षेत्रात झपाटयाने बदल होतांना दिसत आहे. ग्राहकाच्या व व्यापायाच्या सेवा सुविधा वेगाने बदलत आहे.

ई कॉमर्स चे फायदे :

1. ई–कॉमर्स मुले ग्राहक व व्यापारी वर्गाच्या वस्तुच्या देवान–घेवानीचा व मौद्रीकतेचा मार्ग सुलभ झाला.
2. ग्राहकाच्या पसंदी प्रमाणे वस्तु या सेवा उपलब्ध होऊ लागल्या.
3. उत्पादनात व गुणवत्तेला चालणा मिळाली उपभोक्त्याला चांगल्या सेवा मिळाल्या.
4. उत्पादकता, व्यापारी व ग्राहकाला घर बसल्या वस्तुची सेवा मिळाली . ई–कॉमर्समुळे कुशल कामगार उपलब्ध होऊ लागले.
5. ई कॉमर्समुळे ग्राहकाची बाजारपेठेतील (पत) वाढली नगदी व उधारीचे व्यवहार सहजरीत्या होऊ लागले.
6. उत्पादकता, व्यापारी व ग्राहक वर्गातील 24 तास सेवाचे देवान–घेवान वाढले.
7. संगणक किंवा मोबाईलद्वारे एक व्यक्ति दुसऱ्या व्यक्तिच्या जवळ आला.
9. ई–कॉमर्स हो ऑनलाईन प्रणाली झाल्यामुळे केव्हाही वस्तुची डिलेव्हरी मिळते.
10. मोबाईल बँकींग, एटीएम, इंटरनेट बँकोंग, क्रेडी/डेबीट कार्ड, इपीएस कोअर बँक सुवीधा, स्मार्ट कार्ड, किसान कार्ड, इलेक्ट्रॉनिक्स फंडस् ट्रान्सफर व ऑनलाईन बँकिंग... इत्यादी सुविधा ई–कॉमर्स मुळे उपलब्ध झाल्या.

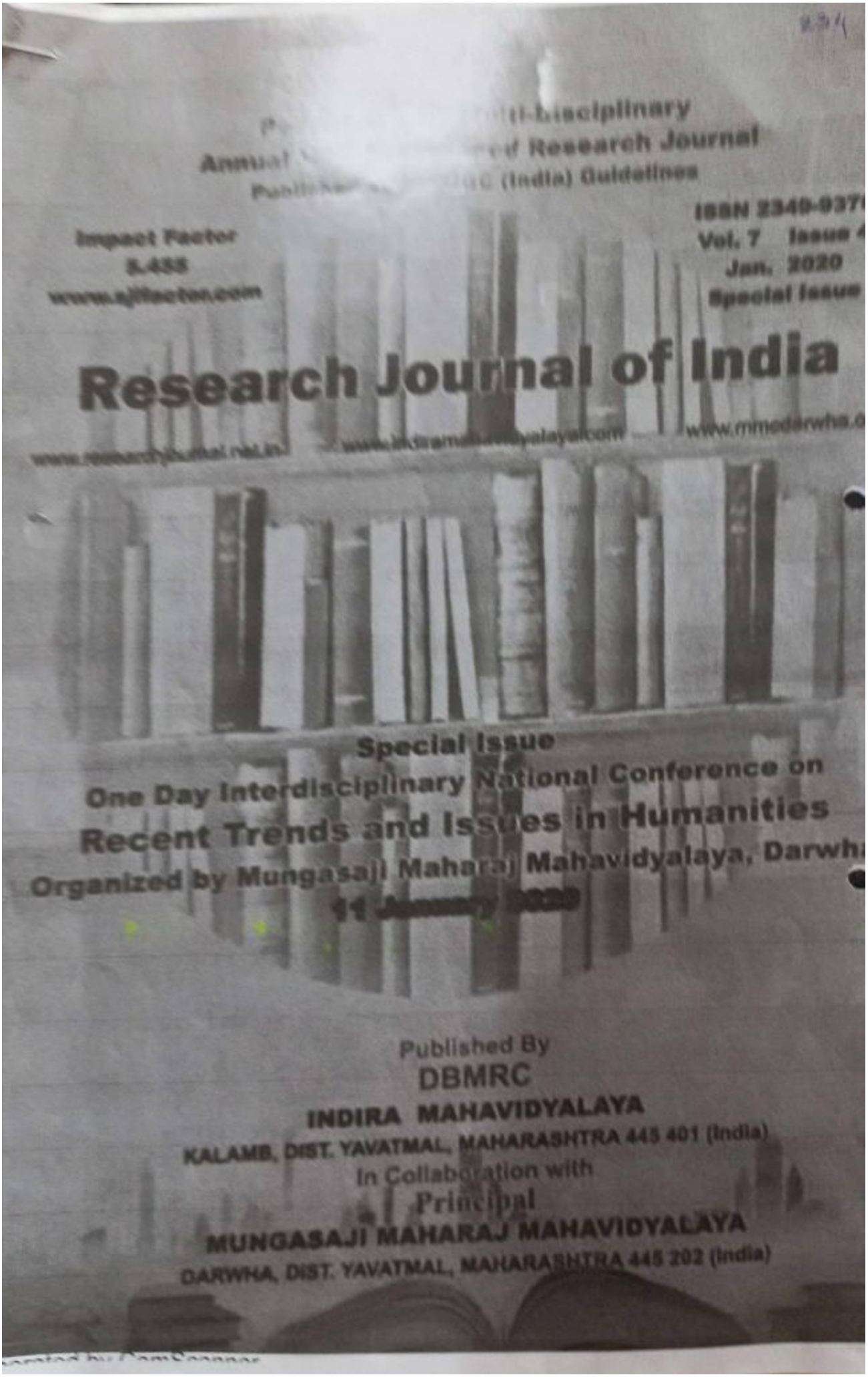
ई–कॉमर्सचे दोष :

1. ई कॉमर्स मुळे वैश्यिक व्यवसायाववर नकारात्मक प्रभाव दिसून येतो.
2. ई–कॉमर्स ही खर्चीक पध्दत आहे.
3. ग्राहकाला वस्तु प्रत्यक्ष पहायला मिळत नाही.
4. ई–कॉमर्स मुळे दळणवळणाच्या सेवेबद्दल वाट पहावी लागते.
5. ई–कॉमर्सचे नेटवकींग सेवा खेड्यापाड्यात न पोहचू शकल्याने ग्राहकाला व व्यापाऱ्याला सेवा ताबडतोब मिळू शकत नाही.
6. ग्राहकाला वस्तुचे पेमेंटच्या वेळी पासवर्ड नंबर टाकतांना बरीच हेराफेरी होऊ शकते.
7. ग्राहकाला व व्यापाऱ्याला ऑनलाईन माहिती पाठवितांना सर्वर डाऊन चा प्रश्न प्रत्येक क्षेत्रात जानवतो.
8. नेटवर्किंगची मुख्य समस्या विद्युत पुरवठा झालीण

निष्कर्ष :

उपरोक्त सर्व मुद्यावरून असे दिसून येते की, भारतात ई–कॉमर्स चा उपयोग करणारे प्रमाण जरी कमी असले तरी त्यामध्ये वाढ होत आहे. ई–कॉमर्स हे संगणक मोबाईलद्वारे करणारे व्यापार क्षेत्रात आदान प्रदान असुन ई कॉमर्स सोबतच एम कॉमर्स खरेदीचे मोठे माध्यम ठरले असुन अनेक बाहय कंपन्यांशी नेटवर्कींग जोडले आहे. नविन तंत्रज्ञानाच्या प्रणालीत जाऊन नवनवीन साधनाचा उपयोग होत आहे. जसे मंगलयान ग्रहाद्वारे होणारी सुविधा इतकेच नाही तर ई कॉमर्स वापरणारा विद्यार्थी व्यापारी, नोकरदार त्यामध्येही 20 ते 30 वयोगटातील लोक ई–कॉमर्सचा उपयोग घेतांना दिसतात यापासून उपरोक्त फायदे व तोटे सुध्दा दिसून आले. विकसनशिल देशात तसेच अविकसीत देशांना जागतीक बाजारपेठेत आपले स्थान निश्चित करण्याचे सर्वात चांगली संधी ई–कॉमर्सच्या माध्यमातून मिळत आहे. त्यामुळे अशा देशात तंत्रज्ञानाचा प्रसार व प्रचार होईलच परंतु त्या देशाची अर्थव्यवस्था मजबुत होईल, म्हणून ई–कॉमर्स बाजारपेठेतील सामर्थशील साधन आहे.

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Place of Agriculture in National Economy

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Conclusion

Thus agriculture occupies a position of outstand importance in the Indian economy having a high employment potential, it is important in its contribution to national income as a source of food and raw materials, as being vital to international trade, as a yielder of state revenue and as a contributor to social and political stability. But too much dependence on agriculture makes the Indian economy unstable and unbalance and is a major cause of India's appalling poverty.

The importance of Agriculture to India can hardly be exaggerated. It is the very backbone of her economic system and is her premier, national, key industry. In fact the prosperity of agriculture is synonymous with the property of India. Also, agriculture is assuming even greater importance with the passage of time. Internal demand for food is on the increase as a result of growing population and rising standard of living. Indian agriculture will have to meet the need of more raw materials of a better quality as the economy grows under the Five Year Plans. Agriculture is important from several point of view.

As a Source of Livelihood :-

Millions of people in India draw their livehood from agriculture. Some draw their sustenance from direct cultivation, others from the movement of crops and still others from trade in the agriculture products. About 75% of the people depend for living on agriculture, directly and indirectly. Whereas in the West and other developed countries, the percentage of the people dependent on agriculture has been going down and is 10 to 20 %, in India it has remained remarkably stable.

As a Contributor to National Income :-

Out of a total national income the share of agriculture in the national income is bound to go down as the Indian economy grows, as it has happened in the developed countries of the west, yet for a long time to come, it seems the pre-dominance of agriculture is likely to continue.

As a Supplier of Food. -

The inhabitants of the country obtain their food from agriculture in various forms, e.g. cereals, fruit, vegetables, etc. What would have happened to the teeming millions without this source of food can be easily imagined. But we cannot help adding that it is a sorry state of affairs when India has to depend on foreign food in spite of three - fourths of its people engaged in agriculture.

As a support for Industrial Development :-

It goes without saying that industrialisation of India draws its supports and sustenance from Indian agriculture. It supplies the industrial raw materials like cotton, jute, and sugar cane. Prosperous agriculture will provide the necessary purchasing power to the rural masses for the consumption of manufactured goods. It will lay the foundation of many agro industries, e.g., food processing industries.

Importance in Trade :-

Agriculture products constitute the mainstaples of our internal external trade. Indian agriculture thus determines the volume and composition of trade.

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As a Foreign Exchange Eraner :-

Indian tea, oil seeds, spices, tobacco, etc., find ready market abroad and earn for the country valuable foreign exchange which is an important wherewithal of economic development. Bymeans of it India is able to obtain from abroad plant and machinery, accessories,industrial raw materials and technical know-how.

Financial stability :-

Agriculture is very foundation of financial stability of the Government. Agriculture prosperity enables the Finance Ministers to balance the budgets. A bad year for agriculture is a bad year all round, for it brings down the railway earnings, yield from land revenue and many other taxes.

Social and Political Importance:-

Agriculture has also great social and political significance for the country. Agriculture are a sturdy self - reliant class a people who are the backbone of the stste. They are the best soldiers With there fixed out look and attitudes; they exercise a great stabilizing influence in the social and political spheres.

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Knowledge Of Indian Economy

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Introduction :-

The Knowledge Assessment Methodology 2016 (KAM) is an interactive benchmarking tool created by the Knowledge for Development Program, World Bank to help countries identify the challenges and opportunities they face in making the transition to the knowledge based economy. The KAM consists of more than 80 structural and qualitative variables to measure countries' performance on the four Knowledge Economy (KE) pillars: Economic Incentive and Institutional Regime, Education, Innovation, and Information and Communications Technologies. Variables are normalized on a scale of zero to ten relative to other countries in the comparison group. The KAM also allows to derives country's overall Knowledge Economy Index (KEI) and Knowledge Index (KI).

The KAM Knowledge Index (KI) measures a country's ability to generate, adopt and diffuse knowledge. This is an indication of overall potential of knowledge development in a given country. Methodologically, the KI is the simple average of the normalized performance scores of a country or region on the key variables in three Knowledge Economy pillars - education and human resources, the innovation system and Information and Communication Technology (ICT).

The KEI takes into account whether the environment is conducive for knowledge to be used effectively for economic development. It is an aggregate index that represents the overall level of development of a country or region towards the Knowledge Economy. The KEI is calculated based on the average of the normalized performance scores of a country or region on all four pillars related to the knowledge economy - economic incentive and institutional regime, education and human resources, the innovation system and ICT.

For the purposes of calculating KI and KEI, each pillar is represented by three key variables.

The Economic Incentive and Institutional Regime

- Tariff & Nontariff Barriers
- Regulatory Quality
- Rule of Law

Education and Human Resources

- Adult Literacy Rate
- Secondary Enrollment
- Tertiary Enrollment

The Innovation System

- Researchers in R&D
- Patent Applications Granted by the US Patent and Trademark Office
- Scientific and Technical Journal Articles

These three variables are available in two forms: scaled by population and in absolute values. Thus, both KI and KEI are also available in "weighted" and "unweighted" forms. In innovation, absolute size of resources matters, as there are strong economies of scale in the production of knowledge and because knowledge is not consumed in its use.

Information and Communication Technology (ICT)

- Telephones per 1,000 people
- Computers per 1,000 people
- Internet Users per 10,000 people

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Table 1 : Knowledge Economy Index G-7 Countries

Overall Rank	Country	KEI	KI	Econ. Incentive Regime	Innovation	Education	ICT
6	United States	8.74	8.9	8.26	9.42	8.38	8.91
9	Canada	8.68	8.73	8.51	9.05	8.52	8.63
10	United Kingdom	8.57	8.77	8.36	8.62	8.44	9.25
13	Germany	8.48	8.57	8.19	8.8	8.07	8.85
14	Japan	8.42	8.6	7.88	9.27	8.15	8.36
19	France	8.21	8.34	7.81	8.06	8.44	8.13
27	Italy	7.66	7.85	7.07	7.4	7.84	8.58

Table 2: Knowledge Economy Index – Select Asain Countries

Overall Rank	Country	KEI	KI	Econ. Incentive Regime	Innovation	Education	ICT
20	Singapore	8.20	7.71	9.65	9.20	4.92	9.01
28	Korea Rep	7.60	8.23	5.70	8.10	7.57	8.82
46	Malaysia	5.69	5.52	6.20	5.14	4.36	7.05
66	Thailand	4.88	4.88	4.87	4.47	5.17	4.99
69	Mongolia	4.42	4.37	4.56	2.42	6.22	4.49
73	China	4.23	4.32	4.10	4.78	3.93	4.24
78	Philippines	4.03	3.82	4.66	2.38	5.05	4.02
81	Sri lanka	3.82	3.47	4.86	3.46	4.52	2.44
90	Indonisia	2.96	2.96	2.96	2.34	3.59	2.93
97	India	2.71	2.58	3.11	3.64	2.11	2.00
99	Vietnam	2.69	2.82	2.28	3.61	3.40	2.75
115	Pakistan	1.51	1.48	1.60	2.31	1.04	1.30
122	Bangladesh	1.20	1.35	0.76	1.63	1.57	0.83
125	Nepal	1.05	0.92	1.44	0.85	1.36	0.57
129	Lao PDR	0.85	0.91	0.06	0.15	1.86	0.72

The normalization procedure used in the KAM is as follows:

1. The actual data (u) is collected from World Bank datasets and international literature for all the variables and countries,
2. Ranks are allocated to countries based on the absolute values (actual data) that describe each and every one of more than 80 variables (rank u). Countries with the same performance are allocated the same rank. Therefore, the rank equals 1 for a country that performs the best among the countries in our sample on a particular variable (that is, it has the highest score), the rank equals to 2 for a country that performs second best, and so on.
3. The number of countries with worse rank (Nw) is calculated for each country.
4. The following formula is used in order to normalize the scores for every country on every variable according to their ranking and in relation to the total number of countries in the sample (We) with available data : **Normalized *(u)* = 10*(Nw/Ne)**
5. The above formula allocates a normalized score from 0 to 10 for each country.

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Commerce Education In Globle Prespecive

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ABSTRACT:

Commerce offers foundation for many professional careers like Finance, Planning, Accountancy, Tax Practitioners, Banking and Broking etc, besides academics, research, and many more. Persons having flair for accounting, finance, commodities, marketing and trading etc. generally choose Commerce as first career choice.

As a stream of study, Commerce can be studied right after 10 years of schooling. After the 10 years of schooling - commerce is available as an option in 10+2 or the Higher Secondary level. This paves the Way for higher studies in commerce related subjects.

The undergraduate and postgraduate Education in Commerce is offered at University departments and colleges spread all across the country. Specializations are offered at post graduate and at research levels.

A number of subjects can be studied under disciplines of Commerce in conjugation like; accountancy, economics, mathematics, business, finance etc. Most commerce colleges in India offer the following subjects:

This section deals with Commerce education in India after Class 12. Commerce is one of the most important streams of education in India after Science. Some students even opt commerce as the first choice after Class 12. Commerce in its broad sense is the exchange of items of value or products between persons or companies and any such exchange of money for a product, service, or information is considered a deal of commerce. Over the years, importance of commerce as a stream has increased with the integration of the world economy.

Courses in Commerce

As a stream of study, Commerce can be studied right after 10 years of schooling. After the 10 years of schooling - commerce is available as an option in 10+2 or the Higher Secondary level. This paves the way for higher studies in commerce related subjects. One can pursue B.Com after Class 12 and shape a career in various sectors like banking, financial services, business and industry, government services and law. B.Com also opens doors for Bachelor in Business The undergraduate (B.Com) and postgraduate (M.Com) courses in Commerce is offered at University departments and colleges spread all across the country. For more information on courses in commerce.

Introduction :-

Business industry, trade and Commerce has became highly technology oriented and sophisticated. Information technology is in flouncing every walk of business, Information technology revolution has made the world a global village. The change induced by business and industry through science and technology demands rapid individual and social adjustment because it renders Products and Procedures obsolete aiong with skills and attitudes of men and jobs too.

Commerce is an integral part of total educational system. It is a living discipline and a totally different from other disciplines. It must charter new routes to serve the aspirations of the name and to bring in socio-economic revolution in the Society. There Fare it should be related to the national objectives in order to establish its Social relevance if it were to get social approval. To man the economic development of the Country. In the last 20 Year the rate of increase of commerce graduates have out stripped the rate of growth of our economy. We need now purposive practical and socially

relevant commerce education which must accept the challenges of the time and produce young men and women for shouldering the task of nation building.

Some reasons for the fast growth in the demand for commerce courses

1. Expansion of service industry like banking and insurance, a
2. Expansion in the government and increased demand for accounting, Marketing and personnel services.
3. Stagnation of job opportunities in physical science and engineering.
4. Scope for entrepreneurship in small business and industry.
5. Scientific approach at business and industrial houses.

Commerce Education as it stands today is completely insulated from the realities of the industrial environment. Most practical courses has now became highly thence over a period of years due to variables reasons.

1. Lack of uniformity in the courses prescribed and the absence of clear cut adjectives.
2. Non available of suitable text books and reference books.
3. Indiscriminate large scale admission of student to commerce courses.
4. Too much emphasis on theory
5. Lack of proper Planning for commerce education host of other reasons.
6. Absence of modern methods of teaching and use of teaching aids and lack of training to teachers.
7. Inadequate research facilities both for students and teachers

In order to overcome the above drawbacks and to develop in the Commerce graduate the tools so analysis capable of application and adoption in the changing pattern of business and industrial world the following changes are suggested.

1. Providing basic skill in commerce operations, in addition in collating proper vocational interests, attitudes arid human values in students.
2. Commerce courses should be made work oriented, job-oriented, and socially relevant for the social good.
3. Establishment of a data bank for business and industrial research.
4. Close interaction/linkage with industries and business houses should be established.
5. Vocationalisation and proffer ssimglisation of commerce courses.
6. Restructuring the course with suitable orientation towards job fitness.
7. "A" Business laboratory with required from and equipment's should be set up in each college to import practical training to the students.

The Education commission had long knack observed that educational technology being shaped in her class rooms. The fear that educational technology will replace the teacher in the class room has to be removed from the minds of educators. It must be noted that the best tools and techniques cannot replace the teacher in the classroom. These will certainly facilitate more effective and efficient teaching and better learning. The development of technology has facilitated even teacher less class rooms by the use of nationwide net work of computerized and televised instructional programmers. To think that India can afford such techniques is unrealistic presently but it should be taken as an advance warning for its indispensability in iuiure.

It is interesting to recall a statement made by late prime minister Jawaharlal Nehru with reference to his visit to the USA in 1961, "You can imagine my embarrassment when I was told by a college professor that students who had gone there for advanced training in the dairy industry did not know how to milk a cow "Similarly imagine the discomfiture of the commerce who goes to serve in a bank without knowing how a cherub is encased.

Commerce is no more a stranger seeking recognition and pleading for acceptance in Indian universities and college. It is a major contributing partner in the national educational experience. We

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need confidently to look ahead and boldly go ahead consolidating our gains, systematizing our methods and fighting to make our contribution to society bigger and better. Let it not be said that men of our generation failed to give it a timely turn towards new meaning and usefulness.

To Sum up it may be said that the educational system of a country is like a bank on which the nation draws a cherub whenever if requires strong, reliable and skilled workers. If it becomes bankrupt it is a national disaster. Education has continued to evolve, diversify and extend its reach and coverage since the dawn of human history. Every country develops its system of education to express and provide its unique sociocultural identity and also to meet the challenges of the times. There are moments in history when new direction has to be given to an age old process that moment has come to day.

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Opportunities challenges in E- Commerce in Indian Perspective

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INTRODUCTION :

E-commerce is anything that involves an online transaction. This can range from ordering online, to financial transactions e.g. movement of cash, from one branch to other branch all over the country. The e-business is one of the biggest things that have taken the Indian business by Storm. It is creating an entire new economy, which has a huge potential and is fundamentally changing the way. The e-business is one of the biggest things that have taken the Indian business by storm. It is creating an entire new economy, which has a huge potential and is fundamentally changing the way businesses are done. It has advantages for both buyers as well as sellers and this win-win situation is at the core of its phenomenal rise. The e-business is one of the biggest things that have taken the Indian business by rising income and a greater variety of goods and services that can be bought over the internet is making buying online more attractive and convenient for consumers all over the country. Electronic commerce is presently an essential ingredient of India's trade fundamentally changing the e- business the is one of the biggest things that have taken the Indian business on new scenario.

Advantages :

1) Rising incomes and a greater variety of goods and services that can be bought over the internet is making buying online more attractive and convenient for consumers all over the country. Electronic commerce is become essential part of India's trade.
2) Lower prices compared to brick and mortar retail driven by disintermediation and reduced inventory and real estate costs.
3) Increase use of online sites. The selling buying of second had goods are also increasing on large scale.
4) Evolution of the online marketplace model with sites like E-buy, Snapdeal, Flip kart, Infibeam quetinina.in and Tradus. The evolution of E_ business has come a full circle with market place models taking center positionagain.
5) The all transaction of banking are performing with help of internet banking software. No banking is possible if internet facility is out of order. Withdrawal of cash, ATM operation credit cards, debit cards are operated only with internet facility.

History of Internet:

India has an internet user base of about 137 million as of June 2012. The access of e-businessis low as compared to markets like the United States and the United Kingdom but is growing at a much faster rate with a large number of new entrants. Cash on delivery is a unique thing to India and is a preferred payment method. Indiahas a vibrant cash economy as a result of which around 80% of Indian e-business tends to be Cash on Deliverymen-busmess in India is still in burgeoning stage but it offers extensive opportunityin developing countries like India. Highly intensed urban areas with very high literacyrates, huge rural population with fast increasing literacy rate, a rapidly growing. Internet user base, technology advancement and adoption and such other factors makelndia a dream destination for e-business players. Moreover, squat cost of personal.

Computers, an emergent installed base for Internet use and a progressively more competitive Internet Service Provider (ISP) market has added fuel to the fire in augmenting e-commerce growth in Asia's second most populous nation. India's e-Business industry is on the growth curve and

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experiencing a surge in growth. The Online Travel Industry is the biggest segment in e business and is flourishing largely due to the Internet-savvy urban population. The other segments, categorized under online non-travel industry, include e-Tailing (online retail), online classifieds and Digital Downloads (still in a blossoming stage). The online travel industry has somePrivate companies such as Makemytrip, Cleartrip and Yatra as well as a stronggovemment presence in terms of IRCTC, which is a successful Indian Railwaysinitiative. The online classifieds segment is broadly divided into three sectors; Jorjs, Matrimonial and Real Estate. A description by the Internet and Mobile Association oflndia has exposed that India's e-business market is mounting at an average rate of 70 percent annually and has grown over 500 percent since 2007. Apparently, more online users in India are willing to make purchases through thelnternet. Overall e-commerce industry is on the edge to experience a high growth inthe next couple of years. The e-commerce market in India was largely dominated by the online travel industry with 80% market share while electronic retail (E-Tailing) held second place with 6.48% market share-Tailing and digital downloads are expected to grow at a faster rate, while onlinetravel will continue to rule the major proportion of market share. Due to increased ecommerce initiatives and awareness by brands, e-Tailing has experienced decent growth. According to the Indian Ecommerce Report released by Internet and Mobile. Investment Bank specializing in digital media and technology sector, the Indian ecommerce.

Opportunities and challenge of E- Commerce in India.

As per "India Goes Digital", a report by Avendus Capital, a leading Indian market was estimated at Rs 28,500 Crore for the year 2011 Online travel constitutes a sizable portion (87%) of this market today. Online travel market in India is expected to reach Rs 54,800 Croreby 2015.Indian e-tailing industry is estimated to grow toRs 53,000 Crorein 2015.Overall e-commerce market is expected to reach Rs 1,07,800 corers by the year 2015 with both online travel and e-tailing contributing equally. Another big segment in e-commerce is mobile/DTH recharge with nearly 1 milliontransactions daily by operator websites.

Conclusion:

1. Indian customers return much of the commodities they purchase online

business in India has many first time buyers. This means that they have not yetmade up their mind about what to expect from e-business websites. As a result, buyerssometimes fall prey to hard sell. But by the time the product is actually delivered, theyreveal remorse and return the goods. Though consumer remorse is a global problem, but it is all the more prevalent in a country like India, where much of the growth comes from new buyers. Returns are expensive for e-business companies, as reverse logistics presents unique challenges. This becomes all the more complex in crossbrede-business.

2. Cash payment is made on-line:

Low credit card access and low trust in online transactions has led to cash on delivery being the preferred payment choice in India. Unlike electronic payments, manual cash collection is painstaking, risky, and expensive.

3. Payment gateways have a high failure rate.

As if the preference for cash on delivery was not bad enough, Indian payment gateways have an unusually high failure rate by global standards. E-business companies using Indian payment gateways are losing out on business, as several customers do not attempt making payment again after a transaction fails.

4. Internet penetration is low.

Internet penetration in India is still on very small scale as compared to the western country. On top of that, the quality of connectivity is poor in severalregions. But both these problems are on their last legs. The day is not far whenconnectivity issues would not feature in a list of challenges to e-business in India.

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Palladium-Doped Zinc Oxide Nanomaterial For Liquefied Petroleum Gas Detection.

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Abstract: *The liquid petroleum gas sensing characteristics of Palladium doped zinc oxide (ZnO) films have been studied. Microwave synthesis method was used for synthesis of zinc oxide and Palladium doped zinc oxide nanomaterial and screen printing technology was used to prepare thick-film sensor element. The thick films were characterized by using X-ray diffractogram, field emission scanning electron microscopy and energy dispersive X-ray analysis. The 3 wt. % Pd doped ZnO thick film show sensitivity to LPG at room temperature and maximum sensitivity at 350 °K temperature with fast response and recovery time.*

Keywords: *Gas sensor, Palladium, Thick film, ZnO.*

Date of Submission: 20-01-2020 Date of Acceptance: 05-02-2020

I. Introduction

Zinc oxide nanomaterial play an important role in applications of electronic devices, in particular for gas sensing. The growth conditions of ZnO nanocrystals affects availability of ZnO crystals in distributed discrete gas sensing devices and the uniformity, size and defects of ZnO nanocrystals are strongly influenced by this condition. Gas sensing and optical properties of ZnO nanomaterial differ from the bulk materials i.e. sensitivity and selectivity are sufficiently high in case of nanomaterial. ZnO nanomaterials possess a large surface atom/bulk atom ratio. This ratio correspondence to a higher sensitivity, thermal stability and compatibility with other nano devices [1- 8]. Hence ZnO nanomaterials are used as a gas sensor. ZnO nanords resist formation of rust. Because of these properties, ZnO is widely used in chemical and humidity sensing devices. Metal oxides cannot easily differentiate between different types of gases, but by adding certain noble metals as dopants can enhance the gas sensing performance [9 -15]. The optical and electrical properties of ZnO can be enhanced by adding Noble dopants in ZnO which increase the sensitive performance. Palladium metal is used as an impurity in ZnO because of its special electronic configuration, i.e., 4d. Due to the sensitivity of the palladium ions with deep holes on singly ionized oxygen interstitials, Zn anti-site vacancies, and oxygen vacancies, it is of interest to find out whether Pd incorporated in ZnO significantly improves sensitivity and specificity [16 - 19].

In long term devices and space craft's hydrogen sensors based on Pd are used for detection of hydrogen leaked from fuel cells and proton-exchange membrane to minimized weight and power of sensor. Chemical vapour deposition (CVD), RF sputtering methods to prepare ZnO nanorods or doping of Pd in ZnO are expensive methods [20, 21].

In this work, we report the microwave assisted synthesis of Pd doped ZnO nanomaterial. Pd doped ZnO nanomaterials were synthesized by using simple instruments i. e. microwave and magnetic stirrer. The effect of dopant concentrations on structural properties were studied from X-ray diffraction (XRD) and morphological properties were studied by using scanning electron microscopy (SEM). Synthesized powders were used to fabricate the sensor elements in the form of thick films with a screen printing technique and gas sensing response of prepared thick films were tested for different gases i. e. NH_3, H_2S, CO_2, LPG and Ethanol gas.

II. Experimental

2.1 Synthesis of pure and Pd doped ZnO:

In preparation of pure and Palladium doped ZnO nanomaterial, zinc acetate ($(CH_3.COO)_2$. Zn. $2H_2O$) and Palladium chloride (0 wt. %, 1 wt. %, 3wt. % and 6wt. %) were dissolved in 100 ml deionized water and magnetically stirred for 30 minutes. Then 2 M sodium hydroxide (NaOH) solution was prepared and introduced into the zinc acetate solution with continues stirring. The solution was ultrasonicated for 15 minutes and then it was kept in microwave for 15 minutes. The solution was allowed to cool down at room temperature naturally.

After that solution was filtered and precipitate was washed with deionized water and absolute ethanol to remove the excess and contaminated salts. The obtained powder was dried at 343 ^{0}K in oven. Fig.1 shows the photographs of Synthesized of Pd-doped ZnO.

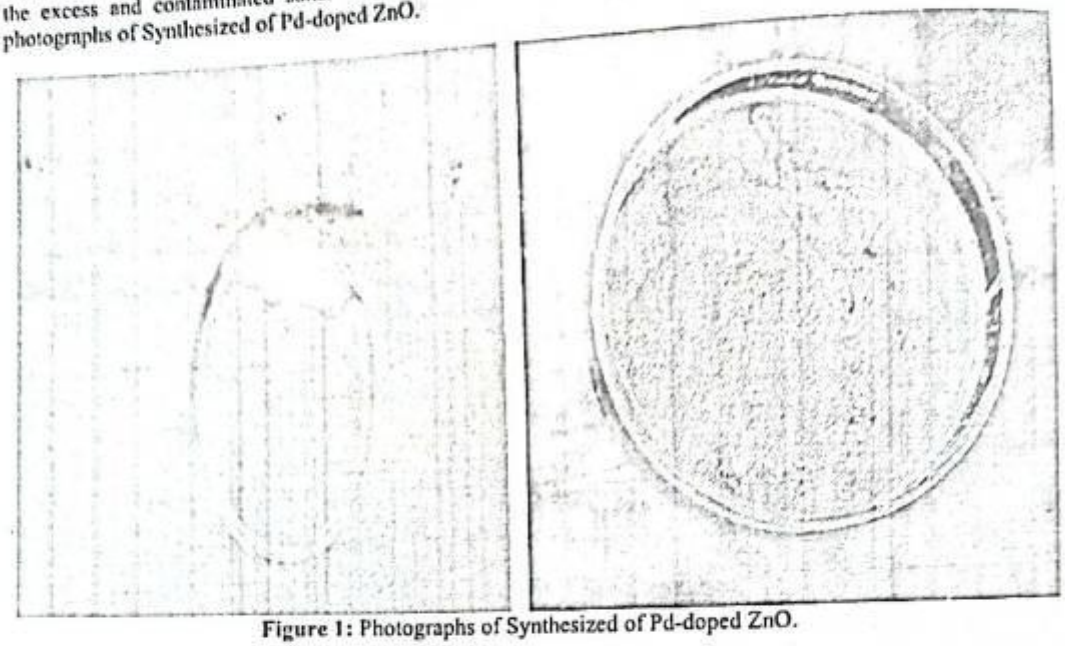


Figure 1: Photographs of Synthesized of Pd-doped ZnO.

2.2 Fabrication of thick films and gas sensing measurements:

For preparation of thick films, thixotropic paste of synthesized material was prepared and ethyl cellulose is used as temporary binder with mixture of organic solvents such as butyl carbitol acetate, butyl cellulose and turpineol. The synthesized materials were mixed with solution of ethyl cellulose and mixture of organic solvents. The ratio of organic to inorganic part was maintained as 20:80 in formation of paste. The binder was used for binding of material with glass substrate. The thick films were prepared by screen printing method. In this method, paste is robbed on the glass substrate by applying uniform pressure. The fabricated thick films were fired at 500 °C for half an hour for removal of organic material.

The electrical contacts were made by using silver electrodes to measure gas sensing properties. For gas sensing measurements, static gas sensing system was used. The gas concentration for experiment was fixed to 1000 ppm and gas sensing response of thick film was noted. The sensor response (S) was defined as the ratio of resistance of sensor element in air (R_a) to that in target gas (R_g) [22].

$S = R_a / R_g$ (1)

III. Results And Discussion

3.1Thick film Characterization techniques:

3.1.1 X-ray diffraction analysis:

X-ray diffraction study of pure and Pd doped ZnO thick films were carried out using BRUKER AXSD8 (Germany) advance model X ray diffraction with $CuK\alpha_1$ (λ=1.54056 Å) radiation in the 2θ range 20^0-80^0. The scanning speed of the specimen was maintained 0.5^0 /min.

Fig.2 shows the XRD spectra of (a) Pure ZnO, (b) 1wt.% Pd doped ZnO, (c) 3 wt.% Pd doped ZnO, (d) 6 wt. % Pd doped ZnO thick films. The peaks of pure and Pd doped ZnO are obtained at (100), (002), (101), (102), (110), (103), (112) and (201) planes. The peaks assigned to diffraction from various planes correspond to hexagonal Wurtzite structure of ZnO. It is observed that two additional peaks are obtained at 30.68^0 and 57.95^0, which can be associated with PdO [23]. These peaks can be associated with (1 0 0) and (1 1 2) or (2 2 0) PdZn intermetallic compound [24]. The intensities of the peaks obtained at 30.68^0 and 57.95^0, increases with increase in percentage of Pd doping in ZnO. The results show that Pd - doped ZnO sample has a better crystallinity, higher intensity and smaller peak width than those of the pure ZnO. The crystalline sizes of the ZnO and Pd doped ZnO were determined by means of X-ray line –broadening method using Debye–Scherrer's formula [25].

$$D = \frac{0.9\,\lambda}{\beta \cos\Theta} \quad (2)$$

Where, D is the crystallite size in nanometer, λ is the X-ray radiation (0.154056 nm for CuKα radiation) wavelength, θ is the Bragg diffraction angle and β is full width at half maxima intensity (FWHM). No diffraction peaks of other compounds were observed in ZnO which indicates that the ZnO nano structures have high crystallinity and purity. The crystallite size for Pure ZnO, 1wt.% Pd doped ZnO, 3 wt.% Pd doped ZnO, and 6 wt. % Pd doped ZnO was found to be 49 nm, 43 nm, 33 nm and 42 nm respectively. Thus, it is observed due to Pd doping, there is decrease in crystallite size.

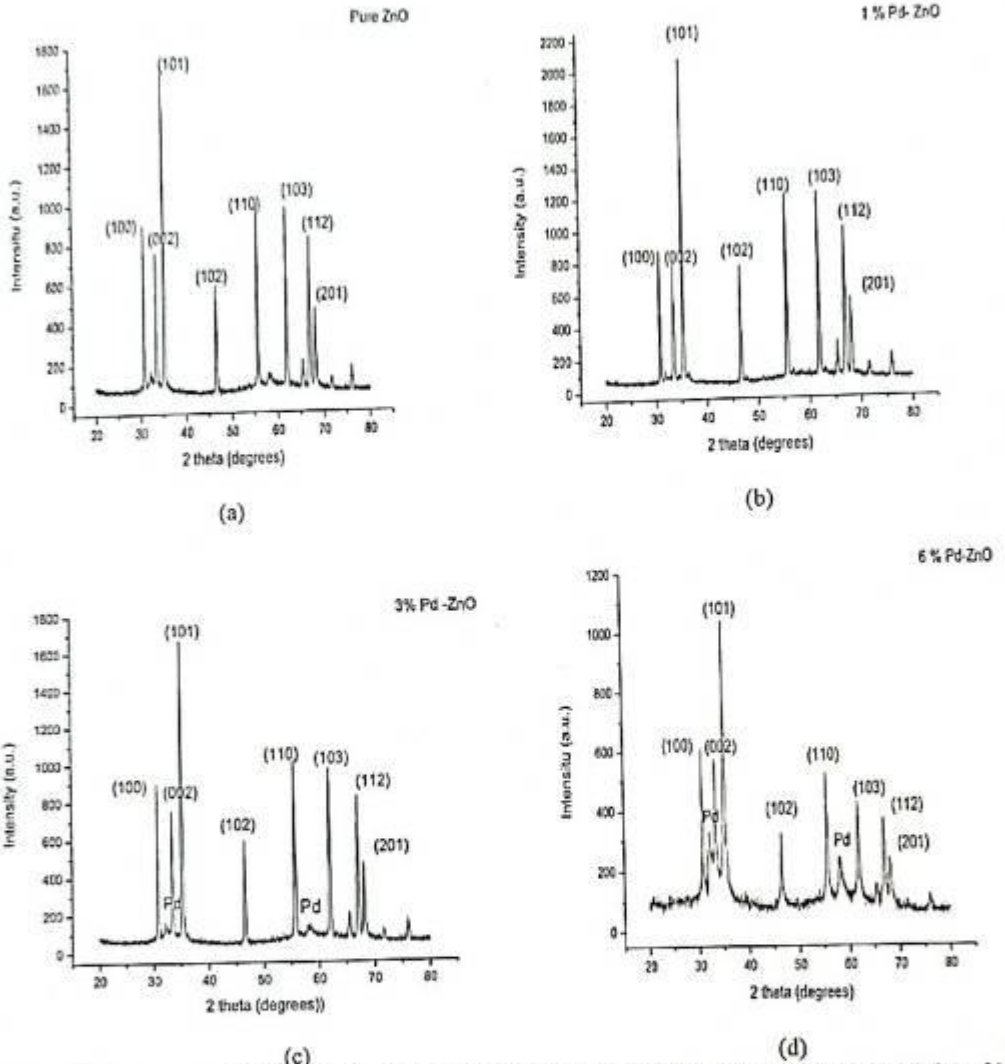


Figure 2: XRD spectra of (a) Pure ZnO, (b) 1wt.% Pd doped ZnO, (c) 3 wt.% Pd doped ZnO, (d) 6 wt. % Pd doped ZnO thick films.

3.1.2 Field emission scanning electron microscopy (FE-SEM):

Fig. 3 (a – e) shows the FESEM images of (a) Pure ZnO, (b) 1wt.% Pd doped ZnO, (c) 3 wt.% Pd doped ZnO, (d) 6 wt. % Pd doped ZnO and (e) high resolution image of 3 wt.% Pd doped ZnO. Fig. 2 (a) and (b) shows bulk quantity of flower like structure of pure ZnO and 1 wt. % Pd doped ZnO. Each flower consists of small hexagonal prism like structure of ZnO. Fig. 2 (c) and (d) shows FE - SEM images for 3 wt. % of Pd doped ZnO and 6 wt. % Pd doped ZnO. It is observed that both consist of hexagonal prism-like structure of ZnO crystalline phase. Fig. 2 (e) shows the high resolution image of 3 wt.% Pd doped ZnO shows that the height and width of the prism ranges from 400 nm to 1μm from these results it can be concluded that there is incorporation of Pd in ZnO.

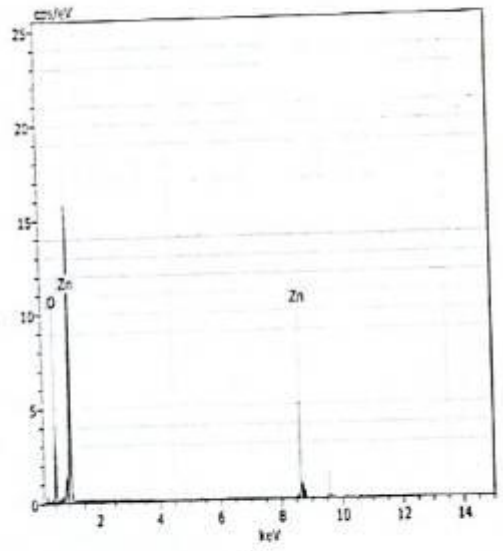


(e)

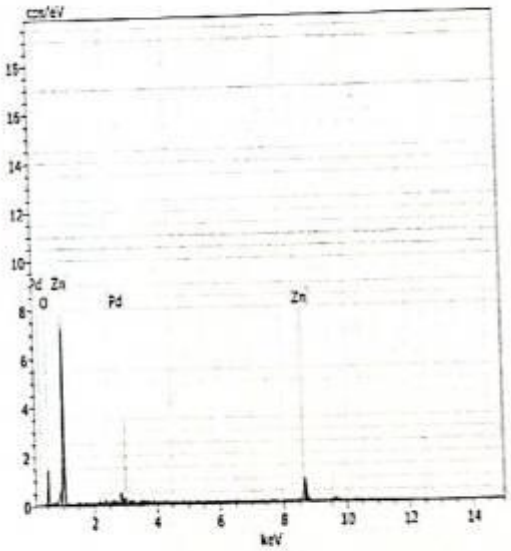
Figure 3: FESEM images of (a) Pure ZnO, (b) 1wt.% Pd doped ZnO, (c) 3 wt.% Pd doped ZnO, (d) 6 wt. % Pd doped ZnO and (e) high resolution image of 3 wt.% Pd doped ZnO.

3.1.3 Energy dispersive X-ray analysis (EDAX):

The elemental analysis of pure and Pd doped ZnO thick films were carried out using EDAX (JOEL, JED-2300, Germany). Fig. 4 shows EDAX pattern of (a) Pure ZnO, (b) 1wt.% Pd doped ZnO, (c) 3 wt.% Pd doped ZnO, (d) 6 wt. % Pd doped ZnO. The EDAX analysis shows presence of only Zn, Pd and O as expected, no other impurity elements were present in the Pd doped ZnO. The EDAX result shows variation in Zn/O ratio with variation in doping concentration.



(a)



(b)

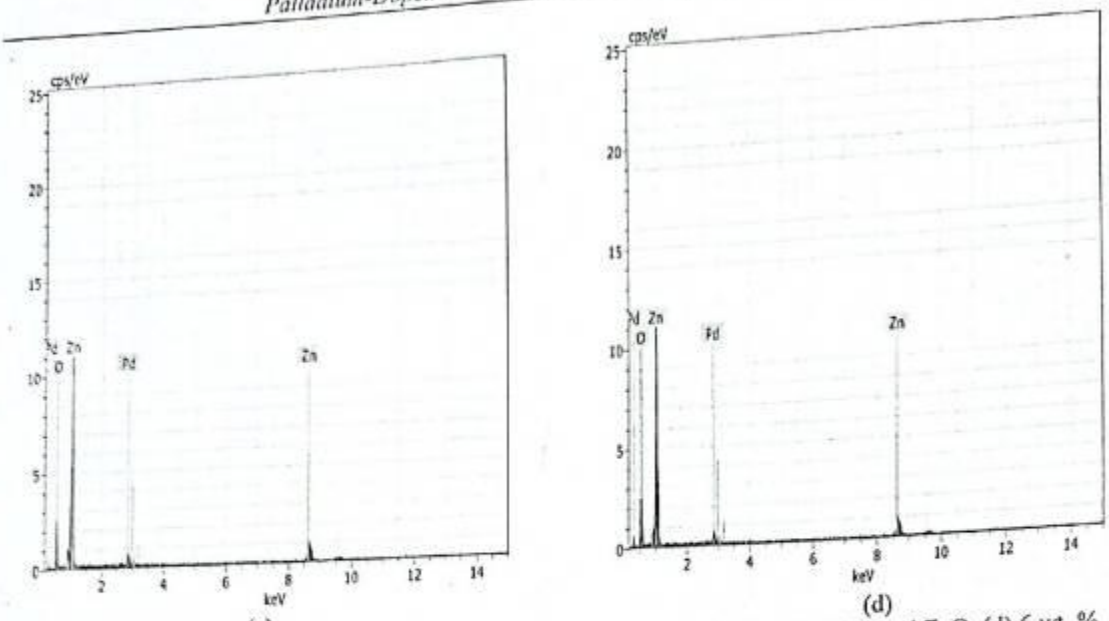


Figure 4: EDAX spectrum of (a) Pure ZnO, (b) 1wt.% Pd doped ZnO, (c) 3 wt.% Pd doped ZnO, (d) 6 wt. % Pd doped ZnO.

3.2. Gas sensing Characteristics:

3.2.1 I-V characteristics:

Fig.5 shows the I-V characteristics of the Pure and Pd doped ZnO thick films. Keithley 6487 picoammeter cum voltage source was used for measurement. The bias voltage was increased from 0 to 25 volts and the corresponding current was noted. The voltage was increased in steps of 5 volts. The same process was performed for negative voltage. It is observed from I-V characteristics that the curves for pure and Pd doped ZnO thick films shows symmetry indicate the contacts between the films and the probes of the system are ohmic in nature [26].

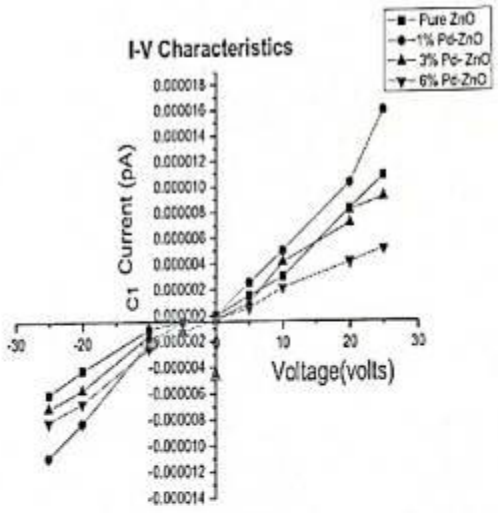


Figure 5: I-V characteristics of pure and Pd doped ZnO thick films.

3.2.2 Electrical conductivity:

Fig. 6 gives graphical representation of variation of log (conductivity) with operating temperature of pure and Pd doped ZnO thick films. From the graph the nature of thick films are semiconducting nature. The

increase in conductivity with increasing temperature could be attributed to negative temperature coefficient and semiconducting nature of pure and all Pd doped ZnO thick films.

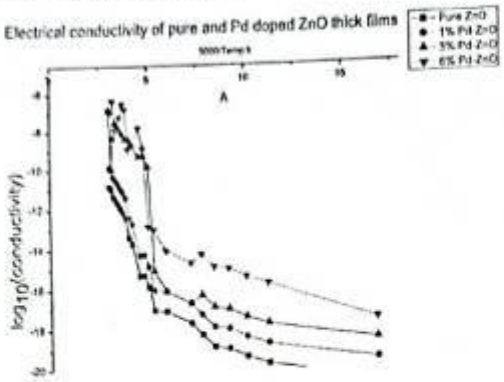
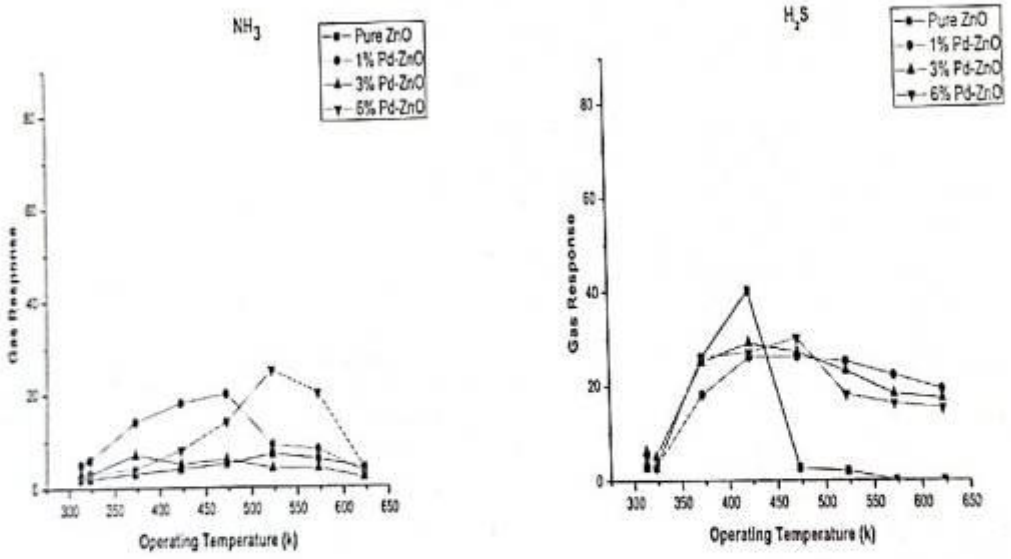


Figure 6: Conductivity temperature profile of pure ZnO and Pd doped ZnO thick films.

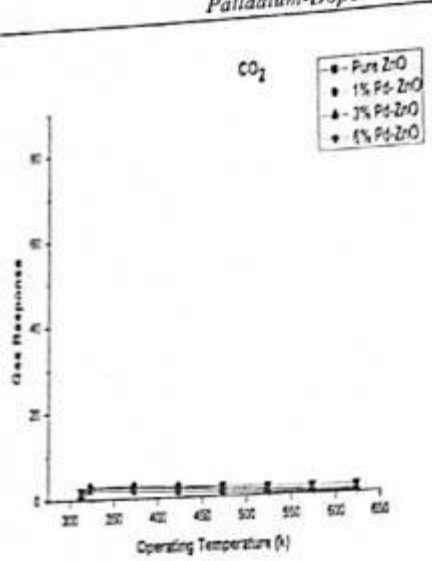
3.3 Gas response:

The gas sensing behavior of Pd doped ZnO thick was studied by using static gas measurement system. The DC resistance of pure and Pd doped ZnO thick films ware measured by using half bridge method as a function of temperature in air as well as in NH_3, H_2S, CO_2, LPG and Ethanol vapour in gas atmosphere. The operating temperature was varied at the interval of 50 °K. From the measured resistance in air as well as in gas atmosphere, the sensitivity of gas was determined at particular operating temperature.

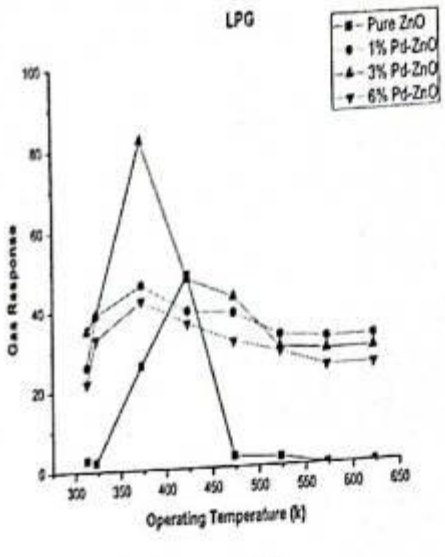
The gas sensing properties of pure and 1 wt. %, 3 wt. %, and 6 wt. % Pd dope ZnO thick films have been studied. On the basis of measured data, the sensitivity, selectivity, response and recovery time of thick film sensor for a fixed gas concentration of 1000 ppm in air ambient condition was calculated. Also the response of gas with variation of gas concentration at optimum operating temperature is studied.



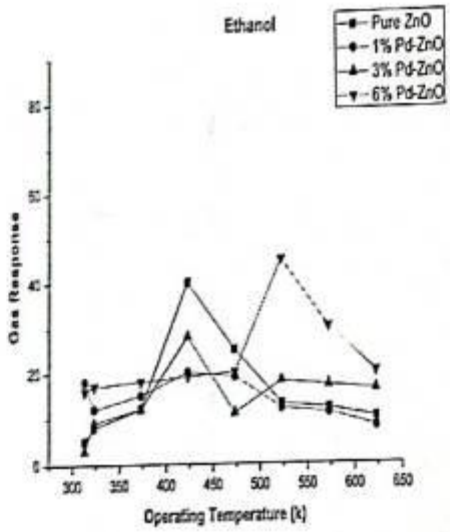
(a) (b)



(c)



(d)



(e)

Figure 7(a – e): Variation of gas response of pure and Pd doped ZnO thick films with operating temperature for NH_3, H_2S, CO_2, LPG and Ethanol gas.

The gas response for pure and Pd doped ZnO thick films was noted from room temperature to 623 °K for 1000 ppm of different gases i.e. NH_3, H_2S, CO_2, LPG and Ethanol vapour. Form figure 7 (a-e), it is observed that Pd doped ZnO thick films are sensitive to LPG at room temperature than other tested gases i.e. NH_3, H_2S, CO_2 and Ethanol vapour. The 3 wt. % Pd doped ZnO thick films show higher sensitivity to LPG than other doping concentrations. This film has shown sensing response to LPG i.e. 32 at room temperature and higher sensing response i.e. 82 at operating temperature 350 °K.
The composition of LPG is as follows:

TABLE 1: Composition of LPG gas.

Composition of LPG in volume percentage	CH_4	C_2H_6	C_3H_8	C_4H_8	C_4H_{10}	C_5H_{12}
	6	8	11.5	15	55	4.5

As butane is an important element of LPG, to dissociate butane into lower alkanes, there is need of higher temperature. As the Van der Waals forces are very strong, carbon-hydrogen and carbon - carbon bonds are also strong. These carbon-hydrogen and carbon - carbon bonds requires very high temperature to breakdown the bonds. When these bonds are broken, there is separation of hydrogen and carbon. Then adsorption of atmospheric oxygen O_2 on the surface of the film takes place and acquires the electron from conduction band as follows:

$$O_{2\,(air)} + 4e^- \rightarrow 2O^{2-}_{(film\ surface)}$$

As a result of this, there is decrease in conductivity of the thick film.

When there is reaction between oxygen and alkanes, number of reactions takes place and as a result of this alkanes are converted into carbon dioxide and water as shown in the following reactions:

$$CH_{4\,(gas)} + 4\,O^{2-}_{(film\ surface)} \rightarrow CO_{2\,(gas)} + 2\,H_2O_{(gas)} + 8\,e^-_{(cond.band)}$$

$$C_2H_{6\,(gas)} + 7\,O^{2-}_{(film\ surface)} \rightarrow 2\,CO_{2\,(gas)} + 3\,H_2O_{(gas)} + 14\,e^-_{(cond.band)}$$

$$C_3H_{8\,(gas)} + 10\,O^{2-}_{(film\ surface)} \rightarrow 3\,CO_{2\,(gas)} + 4\,H_2O_{(gas)} + 20\,e^-_{(cond.band)}$$

$$C_4H_{10\,(gas)} + 13\,O^{2-}_{(film\ surface)} \rightarrow 4\,CO_{2\,(gas)} + 5\,H_2O_{(gas)} + 26\,e^-_{(cond.band)}$$

This indicates that the mechanism is of n-type. The molecular oxygen O_2 is converted into O_2^- when the temperature is high. Also in the reaction, hydrogen ions H^+ are produced due to decomposition of alkanes. Then there is a reaction between the O_2^- anion super-oxide and H^+ hydrogen ions which leads to formation of water molecule H_2O_2 and the molecular oxygen O_2 [27-30]. This reaction is as shown below:

$$2O_2^- + 2\,H^+ \longrightarrow H_2O_2 + O_2$$

$$2\,H_2O_2 \longrightarrow 2\,H_2O + O_2$$

When Pd doped ZnO thick film sensor element exposed to LPG, it decomposes into carbon and hydrogen species. These carbon and hydrogen species then reacts with adsorbed oxygen. This results in the release of electron in the conduction band which then improves the catalytic activity of surface of thick film. The rate of reaction between adsorbed species as well as rate of adsorption depends on the temperature. In case of semiconductors, a maximum is obtained at certain temperature in the curves of gas response versus operating temperature. This maximum temperature is used as the working temperature of sensor. As there is change in temperature, there is also the change in the form of the adsorbed oxygen. Hence, coverage of adsorbed oxygen as a function of temperature also affects the observed shape of gas response curve. Hence by adding the impurities which adsorbs or reacts with the target gas, the selectivity can be enhanced. In Pd doped ZnO thick films, the number of grains of ZnO and Pd are linked with each other through the grain boundaries. As a result of this, barrier height among the grains is formed. Due to the formation of these barrier height in the grains, in absence of the target gas there is increase in the resistance.

3.4 Selectivity :

Selectivity is defined as the ability of a sensor to respond to certain gas in the presence of other gases. Selectivity of one gas over others is defined as the maximum response of sensor element in presence of other gas to the maximum response sensor element in presence of target gas at optimum operating temperature. Fig. 8 shows gas response of 3 wt. % Pd doped ZnO thick film for different gases and it is found that 3 wt. % Pd doped ZnO thick films shows maximum gas response for LPG over other gases.

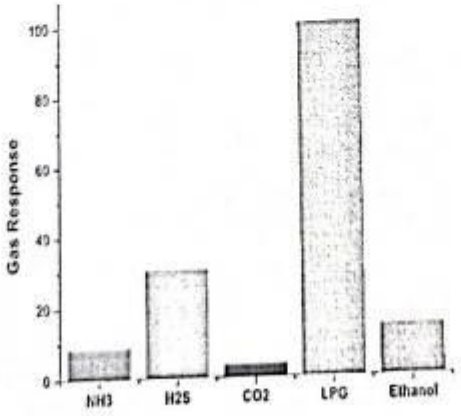


Figure 8: Gas response of 3 wt.% Pd doped ZnO thick film.

3.5 Response and recovery time of thick film sensor:

In practical applications, response and recovery time for the particular gas are important factors. The response and recovery time of sensors is the time reaching 90% of final stable values [30]. Fig. 9 illustrates response and recovery time of 3% Pd-doped ZnO thick film sensors. The response time and recovery time of the sensor was (8 s) and (16 s) respectively to LPG. The quick response of sensor element to LPG may be due to faster oxidation of gases.

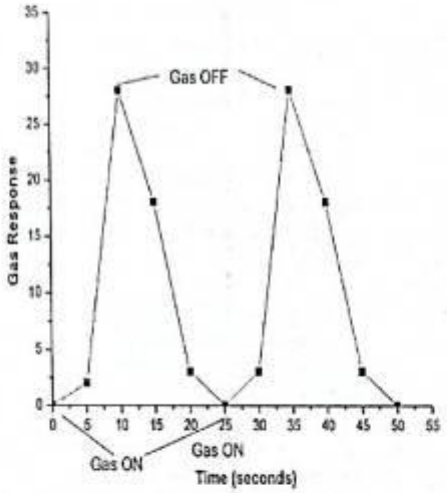


Figure 9: Gas response of 3 wt. % Pd doped ZnO thick film sensor towards LPG with time.

IV. Conclusions

Zinc oxide and Palladium doped zinc oxide nanoparticles were successfully synthesized without using surfactant by microwave assisted precipitation method. The response of pure ZnO thick film toward LPG was very poor than the response of Pd doped ZnO thick films. Pd doped ZnO thick films show sensing response to LPG at room temperature. The 3 wt. % Pd doped ZnO thick films show sensitivity to LPG at room temperature and maximum sensitivity at 350 °K temperature with fast response time (8 s) and recovery time (16 s). Hence Pd doping in ZnO is an appropriate dopant to enhance sensitivity and selectivity of sensor element toward LPG. The 3 wt. % Pd doped ZnO thick film sensors found to be sensitive and selective to LPG at operating temperature hence it is use as sensing material for LPG sensor element.

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Physicochemical And Bacteriological Contamination Of Drinking Water In Selected Restaurants In Amravati City, (M.S)

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Introduction:

Water is one of the most important compounds to the ecosystem better quality of water described by its physical, chemical and biological characteristics. But some correlation was possible among these parameters and significant one would be useful to indicate quality of water (Pandey et al., 1993). Worldwide drinking water is most important single source of borne disease mainly due to the fecal contaminated raw water failure in the water treatment process or recontamination of treated drinking water (Medema et al.,2003;WHO,2003). Two thirds of total drinking water consume worldwide is derived from various surface water source (Annan, 2000). Water borne pathogens infect around 250 million people each year resulting in 10 to 20 million death worldwide9DWAF, 1996). Any infectious diseases are transmited by water through the fecal-aerial rout. Through drinking water kill about 5million children annually and make 1/6th of the world population sick WHO(2004).

The detection of pathologic bacteria and viruses and cyst of protozoan's parasites required costly and time consuming producer and well trained personnel. This requirement led to the concept of indicator organisms of fecal origin. As early as 1914, the use public health service adopted the coli form group as an indicator of fecal contamination of drinking water Gerba,(1987). Investigator suggests the used of E.coli as an indicator because it can easily distinguish from other members of the fecal coli from group.

Tambekar and Bangiwar, (2004)stated that water become contaminated by incorrect method of collection of storage, serving and handling practices in hotel and restaurant. The improving water handling practice by promoting water hygine behavior, improved water quality (pinfold,1990). Many hotel authority store drinking water in cement and plastic tank on ground or steel drum earthenware and water cooler due to in proper handling studies have shown storage water at home or hotel and restaurant causes quality deterioration to such an extent that water posses potential risk to consumer (Jagals,et al.,1999).

Patil et al., (2001) studies on water quality of Gadchiroli Lake; data were collected to evaluated the water quality for human consumption and irrigation. Unfortunately clean pure and safe water only exist briefly in nature and is immediately polluted by prevailing environment factor and human activities for unfit for immediate consumption without some sort of treatment (Raymond,1992).

The primary sources of these bacteria in water are animal and human waste additional source include sewage or discharge for septic tank (EPA,2002). The microbial count was higher in well water close to refused disposal site as compared is believed the to be purest known (Gorden and John,1996).

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Material and methods:

Study area: Amravati is one of the city of Maharashtra state, cover the area of about 12,212Sq.km. The total population of Amravati isapprox. 16,46,801. For the present study in order to analyase the various physicochemical and bacteriological parameter of drinking water of different restaurant collect five different restaurant water sample were collected from five different restaurant at different location in Amravati city namely Roshani, Nice day, Baba, Near Gadge Nagar at Panchavati square, road in Amravati and two other restaurant are Neelam near Irwin square, Ambica restaurant near bus stand, Amravati

Samplingmethod: water samples were collected from above selected restaurant, some restaurant used water filter so the water sampled from filter. Water sample were collected in 1litter plastic bottles labeled with appropriate sample name for the period of October 2017 to F ıary 2018, and transported to the laboratory. The sample were processed and analyse for physicochemical parameter of the water sample were recorded like that temperature, hardness, alkalinity TDS, CO2, DO & Chloride. These parameters were analyse in the laboratory given by following (APHA,1998). While other parameters pH, Temperature, TDS were analyse with the help of wate analysis kit (CK 711). For bacteriological analysis of water media was used which include nutrient agar the media used was weight out and prepared according to manufacturing specification.

Observation and Result:

Physico-chemical analysis of drinking water from different restaurant in Amravati city , India.

Sampling station	Nice day	Roshni	Baba	Neelam	Ambica	ISI values
October 2017						
pH	7.20	7.32	7.34	7.50	8.2	6.0 to 8.2
Temperature	25.0	25.10	24.50	25.10	25.00	25to28mg/l
I' iness	350	375	465	550	590	300to600mg/l
Alkalinity	205	200	315	420	556	200to600mg/l
Chloride	262	355	445	755	870	250to1000mg/l
TDS	515	530	625	660	690	500to700mg/l
DO	4.6	5.0	5.10	5.25	6.0	4.0to6.0mg/l
CO2	0.06.	12.5	10.5	20.5	25.5	0.0to30.5mg/l
November2017						
pH	7.32	7.34	7.36	7.40	8.1	6.0 to 8.2
Temperature	25.0	24.0	24.05	23.4	23.4	25to28mg/l
Hardness	355	465	470	560	554	300to600mg/l
Alkalinity	220	380	440	500	600	200to600mg/l
Chloride	255	365	470	820	850	250to1000mg/l
TDS	510	525	620	700	700	500to700mg/l
DO	4.0	4.3	4.47	5.15	5.16	4.0to6.0mg/l
CO2	6.40	8.85	9.06	12.52	12.25	0.0to30.5mg/l
December2017						
pH	7.3	7.5	7.8	7.70	8.01	6.0 to 8.2

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Temperature	28.0	28.10	28.50	27.80	27.75	25to28mg/l
Hardness	315	310	390	447	570	300to600mg/l
Alkalinity	200	260	320	450	525	200to600mg/l
Chloride	250	465	750	852	980	250to1000mg/l
TDS	208	290	320	390	480	500to700mg/l
DO	3.42	4.5	5.40	5.60	6.0	4.0to6.0mg/l
CO2	4.0	4.5	5.5	5.10	10.0	0.0to30.5mg/l
January 2018						
pH	7.5	7.10	7.50	7.90	8.1	6.0 to 8.2
Temperature	27.0	27.5	27.15	26.90	27.0	25to28mg/l
Hardness	390	475	545	580	600	300to600mg/l
Alkalinity	210	320	425	524	560	200to600mg/l
Chloride	265	355	770	855	950	250to1000mg/l
TDS	512	610	650	660	700	500to700mg/l
DO	4.25	6.10	3.40	6.10	5.0	4.0to6.0mg/l
CO2	0.10	0.6	0.11	0.7	0.9	0.0to30.5mg/l
February 2018						
pH	7.28	7.51	7.54	7.70	8.2	6.0 to 8.2
Temperature	26.10	26.50	25.00	25.5	27.0	25to28mg/l
Hardness	320	450	544	580	600	300to600mg/l
Alkalinity	200	320	450	530	590	200to600mg/l
Chloride	250	345	449	780	860	250to1000mg/l
TDS	500	530	550	610	680	500to700mg/l
DO	4.50	4.90	5.0	5.4	6.0	4.0to6.0mg/l
CO2	4.4	7.6	8.58	15.4	28.6	0.0to30.5mg/l

All the parametersare in mg/l except Temp and pH

Table 2: bacteriological analysis of drinking water from different restaurant in Amravati city

Sr. No	Restaurant	bacterial growth	Bacteria Gram positive	Gram Negative
1	Nice day	no growth	-	-
2	Roshni	poor growth	+	-
3	Baba	high growth	-	+
4	Neelam	poor growth	-	+
5	Ambica	high growth	+	+

+: present, - : absent

Discussion and Conclusion:

The average result of physiochemical analysis of different restaurant water sample are represented in given table

pH :in the present study the pH range 6.0 to 8.2. the high pH range was recorded in one of the Ambica restaurant range to 8.0 to 8.2 water sample and other Restaurant water sample minimum range between to 7.0 to7.70 the high pH range was recorded in summer and low in winter. The factor like air temperature bring about changes the pH water biochemical and chemical ire influenced by the pH reduced rate photosynthetic activities reduced the

GAS SENSING PROPERTIES OF CUO MODIFIED ZINC STANNATE NANOMATERIAL PREPARED BY SOL – GEL METHOD

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Abstract : Semiconducting Zinc stannate, Zn_2SnO_4, is an important n-type semiconductor with a large band gap of 3.6 eV [1], which is often called zinc tin oxide (ZTO) having face – centred cubic spinel structure. The compound has been successfully prepared by simple method called sol gel citrate method followed by calcinations. The nanocomposite was characterized by means of x-ray powder diffraction. Additionally, sensor performance of undoped and surface modified by 5 wt % copper oxide over ZTO were studied under different operating temperature and different reducing gases such as ethanol, H_2S, CO and LPG. The result reveals that material exhibit excellent sensitivity and selectivity toward carbon monoxide gas at 180°C proving their applicability in gas sensors.

Index Terms - Spinel, Nanocrystalline, XRD, Sensitivity, CO.

1. Introduction

As there is an increasing demand for various gases in industry and the home, it has become a major task to develop semiconductor gas sensors that enable us to detect the leakage of these gases. Thus, efforts have been concentrated on developing gas sensors with a high sensitivity and selectivity to gases [2]. The monitoring of carbon monoxide (CO) gas is essential since CO is not only a very toxic gas, but also a common gas produced by the incomplete combustion from factories, vehicles, and household appliances. In this paper, Zinc stannate (Zn_2SnO_4) was studied as a sensing material for monitoring CO gas.

Zinc stannate (Zn_2SnO_4) is a typical n-type ternary semiconductor, and has been employed as important multifunctional material in the fields of photocatalytic activity [3], solar cells [4], lithium ion batteries [5], and so forth. Especially, owing to the excellent gas-sensing performance of ZnO and SnO_2 [6 - 8], the application of Zn_2SnO_4 in the field of gas sensors has attracted extensive attention [9 - 11]. Therefore, it would be a meaningful work to prepare Zn_2SnO_4 with novel morphology to lowering the optimum operating temperature and improve the sensitivity, selectivity. It 1s well known that the sensitivity or selectivity to a specific gas can be enhanced by applying some appropriately selected additive to the base materials. CuO was coated on the surface Zn_2SnO_4 in order to modify the gas-sensing properties of Zn_2SnO_4. CuO was known to lower the sensing temperature of SnO_2 and ZnO based gas sensors. Thus it is expected that CuO - coated Zn_2SnO_4 may have an added advantage in the selective detection of CO gas.

2. Experimental Details

2.1 Material Synthesis

All the chemicals and reagents used in the experiment were analytically pure and were used as received without further purification. Nanocomposite Zn_2SnO_4 was synthesized by sol–gel citrate method. For the preparation, zinc nitrate, tin nitrate and ethylene glycol was used as a starting material. Zinc nitrate, tin nitrate was taken in stoichiometric ratio and dissolved in de-ionized water at 80°C for 2 h. Then ethylene glycol was added under constant stirring to obtain a homogeneous and stable sol. The solution was further heated in pressure vessel at about 130°C for 12 h. During this reaction transparent solution was transform into a gel state with very high viscosity. The material was then heated in a furnace at 350°C for 3 h and a violent combustion was occurs which spontaneously propagates until all the gel was burnt out to form a loose powder. The powder was then calcined at 650°C for 6 h in order to improve the crystallinity of materials.

CuO - coated sample was also made by immersing the sintered sample into 5 wt% CuO solution for 1 h. The CuO - impregnated sample was then heated to 350°C for 2 h followed by firing at 650°C for 3 h.

2.2. Characterization techniques

The synthesized sample was characterized for their structure and morphology by X -ray powder diffraction (XRD; Siemens D5000). The X-ray diffraction data were recorded by using CuK_α radiation (1.5406 A^0).

2.3. Measurement of sensing properties

The gas-sensing properties of prepared ZTO powder was studied for different reducing gases such as hydrogen sulphide (H_2S), ethanol (C_2H_5OH), liquefied petroleum gas (LPG) and carbon monoxide (CO) whose concentration were fixed at 600 ppm in air. The gas sensitivity (S) was defined as: $S = (Ra - Rg)/Ra = \Delta R/Ra$; where, Ra and Rg are the resistance of sensor in air and the test gas, respectively. The gas-sensing properties were measured in a temperature range of 50 – 350°C.

3. RESULTS AND DISCUSSION

3.1. X-ray diffraction

The crystallinity of the synthesized samples was examined by XRD analysis. XRD pattern of CuO coated ZTO nanoparticle calcined at 650°C was shown in Figure 1. All of the peaks can be readily assigned to a pure phase of Zn_2SnO_4. No extra peak is observed for CuO, which indicated the formation of a homogeneous compound with face-centered cubic structure. The presence of sharp and strong X-ray diffraction peaks suggests that the Zn_2SnO_4 nanowires have good crystallinity. Their average crystallite size of the samples was estimated with the help of Debye-Scherrer formula and it was found to be 35 nm.

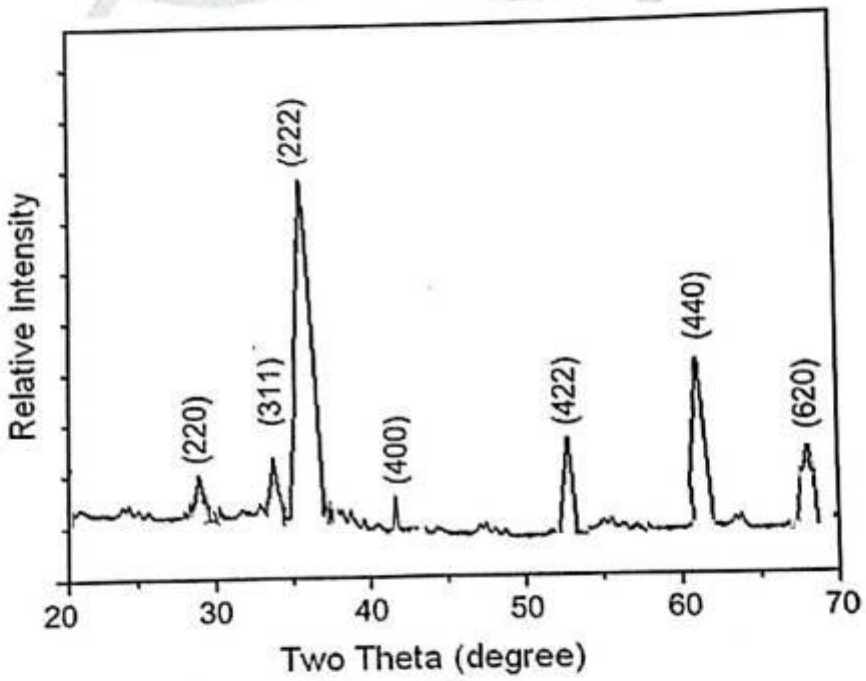


Fig. 1: X-ray diffraction pattern of CuO coated Zn_2SnO_4, calcined at 650°C for 6 h

3.2. Gas sensing characteristics

Since the response of gas sensors is greatly influenced by operating temperature, we have investigated the temperature-dependence behavior of the sensors made of ZTO, calcined at 650°C, to various gases including LPG, H_2S, CO and ethanol at 50–350°C, as shown in Figure 2. It is clear from the figure that the response goes on increasing with increase in operating temperature, attains its maximum and then decreases with further increases in operating temperature. The optimum operating temperature is found to be 220°C.

In order to modify and/or control the surface properties of the ZTO sensor and enhance to sensitivity, surface modified by 5 wt % copper oxide over ZTO is performed. The most important effects of surface modification are to increase of the maximum sensitivity and the rate of response, as well as the lowering of the temperature of maximum sensitivity. The effect of CuO modified ZnO on the sensitivity of CO sensor at an operating temperature of 180°C is shown in Figure 3.

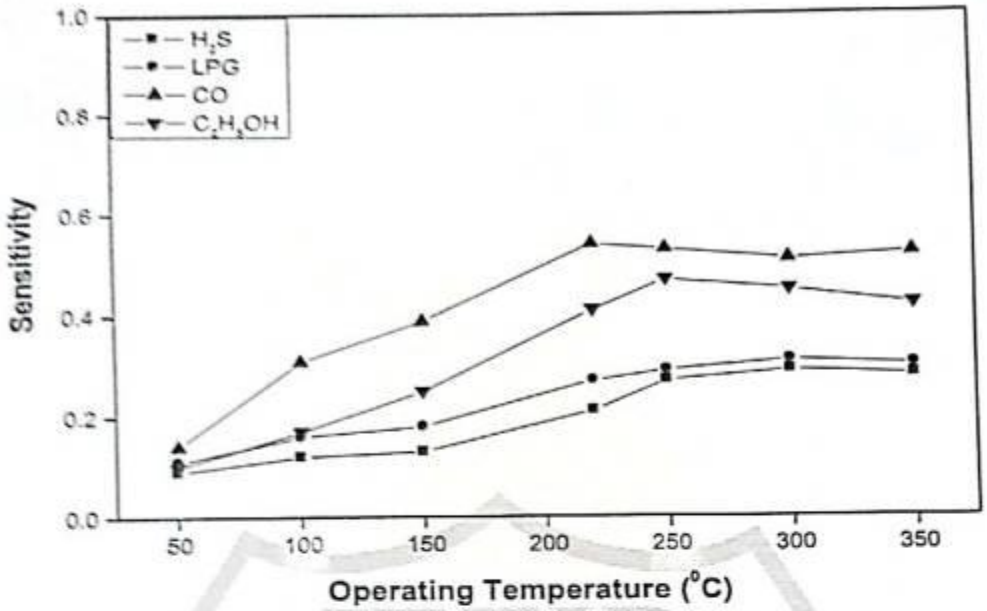


Fig. 2: Sensitivity as a function of operating temperature for ZTO for H_2S, LPG, CO and ethanol.

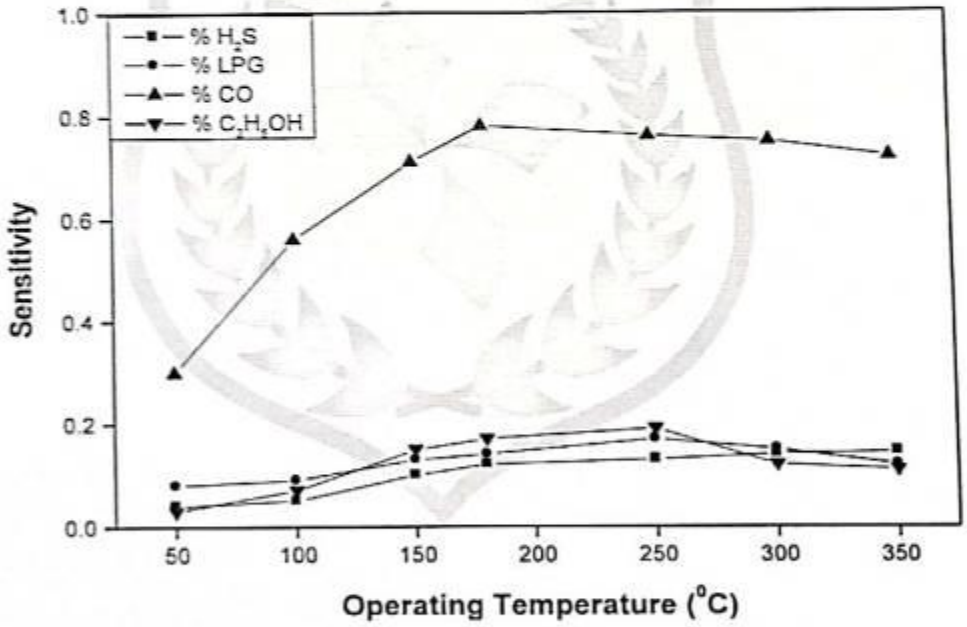


Fig. 3: Sensitivity as a function of operating temperature for 5 wt.% CuO modified ZTO sensor

It is evident from the figure that the 5 wt. % of CuO modified ZTO sensor was highly selectivity to CO gas against ethanol, LPG and H_2S gases. As expected, the sensitivity increased with an increase in the operating temperature. For CO gas, the sensitivity increased and reached saturation values around 180°C and sensitivity for other gases decreases.

Figure 4 shows the dependence of the sensitivity of 5 wt% CuO modified ZTO sensor on the concentration of CO gas. This sensor exhibits a good dependence on CO concentrations. An increase in the gas concentration raises the surface coverage eventually leading to a saturation level. It was found that the sensitivity for CO gas starts detecting at 200 ppm and further reaches to saturation level at around 600 ppm.

272

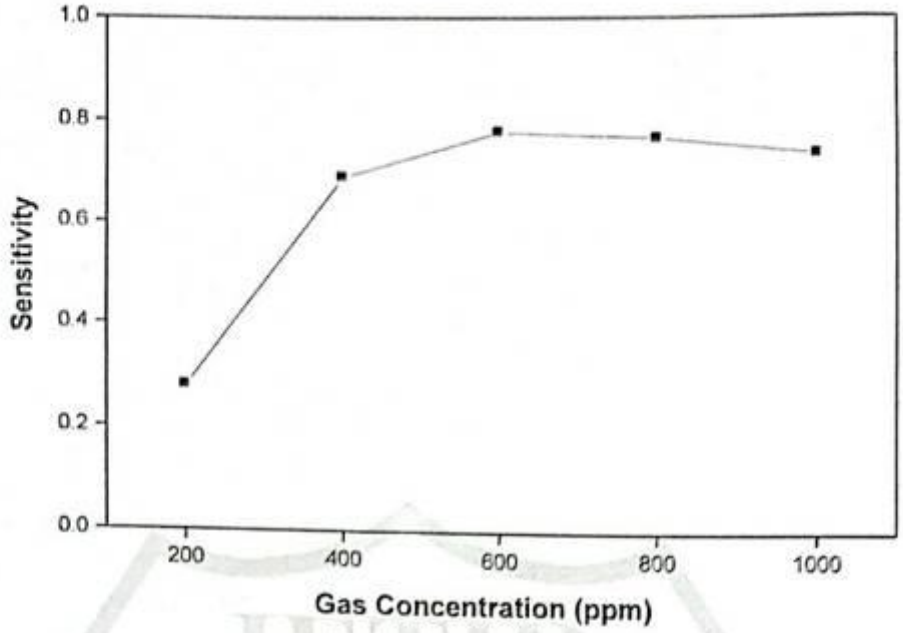


Fig. 4: Variation in response for 5 wt% CuO modified ZTO gas sensor as a function of gas concentration for CO in ppm.

4. CONCLUSION

In summary, (1) we synthesized nanocrystalline 5 wt % Cuo modified ZTO by a using sol-gel citrate method. (2) XRD pattern shows nanocrystalline with average particles size 35 nm. (3) The material was found to be good sensitive towards CO in comparison to other reducing gases.

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INFLUENCE OF Zn SUBSTITUTION ON THE STRUCTURAL AND GAS SENSING PROPERTIES OF $Co_{1-x}Zn_xFe_2O_4$ NANO-FERRITES

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Abstract : Polycrystalline samples of $Co_{1-x}Zn_xFe_2O_4$ with stoichiometric proportion (x) varying from 0.2 to 0.8 were synthesized through the sol-gel citrate method. The structure and morphology were characterized by X-ray powder diffraction and Scanning Electron Microscopy. XRD studies revealed the formation of single phase spinel cubical structure. The average particle size of synthesized sample is estimated as from 35 to 40 nm. The gas sensing performance of the unmodified and surface modified films was tested for various gases such as H_2S, Ethanol, LPG and CO. $Co_{0.2}Zn_{0.8}Fe_2O_4$ powder showed large response to 200 ppm ethanol gas at an operating temperature 220°C. The sensitivity, selectivity of $Co_{0.2}Zn_{0.8}Fe_2O_4$ thick films was measured.

Index Terms - **Gas sensor, $Co_{0.2}Zn_{0.8}Fe_2O_4$, Spinel ferrites , Selectivity.**

I. INTRODUCTION

Metal-oxide semiconductors have been widely investigated for gas sensor applications because of their simplicity, ease of production, low cost and capability of detecting large number of toxic and volatile gases under different conditions [1,2]. Spinel ferrites have been studied extensively due to easy to synthesis and abundant uses in technological and industrial applications [3-5]. The useful properties of the spinel ferrites mostly depend upon the chemical composition, preparation methods, sintering temperature and their distribution i.e. tendency to occupy tetrahedral (A) or octahedral (B) site [6].

$CoFe_2O_4$ has inverse spinel structure with Co^{2+} ions in octahedral sites and Fe^{3+} ions equally distributed between tetrahedral and octahedral sites [7]. Whereas $ZnFe_2O4$ has a normal spinel structure with Zn^{2+} ions in tetrahedral and Fe^{3+} in octahedral sites. Hence, Zn-substitution in $CoFe_2O_4$ may have some distorted spinel structures depending upon the concentration of the precursor solutions. $Co_{0.2}Zn_{0.8}Fe_2O_4$ was prepared by co-precipitation method [8], sol–gel citrate method [9,10], solid-state reaction method [11]. Thick films are suitable for such metal oxide sensors since the gas sensing properties are related to the material surface and the gases are always adsorbed and react with the films surface [12,13]. The development of gas sensors to monitor combustible gases is imperative due to the concern for safety requirements in homes and industries.

The present work deals with the synthesis of nano particles of zinc substituted cobalt ferrite ($Co_{1-x}Zn_xFe_2O_4$ where x= 0.2, 0.4, 0.6 and 0.8) via sol-gel citrate method and characterized using X-ray diffractometry (XRD) and Scanning Electron Microscopy (SEM). The gas sensor based on the nanocrystalline $Co_{0.2}Zn_{0.8}Fe_2O_4$ material shows good sensitivity and selectivity to the Ethanol gas.

II. EXPERIMENTAL DETAILS

1. Material Synthesis

The $Co_{1-x}Zn_xFe_2O_4$ where x= 0.2, 0.4, 0.6 and 0.8 nanomaterails were prepared by using citrate sol-gel method [14]. Firstly, $Co(NO_3)_2{\cdot}6H_2O$ and $Fe(NO_3)_2.9H_2O$ were dissolved in deionized water, and proper amount $Zn(NO_3)_2.6H_2O$ was added. Then citric acid was added to the above solution with stirring. The mixed solution was stirred for 1 h and then heated in an 80 °C water bath until a highly viscous gel was formed. Then ethylene glycol was added under constant stirring to obtain a homogeneous and stable sol. The gels were dried in an furnace at 130 °C for 14hrs and then cancinied to 700 °C for 6hrs to obtain fine nanoparticles.

2. Characterization Techniques

The synthesized samples were characterized for their structure and morphology by X -ray powder diffraction (XRD Siemens D5000) and Scanning electron microscopy (SEM) images were performed on a JEOL JEM-6700F microscope operating at 5 kV. The X-ray diffraction data were recorded by using CuK_α radiation (1.5406 A^0). The intensity data were collected over a range of $10–70^0$.

The gas-sensing properties of prepared $Co_{1-x}Zn_xFe_2O_4$ powders were studied for reducing gases such as H_2S, Ethanol, LPG and CO whose concentration were fixed at 1000 ppm in air. The gas sensitivity (S) was defined as: $S = (Ra - Rg)/Ra$; where, Ra and Rg are the resistance of sensor in air and the test gas, respectively. The gas-sensing properties were measured in a temperature range of 50 – 350°C.

3. RESULTS AND DISCUSSION

Figure 1 shows the XRD diffraction patterns of the $Co_{0.2}Zn_{0.8}Fe_2O_4$ nanoparticles calcinied at 700 °C. The diffraction peaks show the reflection planes (220),(311), (400), (422), (551) and (440) which are consistent with the standard powder diffraction reported from XRD library code (00-052-0279) and no other metal oxides could be identified. XRD studies revealed the formation of single phase spinel cubical structure. The diffraction peaks become sharper when the calcinations temperature increased. It can be said that all samples formed the spinal phase with a face centered cubic structure (f.c.c). The particle size of the ferrite nanoparticles has been estimated from the XRD plane (311) by the Scherrer's formula $d = 0.9\,\lambda/\beta\cos\theta$, where d is the average particle size in nm, β is the FWHM of the intensity measured in radians, λ is the X-ray wavelength and θ is the Bragg angle. The average particle size increased from 35 nm to 40 nm.

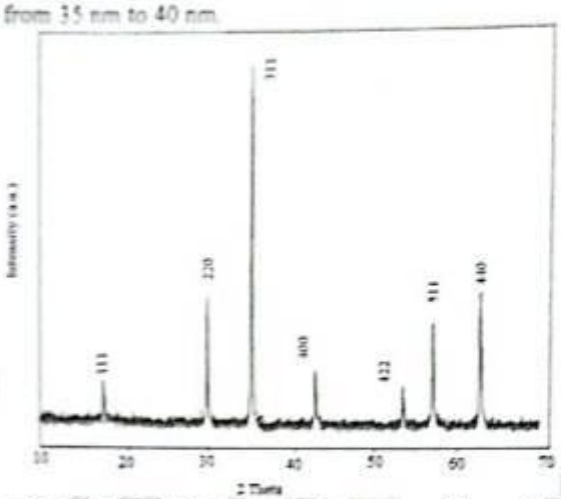


Figure 1. X-ray Diffraction pattern of $Co_{0.2}Zn_{0.8}Fe_2O_4$ nanoparticles calcinied at 700 °C

Surface morphology of the sensing element was analyzed using Scanning Electron Microscope unit. SEM image of $Co_{0.2}Zn_{0.8}Fe_2O_4$ nanoparticles calcinied at 700 °C is shown in **Figure 2.** It exhibits that the grown samples consist of irregular grains having more space as pores. Each grain is uniformly distributed over the surface. The sample have an inhomogeneous dispersion of particle sizes, ranging from less than 500 nm.

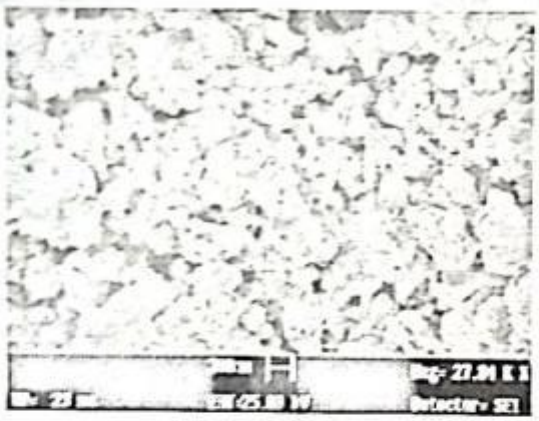


Figure 2. SEM image of $Co_{0.2}Zn_{0.8}Fe_2O_4$ nanoparticles calcinied at 700 °C

Gas-sensing experiments are performed at different operating temperatures in order to find the optimum operating condition for ethanol gas detection. Figure. 3 shows the relationship between the different operating temperatures and the responses of the sensors to 200 ppm ethanol gas. As can be seen in **Figure. 3**, as operating temperature increases, the gas response increases and its reaches to maximum at 220 °C, and then decreased rapidly with increasing the operating temperature. The similar tendencies are commonly observed for all the five samples such as undoped and Zn doped $CoFe_2O_4$ where Zn= 0.2, 0.4, 0.6 and 0.8 nanoparticles. Therefore, 220 °C is chosen to be the operating temperature for further examine the properties of the gas sensor. Moreover, the 0.8 wt% Zn-doped $CoFe_2O_4$ sensors show the maximum response of about 35 at 220 °C which indicate that the addition of Zn is beneficial to the ethanol gas sensing of $CoFe_2O_4$ sensors.

It is well known that response and recovery characteristics are an important indicator to evaluate the performances of gas sensors. **Figure. 4** shows the gas response versus time cures of pure and Zn-doped $CoFe_2O_4$ sensors to 200 ppm ethanol gas. It can be seen that although the response values increase signally by doping Zn, the response and recovery times change slightly. This phenomenon suggests that doping Zn may increases the sensing reaction between materails and ethanol gas. The response and recovery times of 0.8 wt% Zn-doped $CoFe_2O_4$ nanomaterials sensors are about 6 and 20 s, respectively.

275

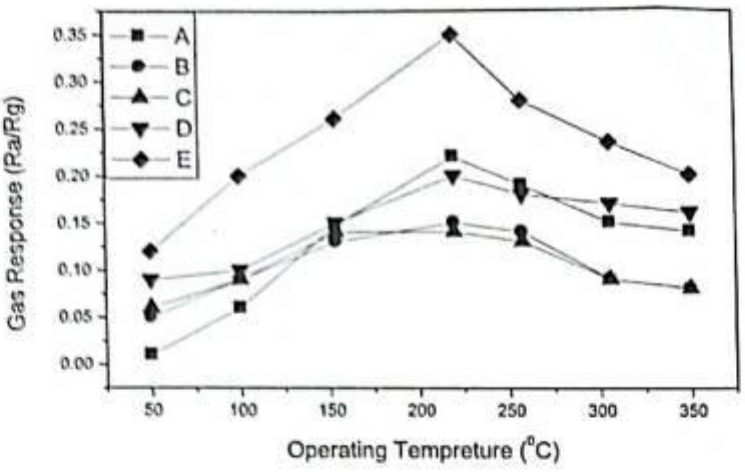


Figure 3: Gas Response of $CoFe_2O_4$ doped with different amount of Zn (A) X=0, (B) x=0.2, (C) x=0.4, (D) x=0.6 and (E) 0.8

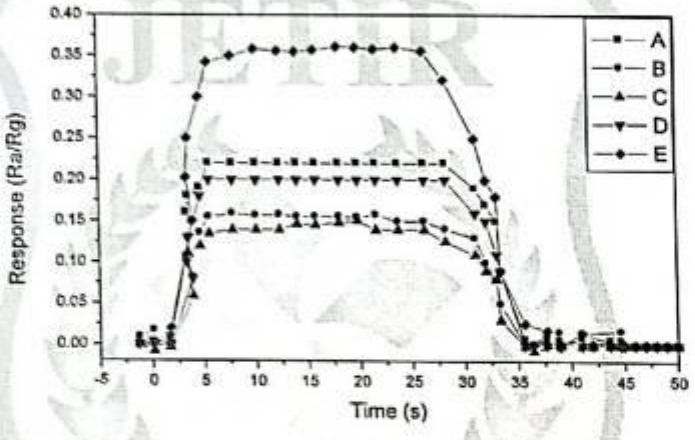


Figure 4: Response characteristics of $CoFe_2O_4$ doped with different amount of Zn (A) X=0, (B) x=0.2, (C) x=0.4, (D) x=0.6 and (E) 0.8 at 220°C.

To further investigate the sensitivity of the 0.8 wt% Zn-doped $CoFe_2O_4$ nanomaterials, the sensor is exposed to different concentration of ethanol gas at 220 °C as shown in Figure. 5. It can be easily found that the sensor reveals as a liner response value to ethanol in the range of 1–200 ppm. Above 200 ppm, the response becomes steady slowly, which indicates that the sensor becomes more or less saturated.

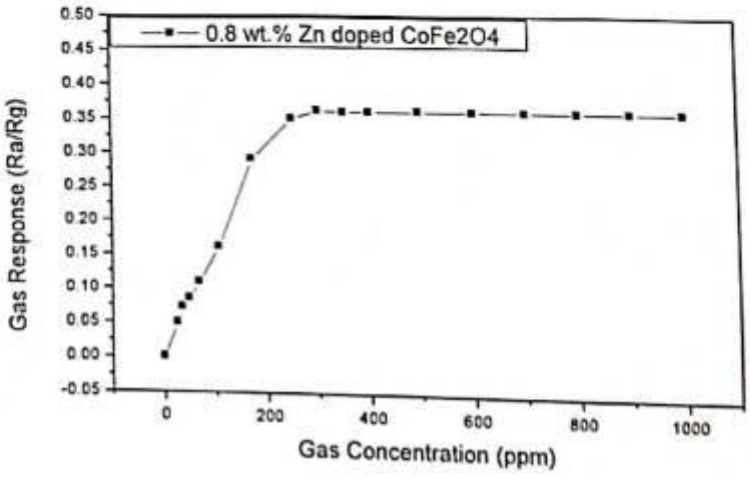


Figure 5: Response of 0.8 wt% Zn-doped $CoFe_2O_4$ to Ethanol gas of different concentration at an operating temperature 220°C.

The selective test of 0.8 wt% Zn-doped $CoFe_2O_4$ nanomaterials based sensor toward to 200 ppm H_2S, Ethanol, LPG and CO are conducted at 220 °C. As demonstrated in **Figure. 6**, the sensor shows less sensitive to H_2S, and almost no response to the other typical interference gases at the same temperature. However, the response of 0.8 wt% Zn-doped $CoFe_2O_4$ nanomaterials based sensor has good selectivity to 200 ppm ethanol gas is 35. This indicates that the 0.8 wt% Zn-doped $CoFe_2O_4$ nanomaterials based sensor has good selectivity to ethanol gas.

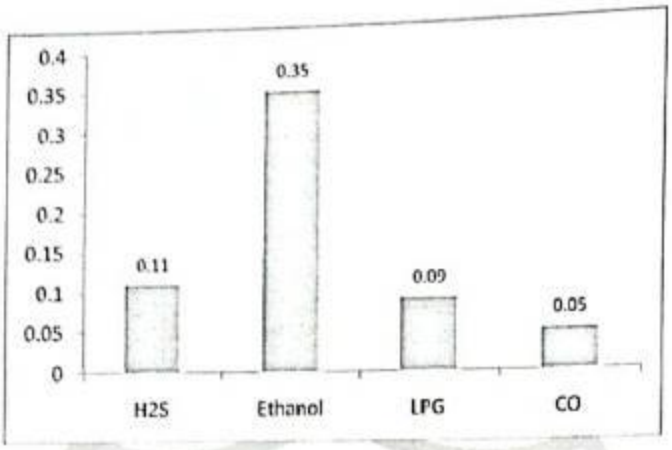


Figure 6: Response to different reducing gases of 0.8 wt% Zn-doped $CoFe_2O_4$ as a function of operating temperature.

4. CONCLUSION

$Co_{1-x}Zn_xFe_2O_4$ where x= 0.2, 0.4, 0.6 and 0.8 nanoparticles thick film were prepared by sol-gel citrate method. XRD of $Co_{0.2}Zn0.8Fe_2O_4$ calcined 700°C for 6 h showed good crystalline quality with a grain size 35-40 nm. XRD studies also revealed the formation of single phase spinel cubical structure. It was also found that $Co_{0.2}Zn0.8Fe_2O_4$ sensor exhibited excellent gas response and selectivity for ethanol gas at 220°C. The sensor is found to exhibit good selectivity towards Ethanol gas against H_2S, CO and LPG. The sensor is very promising for ethanol gas detection with a response time in second range.

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Original Article

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Histopathological changes in hepatopancrease of crab *Paratelphusa jacquemontii* by Vibrio spp.

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ABSTRACT

Increasing pollution of rivers and other water bodies has become a matter of great concern in recent years. Further crabs, fishes are the non-target organisms are affected. The accumulated toxicants damage their body parts and may reach the consumers. In the study aimed to histopathology of freshwater crab *Paratelphusa jacquemontii* (Rathbun), was investigated in the under laboratory experimental conditions. The results obtained *Vibrio spp.* affect in the disease imparted damage to hepatopancreas.

Key words: *Paratelphusa jacquemontii*. Histopathology, hepatopancreas

INTRODUCTION

Microorganisms are widely distributed in nature and diversity of microorganisms may be used as an indicator for organic pollution. The impact of changes in the water quality on flora and fauna may be differential, favouring some forms but detrimental to others, affecting natural system (Cooke *et al.*, 2002). Faecal contamination of water leads to higher bacterial load and subsequent water-borne diseases. Infection in crabs is more likely to occur at polluted water as reason of stress factor. Understanding the transfer of contaminants through the food web is critical to predict the exposure of humans to contaminants either through existence or commercial consumption of aquatic food and the possible health consequences of such exposure. In addition, such information is crucial in making accurate risk assessment for aquatic food safety. Botkin and Keller (2003) state that sewage pollution that has been observed in all aquatic ecosystems, affecting water resources if not properly treated before discharge. Due to sewage pollution has an important effect on benthos; crustaceans are mostly known as bio-indicators in various aquatic ecosystems, especially for polluted waters (Rinderhagen *et al.*, 2000). Such microbial activities result in a decrease in the economic value of crustaceans, such as lobsters and crabs, because of the unsightly effects on the cuticle of the animals.

MATERIAL AND METHODS

Microbiological parameters

Isolation of bacteria:

One ml of the water sample from water body was serially diluted with distilled water. Appropriately diluted water samples were plated on Nutrient Agar (NA) medium using spread plate technique. The inoculated plates were incubated at 37°C for 24-48 hours. After incubation plates with countable range (30-300 colonies) were selected for counting and the bacterial load in the sample was expressed as total colony forming units (cfu) per ml of water sample.

Selection of Bacteria for experiment:

Vibrio sp., isolated from the water samples of Nal-Damyanti Sagar dam were selected as test micro-organisms for the experimental study. *Vibrio sp.* was selected considering their ubiquitous presence in the aquatic environment and their role as an important crab pathogen in fresh water crabs. These micro-organisms were selected hypothesizing that in a stressed environment the different bacterial species could negatively affect the crab fauna.

Preparation of inoculum:

Pure cultures of *Vibrio sp.* was inoculated separately in to 10 ml sterile nutrient broth and incubated at 37°C for 20 to 24 hours. After incubation the cells were harvested by centrifugation at 3000 rpm for 15 minutes. The cell pellets were washed in isotonic saline. The initial inoculum density was determined by spread plate method on nutrient agar after desired dilution of inoculum in sterile distilled water or isotonic saline. Selected doses (0.5ml/crab) of 10^3, 10^5 and 10^7 dilutions of *Vibrio sp.* was injected through walking legs of crabs.

Experimental set up:

The fresh water crabs, *Paratelphusa jacquemontii* collected from Nal-Damyanti Sagar dam were brought to the laboratory. The crabs were kept in properly aerated large tanks contains well water. Water from the campus well was selected as control medium as the water sample was found to be clean with least bacterial concentration. Crabs of about the same weight and size irrespective of sex were selected for the experiment. Crabs were fed with dead prawn and the water was changed daily and was acclimatized for 15 days in the prevailing room temperature.

The crabs were divided into two tanks of 10 crabs each with well water. Tank-A stand as a control. Crabs in Tank-B were injected with *Vibrio sp.*, The experiments were conducted for a period of 15 days. For the analysis, the crab was caught individually using a small hand net from aquarium tanks. The analysis was carried out on the days 2,4,6,8,10,12,15.

Histological analysis

Tissue processing:

To determine whether bacterial infection results in structural changes in internal tissues such as hepatopancreas of both control and infected crabs were examined histologically.

The excised tissues were fixed in aqueous Bouins fluid. After fixation for 24 hrs, the tissues were further processed to study histological details as per procedure of Bancroft and Stevens (1982). In brief, the tissues were dehydrated through 30-100% different alcohol grades and cleared in xylene. Cold and hot impregnations were followed by embedding the tissue in paraffin wax (Melting Point 58-60°C). Serial sections were cut at 7 µm serial using rotary microtome. The sections were stained using Harris Haematoxylin and Eosin-Y as counter stain (Bancroft and Stevens, 1982). Damage to the tissues of treated crabs is recorded by comparing the data obtained from control.

RESULTS AND DISCUSSIOINS

Hepatopancreas pathology:

Histologically, each tubule of the hepatopancrease was surrounded by haemal spaces that contained haemocytes and apparent blood vessels. The hepatopancreatic tubules were enclosed by a basal lamina and contained a central lumen as shown in (Fig. 4.5-A). *Vibrio spp.* was more pathogenic in leaving severe inflammation of the submucosa, haemorrhagic ulceration and large scale degeneration of both mucosa and submucosa (Fig.4.5-B) Haemocyte infiltration, wandering of phagocytes and extensive degranulation were observed to be the potential immunopathologic response towards *Vibrio sp.* challenge. In severely infected crabs, epithelial cell boundaries were often not as clear as those observed in control animal. Pathological symptoms included intertubular accumulation of haemocytes (Fig.4.5-B). Cell necrosis and reduction of intertubular spaces were noticed in hepatopancreas infected with *Vibrio sp.*

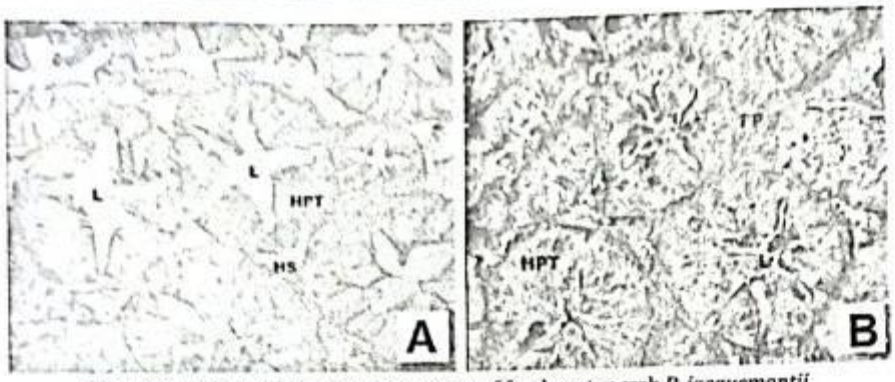


Figure 1: A: Normal hepatopancreaease of fresh water crab *P. jacquemontii*.
B: Hepatopancreatic pathology *P. jacquemontii* infected with *Vibrio sp.*

CONCLUSION:

In the present investigation, experiment infection of the freshwater crab *P. jacquemontii* by the gram negative strains of bacteria *Vibrio spp.* HikimaSonomi,(2003) believes that *Vibrio spp.* a gram negative bacteria infecting the hemolymph is an opportunistic pathogenic effect of this strain affects greatly the physiological condition of the organism. *Vibrio spp.* have been demonstrated as pathogenic over a few marine arthopods like *Limulus polyhemus* (Bang, 1956). Lightner (1977) has reported that species of *Vibrio, Pseudomonas* and *Aeromonas* are involved in the disease syndrome in penaeid shrimp. Newman and Feng (1982) have also identified that *Vibrio spp.* are pathogenic to *Cancer irroratus.*

Histological studies of hepatopancreas infected by *Vibrio spp.* shows severe damage, characterized by aggregation of hemocytes, migration of phagocytes and hemocytic encapsulation of injured tissues. In *Vibrio* infected hepatopancreas, the tissue damage is serious leading to glandular necrosis. Such observations have been reported by Johnson,(1983). Thus, it may be concluded that all detrimental associations of bacteria with crustaceans are more serious. The presence of Vibrio sp in crabs which are potential human pathogens indicates the need for public enlightenment, campaign and general education on proper handling and thorough cooking of crabs is important in reducing the outbreak of the disease.

Conflict of Interest

The author declares that there is no conflict of interest.

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EFFECT OF VIBRIO *SPECIES* ASSOCIATED WITH HAEMOLYMPH IN THE CRAB, *PARATELPHUSA JACQUEMONTII*

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Abstract: The present research paper deals with effects of Vibrio species on Haemolymph of Crab Paratelphusa jacquemontii(Rathban),was observed during laboratory experimental conditions. The results were recorded that, infection of Vibrio sps.in haemolymph alters Total leucocyte count (TLC) and Differential leucocyte count (DLC)as wel as augmentation of disease in the body of Crab, P. jacquemontii (Rathban).Water pollution also affects health of said Crab.Due to this contamination of crabs with microorganism happens,the microorganisms are potential pathogens of human beings. Hence the research study suggest that,contaminated Crabs are never used as a Food. Peoples shall use uncontaminated Crabs as a Food.

Keywords: **Effects of Vibrio Species on edible Crab, Paratelphusa jacquemontii.**

Introduction: India is a country having great cultural diversity associated with all kinds of climates, rich flora and fauna, and supporting an estimated total of eight percentages of the globally documented species. It is experiencing increasing pressure on its bioresource and ecosystem services due to high demand of food **(Kannupandi *et al.*, 2003; Varadharajan *et al.*, 2009)**. Microorganisms are widely distributed in nature and diversity of microorganisms may be used as an indicator for organic pollution. The bacteria are basically suffocating the other organisms. Some of the organisms that overpopulate from this can also are disease-causing microorganisms. Increasing pollution of rivers and other water bodies has become a matter of great concern in recent years. Further crabs, fishes are the non-target organisms are affected. The accumulated toxicant in their body may reach the consumers.

These variations are often stressing crustacean, resulting in a reduction of immune strength. Water quality monitoring has one of the highest significances in environmental protection policy. The main objective is to control and minimize the incidence of pollutant oriented problems, and to provide water of good quality to serve various environmental purposes **(Sargaonkar and Deshpande, 2003)**. The water quality is also affected by pollutants which act on elements existing in water such as dissolved oxygen or produce substances such as ammonia, nitrates etc. It is not possible to understand biological phenomena fully without the knowledge of water chemistry. If we can find some correlations among these numerous parameters, however, the task of periodic monitoring of water quality may be facilitated to a good extent **(Tiwari, 2011)**. Crustacean"s hemocytes are known for their importance in defense reactions towards invasive microorganisms infection by several species of bacteria has been documented in decapods occupying freshwater habitats **(Johansson *et al.*, 2000)**. Haemocyte classification in various crustaceans lacks consistency. Classification of the haemocyte types in decapod crustaceans is based mainly on the presence of
cytoplasmic granules in hyaline cells, semi-granular cells and granular cells
(Persson *et al.*, 1987). The same classification was given by **(Johansson *et al.*, 1989)** for crayfish. The circulating haemocyte number is a stress indicator **(Le Moullac *et al.*, 2000)** and haemocyte counts may be a valuable tool in monitoring the health status of crustacean species. The haematological index has been employed effectively in monitoring the response of the aquatic animals to the stressors and thus its health status under such adverse conditions and reflects the ecological condition of its habitat.

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Material and Methods:

The fresh water crabs of species *Paratelphusa jacquemontii* were maintained in the laboratory in well water collected and exposed to bacterial and fungal inoculums to study the haematological and histopathological changes due to the stress induced by the microbes. **Selection of Bacteria for experiment:**
Vibrio sp. isolated from the water samples of Nal-Damyanti Sagar dam were selected as test micro-organisms for the experimental study. *Vibrio sp.* was selected considering their ubiquitous presence in the aquatic environment and their role as an important crab pathogen in fresh water crabs. This micro-organism was selected hypothesizing that in a stressed environment the different bacterial species could negatively affect the crab fauna
Collection: Crabs were captured manually using dip net with the help fishermen (4-5 individuals). Crabs
Experimental and control individuals check over a period of 15 days recording the changes of the THC and DHC were counting to initially and at 2nd, 4th, 6th, 8th,10th,12th and later on at 15th day

Haematological analysis

Collection of heamolymph: For the study of haemocytes and their differential count, the haemolymph of *P. jacquemontii* was collected aseptically from the base of one of the second walking legs **(Mattson and Spaziani, 1985; Eddy *et al.*, 2007)** using a 1ml sterile syringe, place in Eppendorf tubes and diluted 1:2 in an anticoagulant solution with ice-cold citrate EDTA buffer (0.45 M NaCl; 0.1 M glucose; 30 mM trisodium citrate; 20 mM citric acid; 100
mM EDTA, pH 4.6).

Total haemocyte count (THC):

Total haemocyte counts (THC) were made using Neubauer chamber and a procedure similar to that used for red blood counts. Each experiment was repeated three times **(Eddy *et al.*, 2007; Manjula *et al.*, 1997).**

Differential haemocyte count (DHC):

Differential haemocyte counts (DHC) were estimated according to the method of **Nakayama *et al.*, (1997)** using Giemsa stain. A sample of 100µl of haemolymph was taken on a clean, grease- free glass slide and allowed to form a monolayer on the slide by incubating in a moist chamber for 45 minutes. It was fixed with 10% Methanol for 15min, air dried, and stained in Giemsa for 20 min. The slides were then viewed under a research microscope to identify haemocytes. For differential count, a total of 200 cellswere counted and the percentage of each type of cells such as granulocyte, semigranulocytes, and hyalinoctes was calculated.

Table: Response of THC in *Paratelphusa jacquemontii* exposed to *Vibrio sp.*

- Indicates mortality

Bacterial Dose	THC (Cell/mm3)						
	Day2	Day 4	Day 6	Day8	Day10	Day 12	Day15
0 (Control)	5028 ± 7.63	4990± 20	5106 ± 51.31	5086 ± 50.47	5040 ± 140.0	5030± 49.58	5046± 50.52
10^3 (High)	1530 ±26.45	1311 ± 35.47	-	-	-	-	-
10^5 (Medium)	2046± 15.27	1823 ± 16.07	1681± 10.40	1463± 47.82	-	-	-
10^7 (Low)	3816± 25.16	3962 ± 54.04	4271± 17.55	4561 ± 39.71	4990± 28.67	4980± 280.08	4950± 26.12

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Table : Response of DHC in *Paratelphusa jacquemontii* exposed to *Vibrio sp.*

Day	Dose	DHC (%)		
		Granulocyte	Semigranulocyte	Hylinocytes
2	10^3	63	25.45	8.33
	10^5	53.03	22.33	11.66
	10^7	52.01	29.66	15.4
4	10^3	53.66	21	10.33
	10^5	55	29.33	12.66
	10^7	57	24	13.4
6	10^3	-	-	-
	10^5	52.2	32.2	16.1
	10^7	51.03	32.24	14.2
8	10^3	-	-	-
	10^5	55.33	29.66	15
	10^7	58	30	14.33
10	10^3	-	-	-
	10^5	-	-	-
	10^7	53.43	30.2	16.66
12	10^3	-	-	-
	10^5	-	-	-
	10^7	52.01	29.66	15.4
15	10^3	-	-	-
	10^5	-	-	-
	10^7	52.2	32.2	16.1

- Indicates mortality

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Result:-

Haemocytes pathology:
Impact of *Vibrio sp.*

Total Haemocyte Count (Control): The count is 5028 ± 7.63 at 2nd day and 5046 ± 50.52 at 15th day.

Total Haemocyte Count (10^3): The count of THC by exposure of high dose of *Vibrio sp.* is 1530 ± 26.45 at 2nd day and 1311 ± 35.47 at 4th day. Mortality occurs at 6th day.

Total Haemocyte Count (10^5): The count of THC by exposure of medium dose is 2046 ± 15.27 at 2nd day and 1463 ± 47.82 at 8th day. Mortality occurs at 10th day.

Total Haemocyte Count (10^7): The count of THC by exposure of low dose is 3816 ± 25.16 at 2nd day and 4950 ± 26.12 at 15th day. (Table- 4.20).

Vibrio sp. the gram negative pathogen (1ml) was injected through the walking legs to assess the pathological impact. It was found lethal to *P. jacquemontii* within short period. In 103 dilutions there was a significant fall in the number of circulating haemocytes on Day-2 (1530 ± 26.45 cells / mm3) and subsequently there was depletion in the haemocytes number on Day-4 (1311 ± 35.47 cells/ mm3). Mortality occurs at Day-6. Similar observation was recorded in 105 dilutions.

Mortality occurs on 10th day. But in 107 dilutions even though there was a decline in haemocyte count initially, there was a gradual increase in the number of circulating haemocytes (3816 ± 25.16 to 4950 ± 26.12 cells / mm3).

Discussion

Experimental infection of bacterial strain i.e. *Vibrio sp.*, *E coli.* and Fungal strain *Aspergillus sp.* show fluctuation in haemolymph parameters. Experimental infection of bacterial sp. results in to rapid decrease in total haemocyte count. In high dose (103) there was a significant fall in the circulating haemocyte result in to early mortality. In low dose (107) though there was a decline in haemocyte initially but then there was gradual increase in the haemocyte count. In the present study, *vibrio sp.* and *E. coli.* show profound influence on the population of granulocyte and Semigranulocyte ratio. The present investigation showed that the high bacterial and fungal load in water, so crab also infect by isolated bacteria

The consumption of these disease or infected crabs possesses greater health risks than the consumption of apparently healthy ones. The general public and consumers of crabs should therefore ensure that they do not buy or consume disease or injured crabs. Organic materials of any type are suitable foodstuffs for bacteria growth. A case of cholera occurred in a patient in Maryland, who had eaten crabharvested commercially along the Texas coast in October 1984. Findings of *Vibrio sp.* in the tissue of crabs of present studies are considered to be correlated with the epidemiology and transmission of cholera in the aquatic environment.

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The Latest Trends Information Technology in India

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Abstract

As Asian Economies mature, their need for more sophisticate IT products will fuel a rise in software spending Indiana software growth is expected to be more than 22 percent a year for India, the USA is the biggest market of the total $ 24.5 billion software and services exports nearly $ 15.2 billion is countred by the us market.

Introduction

The Indian economy is set to grow at over 8 percent during 2015-16 in lint; with quick estimates; by the Central Statistical Organisation. A high growth in manufacturing and services sector brought down the share of agriculture in Gross Domestic Product from 23.6 percent in the first half of 2014-15 to 19.3 percent in the first half of 2015-16. Consequently, the growth in direct tax collection; is Fixely to increase. Growth in direct taxes stood at 21 percent during the first nine months of this fiscal year.

It has been predicted that the low-cost labour advantage enjoyed by the Indian Information Technology Services over the sourcing nations is here to stay for at least two more decades cespite the perceived sharp. rise in wages. The wages developing countries in IT services are experiencing double-digit growth at select skill levels.

In addition, the telecom tariffs are likely to reduce further due to high volume: heavier traffic and huge demand for the telecom services. This is the third time the access deficit charge has been reduced and whenever it is reduced, the telecom companies. brought down the tariff.

In order to increase competition in the long distance market by empowering the consumers choose their long distance carrier, consumers are being offered choice of carriers soon in long distance cells. Increasingly, clients, are demanding more value addition and more versatility in their outsourcing vendors. The latest trend is transformation of client's business. In the latest telecommunications, new opportunities are for the service delivery of data, voice and video for communications and computing in real time, anywhere and anytime.

The IT sector is projected to contribute $ 350 billion to the Asian economies between 2014 and 2019. Further, Asia's IT sector will contribute over one million jobs and $ 14.3 billion in new tax revenue. More international companies will set up their operations in Asia to take advantage of the sector's superior growth. Revenues generated by Asia's IT industry are expected to increase at an average annual rate of 11.3 percent, nearly double the economic growth forecast for Asia in the 2014-19 period. The addition of one million new jobs to the three million people employed in the IT industry will be driven by the creation of more than 21,000 new companies, with the fastest growth coming from software.

As Asian economies mature, their need for more sophisticated IT products will fuel a rise in software spending. In India, software growth is expected to be more than 19 percent a year. For India, the USA is the biggest market. Of the toil $ 21.5 billion software and services exports, nearly $ 14 billion is captured by the US market.

The Nasscom-McKinsey 2015 Report has projected fat IT exports from India to reach $ 60 billion by 2020. However, India faces potential shortage of; Killed employees in the next decade.

India needs to raise foreign direct investment caps across sectors and open its markets lor foreign firms and industrial products and services. The main advantage is that low-cost countries like India attract , foreign capital.

The latest Nasscorn - Hewitt Survey points out that salaries in the IT industry in the last one year have risen by 19 percent. The encouraging trend is that premiums were paid for specialized skills at the time of recruitment. The biggest challenge for the industry is to hire specialized manpower.

Considering all the above-mentioned trends, the IT industry in India has a glorious future. This has already been proven by the ever increasing number of engineering and telecom graduates available in India.

Home-based businesses are nothing new; many if not most: Asian micro and small enterprises operate from homes. However, people currently starting up home-based businesses tend to rely heavily on IT and enter fields qualitatively and quantitatively different from the traditional living-above-the-shop model. AllBusiness.com, an online

media and e-commerce company founded in 1999, is meant to "help entrepreneurs, small and growing businesses, consultants, and business professionals save time and money." Below are All business. corn's 12 productivity tips for today's home-based businesses.

1. Prioritize your takes head of time. Schedules tasks in order of importance. Checking the main ones off the list early frees time to take care of routine matters or unexpected requests.
2. Set goals for your day. Ensure that you to-do list contains reasonable goals and do your best to meet them.
3. Instruct your family. Many home businesses are unproductive due to "family interference". Explain that even though you are at home, you are really at work. Those the small children may need childcare help.
4. Do not avoid overtime. Long hours may to necessary when first starting a home-based business. If you want your business to succeed, don't shy away from investing extra time.
5. Turn off distractions. Shut down radios, TVs, and music. If that's not possible, move your home office as far from them as possible.
6. Schedule fun time. Even if you're working harder than ever, take some time for yourself. You'll return to the job with a more positive attitude.
7. Limit your time on the Internet. One site can easily lead to another, so find what you need and then disconnect.
8. Try multitasking. Make any downtime or waiting period as productive as possible.
9. Be a good boss. Demand excellence of yourself and your work, but don't push too hard.
10. English help if you need it. If there's too much work and your productivity levels are falling, ask friends or family for (paid or unpaid) temporal help. Evaluate the need for permanent assistance realistically and be prepared to rethink it periodically.

Information and Communication Technology (ICT)

- Telephones per 1,000 people
- Computers per 1,000 people
- Internet Users per 10,000 people

The normalization procedure used in the KAM is as follows:

1. The actual data (u) is collected from World Bank datasets and international literature for all the variables and countries.
2. Ranks are allocated to countries based on the absolute values (actual data) that describe each and every one of more than 80 variables (rank u). Countries with the same performance are allocated the same rank. Therefore, the rank equals 1 for a country that performs the best among the countries in our sample on a particular variable (that is, it has the highest score), the rank equals to 2 for a country that performs second best, and so on.
3. The number of countries with worse rank (Nw) is calculated for each country.
4. The following formula is used in order to normalize the scores for every country on every variable according to their ranking and in relation to the total number of countries in the sample (Nc) with available data : Normalized (u) = 10*(Nw/Nc)
5. The above formula allocates a normalized score from 0 to 10 for each country.

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देशाच्या आर्थिक विकासात महिला उद्योजकांचे योगदान

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प्रस्तावना :-

आज जागतिकिकरणाच्या प्रभावातून कोणताही देश सुटलेला नाही. भारतावरील जागतिकिकरणाच्या प्रभावामुळे भारतीय महिला देखील प्रभावित झाल्या आहेत. लोकसंख्येच्या जवळपास ५० टक्के असणा-या महिलांनी सर्वच क्षेत्रात पदापर्ण केलेले आहे. शैक्षणिक वातावरण, कौटुंबिक पार्श्वभुमी, साधन संपत्तीची उपलब्धता, बदलता सामाजिक दृष्टीकोन यामुळे शहरी महिला पूढे सरसावल्या आहेत. ग्रामिण महिला देखील परिस्थितीनुरुप आपआपल्या क्षेत्रात कार्यरत असल्याचे दिसुन येते. ग्रामिण महिलेच्या कार्यातुन त्यांची उद्योजकता स्पष्ट होत असली तरी त्या कितपत यशस्वी होतात. हे शोधणे गरजेचे आहे.

- आधुनिक समाज व्यवस्थेमध्ये महिलांची भुमिका गतीमान झाल्यामुळे महिला उद्योजकता हि संकल्पना पूढे आली आहे. व्यवसायाच्या वेगवेगळया क्षेत्रामध्ये महिलांची संख्या वाढलेली दिसून येते. कोपनहेगन (डेन्मार्क) येथील जागतिक परिषदेमध्ये महिलांच्या स्वयंरोजगाराच्या संधी व त्याबाबतच्या जबाबदा-या, अपारंपारीक उद्योग क्षेत्रामध्ये महिलांना संधी, व्यवस्थापन पातळीवर महिलांची भुमिका इत्यादी विषयावर चर्चा होवून महिलांसाठी एक कृति कार्यक्रम आखण्यात आला.

उद्योजक बनण्याकरीता पुरुषांइतकीच किंबहुना त्याहीपेक्षा जास्त योग्यता असतांना केवळ योग्य संधी न मिळल्यानुळे महिलांनी उद्योजकतेच्या क्षेत्रात स्वत:चे स्वतंत्र स्थान निर्माण करता आले नाही. तसा विचार करता गृहिणी आणि उद्योजकता या एकाच नाण्यांच्या दोन बाजु आहेत, कारण कुशल गृहिणीच्या अंगी असणा-या सर्व गुणांची गरजही उद्योकतेमध्ये आहे. ज्या महिला योग्य रितीने नियोजन करु शकतात त्या उद्योजकतेमध्ये निश्चितच यशस्वी होवु शकतात.

आधुनिक काळात कुटुंबाचे विघटन,वाढती महागाई,वाढत्या जबाबदा-या जीवनमान उंचावल्याची तीव्र आकांक्षा स्वत:ची ओळख निर्माण करण्याची दुर्दम्य इच्छाशक्ती अशा अनेक कारणांमुळे महिला आर्थिक दृष्टीने स्वावलंबी होण्याकरीता प्रयत्नशील आहेत. त्याचाच एक भाग म्हणून अनेक महिलांनी उद्योजकतेच्या क्षेत्रामधील आव्हाने स्विकारली आहेत. ज्या महिलांना शिक्षणाच्या संधीसोबतच उद्योजकता कौटुंबिक वातावरणाची साथ मिळाली. त्या महिलांनी उद्योजकता क्षेत्रात पदार्पण करत स्वत:ला उद्योजिका म्हणून पुढे आणले. मात्र हि परीस्थीती शहरी, निमशहरी भागातुन दिसुन येते. उद्योजकता ही प्रवृत्ती सर्वांमध्ये सारखी असली तरी तिच्या प्रगटी करणाची कारणे ग्रामीण महिला उद्योजिका आणि शहरी महिला उद्योजिका यांच्याकरीता भिन्न स्वरुपाची आहेत. प्रतिकुल आर्थिक
परीस्थिती, पारंपारीक उद्योगाला बदलल्या परीस्थितीत जागृत ठेवणे, कृषीवरील आधारीत उद्योग, कुटुंब प्रमुख म्हणून पार पाडावयाची कर्तव्ये या सर्व बाजूंनी विचार करुन उद्योजकतेकडे तिला वळावे लागते. मात्र उद्योजकतेच्या
माध्यमातुन ग्रामिण महिलेचे सक्षमिकरण ही आज काळाची गरज बनली आहे. प्रत्यक्षात कोणतीही अनुकुलता नसतांना काहीतरी नव्याने उत्पन्न करण्याची क्षमता म्हणजे उद्योजकता होय. उद्योजकतेचा परिघ हा फार मोठा आहे. मानवी जीवनाची व समाजाच्या व्यवस्थेची सर्व क्षेत्रे आणि मनुष्याचे सर्व व्यवहार उद्योजकतेच्या परिघामध्ये अंर्तभुत आहेत.

व्याख्या :- उद्योजकता या संकल्पनेतून असे स्पष्ट होते की, एखादा व्यक्ती एखादया उपक्रमाचे आयोजन करते आणि व्यवस्थापन करते. जेव्हा एखादी महत्त्वाकांक्षी व्यक्ती (स्त्री) स्वत: पुढाकार घेवून उद्योजकाची भुमिका स्विकारते आणि हि भुमिका पार पाडण्यासाठी आवश्यक ते प्रयत्न करते तेव्हा अशा स्त्रीला स्त्री उद्योजक म्हणता येईल. **(देशपांडे आणि सहकारी २००१)**

उद्देश :- १. आर्थिक विकासात स्त्री उद्योजकांचे योगदान जाणून घेणे.
२. स्त्री उद्योजकता ही संकल्पना माहीती करुन घेणे.

गृहित कृत्य :- १. आर्थिक विकासात स्त्री उद्योगाचे योगदान आहे.
२. स्त्री उद्योजकता ही संकल्पना विकासास चालना देणारी आहे.

संशोधन पध्दती :- प्रस्तुत शोध निबंधाकरीता ग्रंथालयीन संदर्भाचा अभ्यास करण्यात आला आहे.

वाङमयावलोकन :-

शोधनिबंधाचे लिखाण करतांना प्रस्तुत विषयांशी संबधीत वाङमयाचा आधार घेणे अतिशय महत्त्वाचे असते. त्या दृष्टीने पूढील काही अभ्यासकांच्या निष्कर्षाचा उदापोह करण्यात आला आहे.

देशपांडे आणि सहकारी २००१ यांचे नुसार प्रगत राष्ट्रातून महिला उद्योजकांची प्रगती समाधानकारक झालेली असुन अपांरपारीक उद्योगात महिला उद्योजकांची संख्या झपाटयाने वाढत आहे. तदवतच टेलीकम्युनिकेशन मानव विकास सेवा, जहाज बांधणी आणि माहिती तंत्रज्ञान यासारख्या क्षेत्रामध्ये महिला उद्योजकांचा व्यावसायिक खर्च अनुकमे २८ बिलीयन डॉलर ते १०३ बिलीयन डॉलर एवढा प्रचंड आहे.

देशमुख प्रभाकर २००८ यांचेनुसार महिला उद्योजकांची भुमिका आर्थिक विकासाच्या दृष्टीने महत्त्वाची असुन कुशल संघटन, जोखीम, नवनिर्मिती, कार्यक्षम व्यवस्थापन, प्रगत तंत्रज्ञान व परिणामकारक नियंत्रण अशा विविध भुमिका स्त्री एक उद्योजक म्हणून समर्थपणे पार पाडत आहे. हे सर्व करीत असतांना तिला अनेक आर्थिक, सामाजिक समस्यांना तोंड दयावे लागते.

Wasanthagopal and Santhas (२०१०) यांचे मते, "१९८१ च्या जनगणनेनुसार एकुण उद्योजकांच्या फक्त ५% स्त्री उद्योजक शेती, हातमाग, गृहउद्योग, अशा संबधीत क्षेत्रातील उद्योगात व्यस्त होत्या. १९८८-८९ च्या दरम्यान
१ लाख ५० हजारपेक्षा जास्त स्त्री उद्योजकांची संख्या वाढली तर २००३ पर्यंत हि संख्या सुमारे २२ लाखाच्या वर पोहचल्याचे दृष्टोपत्तीस येते."

भारत सरकारच्या अहवालानुसार समाजामध्ये स्त्रीयांचा दर्जा सुधारण्यासाठी शिक्षण ही अतिशय महत्त्व पूर्ण बाब असुन शिक्षणामुळे स्त्रीयांच्या कुटुंबामधील दर्जात वाढ झालेली आहे. Empowerment Means Moving from a Weak Position to execute Power.

परिणाम व चर्चा :-

जगभरात महिला उद्योजकांची संख्या एक तृतीयांश इतकी आहे. गेल्या तीन दशकात स्वयंपूर्ण महिलांची संख्या सातत्याने वाढत आहे. स्त्रीयाना आरक्षण मिळाल्यामुळे प्रत्येक क्षेत्रात पुरुषांच्या बरोबरीने काम करण्याची संधी त्यांनी मिळत आहे. त्यामुळे आधुनिक काळात स्त्रीया उंच प्रगतीच्या शिखरावर झेपावतांना दिसतात. साधारणत: १९७८ पासुन भारतात महिला उद्योजकता विकासात सुरुवात झाली तेव्हापासुन आजपर्यंत महिला उद्योजकांनी लक्षणिय प्रगती साधली आहे. भारतात सुध्दा १९७० नंतर महिला उद्योजकता ही संकल्पना लोकप्रिय झाली. महिलांच्या विकासाकरीता केंद्र सरकारने अनेक योजना सुरु केल्या याचा फायदा घेण्यासाठी विविध क्षेत्रात स्त्री उद्योजक पूढे सरसावल्या आहे. विविध क्षेत्रात आपल्या शिक्षण, आत्मविश्वास, धाडस या गुणांच्या बलावर उद्योगातील चढउतार पचवायला लागल्या. आजमितीला अनेक उद्योजकीय क्षेत्रात महिला कुशल नेतृत्व करतांना दिसुन येत आहे. आर्थिक विकासाच्या योगदानात महिला उद्योजकांचा सिंहाचा वाटा आहे. साधारणत: महिला अर्थव्यवस्थेच्या विविध क्षेत्रात एक महिला कामगार, महिला उद्योजक व स्वयंरोजगारी महिला इत्यादी क्षेत्रात आपल्या कर्तबगारीने यशस्वी होतांना दिसुन येतात.

भारतात असंघटित क्षेत्रात व्यवसाय करणा-या महिला उद्योजकांची संख्या सुध्दा अमर्याद आहे. आज स्त्री उद्योजकांनी अर्थ व्यवस्थेतील सर्व क्षेत्रे पादाक्रांत करुन यशस्वी स्त्री उद्योजक म्हणून स्वत:ला सिध्द केले आहे. भारतात उद्योग व्यवसायाबाबत महिलांमध्ये जागृती होतांना दिसुन येत आहे. हे आर्थिक विकासाच्या दृष्टीने उचललेले मोठे पाऊल आहे. यामध्ये महिला बचत गटाच्या संघटन शक्तीची भुमिका सुध्दा फार महत्त्वाची आहे.

भारतातील महिला उद्योजकांनी आपल्या विकासासाठी अनेक संघटना स्थापन केल्या आहेत. त्यामध्ये भारतीय महिला उद्योजक परिषद, भारतीय महिला उद्योजक महासंघ स्वयंरोजगार महिला संघटनांचा समावेश होतो. मोठया उद्योजकासोबतच लघू व कुटीर उद्योगांची संख्या वाढतांना दिसुन येते. आज उद्योजकीय क्षेत्रामध्ये मराठी तरुण तरुणीच्या दृष्टीने ही अतिशय महत्त्वची बाब आहे. सर्वांगीण विकासाला पुरक ठरणा-या सरकारच्या योजनांमुळे आज विविध क्षेत्रात देशाच्या या तेजस्विनी आपला ठसा उमटवून स्वयंसिध्द होण्याचे स्वप्न साकारत आहेत.

सारांश :-

महिलांची उद्योजकता जरी वाढलेली असली तरी तीला भरभराटी येण्याकरीता व देशाच्या जलद आर्थिक विकासाकरीता सरकारने योजलेल्या अनेक योजनांचा लाभ तळागाळातील महिला उद्योजकांना मिळणे अगत्याचे आहे. महिलांच्या उद्यमशिलतेमुळे झालेल्या आर्थिक विकासाचा परिणाम म्हणून घरात व घराबाहेर राहणीमानाचा दर्जा
वाढलेले आहे. मुलांच्य शिक्षणासंदर्भात त्या जागृक झालेल्या आहेत. आर्थिक व्यवहार करतांना त्यांच्या समाज स्हभाग ही वाढत आहे.

थोडक्यात महिला उद्योजक विकासास कुटुंब, समाजशासन इत्यादी घटकांचे सहाय्य मिळण्यास नक्कीच महिलांचा व त्यांच्या उद्योगांचा विकास होईल. तसेच देशाच्या औद्योगिकीकरणाला चालना मिळुण देशाचा आर्थिक विकासाचा दर उंचावेल आणि भारत देश नक्कीच आर्थिक बाबतीत महाशक्ती होईल यात तिळमात्र शंका नाही.

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List of Peer Review Research Paper 2018-19

Sr. No.	Year	Author	Paper Title	Link
1	2018-19	Dr.M.K. Phule	Doris Lessing's "The Golden Notebook-A Feminine Manifesto pg-99-103	
2	2018-19	Dr.I.M Rajput	Economics reforms and foreign trade policy overview	www.irasg.com
3	2018-19	Dr. A B Ingole	Assessment of Avian Population in and around M.J.F. Mahavidyalaya Campus, Bhatkuli	www.sjifactor.com
4	2018-19	A. V. Kadu, N. N. Gedam, S. G. Ibrahim and S. V. Jagtap	Synthesis and electrical properties of $CdFe_2O_4$ nanoparticles with effect of capping agents.	https://www.researchjourney.net/
5	2018-19	Dr. A B Ingole	2. Assessment of Molluscan Diversity observed in mud flats of Purna river Runmochan tq. Bhatkuli	https://www.researchjourney.net
6	2018-19	A. V. Kadu, N. N. Gedam, S. G. Ibrahim and S. V. Jagtap	Effect of Eu doping on structural and gas sensing properties of In_2O_3nanoparticles.	http://sjifactor.com/passport.php?id=18979
7	2018-19	D.P. Bele Dr. M.M. Pimpale	Impact of GSTon local Taxes with Special Reference to Nagar Palika in Amravati Dist.	https://www.indiastudychannel.com/colleges/15499-smt-l-r-t-college-of
8	2018-19	Dr. M.M. Pimpale	Antrashatriy Vivanan V Samasya	https://www.ajantaprakashan.in/ajanta_journal.html
9	2018-19	Dr. M.M. Pimpale	Opportunities & Challenges in Commerce in Indian Prespective.	https://www.ajantaprakashan.in/ajanta_journal.html
10	2018-19	Dr. M.M. Pimpale	Effect Of yoga on Runners	
11	2018-19	Dr. L. D Bodile	Opportunitiws of Demonetisation	www.sjifactor.com
12	2018-19	Dr. L. D Bodile	Antrrashtriy Vittiy Bajarpeth	www.sjifactor.com
13	2018-19	S. P. Kalbende, R. B. Pedhekar	Bio-Coal Made from Agricultural Residue, Available in Vidarbha Region of Maharashtra State, India, A Low Carbon Energy Source: A Review	https://www.researchjourney.net/
14	2018-19	Dr. S.S. Somvanshi	Nave Arthik Dhoran Ani Bhartiay Samaj	
15	2018-19	Dr.Kiran R. Belurkar	"Stri sakshamikarnat Purushanche Yogdan".	www.researchjournay.net
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22	2018-19	Dr. S.S. Somvanshi	Acharya Vinoba Bhave Yanche Samajik Yogdan	www.vcjourn al.net
23	2018-19	Dr. M. K. Phule	Hunger and Exploilation In Bhabani Bhattacharya's 'So Many Hunger'	www.aadhars ocial.com

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19

DORIS LESSING'S THE GOLDEN NOTEBOOK – A FEMININE MANIFESTO

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Abstract :

Doris Lessing an outstanding women novelist and the celebrated English writer occupies a significant place in the literature of 20th century. Lessing's novels and stories present the finest expressing of lostness and simultaneous self awareness found in the sensitive person today. It's a woman writing about women. Her major female characters are the central figures in the role of 20th century literally protagonists. Their efforts to understand and ultimately transcend the biological and social expectation incumbent upon them as women occupy an important position in lessing's fiction. This paper presents the structure of *The Golden Notebook* the containing conventional novel, free women, intercut with the four notebook. It explores the underlying chaos of relation between sexual and political experience and creativity is elaborately orchestrated. By using the device of the notebook, Lessing is able to convey their variety of moods in memories, thoughts, conscious and unconscious motives and habits that make up the individual Anna. Finally there is *The Golden Notebook* in which Anna and her lover give each other a sentence to begin a new novel. Anna's is the first sentence to begin a new novel. Anna's is the first sentence of Saul's novel 'On a dry hillside, in Algeria, soldiers watched the moonlight glittering on the rifle and Saul gives the title to her novel "Free Women' thus linking the end of the notebooks to the beginning of the novel the 'The Golden Notebook'. The fragmentary structure of the novel is thereby unified and turned into a coherent whole.

Keywords: Feminism, Expression, Golden Notebook, Lessing.

Introduction :

Lessing had deep concern about the sufferings of human beings all over the world. Through her novels she has presented the local and the private problems of England after the second world war. She explored the most important issues like the psychological aspect of human relationships, women and their experiences in the male dominated society, politics, class conflict, man-woman relationship, feminine sensibility marital disorders etc.

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'*The Golden Notebook*' is one of the best known novels of Doris Lessing published in 1962. In the novel Lessing introduces two eloquent women Anna and Molly. Both dealing with the problems related to their love life as well as motherhood.

Showalter claims that :

The Golden Notebook is such a monumental achievement that one is tempted to see Lessing's novel as the ultimate statement about the twentieth century women and the female tradition'. [1](Showalter, Elaine. 'A Literature of their own', Princeton University Press, Prelnceton, 1977. P. 308.)

The central character of the novel is Anna Wulf, a writer, from south Africa, living in London. This novel portrays the experience of Anna during the second world war. Her marriage, divorce, her migration to London, her love affairs and intense friendship is described in the novel. Anna marries to a German refugee Max but divorces and then migrates to London with her daughter Janet. She has a long love affair with Michael and an intense friendship with Molly.

The novel is divided in four notebooks namely 'The Black Notebook', 'The Red Notebook', The Yellow Notebook' and 'The Blue Notebook'. *The Golden Notebook* is the title given to the collection of this four Notebooks.

In her thirties Anna is in life Crises, disillusionaed by communist politics doubting herself and her literary carrer. Therefore she needs the treatment of psychologiest to deal with her mental state, she opens herself in four independent notebooks, giving each one a different colour. The Black Notebook is concerned with her previous life in Africa and with her professional life as a writer. The Red Notebook reports about Anna's political views and her attitudes towards the communist party. The blue notebook is the diary of the event of her life. The yellow notebook contains "The shadow of the third" a manuscript of a novel about a married man and his mistress. It deals indirectly with Anna's five year relationship with Michael.

The Golden Notebook focuses on an important aspect of feminism and human relationship. Anna refuses to accept the roles traditionally imposed on women by the society by describing troubled relationships through out the novel, the author has shown women's dissatisfaction with men. The novel has autobiographical layers. The character Anna reflects elements of the author Doris Lessing's own life, while Anna writes an autobiographical novel about her imagined Ella, who writes autobiographical stories.

Within *The Golden Notebook*, the novel 'Free women' is an account of two women friends living in London in 1950, divorced, bringing up their children alone. Anna and her friend Molly are conventionally, emancipated particularly in the area of sexual morality and in their ability to move freely through an explicitly masculine world. The term they use to refer to themselves 'free women' is itself the overall title of the short novel. It is no surprise that the concept of freedom occurs frequently in '*The Golden Notebook*' Anna's

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emancipation like Martha' is expressed through sexual attitudes and behaviour and through an obsessive self-understanding gained through psycho-analysis.

Throughout her life, as recorded in the notebooks in her youth as occasionally recalled in moments of stress or reminiscences, Anna thinks of herself in sexual terms ranging from the translike sexual obsession felt at the age of fifteen, to her subsequent fear of an appeal for sexual experience, when she is first aware of her emancipated state. In each of her several lives, she has lovers who more or less correspond in their meaning for her with gradually changing knowledge and commitment, she acknowledges. In colonial Africa it is willy and later Michael, the American communist Nelson, Molly's Ceylonese friend De silva, Nelson's friend whom Anna thinks 'a normal man at last thank god' which too, ends because of the fear of his wife back home. All these men in this promiscuous sequence are desperate choices for a love partner and all affairs end in futile and sterile way. Finaly it is the American writer Saul Green, who aids in Anna's self knowledge. She has satisfying experience even though there are the inevitable conflicts and arguments.

Anna's otherself Ella, goes through somewhat the sequence of loves and emotions prior to her achieving a satisfying experience. Since Ella is Anna's fictional creation Anna can put into Ella's consciousness words and many of the secret thoughts and socially embarracing ideas about sex that Anna does not mention. To read '*The Golden Notebook*' as purely feministic novel, simply because it talks of women's dissatisfaction with men is to misread it. Time and again Anna, and her counterpart Ella express very unfeminist needs. What is important to them is not to be liberated from marriage, but to enhance the equality of marriage. The men they meet are emotionally stupid, aware of the negative effects they have on women. There is a great deal about men's sexual inadequacies in this book, from lovers who are technically efficient but emotionally detached to those who are simply rough. What Lessing's reiterates is the different nature of the relationship for a woman if it is in the context of love. After Paul leaves, Ella is fermented by sexual desire, she is distressed because it is not for any specific purpose, but then she realizes that this desire is fed by a myriad of emotional hungers. She suffers sexual desire in a vaccum; she is acutely humiliated thinking that this means she is dependent on men for 'having sex for being serviced' for 'being satisfied'.

"When she loved a man again, she would return to normal. A woman's sexuality is contained by man, if he is a real man. She is in a sense put to sleep by him, she does not think about sex"[2] (Lessing Doris, *The Golden Notebook* p. 390)

Even more consciously than Anna, Ella prides herself on her independence Ella comments to her friend Julia "We're chosen to be free women. Julia mocks at this freedom. "Free" says Julia. "Free" what is the use of us being free if they aren't. I swear to God, that

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everyone of them, even the best of them have the old idea of good women and bad women."[n3(Lessing Doris, *The Golden Notebook*, P.392)]

Immorality is not a solution : Ella realizes that by being a free woman, she has an advantage over wives, simply because she was so much more exciting that the dull tied wives' [(p.188)]. But like Anna herself who ultimately realizes that she is not free she wishes she were married, she doesn't like, living the way she does [(237)] Ella too, after years of freedom, is over ready for serious love [(394)].

Lessing along with women's dependence on men, shows the devastating effect of being rejected by them and the passivity with which this is accepted. Fear of breakdown is always very close to Anna and Ella, and the loss of friendship brings that fear closer when Michael leaves her, Anna knows then 'a black whirling chaos is just outside me, waiting to move into me' [(P. 360)]. For all their intelligence the women seldom assert themselves. But Anna feels that something may be so bad that they can be never got over because 'when I really face it, I don't think I've really got over Michael. I think it's done for men'. [(p.70)] In the novel, women never envisage life without men, and the price they pay to keep a man, in forms of compromise and deception is high. But even so they constantly recognize willingness to sacrifice themselves to become the passive acquiescent women. In her relationship with Paul Ella hides her writing from him, because he does not like her doing it'. At one point she was prepared to give it up, entirely. 'Suppose Paul had said to me : I'll marry you if you promise never to write another world? My God I would have done it' [(P. 311)]. Lessing states through Ella, that women's emotions are made to seem out of date in the present day society, and have not evolved to fit notions of seperateness and independence, *The Golden Notebook* is not a treatise advocating autonomy for women, rather it is a lament for its seeming impossibility.

The novel shows that women have been subject to suppression and sufferings through ages, they were denied freedom and equal rights. Anna wulf has been depicted as the spokesman of Doris Lessing who gives vent to the ideas and experiences of the author. She thinks that women are equal to men and is very conscious in giving proper justice to women.

Also the other women characters in the novel are invariably self conscious aware of their emancipated status. in a masculine world they attempt to establish an identity uniquely of their, own. Most of them believe that being committed, to a life free of bureaucracy and confirmity necessarily leads to a self consciously 'emancipated' or 'free' status in society. The effort to understand and ultimately transcend the biological and social expectation binding upon them as women, occupy an important position in Lessing's fiction. Yet such a focus she states should in no way imply that either her subject or her audiences are determined by gender "Ultimately the deepest task of her character is to achieve a

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HORIZON PALAESTRA International Journal
June 2019 Special Issue
0103

personal wholeness that subsumes sexual identity or gender under a larger principle in the enlargement of the human spirit that is shared equally by both sexes without denying the importance of their progress of development of awareness as women, an identification that includes but goes beyond their sexual indentities. The body may be enclosed by biology but the mind is not"[4] (Howe Florence, Doris Lessing "Free Women" Nation 11 Jan 1965, P. 34).

Conclusion :

In Lessing's novels the heroine's emotions disrupt the self and intelligence gives a sense of self. When emotion has rooted in the self, Lessing's heroins try to expel the organ traditionally responsible for it. Lessing seems to be little vindictive towards men as men do not value women and women have to make adjustment in order to preserve their praise, love and comfort. Lessing's women characters are searching for personal freedom and for the true self but they always find themselves in the middle way. Lessing applies the suppression issue as a window through which the patriarchal panorama is depicted.

Thus Lessing has remarkably presented the theme of freedom and loneliness of women in her works. She does not repudiate the institutions of marriage but when her women characters find that they are being oppressed and exploited, they rebel against the rigid taboos and patriarchal dominance of the orthodox society. Lessing's women are different from stereotype women. They do not suffer but take a stand and rebel against the patriarchal society.

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Economic Reforms and Foreign Trade Policy : An Overview

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2 Research Paper - Economics

ABSTRACT

India's foreign trade has undergone a drastic change in terms of policy since economic reforms 1991. The balance of payments situation became very difficult in 1991-92 due to hike in oil prices in the world market. Hence, problems created of low level of foreign reserves. The policy of the management of foreign exchange reserves had announced in budget of 1991-92 which focused structural reforms in trade policy, to boost expert promotion as medium term policy with short term policy of external financing from the multinational agencies .Procedural simplification enforced since 2005-06 a new scheme to accelerate growth of export . The 10th plan projects a growth rate of 12.4 percent in India's export and for this prepared median term export strategy. FDI under automatic route was permitted up to 100 per cent for manufacturing in SEZs.

Key Words: Foreign Trade, export-import.

Introduction -

India's foreign trade has undergone a drastic change in terms of policy since economic reforms 1991. The balance of payments situation became very difficult in 1991-92 due to hike in oil prices in the world market. Hence, problems created of low level of foreign reserves. The pressure on the balance of payments remaining throughout the year 1990-91, as a result, economic crisis faced by India. An emergency, measures adopted by the govt. of India such as to mobilize support for the balance of payments

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from multilateral financial institutions, the international monetary fund, the world bank and Asian development bank therefore, it was urgent need to adopt new trade policy. The early results of crisis management effort in 1991-92 were encouraging foreign reserves situation. Which had increased U.S $ 4.4 billion at feb.1992 as compared to U.S. $ 1.1 billion in 1991.Present paper has got review of the India's trade policy after 1991 economic reforms.

1991 Reforms in Forcign Trade Policy-

The policy of the management of foreign exchange reserves had announced in budget of 1991-92 which focused structural reforms in trade policy, to boost expert promotion as medium term policy with short term policy of external financing from the multinational agencies. During this reforms period external help oriented policies were undertaken initially. Such as efficient resource allocation, infusion of modern technologies, promotion of economies of scale, retention of consumer surplus and reduction of rent-seeking and unproductive profit seeking activates.

East Asian crisis and India's foreign trade - (1996-99)

East Asian crisis start and spread in 1998. It was due to the extreme volalility and uncertainty in global financial markets, during 1991 to 1996-97 increased risk in international capital which had an impact on all emerging economies including India. As a result trade deficit increased from 3.7 percent of GDP in 1996-97 to 3.9 percent in 1997-98 and continued till 1998-99.Trade Policy Reforms since 1999-2000 Onwards-
Under this policy documentation following policy announced to best economy.
There are increases 894 items for free licensing

Previous free trade zones to replace export processing zones.

Increased recognition of potential of service exports reflected in a new chapter in exam policy-

Zero duty export promotion capital goods scheme extended to chemical and textiles.Foreign Exchange Management Act 1999 was passed to replace FERA.

Comprehensive automatic approved system of FDI through automatic route for drugs and pharmaceuticals rose to 74 percent from 51 percent and automatic route opened for issues to ADRs and GDR, Software companies were allowed to issue

RNI: MAHMUL02805/2010/33461 IMPACT FACTOR 6.20 ISSN 0976-0377
International Research Analysis Issue : XIX, Vol. IV, Jan. 2019 To June 2019 9

ADR, Peak rate of basic customs duty was reduced-time to time. Setting up of SEZ's from 2000-2001

Rationalizations of existing export promotion schemes since 2001-02 FDI up to 100 per cent was permitted and extended time to time FDI under automatic route was permitted up to 100 per cent for manufacturing in SEZs. Foreign institution and investors were permitted in primary and secondary markets

Agri- economic zones set up for promoting argi-export.

Special financial package introduced to large export units since 2001-03 SEZ scheme to strengthen by permitting the setting up of offshore banking units. Procedural simplification enforced since 2005-06 a new scheme to accelerate growth of export Role of foreign trade in 10th plan-

The 10th plan projects a growth rate of 12.4 percent in India's export and for this prepared median term export strategy. It aims the increase 1 per cent export to current 0.7 per cent by 2006-07. The Exim policy for 2002-07 has emphasized export market diversification with special focus on unexploited regions. As regards imports while proposing an indicative target of 8 percent GDP growth during plan period for improving the imports, the projection. It made on the basis of two rates. The growth of imports is lower at 16.3 percent annually during the plan period.

Table-1

India's Trade Performance (annual % change) (Rupee terms)

Items	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Export	2.7	22.1	15	27.6	21.6	25.3	14.7	28.2
Import	6.2	21.2	20.8	39.5	31.5	27.3	20.4	35.8
Net Income	-2.1	-9.8	3.6	-3.5	-6.	-1.3	2.6	2.5

RNI: MAHMUL02805/2010/33461 IMPACT FACTOR 6.20 ISSN 0976-0377
International Research Analysis Issue : XIX, Vol. IV, Jan. 2019 To June 2019 10

Table-2

Trends in India's export of principal commodities 1990-02 to 2004-05

(Rs.crore)

Year	Primary Products	Manufactured Goods	Petroleum	Others	total
1991-92	10186.73	32413-41	1022.27	419.40	44.41.81
1994-95	16372.62	64067.06	1308.08	925.45	82674.11
1997098	28569.59	98659.76	1310.99	1560.30	130100.64
2000-01	32555.55	156858.42	8541.67	5615.37	203571.01
2004-05	60896	272872	31404	10166	375339
2007-08	110811	414557	114191	16402	655863

Table-3 Trends In India's Import Of Principal Commodities (Rs.Crore)

Year	Primary Products	Manufactured Goods	Petroleum	Others	T0tal
1991-92	10816.11	998.55	10470.62	6602.96	43192.86
1994-05	18612.55	3592.41	23982.44	13761	73101.01
1997-98	30341.19	5512.95	36407.17	2593.64	154176.30
2000-01	71496.52	6593.22	40846.80	36815.37	230872.76
2004-05	13044.00	13540.29	10198.4	704806.75	481064.11
2007-08	310655	78517	285209	83676	70,12,312

Findings from above tables-

It can be revealed from Table 1that annual percentage change in Rupee terms, net income seen positive since 2007-08. Table 2 Trends in India's export of principal commodities 1990-02 to 2004-05 indicate that, as compared to primary goods manufacturing goods increased significantly. Table 3 which is shown that same situation like export Table 4 indicates that, India's trade balance is negative means import value is more than that of export.

RNI MAHMUL02305/2015/03461 Interlink Research Analysis IMPACT FACTOR 6.20 ISSN 0976-0377 Issue: XII, Vol. IV, Jan. 2019 To June 2019

Table-4

Trends in the Direction of India's Foreign Trade (Rs.crores)

Year	OECD	PEC	Easter Europe	Developing countries	Total Trade
1991-92					
Export	25482.20	3850.17	4813.69	4842.78	44041.81
Import	25939.37	9419.56	2444.40	10043.78	130100.64
1993-94					
Export	39672.06	7471.76	3140.92	18184.45	69751.39
Import	41037.13	16377.47	1766.31	1391.80	73101.01
1997-98					
Export	7245.18	71462.18	4769.53	38324.76	130100.64
Import	79293.93	36306.18	4142.48	35775.36	154176.30
2001-02					
Export	103113.69	24916.47	5984.23	64553.19	209017.97
Import	98439.42	14844.36	4515.57	60933.25	243199.72
2004-05					
Export	136392.37	57131.38	7650.70	132860.38	356068.88
Import	168690.78	438234.92	10746.96	12051.24	481054.11
2007-08					
Export	252404	107379	13622	280102	655863
Import	352061	306287	21192	324694	1012312

Conclusion-

In spite of the incentives and encouragements given to boost o foreign trade, the rise in the export values has been lower than that of imports; accordingly trade deficit has been continuous. The growth of imports is lower at 16.3 percent annually during the plan period. However, as compared to situation created in 1990-91 it is better and widened in terms of composition and direction of foreign trade of India.

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23. Assessment of Avian Population in and around Mahatma Jyotiba Fule Mahavidyalay, campus, Bhatkuli, dist. Amravati (M.S.)

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Abstract

Study of bird diversity in college campus Bhatkuli was done over a period of four month from December 2017 to April 2018. A total no. of 34 birds was recorded during the study. The common bird species were crow, house sparrow, house crow, blue rock pigeon, common myna, etc. the college campus has wide variety of tress, which may be one of the major contributing factor for the richness of bird species.

Keywords- common myna, spotted dove, blue rock pigeon, house crow

Introduction

Birds are chordate belonging to class Aves. Aves are the Latin name for birds-feathered, winged, bipedal, warm blooded egg laying Vertebrate animal. They inhibit the ecosystem across the globe. Birds are some of the most prominent species of the earth's biodiversity and sensitive to environmental changes (Dayananda G 2009.)

Birds are very important ecological indicators to understand the quality of habitats. Present status of bird's diversity has been decreasing due to the destruction of natural habitats and anthropogenic activities (Grewal B 2000). The destruction of different types of habitats by cutting food provide trees and foraging plant for house hold use of woods and require land for residential purposes are the main factor responsible for lower down in bird foraging habitat and their nesting sites. Therefore the majority of avian species are unknowingly enters to inhibit in the urban areas (Joshi PP 2001).

According to new research led by American museum of National history suggest that there are about 18000 bird species in the world. A check list of birds of Indian authored published by the Indian journal 2016 by (Praveen et al the Indian 2016). There are about 1263 species of birds present in India and about 358 species of bird found in Gorakhpur region (Khan

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MMH2008. Mohsanin S, Khan MMH 2009, Reza AMS, Hossain M, Parween S 2012). No research on bird diversity their population and assessment was carried out in the selected study area of college campus. Present study helps to prepare a base line data on avian diversity with their relative abundance occurrence in MJF college campus Bhatkuli.

Method and material

Bhatkuli is a large village about 26 Km away from Amravati city. The study area was visited 4 day in a month. The detailed survey was conducted in the early hours 6 am to 9 am and evening hours (4 to 6pm) from December 2018 to April 2019. Birds were counted by transect line point counting and look & see method. A field binocular with magnificence 10 x 50 was used to observe and identify bird's species. Observation was made by standing & seating from hiding place photographs are taken. Birds were recognized by fixing eye on them. Continuous observation were made regarding their movement, songs, feeding habits, size, shape, strips and patches of color, eye line, nape color, eye arcs were noted during stationary stage or flying stage. Observation was confirmed with the help Avibase bird count (2013).

Result & discussion

After our continuous observation of four months that is from December 2018 to April 2019. We have identifies the birds' species which are listed below in table: 1

Table 1: Most frequently found birds in college campus

Sr.No.	Common name of Birds	Scientific name	Status in campus
1	House Sparrow	Corus splendens	widespread
2	Common sparrow	Passer domasticus	widespread
3	Common myna	Acridotheres tristis	widespread
4	Rock pigeon	Petronia Bucerotidae	widespread
5	Rose-Ringed Parakeet	Pstittacula Krameri	widespread
6	Indian Koyal	Eudynamys	Rare
7	Brahmini myna	Sturnia pagodarum	Rare
8	Pide myna	Amandava	Rare
9	Red munia	Amandava	Rare
10	Common hill myna	Gracula Religisa	Rare
11	Indian Roller	Coracias Benghalensis	widespread
12	Common Dove	Columbidae	widespread
13	Spotted dove	Spilopelia Chinensis	widespread
14	Rose ringed Paraket	Psittacula krameri	widespread

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
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15	White bristled kingfisher	Alcedinidae dicrorus adsimilis	widespread
16	Black drongo	Dicrus caerulescens	widespread
17	Spotted egle owl	Bubo africanus	Rare
18	Spotted owl	Strix occidentalis	Rare
19	Rock pigeon	Columba livia domastica	Rare
20	Red vented bulbul	Pycnonotidae	Widespread
21	Greattle coucal	Gracupiacontra	Rare
22	Male koyal	Eudylamys scolopaccos	Rare
23	Shikra	Accipiter badius	Rare
24	Wood picker	Picidae	Widespread
25	Cattle Egrate	Bubulcus ibis	Widespread
26	Rocks sparrow	Petronia	widespread
27	Pond herron	Ardeola Leucoptera	widespread
28	Cattle egret	Bubulcus ibis	Rare
29	Black kite	Milvus migrans	widespread
30	Red Wattled Lopwing	Vanellus indicus	Widespread
31	Grey horn bill	Ocyceros birostris	Rare
32	Babbler	Argya caudate	Widespread
33	Great Tit	Parus Major	Seasonal
34	Rosy Starling	Pastor roseus	Rare

The most frequently found birds are House sparrow, common myna, house crow, common dove, pigeon. Red myna, rose ring parakeet. Some birds are rarely sighted during study periods such as spoted dove, red drongo, white drongo, & owl. The species diversity and status of each bird species in different habitat were as different cover is also different.

The majority of birds was observed in college campus and also has wide range of trees such Eucalyptus, banyan, peeple, ashok, neem. These trees give habitat for different species of birds. The birds were observed in and around college campus .This may be due to large variety of plant which provided shelter as well as food and safety for birds. Comparative data clearly indicates that college campus has recorded highest diversity in the garden and lowest near the main office which shows encroachment of students and staff members in that area. This study shows the positive relationship between healthy ecosystems to bird which are recorded.

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Synthesis and Electrical Properties of $Cdfe_2o_4$ Nanoparticles With Effect of Capping Agents

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Abstract:

Cadmium Ferrite ($CdFe_2O_4$) nanoparticles were prepared by the sol-gel method using Sodium Docecyl Benzene Sulfonate (SDBS) and Ctyl Trimethylammonium Bromide (CTAB) capping agents. The process was a convenient, environment friendly, inexpensive and efficient method forsynthesis of $CdFe_2O_4$ nanoparticles. X-ray diffraction pattern shows that synthesized nanoparticles exhibit cubic spinel-type structure. Scanning Electron Microscopic (SEM) images revealed that the synthesized nanoparticles of the mixed phase possess agglomerate bunch of square shaped structures. Electrical properties of the synthesized nanoparticles are studied by DC conductivity measurement. Electrical conductivity of the nanomaterials $CdFe_2O_4$ were increased with the temperature.

Keywords: Capping agents, Sol-Gel, $CdFe_2O_4$, XRD

Introduction:

Ferrite nanoparticles have attracted considerable attention because of their particular properties [1-4]. So, they are intensively studied and developed for industry as information storage, high frequency devices, ferrofluid [5] and transformers but also in biological applications [6].The changes in the properties of the nanoparticles are mainly attributed to crystallite size due to the fraction of atoms on the surface compared to the bulk [7].

These ferrites have the structural formula of MFe_2O_4, where M is a divalent metal ion from the 3d transition elements such as Mn, Cu, Ni, Co, Zn or combinations of these [8]. Among the spinel ferrites, Cadmium ferrite has long been the subject of study because of its unique properties such as chemical and thermal stability and the particle size dependent magnetic properties. Several methods such as ball milling [9], sol-gel [10], co-precipitation [11], hydrothermal technique [12] auto-combustion route, ultrasonic cavitation [13], etc. have been

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used to synthesize ferrite nanoparticles. Among these methods, sol-gel method is promising technique to synthesis the ferrites at low temperatures.

In this paper, nanopowders of the spinel ferrites $CdFe_2O_4$ were prepared by a sol-gel method. CTAB (Cetyl Trimethyl Ammonium Bromide) and SDBS (Sodium Dodecyl Benzene Sulfonate) are used as capping agents. The advantage of this method is that it enables the economic manufacture of a wide range of ceramic nanopowders and the particle size can be controlled by subsequent heat treatments.

Materials Synthesis:

$CdFe_2O_4$ nanoparticles were prepared by sol-gel method using CTAB (Cetyl Trimethyl Ammonium Bromide) and SDBS (Sodium Dodecyl Benzene Sulfonate) capping agents. AR grade Cadmium nitrate hexahydrate $Cd(NO_3)_2.6H_2O$, ferric nitrate nonahydratetes $(Fe(NO_3)_3 9H_2O$, citric acid, CTAB and SDBS, liquor ammonia with high purity of 99.99% and used without further purification.

The accurately weighed amount of metal ion precursors, citric acid and CTAB in desired stoichiometric proportions were dissolved separately in minimum quantity of distilled water. The prepared mixture was stirred magnetically at 80^0C for 2 h. A transparent solution was obtained after 2 h. Thereafter, this transparent solution was poured to Teflon-lined stainless steel autoclave. The temperature of the autoclave was increased gradually to 130^0C and kept for 12 h to obtain gel precursor. Later, the autoclave was allowed to cool naturally to room temperature and the obtained product further heated for 3 h at 350^0C in muffle furnace and then milled to a fine powder. Then the obtained powder was calcined at 650 ^{0}C for 3 h. In this way, $CdFe_2O_4$ powder samples using SDBS capping agents were prepared by following the same procedure.

Phase identification of the prepared powder samples was performed by X-ray diffractometer with a Cu Kα radiation (λ = 1.5406Å). The crystallite size (D_{hkl}) of the powder sample was calculated using Debye-Scherrer relation, which is given by, $D = K\lambda/B\cos\Theta$; Where B is the full width at half-maximum intensity (in radians) of a peak at an angle O; K is a constant, depending on the line shape profile; λ is the wavelength of the X-ray source. Investigations related to microstructure and morphology of prepared powder samples were carried out by scanning electron microscopy (SEM). The electrical conductivity measurements were conducted using KEITHLEY source meter (Model–4240) instrument. The DC electrical conductivity measurements were carried in the temperature between the range of 300-650 K.

Results and Discussion:

Figure-1 (a and b) presents the X-ray diffraction patterns for prepared (a) $CdFe_2O_4$ - CTAB and (b) $CdFe_2O_4$ -SDBS powders. Every one of the powder samples have single phase with a cubic spinel-type structure with *d*-spacing values consistent with those found in the JCPDS files-00-022- 1063[14]. The average crystallite sizes, according to the Debye-Scherrer formula, of $CdFe_2O_4$ - CTAB and (b) $CdFe_2O_4$ -SDBS powder samples were found as ~25 and 17nm respectively.

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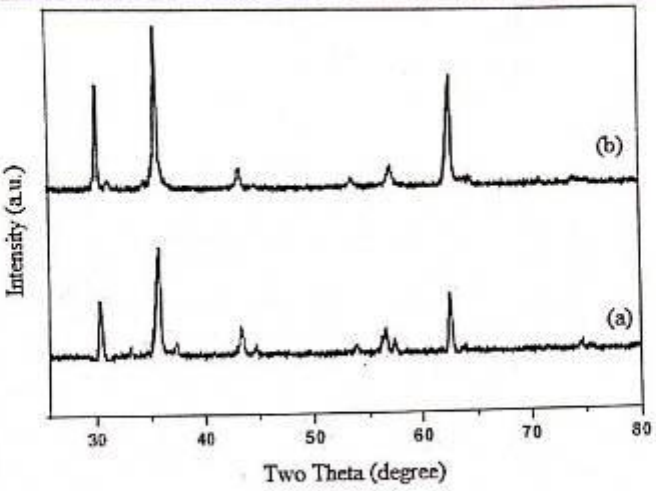


Fig.1 XRD patterns of a) $CdFe_2O_4$ - CTAB and (b) $CdFe_2O_4$ -SDBS nanoparticles

The morphology of the prepared $CdFe_2O_4$ nanoparticles were investigated by SEM. The SEM image of a) $CdFe_2O_4$ - CTAB and (b) $CdFe_2O_4$ -SDBS nanoparticles is shown in Figs.2a,b respectively. The SEM images exhibit agglomerated bunch of square shaped nanoparticles. The small size of nanoparticles leads to high agglomeration because of its high surface energy. The SEM image shows that the agglomeration of $CdFe_2O_4$ -SDBS nanoparticle is relatively higher when compared to that of the $CdFe_2O_4$ - CTAB nanoparticles because of the effect of capping agent on modifying crystal sizes. As it can be seen that the results estimated from SEM photographs that the presence of macroagglomerations of very fine particles having size less than 1 μm.

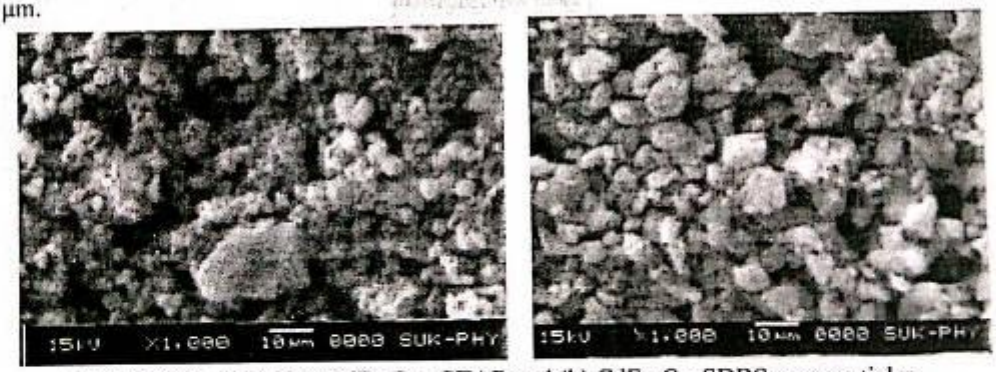


Fig.2 SEM images of a) $CdFe_2O_4$ - CTAB and (b) $CdFe_2O_4$ -SDBS nanoparticles

Figure.3. shows the variation of DC Electrical conductivity of the synthesized samples a) $CdFe_2O_4$ - CTAB and (b) $CdFe_2O_4$ -SDBS nanoparticles with temperature. It is found that, the conductivity increases with the rising in temperature showing a semiconducting behavior of the materials. The two steps conductivity was observed here, the first conductivity was almost constant with increase in temperature up to 400 K and the second then gradually increases conductivity.

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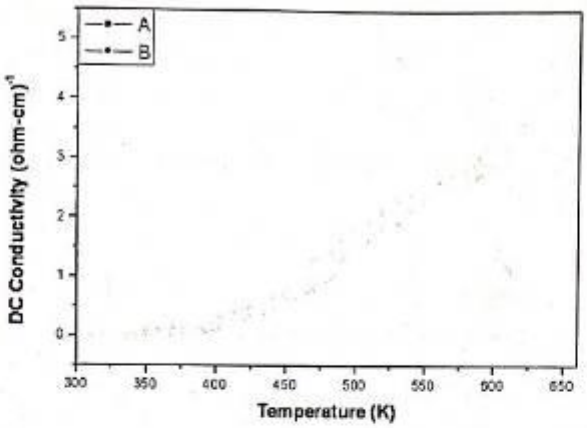


Fig. 3. Variation of DC electrical conductivity with temperature.

Conclusions:

The $CdFe_2O_4$ nanoparticles have been prepared by using conventional and simple sol-gel citrate method using two different capping agents, Sodium Dococyl Benzene Sulfonate (SDBS) and Ctyl Trimethylammonium Bromide (CTAB) capping agents. XRD patterns confirmed that the $CdFe_2O_4$ - CTAB and (b) $CdFe_2O_4$ -SDBS powder samples were synthesized having a size ~25 and 17nm respectively and exhibit cubic spinel-type structure. The SEM image shows that the small size of nanoparticles leads to high agglomeration because of its high surface energy. DC conductivity study revealed, the electrical conductivity increases with the rising in temperature showing a semiconducting behavior of the materials.

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Assessment of Molluscan Diversity observed in Mudflat of Purna River, Runmochan, Tq. Bhatkuli, Dist. Amravati India

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Abstract:-

The present study was undertaken in the mudflat of purna river located at Runmochantq. Bhatkuli,dist. Amravati.

The Purna river has a rich molluscan diversity.The molluscan have been used as a indicator to access the water quality molluscans are natural filter feeders. They strain out suspended particle or pollutant from the water column and help to improve water quality. The molluscan diversity reveled presence of 4 species of gastropoda and 1 species of bivalve.

The gastropods species of the family Planorbidae,Thiaridae,Viviparidae, were recorded dominant where as the bivalve were represented from the family like Unionidae.

Keywords:-Runmochanmolluscan diversity, mudflats, pollutant Purna river.

Introduction:-

The phylum mollusca include soft bodied animal which is protected by hard shell. They occur in various habitat form deep sea, co salt belt and divided into freshwater, marine, estuarine and terrestrial.

Fresh water mollusca are those member of the phylum which live in fresh water habitat ,both lotic such as river, stream ,canals ,spring and underground cave strems and lentic such as lakes, ponds Temporaritivein fresh water. The gastropods and the bivals. It appears that the other classes with in the phylum mollusca the cephalopods, scaphopods,poluplacophartans, etc-is made their transition form a fully marine environment to a freshwater environment. A few species of fresh water mollusca are among the most notorious invasive species(A.B.Chavhan et.al 2015)-

Mollusca can be found in almost all type of habitat from the bottom of the oceans to mountains tops and tundra regions. They are very divers, not only in size and shape,but also in their life cycle, life span and habitat. They play a key role in the recycling of nutrients a, soil generation and water friction, they are good indicator of environment quality, especially for river, lakes, moist ancient grassland and ancient woodland.(Aniketkumar and VlpinVyas 2011).

The fresh water mollusca constitute an important part of fresh water ecosystem. The mollusca are the second largest group of living aquatic organisms. Molluscans play a critical role in maintaining the aquatic by recycling nutrient and energy pyramids by surving as nutrition, for certain aquatic organisms. Several genera of gastropods and bivals are found in fresh water pond and reservoir.(Wagh G.A, Nikita Jane et.al 2015)

Material and Methods:-

The study area was visited in the morning hours for the collection of mollusus at PurnaRiver which is located Runmochan Tal. Bhatkuli Dist. Amravati .The study was carried out for three months from January to March.

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Collection of molluscan was done from three leutoral site of the river by collecting bottom sample by quadrate method using area 10/10 mt samples were collected from bottom of mudflat and put into separate polythene bags and transported to the laboratory af our collfoge for the further studies.

The sample were washed and preserved in 70% ethyl alcohol. Molluscan were identified with the help of keys and from different available literature.

Results and discussion:-

During this study five species of molluscan belonging to class Gastropoda and Bivalve were recorded. Considerable changes in molluscan diversity were observed in the three different sites in Purna River.

These molluscanfamilies Viviparidae and Tharidae, Unionidae, Planorbis were found dominant at all the sites. The existence of molluscan is highly necessary because they constitute Food for many aquatic organisms(SubhaRao et.al 1979) . All these molluscan are observed phytophagus. The post monsoon period's most favorable time for the mollusacn species (Poulami Paul et.al. 2014). The presenceof thriving population of molluscan indicates the river water is not acidic hardly molluscan survive beyond the pH 5.(Madhusudan V. et.al 2011)

The presence study shows a reach molluscan diversity .The molluscan have long been usc as an indicator to assess the water quality mollusan are natural filter feeders. They strain out suspended particles and pollutants from the water column and help to improve water quality. These molluscan have a tremendous impact on the economy of people.

Table 1 Gastropoda and Bivalvia occurrence during study period from selected sites of Purna River

Class	Family	Species
Gastropod	Viviparidae	Belllamyabengalensis (lamark)
	Viviparidae	Bellamya eburnean (lamark)
	thiaridae	Taberia lineate (Gray)
	Plenorbidae	Indoplanorbisexustus (Beshayes)
Bivalvia	Unionidae	Lamellidensmarginalis



Fig. In percentage molluscan diversity species recorded at three study sites

Table 2. Quadrate wise abundance

Species	Quadrate 1	Quadrate2	Quadrate3	Total
Belllamyabengalensis(lamark)	7	1	2	10
Bellamya eburnean (lamark)	3	2	7	13

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February-2019

Taberia lineate(Gray)	1	-	-	1
Indoplanorbisexustus (beshayes)	2	3	21	26
Lamellidensmargenalis	10	3	2	15

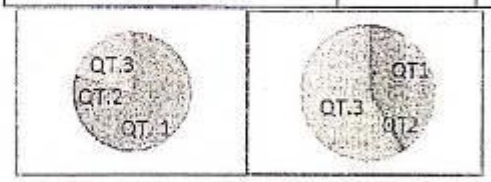


Fig.*Belllamyabengalensis (lamark)*

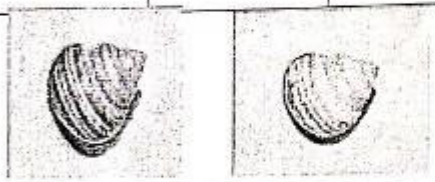


Fig.*Bellamya eburnean (lamark)*



Fig Taberia lineate (gray)



Fig.*Indoplanorbisexustus (beshayes)*



Fig.*Lamellidensmargenalis*

1. We observed some therets during the study that use of wetland for ganesh and durgaidole immersion on the festival time.
2. Habitat destruction and encroachment by local people
3. Uncontrolled fishing.
4. Sand and rock mining becoming a major problem for wetland.
5. Uncontrolled growth of Ipomoea.

The study reviled that there is good diversity of mollusan most of the species where indigenous.Some of the recorded species have greater commercial value and biodiversity importance some of the species observed are edible however no information is available about the molluscan diversity of this arca. Hence it is necessary to document the biodiversity of molluscus in the study area. There is agent need of conservation and sustainable utilization of molluscan species.

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VOLUME - VIII, ISSUE - I- JANUARY - MARCH - 2019
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22. Effect of Eu Doping on Structural and Gas Sensing Properties of In2O3 Nanoparticles

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Abstract

In the present work, thick film of nanostructured Eu doped In2O3 were synthesized by sol-gel citrate method. The structural properties of Eu doped In2O3 nanoparticles were analysed using x-ray diffractometer (XRD) and transmission electron microscope (TEM. The minimum crystallite size of Eu doped In2O3 calculated from Scherrer's formula is found to be 20-25 nm. SEM images exhibit the porous nature of the sensing material with a number of active sites. The sensitivity of Eu doped In2O3 to reducing gases like acetone, ethanol, H2S and LPG was been compared. Eu doped In2O3 is adopted to improve the gas sensitivity of pure In2O3, especially to enhance the response to acetone gas. The maximum values of sensitivity and percentage sensor response were found at an operating temperature 1800C of acetone gas. The quick response and fast recovery are the main features of this sensor. The effects of microstructure and additive concentration on the gas response, selectivity, response time and recovery time of the sensor in the presence of acetone gas were studied and discussed.

Keywords: Sensitivity; Acetone Sensor; Sol-gel method; Nanomaterials

1. Introduction

In recent years, environmental monitoring gas sensors have attracted great attention. Gas sensors can detect various inflammable, explosive, toxic, and harmful gases accurately and

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the dried gel was ignited in a corner. The gel was subjected to calcinations at 650^{0}C for 6 hours in a furnace to obtain the combusted flake form material. By grinding the flakes in mortar and pestle, powdered form of material was obtained. Due to combustion the gel converts into a loose powder containing very fine crystallites.

Phase identification of the prepared powder samples was performed by X-ray diffraction study Cu-Kα radiation with wavelength (λ = 1.5406 ^{0}A). The crystallite size ($D_{h\,k\,l}$) of the powder sample was calculated using Debye-Scherrer relation, which is given by, $D_\lambda = K\lambda/\beta\cos\theta$; Where β is the full width at half-maximum intensity (in radians) of a peak at an angle 0; K is a constant, depending on the line shape profile; λ is the wavelength of the X-ray source. Investigations related to microstructure and morphology of prepared powder samples were carried out by transmission electron microscopy (TEM).

To study the gas sensing behavior, as-prepared powder samples were mixed separately with PVA as a binder to form pastes. After that prepared pastes were correspondingly coated as a gas sensing film onto Al_2O_3 tube substrate with gold wire electrodes for good ohmic contacts at each end. To evaporate the PVA, the sensor element was annealed at 350^{0}C for 1hr. The sensor element, with Ni-Cr heating coil to provide the necessary temperature and a chromel-alumel thermocouple (TC) for indicating the operating temperature, was placed in the glass chamber to investigate the gas sensing properties. The static gas-sensing unit was used to investigate the sensing performance of the fabricated sensor elements. To measure the gas sensing characteristics, desired volume of the test gas was injected into a glass chamber and mixed with air. The electrical resistance of the sensor was calculated in the presence as well as in the absence of different test gases. The gas-sensing characteristics were recorded with reference to time at different operating temperatures and as a function of gas concentration. The gas sensing response was calculated using the given formula :

$$S\,(\%) = [(Ra - Rg)/Ra] \times 100, \qquad (1)$$

where Ra and Rg are the resistance in the air and in the presence of tested gas, respectively.

3. Results and Discussion

The XRD patterns of (a) In_2O_3 and (b) 3wt.% doped Eu doped In_2O_3 powders samples calcinated at 650^{0}C were shown in Fig. 1. The major diffraction peaks (2 2 2), (4 0 0), and (4 4 0) observed in the figure are indexed to the cubic structure of In_2O_3 as evidenced from JCPDS

VOLUME - VIII, ISSUE - I- JANUARY - MARCH - 2019
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The sensitivities of gas sensors based on pure In_2O_3 and Eu- doped (1,2, and 3 wt.%) In_2O_3 nanomaterials to 100 ppm acetone were measured at different temperatures in order to find the optimal working temperature. The results are shown in Fig. 3. The responses of the four samples increase with the rising of the operating temperature, and reach their maximum at 180 ^{0}C. Then, as the operating temperature continue to increase, the responses decrease. The sensitivity of gas sensor based on 3 wt.% Eu-doped In_2O_3 nonmaterial to 100 ppm acetone is 24, which is highest than that of the other synthesized gas sensors, indicating that the doping of Eu can enhance the gas sensitivity of In_2O_3 nanomaterials significantly.

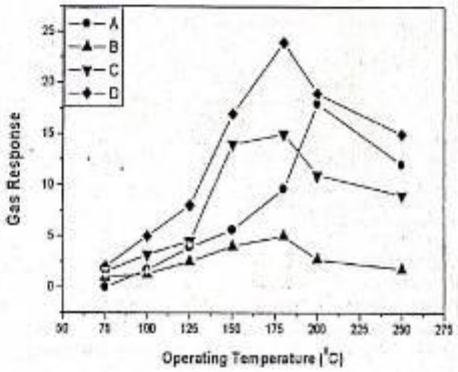


Fig.3. Responses of gas sensor based on (A) 2 wt.% Eu doped In_2O_3, (B) pure In_2O_3, (C) 1 wt.% Eu doped In_2O_3 and (D) 3 wt.% Eu doped In_2O_3 nanomaterials to 100ppm acetone under different temperatures.

The response and recovery characteristic is one of the important features of gas sensors. The response and recovery curves of gas sensors based on pure In_2O_3 and Eu- doped (1,2, and 3 wt.%) In_2O_3 nanomaterials to 100ppm acetone at 180 ^{0}C are shown in Fig. 4. From the figure we can see that, although Eu doping in different amount, the response and recovery times of each sample change slightly.

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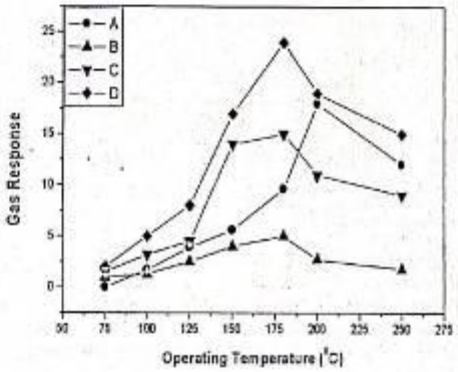


Fig.3. Responses of gas sensor based on (A) 2 wt.% Eu doped In_2O_3, (B) pure In_2O_3, (C) 1 wt.% Eu doped In_2O_3 and (D) 3 wt.% Eu doped In_2O_3 nanomaterials to 100ppm acetone under different temperatures.

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VOLUME - VIII, ISSUE - I- JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 -IMPACT FACTOR - 5.5 (www.sjifactor.com)

The results are shown in Fig. 6. It is clearly to point out that the sensor is less sensitive to H_2S and LPG. The results demonstrate the good selectivity of gas sensor based on 3 wt.% Eu-doped In_2O_3 nanomaterils.

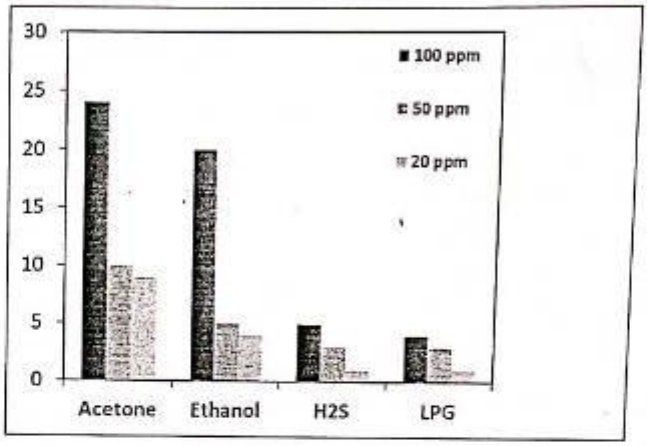


Fig. 6.Responses of gas sensor based on 3 wt.% Eu-doped In_2O_3 nanomateials to 10, 50 and 100 ppm acetone, ethanol, H_2S and LPG at 180°C.

The mechanism of gas sensing can be explained on the basis of gas adsorption and the chemical reactions occurs on the surface of the materials [16]. When 3 wt.% Eu-doped In_2O_3 nanomateials are exposed to the air, their surface will be surrounded by oxygen molecules. These oxygen molecules will extract electrons from the conduction band of the materials and ionize to O^{2-}, O^- and O_2^-. This will lead to conductivity decreasing of matrtial. However, when wt.% Eu-doped In_2O_3 nanomateials are exposed to acetone, the surrounding acetone molecules will react with these ionized oxygen species and release the trapped electrons back to the materials. Thus increase the conductivity of wt.% Eu-doped In_2O_3 nanomateials.

4. Conclusion

In summary, pure In_2O_3 and Eu- doped (1,2, and 3 wt.%) In_2O_3 nanomaterials were synthesized by sol-gel method and their gas sensing properties are investigated. The XRD patterns also show high degree of crystallinity and complete phase formation with grain size of about 20-25 nm with cubic structure. The XRD peaks of 3% Eu doped In_2O_3 were sharp than that of undoped In_2O_3 sample which indicates good crystallinity of nanoparticles. Among all other additives 3 wt. % Eu doped In_2O_3 nanomaterials was found to be optimum and showed highest

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Smt. L.R.T College of Commerce, Akola 12th January 2019
■National Conference Souvenir■

(37)

IMPACT OF GST ON LOCAL TAXES WITH SPECIAL REFERENCE TO NAGAR PALIKA IN AMRAVATI DISTRICT

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Abstract:

GST the biggest tax reform in India founded on the notion of "one nation, one market, one tax" is finally here. The moment that the Indian government was waiting for a decade has finally arrived. The single biggest indirect tax regime has kicked into force, dismantling all the inter-state barriers with respect to trade. The GST rollout, with a single stroke, has converted India into a unified market of 1.3 billion citizens. Fundamentally, the $2.4-trillion economy is attempting to transform itself by doing away with the internal tariff barriers and subsuming central, state and local taxes into a unified GST. Will the hopes triumph over uncertainty would be determined by how our government works towards making GST a "good and simple tax". The idea behind implementing GST across the country in 29 states and 7 Union Territories is that it would offer a win-win situation for everyone. Manufacturers and traders would benefit from fewer tax filings, transparent rules, and easy bookkeeping; consumers would be paying less for the goods and services, and the government would generate more revenues as revenue leaks would be plugged. Ground realities, as we all know, vary. So, how has GST really affected India? Let us look.

Keywords: Direct taxes, GST, Indirect taxes. Local taxes,

Introduction:

India is the hub of taxes where people pay many taxes, which create confusion for them. Presently we pay two types of taxes i.e. Direct and Indirect in various sectors. Direct Tax paid directly to the government by the taxpayer i.e. Income Tax, Wealth Tax, and Corporation Tax. Indirect Tax is a tax levied on goods and services rather than on income or profits. It is not directly paid to government but collected from intermediaries (such as retail stores) from the person who bears the ultimate

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economic burden of the tax (such as consumers). The intermediary later files a tax return and forwards the tax precedes to government with the return for example Sales Tax, VAT, Excise Duty, and Custom Duty and so on. GST is a blanket of Indirect Tax that will subsume several indirect state and federal taxes such as Value Added Tax (VAT) and Excise Duty and different State Taxes, Central Surcharges, Entertainment Tax, Luxury Tax and many more. GST had firstly introduced in France in 1954, with introduction of GST France became the first country ever to introduce GST. Its introduction was requiring because very high sales taxes and tariffs encourage cheating and smuggling.

Nagarpalika does not only do tax assessment or collection in post independence but it was also collected by Britisher's. They also used this revenue collected from various taxes to provide basic facilities to the citizens. Britisher's come to India only to develop their business but they become Governor and governed the country for 150 year. They did this only because at the co-operation of local people. Britisher's to get away precious things of India to their country. When Britisher's came to India, they study geographical condition, political atmosphere of India. Then they established to their ascendancy in India and used to collect various taxes from the people the same part of collected revenue had to send their country and the remaining revenue had spend on residence, roads construction, bridge, erection, Medical facilities, educational facilities in India. Britisher has had provided all these facilities honestly. The process, which Britisher has accepted to collect revenue, was very strict. Britisher's appoints committee to collect various taxes. So that they can satisfy the needs of people because of prepared format of tax collection, Britisher's used to collect much revenue. Time to time they used to increase rate of tax as per the report of committee. This growth in taxes had to be bearded by the people.

Today also method of tax collection which used by Britisher's is accepted in India. Today we are living in independent India. However, the taxes, which are paying today, are on the some basis and precious of Britisher's. The main sources of revenue for Nagarpalika, Mahanagarpalika are collection of various taxes. In India Nagarpalika's are function based on population and they work according to the No. of people and plan to provide facilities to the people. These Nagarpalika's spends the collected revenue for the management of waste, clean less, streetlight, medical department, water supply, salary of staff etc. the law of prescribed in constitution of India. Therefore, tax collection and assessment is very necessary for Nagarpalika's.

Table -1 Nagarpalika in Amravati District.

Sr. No.	Nagarparishad / Nagarpalika	Year of established	Population (In 2011)
1	Achalpur	1956	107000
2	Anjangoan Surjee	1939	56380
3	Warud	1937	45528
4	Chandur Rly	1948	19776
5	Dhamagam Rly	1947	21847
6	Chandur Bajar	1948	18759
7	Daryapur	1937	36463
8	Morshi	1936	37233
9	Shendurjana Ghat	1948	21748
10	Chikhaldara	1948	5158

(Source: Primary Data)

Review of literature:

1) **Chaurasia et al.** (2016) Studied, "Role of Goods and Services Tax in the growth of Indian economy" and concluded that in overall GST will be helpful for the development of Indian economy and this will also help in improving the Gross Domestic Products of the country more than two percent.
2) **Kumar (2014)** studied, "Goods and Service Tax - A way forward" and concluded that after implementation of GST in India many indirect tax system will be finished and there will be only one tax i.e. GST which is expected to encourage unbiased tax structure.
3) **Gupta Dr. Radha (2013)** :In their research paper title "Personal Income Tax Structure in India : An Evaluation" published in Pacific Business Review International Volume 5, Issue 7, January 2013, page No. 1-6. According to researcher to pay tax is our moral and basic responsibility people should be aware in this regard of income is tax. The revenue collected from taxes can be spend to provide various facilities to the people. When the people avoided to pay taxes then it automatically affects the financial management of country.
4) **Palande Pro S.A. (2011)** :The title of the research paper "Income Tax Problem and Recommendation" publish in IJRCM, Volume No. 09, Page No. 27-32. According to the researcher, the assessment of tax should be affordable and the policy of fixed agreement has implemented. The emphysaesd should be on the development of tax management policy sincerely the main intension of income tax is to collect revenue from various taxes and this revenue should be used for development of country.

Objective:

1) Impact of GST on local taxes.
2) To know the nature of main tax of Nagarpalika's.
3) To review Nagarpalika's and their population.

Research methodology: On 7th October 2016 Government of India (GOI) passed Process and Flowchart of GST. Now, GST is going to implement very soon and all the sectors have to register for it. The first step for each sector is to In order to study tax system of various Nagarpalika's the primary data from Amravati district 40 respondents. In addition, secondary sources have been used. The information has collected to give this paper critical attitude. Secondary Sources of data includes available published literatures such as books, journals, newspapers and relevant government websites.

Limitation of the study

1) In this research, various taxes had studied because of available information.
2) This research is limited to study various taxes of GST and local taxes like Nagarpalika's only in Amravati District.
3) The conclusion arise from search may or may not be applicable to the other parts of district or state.

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AJANTA - ISSN 2277 - 5730 -IMPACT FACTOR - 5.5 (www.sjifactor.com)

२१. आंतरराष्ट्रीय विपणन व समस्या

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सारांश

नव्वदीच्या दशकापासून आंतरराष्ट्रीय विपणन खऱ्या अर्थाने बहरले आहे. सर्वांगाने प्रगत झालेले तंत्रज्ञान, सुधारित वाहतूक आणि दळणवळणाच्या सोयी यामुळे जग जवळ आले आहे. या सर्व सुधारणा, आर्थिक उदारीकरण आणि जागतिकीकरण प्रक्रियापूरक व्यापारी धोरणे, याद्वारे जागतिक बाजारपेठ उदयास आली आहे. तांत्रिक प्रगतीमुळे उत्पादनात वाढ झाली आणि त्यामुळे उत्पादनखर्च कमी झाला. कमीत कमी खर्चात जास्तीत जास्त वस्तूंचे उत्पादन शक्य झाले. व्यावसायिक संस्थांना, देशांच्या सीमा पार करून डोकावण्याची गरज वाटू लागली. नव्या बाजारपेठा म्हणजे नवी आणि मोठी आव्हाने त्यातून विपणन कार्यालय स्वतंत्र आंतरराष्ट्रीय परिणाम लाभले.

आंतरराष्ट्रीय विपणन हे अनेक संधी आणि आव्हाने यांचे अजब रसायन आहे, असे म्हणणे अधिक संयुक्तिक ठरले. एका दृष्टीने ते बाजारपेठ विस्तारीकरण आहे तर दुसऱ्या दृष्टीने ते अतिस्पर्धात्मक आहे त्यामुळे देशांतर्गत तसेच आंतरराष्ट्रीय बाजारपेठात महत्वपूर्ण परिवर्तन घडून येत आहे. जागतिकीकरण प्रक्रियेचा प्रभाव देशांतर्गत बाजारपेठेवर होत आहे. भारतातील अनेक व्यावसायीक आंतरराष्ट्रीय बाजारपेठेत प्रवेश करीत आहेत तर पूर्वी भारतात वस्तू विकाणारे विदेशी उत्पादक आपला बाजारपेठेतील हिस्सा दुपटीच्यावर नेत आहेत.

प्रस्तावना

बदल हा आजच्या युगांचा स्थायीभाव झाला आहे. बदल हेच केवळ स्थिर असलेले आजच्या जगाचे वैशिष्टये आहे. देशांतर्गत सीमा पुसट होत जाणे जग अधिकाअधिक लहान होत जाणे. त्यामुळे बदल घडुन येण्याची प्रक्रिया अधिक अपरिहार्य बनली आहे. कंपन्यांना एक तर अंतर्गत परिवर्तनाने बदलाशी जळवून घ्यावे लागते. किंवा बदलांच्या झंझावाताने झाकाळून जावे लागते. जागतिक बाजारपेठेत हे सर्व दिसून येत आहे.

बदलत्या परिस्थती साठींचा एक रामबाण उपाय म्हणून व्यवसायात पुनरर्चना धोरणाकडे पाहीजे जाते. बदलत्या स्थितीशी नाळ साधण्याच्या दृष्टीने स्वरचना पुनः केली जाते व स्वतःची बलस्थाने पुन्हा ओळखून पुनर्रचना केली जाते.

1. बाजारपेठ संयुक्तता किंवा विलय

काही वेळा, विशेषतः प्रगत देशात, अशी स्थिती निर्माण होते की, काही उत्पादनांसाठी तेथील बाजारपेठ ही पर्याप्त असते. त्या वस्तूंची विक्री तेथे त्यांना शक्य होत नाही. पर्याप्त नाही 2. **व्यापारतुट वाढीचा धोका :** बाजारपेठेप्रमाणेच व्यापारतूट वाढ, हा देखील एक धोका असतो. ही समस्या विकसीत देशांना भेडसावते. निर्यातीपेक्षा

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 -IMPACT FACTOR - 5.5 (www.sjifactor.com)

आयात वाढते. अशावेळी व्यापारतूट वाढते त्यातून अर्थव्यवस्थेचा समतोल ढासळण्याची भीती निर्माण होते अशावेळी आंतरराष्ट्रीय विपणन श्रेयस्कर ठरते.

2. विदेशी कंपन्यांकडून होणारी तीव्र स्पर्धा

जागतिक बाजारपेठे संकल्पनेमुळे विकसित देशातील उद्योगगृहांना देखील खाली पाहावे लागत आहे. उदा. स्वयंचलित वाहन बाजारपेठेतील फोर्ड जनरल मोटर्स या बलाढय कंपन्या, जपानी आणि जर्मन वाहन उत्पादकांच्या स्पर्धेत उभ्या राहून शकल्या नाहीत त्यामुळे त्यांना नव्या बाजारपेठांत पदार्पण करावे लागले.

3. खुणावणारी नवीन बाजारपेठ

अविकसित देशांतील आंतरराष्ट्रीय व्यापारांचे प्रमाण केवळ 40 ते 65 टक्के असते त्यामुळे ते देश ही नवी कोरी बाजारपेठ असते. भारतात परकीय बनावटीच्या मोटारगाडया, डिजिटल कॅमेरे, याबद्दल नवलाई वाटते. आंतराष्ट्रीय व्यापारामुळे सहअस्तित्वावर आधारित जग निर्माण होत आहे. विकसित देशांना आत कळून आले आहे की, त्यांचे अस्तित्व आता एकल स्वरूपी राहिलेले नाही त्यामुळे त्यांनी अविकसित देशांना मुक्तपणे मदत देणे सुरू केले आहे त्यातून विकसित देशात व्यावसायिक संधी निर्माण होत आहेत.

4. झपाटयाने प्रगत होत असलेले जग

आंतरराष्ट्रीय व्यापारामुळे सहअस्तित्वावर आधारीत जग निर्माण होत आहे. विकसीत देशांना आता कळून आले आहे की, त्यांचे अस्तित्व आत एकल स्वरूपी राहीलेले नाही त्यामुळे त्यांची अविकसीत देशांना मुक्तपणे मदत घेणे सुरू केले आहे. त्यातुन विकसीत देशात व्यावसायीक संधी निर्माण होत आहे.

आंतरराष्ट्रीय विपणन समस्या आणि आव्हाने

आंतरराष्ट्रीय विपणन हे एक प्रकारचे दुसऱ्या देशाच्या भूमीत जाऊन युध्द करण्यासारखे आहे. विपणन व्यवस्थपकाने त्यासाठी विशेष तयारी ठेवली पाहिजे.सर्वसाधारणपणे अशा विपणन व्यवस्थपनात अनेक आव्हाने असतात. त्या देशातील आर्थिक, सामाजिक व सांस्कृतिक समस्यांमुळे ही आव्हाने निर्माण होतात. समस्यांचे स्वरूप पुढील प्रमाणे सांगता येईल.

भरमसाठी कर्जबाजारीपणा : अनेक देश भरमसाठ कर्जे काढतात. काही वेळा त्यावरील व्याज देणे कठिण होऊन बसते. अशा वेळी अर्थव्यवस्था दिवाळखोरीकडे जाते.

राजकीय अस्थिरता : प्रारंभिक तयारी न करता आंतरराष्ट्रीय बाजारपेठेत पदार्पण करते, हे राजकीय संकट ओढवून घेतल्यासारखे आहे. समोरच्या देशातील राजकीय अस्थिरता वाढील लागते.

विदेशविनिमय अडचणी: आर्थिक. दिवाळीखोरी आणि राजकीय अस्थिरता यामुळे विनिमय विषयक अडचणी निर्माणा होतात. अशा अडचणी म्हणजे आंतरराष्ट्रीय व्यापाराच्या मुळावरच घाला होय.

प्रमाण आणि अधिनियम :शासनाकडून विदेशी कंपन्यांवर अनेक बंधन घातली जातात काही ठिकाणी त्यांना संयुक्त उपक्रम म्हणून सामील होण्यास सांगितले जाते. राष्ट्रीय धोरणामुळे अनेक अधिनियमप्रमाणे त्यांव्यावर लागू केली जातात.

स्थानिक व्यवसायाला संरक्षण: स्थानिक व्यवसायाला हानी पोहवू नये यासाठी स्थानिक व्यवसायांना संरक्षण दिले जाते. विदेशी वस्तूंवर कर, जकाती इ. लादल्या जातात. काही गोष्टींसाठी परवाना पत्र अडविली जातात.

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 -IMPACT FACTOR - 5.5 (www.sjifactor.com)

व्यापारी माहिती गुप्तता : विदेशातील विपणन कार्यासाठी तेथील वितरक किंवा विपणन कर्मचारी नेमावे लागतात आपली व्यापारी माहिती किंवा व्यावसासिक गुपिते त्यांना ज्ञान होतात. काही वस्तू तंत्रज्ञान बाबत ही गोष्ट अनर्थ ओढवून घेणारी ठरू शकते.

सांस्कृतिक समरसता : विदेशी बाजारात वस्तू –सेवा नेण्यापूर्वी त्या देशाची संस्कृती, राहणीमान, सवयी, भाषा इ. बाबत माहिती प्राप्त केली पाहिजे. ते न करता त्यात पाऊल टाकणे, म्हणजे चूक ठरू शकते.

आंतरराष्ट्रीय विपनण नियोजन

- **लक्ष्य/उदिष्टे ठरवणे :** योजनेची आखली करतांना हितसंबंधी घटकांच्या अपेक्षा, संघटनेची उदिष्टे, कंपनीची बलस्थाने कुमकुवत गोष्टी आणि भविष्यकालीन विपणन संधी, यांचे परीशीलन करावे लागते. त्यानंतर योजनेअंतर्गत विविध पर्यायाचा शोध घेतला जातो. हे पर्याय पुढीलप्रमाणे असतात बाजारपेठ विभागणे, निवडक बाजारपेठेवर प्रयत्न एकवटणे, नवीन वस्तू विकसित करणे, नवीन वस्तूचा शोध घेणे त्या वस्तू बाजारात नेणे, इ. उपलब्ध पर्यायातून एक किंवा अनेक पर्याय स्विकारले जातात.
- **योजनेची आखणी :** धोरण ठरल्यानंतर त्यानुसार योजना आखण्याची कार्यवाही केली जाते. प्रत्येक काम केव्हा कोठे, कसे आणि कोणी पूर्ण करायचे हे ठरवले जाते. यामुळे निधी आणि खर्चात बचत होते, काम वेळेवर पूर्ण होते यशस्वी आंतरराष्ट्रीय विपणन योजनेची अनेक वैशिष्टये सांगतायेतील सदर योजना ही विपणनाच्या विविध अंगांना सानावून घेणारी पाहीजे. उदा. वस्तू, किंमत प्रयारण आणि वितरण योजना लवचिताक असावी आंतराष्ट्रीय व्यवसाय हा अधिक संवेदनशील तसेच लहरी असतो योजनेत विपण प्रयत्नाचा आढावा घेण्याची तरतूद असली पाहीजे.

समारोप

जागतिक स्पर्धेत अनेक देश उतरले आहेत. भारतीय उद्योगगृहांनी या स्पर्धेची भीती न बाळगता, स्वतःच्या बळावर आणि गरज भासल्यास संयोगीकरण करून आपले व्यवसाय आंतरराष्ट्रीय बनवले पाहिजेत.

विदेशी बहुराष्ट्रीय कंपन्यांना भरतात निमंद्रित करून आपण आपल्या उदारीकरण धोरणाचे केवळ अर्धे प्रमाण वापरले आहे. अजून 50 टक्के भाग दुर्लक्षित आहे. आपल्या वस्तू सेवा, त्यांचा वापर, भाषा संस्कृती, वित्तीय सेवा तंत्रज्ञान, व्यवस्थापन कौशल्ये इ. कितीतरी भारतीय गोष्टी जगात अन्यत्र प्रसारित करायच्या आहेत. तरच खऱ्या अर्थाने आपण जागतिक अर्थव्यवस्थेचा घटक, जागतिक व्यापाराचा हिस्सेदार आणि जागतिक बनणारा आहेता विकसनशिल देशाचे दृष्टीने आंतरराष्ट्रीय विपणन कसे उपकारक ठरते हे भारताने सिध्द केले पाहिजे

संदर्भ

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3. बॅकींग – मुकुंद महाजन व रा.का बर्वे, निराली प्रकाशन, बुधवरा पेठ पुणे
4. पैसा, बॅकीग आणि राजस्वी – डॉ. गंगाधर कायंदे पाटील, चैतन्य पब्लिकेशन नाशिक – 13

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

11. Opportunities and Challenges in Commerce in Indian Perspective

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Introduction

Commerce is anything that involves an online transaction. This can range from ordering online, to financial transactions e.g. movement of cash, from one branch to other branch all over the country. The e-business is one of the biggest things that have taken the Indian business by Storm. It is creating an entire new economy, which has a huge potential and is fundamentally changing the way. The e-business is one of the biggest things that have taken the Indian business by storm. It is creating an entire new economy, which has a huge potential and is fundamentally changing the way businesses are done. It has advantages for both buyers as well as sellers and this win-win situation is at the core of its phenomenal rise. The e-business is one of the biggest things that have taken the Indian business by rising income and a greater variety of goods and services that can be bought over the internet is making buying online more attractive and convenient for consumers all over the country. Electronic commerce is presently an essential ingredient of India's trade fundamentally changing the e- business and e-commerce the is one of the biggest things that have taken the Indian business on new scenario.

Advantages

- Rising incomes and a greater variety of goods and services that can be bought over the internet is making buying online more attractive and convenient for consumers all over the country. Electronic commerce is become essential part of India's trade.
- Lower prices compared to brick and mortar retail driven by disintermediation and reduced inventory and real estate costs.
- Increase use of online sites .The selling buying of second had goods' are also increasing on large scale.

- Evolution of the online market place model with sites like E-buy, Snapdeal, Flip kart, Infibeam quetinina.in and Tradus. The evolution of E_ business has come a fulhcircle with market place models taking center position again
- The all transaction of banking are performing with help of internet banking software. No banking is possible if internet facility is out of order. Withdrawal of cash, ATM operation credit cards, debit cards are operated only with internet facility.

History of Internet

India has an internet user base of about 168 million as of June 2016. The access of e-business is low as compared to markets like the United States and the United Kingdom but is growing at a much faster rate with a large number of new entrants. Cash on delivery is a unique thing to India and is a preferred payment method. India has a vibrant cash economy as a result of which around 80% of Indian e-business tends to be Cash on Deliverymen-business in India is still in burgeoning stage but it offers extensive opportunity in developing countries like India. Highly in tensed urban areas with very high literacy rates, huge rural population with fast increasing literacy rate, a rapidly growing. Internet user base, technology advancement and adoption and such other factors make India a dream destination for e-business players. Moreover, squat cost of personal

Computers, an emergent installed base for Internet use and a progressively more competitive Internet Service Provider (ISP) market has added fuel to the fire in augmenting e-commerce growth in Asia's second most populous nation. India's e-Business industry is on the growth curve and experiencing a surge in growth. The Online Travel Industry is the biggest segment in e business and is flourishing largely due to the Internet-survey urban population. The other segments, categorized under online non-travel industry, include e-Tailing (online retail), online classifieds and Digital Downloads (still in a blossoming stage). The online travel industry has some Private companies such as Make my trip, Clear trip and Yatra as well as a strong government presence in terms of IRCTC, which is a successful Indian Railways initiative. The online classifieds segment is broadly divided into three sectors; Jobs, Matrimonial and Real Estate. A description by the Internet and Mobile Association . of India has exposed that India's e-business market is mounting at an average rate of 70 percent' -annually and has grown over 500 percent since 2007.Apparently, more online users in India are' willing to make purchases through the Internet. Overall e-commerce industry is on the edge, to ' experience a high growth

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
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in the next couple of years. The e-commerce market in India was largely , dominated by the online travel industry with 80% market share while electronic retail (E-Tailing) held second place with 6.48% market share-Tailing and digital downloads are expected to grow at a faster rate, while on line travel will continue to rule the major proportion of market share. Due to increased ecommerce initiatives and awareness by brands, e-Tailing has experienced decent growth. According to the Indian Ecommerce Report released by Internet and Mobile. Investment Bank specializing in digital media and technology sector, the Indian ecommerce.

Opportunities and Challenge of E- Commerce in India

As per "India Goes Digital", a report by Avendus Capital, a leading Indian market was estimated at Rs 28,500 Crore for the year 2011 Online travel constitutes a sizable portion (87%) of this market today. Online travel market in India is expected to reach Rs 54,800 Crore by 2015.1ndian e-tailing industry is estimated to grow toRs 53,000 Crorein2015,Overall e-commerce market is expected to reach Rs 1,07,800corers by the year 2015 with both online travel and e-tailing contributing equally. Another big segment in e-commerce is mobile/DTH recharge with nearly 1 million transactions daily by operator websites.

Conclusion

1) Indian customers return much of the commodities they purchase online business in India has many first time buyers. This means that they have not yet made up their mind about what to expect from e-business websites. As a result, buyer some -times fall prey to hard sell. But by the time the product is actually delivered, they reveal remorse and return the goods. Though consumer remorse is a global problem, but it is all the more prevalent in a country like India, where much of the growth comes from new buyers. Returns are expensive for e-business companies, as reverse logistics presents unique challenges. This becomes all the more complex in crossbreed-business.

2) **Cash Payment is Made on-Line:** Low credit card access and low trust in online transactions has led to cash on delivery being the preferred payment choice in India. Unlike electronic payments, manual cash collection is painstaking, risky, and expensive.

3) **Payment Gateways Have a High Failure Rate :** As if the preference for cash on delivery was not bad enough, Indian payment gateways have an unusually high failure rate by global standards. E-business companies using Indian payment gateways are

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

losing out on business, as several customers do not attempt making payment again after a transaction fails.

5. **Internet Penetration is Low :** Internet penetration in India is still on very small scale as compared to the western country. On top of that, the quality of connectivity is poor in several regions. But both these problems are on their last legs. The day is not far when connectivity issues would not feature in a list of challenges to e-business in India

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Effects of Yoga on Runners

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ABSTRACT

Runners are often reluctant to try yoga; their most common fear is that they are not flexible enough. It is not uncommon for those attending their first Yoga for Runners class to ask whether the room will be filled with lithe and flexible bodies, in spite of the class being advertised "For runners; no yoga experience necessary." This fear may be driven by the many media images showing people in advanced yoga poses, fueling the notion that you have to be able to bend like a pretzel to do yoga. This is the furthest thing from the truth. Yoga is suitable for every body type. It can be started at any age regardless of physical condition, and those who are the stiffest have the most to gain. Runners, specifically, have a tremendous amount to gain from adding yoga to their fitness regimen. Running can lead to injury because of its repetitive nature and the resulting musculoskeletal imbalances. On a physical level, yoga restores balance and symmetry to the body, making it the perfect complement to running. Runners are often drawn to yoga to deal with specific issues, such as improving flexibility or helping with an injury. Yet many are shocked at the world it opens for them, specifically, the strengthening capacity and the use of muscles they never knew they had. Let's take a closer look at the effects of yoga, both physical and mental, on runners.

Keywords: Yoga, Runners, Physical, Performance

INTRODUCTION

As seen in the preceding definitions, yoga encompasses more than the mere physical postures. Nonetheless, the physicality of yoga is what draws most people to their first yoga class. The following summarizes the physical benefits that runners can expect from yoga. Flexibility many runners cite greater flexibility as the number one reason for beginning a yoga practice. This is a good reason, because yoga stretches the muscles that are tight, which in turn increases the range of motion in related joints. Increased flexibility decreases stiffness, results in greater ease of movement, and reduces many nagging aches and pains. Strength Runners are strong in ways that relate to running. However, a running stride involves only the lower body and movement in one plane—sagittal (i.e., forward and backward). Thus, certain muscles become strong while others are underused and remain weak. Runners have strong legs for running, but when faced with holding a standing yoga pose, they are quite surprised to find that their legs feel like jelly. This is simply because a properly aligned yoga pose involves using all the muscles in a variety of planes. The muscles that are weak fatigue quickly and those that are tight scream for release—thus, the jelly-leg syndrome. Overly tight muscles are also weak ones. To be fully functional, a muscle needs to contract when needed and also relax and lengthen when needed. For example, if your hand is perpetually in a state of contraction, as in a fist, its function is severely impaired. A healthy muscle is able to move through a healthy range of motion. Additionally, running primarily uses the muscles from the hips down, whereas a balanced yoga practice involves the entire body. Muscles that are simply not used while running are called upon and strengthened—specifically in the arms, upper torso, abdominals, and back. Moreover, yoga uses the person's own body weight to create resistance, working against gravity to build the muscle and bone strength vital for overall health. Muscles strengthen by various methods of contraction, followed by rest and supported with proper nutrition. In running, the strengthening is primarily in the legs, whereas a balanced yoga practice contracts and stretches the muscles of the entire body. For example, a fairly basic pose

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such as plank requires numerous muscles to actively engage; otherwise, the effect of gravity would result in the belly, hips, and upper torso sagging. Strengthening the upper body and core helps improve posture during daily activities and while running. Moreover, a strong core allows the arms and legs to move more efficiently, creating better overall form, less fatigue, less weight impact on the legs, and a reduced risk of injury. A strong core creates a strong runner. Additionally, a by-product of becoming stronger is greater muscle tone. Yoga helps shape long, lean muscles that do not hinder free range of movement in joints. Biomechanical Balance Overusing some muscles while underusing others creates muscular imbalances, which affect the entire musculoskeletal balance and impairs biomechanical efficiency. For runners, biomechanical imbalances eventually lead to pain and injury. Depending on the action, a muscle is either contracting (i.e., an agonist) or lengthening (i.e., an antagonist). For example, if you make a fist and lift your forearm, the biceps contracts while the triceps stretches. If you want showy biceps and do repeated biceps curls to pump up the muscle, the triceps will shorten and you could lose the ability to straighten your arm. A healthy balance is to work to both contract and stretch to maintain muscle equilibrium as well as functionality. For example, when stretching the hamstrings, the quadriceps need to contract. This coordinated action not only creates a deeper and safer hamstring stretch, but also provides an opportunity to strengthen the quadriceps, especially the inner quadriceps, which are weak in many runners. This is crucial for runners because the hamstrings most likely need lengthening while the commonly weak inner quads need strengthening. Executed correctly, a seemingly simple yoga pose requires the balanced activity of opposing muscle groups. To hold a pose, some muscles need to stretch while others need to contract. In this way, a natural balancing of strength and flexibility occurs, which creates biomechanical balance over time. This is one of the major benefits that await runners who undertake a regular yoga practice. Every yoga pose is a balance of stability (muscles contracting and strengthening) and mobility (muscles stretching and lengthening). At no time is only one muscle group used. Even the simplest yoga pose requires an awakening of every part of the body. Downward dog is an exemplary pose to demonstrate this. Following is a summary of the major muscle actions in this fundamental pose.

Stability (Strength)

- Arms: hands, wrists, lower arms, triceps, deltoids
- Back: lower trapezius, serratus anterior
- Legs: quadriceps, tibialis anterior (front of shins)

Mobility (Flexibility)

- Arms: fingers, biceps
- Back: latissimus dorsi, paraspinals (both superficial and deep layers of back muscles)
- Legs: hamstrings, calves, Achilles tendon

A balanced yoga practice requires most of the muscles in the body to perform some action. At the same time, joints are taken through their full ranges of motion as the corresponding muscles contract or stretch to support the movement. The result is improved muscle balance, which translates to better form, stronger running, and fewer injuries. A Complete, Inside-Out Body Workout Yoga provides a workout that includes every muscle and all the joints. Yoga uses all muscle groups, including the small muscles in the hands and toes, the large muscles of the legs

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and torso, the superficial muscles such as the calves and hamstrings, and the deeply layered muscles that are not visible. When examining a person in the downward dog pose, you can see clearly that the superficial muscles of the back are stretching. What is less obvious is the lengthening of the intrinsic layer of paraspinal muscles, creating space and decompressing the vertebrae. Furthermore, all of the body's systems beyond the muscle groups are worked in yoga, including the cardiovascular, respiratory, skeletal, and endocrine systems. Additionally, the internal organs are massaged and oxygenated through yogic breathing and movement in the poses.

An Energized Body Many forms of exercise deplete the body of its energy stores. Yet a yoga practice oxygenates the blood and creates more energy, leaving the body and mind feeling restored and energized. Yoga provides a vehicle through which the body can actively recover from the physical demands of running. Improved Breathing Lung capacity is of prime importance for runners, because it creates the ability to maintain an even breathing pattern through all phases of running. The better the lung capacity is, the more oxygen is circulated through the system, which is most helpful for running long and strong. However, the breathing pattern used in running and other forms of aerobic exercise involves quick and shallow inhalations and exhalations. This uses only the top portion of the lungs, leaving the middle and lower portions untouched. Yogic breathing involves slow, deep inhalations and long exhalations, making use of the upper, middle, and lower portions of the lungs. Yogic breathing has been shown to increase lung capacity, and greater lung capacity increases endurance and improves overall athletic performance.

In Sanskrit, *prana* means "energy," and yogic breathing is called *pranayama*. Through the breath, you bring in oxygen, feeding your cells and creating vital life force, and remove carbon dioxide, eliminating toxins. The use of the breath in yoga is vital. Whereas holding the breath creates internal tightness, tension, and anxiety, deep breathing releases tension, reduces stress and anxiety, and physically helps the body ease into poses, particularly those that are challenging. Through this conscious breathing, the body is energized as a result of increased oxygen circulation throughout all of its systems.

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9. Opportunities of Demonetisation

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Introduction

The representative English poet of the Victorian Age has said that change is the ess of life while giving reaction to the industrialisation and modernism. With the passing tim old orders change to pave the way for the new. However, all changes are not historic i impact they have on society, economy or politics. The Demonetising policy adopted b Indian Government on Nov. 08th, 2016 can be taken as a step towards such changes. Defi the policy is going to change the financial scenario in the future time and provide ki opportunities to bring a desired growth and the traditional perception of the nation. It c taken as a dared step taken by the Government to sustain the economy and to stop the fl illegal money in the market. The following changes are going to be expected from the proc policy:

- The pull out of Rs. 500 and Rs. 1000 notes from the economy has forced the peo access the debit and credit cards frequently to carry out financial transaction.
- The size of the formal economy is expanding due to the transaction in banking s by the mode of digital payment.
- The cash used for corruption, counterfeit currency, terrorism and evading taxes v down.
- Currency withdrawal would help the Government to low the tax rates, both dire indirect in future time.
- The banking system will collect more cash in its treasury therefore its ability to s economy with low cost cash will be increased or enhanced.
- Demonetisation will lead to minimise or decrease the demand for goods from the of banks liquidity. It will help Government to control the inflation, and by that t the economy. It will also help Government to provide affordable housing sche the middle and lower classes.

Demonetisation can be also taken as an ethical step on the part of the Government to stop the culture of illegality and financial indiscipline in the lives of the rich class. It will also help the Government to control and monitor the ill gotten wealth.

Demonetisation will have a negative impact on the growth in short run but GDP will gradually recover in the long run.

Demonetisation is an effective means to control the large extend of black money which is spent in unorganised sectors and flow of structural black income.

After demonetisation, the Micro Finance Institutes (MFIs) is hopefully looking for cashless disbursement and collection through Jan Dhan Accounts by leveraging technology.

Post-demonetisation estimates show Rs. 75000 crorcs will be cut from banking system. It means that the RBI's liabilities is going to be reduced by Rs. 75000 crores. The RBI can transfer the same to the Government.

Demonetisation has also affected the yellow metal market. With demonetisation, the surplus cash is not available in the market to invest in the metal. It should be noted that import of gold is main cause to spend foreign reserve currency.

Demonetisation is proved as an effective weapon against uncontrolled inflation and beneficial to maintain the value of money.

The public sector Banks gross NPA has hit 09.85% in the financial year 2015 and further rised to 11.82% by Sept. 2016. Demonetisation proves an effective remedy on NPA problem of Public sector and private banks.

Demonetisation will also help in some extend to restrict the gap which is increasing day by day by decentralisation of asset.

Demonetisation will help to ensure social security to the beneficiaries by adopting direct benefit transfer.

ion

he overall discussion and possibilities reveal that the process of demonetisation is l in context to time and its need. It will help to end the shadow economy. The economy nomentum and stability. There will be decentralisation of economy and opportunities of ent will be made available. In long run it will boost the GDP by improving productivity

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and controlling inflation. There is possibility to sustain rapid growth of economy. demonetisation should be taken as an opportunity with so many possibilities.

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११. आंतरराष्ट्रीय वित्तय बाजारपेठा

डॉ. लालचंद दामोदर वोदिले
सहा. प्राध्यापक, वाणिज्य विभाग, महात्मा ज्योतीबा फुले वाणिज्य, विज्ञान व विठ्ठलराव राऊत कला महाविद्यालय, भातकुली, जि. अमरावती.

सारांश

आंतरराष्ट्रीय वित्तीय संस्था निरनिराळया देशांमध्ये मध्यस्थी करण्याच्या संधीचा पुरेपुर उपयोग करून घेतात या संस्थांवर चलनाच्या मूल्यांमध्ये बदल होण्याबाबत अनिश्चितता, गोठया प्रमाणत कर्जे बुडण्याची शक्यता आणि कज बुडविणे या बाबींचा परिणम होऊ शकतो. सर्व आंतराष्ट्रीय व्यवहारांमध्ये एक चलनाचा विनिमय दुसऱ्या चलनाशी होणे अंतर्गुत असते यामुळे चलनाबाबतची जोखीम टाळता येत नाही. याशिवाय आंतरराष्ट्रीय कर्जे पुरवणाऱ्या व्यापारी कर्जाची जोखीम आणि वैशिष्टयपूर्ण अशी देशविषयक जोखीमही स्वीकारावी लागते. भावी विनिमय करांद्वारे काही प्रमाणात चलनाबाबतची जोखीन कमी करता येते परंतु यासाठी खर्च येतो आणि अल्पकालीन करांबाबतच हे शक्य असते दिर्घकालीन कर्ज व्यवस्थेला आधार देण्याचे दृष्टीने खाजगी कर्जदार युरो–डॉलर, आणि युरो –चलनांच वरचष्मा असणाऱ्या करांवर अवलंबून असतात.

प्रस्तावना

आंतरराष्ट्रीय वित्त हा असा व्यवहार आहे की ज्यात दोन प्रकारच्या व्यक्ति भाग घेतात– एक राष्ट्रीय सरकारातील राजकारणी लोक आणि सनदी नोकर आणि दुसरे, विशाल, मोठया, मध्यम आणि छोटया संस्थांचे अध्यक्ष आणि खजिनदार. राजकारणी लोकांना निवडणुका जिंकून आपापल्या देशांया इतिहासात मानाचे स्थान मिळवावयाचे असते महामंडळाचे अध्यक्ष आणि खजिनदारांना नफा मिळवावयाचा असते किंवा निदान नुकसान टाळावयाचे असते ह नफा किंवा तोटा विनिमय दरांमधील अपरिहार्य बदलांमुळे होता. सरकारी अधिकारी असे बदल होणार नाहीत, असे आश्वासन देताता, परंतु हे बदल नेहमीच होतात गेल्या काही वर्षात प्रत्येक प्रमुख पाश्चिमात्या देशाने आपल्याचलनाचे विदेशी विनिमय मूल्य बदलविले असून त्यामुळे नफा मिळविण्याची संधी विस्तृत झाल्यास आहेत.

विविध चलनांच्या अस्तित्वामुळे आंतरराष्ट्रीय वित्त व्यवस्थेत मूलभूत समस्या निर्माण होते. प्रत्यक्ष व्यवहारात, विदेशी विनिमय बाजारपेठ व्यापारी आणि इतर लोक एक चलनाचा विनिमय दुसऱ्या चलनाशी करू शकत असल्यामुळे ही समस्या दूर होते. परंतु विदेशी चलनाचा व्यापारी आणि वित्तीय संस्थांवर होणारा परिणाम अत्यंत महत्वपुर्ण असतो. विदेशी विनिमयाचे व्यवहारा आणि निर्णय हे गुंतागुंतीचे असतात. प्रथम आपण चलन कर्ज आणि देश या तीन प्रमुख बाबींचा आटवा घेऊ.

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आंतरराष्ट्रीय विनिमय जोखीम

विदेशी विनिमय बाजारपेठांमध्ये निरनिराळ्या देशांच्या चलनांची खरेदी आणि विक्री केली जाते. उदा. बाजारात रु 46 या भावाने डॉलरचा विनिमय होत असल्यास डॉलरचा पुरवठा करणारे आणि मागणी करणारे या भावाने समाधान होते, असे समजू या दोन चलनांमधील संबंध हा व्यक्तिगत व्यवहारांपेक्षा स्वतंत्र असतो. परंतु हा संबंध बाजारातील चलनाच्या मागणी व पुरवठ्यांवर अवलंबून असतो.

आंतरराष्ट्रीय निधी

विनियम दर ठरवितांना निरनिराळे देश चलनाच्या किमती ऐवजी त्यांच्या सुवर्णनिधी आणि विदेशी चलन निधीमध्ये चढउतार होऊ देतात. ज्यादेशाच्या देण्याघेण्यात आधिक्य असते असा देश आपले चलन विकतो आणि सुवर्ण किंवा विदेशी चलनांची खरेदी करतो. याउलट देशाच्या देण्या घेण्यात तूट असल्यास तो देश विदेशी चलन आणि सुवर्ण यांची विक्री करून स्वतःचे चलन खरेदी करतो.

सन 1948 ते 1967 या काळात अनेक देशांच्या चलनांमध्ये समतेसाठी समायोजना करण्यात आले. या काळात जगातील 109 चलनांपैकी फक्त 12 देश या 20 वर्षाच्या काळात आपे चलन स्थिर ठेवू शकते. ज्यामध्ये आपल्या चलनाचे अवमुल्यन एका पेक्षा अधिक वेळा केले अशादेशांमध्ये इंग्लंड, ऑस्ट्रीया, भारत, चीन, सिलोन, न्युझिलंड, डेन्मार्क आणि फ्रान्स देशांचा समावेश होतो.

कर्जाची जोखीम : देशी सावकारने आंतराष्ट्रीय सीमेपलीकडील व्यापारी आणि बँक संस्थंना आणि इतर मदुरवठा केल्यास काही विशेष समस्या निर्माण होतात. हिशेब ठेवण्याच्या पध्दती मध्ये भौगोलिक विविधता आणि त्यामुळे भावी कर्ज धेणाऱ्यांबंद्दल माहिती मिळविणे कठीण जाते.

देशविषयक जोखीमः देश हे स्वतंत्र आणि शक्तीमान असतात. यामुळे ते विदेशी लोकांचे कर्ज रद्द केले आहे. असे जाहीर करू शकतात किंवा इतर मार्गाने नफा, व्याज आणि भांडवलाच्या हालचालींवर बंधने टाकू शकतात. आंतराष्ट्रीय व्यापार आणि गुंतवणूक या बाबी म्हणजे सरकारी धोरणाचे साधन आहे.

बँक व्यवहार आणि आंतरराष्ट्रीय नाणे बाजार

आंतरराष्ट्रीय पैसा बाजारात बँका या प्रभावी अशा वित्तीय संस्था आहेत. बँक व्यापारांमुळे व्यवहारांमध्ये सुलभता निर्माण होते हे बँक व्यापारी इतरांसाठी हस्तक म्हणून कार्य करीत असून त्यांच्या बँकांसाठी फायदेशीर असे व्यवहार करतात.

- **आकार :** मोठ्या बँका बहुराष्ट्रीय विशाल कंपन्यांना लागणरी मोठी कर्जे पुरवू शकतात. या बँकाची मालमत्ता मोठी असल्यामुळे त्यांचे बद्दल विश्वास आणि सुरक्षितता वाटते. जगातील सर्वात मोठ्या पाच बँकापैकी तीन बँक अमेरिकतील आहेत फरर्ट नॅशनल सिटी बँक ऑफ न्यूयॉक ही सर्वात बॅल्जिअन बँक व्यवस्थेपेक्षा मोठी आहे.

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- **कार्यक्षमता :** अमेरीकेत बॅंकाची खूप मोठी संख्या 26000 आणि त्यांची भौगोलिक वाटणी यामुळे अमेरिकन बॅंकांना पैसा पाठविण्याची कार्यक्षम यंत्रणा विकसित करावी लागली आणि त्याचबरोबर दूरवरच्या अंतरावर विक्री करण्याची क्षमताही मिळवावी लागली.

पसंतीचे चलन

अमेरिकेचे डॉलर हे चलन जगातील सर्वात पसंत असणरे चलन आहे. जगातील अनेक विदेशी सरकारे आपल्याचलनांचे दर अमेरिकेच्या डॉलरबरोबर निश्चित करतात आणि विदेशी कर्जे बहुधा डॉलर चलनातच व्यक्त केले जातात. अमेरिकेतील बॅंकांना या अनुकूल परिस्थितीचा फायदा मिळतो

युरो डॉलरचे बॅंक व्यवहार

गेल्या दोन दशकात घडलेली नाणे आणि भांडवली बाजारातील नेत्रदिपक घटना म्हणजे युरो डॉलरचा झालेला विकास युरो–डॉलर बाजार केवळ नवीन आहे एवढेच नव्हे तर अत्यंत विशाल, गुंतागुंतीचा, धोक्याचा आणि व्यापक आंतरराष्ट्रीय संधीशी जुळवून घेणारा असा बाजार आहे.

संदर्भ

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2. [illegible]
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Bio-Coal Made from Agricultural Residue, Available in Vidarbha Region of Maharashtra State, India, A Low Carbon Energy Source: A Review

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Abstract:

Bio-coal Briquetting is the process of converting agro waste into high density and energy concentrated fuel briquettes also called as "White Coal". The present review is about to discussed the manufacturing and production of white coal which is made from agricultural waste or forest waste as an alternative source. These compressed briquettes are made from various organic materials such as rice husk, saw dust, bagasse, groundnut shells etc. Instead of using fast depletion of energy resources and reserves like coal, petroleum, charcoal, diesel etc. it seems to be very good renewable fuel substitute. The process of briquetting is the physical transformation of the loose raw material into high density fuel briquettes through a compactly compressed unit. It compacts the raw material with the help of high pressure mechanical punch. White coal can be the replacement of conventional black coal having similar properties of black bustard coal. It is less polluting, cheaper in cost and raw material is easily and sufficiently available in almost all parts of India for production purpose. Farmers also get additional income from their agro-waste which may be the waste material for them. The use of biomass briquette has been steadily increasing as industries realize the benefits of using biomass briquette as they are 99.9% environment friendly. The calorific value Briquette is different as per the use of raw material used for making briquettes.

Key-words: Bio-coal, White coal, Agricultural waste, Biomass briquette, Calorific value.

Introduction

Throughout human history, coal has been used as an energy resource, primarily burned for the production of electricity and heat. But the use of black coal to generate energy has negative health consequences. There is evidence of coal's impact on human health during every stage of its use. In particular, the combustion of black coal has been well-studied, with compelling evidence of widespread health effects on the population. Air pollution produced by black coal combustion in power plants can affect the respiratory and cardiovascular systems as well as cause abnormal neurological development in children, poor growth of the fetus before birth, and can cause cancer. Black coal used for heating and cooking indoors, generates pollutants in indoor air that are known to cause respiratory ailments and cancer [1-3]. Moreover, coal combustion contributes to climate change, which can harm human health on a global scale.

It produces air-borne pollutants of particulate matter, sulfur dioxide, oxides of nitrogen, carbon dioxide, mercury, arsenic, chromium, nickel, other heavy metals, acid gases (HCL, HF), hydrocarbons (PAHs) and varying levels of uranium and thorium in fly ash. Specific pollutants from burning coal that cause a negative health effect on the respiratory system include particulate matter (PM), sulfur dioxide (SO_2), and oxides of nitrogen such as NO_2. The mechanism injury to the airways and lungs via damage to cells caused by oxidizing molecules in pollutants. This leads

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to inflammation, cytotoxicity and cell death [1]. Using solid-fuels such as coal for heating and cooking is estimated to cause almost one million deaths from pneumonia in children under five years old and one million deaths from chronic obstructive pulmonary disease per year world-wide [2]. While the use of coal for indoor fuel is relatively unusual, in China it is still in common use. In 2000, the World Health Organization conducted a meta-study on the use of solid fuels for heating and cooking in which they reported that about 158 million adults in East Asia and about 20 million adults in South Asia are exposed to coal smoke from cooking, causing over 16,000 deaths from lung cancer per year [3].

To overcome these negative consequences of black coal, the alternate option for the combustion purpose is more essential [4]. The demand of energy is increasing day by day and the supplies of sources are limited. The renewable energy project is ideal for the agricultural based countries like India, Sri Lanka, Pakistan and African Countries as there is a huge availability of agro-forestry waste and it is very good in industrial based countries [5].

Residues vary widely in their form and characteristics, which determine how well they can be used as fuel. Other crop residues are considered to make poorer fuels. For example, low density materials are considered to burn too rapidly, with fluctuating power output, in their unprocessed form. For these residues to become a more attractive alternative fuel, they have to be upgraded to improve their burning performance. This study is focused on upgrading waste crop residues. It could be particularly useful for the rural poor because they are often the people with the most direct access to many of the residues [6]. So, the briquettes made from biomass residues could contribute to ensuring the sustainable supply of biomass energy [7].

Every year millions of tons of agricultural waste are generated. These are either none used or burnt inefficiently in their loose form causing air pollution. Handling and transportation of these materials is difficult due to their low bulk density. These wastes can provide a renewable source of energy by converting into high density fuel briquettes without addition of any binder. It has been found that several alternative energy sources has come up, among them, utilization of agricultural residues, forest residues, municipal garbage into valuable solid fuel is one which is one of the modern and latest concept which has come up to meet the growing demand of fuel [8, 9]. The briquettes can be used for domestic purposes (cooking, heating, barbequing) and industrial purposes (agro-industries, food processing) in both rural and urban areas [10]. Its demand will definitely rise with rapid industrialization in the coming future. But the development of such a fuel source faces several challenges including combustion properties, a reliable supply of raw materials, distance from and access to conversion facilities, production scale and market access for agricultural biomass products [11]. So a new entrepreneur can well venture into this field by fully assessing the fuel requirement by different small, medium and large scale industries. The new prospective and decisive entrepreneurs can well venture by installing a unit of bio-coal manufacturing to satisfy present and future demand.

Bio Coal Briquetting is the process of converting solid agricultural waste into high density and energy concentrated fuel briquettes. These Briquettes also called as White Coal are ready substitute of Coal/wood in industrial boiler and brick kiln for thermal application. Bio-Coal Briquetting plants are of various sizes which converts agricultural waste into solid fuels. Briquettes are ready substitute of Coal/wood in industrial boiler and brick kiln for thermal application. Bio-coal development is becoming important due to many factors including the rising cost of oil, natural gas and electricity and the scarcity of fossil fuels. Bio-coal briquettes are a renewable source of energy and avoid adding fossils carbon to the atmosphere. The need to find alternatives to fossil fuels and reduce Greenhouse Gas emissions has prompted interest in Bio-coals by energy specialists around the world. Power generation from biomass is also becoming attractive across the world [12, 13].

The development of industrial centers requires the use of fuel. Unfortunately, the scarcity of kerosene and the high price of LPG as kerosene conversion have triggered the emergence of

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Residues vary widely in their form and characteristics, which determine how well they can be used as fuel. Other crop residues are considered to make poorer fuels. For example, low density materials are considered to burn too rapidly, with fluctuating power output, in their unprocessed form. For these residues to become a more attractive alternative fuel, they have to be upgraded to improve their burning performance. This study is focused on upgrading waste crop residues. It could be particularly useful for the rural poor because they are often the people with the most direct access to many of the residues [6]. So, the briquettes made from biomass residues could contribute to ensuring the sustainable supply of biomass energy [7].

Every year millions of tons of agricultural waste are generated. These are either none used or burnt inefficiently in their loose form causing air pollution. Handling and transportation of these materials is difficult due to their low bulk density. These wastes can provide a renewable source of energy by converting into high density fuel briquettes without addition of any binder. It has been found that several alternative energy sources has come up, among them, utilization of agricultural residues, forest residues, municipal garbage into valuable solid fuel is one which is one of the modern and latest concept which has come up to meet the growing demand of fuel [8, 9]. The briquettes can be used for domestic purposes (cooking, heating, barbequing) and industrial purposes (agro-industries, food processing) in both rural and urban areas [10]. Its demand will definitely rise with rapid industrialization in the coming future. But the development of such a fuel source faces several challenges including combustion properties, a reliable supply of raw materials, distance from and access to conversion facilities, production scale and market access for agricultural biomass products [11]. So a new entrepreneur can well venture into this field by fully assessing the fuel requirement by different small, medium and large scale industries. The new prospective and decisive entrepreneurs can well venture by installing a unit of bio-coal manufacturing to satisfy present and future demand.

Bio Coal Briquetting is the process of converting solid agricultural waste into high density and energy concentrated fuel briquettes. These Briquettes also called as White Coal are ready substitute of Coal/wood in industrial boiler and brick kiln for thermal application. Bio-Coal Briquetting plants are of various sizes which converts agricultural waste into solid fuels. Briquettes are ready substitute of Coal/wood in industrial boiler and brick kiln for thermal application. Bio-coal development is becoming important due to many factors including the rising cost of oil, natural gas and electricity and the scarcity of fossil fuels. Bio-coal briquettes are a renewable source of energy and avoid adding fossils carbon to the atmosphere. The need to find alternatives to fossil fuels and reduce Greenhouse Gas emissions has prompted interest in Bio-coals by energy specialists around the world. Power generation from biomass is also becoming attractive across the world [12, 13].

The development of industrial centers requires the use of fuel. Unfortunately, the scarcity of kerosene and the high price of LPG as kerosene conversion have triggered the emergence of

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Pigeon pea stalk(Toor)	4707	10.62	19.8	31.6	19.4

Process of converting agricultural waste to solid fuel does not need to add any binder/chemicals so it is 100 % natural. But the raw material of a briquette must bind during compression; otherwise, when the briquette is removed from the mould, it will crumble [20]. Briquettes have high specific density (1200 Kg/m^3) and bulk density (800 Kg/m^3) compared to just 60-180 Kg/m^3 of loose Bio-Coal [21, 22]. Photographs of Bio-coal produced in Mukta Industries, Nimba, Tq. Bhatkuli, Dist. Amravati (M. S.) is shown in Fig. 1 and Briquetting machine used in Mukta Industries, Nimba, Tq. Bhatkuli, Dist. Amravati (M. S.) for production of Bio-coal is shown in Fig. 2.

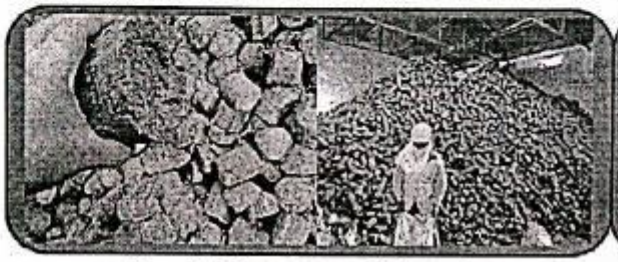


Fig. 1: Briquettes of bio-coal

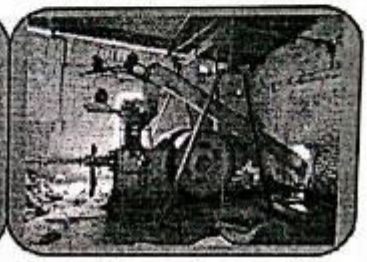


Fig. 2: Briquetting machine

Benefits of Bio-coal:

- Bio Coal Briquettes are cheaper than coal, fire wood, heavy furnace oil etc.
- Oil, coal or lignite, once used, cannot be replaced.
- High sulfur content of oil and coal, when burnt, pollutes the environment.
- White coal is totally dry therefore moisture contents nil.
- There is no sulfur in Briquettes, therefore no toxic gases emits.
- Bio Coal briquettes have a higher practical thermal value and much lower ash content (2-10% as compared to 20-40% in coal).
- There is no fly ash when burning Bio Coal Briquettes.
- Combustion is more uniform compared to coal and boiler response to changes in steam requirements is faster due to higher quantity of volatile matter in Bio Coal Briquettes.
- The shape of the finished Briquettes is cylindrical shape with generally 90 mm diameter.
- Bio coal is practically smokeless.
- It has low ignition point.
- Easy to handle and can storage for long period.
- Available round the year.

Use of Bio-coal Briquettes in various industries:

- Textile Industries
- Brick Making Units
- Leather Industries
- Spinning Mill
- Lamination Industries
- Vegetable Plants
- Food Processing Industries
- Ceramic and Refractory Industries
- Solvent Extraction Plant
- Chemical Industries
- Dyeing Plants

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- Milk Plants

Briquettes are widely used for any Thermal application where coal can reutilize i.e. steam generation in boilers, heating purpose etc.

Conclusion

Briquetted Bio-coal which is also called as white coal seems to be very good renewable fuel substitute. This is particularly useful in regions where ample agro-waste is generated and enough fresh grass, feeders etc. for animals are available. In Vidarbha region there is abundance/sufficiency of agro waste because in Vidarbha most of the people having their main business as farming. This also helps farmers to get additional income from their agro-waste for improvement of economical condition.

In this review paper we discuss the available agri-residue in Vidarbha region of Maharashtra state, India that can sustainably used for bioenergy without major negative impact on other industries and environment.

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17

नवे आर्थिक धोरण आणि भारतीय समाज

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१९८० नंतरच्या बदलत्या जागतिक आर्थिक धोरणाचा एक चटकन लक्षात येणारा परिणाम म्हणजे आंतरराष्ट्रीय पातळीवर कुशल, निपुण कारागिराचे आणि व्यावसायिकाचे वाढते स्थलांतर. औद्योगिकीकरण व्यापक प्रमाणावर झालेल्या देशातील विद्यापीठानी अग्रगत देशातील कुशल कामगारांना आकृष्ट केलेले आढळते. त्यामुळे, अमेरिकेला अशा इच्छुकांना अमेरिकेत येवू देण्याबाबतच्या धोरणांत लवचिकता स्वीकारावी लागली. १९८० मध्ये वरील इच्छुकांची सख्या १९.००० होती की जी १९९१ मध्ये २८.००० झाली. उल्लेखनीय बाब म्हणजे, १९९१ नंतरच्या काळात फक्त आशियातील ५.००० पेक्षा जास्त व्यक्तांना सायन्स व इंजीनियरींग विषयात चेण्क्ष पदवी प्राप्त केली. परंतु लक्षवेधी व दर्दैवी बाब ही की वरील पदवीधारकापैकी ६२ टक्के अमेरिकेत स्थायीक होवू इच्छीत होते. ही घटना केवळ 'ब्रेन डेन' समजावयाची का? त्यातील भारतीयाची संख्या निश्चितच नगण्य नसावी. वरील सर्व इच्छुकांनी घेतलेल्या शिक्षणाचा फायदा आपल्या देशाला मिळावा असा विचार केला नाही का? मायदेशामध्ये स्वकीयांसमवेत रहावेसे त्यांना वाटले नाही का? त्यांना देशाभिमान नव्हता का? त्याच्या देशात त्यांना यथायोग्य स्थान, मान व धन मिळाले नसते का? का त्याना फक्त अमेरिकेसारख्या परक्या देशातील भौतिक लाभ उठवावयाचा होता?

वरील आकडेवारी तशी बोलकी आहे. प्रसारमाध्यमाच्या साधनामुळे जग जवळ येत चालले आहे. छोटे होत आहे. आर्थिक व्यवहार, व्यापार सुलभ होतोय. जागतिक पातळीवरील आर्थिक व्यवहारात परिवर्तन घडले आहे. द्रुतगतीने घडत आहे. म्हणून, जागतिक पातळीवरील परिवर्तनशील आर्थिक धोरणाची प्रक्रिया, तिची व्याप्ती, तिचा भारतीय समाजावर होणारा परिणाम विचारात घेण्याची, तो परिणाम भारतीय सामाजिक संस्थाना, समाजाला कितपत पेलवेल? सारख्या प्रश्नाचा विचार करणे जरुरीचे झाले आहे. परिणाम पेलवण्याची शंका येणे म्हणजे भारतीय सामाजिक संस्था, समाज अपेक्षित परिवर्तनाशी समायोजन साधू न शकण्याची चिंता जाणवणे स्पष्ट होते. आर्थिक परिवर्तनाच्या प्रक्रियेचे परिणाम पेलविण्याशी जागतिक पातळीवरील इतर देशाची अर्थनिती, राजनिती, त्याचे शास्त्रीय व तंत्र वैज्ञानिक ज्ञान, त्याची साधनसंपत्ति, प्रसार माध्यमावरील त्याची पकड, इ. चा संबंध तसेच भारतातील वरील घटकांखेरीज सामाजिक संबध, आंतरक्रिया, सामूहिक जीवन, श्रद्धा व विश्वासपद्धती, भारतीयांच्या आजच्या गरजा व गरजपूर्तिची उपलब्ध साधने इ. चा पण सूक्ष्म आणि एकत्रीतरीत्या अभ्यास करणे आवश्यक ठरते. या आर्थिक विषयाचा त्याची व्याप्ति सिमित स्वरुपात लक्षात घेवून आपण सामाजिक दृष्टिकोनातून अभ्यास करणार आहोत. असा संतुलित अभ्यास करताना उपाययोजना सुचविणे शक्य व्हावे म्हणून आपण सबंधित क्षेत्रातील दोषावर प्रामुख्याने लक्ष केंद्रीत करणार आहोत. आर्थिक प्रक्रियेशी समायोजन साधण्यास बाधा आणणाऱ्या समाजव्यवस्थेतील घटकाची तीव्रता तपासावी लागेल.

(१) बदलते जागतिक आर्थिक धोरण – एक प्रक्रिया

या प्रक्रियेची सुरुवात साधारणपणे १९८० च्या सुमारास म्हणजे 'उरुग्वे राऊड निगोशिएशन्स' पासूनच्या कालखंडात झाली. व्यापारात परदेशी भांडवलाच्या गुंतवणुकीचा उघड पुरस्कार व पाठपुरावा केला गेला. Trade Policy या आपल्या ग्रंथात Ernest H. Preeg यांनी म्हटले आहे की, जागतिक अर्थव्यवस्था (Global Economy) आणि जागतिक व्यापार पद्धतीमध्ये मुलभूत फरक झाले. १९८१ ते १९८४ मधील कालखंडात

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स्त्री सक्षमिकरणात पुरुषांचे योगदान एक अध्ययन

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प्रस्तावना :—

महिलांचे सक्षमिकरण ही संकल्पना संपूर्ण विश्वात महिलांच्या प्रगतीच्या दृष्टीने उचललेले महत्वपुर्ण पाऊल आहे. समाजाच्या विकासाकरीता स्त्री—पुरुष समानता असणे आवश्यक आहे आणि त्याकरीता शासन व समाजाची भुमिकाही तेवढीच महत्वाची आहे. महिला सबलीकरण म्हणजे,'आपल्या अंगी असलेल्या क्षमतेचा उपयोग करुन विकास साध्य करणे होय.'महिलांना स्वविकासाबरोबर समाजाचा पर्यायाने देशाचा विकास साधायचा आहे. त्यासाठी पुरुषांचे सहकार्य आवश्यक आहे. महिलांना सक्षम बनविण्यात पुरुषांची भुमिका अत्यंत महत्वाचीं आहे. निर्णय प्रक्रियेमध्ये स्त्रियांना सहभाग नोंदविणे गरजेचे आहे.

संशोधनाची उद्दीष्टे :—

- महिलांच्या सक्षमिकरणासंबंधी पुरुषांचा दृष्टीकोन अभ्यासणे.
- महिलांच्या प्रगतीमध्ये पुरुषांनी केलेल्या कार्याचा आढावा घेणे.

गृहितके :—

- महिला सक्षमिकरणासंबंधीपुरुषांचा दृष्टीकोन सकारात्मक आहे.
- महिलांच्या प्रगतीसाठी पुरुष सतत प्रयत्नरत असतात.

संशोधन पध्दती :—

प्रस्तुत संशोधनाकरीता वर्णनात्मक संशोधन पध्दतीचा अवलंब केलेला आहे.

प्राचिन सिंधू संस्कृतीमध्ये मातृसत्ताक कुटूंबपध्दती अस्तित्वात होती त्याकाळी पुरुषांच्या तुलनेत स्त्रियांना अधिक महत्व दिले जात होते तद्वतच पुर्व वैदिक कांळात पुजा—अर्चा विधी यामध्ये पुरुषांच्या बरोबरीने स्त्रियांचे स्थान होते प्रशासन राजसभा यामधुन बसण्याचा व आपले मत मांडण्याचा अधिकार स्त्रियांना होता. मात्र उत्तर वैदिक काळामध्ये धर्मशास्त्रानुसार पुरुषांच्या तुलनेत स्त्रियांना दुय्यम स्थान दिले गेले स्त्रियांचा जन्म म्हणजे अभिशाप मानले जात होते. त्याकाळी स्त्रियांना चार भिंतीच्या आत बंदिस्त करण्यात आले होते.

डॉ. अळतेकर ए.एस. यांनी 'द पोजिशन ऑफ वूमेन इन हिंदू सिव्हीलायझेशन' या ग्रंथामध्ये नमुद केले की, ''हिंदू समाजात सर्वात जास्त शोषणाचे घटक स्त्री आणि शुद्र हे होते. विषमतेचा सर्वात जास्त परिणाम स्त्रियांवर होत होता हिंदु स्त्रियांसंबंधी प्रचलित व्यवस्थेमध्ये रुढी परंपरा अतिशय क्रुर, अमानविय होती स्त्रियांना गुलाम मानले जायचे वेद काळापासुन सतीची प्रथा चालु होती.''

मनुस्मृती नुसार,''पिता रक्षती कौमार्य, भर्ता रक्षति यौवने।
रक्षान्ते स्थविरे पुत्रा: नं ही स्त्री स्वातंत्र्य मर्हती।।

अर्थात कुमारी अवस्थेतत पिता रक्षण करतो, यौवनावस्थेत पती तर म्हातारपणी मुलगा तिची रक्षा करतो. स्त्रीला कधीच स्वातंत्र्य नसते. मनुस्मृतीचा स्विकार करणाऱ्यांनी बालविवाह,

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हुंडा पध्दती, सतीची चाल, विधवा पुर्नविवाह, बहुपत्नीत्व यासारख्या अनिष्ठ रुढी निर्माण केल्या.

मध्यमयुगीन कालखंडात मात्र स्त्रियांच्या स्थितीमध्ये बरेच परिवर्तन झाले जिजामाता,रजिया सुलतान, पद्मावती, नुरजहॉ, ताराबाई शिंदे इत्यादी महिलांनी प्रतिकुल परिस्थितीशी सामना करत पराक्रम गाजविले.

गौतम बुध्दाच्या काळात स्त्रियांच्या विकासाला सुरुवात झाली राजाराम मोहन रॉय यांनी समाजसुधारणेच्या क्षेत्रात क्रांतीचा शंखनाद केला त्यांनी स्त्रियांना अज्ञान व अंधविश्वासाच्या गर्तेतून बाहेर काढण्याचा प्रयत्न केला. स्त्रियांच्या गुलामीचे मुख्यकारण अज्ञानता असुन ती दुर करण्यासाठी शिक्षणाच्या महत्वाचे समर्थन त्यांनी केले. प्रतिकुल परिस्थितीमध्ये प्रत्यक्ष स्त्री शिक्षणाची सुरुवात १८४८ मध्ये महात्मा ज्योतिबा फुले यांनी पुण्याच्या भिडे वाडयात मुलींची पहिली शाळा काढुन केली. तेव्हा सावित्रीबाई फुले या आद्यशिक्षिका होत्या. येथुनच खऱ्या अर्थने स्त्रियांच्या स्थितीत सुधारणा होवुन त्यांचा अबला ते सबला प्रवास सुरु झाला.

महिलांच्या दृष्टीने अठरावे व एकोणीसावे शतक अत्यंत महत्वपूर्ण मानले जाते. महिलांना या काळात आपले हक्क व कर्तव्यांची जाणीव व्हायला लागली. महिलांच्या पुनरुत्थानासाठी अनेक समाज सुधारकांनी प्रयत्न केले. त्यामध्ये सावित्रीबाई फुले, महात्मा ज्योतिबा फुले, पंडीता रमाबाई, राजाराम मोहन रॉय, न्या. गोविंद रानडे, आगरकर, महात्मा गांधी, लोकमान्य टिळक यासारख्या समाज सुधारकांनी स्त्रियांवर होणारे अत्याचार, अन्याय, स्त्रियांचे शोषण यांना वाचा फोडण्याची व महिलांना सक्षम करण्याची मोठी कामगिरी हाती घेतली एकोणविसाव्या शतकात महात्मा फुलेंनी सावित्रीच्या माध्यमातुन स्त्रियांना शिक्षण देण्याचे महान कार्यास सुरुवात करुन स्त्री–पुरुष समानतेचा आदर्श भारतीय समाजासमोर मांडला.

शिक्षण हे समाज परिवर्तन व समाजाच्या उन्नतीचे प्रभावशाली माध्यम आहे हे जाणुन डॉ.बाबासाहेब आंबेडरांनी हिंदू कोड बील पास करुन महिलांच्या प्रगतीचा रस्ता खुला केला. महात्मा फुले यांच्या विचाराने प्रेरित होवुन डॉ. बाबासाहेब आंबेडकर यांनी स्त्रियांची स्थिती सुधारण्याचा प्रयत्न केला. १९३७ मध्ये स्त्रियांना आपल्या संपत्तीवर अधिकार प्राप्त झाला. १९५० मध्ये त्यांनी हिंदु कोड बिलाच्या माध्यमातुन महिलांना अधिकार मिळवुन देण्याचा प्रयत्न केला. हे कोड बिल म्हणजे स्त्रियांसाठी एक वरदानच ठरले.

स्त्री पुरुष समानते शिवाय कुठल्याही समाजाची प्रगती अशक्यप्राय आहे. भारताच्या इतिहासावरुन असे लक्षात येते की, स्त्रियांचे सामाजिक, आर्थिक, राजकिय शोषण कुटूंबातच झाले आहे. रामायण, महाभारत, मनुस्मृती या मधुन महिलांवरील अत्याचाराचे दाखले पहायला मिळालेत. महिलांच्या सक्षमिकरणात पुरुषांची भुमिका अत्यंत महत्वाची आहे. पुरुषांचा दृष्टीकोन बदलण्यासाठी पुरुषांची भुमिका पुढील प्रमाणे असावी.

- महिलांना शिक्षण, पोषण, आहार, रोजगार, राजनिती या क्षेत्रात पुरुषांनी समान संधी दयावी.
- सामाजिक परिवर्तनासाठी पुरुषी मानसिकतेत बदल व्हायला हवा.
- महिलांनी आर्थिक आत्मनिर्भर होण्यासाठी लघुउद्योग, गृहउद्योगाची कास धरावी.

महिला सक्षमिकरणामुळे स्त्रीयांचे चुल आणि मुल [illegible] राहता शिक्षण, आरोग्य, प्रशासन, राजकारण, अर्थकारण, बँक या सारख्या क्षेत्रातमहिला कार्यरत आहेत महिला सक्षमीकरणाच्या दृष्टीकोनातुन खालील बाबींवर जास्त भर देण्यात येत आहे.

- संसद, विधिमंडळ यामध्ये महिलांचा सहभाग
- प्रशासन व व्यवस्थापनात महिलांना समान संधी
- मुलींच्या शिक्षणाला विशेष प्राधान्य व स्त्रीभ्रुणहत्येला प्रतिबंध
- स्त्रियांना वडीलोपार्जित संपत्तीमध्ये समान वाटा

स्त्री पुरुष हे समाजाचे दोन मुख्य घटक आहेत. आज स्त्रिया प्रगतीपथावरच नाही तर पुरुषांपेक्षाही सर्वच क्षेत्रात अग्रेसर ठरत आहेत. स्त्रियांच्या या प्रगतीमध्ये पुरुषांचा फार मोलाचा वाटा आहे. शासन स्त्रीसक्षमिकरणाच्या दृष्टीकोनातुन निरनिराळया योजना राबवित आहे. विशेषत: महिला बचत गटाच्या माध्यमातुन आज भारतीय स्त्रीचे आर्थिक सबलीकरणाबरोबरच वैचारीक,मानसिक, राजकीय, शैक्षणिक सबलीकरण झाले आहे. यामध्ये पुरुषांची भुमिका अत्यंत महत्वाची आहे.

अनेक विचारवंतांनी स्त्री विषयक आपले विचार प्रगट केले. महात्मा गांधी, फुलेंच्या मतेएक स्त्री शिक्षीत झाली तर संपुर्ण कुटूंब पर्यायाने समाज शिक्षित होतो. स्वामी विवेकानंदांना वाटायचे की, देशाची प्रगती स्त्रीविकासावर आधारीत आहे. तर पंडीत जवाहरलाल नेहरु पण पुरुषांच्या बरोबरीने स्त्रीयांना विकासाची संधी दिली जावी याबद्दल आग्रही होते. ही सर्व पुरुष मंडळीच होती.

स्वातत्र्योत्तर काळात याच विचाराने प्रेरीत होवुन शासनाने स्त्रियांसाठी विविध उपयुक्त कायदयांची तरतुद केली आहे. आज २१ व्या शतकात स्त्रिया पुर्णत: स्वतंत्र होण्याच्या मानसिकतेत आहेत परंतु केवळ सुशिक्षित नागरी स्त्रियांमध्ये वैचारीक परिवर्तन आलेले दिसुन येते.आजही ग्रामिण अशिक्षित स्त्रियांची स्थिती चिंताजनक आहे. आजही त्या पुरुषांच्या मक्तेदारीतच जिवन जगातांना दिसुन येतात मात्र हे चित्र बदलण्याचे कार्य महिला बचत गटाच्या माध्यमातुन ग्रामिण भागात होत असुन बचत गटाच्या मध्यिमातुन स्त्रियांमध्ये बरीच स्थित्यंतरे होत आहेत. यामध्ये पुरुषांचाही सहभाग तेवढाच महत्वाचा आहे.

निष्कर्ष :—

- महिला सबलीकरणासाठी कायदयाने कितीही प्रयत्न केले तरी त्यासंबंधी पुरुषी दृष्टीकोन बदलणे आवश्यक आहे.
- महिला सक्षमिकरणाकरीता स्त्रियांना कुटूंबातच सामाजिक, आर्थिक,राजनैनिक तसेच शिक्षणासंबंधी अधिकार कायदयाने पुरुषांकडुन उपलब्ध करुन देणे अत्यंत आवश्यक आहे.
- स्त्रियांना धार्मिक सामाजिक गुलामगीरीतुन मुक्त करण्यासाठी शिक्षण अत्यंत आवश्यक आहे
- ग्रामिण महिलांचा शैक्षणिक स्तर उंचावणे गरजेचे आहे.
- स्त्रीयांना समान अधिकार, दर्जा देवुन सन्मानाने वागविण्यात समाजाची निश्चितच उन्नती आहे.

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- पुरुषांची सशक्त [illegible] - सकारात्मक भुमिका महिला सक्षमिकरणातील महत्वाचा टप्पा आहे.

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किशोरवयीन मुलांच्याशारीरिक विकासात योग्य आहार व पोषणाची भूमिका

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...ज्ञान व
वि.आर. कन्या महा. धामणगाव

प्रस्तावना :-

मानवी विकास आणि आरोग्याचा योग्य आहार व पोषणाशी घनिष्ट संबंध आहे. संतुलीत पोषक आहार मनुष्याला दिर्घायुषी बनविते.उत्तम स्वास्थ म्हणजे केवळ आजारापासुन मुक्तता नव्हे तर संपूर्ण शारीरिक,मानसिक तसेच सामाजिक विकास म्हणजे उत्तम स्वास्थ होय. मानवाला जिवंत राहण्याकरीता अन्नाची अतिशय आवश्यकता असते.मनुष्य कुठल्या प्रकारचा आहार ग्रहण करतो त्यावर त्याचे शरीर स्वास्थ अवलंबून असते.आहाराव्दारे शरीराला उष्णता किंवा शक्ती प्रदान होते. शिवाय पोष्टीक घटक ही मिळतात मनुष्याला ऐच्छीक व अनैच्छीक या दोन्ही प्रकारच्या क्रिया करण्याकरीता लागणारी शक्ती किंवा ऊर्जा आहारातून प्राप्त होते.

विज्ञानाच्या प्रगतीमुळे केवळ जिवंत राहण्याकरीता आहाराची आवश्यकता असतो हा समज निर्माण झाली प्रत्येक व्यक्तीला आवश्यक असणारे पोषक घटकांचे प्रमाण वेगवेगळे असते. आहार खूप कमी प्रमाणात घेतला किंवा कमी प्रमाणात घेतला तरी ही त्याचा स्वास्थावर वाईट परिणाम झालेला आढळुन येतो. म्हणुन व्यक्तीला योग्य व उत्तम पोषण करणारा आहार मिळणे गरजेचे आहे. उत्तम पोषणामुळे मानवाची हाडे मजबुत राहतात, मासपेशी क्रियाशील होतात, शरीरात रक्तसंचालन योग्य होते, रोगप्रतिकार शक्ती वाढते, मनुष्याची वाढ होते व क्षिण भरुन निघते. तसेच मानसिक व बुध्दी चांगले असुन एकाग्रता साधण्यास मदत होते.

संशोधकाची उद्दीष्टे :-

- किशोरवयीन मुलांच्याशारीरिक विकासात योग्य आहाराचे महत्व अभ्यासणे.
- किशोरवयीन मुलांनायोग्य पोषणाची गरज पटवून देणे.

गृहितके :-

- किशोरवयीन मुलांच्याशारीरिक विकासात योग्य आहाराचे अनन्य साधारण महत्व आहे.
- किशोरवयीन मुलांनायोग्य पोषणाची गरज असते.

संशोधन पध्दती :- प्रस्तुत संशोधनाकरीता वर्णनात्मक संशोधन पध्दतीचा अवलंब केला आहे.

मानवी विकासाच्या विविध अवस्थांपैकी किशोरवयीन ही अवस्था शारीरिक दृष्टीने अशी अवस्था आहे या काळात संपुर्णविकास होत असल्यामुळे प्रथिने –कॅलरी अधिक प्रमाणात मिळणे गरजेचे असते. संतुलित आहार मिळणे आवश्यक असते. ही अवस्था म्हणजे बाल्यवस्था व प्रौढावस्था यांचा मधला काळ होय या काळात मुलामुलींमध्ये शारीरिक विकासाच्या दृष्टीकोनातुन अनेक बदल होतात मुला-मुलींमध्ये शारीरिक परिपक्वता येण्याचा हा काळ असतो यामुळे पोष्टीक आहाराची खास गरज असते. आरोग्य संपन्न जीवनासाठी आवश्यक असलेले अन्नघटक व त्यांचे प्रमाण आणि आहाराचे आहारामुन मिळणारे अन्न घटक व त्यांचे प्रमाण यांचे संतुलनकरुनच आरोग्य राखण्यासाठी संतुलन आहाराचे आहारात करावे लागते. संतुलीत आहाराचे महत्व पालकांना पटत असले तरी केवळ पाश्चात्याचे अंधानुकरण,सामाजिक प्रतिष्ठा, वाढती उपभोगक्षमता व आधुनिक कालच्या धावत्या जीवनशैली यांच्या आहारी जावुन सामाजातील सर्वच स्तरातील लोकांचे फास्टफुड कॉर्नर,पिझ्झा शॉप,फुड मॉल इत्यादी ठिकाणी बाजारात मिळणाऱ्या खाद्यपदार्थांचे आकर्षण दिवसेंदिवस वाढत आहे. त्यामुळे किशोरवयीन मुलामुलींमध्ये बाहेरचे फास्टफुड खाण्याचे प्रमाण वाढलेले दिसुन येते. कमी वयात ब्लडप्रेशर,मधुमेह यासारखे आजार होतांना आढळतात. किशोरावस्थेला परिवर्तनाची अवस्था असेही म्हणतात या अवस्थेत शारीरिक, मानसिक,सामाजिक विकासाबरोबर लैंगिक परिपक्वताही आलेली असते.

किशोरावस्थेमध्ये लागणारे आवश्यक पोषण घटक :-

या अवस्थेत होणाऱ्या जलद विकास आणि आरोग्याची सुदृढता जपण्यासाठी पोषणाकडे विशेष लक्ष दयावे लागते. त्या करीता लागणाऱ्या पोषक घटकाचे प्रमाणे :-

कॅलरी :- शारीरिक श्रम करणाऱ्या मुलांना2750 तर मुलींकरीता 2400 कॅलरी [illegible] वर्ष वयोगटाकरीता तर 16 ते 17 वर्षे वयामध्ये मुलींना 3000 कॅलरी तर मुलांना2400 कॅलरी लागतात

प्रथिने :- शारीरिक विकास जलद गतीने होण्याच्या या अवस्थेत मुलांना 65 ग्रॅम तर मुलांना 55 ग्रॅम प्रथिने प्रतिदिन आवश्यक असतात.

खनिजपदार्थ :- या वयातील मुलांची विशेषत: लोह व कॅल्शियमची गरज वाढलेली असते. प्रतिदिन 800 मिली ग्रॅम कॅल्शियम हाडांच्या वाढीसाठी तर मुलींना 30-32 मि. ग्रॅम लोह आणि मुलांना 28-28 मि. ग्रॅम लोह आवश्यक असते.

जीवनसत्वे :- या वयात जीवनसत्व 'अ', फोलीक ॲसिड जीवनसत्व ब [illegible] यांची कमता तर वाढत्या वयातील जीवनसत्व 'ड' तद्वतच मुलींना प्रजनन क्षमता विकसीत होण्यासाठी जीवनसत्व 'ई' पिअण आवश्यक असते.

किशोरवयीन मुलांमध्येअहार विषयक समस्या निर्माण होण्याची कारणे :-

- शारीरिक व मानसिक दडपण
- भावनिक परिवर्तन
- आपण मोठे झाल्याची भावना
- वजन वाढ होवु नये ही भ्रामक कल्पना
- खाणपानाच्या अयोग्य सवयी
- अपुऱ्या आहारामुळे पोषक तत्वांची कमतरता होवुन [illegible]
- बाहय झगमगाटाचे आकर्षण
- अभ्यासकरतांना झोप येवू नये म्हणुन अपूरा आहार घेणे

उपाययोजना :- किशोरवयीन मुलांच्या दृष्टीने योग्य पोषक आहाराचे महत्व लक्षात घेता त्यांच्या आहारविषयक समस्यांचे निवारणार्थ काही उपाय योजना करणे क्रमप्राप्त ठरते.

- किशोरवयीन मुलांच्यासमस्या जाणुन त्यावर तोडगा काढुन त्यांचे मनावरील दडपण कमी करावे.
- पालकांनी त्यांच्या भावना समजुन घेवुन त्यांच्या भावनेचा आदर करावा.
- त्यांच्या मनात असलेल्या भ्रामक कल्पना शास्त्रीय माहितीच्या [illegible] दुर करण्याचा प्रयत्न करावा.
- खानपानाच्या अयोग्य सवयी बदलण्यास त्यांना मदत करावी.
- घरी तयार केलेल्या शुध्द सात्वीक आहाराचा उपयोग करण्यास त्यांना प्रोत्साहित करावे.
- आहार व स्वास्थ वर्धक माहिती मिळविण्यासठी महाविद्यालयातुन कार्यशाळांचे शिक्षकांनी आयोजन करावे.
- आहारासोबतच व्यायामाचे महत्व त्यांना पटवुन द्यावे.
- अपुऱ्या आयोग्य आहारचे दुष्परिणाम त्यांना समजावून सांगावे.
- पर्याप्त पोषक आहार मिळण्याच्या दृष्टीने गृहिणीने मुलांच्या आहारात सर्वच अन्न गटातील विविध पदार्थांचा शक्यतोवर जास्तीत जास्त समावेश करावा.

निष्कर्ष :-

- किशोरवयीन मुलांच्या मनावर दडपण असल्याने त्यांची खेळण्याची इच्छा कमी होत परंतु शरीराची पोषण विषयक आवश्यक्ता जास्त वाढते.
- या अवस्थेत अनावश्यक सवयी लागल्याने आहारासंबंधीसवयी बदलतात.
- आहारामध्ये पौष्टीक भोज्य घटक युक्त पदार्थांचा अभाव आढळतो.
- जाहिरातीच्या प्रभावामुळेजास्त भूक लागेल तेव्हा जंकफुडचा [illegible] मुले जास्त करतात.
- टि.व्ही. पाहतांना सतत फास्टफुड खाल्याने वजन वाढते.
- अपुऱ्या अयोग्य आहारामुळे मुलांचेयोग्य पोषण होत नाही. परिणामी विकासात अडथळे येतात.
- अभ्यास करतांना झोप येवु नये म्हणुन कमी खाल्यामुळे कुपोषणाची स्थिती निर्माण होते. मुलींमध्ये लोहाची कमतरता आढळते.

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देशाच्या उज्वल भविष्याकरिता कुपोषणमुक्ती - एक पुढचे पाऊल

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उत्तम आरोग्य हा जीवनाचा पाया आहे. आपले स्वास्थ उत्तम असेल तर व्यक्तीची कार्यक्षमता वाढते, उत्साह चैतन्य टिकून राहते. दैनिक, आहारात आवश्यक त्या प्रमाणात कॅल्शिअमचा पुरवठा झाला नाहीतर कुपोषणाला स्वरूवात होते. हिच परिस्थिती दिर्घकाळ राहील्यास कुपोषणाची गंभीर समस्या निर्माण होते. गरीबी, अज्ञान, आहार विषयक चुकीच्या सवयी, अन्न शिजविण्याच्या चुकीच्या पध्दती यामुळे अपुरे पोषण होते. कुपोषणामुळे विविध अन्न घटकांच्या अभाव निर्माण होवून निरनिराळे विकार संभवतात याचा परिणाम सामाजिक स्वास्थावर होतो.

कुपोषण ही एक जागतिक समस्या आहे. भारत देश सुध्दा त्याला अपवाद नाही भारतात अतीदुर्गम भागात राहणाऱ्या लोकांमध्ये कुपोषणाची तिव्र समस्या आढळून येते. ० ते ६ वर्षे वयोगटातील बालकामध्ये कुपोषणामुळे होणाऱ्या मृत्युची संख्या बरीच जास्त आहे. नॅशनल न्युट्रीशन मॉनिटरिंग ब्युरो व्दारा २००२ मध्ये महाराष्ट्रात केलेल्या पाहणीनूसार तीव्र कुपोषणाचे प्रतिशत प्रमाण ७.२ होते. मध्यम कुपोषीत बालके ४५ प्रतिशत तर अल्प कुपोषीत बालके ३९.६ प्रतिशत इतकी आढळून आली. (प्रा. फरकाडे आणि सहकारी)

व्याख्या -

कुपोषण ही अशी अवस्था आहे की. ती एक किंवा अधिक पोषक घटकांच्या कमतरतेमुळे किंवा आधिक्यामुळे निर्माण होते व त्याचा परिणाम म्हणजे अल्पपोषण, अतिपोषण किंवा असमतोल निर्माण होतो.

कुपोषण म्हणजे अशी स्थिती की, ज्यामध्ये व्यक्तीचे वय ,लिंग, अवस्था शारीरिक व मानसिक कार्य व आवश्यकतेनूसार लागणाऱ्या आवश्यक घटकांची सतत कमतरता किंवा आधिक्य असणे होय.

उद्दिष्टये :-

1. कुपोषणाच्या समस्यांचा अभ्यास करणे.
2. कुपोषण दूर करण्यासाठी शासनाच्या असलेल्या योजनांचा आढावा घेणे.

International Quarterly Research Bulletin ISSN 2231-1025 , Vol-31, Dec 2018

गृहितके :-

१. कुपोषण ही देशातील गंभीर समस्या आहे.

२. कुपोषण निर्मुलनाकरिता शासनाकडून विविध पातळ्यावर उपाय योजना केल्या जातात.

देशाच्या विकास प्रक्रियेमध्ये बालकांच्या विकासावर विशेषत्वाने लक्ष देणे गरजेचे आहे. मुलांच्या चांगल्या शरीर व मानवाच्या विकासाकरिता त्यांना पौष्टीक आहार मिळणे आवश्यक आहे. अशा बालकांना भविष्यात विकास प्रक्रियेत सहभागी होता येईल व त्यांनाच विकासाचे फायदेही प्राप्त करून घेता येईल. आपल्या देशाची लोकसंख्या १३० कोटी पर्यत आलेली आहे. मात्र २०११ च्या जनगणनेनूसार ६ वर्षापेक्षा कमी वय असणाऱ्या मुलांची संख्या २००१ च्या तुलनेत २.९ प्रति.ने घटलेली आहे. यामध्ये मुलींच्या संख्येतील घट ही मुलांच्या तुलनेत जास्त आहे. साधारणपणे असे आढळते की, बालकासांठी सुरूवातीची ३-५ वर्ष अत्यंत महत्वाची असतात कारण याच वयात त्यांचा मानसिक शारीरिक, बौध्दिक , विकास झपाट्याने होत असतो, मात्र याच वयात योग्य आहाराअभावी विविध आजार,कुपोषण तद्वतच शारीरिक, मानसिक अक्षमता किंवा दुबळेपणा बालकामध्ये निर्माण होण्याची शक्यता असते. जगातील विकासनशील देशामध्ये आरोग्याचे जे प्रश्न आहेत त्यामध्ये न्युन पोषण हा जटील तथा गंभीर प्रश्न बनलेला आहे. शिशु, लहान मुले, गर्भवती स्त्रिया यांच्यात विशेषत: ही न्युनता आहे. विशेष म्हणजे ५ वर्षा खालील शिशुंचे ५०% मृत्य हे न्युन पोषणामुळे होत असल्याचे निदर्शनास येते. याची अनेक कारणे आहेत. जसे जन्म वेळेचे मातेचे कमी वय, प्रथिन-उर्जा कमतरता लोहाची कमतरता गैरसमुजती ,अज्ञान अंधविश्वास , निर्धनता , अस्वच्छता चालीरिती इत्यादी गरोदर मातांच्या अशक्तपणामुळे जगभरात दरवर्षी सुमारे ३० लाख मृत बाळांचा जन्म होतो. तर ३७ लाख नवजात बालकांचा मृत्यु जन्मानंतर लगेचच अथवा महिन्याभरात होतो. शिवाय बाल निरोगी सुध्दा जन्माला न आल्यास भविष्यात त्याला आरोग्य विषयक अनेक अडचणींचा सामना करावा लागतो.

२०११ मध्ये जागतिक पातळीवर ५ वर्षाखालील १० कोटी बालकांचे वजन कमी होते ११.६ कोटी बालकांची उंची कमी होती तर ८ प्रतिशत मुलांचे वजन उंचीच्या तुलनेत कमी होते तद्वतच ७ प्रतिशत म्हणजे ४.३ कोटी बालकांचे वजन जास्त आढळते (दि.व्य. जहागीरदार)

भारतात सुध्दा कुपोषित बालकांची संख्या बरीच जास्त आहे. कुपोषण हे बालमृत्याचे प्रमुख कारण मानले जाते.भारतात. इ.स. २००५-६ च्या पाहणीनूसार उंचीच्या तुलनेत वजन कमी असणाऱ्य मुलामुलींचे प्रमाण १९.८% असून २०१५-१६ मध्ये त्यात घट होवून १५.१% झाले आहे.

International Quarterly Research Bulletin ISSN 2231-1025 , Vol-31, Dec 2018

नॅशनल फॅमिली हेल्थ सर्व्हे २००५-०६ आणि २०१५-१६ नूसार भारतीय स्तरावर ५ वर्षाखालील अनुक्रमे ४२.५% मुले मुली आणि ३५.७% मुले मुली कमी वजनाची होती.

अनेक विकसनशील देशातील ४५% गरोदर स्त्रियांमध्ये रक्तक्षय असल्याचे दिसून येते.याचा परिणाम स्त्रियाच्या शरीरावर व जन्माला येणाऱ्य शिशुवरही होतो. तरूण स्त्रीचा बी.एम.आय १८.५ पेक्षा कमी किंवा १८.५ पेक्षा च्या बरोबर असेल तर ती स्त्री न्युनपोषीत आहे असे समजले जाते भारतात केरळ या प्रांतात न्युन पोषित स्त्रियांचे प्रमाण सर्वात कमी असून बिहार (३०.४) ,गुजरात (२४.२) या प्रांतात हे प्रमाण सर्वाधिक असल्याचे दिसून येते.

गेल्या काही वर्षापासून भारतात तरूण स्त्रीपुरूषांमध्ये उर्जा असंतुलनामुळे अती वजनाची समस्या निर्माण झाली आहे. बी.एम.आय २५ किंवा त्यापेक्षा जास्त असणे म्हणजे अती वजन डब्ल्यु एच.ओ. २०१२ च्या अहवालनूसार जगातील एकूण तरूणांपैकी (पुरूषस्त्रिया) १६% मध्ये अती वजनाचा किंवा लठ्ठपणाचा विकार असल्याचे आढळून येते. जवळपास २८ लाख तरूण तरूणी या विकाराने दगावतात (दि.व्य. जहागीरदार २०१८).

कुपोषणामुळे आई व बाळाच्या आरोग्यावर घातक परिणाम होतो देशात दररोज सुमारे १५०० महिला आणि किशारवयीन मुली गर्भधारणा व बाळाच्या जन्माशी संबंधीत समस्येने मरण पावतात सुमार १० लक्ष महिला व किशोर वयीन मुलींना गर्भधारणे दरम्यान अनेक अडचणींचा समाना करावा लागतो बरेचदा बाळाला संसर्ग होतो. अपंगत्व येते त्यामुळे गर्भधारणे दरम्यान आई व बाळाची विशेष काळजी घेणे महत्वाचे ठरते . त्याकरिता 'राजमाता जिजाऊ माता-बाल आरोग्य व पोषण मिशनव्दारा' तरूण किशोर वयीन मुली आणि महिलांमधील पोषण सुधारण्यासाठी कुपोषण दूर करण्याच्या दृष्टिने लक्षणिय सुधारणा केली आहे. लहान मुलांमधील कुपोषणाचे प्रमाण ४६ % वरून ३४ टक्क्यावर आणण्यात यश आले आहे. हे प्रमाण पुढील तीन वर्षात ३४ टक्क्यावर वरून ५ ते २३ टक्क्यापर्यत खालील आणण्याचा शासनाचा निर्धार आहे.

कुपोषण मुक्तीसाठी शासनाचे प्रयत्न :-

महाराष्ट्र २०१२ पर्यत कुपोषण मुक्त करण्याचे लक्ष्य राज्य शासनाने ठेवले आहे. आरोग्य व पोषण मिशनची स्थापना करणारे महाराष्ट्र राज्य देशात पहिले आहे. २००५ मध्ये या मिशनची सुरूवात करण्यात आली. हे मिशन जानेवारी २०१८ ते डिसेंबर २०२२ पर्यत कुपोषण मुक्त महाराष्ट्रासाठी शर्थीचे प्रयत्न करीत आहे.

International Quarterly Research Bulletin ISSN 2231-1025 , Vol-31, Dec 2018

२ वर्षा पर्यतचे बालके तसेच दुर्गम भागातील सहा वर्षाखालील कुपोषीत बालकांना कुपोषणा पासून दूर करण्याचा शासनाचा मानस आहे. गरीबी, दुर्गम भाग अथवा अज्ञानामुळे माहिला चांगल्या आरोग्य सेवांपासून वंचित राहतात परंतु राज्यशासनं महिलांसाठी अनेक योजना राबवित असल्याने महिलांना प्रसुतीपूर्व व प्रसुती नंतरच्या सर्व आरोग्य सुविधा मिळत आहेत.

राज्यात राष्ट्रीय आरोग्य मिशन आणि इंटिग्रेटेड चाइल्ड डेव्हल्पमेंट सर्व्हिस अंतर्गत राबविण्यात येत असेल्या एम.आय.वाय.सी.एन (मॅटरनल,इन्फट ॲण्ड चाईल्ड न्युट्रीशन) या कार्यक्रमाअंतर्गत लहानमुलांचा मृत्युदर मोठ्या प्रमाणावर घटला आहे. शिवाय शासनामार्फत गरोदर मातांसाठी जननी सुरक्षा योजना व जननी शिशु सुरक्षा कार्यक्रम राबविण्यात येत आहे.

आदिवासी विभागात कुपोषणाचे प्रमाण कमी करण्यासाठी राज्यशासन ए.पी.जे. अब्दुल कलाम अमृत आहार योजना राबवत आहे. तद्वतच अंगणवाडी सेविकांमार्फत आदिवासी भागात गरोदर मातांना पोषण आहार दिला जात आहे. जागतिक आरोग्य संघटनेच्या माध्यमातून सुरक्षित मातृत्व योजना माता मृत्युदर कमी करण्याच्या दृष्टिने राबविली जाते आहे.

कुपोषण मुक्तीसाठी उपाययोजना:-

देशातील पोषणाच्या स्थितीत सुधारणा करण्यासाठी पुढील उपाययोजना करता येतील.

१. अल्प व न्युन पोषणाची स्थितीत सुधारणा करण्यासाठी गर्भवतीच्या आरोग्यात सुधारणा करणे.

२. ५ वर्षाखालील मुला मुलींना सकस आहार पूरविणे.

३. लठ्ठपणा वाढू नये म्हणून शाळांमधून योग्य सल्ला देणे.

४. शारीरिक क्रिया, योगासने, खेळ फिरणे.यावर भर देणे.

५. फास्ट फुड वर नियंत्रण ठेवणे

कुपोषण मुक्तीसाठी राजमाता जिजाऊ माता - बाल आरोग्य पोषण मिशनाचा कार्यक्रम

१. तीव्र कुपोषीत असणाऱ्या मुलांसाठी अंगणवाडी केंद्रामार्फत गाव बाल विकास केंद्राची स्थापना करणे.

२. सामाजिक संस्था, आंतरराष्ट्रीय संस्थांच्या सहयोगाने नाविण्यपूर्ण उपक्रम राबविणे.

३. कुपोषण मुक्तीसाठी माध्यमांचा वापर करणे.

४. कुपोषण मुक्तीसाठी योजना, उपक्रम राबविणारे शासनाचे विविध विभाग व संस्था यांचे समन्वय साधणे.

International Quarterly Research Bulletin ISSN 2231-1025 , Vol-31, Dec 2018

५. शहरी तसेच दुर्गम भागात कुपोषण मुक्तीच्या अंमलबजावणीसाठी तांत्रिक आणि क्षमता विकास सहाय्य देणे.

६. राज्य व जिल्हा पातळीवरील अंमलबजावणीची देखरेख करणे.

७. शहरी भागातील कुपोषण, बाल्यवयातील लट्ठपणा दूर करण्यासाठी संख्यात्मक यंत्रणा स्थापित करणे.

अशाप्रकारे शासन, विविध सामाजिक संस्था, सोशल मिडीया, सामाजिक कार्यकर्ते युवक युवती यांच्या सहकार्याने देशातील कुपोषणाचे उच्चाटन होणे शक्य होईल. आणि देशाच्या उज्वल भवितव्याकरिता कुपोषणामुक्तीचे पाऊल हितावह ठरेल हाच आशावाद!

संदर्भ ग्रंथ सूची :-

१. डॉ.संगिता जवंजाळ आणि डॉ. किरण बेलुरकर (२०१८), 'मानवी पोषण व आहाराशास्त ' पृष्ठ क्रमांक ६-७ , श्री. साईनाथ प्रकाशन ,धरमेठ , नागपूर

२. दि.व्य. जहागीरदार (२०१८), भारतातील कुपोशणाच्या परिणमाचे प्रांतनिहाय स्वरूप, लेख दैनिक हिदुस्थान. २४ डिसेंबर व ३१ डिसेंबर २०१८

३. श्री.गणेश. तारे (२०१८), कुपोषण मुक्ती , लेख लोकराज्य मार्च २०१८, पृष्ठ क्रमांक २१

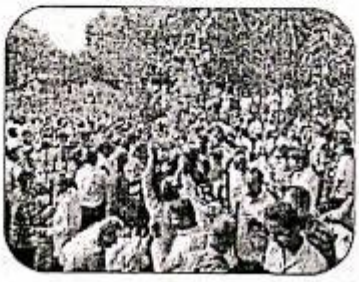
४. श्री. गणेश तारे (२०१७), 'सृदृढ आणि सुरक्षित' लेख लोकराज्य ऑगस्ट२०१७ पृष्ठ क्रमांक ५४ - ५५

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विदर्भ नावाच्या निर्मितीच्या घटनाक्रमाचा इतिहास

प्रा.डॉ. निलय देशमुख
महात्मा ज्योतीबा फुले, वाणिज्य विज्ञान व विठ्ठलराव राऊत महाविद्यालय, भातकुली, जि. अमरावती.



वऱ्हाड प्रांताला 'विदर्भ' या नावाने संबोधायचे का हा आजही वादाचा विषय आहे. परंतु प्राचीन भारताच्या इतिहासात वेदात 'विदर्भाचा' उल्लेख आढळतो. परंतु मध्यकाळात भारताच्या इतिहासात 'बेरार' नावाचा नामोल्लेख होऊन 'वऱ्हाड' हा शब्द प्रचलीत आला आणि तोच पुढे प्रचलीत राहीला.विदर्भात यादव वंशातील भोज राजे वरदा नदीच्या तिरावर कुंडीनपूर येथे राज्य करीत होते. नलचंपू कर्त्या त्रिविक्रमभटाने तर 'वरहतट' हे प्राचीन विदर्भाचे नाव नमूद केले आहे तो म्हणतो.

वीर पुरुष तदेतव्दरक्षात नामक महाराष्ट्रम
दक्षिण सरस्वती सा वहति विदर्भा नदी यत्रा।।

'वरदातट' शब्दानेच या प्रदेशाचे नाव 'विदर्भ' असे होऊन प्रचलित आले. याच प्रदेशात 'वऱ्हाड' असाही शब्दप्रयोग केला जातो. वऱ्हाड हा शब्द कसा प्रचलित आला याविषयी अबुल फजल यांनी आईन-ए-अकबरी मध्ये वर्धा (नदीचे नाव) व तट (किनारा) यापासून आला आहे. असे मानतो. महाभारत पुराणे इत्यादी उत्तरकालीन ग्रंथात विदर्भाचा उल्लेख अनेक ठिकाणी येतो. पयोष्णी (पुर्णा), वरदा (वर्धा), वेणा (वाईनगंगा) इत्यादी पुण्यनद्यांचा व त्यांच्या तिरावरील पुण्यक्षेत्राचा उल्लेख उपरोक्त ग्रंथात येतो[१].

विदर्भाचा ऐतिहासिक कालखंड २५०० वर्षाचा असुन या काळात विदर्भावर राज्य करणाऱ्या प्रसिध्द राजघराण्यामध्ये मौर्य, सातवाहन, वाकाटक, कलचुरी , राष्ट्रकुट चालुक्य, यादव या सर्व राज्यांचा उल्लेख 'विदर्भ' या नावाने होतो. याचाच अर्थ प्राचीन भारताच्या इतिहासात 'विदर्भ' या नावाचा उल्लेख होतो. परंतु मध्यकाळात 'बेरार' च्या निर्मीतीपासुन वऱ्हाड ची निर्मीती झाली. आणि ते भारताला स्वातंत्र्य मिळेपर्यंत वऱ्हाड हा स्वतंत्र प्रांत अस्तित्वात होता. त्यावेळी विदर्भ राज्याचा उदय झाला नव्हता. विदर्भ राज्य कसे अस्तित्वात आले यावर संशोधनातुन प्रकाश टाकण्याचा प्रयत्न करीत आहोत.

मध्यकाळात इ.स. १३१८ ते ते १३४६ या काळात दिल्लीवर खिलजी व तघलक या घराण्याचे राज्य वऱ्हाडात होते. इ. स. १३४६ मध्ये दिल्ली सुलतान महमद तहालकाच्या काळात दक्षिणेकडे बंड झाले असतांना त्यांचा बंदोबस्त करण्यासाठी सुलतानाने हसनगंगु व हरीहर बुक यांना दक्षिणेत पाठवीले. हसनगंगुने दक्षिणेतील बंडाळी मोडुन गुलबर्गा येथे बहामणी राज्य व विजयनगर येथे हरीहर, बुक्क या बधुंनी हिंदु राज्याची निर्मिती केली.

बहामनी सुलतांनांनी पश्चिम विदर्भाला 'बेरार' ही संज्ञा देऊन सरदारांमार्फत इ. स. १३४६ ते १४८४ पर्यंत विदर्भावर राज्य केले. पुढे १५ व्या शतकाच्या उत्तरर्धात बहामनी राज्याचे सरदार स्वतंत्र होऊन बहामनी राज्याचे पाच तुकड्यामध्ये रुपांतर झाले.

इ. स. १४८७ मध्ये वझीर इमाद उल मुल्क याने अमरावती जवळील अचलपूर येथे राजधानी स्थापन करुन इमादशाहीची निर्मिती केली. इ. स. १५६२ पर्यंत वऱ्हाडप्रांतावर त्याचे शासन होते. त्यानंतर अहमदनगरच्या मूर्तीजा निजामशहाने वऱ्हाड जिंकून आपल्या राज्याला जोडला. अशा प्रकारे इ. स. १५६२ मध्ये इमादशाहीचा अंत होऊन निजामशहीला सुरुवात झाली. इ. स. १५६२ ते इ. स. १५९५ पर्यंत वऱ्हाडवर अहमदनगरच्या सुलतानाचे शासन होते. पुढे मोगल सम्राट अकबराने दक्षिण जिंकण्यासाठी इ.स. १५९५ मध्ये निजामशाहीवर आक्रमण केले. निजामशाही तर्फे चांदबीबीने शहजादा मुरादबरोबर तह करुन वऱ्हाड मोगलाच्या स्वाधीन केला. अशाप्रकारे इ.स. १५९५ मध्ये वऱ्हाडामधील

व बिदरवर मोगल सत्ता सुरु झाली. इ. स. १६०१ मध्ये बादशाहा अकबराने वऱ्हाड हा स्वतंत्र मोगली सुभा बनविला. मोगल सम्राट ानने इ.स. १६३६ मध्ये निजामशाही बुडवीली. छत्रपती शिवाजी महाराजांनी हिंदवी स्वराज्याची स्थापना केली असली तरी वऱ्हाडचा ांच्या राज्यांत समाविष्ट नव्हता. शिवाजीने वऱ्हाडप्रांतातुन लुट व चौथाई वसूल केली असली तरी वऱ्हाड मागेली आधिपत्याखाली एक ता. शिवाजी महाराजांच्या मृत्यू नंतर औरंगजेबाने दक्षिणेवर आक्रमण करुन विजापूरची आदिलशाही व गोवळकोंडाची कुतुबशाही इ.स. ९० मध्ये जिंकून घेतली. त्यानंतर दक्षिणेतील पूर्वविजीत प्रदेश खानदेश, बेरार, बिदर, अहमदनगर व नवविजीत प्रदेश विजापूर, ोंडा अशा सहा सुभ्यात विभागला औरंगजेबाच्या मृत्यूनंतर (इ.स. १७०७) दिल्लीत वारसा युध्दाला तोंड लागले. शाहू महाराजांच्या तर साताऱ्याला मराठ्यांचे राज्य स्थापन झाले. छत्रपती शाहूच्या काळात पेशवाईला सुरुवात झाली. पेशवाईच्या उदयामुळे मराठा च्या बलाढ्य संघाची निर्मिती झाली. दिल्लीतील राजकीय उलथापालथीमुळे व दक्षिणेतील मोगलांची स्थिती कमकुवत बनली.[२]

छत्रपती शाहूच्या काळात मराठ्यांना मोगलाकडून दक्षिणेतील सहा सुभ्यामधुन चौथाई सरदेशमुखी वसुलीचे अधिकार मिळाल्यानंतर वऱ्हाडातील चौथाई वसुलीसाठी परसोजी भोसले या सरदारास नेमले होते. इ. स. १७२४ मध्ये मोगल बंडखोर सरदास निजाम उल मुल्क ा येऊन त्याने हैद्राबादला स्वतंत्र निजामी शासन प्रस्थापीत केले. त्यामुळे दक्षिणेतील सहा सुभ्याच्या चौथाई वसुलीचा मराठा ारावस[illegible]राठा-निजाम संघर्षाला सुरुवात झाली.मराठ्यांमध्ये अंतर्गत कलह असल्यामुळे परसोजीचा मुलगा कान्होजी भोसले यांच्यात निर्माण झाले. शाहूने इ. स. १७२८ मध्ये कान्होजीच्या बंदोबस्तासाठी साताऱ्याहुन रघुजी भोसल्यास पाठविले. रघुजीने सैनिकांच्या सह्याने वऱ्हाडातून खंडण्या वसुल करुन अमरावतीला आला. उमरावतीकर राणोजी भोसल्यांच्या मदतीने रघुजीने माहुर निकट कान्होजीला करुन कैद केले व साताऱ्यास पाठवून दिले. रघुजीला याच दरम्यान सोनासाहेब सूभा हा किताब व वऱ्हाड प्रांताच्या चौथाई वसुलीचे धिकार प्राप्त झाले . हैद्राबादला निजाम वऱ्हाड प्रांतात रघुजी भोसले स्थिर झाल्यानंतर चौथाई सरदेशमुखीच्या वसुली प्रकरणावरुन वितृष्ट निर्माण झाले. त्यावर तोडजोड म्हणुन भोसल्यांनी चौथाई सरदेशमुखीचा वाटा ६० टक्के व निजामाने ४० टक्के ठेवावा असे तडजोड म्हणुन वसुलीसाठी पुर्व वऱ्हाड भोसल्यांकडे व पश्चिम वऱ्हाड निजामाकडे वाटून देण्यात आला. यालाच वऱ्हाडवरील नीशासन म्हटल्या जाते. इ. स. १७३४ मध्ये रघुजी भोसले यांनी गोंड राज्याच्या अंतर्गत भांडणात हस्तक्षेप करुन नागपूर येथे राजधानी केली. रघुजी भोसल्यांचा स्वतंत्र शासन म्हणुन उदय झाला. गाविलगड व नरनाळ हे अभेद्य किल्ले भोसल्यांच्या ताब्यात होते. तरी सुध्दा ांनी मात्र नेहमीच निजामास वऱ्हाड प्रातांच्या राजा संबोधिले आहे. एकीकडे दक्षिणेतील निजामाचे राजकीय वर्चस्व आणि दुसरीकडे यांचा आर्थिक अधिकार अशा दुहेरी राजवटी खाली वऱ्हाडचा भाग होता. त्यामुळे वऱ्हाडात दुअमली शासनाला सुरुवात झाली. निजाम व यांच्या शासनाखाली वऱ्हाडातील प्रजेवर कमी-अधिक प्रमाणात सारखेच अन्याय झालेत. प्रजेमध्ये असुरक्षितता निर्माण झाली. नागपूरच्या ेच्या सत्तेचा जोर इ.स. १७५१ मध्ये वऱ्हाडात विशेष असावा असे दिसते. पानीपतवरील दारुन पराभवानंतर दक्षिणेत निजामाने ाविरुध्द आक्रमक मोहीम उभारली.

जानोजी सुध्दा निजामास मिळाला. म्हणुन जानोजीला धडा शिकविण्यासाठी पेशवे माधवराव व रघुनाथराव वऱ्हाडात आले. ांनी भोसल्यांच्या वऱ्हाडातील महालांवर जप्त्या बसविण्यासाठी आपली तीन-चार सैन्य पथके रवाना केली. पुढे जानोजीने पेशवा बरोबर रचा त[illegible]रुन काही प्रदेशावर पाणी सोडले. तरीही कल मिटला नाही. माधवरावाने भोसल्याविरुध्द पुन्हा दुसरी मोहिम हाती घेतली. ी माधवराव पेशव्यांनी देवाजीपंत कैद करुन आपल्या लष्कराबरोबर ठेवले व मजल दरमजल कूच करीत पेशवे वऱ्हाडात शिरले. ांच्या या भोसले विरोधी स्वारीने वऱ्हाड प्रांतात भोसल्यांचा अंमल उठवून आपला अमल कायम केला. जाने. १७६९ पर्यंत पेशव्याने वर्धा या पश्चिमेकडील सर्व मुलुख आपल्या ताब्यात घेतला. अखेर कनकपुरच्या तहाने भोसले व पेशवे यांच्यातील हा संघर्ष काही काळ ला.[३]

मराठ्यांच्या भितीमुळे निजामाने पूर्वीच इंग्रजांची तैनाती फौज स्विकारली होती. पेशवा बाजीराव दुसऱ्याने इ.स. १८०२ मध्ये इंग्रजांचे ण घेतले. त्यावरुन मराठा इंग्रजांचे दुसरे युध्द सुरु झाले. भोसल्यांनी निजामाच्या राज्यात धुमाकुळ माजवल्यामुळे निजामाच्या राज्याचे करण्यासाठी व भोसल्यांच्या बंदोबस्तासाठी इंग्रज अधिकारी वेलस्ली वऱ्हाड प्रांतावर चालुन आला. दिनांक २९ नोव्हे. १८०३ रोजी ला जिल्ह्यात अकोट तालुक्यातील अडगावच्या लढाईत भोसल्यांचा पराभव झाला. १६ डिसे. १८०३ रोजी देवगाव येथे वाटाघाटी होऊन र सह्या झाल्या या तहानुसार वऱ्हाडप्रांतावर असलेली भोसल्याची वतनदारी काढुन टाकण्यात आली. या तहानुसार वर्धा नदीच्या कडील वऱ्हाडचा सर्व प्रदेश (गाबीलगड व नरनाळा हे दोन किल्ले व त्या खालचा प्रदेश वगळून) इंग्रजांना देण्यात आला. त्यामुळे त्यांचा काही प्रमाणात वऱ्हाडशी संपर्क तुटला. या लढाईमध्ये इंग्रजांचा साक्षीदार निजाम होता. इंग्रज व निजाम यांच्यात पुढे दिनांक १८ १८०४ रोजी, झालेल्या वाटणीच्या तहानुसार इंग्रजांनी हा प्रदेश निजामाला देऊन टाकला. अशाप्रकारे वऱ्हाडप्रांतावर निजामाची निरंकुश सुरु झाली. इ.स. १७१६ मध्ये भोसले इंग्रज यांच्यात तिसरे युध्द होऊन या लढाईत भोसल्यांचा पराभव झाला. दिनांक ६ जाने. १७१८ रोजी ले व इंग्रज यांच्यात झालेल्या तहानुसार तहानुसार वऱ्हाडचा शिल्लक राहिलेला प्रदेश भोसल्यांनी इंग्रजांना दिला. त्यामध्ये गाविलगड व ाळा हे किल्ले व त्या खालचा प्रदेश समाविष्ट होता. पुढे दिनांक १२ डिसे. १८२२ रोजी इंग्रजांनी वाटणीच्या तहानुसार हा प्रदेश निजामास आणि इ.स. १८२२ च्या अखेरीपर्यंत संपूर्ण वऱ्हाड प्रांत निजामाच्या अधिपत्याखाली आला. इ.स. १८०४ ते १८५३ या कालखंडात वऱ्हाड णे निजामाच्या ताब्यात होता. या संदर्भात जुन १८०४ मध्ये तत्कालीन इंग्रज गव्हर्नर जनरल लॉर्ड वेलस्लीने लिहिलेल्या एका पत्रातील

पूर्व विदर्भ- पश्चिम विदर्भ मिळून विदर्भाची निर्मिती झाली. इ.स. १९६० मध्ये विदर्भ महाराष्ट्रात विलिन झाला. परंतु १९५३ मध्ये केंद्र शासनाने स्थापन केलेल्या राज्य पुनर्रचना आयोगाने आपल्या अहवालात स्वतंत्र विदर्भ राज्याच्या स्थापनेची शिफारस केली, परंतु राजकीय कारणामुळे वेगळ्या विदर्भाचे राज्य न करता १६५६ मध्ये देशाच्या घटने मध्ये संशोधन करुन ३७१ (३) हे कलम समाविष्ट करण्यात आले व त्यात महाराष्ट्र राज्याच्या स्थापनेचे विधेयक विधिमंडळात स्थापना करतांना स्टेटमेंट ऑफ गव्हर्नमेंट पॉलिसी म्हणजेच महाराष्ट्र राज्यात भविष्यात विदर्भाला कशी वागणूक मिळेल याचा वचननामा विधिमंडळात सादर केला. महाराष्ट्रात राज्याच्या विदर्भासह विविध विभागाचा समतोल विकास होईल असे आश्वासन देण्यता आले. परंतु, प्रत्यक्षात या आश्वासनाची म्हणावी तशी पुर्ती न झाल्याने १९८० पासून विधी मंडळात विदर्भाच्या मागासलेपणाची चर्चा सुरु झाली. शेवटी १९८२ मध्ये विभागीय असमतोल दुर करण्यासाठी डॉ. दांडेकर यांच्या अध्यक्षतेखाली सत्यशोधक समितीचा स्थापना झाली. या समितीच्या अहवालाप्रमाणे विदर्भाचा मागासलेपणा समोर आला व १९६० मध्ये महाराष्ट्रात विदर्भाचे विलीनीकरण करतांना विदर्भाला भविष्यात मिळण्याच्या न्याय वागणुकीचे धोरण राबविले पाहिजे हे स्पष्ट झाले.[१२]

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प्रा. डॉ. निलय देशमुख

एम. जे. एफ. सायन्स कॉमर्स व विठ्ठलराव राऊत कला महाविद्यालय भातकुली.

मराठी साम्राज्याचे संस्थापक आणि एक आदर्श शासनकर्ता म्हणुन ओळखले जाणारे छत्रपती शिवाजीराजे भोसले एक सर्वसमावेशक सहिष्णू राजा म्हणुन महाराष्ट्रात आणि इतरत्रही वंदिले जातात. राष्ट्रविरुध्द लढाया करतांना महाराष्ट्रातल्या डोंगर दऱ्यांमध्ये अनुकूल असलेली गनिमी काव्याची पध्दत वापरुन त्यांनी तत्कालीन विजापूरची आदिलशाही, अहमदागरची निजामशाही, मुगल साम्राटशाही ह्यांच्याशी लढा दिला आणि मराठी साम्राज्याचे बिजारोपण केले. आदिलशाही, निजामशाही आणि मुगल साम्राज्य बलाढ्य असली तरी महाराष्ट्रात त्यांची सगळी स्थानिक सरदारांवर आणि किल्लेदारांवर होती. ते सरदार, किल्लेदार जनतेवर अन्याय-अत्याचार करत असत. शिवाजी महाराजांनी त्या अन्याय-अत्याचारातून जानतेची सुटका केली. आणि उत्तम शासाचे एक उदाहरण भावी राज्यकर्त्यासमोर ठवले.

छत्रपती शिवाजीराजे भोसले यांचा जन्म पुणे जिल्ह्यातील जुन्नर शहराजीक बसलेल्या शिवोरी या डोंगरी किल्ल्यावर इ. स. १९३० मध्ये झाला. इतिहासाच्या अभ्यासकांमध्ये जन्म तारीख हा एकेकाळी मतभेदांचा मुद्दा होता तो वादा नंतर मिटला. महाराष्ट्र राज्य शासन फाल्गुन वद्य तृतीय शके १५५१ (शुक्रवार, १९ फेब्रु.१६३०) ही शिवरायांची जन्म तारीख २००१ साली स्वीकारली. त्याप्रमाणे महाराष्ट्र सरकार दरवर्षी १९ फेब्रुवारी या दिवशी सुट्टी जाहीर करते. इतर संभाव्य तारखांमध्ये ६ एप्रिल १६२६ (विशाख शुध्द तृतीया) ही एक जन्म तारीख मानली जात होती. त्यानुसार, महाराष्ट्रा बाहेरचे लोक शिवजयंतीचा दिवस म्हणुन वैशाख शुध्द तृतीया हा दिवस, आणि महाराष्ट्रातले काही लोक मराठी पंचांगाप्रमाणे फाल्गुन वद्य तृतीया हा दिवस शिवजयंती म्हणुन पाळतात. एक आख्यायिकेनुसार शिवनेरी गडावरील शिवाई देवीला जिजाबाईंनी आपल्याला बलवान पुत्र व्हावा अशी प्रार्थना केली होती म्हणुन या मुलाचे नाव शिवाजी ठेवले गेले.

शिवाजी महाराजांचे वडील शहाजीराजे प्रथम अहमदनगरच्या निजामशहाच्या दरबारी एक सरदार म्हणुन होते. मलीक अंबर या निजामशहाच्या प्रभावी वजिराच्या मृत्यूनंतर मोगल सम्राट शहाजहानच्या सैन्याने इ. स. १६३६ मध्ये अहमदागरवर चाल करुन ते शहर आपल्या ताब्यात घेतल्यांतर शहाजीराजे विजापूरच्या आदिलशहाच्या पदरी सरदार म्हणून रुजू झाले. आदिलशहाने त्यांना पुण्याची जहागिरी दिली. शहाजीराजांनी तुकाबाईशी आपला दुसरा विवाह केला. लहान शिवजीरांजाना घेऊन जिजाबाई पुण्याला रहायला आल्या. तुकाबाई आणि शहाजीराजे त्यांच्या एकोजी भोसले (व्यंकोजी भोसले) ह्या पुत्रांनी पुढे सध्याच्या तामिळनाडू मधील तंजावरला आपले राज्य स्थापन केले.

जिजाबाई पुण्यात रहायला गेल्या त्यावेळी पुण्याची फार दुरावस्था झालेली होती. तेव्हा छोटे शिवाजीराजे आणि कारभारी ह्यांच्या हस्ते पुण्यात एका शेतात प्रतीका दाखल सोन्याच्या मुलाम्याचा नांगर फिरवून जिजाबाईंनी दादोजी कोंडदेवांच्या मदतीने पुण्याची पुनःस्थापाा करायला सुरुवात केली.

शिवाजीराजे लहानाचे मोठे होत असतांना आणि मोठे झाल्यावरही प्रत्येक महत्वाच्या प्रसंगी त्यांना जिजाबाईंनी खंबीर मागर्दर्शन दिले. शिवाजी महाराजांच्या त्या आद्य गुरु होत. हिंदवी स्वराज्य स्थापानेचे स्वप्न साकार करायला शिवाजी महाराजांना जिजाबाईंनी स्फूर्ती दिली.

युध्दाभ्यास आणि रणानीती तसेच राजकारभार ह्या संबंधी प्राथमिक मागर्दर्शन त्यांना शहाजीराजांकडून दफ्तरव्यवस्था व - न्यायवस्थेचे शिक्षण दादोजी कोंडदेव मलढणकर यांचेकडून, तर परकीय सत्ते विरुध्द लढा करण्याकरीता आवश्यक असलेल्या शिस्तीचे शिक्षण जिजाबाईकडून मिळाले असे मात्र उपलब्ध ऐतिहासिक माहितीवरुन निश्चितपणे सांगात येते. जिजाबाईंनी बाल शिवाजीच्या शिक्षणाची जबाबदारी घेऊन त्यांस युध्दकला व राजनीतीशास्त्राचे शिक्षण दिले. शिवाय संत एकनाथ महाराजांचा भावार्थ रामायाण, भारुड इत्यांदीचा माध्यमातून बाल शिवबाच्या मनात स्वराज्याचे स्फुल्लिंग चेतविले. पालक व स्वराज्यांचे प्राथमिक संत तुकाराम महाराज ह्यांचे महत्वाचे मागर्दर्शनही शिवाजीराजांना लाभले होते.

शिवाजी महाराजांची रणीती

१) मावळ प्रांत :- छत्रपती शिवाजीराजांच्या सैन्यातील मावळ्यांनी शिवाजीराजासोबत हिंदवी स्वराज्य स्थापनेच्या कार्यात मोठा सहभाग नोंदवला. सह्याद्रीच्या दोन डोंगर राजांच्या मधल्या खोऱ्यात मावळ आणि खोऱ्यातील सैनिकांना मावळे म्हणत. पुण्याखाली १२ आणि जुन्नर. शिवनेरीखाली १२ अशी एकूण २४ मावळ आहेत. शिवाजी महाराजांचे मावळामधील

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सवंगडी आणि अन्य प्रसिध्द मावळे कान्होजी जेधे, बाजीप्रभू देशपांडे, मुरारबाजी देशपांडे, नेताजी पालकर, बाजी पासलकर, जिवा महाल, तानाजी मालसुरे, हंबीरराव माहिते इ. होते.

२) तोरणगडावर विजय:- इ. स. १६४७ मध्ये सतरा वर्षाच्या शिवाजीराजांनी आदिलशहाच्या ताब्यातला तारेणगड जिंकला आणि स्वराज्यांची मुहूर्त मेढ रोवली. तोरणगड हे स्वराज्याचे तोरणच ठरले. त्याच साली शिवाजीराजांनी कोंढाणा (सिंहगड) आणि पुरंदर हे किल्ले आदिलशहाकडून जिंकून पुणे प्रतांवर पूर्ण नियंत्रण मिळवले. या शिवाय तारेणगडासमोरील मुरुबदेवाचा डोंगर जिंकून त्यांची डागडूजी केली व त्याचे नाव त्यांनी राजगड असे ठेवले.

शहाजीराजांना/अटक:-

शिवाजीराजांच्या यशस्वी स्वाऱ्या विसरुन शिवाजीराजांना आळा घालण्याची एक युक्ती म्हणून आदिलशहाने शहाजीराजांना अटक केली. शिवाय सुमारे ५००० फौज घेऊन फत्तेखान नावाच्या सरदाराला शिवाजीराजांवर हल्ला करण्यास पाठवले. शिवाजीराजांनी पुरंदरावर फत्तेखानाचा पराभव केला. बाजी पासलकर सैन्यसकट पळाल्या फत्तेखानांच्या पाठलागावर सासरवडपर्यंत गेले. सासवडजवळ झालेल्या लढाईत बाजी पासलकरांचा मृत्यू झाला.

शिवाजीराजांनी मोगल बादशाह शहाजहान यास त्यांच्या दख्खनच्या सुभेदाराकरवी पत्र पाठवून शहाजीराजांसकट त्यांच्या चाकरीत जायची इच्छा प्रकट केली. त्याचा परिणाम म्हणून शाहजाहनने आदिलशहावर दबाव आणला आणि परिणामी शहाजीराजांची सुटका झाली. परंतु त्यासाठी शिवाजीराजांना कोंढाणा किल्ला आणि शहाजीराजांना बंगळूर शहर आणि कंदर्पीचा किल्ला आदिलशहाला द्यावा लागला.

४) जावळी प्रकण:- आदिलशहाशी इमान राखणारा जावळीचा सरदार चंद्रराव मोरे शहाजीराजे आणि शिवाजी राजे यांच्याविरुध्द आदिलशहाकडे कुरापती काढत असे. त्याला धडा शिकविण्यासाठी इं.स. १६५६ साली शिवाजीने रायरीचा किल्ला सर केला. त्यामुळे कोकण भागात स्वराऱ्याचा विस्तार झाला.

५) पश्चिम घाटावर नियंत्रण:- इ. स. १६५९ पर्यंत शिवाजीराजांनी जवळपासच्या पश्चिम घाटातील आणि किल्ल्यातील चाळीस किल्ले जिंकले होते.

६) आदिलशाहीशी संघर्ष व अफजलखानाचा वध:-

आदिलशहाच्या ताब्यात असणार किल्ले जिंकत राहिल्यामुळे इ. स. १६८९ साली आदिलशहाने दरबारात शिवाजी महाराजांना संपविण्याचा विडा ठेवला. हा विडा दरबारी असलेल्या अफजलखान नावाच्या सरदाराने उचल्ला. मोठ्या सैन्यासह आणि लवाजन्यासह अफझलखांन मोहिमेवर निघाला.

अफझलखान वाईजवळ आला तेव्हा शिवाजीराजांनी सध्याच्या महाबळेश्वर जवळ असलेल्या प्रतापगडावरुन त्यास तोंड देण्याचे ठरवले. तहाची बोलणी सुरु झाली आणि अंतिम आग्रह होता. पण शिवाजीराजांच्या वकिलांनी (पंजाजी गोपीनाथ बोकील) यांनी अफझलखानाला गळ घालून प्रतापगडावरच मोजकीच माणसे भेटीसाठी येतील आणि दरम्यान सर्वांनी निःशब्द राहण्याचे ठरले. शिवाजीरांना अफझलखनच्या दगाबाजापणाची कल्पना असल्यामुळे त्यांनी सावधगिरी म्हणून चिलखत चढविलेआणि सोबत बिचवा तसेच वाघनखे ठेवली. बिचवा चिलखतामध्ये दडविला होता तर वाघनखे हाताच्या पंजाच्या आतमध्ये वळविलेली असल्यामुळे दिसनारी नव्हती. शिवाजी महाराजासोंबत जिवा महाल हा विश्वासू सरदार होता तर अफझलखान सोबत सय्यद बंडा हा तत्कालीन प्रख्यात असा दांडपट्टेबाज होता. प्रतापगडावरील एका छावणीमध्ये भेट ठरली.

भेटीच्या वेळी उंचपुरा, बलदंड अफजलखानाने शिवाजी महाराजांना मिठी मारली आणि शिवाजीराजांचे प्राण कंढाशी आले. त्याचवेळी अफजलखानने कट्यारीचा वार शिवाजी महाराजांवर केला परंतु चिलखतामुळे शिवाजीराजे बचावले. अफजलखानाचा दगा पाहून शिवाजीराजांनी वाघनखे खानाच्या पोटत घुसवली. त्याचबरोबर अफजलखानाची प्रांणतिक आरोळी चहूकडे पसली. सय्यद बंडाने ततक्षणी शिवाजीवर दांडपट्टयाच्या जोरदार वार केला. तो तत्पर जिवा महालाने स्वत:वर झेलला आणि शिवाजीराजांचे प्राण वाचले. यामुळेच होता जिवा म्हणून वाचला शिवा ही म्हण प्रचलित झाली. आम्हीच ठरल्याप्रमाणे भेटीच्या वेळी तीन तोफांचे बार प्रतापगडावरुन काढण्यात आले. आणि खानाच्या छावणीच्या जवळपासच्या झाडाझुपांमध्ये दडून बसलेल्या मावळ्यांनी हल्ला करुन खानाच्या सैन्याची दाणादाण उडाली. खानाचा मुलगा फाजलखान आणि इतर काही सरदार लपून छपून वाईच्या मुख्य छावणीपर्यंत आले. इथे खानाचा जनाना होता. ते पाठलागावर असलेल्या नेताजीच्या सैन्यापासून वाचवण्यासाठी खजिना, हत्ती व इतर गड सामान टाकून विजापूरला जनान्यास कट पळाले. शिवाजीराजांना जनतेत मिळालेला आदर आणि प्रेम अनेक शतकानंतरही टिकून आहे. त्यामागचे त्यांची सहिष्णुवृत्ती हे फार महत्त्वाचे कारण आहे. अफजलखानाच्या मृत्यूनंतर त्यांनी

इ. स. १६४९ मध्ये आदिलशहाने शहाजीराजांना कैदेत टाकले. याचवेळी शिवाजी महाराजांनी अनेक आदिलशाही किल्ले आपल्या ताब्यात घेतले. म्हणून शिवाजीचा बंदोबस्त करण्यासाठी आदिलशहाने फत्तेखानास रवाना केले. शिवाजी महाराजांसाठी परिस्थिती फारच बिकट होती. एकीकडे वडील शहाजीराजे कैदेत होते तर दुसरीकडे फत्तेखानाच्या स्वारीमुळे स्वराज्य धोक्यात येणार होते. महाराजांनी यावेळी लढाईसाठी पुरंदर किल्ल्याची जागा निवडली. मात्र यावेळी गड मराठ्यांच्या ताब्यात नव्हता. महादजी निळकंठराव यांच्या ताब्यात किल्ला होता. त्यांच्या भावभावांमधील भांडणाचा फायदा उठवून महाराजांनी किल्ल्यात प्रवेश करण्यात यश मिळवले.

या पुरंदर किल्ल्याच्या आधयाने मराठ्यांनी फत्तेखानाशी झुंज दिली आणि लढाई जिंकली. शिवाजी महाराजांना या पहिल्या लढाईतच मोठे यश प्राप्त झाले. सन १६५५ मध्ये शिवाजीराजांनी नेताजी पालकर यास गडाचा सरनौबत नेमले. वैशाख शु. १२ शके १५६९ म्हणजे १४ मे १६५६ गुरुवार या दिवशी संभाजी राजांचा जन्म पुरंदरावर झाला. शके १५८७ म्हणजेच १६६५ मध्ये मोगल सरदार जयसिंगाने पुरंदर किल्ल्याला वेढा घातला.

खानाने वज्रगड ताब्यात घेतला आणि पुरंदरावर हल्ला करुन पुरंदर मायीचा ताबा घेतला. माचीवर खानाने आणि मुरारबाजीचे घनघोर युध्द झाले. मुरारबाजी पडला आणि त्याच बरोबर पुरंदरही पडला. हे वर्तमान जेव्हा राजांना कळले तेव्हा त्यांनी जयसिंगाशी तहाचे बोलणे सुरु केले आणि ११ जून १६६५ साली इतिहास प्रसिध्द पुरंदरचा तह झाला.

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RESEARCH JOURNEY

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३१. राजर्षी शाहु महाराज : एक समाजसुधारक व्यक्तिमत्व

डॉ. निलय देशमुख
महात्मा ज्योतिबा फुले वाणिज्य, विज्ञान व विठ्ठलराव राऊत कला महाविद्यालय भातुकली.

राजर्षी शाहू महाराजांचा जन्म २६ जून १८७४ रोजी कागल येथील घाटगे घराण्यात झाला. त्यांचे नाव यशवंत, त्यांच्या वडिलांचे नाव जयसिंगराव (आप्पासाहेब) होते. तर आईचे नाव राधाबाई होते. कोल्हापूर संस्थानाचे राजे चौथे शिवाजी महाराज यांच्या मृत्युनंतर त्यांच्या पत्नी आनंदीबाई यांनी १८ मार्च १९८४ रोजी यशवंतरावांना दत्तक घेतले व शाहू हे नाव ठेवले. २ एप्रिल १८९४ रोजी त्यांचा राज्यारोह समारंभ झाला. राज्यभिषेक झाल्यानंतर इ.स. १९२२ सालापर्यंत म्हणजे २८ वर्ष ते कोल्हापूर संस्थानाचे राजे होते. मुंबई येथे ६ मे १९२२ रोजी त्यांचे निधन झाले.

राजर्षी शाहू महाराजांचे कार्य

शाहू महाराजांनी बहुजन समाजात शिक्षण प्रसार करण्यावर विशेष भर दिला. त्यांनी कोल्हापूर संस्थानात प्राथमिक शिक्षण सक्तीचे व मोफत केले. स्त्री शिक्षणाचा प्रसार व्हावा म्हणून त्यांनी राजज्ञा काढली. अस्पृश्यता नष्ट करण्याच्या दृष्टीने त्यांनी इ.स.१९१९ साली सवर्ण व अस्पृश्याच्या वेगळ्या शाळा भरवण्याची पद्धत बंद केली. जातिभेद दूर करण्यासाठी त्यांनी आपल्या राज्यात आंतरजातीय विवाहाला मान्यता देणारा कायदा केला. इ.स. १९१६ साली त्यांनी पुनर्विवाहाचा कायदा करुन विधवाविवाहाला कायदेशीर मान्यता मिळवून दिली. बहुजन समाजाला राजकीय निर्णय प्रक्रियेत सामावून घेण्यासाठी[1] त्यांनी इ.स. १९१६ साली निपाणी येथे 'डेक्कन रयत असोसिएशन' ही संस्था स्थापली. वेदोक्त मंत्र म्हणण्याच्या अधिकारावरुन झालेले वेदोक्त प्रकरण शाहू महाराजांच्याच काळात झाले.

शाहू छत्रपती "स्पिनिंग अॅड विव्हींग मिल", शाहुपुरी व्यापारपेठ, शेतकऱ्यांची सहकारी संस्था, शेतकी तंत्रज्ञानाच्या संशोधनासाठी किंग एडवर्ड अॅग्रीकल्चरल इन्स्टिट्यूट इत्यादी संस्था कोल्हापुरात स्थापण्यात त्यांचा प्रमुख वाटा होता. राधानगर धरणाची उभारणी, शेतकऱ्यांना कर्जे उपलब्ध करुन देणे अशा उपक्रमांतूनही त्यांनी कृषिविकासाकडे लक्ष पुरवले. त्यानी डॉ. बाबासाहेब आंबेडकरांना त्यांच्या शिक्षणासाठी, तसेच मूकनायक वृत्तपत्रासाठीही सहकार्य केले होते त्यांनी चित्रकार आबालाल रहिमान यांच्या सारख्या कलावंतांना राजाश्रय देऊन प्रोत्साहन दिले. शाहू महाराजांना राजर्षी ही उपाधी कानपूरच्या कुर्मी क्षत्रिय समजाने दिली. स्वातंत्र्यपूर्वी कैक वर्ष आधी समता, बंधुता, धर्मनिरपेक्षता, सर्व घटकांना विकासाची समान संधी ही तत्त्वे राजर्षी शाहू महाराजांनी करवीर संस्थानात अंमलात आणली. म्हणूनच त्यांचा देशभरात 'महाराजांचे महाराज' असा गौरव होतो.[2]

राजर्षी शाहू महाराजांचे मूळ नाव यशवंतराव होते. त्यांचा जन्म कोल्हापूर जिल्ह्यातील कागल येथील घाटगे घराण्यातला. आज शाहूची जयंती. महाराजांचे सुमारे २८ वर्षे राज्यकारभार केला. राजर्षी शाहू राजांना बहुजनांच्या शिक्षणाविषयी फार तळमळ होती. म्हणून कोल्हापूर संस्थानात सक्तीच्या मोफत शिक्षणाचा कायदा केला. एवढेच नाहीतर ५०० ते १००० लोकवस्तीच्या गावामध्ये शाळा काढल्या. जे पालक आपल्या मुलांना शाळेत पाठवणार नाही. त्या पालकांना प्रतिमहिना १ रु. दंड आकारण्याची कायदेशीर तरतूद केली. त्यांनी प्राथमिक शिक्षण सक्तीचे व मोफत केले.[3]

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वेदोक्त संघर्ष राजर्षी शाहूंच्या काळात झाला. हे महाराष्ट्राच्या सामाजिक विकासाला बाधकच होते. त्या प्रकरणामुळे सत्यशोधक चळवळ आणखी प्रेरित झाली. बहुजन, अस्पृश्य समाजाचा सर्वांगीण विकास साधण्याचे कार्य करताना त्यांनी एका अर्थाने महात्मा फुले यांचीच परंपरा पुढे चालविली. त्यांनी सत्यशोधक चळवळीला प्रत्यक्ष सहकार्य केले.[५]

राजर्षी शाहूंनी कोल्हापूर संस्थानात संगीत, चित्रपट, चित्रकरण, लोककला आणि कुस्ती या क्षेत्रातील कलाकारांना राजाश्रय देऊन त्यांना प्रोत्साहन देण्याचे महत्त्वाचे कार्य केले. महाराजांनी कोल्हापूर, बेळगाव या भागातील स्थानिकवृत्तपत्रांना वेळोवेळी आर्थिक व इतर मदत केली. शाहू महाराज व डॉ. बाबासाहेब आंबेडकर यांचे संबंध सर्वश्रुत आहेत. डॉ. बाबासाहेबांनी 'मूकनायक' हे साप्ताहिक ३१ जून १८२० ला प्रथम प्रकाशित केले. परंतु आर्थिक अडचणीमुळे पुढे ते बंद पडले. परंतु हे राजर्षी शाहू महाराजांच्या लक्षात आल्यावर त्यांनी तात्काळ आर्थिक मदत केली. शाहू छत्रपती स्पिनिंग अॅन्ड विव्हिंग मिल ची स्थापना शाहूपुरी व्यापारपेठेची स्थापना, गुळाच्या बाजारपेठेची निर्मिती, शेतकऱ्यांच्या सहकारी संस्थांची स्थापना, शेतकऱ्यांना कर्जे उपलब्ध करून देणे असे उपक्रम त्यांनी आपल्या संस्थानात राबविले. शेती, उद्योग, सहकार या क्षेत्रात राजर्षींनी सर्वंकष प्रयोग केले. शेतीच्या आधुनिकीकरणासाठी त्यांनी संशोधनाला पाठिंबा दिला. नगदी पिके व तंत्रज्ञानाचा वापर वाढण्यासाठी त्यांनी 'किंग एडवर्ड' ॲग्रिकल्चर इन्स्टिट्यूट स्थापन केले. राजांनी त्याकाळी पाण्याचे महत्त्व लक्षात घेऊन भविष्यात राज्यांना दुष्काळाला सामोरे जावे लागणार नाही यासाठी राधानगरी धरणाचे धरण बांधले.

शाहू महाराजांनी सम्मतेवर आधारित राज्य निर्माण केले. त्यामुळे जातीयवादी समाजकंटक लोकांनी महाराजांना ठार मारण्याचे प्रयत्न केले. एकदा मारेकरी पाठवून आणि एकदा बॉम्ब फेकून महाराजांना दगा करायचा प्रयत्न केला गेला. पण जनतेचे प्रेम आणि दुवा यांच्या पुण्याईने महाराज सुखरूप राहिले. महाराजांना बदनाम करायचेही अनेक प्रयत्न झाले. पण शत्रूचे सारे प्रयत्न विफल गेले.[८]

संदर्भ ग्रंथ सूची

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भारतीय स्वातंत्र्यलढ्याच्या काळातील शेतकऱ्यांची आंदोलने

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आंदोलनाचा अर्थ सामुहिक संघर्ष होतो. परंतु 'संघर्ष आणि आंदोलन' याला एक मानता येणार नाही. तर त्याचा अर्थ वेगळा होतो. रोजच्या जिवणामध्ये असलेल संघर्ष हा वेगळा असल तरी समाजव्यवस्थेमध्ये जो वर्ग वेगवेगळ्या विभागामध्ये विभागीत झालेला आहे. ज्या व्यवस्थेमध्ये समाजाच शोषण होत आहे. तो समाज नेहमीच संघर्ष करीत असतो. याला आंदोलन म्हणता येणार नाही. आंदोलन त्याला म्हणता येईल की संपूर्ण समाज अन्यायाच्या विरोधात संघटीत होऊन जो संघर्ष केला जातो त्याला आंदोलन म्हटल्या जाते.

भारतात ब्रिटिश इस्ट इंडिया कंपनीच्या नेतृत्वाखाली इ.स. 1757 ते 1858 पर्यंत हिंदुस्थानात बंगाल, बिहार, ओरिसा, पंजाब, हैद्राबादचा निजाम मराठे, अवध या सगळ्यांवर त्यांनी प्रभुत्व निर्माण केले. पुढे इ.स. 1857 च्या स्वातंत्र्य संग्रामात ब्रिटिशांनी संस्थानिकांचा पराभव केल्यानंतर भारताला स्वातंत्र्य मिळेपर्यंत राज्यकारभार केला. परंतु हा राज्यकारभार करीत असतांना भारतीय अर्थव्यवस्थेतील सर्वात महत्वाचा व्यवसाय शेती होता. भारतीय लोकसंख्येतील 80 टक्के जनता कृषिक्षेत्रावर अवलंबुन होते. आणि त्यातील 60 टक्के शेतकरी अल्पभुधारक होते. त्यामुळे शेतकरी हा भारतीय अर्थव्यवस्था व समाजव्यवस्थेतील एक मुलभूत घटक होता. ब्रिटिशांनी शासन करतांना शेतकरी वर्ग, अल्पभुधारक यांच्यावर जास्तीत जास्त शेतसारा लादुन अन्याय केला. म्हणुन या अन्यायाला वाचा फोडण्यासाठी ब्रिटिशांनी विरोधात शेतकऱ्यांचे हीत जपणारी संघटना ब्रिटिशांच्या शासनकाळात उदयास आली.

इ.स. 1793 मध्ये लॉर्ड कॉर्नवालीसने बंगाल, बिहार प्रांतावर कायमधारा पध्दती लागु केली. या कायमधारापध्दतीतुन त्याला कष्टकरी शेतकरी समाज निर्माण करायचा होता. शेतकऱ्यावरील असलेला सारा कमी करुन एक उत्कृष्ट शेतकरी निर्माण करायचा होता. परंतु त्यांच्या कायमधारापध्दतीमुळे सदन शेतकरी समाज निर्माण न होता एक आळशी जमीनदार, संस्थानिकांचा वर्ग निर्माण झाला. त्यापैकी काही राजे व संस्थानिक यांनी शेतकऱ्यांच्या हिताचे निर्णय घेतले. आणि शेतीसाठी उपयुक्त सुधारणा केल्या. सुधारणेमध्ये धरणे बांधणे, कालवे तयार करणे, चोरांपासून शेतकऱ्यांच्या उत्पन्नांचे रक्षण करणे या सगळ्या कामांमध्ये शेतकऱ्यांना राजाच्या मर्जीवर अवलंबून राहावे लागत होते. आपल्या व्यथा, मागण्या राजा, संस्थानिक, जहागीरदार यांच्यासमोर येत असल्या तरी त्या मागण्यांच्या पुर्ततेसाठी आंदोलन त्या काळी शक्य नव्हते. मुळात शेकडो वर्षे भारतातील शेतकरी वर्षाकाठी शेतीच्या हंगामात शेतीची कामे आणि उरलेल्या काळात लढाया, मजुरी असे दुहेरी जीवन जगत असल्याने शेतीवाडी, गावाचा विकास संरक्षण या जबाबदाऱ्या त्यांना स्वबळावर पार पाडाव्या लागत होत्या. त्या काळी वस्तुविनिमयाची पध्दत रुढ होती. भारतीय खेड्यातील अलुते-बलुते, खोत ही परंपरांगत वतनी पध्दत ग्रामीण अर्थव्यवस्थेचा पाया होता. या वतनी हक्कामुळे शेतकरी व त्यावर उदरनिर्वाह करीता पूर्णपणे अवलंबून असणारे बिगर शेतकरी लोक यांचे परस्पर संबंध सौहार्दपूर्ण होते. त्यामुळे ही परंपरांगत व्यवस्था चालवीणारी खेडी स्वयंपूर्ण होती. पण नागरीकरण व औद्योगीकरण यामुळे ही संख्या मोडकळीस आली आणि अव्वल इंग्रजी अमलात त्यांची वस्तुविनिमयाची पध्दत नष्ट होऊन पैशाचे विनिमय माध्यम रुढ झाले. या काळात आपल्या गावावर ज्या राजाचा अमल असेल, त्यांच्यावर ठराविक करभरणा केला जातो. शेतीतून येणारे उत्पादन व उत्पन्नातील ठराविक हीस्सा राजाच्या खजिन्यात जमा होत असे.

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आयोजित करण्यात आला. संपूर्ण मुंबई, ठाणे, रायगड, रत्नागिरी, वसई भागातील आगरी, कुणबी, गवई, कोळी, भंडारी, खाखी, भोई, कराडी, सुतार, कुंभार या शेतकरी समाजाचा त्यांना पाठींबा होता. या मेळाव्यात शेतकऱ्यांना संपावर जाण्याचे आवाहन करण्यात आले. शेतकऱ्यांना उत्पन्नातील योग्य वाटा मिळत नसल्यामुळे त्यांनी संपावर जावे असे क्रांतीकारी निर्णय घेण्यात आले. शेवटी या आंदोलनाची दखल घेऊन म.गांधी, डॉ. आंबेडकर यांनी चरीला जावून आंदोलनकांची भेट घेतली. तब्बल सहा वर्षे हा संप सुरु होता. अनेकांची उपासमार झाली. काहींनी एक वेळा जेवण करुन दिवस काढले. परंतु सरकारच्या दबावाला बळी पडले नाही. अखेर तत्कालीन इंग्रज राजवटीतील लॉर्ड लिंलिंग्टन यांच्या सरकारला संपाची दखल घ्यावी लागली. शेतकऱ्यांच्या मागण्या मान्य झाल्यानंतर सहा वर्षांनी इ.स. 1939 मध्ये हा संप मिटला. या संपामुळे राज्यात कुळ कायदा तयार करण्यात आला होता. कुळ कायद्याने अन्यायकारक खोती पद्धत संपवली.

तेभागा आंदोलन

इ.स. 1946 मध्ये लॉर्ड वेव्हेलच्या शासनकाळत बंगालमध्ये शेतकऱ्यांचे तेभागा आंदोलन घडून आले. ज्यात शेतकऱ्यांना फ्लाईड कमिशन च्या शिफारशीनुसार शेतकऱ्यांवरील कमी कर करुन 1/3 कर शेतकऱ्यापासून घेतला जावा यासाठी संघर्ष सुरु केला. बंगालमध्ये तेभागा परिसरातील शेतीतून निघणाऱ्या उत्पन्नातून 2/3 हिस्सा वटाई करणाऱ्या शेतकऱ्यांना दिल्या जावा यासाठी केल्या गेला. हे आंदोलन बंगाल प्रांतात असणाऱ्या 29 जिल्ह्यापैकी 15 जिल्ह्यात याचा प्रसार झाला. विशेषत: उत्तर आणि तटवर्तीला लागून असलेल्या सुन्दरबन क्षेत्रामध्ये याचा जास्त प्रभाव होता. 'किसान सभेच्या' ओदोलनात कमीत कमी 50 लाख शेतकऱ्यांनी भाग घेतला.

निष्कर्ष

इ.स. 1757 ते 1947 पर्यंत ब्रिटिशांच्या काळात शेतकऱ्यांनी संघटीत होऊन आपल्या न्याय हक्कासाठी लढे दिले. शेतकऱ्यांचा हा संघर्ष वेगवेगळ्या प्रांतामधला असल्यामुळे त्यांच्यामध्ये एकी प्रांतापुरती राहिली. ती अखंडीत होऊ शकली नाही. परंतु गांधी व सरदार वल्लभभाई पटेलांच्या उद्यानंतर त्यांनी शेतकऱ्यांच्या हितासाठी केलेल्या आंदोलनामध्ये शेतकऱ्यांना न्याय मिळवून दिला. व ब्रिटिश सरकारला शेतकऱ्यांच्या संघटीत सामर्थ्यासमोर नांगी टाकायला लावली.

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जातो. केळी उत्पादन व विपणन विषयक माहिती प्राप्त करण्यासाठी, वापराचे प्रमाण वाढविण्यासाठी पुढील उपाययोजना करता येतील .

१ कृषी विभाग व शासकीय कार्यालयमार्फत यासाठी जनजागृती करणे.

२ कृषी विभागमार्फत केळी उत्पादक शेतकऱ्यांचे गट तयार करणे.

३ केळी उत्पादक शेतकर्यांना मोबाईल एप्स व संकेतस्थळे वापराचे प्रात्यक्षिके करून दाखविणे.

४ कृषी सहाय्यक तज्ज्ञामार्फत मोबाईल एप्स व संकेतस्थळे हस्तांतरित करणे.

५ विविध मोबाईल एप्स व संकेतस्थळांवर केळी उत्पादक शेतकऱ्यांची नोंदणी करून देणे.

६ शेतकर्यांना कृषी सिमकार्ड सवलतीच्या दारात उपलब्ध करून देणे.

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१ प्राचार्य डॉ. सुधीर बोधनकर, प्रा. विवेक अलोणी, प्रा. मृणाल कुलकर्णी, सामाजिक शास्त्रीय संशोधन पद्धती, श्री साईनाथ प्रकाशन नागपूर.

२ डॉ. वा. ब. राहुडकर, केळीची आधुनिक लागवड, कृषी ग्रंथ भांडार प्रकाशन.

३ स्मरणिका केळी परिषद २०१८ जळगाव, राष्ट्रीय केळी संशोधन केंद्र त्रिची आणि अग्रोसर्च प्रा. लि. नाशिक .

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19

आचार्य विनोबा भावे यांचे सामाजिक योगदान

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आचार्य विनोबा भावे यांच्या योगदानाचा जेव्हा आपण विचार करतो, तेव्हा त्यांच्या चिंतनातील व्यापकता आपले लक्ष प्रकर्षाने वेधून घेते. त्याचे विचार फक्त मानवी समाजापुरतेच मर्यादित तर त्यात प्राणीजीवन आणि निसर्गातील परस्परावलबंनचा गहन विचार केलेला आहे. हे विचार निव्वळ सद्यकालीन प्रश्नांचा तात्पुरता मागोवा घेणारे नाहीत तर या चिंतनात जीवनाच्या सातत्य आणि विकासा समवेतच स्थायी स्वरूपाच्या जीवनप्रणालीचा वेध घेतलेला आहे. त्यांच्या चिंतनाला कृतीपरतेचा अन्वय लाभलेला आहे. गांधीजींप्रमाणे विनोबानी विशिष्ट विषयाचे समग्र विवेचन करणारा ग्रंथ लिहिलेला नसला तरी त्यांच्या चिंतनात सूत्रबध्दता आहे आणि ग्रंथाची व्यापकता आहे, विनोबाजी गांधीजींचे अनुयायी आणि आध्यात्मिक वारस मानले जातात, मात्र त्यांनी गांधीजीचा फक्त वारसाच चालविलेला नाही. ग. प्र. प्रधान म्हणतात, गांधी विनोबा हा एक अतूट विकास प्रक्रिया आहे.

विनोबांची ग्रंथसंपदा तीन प्रकारची आहे. एक म्हणजे त्यांनी स्वत: लिहिलेली यात मधुकर आणि गीताई चा प्रामुख्याने समावेश होता. १९२४ ते १९२८ या कालखंडात महाराष्ट्रधर्म या साप्ताहिकात लिहिलेले लेख यात येतात. दुसरा प्रकार म्हणजे ते बोललेले आणि सहकाऱ्यांनी लिहून घेतलेले. या प्रकारात गीताप्रवचने, भूदान गंगा भाग १ ते ९ आणि इतर पुस्तकांचा समावेश होतो. तिसऱ्या प्रकारात त्यांनी

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

16. Hunger and Exploitation in Bhabhani Bhattacharya's So Many Hungers

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Abstract

Bhabani Bhattacharya is a champion of social change and human betterment. He is known for his social realist fiction. His *'So Many Hunger'* is a heart warming and moving novel, based on the man made famine. It deals with the great Bengal Famine of 1943 and quit India Movement of 1942. The paper presents the hunger and exploitation of the peasants and the moral degradation of the rich landlords and the capitalists and indifference of the government officials.

Keywords: Famine, exploitation, degradation, peasants, capitalist.

Research Paper (Introduction)

Among the galaxy of Indo – Anglian novelist Bhabani Bhattacharya is reckoned as one of the strongest voices of all times. He deals with the socio political aspect of the 40's. He has a keen eye to observe the minutest details from Indian culture, tradition and religious beliefs. The novel, *'So Many Hungers'* shows the prevalence of hunger and exploitation, it develops the social theme of scarcity, deficiency and mental unrest. This socio political novel is an authentic record of the Bengal Famine of 1943 and Quit India Movement. Bhattacharya was deeply influenced by Gandhian Ideology of Non-Violence and humanism. He lived in a period when India had full urge for freedom from the British.

The story centers round the Basu, a peasant family. Bhattacharya sketches the characters of the girl kajoli, her mother and her brother. Another urban family of samendra basu in Calcutta, his wife, two sons, Rahul, his wife Manju and Kunal. The families make the two components of the plot. The stories of these two families run parallel till the end of the novel.

Being a social realist Bhattacharya is engrossed with human predicament. He analysis the real cause of famine. According to Bhattacharya the inefficiency or unwillingness of administration leads to this man made famine. Although the ' Theme of Hunger' is recurrent in Bhattacharya's novels, he presented several aspects of hunger in his novels, and artistically weaved the web where one hunger breeds another. *So Many Hunger* deals with man's hunger for liberty, hunger for food, hunger for authority, hunger for sex, hunger for wealth, hunger for recognition and also larger than self, hunger for welfare and happiness for the common people.

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

with determination Devesh Basu, popular and respected as 'Devata' among villagers of Baruni and an ardent follower of Gandhiji, decides to live in the village as a part of villager's life. Dedicated family of Kajoli reveals their desperate hunger for freedom; they sacrifice their selfish interest and jump in the fire of freedom. Devata sows the seed of revolt in them, following path of non-violence.

Bhattacharya focuses on freedom struggle through the character of Devata. Actually the utter indifference on the part of British Government towards famine was due to fast spreading National awareness for freedom. Without discrimination old, young, women participated in National movement with great fervour. The unity made restless to British Government. So they started to put leaders behind the bar. In the early part of the novel Devata is also arrested for his active participation in freedom movements but before he is taken behind the prison he gives advice to his beloved folk of villagers to follow the way of non-violence:

> "Friends and comrades do not betray the flag. Do
> Not betray yourselves. There is violence in your
> Thoughts; that is evil enough. Do not make it worse
> By violence in action..... ours is the-harder task. If
> We use the weapons of our enemy, we play into
> Their hands. The supreme last has come. Be strong,
> Be true. Be deathless".[2] (SMH. P.no.101)

Kajoli is deeply influenced by Devata's non-violation ideology. In spite of all difficulties and sufferings Kajoli proves to be a strong girl, she leads her life with support of her mother and younger brother Onu. Kajoli is a traditional, girl who has a dream as any ordinary Indian girl to marry someone and have a sweet home and children, but unfortunately she has a very brief spell of happiness just after few days of her marriage to Kishor her sweet dream breaks into pieces as her husband is shot dead by sentry when he was on his way to Calcutta for the search of some 'employment in a mill. Unknowing the fact pregnant Kajoli madly waits for his returns.

Bhattacharya realistically presents the tragedy of Bengal famine of 1943, and also stress the real causes behind it and disastrous effect on common masses. The Bengal famine was result of obsession for money and power, took a toll of million innocent men, women and children. The person like Sir Lakshminath and Samarendra Basu satisfied their hunger for wealth by holding stock of rice for long time. The web was created from small traders of village to main director of 'Company sarkar', and the web becomes more woolly with addition of self-interest. And peasants become silent sufferers of greed.

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

laws and historic Quit India Resolution. Though the character 'Devata' or Devesh Basu. Bhattacharya presents the effect of Gandhian Movements on common masses, their sacrifices for freedom and brutality on the side of Britishers in shudder evoking manner.

Focal theme of the novel is hunger for food and political freedom. The twin concepts of hunger is dealt with the central story of the novel. The story is developed with two plots, first plot shows accomplished family of Samarendra Basu and his two sons and second plot shows rural aspect with Kajoli and her family. These two plots link and combine with the common character Devesh Basu, father of Samarendra Basu who ideally differs from his businessman son and the most prominent soldier in the battle of freedom.

The novel presents Rahoul's hunger for new world founded on higher values. He is a D.Sc of the University of Cambridge. He is intellectual scientist and greatly interested in the political affairs of his motherland. He has strong feeling for humanity and betterment for common people. His constant hunger for people's welfare never allow him to sit quiet. He is deeply influenced by his grandfather, Devesh Basu a true follower of Gandhian ideology, his primary interest after retirement has been the village reconstruction work. For his participation in the freedom movement he spent seven years in the prison. Utterly unlike to his father, Samarendra Basu is a practical person who looks upon war and famine as golden opportunity to earn unlimited money and increase prosperity. During the crucial time of war, he was busy in his selfish idea to monopolize rice and to become the Army's lone supplier. To satisfy his greed for wealth he opened rice supply agency ironically named" Cheap rice Ltd.' Through the character Samarendra Basu and Sir Lakshminath, Bhattacharya presents the hunger for more money, social prestige;, titles, riches and sex.The name Sir Lakshminath reveals his interest, in money itself. He is the prince of the black market and director in the company which Samarendra is part of Destitute maidens become easy prey for him to satisfy his hunger for sex. In the name of social service he seduces helpless girls. He is an expert player of flesh trade, prepares to advantage the destitute' dilemma: whether to starve or sell one's body. He is the head of .the brothel,one of the fastest growing business in the city.

Bhabani Bhattacharya slowly reveals the darker shade of hunger through the moving story of Kajoli and her family. Kajoli is the heroine of the novel. A pleasant girl of seventeen with a beautiful dream for her future life, but it breaks horribly proving the saying 'it never rains but pours'. Her father and elder brother are sent in prison because of their participation in India's freedom struggle. Overnight seventeen years 'girl prepares to shoulder responsibilities of her younger brother and aged mother. Deadly. famine adds pain beyond 'her bear. But she faces it

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

With the reference to the Bengal Famine of 1943 and The Quit India Movement of 1942, Bhattacharya presents central theme of hunger for food and political freedom. The novel is full of horrible scenes of hunger and it also symbolizes the novelist's hunger for human values. In the novel Bhabani Bhattacharya discloses the circumstances behind the Bengal famine of 1943. The famine was man-made scarcity; the actual reasons were rooted in the dark reality of war when the world was set on the fire during the second world war, two things were in demand, first was food and second was free place for military camp. Under the strategies of British Government focused on Bengal as center for war, giving pretext of an invasion of Bengal by the Japanese through the way of the Bay of Bengal. They misguided poor peasants of Baruni by spreading rumors that the fisher folks will face the first assault from the war. As the Japanese were coming nearer and nearer to the Bay, the agents of the rulers came to burn their boats. So the enemy would be bogged down and helpless. This was the beginning of the community's economical downfall since the fisher folks were robbed of their only means of earning. For them it was robbery of their life. Without boats the fisher folks would be like body without soul:

> 'Boats. Boats are the limbs of us folks. They are our legs,
> for we without them are lamed, we cannot move over
> the river highways from village to village or from islet to
> islet. They are our arms, for with them we reap the fish and
> some fish we eat and some we give for rice and salt and things
> on offer at the market-place. Boats are more than limbs for us folk.
> They are our blood and bone and heart and soul and all.'[1] (SMH.P.no.75)

The innocent fishermen had no idea about the Japanese invasion and still believed in the fact that, they were ruled by East India Company. The second strategy of company was to buy all rice from the village. Some callous people like Girish, the grosser of the village helps the company in it to fulfill his own hunger for wealth. This is scheme of the Government and businessmen to buy the rice, continue its supply to military troops and even to England, resulting deadly scarcity of rice and sky touching prize in Bengal. Government and businessmen became successful in their callous strategy by spreading the word, that the Japanese will loot the barns. Therefore, it would be better to sell rice to the Government so that rice will not go to the hands of the evil ones. The vulture in human form feed their hunger by killing humanity.

So Many Hungers was published in 1947 Just couple of months after Independence of India. In this novel Bhattacharya speaks about hunger for political freedom through various Gandhian Movements such as Civil Disobedience, the long march to Dandi for violating the salt

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

However, the innocent people become animals just because of hunger and they start eating what the animals refuse to have. Bhattacharya penned the horror of hunger by depicting the incident where a starving mother wants to bury her alive son,in order to save him from the torture of hunger and slow death; the second picture of a child clinging and sucking a dead mother's breast. Uncountable maidens and women are forced to accept prostitution. The novel is full of disturbing incidents when humiliation becomes a fate of the hungry. The rich people treat destitute as a mode of entertainment, when soldiers get fun by enjoying helpless gestures of a maiden for a coin, she stands in bare in front of them, some people amazed by getting naked photo of destitute maiden and some demand to show her breast. Bhattacharya in his *'So Many Hungers '* presents 'What hunger really means.

Bhabani Bhattacharya focuses on the dark reality of time, . when inner degradation and moral implications of human are flushed out due demon of starvation. The word 'Humanism' becomes meaningless for them. When a starving mother continues to eat food at a free kitchen, though her child dies in her lap in want of food. She goes on taking her meal she finishes her meal, and leaves her dead child at the same place and goes on without sign of regret. Here is another incident of depravity caused by hunger. *A* destitute mother gets some handful of rice after hard work throughout the day. When at sunset, on her way home a hungry man attacks her and runs away with the grain. The circumstances become so cruel that Onu a noble young boy becomes a hoarder for his pregnant sister and aged mother. Bhattacharya painfully delineates the difficult period:

"But hunger had debased his warn, innocent spirit. He had become a hoarder. He hoarded for himself and his sister and mother the wild green figs on tree-tops which none but he could reach."[3] (SMH. P.no.159) .

Even Kajoli at the state of hunger forgets her hungry brother and mother and eats covetously her entire bread, inattentive towards the bad touch of soldier. The people know no other word but food.

Finding no hope in the village, the peasants have to leave their native places. Kajoli also is one of the preys of famine; she is now an expected mother. Nothing edible is left around. She tries to fight against the calamity but the condition changes its shape worse to worst, ultimately they decide to move on, attract towards the lighthouse 'Calcutta' to get a mouthful and little work. Kajoli is now isolated from her husband and excluded from society. She suffers the anguish of a tortuous state of loneliness. She leaves her village but misfortune continues haunting her and family. She gets new status of 'city destitute' not food and shelter. The gulf

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

between is unbridgeable. Vultures in human form keep their eye on the victim. Kajoli is cauhgt in trap, as any pray attracts toward food, Kajoli meets an Indian soldier and begs him for food. She gets food but in lieu of it the soldier rapes her, his lust results in brutal rape and painful abortion. But the soldier feels bad for his filthy deed, as he couldn't control his hunger for sex, through the soldier the novelist raises questions:

> "Why were those innocent people doomed to hunger
> and death while the Army had rice and wheat to
> squander? Who but the peasants had created the
> food grain- not the Colonel, not the JungiLat, the
> C-in-C. With the peasants wiped out from the land
> none would get a mouthful to sat."[4] (SMH. Pno.205)

The novelist reveals unmistakable essential goodness and nobility of hungry people who sacrifices their food for needier understanding the ache of hunger. Kajoli's mother gives her cow to needy mother, in order to save her child from brutal starvation, the cow is one of the family member for her kids. Some kind hearted wealthy people like Rahoul runs free kitchen for hungry.

Bhattacharya ends the novel with note of affirmative vision of life. Kajoli's struggle for life takes her at the door of brothel. At first she rejects the offer to earn money by selling her body and soul, but her uncountable miseries and sufferings makes her quite agreeable to the offer, she also wants to provide food to her brother and mother. Her mother on the other hand decides to commit suicide to get rid of all suffering.

Kajoli suffers a lot from conflict between situations compulsions and moral considerations. She never intends to live a sinful life but utter poverty urges her to sacrifice her virginity and stoop to immorality. Consequently it leads to the loss of her identity. Her internal war between good and bad makes psychopathic and suffers from rootlessness and meaninglessness. But all is not lost when she is on her wrong way she hears the news of her dear Devata's going to become the leader of the 'Satyagrah'. This information transforms her and she decides not to surrender.

Conclusion

It was Bengal famine of 1943 which impelled Bhattacharya to write a novel and the result was *So Many Hungers.* Bhattacharya artistically discriminated man's hunger from greed, hunger of common masses for food and freedom and greed of rich for more money, power, prestige, honour and sex.

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If there is any protagonist in the novel, it is hunger. All the characters represent various types of hunger. Rahoul is a victim of 'So Many Hungers'. He shows his hunger for research and freedom. Kunal has hunger for adventures. Samarendra has hunger for money. Manju is hungry for money. Devesh Basu and Kajoli's father and brother have shown hunger for freedom. The novel shows the prevalence of hunger and exploitation. Bhattacharya accuses the poor for their situation but he believes that their faith in God gives them courage to fight against hunger. Their faith makes them embodiment of robust life full of energy and fearlessness. They are strengthened and not softened by exploitation. The novel successfully documents the hunger and exploitation through the behavioural pattern of various characters.

The abbreviation SMH is used for *'So Many Hunger'*.

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List of Peer Review Research Paper 2017-18

Sr. No.	Year	Author	Paper Title	Link
1	2017-18	Dr.Kiran R. Belurkar	Mahila saskhamikarnat Gruhaarthashastrache Yogadan	WWW.IRASG.COM
2	2017-18	Dr.Kiran R. Belurkar	Mahila Sashaktikarnatil Mahattvacha Tappa "Sukshm Vitta puravatha".	Shri Param Hans Education & Research Foundation Trust Www - DocsLib
3	2017-18	Dr.I.M Rajput	Shetkaryanchya Samasyababat Mahatma Jyotiba Fule yanche Vichar	https://jctindia.org
4	2017-18	Dr. M.M. Pimpale	A Study of Various Tax Assesment on Nagarpalika of Amravati Dist.	-
5	2017-18	Dr. M.M. Pimpale	A Critacal Study of Tax Assessment in Nagarpalika of Amravati Dist.	
6	2017-18	Dr. L. D Bodile	Notbandi vs Vastu Savakar Pranali	www.aiirjournal.com
7	2017-18	Dr. L. D Bodile	Managing People Tomorrow	https://www.troindia.in
8	2017-18	Dr. A B Ingole	Serum electrolyte sodium and pottasium observed in tribes of Chikhaldara region Melghat, Dist. Amravati	www.vmsindia.org
9	2017-18	Dr. A B Ingole	Haemoglobin Concentration Among the people in slum area (Amravati,India) Survey and Discussion	https://www.aiirjournal.com/
10	2017-18	Dr. A B Ingole	Pragmative Influence of Anthropomety and Dietary Position in tribal Region; critical micro analysis	https://www.aiirjournal.com/
11	2017-18	N. N. Gedam	Structure and gas Sensing application of nanocrystalline $LaCrO_3$ synthesized by sol – gel method.	www.aiirjournal.com
12	2017-18	N. N. Gedam,	Preparation and study of alcohol gas sensing behaviour of $CuFe_2O_4$ thick film resistors	http://www.ijesi.org
13	2017-18	S. P. Kalbende	Study of Fungal Air Abundance, Diversity in Indoor Environment of College Library	https://www.aadharsocial.com/Jurnal.aspx
14	2017-18	R. B. Pedhekar, F. C. Raghuwanshi	CeO_2 activated ZnO-TiO_2 thick film for CO_2 gas sensor.	-
15	2017-18	Dr. M.M. Pimpale	Jagatik Spardha - Bhartiy Arthavevastecha	www.irasj.com
16	2017-18	Dr. S.S. Somvanshi	Nave Arthik Dhoran v sawdeshi chalwalichi garaj	www.vidyawarta.com
17	2017-18	Dr.I.M Rajput	Bhartatil Manav Sansadhan Vikas Ek Abhyas	www.vcjournal.net
18	2017-18	Dr. L. D Bodile	Human Resource Management Revied Marketing Sense of HRIn Family Firms	www.aadharsocial.com

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महिला सक्षमिकरणात गृहअर्थशास्त्र विषयाचे योगदान

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प्रस्तावना :

भारतीय समाजात महिला सबलीकरण किंवा सक्षमिकरण हा शब्द प्रयोगच पूर्वी अस्तित्वात नव्हता परंतु आधूनिक काळात हा शब्द प्रयोग देशाच्या कानाकोपऱ्यात पोहचलेला आहे. १९४८ साली संयुक्त राष्ट्रसंघात मानवी हक्काची सनद तयार करण्यात आली १९८५ मध्ये नैरोबी येथे भरलेल्या आंतरराष्ट्रीय महिला परिषदेत सबलीकरण ही संकल्पना मांडण्यात आली. महिलांच्या आर्थिक विकासाच्या संकल्पनेतुनच सबलीकरण ही संकल्पना उदयास आली महिला सबलीकरणात स्त्रियांमध्ये आत्मसन्मान व आत्मविश्वास निर्माण करणे,सामाजिक व आर्थिक दृष्टया सकारात्मक दृष्टीकोन विकसित करणे, निर्णय घेण्याची क्षमता निर्माण करणे विकास प्रक्रियेत समान भागीदारी प्राप्त करुन देणे इत्यादी गोष्टी अंतर्भूत आहेत.

आजचे युग हे महिला तंत्रज्ञानाचे युग आहे. विज्ञान व तंत्रज्ञान यामुळे नविन बदल स्विकारणे अपरिहार्य आहे. विज्ञान व तंत्रज्ञानाचा सुरेख मेळ गृहअर्थशास्त्रामध्ये पहायला मिळतो. दैनंदिन जीवनात प्रगती पथावर नेण्यात गृहअर्थशास्त्राची फार मोठी भूमिका आहे. प्रगत जीवन साकार करण्याचा सकारात्मक दृष्टीकोन या शिक्षणातून प्राप्त होतो. सामाजिक परिवर्तनाबरोबर विभक्त कुटुंब पध्दती अस्तित्वात आली नविन बदल बदलत्या जीवन शैलीचे आव्हान पेलन्याचे सामर्थ्य, क्षमता, गृहअर्थशास्त्र या विषयात निश्चितच आहे. जीवन आणि प्राप्त परिस्थितीतील आव्हाने यांचा सुरेख संग साधणारे हे शिक्षण आहे.

प्रगत जीवनाची वाटचाल करतांना गृहिणीला आपल्या क्षमता कला कौशल्य विकसित करण्यात हा विषय वाटाडया म्हणून काम करतो. या विषयाच्या माध्यमातून गृहसजावटीचे शास्त्रीय ज्ञान, पुष्परचनेची विकसित तंत्रे, आहार व पोषण शास्त्र, ग्राहक उपभोक्ता अर्थशास्त्र, वस्त्रशास्त्र, मानवी संबंध, गृहविज्ञान विस्तार इ. जीवनावश्यक बाबींचा प्रशस्त मार्ग म्हणजे गृहअर्थशास्त्र.

(फरकाडे त्रिवेणी व सहकारी जुलै२०१७)

ज्यावेळी एक महिला आर्थिकदृष्टया सक्षम होते तेव्हा तिच्या कुटुंबाला पौष्टीक आहार, आरोग्याची निगा आणि शिक्षणाची संधी मिळण्याची खात्री असते. ज्यावेळी सामाजातील दुर्बल घटक सर्वाथाने सक्षम होतो तेव्हा ते राष्ट्र भक्कम आर्थिक व सामाजिक शक्तीचे बनते भविष्यात स्वयंरोजगारच अर्थव्यवस्थेचा केंद्रबिंदु ठरणार आहे त्या दृष्टीने गृहअर्थशास्त्र विषयाव्दारे दिले जाणारे शिक्षण स्वयंरोजगार निर्माण करण्यास निश्चितच उपयुक्त ठरणार आहे.

व्याख्या :—

लेकप्लेसिड सम्मेलन (१९०२) यांचे नुसार ''गृहअर्थशास्त्र म्हणजे मानवाच्या तत्कालीन गरजांशी तसेच भौतिक संबंधांशी निगडीत असलेल्या नियमाचे, स्थितीचे, सिध्दांताचे तसेच आदर्शाचे अध्ययन होय.''

डॉ. टोन्डकर यांच्या मते ''व्यक्तीला स्वत:ची शारिरीक व मानसिक ओळख पटवून देवून जीवनावश्यक शिक्षण देणारा तसेच अर्थजनाकरीता मदत करणारा विषय म्हणजे गृहअर्थशास्त्र होय.''

(कांडलकर लिना जानेवारी २०१२)

उदिष्टये :—

प्रस्तुत अध्ययनाची उदिष्टये पुढील प्रमाणे निश्चित करण्यात आली.

१. महिला सक्षमिकरणातील गृहअर्थशास्त्राचे महत्व अभ्यासणे.
२. गृहअर्थशास्त्राच्या माध्यमातुन स्वयंरोजगार निर्माण करण्याचा प्रयत्न करणे.

३. आरोग्य विषयक जागृकता निर्माण करणे

गृहितके :—

- गृहअर्थशास्त्र या विषयाचे महिला सक्षमिकरणामध्ये अनन्य साधारण महत्व आहे.
- गृहअर्थशास्त्राच्या माध्यमातुन निश्चितच स्वयरोजगार मिळविण्याचा प्रयत्न केला जातो.
- आरोग्य विषयक जागृकता निर्माण होते.

संशोधन पध्दतीची निवड व नमुना निवड:—

"महिला सक्षमिकरणात गृहअर्थशास्त्र विषयाचे योगदान" या प्रस्तुत विषयाचे अध्ययन सोईस्कर व्हावे म्हणून नमुना निवड करण्यासाठी यादृश्चिक नमुना निवड पध्दती वापरण्यात आली त्याकरीता बीए भाग ३ मधील गृहअर्थशास्त्र विषयाच्या एकूण २० विदयार्थीनींची नमुना म्हणून निवड करण्यात आली.

तथ्य संकलनाकरिता वापरलेली साधने :—

प्रस्तुत अध्ययनात मिळालेली माहिती ही प्रामुख्याने उत्तरदात्यांनी दिलेल्या मौखिक स्वरुपाच्या उत्तरांशी निगडीत आहे. याकरीता मुलाखत, अनुसूची आणि निरीक्षण तंत्राचा वापर करण्यात आला.

परिणाम व चर्चा

महाविदयालयीन विदयार्थीनीच्या माध्यमातुन प्राप्त माहितीची मांडणी अध्ययनाच्या उद्दिष्टांना अनुसरुन करण्यात आली महिला सक्षमीकरणात गृहअर्थशास्त्र विषयाचे महत्व जाणुन घेत असतांना महाविदयालयीन विदयार्थीनीकडुन प्राप्त माहीतीचे विश्लेषण पुढील प्रमाणे करण्यात आले आहे.

अनु क्र.	विवरण	पर्याय		
		सहमत	असहमत	तटस्थ
१	अंगभुत कला गुणांना वाव मिळतो	१४(७०)	०२(१०)	०४ (२०)
२	घरगुती कार्याचे ज्ञान होते	१८(८०)	.....	०२(१०)
३	निर्णय घेण्याची क्षमता वाढते	१२(६०)	०२(१०)	०६(३०)
४	स्वयरोजगाराचे ज्ञान मिळते	१७ (८५)	.....	०३(१५)
५	मिळविलेल्या ज्ञानाचा उपयोग अर्थप्राप्ती करीता करता येतो	१८(९०)	.....	०२ (१०)
६	बालकांच्या संर्वांगीण विकासाला पोषक माहिती मिळते	१८(९०)	.....	०२(१०)
७	आरोग्य विषयक जागृकता निर्माण होते	१९(९५)	.....	०१(०५)
८	अभ्यासक्रम व्यवसायभिमुख आहे	१८(९०)	.....	०२(१०)
९	व्यक्तीमत्व विकसात मदत होते	१६(८०)	०१(०५)	०३(१५)
१०	सदृढ पालक बालक संबंधांची जाण होते	१४ (७०)	०२(१०)	०४ (२०)

महिला सक्षमिकरणात गृहअर्थशास्त्राचे योगदान

कंसातील आकडे टक्केवारी दर्शवितात

अंगभूत कलांगुणांना वाव मिळतो या विधानाशी ७०%विदयार्थीनी सहमत असुन २०%विदयार्थीनी तटस्थ होत्या तर १०%विदयार्थीनी असहमती दर्शविली.

प्रत्येक व्यक्तीला अंगभुतकलागुण व त्याला अनुसरुन प्रशिक्षण मिळाल्यास व्यवसायामध्ये व्यक्तीला यशाचे शिखर प्राप्त करणे सहज शक्य होते. व्यक्तीमध्ये असलेल्या जन्मजात कला, कौशल्याला खतपाणी घातले की त्याचा विकास होवून ते चरीतार्थाचे साधन बनते.

घरगुती कार्याचे ज्ञान मिळते या विधानाशी ९०%उत्तरदाते सहमत असुन केवळ १०%विदयार्थीनींनी तटस्थ भूमिका दर्शविली गृहअर्थशास्त्राच्या अभ्यासातुन गृहकार्यांचे धडे दिले जातात त्यामुळे परंपरागत मिळणारे ज्ञान जरी विभक्त कुटुंबामुळे कमी झाले असले तरी या विषयाच्या माध्यमातून त्याची पुर्तता केली जाते.

निर्णय घेण्याची क्षमता वाढते या विधानाशी ६०%उत्तरदातेसहमत असुन १०%असहमत आहेत

तर ३०%विदयार्थीनी तटस्थ भुमिकेत असलेल्या आढळल्या यावरुन महत्वाचे निर्णय घेणे ही प्रक्रिया अवघड असल्योच दिसून येते.

स्वंयरोजगाराचे ज्ञान मिळते या विधानाशी ८५%विदयार्थीनी सहमत असून केवळ १५%उत्तरदाते तटस्थ असल्याचे दिसून येते गृहअर्थशास्त्र विषयाच्या माध्यमातून प्रात्याक्षिकाव्दारे विदयार्थीनींना विविध प्रकारचे वस्त्र प्रावरणे, विविध पदार्थ, मसाले, जॅम, जेली, केचअप बनविणे कलात्मक वस्तु बनविणे कचऱ्यातुन कला या विषयी दिलेल्या ज्ञानाचा उपयोग त्या स्वंयरोजगार करण्याकरीता करु शकतात.

मिळवलेल्या ज्ञानाचा उपयोग अर्थप्राप्तीकरीता करता येतो या विधानाशी अध्ययनाकरीता निवडलेल्या एकूण उत्तरदात्यांपैकी ८५%उत्तरदाते सहमती दर्शविता तर केवळ १०%उत्तरदाते तटस्थ भूमिका घेतात. यावरुन गृहअर्थशास्त्र या विषयाच्या माध्यमातुन मिळविलेल्या ज्ञानाचा उपयोग अर्थजनाकरीता करुन आर्थिक स्थैर्य प्राप्त करण्याचा आणि त्यातुनच आर्थिक सक्षमिकरण्याचा हा मार्ग असल्याचे दिसुन येते.

बालकाच्या सर्वांगीण विकासाला पोषक माहिती मिळते या विधानाशी अध्ययनातील ९०%उत्तरदात्यांनी सहमती दर्शविली असुन केवळ १०%या बाबत तटस्थ असल्याचे आढळते. यावरुन गृहअर्थशास्त्र विषयांतर्गत मानव विकास या शाखेअंतर्गत बालकाच्या शारीरिक, मानसिक, बौध्दीक, कारक विकासासंबंधी मिळालेली माहिती विदयार्थीनींना भावी जीवनात उपयोगी पडू शकते.

आरोग्य हे स्त्री विकासाचे व समाज परीवर्तनाचे साधन आहे तर व्यक्तीपरीवर्तनाचे मुख्यसाधन शिक्षण आहे यालाच अनुसरुन अध्ययनातील उत्तरदात्याकडून आरोग्य विषयक जागृकता या विषयी माहीती जाणुन घेतली असतांना ९५%विदयार्थीनी या मताशी सहमत असल्याचे तर केवळ ५%तटस्थ भूमिकेत असल्याचे निदर्शनास आले.

अभ्यासक्रम व्यवसायभिमुख आहे या विधानाची सत्यता पडताळली असता ९०%उत्तरदात्यांनी विधानाला सहमती दर्शविली तर १०%तटस्थ भुमिकेत असल्याचे आढळुन आले.

यावरुन गृहअर्थशास्त्र या विषयाअंतर्गत प्रात्याक्षिकांच्या माध्यमातून मिळणाऱ्या ज्ञानाचा उपयोग व्यवसायाला पूरक ठरतो त्यामुळे व्यवसायातुन आर्थिक सक्षमता येत असल्याचे दिसुन येते. आर्थिक स्रोत उपलब्ध झाल्यामुळे स्त्री स्वावलंबी बनते. त्यातुनच तिला कौटुंबिक गरजांची जाणीव व्हायला लागते.

व्यक्ती विकासाच्या दृष्टीने आरोग्य, शिक्षण, आर्थिक स्वांवलंबनविषयक जाणीव असने अत्यंत महत्वाचे आहे. यालाच अनुसरुन व्यक्तीमत्व विकासात या विषयाची मदत होते. या विधानाबाबत माहिती जाणून घेतली असता ८०%उत्तरदात्यांनी सहमती दर्शविली असून १५%उत्तरदाते तटस्थ भुमिकेत होते तर केवळ ५%विदयार्थीनी या विधानाशी असहमत असल्याचे दिसून आले.

यावरुन गृहअर्थशास्त्र या विषयाचा लाभ व्यक्तीमत्व विकासाच्या दृष्टीने विदयार्थीनींना होतो त्यातुनच त्या सक्षमिकरणाकडे वाटचाल करतांना दिसून येतात.

समाजामध्ये वावरत असताना प्रत्येक घरामध्ये पालक बालक संबंध सुदृढअसावेत यालाच अनुसरुन सुदृढ पालक बालक संबंधाची जाण होते. या विधानाशी अध्ययनातील ७०%विदयार्थीनींनी सहमती दर्शविली असून २०%तटस्थ भूमिकेत होत्या. तर केवळ १०%विदयार्थीनींनी असहमती दर्शविली.

यावरुन बालकाच्या सर्वांगीण विकासाच्या दृष्टीकोनातुन पालक बालक संबंध हे कसे पोषक असावेत याबाबत या विषयाच्या माध्यमातुन दिल्या जाणाऱ्या ज्ञानाचा फायदा विदयार्थीनींना भावी आयुष्यामध्ये निश्चितच होतो असे निदर्शनास येते.

निष्कर्ष:

उपरोक्त अध्ययानाचे निष्कर्ष पुढील प्रमाणे मांडण्यात आले

- गृहअर्थशास्त्र विषयाच्या ज्ञानामुळे अंगभूत कला गुणांना वाव मिळतो.
- घरगुती कार्याचे ज्ञान प्राप्त होते.
- मिळविलेल्या ज्ञानाचा उपयोग स्वंयरोजगाराकरीता करुन अर्थप्राप्ती करता येते.
- बालकाच्या सर्वांगीण विकासाला पोषक माहिती मिळाल्यामुळे सुदृढ पालक बालक संबंध प्रस्थापित होण्यास मदत होते.
- आरोग्यविषयक जागृकता निर्माण झाल्यामुळे व्यक्तीविकासाला मदत होते.
- गृहअर्थशास्त्र विषयाचा अभ्यासक्रम व्यवसायाभिमुख असल्यामुळे माहिला सक्षमिकरणामध्ये या विषयाची भुमिका महत्वपुर्ण ठरते.

सुचना व शिफारशी :–

- गृहअर्थशास्त्र विषयाच्या माध्यमातुन मिळणाऱ्या ज्ञानाचा उपयोग विदयार्थीनींनी आपल्या दैनंदिन जीवनात करुन कुटुंबाच्या विकासात भर घालावी.
- विषयाअंतर्गत मिळालेल्या ज्ञानाच्या माध्यमातून स्वंयरोजगार करुन आर्थिक सक्षमिकरणाच्या दिशेने झेप घ्यावी.

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(बचतगट चळवळ)

प्रा. सौ. किरण राजेंद्र बेलूरकर
महात्मा ज्योतीबा फुले महाविद्यालय, भातकूली, जि. अमरावती

प्रस्तावना -

अनादी काळापासून स्त्री ही सृष्टीची जननी समजली जाते, पौरानिक काळात तर तिला देवता मानले जात होते. स्त्री म्हणजे मानवी संस्कृतीच्या अग्रभागी असलेला श्रीकार आहे. आजपर्यंत कोणत्याही देशाचा अगर समाजाचा विकास विचारात घेतल्यास असे दिसून येते कि, जेथे स्त्रीयांची सांस्कृतिक पातळी सुधारलेली आहे किंवा होती तेथे विकासाची बीजे मुळे धरु लागली व विकास साध्य झाला.

जसजसा काळ बदलत गेला तसतशी स्त्री जीवनात स्थित्यंतरे होत गेली. प्राचिन भारतीय स्त्रीयांना अत्यंत महत्वाचे स्थान होते. पुरुषांच्या बरोबरीने समानतेची वागणूक मिळत होती परंतू जेव्हापासून नांगराची शेती सुरु झाली तेव्हापासून स्त्रीचे महत्व हळहळू कमी होवू लागले वैदिक संस्कृतीच्या उगमानंतर स्त्री ही गुलाम होत गेली मध्ययुगीन काळात स्त्रीयावर होणारे अन्याय व अत्याचार यामुळे तिच्या स्वातंत्र्यावर गदा आली.

१७ व्या शतकात युरोपमध्ये झालेल्या औद्योगीक क्रांतीमुळे भारतात लघु व कुटीर उद्योग नष्ट होवून कमी वेतनात अधीक श्रम या माध्यमातुन स्त्रीयांच्या आर्थिक शोषणात सुरुवात झाली परंतू याच काळात सुमाजसुधारकांच्या माध्यमातुन स्त्रीयांचा दर्जा उंचावण्यासाठी शिक्षणाच्या सोई निर्माण केल्या गेल्या व खऱ्या अर्थाने स्त्रीविकासाला सुरुवात झाली. सावित्रीबाईनी स्त्रीला प्रतिष्टा मिळवून दिली आणि संपूर्ण मानवजातीचा विकास म्हणजेच समाजाचा विकास हे लोकांना कळू लागले. अनुभव समृध्दी विद्यासंपन्नता व्यक्तिमत्व विकास या गोष्टी आजच्या स्त्रीने मिळविल्या, अनेक नात्यांनी आपले आयुष्य सार्थकी लावणारी भारतीय स्त्री या २१ व्या शतकात समाजाच्या अनेक क्षेत्रात आज वावरत आहे. परंतू प्रगतीच्या दिशेने वाटचाल करतांना तिला अनेक प्रश्नांना समोरे जावे लागत आहे.

देश विकसित व्हायचा असेल तर तळागाळातील स्त्री विकसित झाली पाहिजे कारण कुटूंबाचा आधार स्त्री आहे.

त्यासाठी स्त्री सक्षमीकरण हे आजच्या युगाची महत्वाची गरज आहे. २१ व्या शतकात स्वयंसहाय्यता गट (बचतगट) चळवळ अत्यंत महत्वपूर्ण पध्दतीने महिला सक्षमिकरणात योगदान देत आहे. आंतरराष्ट्रीय पातळीपासून तर स्थानिक पातळीपर्यंत बचत गटाचे महत्व दिवसेंदिवस वाढतच आहे. वर्तमान काळात दारिद्रय निर्मुलनात बचत गटाचे अत्यंत मौलिक असे कार्य आहे. प्रा. डॉ. मोहम्मद युनूस यांनी बचत गट चळवळीची मुहूर्तमेढ बांगला ग्रामिण बँकेच्या मदतीने सत्तरीच्या दशतकात घातली. आज या बचतगट चळवळीची जगातील ३६७ राष्ट्रांपैकी संकल्पना उचलून धरली व अमंलात आणली. 'बचत छोटी पण यशस्वीता मोठी' अशी या योजनेची ओळख देता येईल दारिद्रयात खितपत पडलेल्या लोकांना सुखाचा ओलावा देण्याच्या उद्देशाने शासनाच्या प्रयत्नांना प्रत्यक्षात साकारण्याची नगरपालीका व महानगरपालीका यांच्या तर्फे द्रारिद्रय रेषेखालील कुटूंबाचे राहणीमान व आर्थिक स्तर उंचावण्याचा प्रयत्न या योजनेच्या माध्यमातुन केला जात आहे.

शोधनिबंधाची उद्दिष्टये -

१) समाजात असलेल्या दारिद्रय रेषेखालील महिलांचा अभ्यास करुन बचत गटाच्या माध्यमातुन त्यांची आर्थिक परिस्थिती सुधारण्याचा प्रत्यन करणे.
२) महिला सबलीकरणाच्या दृष्टिने बचत गटाचे महत्व जाणून घेणे.
३) बचतगटामुळे महिलांच्या व्यक्तिमत्व व समाजाभिमुखतेत होणाऱ्या बदलांचा अभ्यास करणे.
४) महिलांच्या बचत गटाचा त्यांच्या कौटूंबिक जिवनावर होणारा परिणाम अभ्यासणे.

गृहितके -

१. बचत गटामुळे दारिद्रय रेषेखालील महिलांची आर्थिक परिस्थिती सुधारत आहे.
२. बचत गटामुळे महिलांचे व्यक्तिमत्व व समाज सहभाग वाढत आहे.

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३. बचतगटामुळे त्या कौटूंबिक जबाबदाऱ्या यशस्वीरित्या पार पाडत आहे.

अभ्यास पध्दती -

प्रस्तुत शोध निबंधासाठी विश्लेषणात्मक पध्दतीचा अवलंब केलेला आहे. महिला सक्षमिकरणात सुक्ष्मवित्त पुरवठयाचे योगदान अभ्यासतांना द्वितीयक सामुग्रीचा आधार घेण्यात आला आहे. त्यासाठी विविध मासिके, दैनिक, शोधनिबंध, पुस्तके इ. उपलब्ध माहितीचा आधार घेण्यात आला आहे.

स्पष्टीकरण -

गरीबी निर्मुलन आणि महिला सक्षमिकरणासाठी बाग्लादेशाच्या जोब्रा खेडयात प्रा. महमंद युनूस यांनी तीस वर्षापूर्वी सुरु केलेल्या प्रयोगाला वैश्विक परिणाम आलेले आहेत. प्रा. महमंद युनूस यांनी समाजातील दुर्बल घटकांचे जिवनमान उंचावण्यासाठी ग्रामिण बँके सारखी अभिनव कल्पना दिर्घकाळ सक्षमपणे राबविली आणि त्यात संपूर्ण पारदर्शकता राखली, त्यांच्या अथवा परिश्रमामुळे लक्षावधी अभागी जिवांच्या जिवनात अक्षय प्रकाश अवतरला ही दिपमालीका जगातील लहान मोठया देशात उजळायला सुरुवात झाली आहे. बिड जिल्हयातील आचार्य टाकळी या गावातील ५०० महिला पैकी २८० महिलांनी २२ बचतगटाच्या माध्यमातून एकत्र येवून छोटे उद्योग, व्यवसाय सुरु केले आहे. महिलांसाठी एकत्र आल्यामुळे हे गट आज सक्षम झाले आहेत रेशन दुकान, पिठगिरणी, भाजीपाला, साडया, बांगडया विकणे, दुध डेअरी, शेळीपालन अशा विविध उद्योगाच्या माध्यमातुन गावाचा विकास झाला आहे. गावात १००% दारुबंदी झाली आहे. विशेष म्हणजे बँकेच्या कर्जाची परतफेड १००% आहे.

भंडारा शहरातील महिलांनी एकत्र येवून संगणीकृत लॅंड्री व्यवसाय सुरु करुन व्यवसायात ३२ लाचा रुपयांची गुंतवणूक केली त्यासाठी बंगलोर येथील तज्ञाकडून प्रशिक्षण घेतले आहे. या प्रकल्पामुळे इतरांनाही रोजगार मिळाला आहे.

मानवी विकासाच्या विविध पैलूबाबत निर्देशांक तयार करुन यु.एन.डी.पी. तर्फे जागतिक सर्वराष्ट्राची क्रमावारी लावली १९९७ च्या मानवी विकास अहवालात मानवी विकासाच्या दृष्टिकोनातून दारिद्रयाची संकल्पना याबाबत चर्चा केली आहे. कमी उत्पन्न असणे हे द्रारिद्रयाचे एक लक्षण आहे. परंतू दारिद्रयाचे हे एकमात्र लक्षण नाही तर निरक्षर असणे, सहज रोगाला बळी पडणे, समाजाच्या दैनिक व्यवहारात सामील न होणे या सारखी दारिद्रयाची अनेक लक्षणे सांगता येतील. दारिद्रय हा रोग असेल तर अल्प उत्पन्न हे एक लक्षण असू शकते.

"स्त्रियांच्या आर्थिक विकासात विविध योजनांचे योगदान-अमरावती जिल्हयाचे संदर्भात विशेष अध्ययन"

(कोटोल प्रशात २००६)

परिणाम व चर्चा -

प्रस्तुत संशोधनातून उद्दिष्टांचे मुल्यमापन करतांना संशोधकाला महिला बचतगट महिलांच्या आर्थिक विकास प्रक्रियेत महत्वाची भुमिका निभावत असल्याचे दिसून आले. या बचतीच्या प्रेरणेतून महिला स्वत:च्या आर्थिक समस्या व प्रश्न सोडविण्यासाठी सामुहिकरित्या प्रयत्न करतात. गटाव्दारे त्यांना स्वतंत्र आर्थिक पत प्राप्त होवून त्यांच्यातील आर्थिक व सामाजिक जाणीव सामुहिक जबाबदारी विकसीत होत असल्याचे दिसून येते.

प्रस्तुत शोधनिबंधासाठी अमरावती महानगरपालिका अंतर्गत असलेल्या एकता समुदायविकास समिती मधील एकूण २० बचतगटांचा अभ्यास करण्यात आला त्यापैकी एकूण १३ बचतगटांनी उद्योगासाठी कर्ज घेतले त्यातून मेणबत्ती उद्योग, रेडिमेड गारमेंटस, प्रवासी रिक्षा, किराणा व्यवसाय, धान्य विक्री, फाईल बनविणे, अशा व्यवसायला सुरुवात केली सर्व व्यवसाय धारकगट आपल्या कर्जाची परतफेड नियमित करतांना दिसुन आले. बँकेव्दारे त्यांना प्रथम फिरता निधी २५००/- रुपये प्रत्येक गटाला देण्यात आला व्यवसायासाठी घेतलेल्या कर्जावर अनुदान सुध्दा देण्यात आले.

निष्कर्ष -

(१) व्यवसायाच्या माध्यमातुन त्यांच्या कौटूंबिक गरजा भागविण्यास मदत झाली सामाजिक कार्यातही त्या सहभागी होवू लागल्या.

(२) स्वता: पैसा कमविण्यामुळे आरोग्य, मुलाचे शिक्षण, याकडे त्या लक्ष देवू लागल्या.

(३) पिण्याचे पाणी, शौचालयाचा वापर याबद्दल जागृकता निर्माण होवू लागली.

(४) त्यांची आर्थिक परिस्थिती सुधारायला लागली.

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(५) समाज सहभाग वाढला.

(६) कौंटूंबिक जबाबदाऱ्या त्या पार पाडू लागल्या, एकंदरीत महिलांना सुक्ष्मचित्त पुरवठयातुन उर्त्कषाचा मार्ग मिळाला.

संदर्भग्रंथ सुची

मुंडे एस. डी. (२००३) मानवी विकासाच्या दृष्टिकोनातून दारिद्रयाची संकल्पना यशमंथन, सप्टे २००३

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सुवर्णपथ यशोगाथा अमरावती महानगरपालीका अमरावती.

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7

शेतकऱ्यांच्या समस्यावावत महात्मा फुले यांचे विचार

डॉ. इंद्रजीत गोतीरिंग राजपूत
अर्थशास्त्र विभाग,
महात्मा फुले महाविद्यालय, विज्ञान व विद्युतराम राऊळत कला
महाविद्यालय, भातकुली, जि. अमरावती

Research Paper - Economics

प्रस्तावना :

महात्मा फुल्यांचे विचार आर्थिक विचार अत्यंत मौलिक आणि महत्त्वाचे आहेत. आर्थिक पिळवणूक जणू भारत देशाला लागलेला रोगच आहे. भारतातील जमीनदार, सावकार लोकांकडून गरीब मजुर, शुद्र व अतिशूद्र यांचे शोषण होत होते. समाजातील विविध स्वरूपाच्या प्रथा, परंपरा, अंधश्रद्धा व अज्ञान यामुळे समाज परिवर्तनास विरोध करीत होता. एकोणिसाव्या शतकात परिवर्तनास सुरुवात झाली. याचा अर्थ पारंपरिक गोष्टीला ताडे जाऊ लागले. त्याचा परिणाम म्हणून एकोणिसाव्या शतकास परिवर्तनास गती मिळाली. कारण याच शतकात समाजव्यवस्था बदल्यास अनेक समाजसुधारक, विचारवंतांनी प्रयत्न केले. यात महात्मा गांधी, राजाराम मोहनरॉय, रानडे, आगरकर इत्यादींचे कार्य हे परिवर्तनास कारणीभूत ठरलेले दिसून येते.

भारतीय खेडी ही त्याकाळी स्वयंपूर्ण होती. धान्य, वस्त्र, दैनंदिन गरजा आणि वस्तू गावपातळीवरच तयार होत असत. अन्नधान्याच्या बाबतीत स्वयंपूर्ण असल्यामुळे त्यांच्या गरजाही मर्यादित होत्या. बारा बलुतेदार आणि अठरा अलुतेदार पद्धती प्रचलित होती. शेतीत येणाऱ्या पिकांच्या हंगामाप्रमाणे वर्षातून दोनदा अथवा एकदा या ठराविक रोवेच्या मोबदल्यात धान्य द्यावे आणि या लोकांनी गावकऱ्यांची ठरलेली कामे सेवा म्हणून करावी अशी पद्धत अस्तित्वात होती.

महात्मा फुलेंच्या पूर्वी महाराष्ट्रात शेतकऱ्यांची अवस्था खूप वाईट होती. जगाला जगविणारा शेतकरी अडचणीत होता. महात्मा जोतीराव फुलेंच्या पूर्वी अनेक राजे, महाराजे, समाजसुधारक आले गेले पण शेतकऱ्यांच्या अडचणीकडे कोणीच लक्ष दिले नाही. उलट त्यांच्या अज्ञानाचा व देवळभोळेपणाचा फायदा सावकारांनी उचलला. यासाठी त्याकाळी असलेली नोकरशाहीही या सर्व गोष्टीस कारणीभूत ठरलेली दिसून येते.

फुलेंच्या काळात शेती व शेतकरी हा संपूर्णपणे सरंजामशाही, सावकारशाही, साम्राज्यशाही,

भटशाहीत अडकलेला होता. शेतकऱ्यांचा कोणीच वाली नव्हता. म्हणून ब्रिटिश शासनाकडून शेतकऱ्यांची विविध मार्गाने पिळवणूक केली जायची. शेतकऱ्यांविषयी त्यांच्या मनात असणारा कळवळा लेखनात अनेकविध रूप घेतो. कधी तो थारदार उपहासात्मक पिंडतीने तर कधी उपरोधिक पद्धतीने व्यक्त होतो. त्यांच्या उपहासात्मक शैलीचे उदाहरण पुढीलप्रमाणे पाहता येईल.

कायापुरती लंगोटी। फिरती मांगराचे पाठी।।१।।
एका घोंगड्या पांघुनी। स्त्रिया नरो दुजे शयनी ।।२।।
ढोरामागे सर्वकाळ। पोरे फिरती रानोमाळ।।३।।
ताक कढ्या पोटभरी। धन्य म्हणतो संसारी ।।४।।
असे परस्त्राची कमती। एकमेका चिटकती।।५।।
सरकारी पहीनेट। पडेतीन शेंड्या गाठ।।६।।
कर्जरोखी लिहिणे आर। निर्दय मारवाडी कोठ।।७।।
अज्ञान्याला समजत नाही। कुलकर्ण्याने लिहिले काही।।८।।
वकीलाची महागाई। न्यायाधिशाना दया नाही ।।९।।
पाप पुण्य येथे नाही। पैशापुरते दादाभाई।।१०।।
नित्य जमती एक नयी। शुद्रांची दाद नाही।।११।।
राजे धर्मशील म्हणवती। आता कारे मागे पेती।।१२।।
विद्याद्यायी पट्टीपुरती। धिःकारुनी त्यांगे ज्योती।।१३।।
(मारवाडी, भट यांचे कसबाविषयी अखंड. :)

महात्मा फुलेंनी शेतकऱ्यांच्या दयनीय अवस्थेचे चित्रण केले आहे. महात्मा फुलेंना जो प्रश्न भेडसावत होता तो म्हणजे दिवसभर उन्हा, थंडी, पावसाळ्यात शेतात काम करणारा शेतकरी दुःखी का व सरकारी ऐतखाऊ कर्मचारी सुखी का कारण या दोघांनाही अवयव तेवढेच व बुद्धी तेवढीच परंतु या दोघात एवढी विषमता का? या प्रश्नाच्या उत्तरासाठी त्यांनी गुलामगिरी, इशारा, शेतकऱ्याचा आसूड इत्यादी ग्रंथाच्या माध्यमातून त्यांनी शेतकऱ्यांच्या दुःखाला वाचा फोडलेली आहे. शेतकऱ्यांना न्याय देण्यासाठी त्यांनी मांडलेले विचार अतिशय मोलाचे आहेत.

शासनाने लादलेला जो शेतसारा आहे तो शेतसारा भरण्यासाठी शेतकऱ्यांच्या कुटुंबातील एक व्यक्तीस नोकरी दिली असती तर शेतसारा भरण्यास त्यांना काहीच अडचण नव्हती. परंतु शेतकऱ्यांच्या मुलांना शिक्षणापासून वंचित ठेवल्यामुळे त्यांना नोकरी देण्याचा प्रश्नच नव्हता म्हणून फुले म्हणतात की अगोदर शिक्षण व नंतर नोकरी दिली तर शेतसारा भरण्यास अडचण येणार नाही. शेतकऱ्याकडे शेतसारा भरण्याइतकी शेती नव्हती आणि जरी शेती असली तरी हवे तेवढे उत्पन्न निघत नव्हते. परंतु तत्कालीन शासनाने शेतकऱ्यावर जबदरस्ती करुन शेतसारा वसुल करत होते.

परंतु शेतसारा सुध्दा भरण्याची ताकत शेतकऱ्यांत नव्हती म्हणून महात्मा फुले यांसदर्भात म्हणतात की, सर्व शेतकऱ्यांमध्ये भाऊ हिस्से इतके वाढले की, कित्येकारा आठ-आठ, दहा-दहा पामारीचे पेज्यावर गुजारा करावा लागतो. असा प्रसंग गुजराण आहे व अशा आठ-आठ दहा-दहा पामारीचे पेज्याकरिता त्यांना एक दोन बैल बाळगण्याची ऐपत नसल्यामुळे ते आपली शेते शेजाऱ्या, पाजाऱ्यास अर्धालीने अथवा खंडाने देऊन आपली मुले बरोबर घेवून कोठेतरी परगावी मोलमजुरी करुन पोट भरण्यास जातात.

नोकरशाहीकडून पिळवणूक

शेतकऱ्यांच्या नोकरशाहीकडून होणाऱ्या पिळवणूकीबद्दल महात्मा फुले म्हणतात,

१. ब्राह्मणांच्या हातावर अमुकतमुक ठेवल्याशिवाय ते गरिबांच्या कामाला हातच लावीत नाहीत.

२. सडकेच्या कामावर बिगारी म्हणून लावल्यास भट अधिकाऱ्यांची सुतगार केली नाही तर ते वरच्या अधिकाऱ्यांना वेगळ्या सांगतात.

३. पाटबंधारे खात्यात पैसे घेऊन मजूर लावतात. भरपूर पैसा कमवून हवेल्या बांधतात.

४. आपल्या जातबाल्यांचे हीत व्हावे म्हणून भट मामलेदार प्रयत्न करीत असतात.

५. पाटबंधारे खात्यातील भट कामगार खोट्या हजेरीवर शुद्रांच्या सहया घेऊन, खोट्या हजेरी भरतात व त्यांची मजुरी स्वत:च्या खिशात घालतात. या सर्व पैशातून अलिशान इमारती उभ्या करतात.

६. कलेक्टरास अर्ज वाचून दाखवतेवेळी महत्त्वाचा भाग वगळून दाखवला जात असे.

७. शेतकऱ्यास वादविवाद निर्माण करून त्यांना कोर्टात जाण्याचा सल्ला देऊन दोनही बाजूकडून लाच खातात. ज्यांच्याकडून जास्त पैसे मिळतील त्याच्या बाजूनी जबानी नोंदवितात.

८. युरोपियन अधिकारी ऐशआरामात गुंग असल्याने त्यांना गरीबांकडे लक्ष द्यायला फुरसत नसते, याचा फायदा भट कामगार घेतात.

९. सरकार दर ३० वर्षांनी शेतसारा वाढवते. दर सहा नैलावर जकात नाके उभारून जकात वसुल केली जाते. मिठावर ही कर बसवून लाखो रुपयांची करांद्वारे लुट केली जात असे.

शेतकऱ्यांच्या पिळवणूकसाठी नोकशाही जबाबदार असल्याचे प्रतिपादन फुले करतात. ब्रिटिश राजवटीमध्ये कायद्याची अमलबजावणी व न्यायदान करु शकणाऱ्या अशा कार्यक्षम नोकरशाही यंत्रणेची गरज होती ही गरज नवे इंग्रजी शिक्षण घेतलेल्या व बौद्धीक कामाची परंपरा असलेल्या ब्राह्मणांनी मागविली. या शासकीय यंत्रणेत सर्व क्षेत्रामध्ये व सर्व पातळ्यांवर त्यांनी शिरकाव केला. वकील, न्यायाधीश, फौजदार, मामलेदार, कुलकर्णी, डॉक्टर, इंजीनियर, शिक्षक व शिक्षणाधिकारी इत्यादी सर्व जागांवर त्यांची भरती झाली. विविध खात्यातील कारकून व खेड्यातील भट कुलकर्णी यांनी शुद्रावर अन्याय केला म्हणून त्यांना फुले संतापाने कलम कसाई, ग्रामराक्षस अशा पदव्या

देतात.

सत्ता तुझी राणीबाई हिंदुस्तानी जागृत नाही।।
जिकडे तिकडे ब्राह्मणशाही। आहे लेखणीचा धनी।।
महालामध्ये महालकरी। जसा अष्ट अधिकारी।।
यमवत मामलेदार । शुद्रशिक्षा अनियार।।
पुर्त विटणीसाच्या पुढे। न्याय कलेक्टर बापुढे।
रैवेन्युची दफ्तदारी। ब्राह्मण किती अधिकारी।।

नोकरदार बनलेल्या ब्राह्मण जातीने असा काना केला की दुसऱ्या जातीस नोकरीस प्रवेश मिळू द्यायचा नाही आणि नोकरशाही अधिकाराचा उपयोग करुन शूद्र रयतेचे द्रव्य लुटण्यासाठी करायचा ब्राह्मण लाच घेतल्याशिवाय काहीच काम करीत नाहीत. कारण नोकरीसाठी ब्राह्मणच अपरिहार्य होते कारण त्यांच्याशिवाय इंग्रजी शिकलेला दुसरा कोणीही नव्हता. त्यामुळे ब्राह्मण कामगार शेतकऱ्यांची लुट करतात.

शेतकऱ्यांच्या या पिळवणूकीबाबत महात्मा फुले आपल्या पुढील अखंडात म्हणतात.

मोठमोठे दुकानदार। सारे भटच अंमलदार।
गरीब शूद्रावर कहर । हा पहा करती जोहर।
असे आंधळे सरकार।

गरीब शुद्रांचा कशाप्रकारे छळ केला जातो याचे वर्णन फुले मार्मिकपणे करतात. कुलकर्णी, भ्रष्ट अधिकारी, मामलेदार, कलेक्टर, ब्राह्मण आणि नोकरशाही यांच्या भ्रष्ट वागण्याचे परिणाम फुले खालीलप्रमाणे विशद करतात

खेडेगावी कुलकर्णी। आहे लेखणीचा धनी।
महालामध्ये मामलेदार। जसा अष्ट अधिकारी।
यमवत मामलेदार। काय कलेक्टर बापुढे।
रैव्हेन्युची दफ्तरदारी। किती ब्राह्मण अधिकारी।
चहुकडे भट भाई। कुणब्याची दादच नाही।

यावरुन गरीब शेतकऱ्यांचे चोहोबाजूंनी घरील घटकांमार्फत कसे शोषण केले जाते हेच फुले स्पष्ट करतात.

सावकारांकडून शोषण

शेतकऱ्यांची पिळवणूक करणारा हा तिसरा घटक होय. कारण ब्रिटिश शासनात व्यापारी व सावकार हे वर्ग उदयास आले होते. यात मालाची विक्री करण्यासाठी व कच्च्या मालाचा पुरवठा करण्यासाठी बाजारपेठा तयार झाल्या. हे काम करणारा मध्यस्थ दलाल व्यापारी तयार झाला. तो

खरेदी-विक्रीच्या व्यवहारात दलाली खात असेच शिवाय नडलेल्या शेतकऱ्यांना व्याजाने कर्ज देत असे. शेतकऱ्यांचा भरणा बि-बियाणांसाठी लागणारे भांडवल, लग्नादि धार्मिक विधीतील दक्षिणा व अन्य सर्व बाबीसाठी शेतकऱ्यांना कर्ज काढावी लागत. दुष्काळात पुढे यात भरच पडत असे. मारवाडी व्यापारी शुद्र गिऱ्हाईकांना इतर भट-सावकार यजमानांना कर्ज देत असत. अशा प्रकारे ब्राह्मण, मानवारी सावकारी करू लागला. शुद्र शेतकऱ्यांच्या अज्ञानाचा व धर्मभोळेपणाचा फायदा घेवून हे सावकार शेतकऱ्यांच्या जमिनीवरील माल व्याजापोटी हजम करीत. त्यांच्या अशिक्षितपणाचा फायदा घेऊन व्याज, गहानखत केलेल्या जमिनीवर आपला कब्जा बसवीत व त्याच जमिनीवर मूळ जमीन मालकाला कुळ म्हणून राबवीत. अशा प्रकारे सावकारशाहीतूनच गैरहजर जमीनदार तयार होत. महात्मा फुलेंच्या लिखाणात शेतकऱ्यांच्या कर्जबाजारीपणाचा व त्यांचा ब्राह्मण, मारवाड्याकडून होणाऱ्या शोषणाचा वारंवार उल्लेख येतो.

हिशोबी घोळ। सर्व गोंधळ।।
वाढती कर्ज डोईवर । आतूनी होई सावकार।।
पैसा देई गहानावर । वेळ पाहून संधी साधून।।
मागणी नेट त्यावर। तगादा धाडी पाठीवर
दाम दुप्पट सर्व एकवट। नोदिती गहाणखतावर
हातावर देई। लिहून घेई।।
वायदा आट स्टॅम्पावर। ते ते ठोकळी अर्जी अखेर।।
धान्यावरी जीव। केली मोठी कीव।।ड (महात्मा फुले समग्र वाङ्मय : ५७)
बक्षिस बिनभाडे घर। शहाणा ठक आरपार।।
मट घनको। शुद्र ऋणको।।
कर्ज शतावर काडिले। मोजन जातीला दिले।।
थोड्या दिवसात। व्याज मुद्दलात।।
गहाणखत चोख नवे केले
मिराशी भट्ट वारस झाले।। (महात्मा फुले समग्र वाङ्मय : ६२)

शेतकऱ्यांना लुटण्यासाठी सावकार वेगवेगळे छक्केपंजे लढवितात. हे सावकार नापरतीच्या अक्षरशुन्य शेतकऱ्यास सांगतात, ‘सरकारी कायद्याप्रमाणे तुम्हाला गहाणखतावर पैसे देता येणार नाहीत. वास्तव तुम्ही जर आपली शेते आम्हास खरेदी करून द्याल, तर आम्ही तुम्हास कर्ज देऊ तुम्ही आमच्या रुपयांची फेड केल्यावर आम्ही तुमची शेती परत खरेदी करून तुमच्या ताब्यात देऊ. असे शपथा बोलल्या जातात पण त्यांच्याकडून शुद्रास जमिनी परत क्वचितच मिळतात. शेतकऱ्यास लिहिता वाचता येत नसल्यामुळे त्यांच्या कर्जाच्या रक्कमा मनानेच वाढवतात, या सावकारांना ब्राह्मण

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38

मदत करतात त्याच खात्यात व शेतकऱ्यांना गुंडाळतात.

शासनाकडून होणारी पिळवणूक

शासनात असणारे कर्मचारी हे ब्राह्मण वर्ग, दलाल, सावकार यांचेच होते. त्यामुळे स्वत:चाच स्वार्थ कसा साधता येईल असे विचार त्यांचेकडे केला जात असे. त्यामुळे ब्रिटिश शासनाकडून शेतकऱ्यांची पिळवणूक केली जाई. ब्रिटिश व ब्राह्मण अधिकारी शेतसारा वाढवून टाकतात. त्यात सरकारने धर्मब्राह्मण कामगारास हाताशी धरुन मन मानेल तसे शेतसारे वाढवू लागले. कोट्यवधी शेतकऱ्यास पोटगर भाकर व अंगभर कापड मिळेनासे झाले. ब्रिटिश मालाचा खप वाढवून एकंदर सर्व शुद्रातिशूद्र शेतकरी आपल्या मुलाबाळांसह रात्रंदिवस कष्ट करतो. शेती करुन सरकारात कर, फंड वगैरे जकाती द्वारा दरसाल कोट्यवधी रुपयांचा भरणा करत. धान्य, कापूस, कातडी व लोकर यांची निर्यात करुन स्वतःचे द्रव्य उधळले जाई. त्यातून सरकारी अधिकाऱ्यांचे मोठाले पगार व निवृत्तीवेतन दिले जात असे.

रयतवारी पद्धत :

ब्रिटिश सरकारने भारतात रयतवारी पद्धत लागू केली. या पद्धतीचे पुरस्कर्ते म्हणून थॉमस, जॉमस माल्थस, जेम्स मिल इत्यादींचा उल्लेख केला जातो. मद्रासमध्ये १८२० मध्ये रयतवारी पद्धतीची सुरुवात करण्यात आली. त्याकाळी शेतकऱ्यांना जमिनीच्या मोजणीनंतर जमिनीची मालकी व भोगवटयाचे अधिकार मिळत नसत. प्रत्यक्ष जमीन कसणाऱ्यांच्या ऐपतीप्रमाणे महसूल आकारणी ठरत असे. दर वीस किंवा तीन वर्षांनी पुन्हा जमिनीची पाहणी आणि मोजणी होत असे आणि या सर्वांचा दर ठरत असत. वहिवाटदारास जमिनीवरील मालकी हक्क नियमितपणे सारा देण्याच्या अटीवर मिळत असे. शेतकऱ्यांनी सारा न दिल्यास सरकार त्याचा हक्क काढून दुसऱ्यास देत असत. यामुळे शेतकरी नाडला जाऊन काहीही करुन शेतसारा वेळच्या वेळी भरत असत. शासनाचा मुख्य उत्पन्नाचा स्त्रोत शेतसारा असल्याने त्याबद्दल अधिकारी प्रयत्नशील असत.

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"A Study of Various Tax Assessment in Nagarpalika of Amravati District"

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Abstract :-

Nagarpalika collects many types of taxes including property tax, tree tax, education tax, fire extinguisher tax, other special taxes, sanitation tax, water tax, employment tax, Maharashtra education tax etc. under the head of property tax. In short, Nagarpalika receives revenue from the above mention various taxes. From this revenue Nagarpalika provides various facilities to the tax payer. In this connection this Research paper attempted to study all taxes assessment process and percentage of revenue to be collected by Nagarpalika.

Keyword :- Education Tax, Employment tax, Fire extinguisher tax, M. H. Education tax, Other special Taxes, Property Tax, Tree Tax, Sanitation Tax.

Introduction :

Tax assessment or collection is not only done by Nagarpalika in post independence but it was also collected by Britisher's. They also used this revenue collected from various taxes to provide basic facilities to the citizens. Britisher's come to India only to develop their business but they become Governor and governed the country for 150 year. They did this only because at the co-operation of local people. Britisher's to get away precious things of India to their country. When Britisher's came to India, they study geographical condition, political atmosphere of India. Then they established to their ascendancy in India and used to collect various taxes from the people the same part of collected revenue had to send their country and the remaining revenue had spend on residence, roads construction, bridge, erection, Medical facilities, educational facilities in India. All these facilities had been provided honestly by Britisher's. The process which Britisher's accepted to collect revenue was very strict. Britisher's appoints committee to collect various taxes. So that they can satisfy the needs of people on the basis of prepared format of tax collection, Britisher's used to collect much revenue. Time to time they used to increase rate of tax as per the report of committee. This growth in taxes had to be beared by the people.

Today also method of tax collection which used by Britisher's is accepted in India. Today we are living in independent India. But the taxes which are paying today are on the some basis and precious of Britisher's. The main sources of revenue for Nagarpalika, Mahanagarpalika is collection of various taxes. In India Nagarpalika's are function on the basis of population and they work according to the No. of people and plan to provides facilities to the people. These Nagarpalika's spends the collected revenue for the management of waste, clean less, streetlight, medical

department, water supply, salary of staff etc. As per the law prescribed in constitution of India. So tax collection and assessment is very necessary for Nagarpalika's.

Nagarpalika in Amravati District.

Sr. No.	Nagarparishad / Nagarpalika	Year of established	Population (In 2011)
1	Achalpur	1956	107000
2	Anjangoan Surjee	1939	56380
3	Warud	1937	45528
4	Chandur-Rly	1948	19776
5	Dhamagam Rly	1947	21847
6	Chandur Bajar	1948	18759
7	Daryapur	1937	36463
8	Morshi	1936	37233
9	Shendurjana Ghat	1948	21748
10	Chikhaldara	1948	5158

(Source : Primary Data)

Statement of the Problem

After independence in India much importance is given to tax as the main sources of income. Tax is also the main income sources of various Nagarpalika's in various states. These Nagrapalika's use their tax system as per low rate to collect various taxes. This research is an attempt to study essentials to find out the various differences between Nagarpalika's . In this process tax assistant and clerk play very important role. In all these things regarding tax system in Nagarpalika's are critically analyzed.

Review of Literature

In order to complete research paper many references has to be taken and it is important for complete of work. Because researcher has to face lot of problem while researching researcher has to review tax assessment and determination instrument has to considered and various literature which published before.

1) **Andrew Coleman (2009)**

In their research article title "The Long Term of Capital Gains, Taxes in New Zealand " publish in research paper, motto economic and public policy research Po. Box. 24390 Wellington, New Zealand, 2009, page No. 1-30, suggested that. This research paper has focus on long term impact of profit collected from property tax. In this regard, when the growth of property develop then marketing of buildup home will suffered in three following times.

1) The researcher's has given the description of income which is based on capital profit. When the price which are on rent home becomes low.
2) Supply of currency them it affects the capital profit.
3) When the rate of rent will automatically be reduced.

Hence all these things are related to property tax.

2) **Gupta Dr. Radha (2013)**

In their research paper title "Personal Income Tax Structure in India : An Evaluation" published in Pacific Business Review International Volume 5, Issue 7, January 2013, page No. 1-6. According to researcher to pay tax is our moral and basic responsibility people

should be aware in this regard of income is tax. The revenue collected from taxes can be spend to provide various facilities to the people. When the people avoided to pay taxes then it automatically affects the financial management of country.

3) **Mohanty Dr. P. K. (2003)**

In their research article title "Reforming Property Tax, "The Approach of Municipal Corporation Of Hyderabad" central for good governor working paper 2003, Vol. II, page No. 1-37, suggested that the municipal corporation of Hydrabad has been established in 1955. It consists of two cities. This municipal corporation has received many awards of national level continuously. The main reason is that there are many sources of income and tax is one of them. Here tax plays very important role in increasing income of this city. As a result of two agencies awarded CRISIL and LLA + (S.O.) ISRA e.g. Mumbai Municipal Corporation including taxes that is general tax, fire extinguisher tax, water tax, sanitation tax, education cess, street light tax, tree tax etc. are the main sources to develop income of Nagarpalika.

4) **Poirson Helene (2006)**

In their research article title, "The tax system in India could Reform spur Growth?" International monitory fund working paper, WP/06/93, page no. 1 to 22, suggested that in this research in focused on Indian tax assessment system. Rate of tax and impact of tax rate etc. This research also said that there are two standard to find out the Burdon of tax on the people who invest their money in various country. This research studied marginal tax wastage (METW) between the pre & post tax return on capital and marginal effective tax rate. In this research those countries are refer which are included under international monitory fund.

5) **Palande Pro S.A. (2011)**

The title of the research paper "Income Tax Problem and Recommendation" publish in IJRCM, Volume No. 09, Page No. 27-32. According to the researcher the assessment of tax should be affordable and the policy of fixed agreement has to be implemented. The emphysaesd should be on the development of tax management policy sincerely the main intension of income tax is to collect revenue from various taxes and this revenue should be used for development of country.

Objective of Research

1) To collect the information of various taxes of Nagarpalika's.
2) To study property tax, other taxes of Nagarpalika's.
3) To study the percentage A, B, C on the basis of division in Nagarpalika's.
4) To know the nature of main tax of Nagarpalika's.
5) To review Nagarpalika's and their population.

Methodology

In order to study tax system of various Nagarpalika's the primary and secondary sources will be used. The information will be collected to give this paper critical attitude. The researcher will visit various Tahasil places of Amravati district to collect information regarding tax system. The method of simple random sampling used for research purpose. The primary information will be gathered from interviewing 10 tax supervisor's & 40 tax clerk's (10 as per 4)

IRJMST Vol 8 Issue 6 [Year 2017] ISSN 2250 – 1959 (Online) 2348 – 9367 (Print)

Sr.No.	Respondents	No. of Respondents
1	Tax Supervisor	10
2	Tax Clerk	40
	Total	**50**

(Source : Primary Data)

Statistical Tools

To make research more practical, chi-square test is used a for statistical analysis of collected information and verification of hypothesis.

Hypothesis

H_0 Property tax and other taxes related to property tax does not increase the income of Nagarpalika's.

H_{10} Property tax and other taxes related to property tax increase the income of Nagarpalika's.

Limitation of the study

1) In this research various taxes are studied on the basis of available information.
2) This research is limited to study various taxes of Nagarpalika's only in Amravati District.
3) The conclusion arise from search may or may not be applicable to the other parts of district or state.

Data interpretation and Analysis

Table No. 1 : Tax as a Medium of Income

Sr.No.	Respondents opinion	Opinion	Percentage
1	Strongly Agree	33	66%
2	Agree	12	24%
3	Neither Agree or Disagree	05	10%
4	Disagree	0	0%
5	Strongly disagree	0	0%
	Total	**50**	**100%**

(Source : Primary Data)

From the above table it is found out that as per operation of tax supervisor and clerk 33(66%) tax as a medium of income.

Table No. 2 : Valuation and assessment of new property to increase tax

Sr.No.	Respondents opinion	Opinion	Percentage
1	Strongly Agree	38	76%
2	Agree	08	16%
3	Neither Agree or Disagree	04	08%
4	Disagree	0	0%
5	Strongly disagree	0	0%
	Total	50	100%

(Source : Primary Data)

From the above table it is found out that as per operation of tax supervisor and clerk 38(76%) opinion valuation and assessment of new property to increase tax.

Table No. 3 : To increase suitable tax assessment and recovery

IRJMST Vol 8 Issue 6 [Year 2017] ISSN 2250 – 1959 (Online) 2348 – 9367 (Print)

Sr.No.	Respondents opinion	Opinion	Percentage
1	Strongly Agree	32	64%
2	Agree	10	20%
3	Neither Agree or Disagree	05	10%
4	Disagree	02	04%
5	Strongly disagree	01	02%
	Total	**50**	**100%**

(Source : Primary Data)

From the above table it is found out that as per operation of tax supervisor and clerk 32(64%) opinion to increase suitable tax assessment and recovery.

Table No. 4 : To make people aware about the payment of taxes

Sr.No.	Respondents opinion	Opinion	Percentage
1	Strongly Agree	42	84%
2	Agree	06	12%
3	Neither Agree or Disagree	02	04%
4	Disagree	0	0%
5	Strongly disagree	0	0%
	Total	**50**	**100%**

(Source : Primary Data)

From the above table it is found out that as per operation of tax supervisor and clerk 42(84%) opinion show that tax payment is primary liability of tax payer so that Nagarpalika can provide basic facilities to the society.

Table No. 5 : Use of new technology to assessed the taxes

Sr.No.	Respondents opinion	Opinion	Percentage
1	Strongly Agree	29	58%
2	Agree	15	30%
3	Neither Agree or Disagree	06	12%
4	Disagree	0	0%
5	Strongly disagree	0	0%
	Total	**50**	**100%**

(Source : Primary Data)

From the above table it is found out that as per operation of tax supervisor and clerk 29(58%) as per opinion use of new technology to assessed the taxes.

Application Chi-Square Test :

Sr.No.	Responded opinion	'O'	'E'	Formula $x^2 = \left(\frac{o-E}{E}\right)^2$
1	Strongly Agree	113	30	229.63
2	Agree	26	30	00.53
3	Neither agree or Disagree	11	30	12.03
4	Disagree	0	30	30.00
5	Strongly Disagree	0	30	30.00
	Total	150	150	302.19

(References : Table 1, 2 and 4)

IRJMST Vol 8 Issue 6 [Year 2017] ISSN 2250 – 1959 (Online) 2348 – 9367 (Print)

Expected Frequency $= \frac{Em}{n} = \frac{150}{5} = 30$

$$X^2 = \sum \frac{(O-E)^2}{E}$$

X^2 = 23.685 (Calculated Value)

Conclusion :

From the above information it is clear that calculated value (23.685) is more than table value (18.465) at 0.05% significance level for D. F. (15-1=14) 14 therefore our alternative hypothesis accepted (H_{10}.)

Tax assessment :

Calculation of Taxable Value :

e.g. plot construction area = 2450 sq. ft.

Auto D. C. R. = 1850 sq. ft.

Actual construction area 1850 sq. ft.

1850 ÷ 10.76 = 171.93 Meter

x 10.76

1849.96 (1850)

(Taxable Value 1850)

Tax Assessment Categories :

1) Category 'A'

Name of Assesses = Shri. Omprakash S. Rathi

Property No. 34000919 (Taxable Value 1850)

Address = Achalpur (Ward No. 9)

Table No. 6 : Tax Assessment

Sr. No.	Types of Tax	Tax Assessment	Financial year demand	
			01/04/2014 to 30/09/2014	01/10/2014 to 31/03/2015
1	Consolidated property Tax	27%	249.75	249.75
2	Special education Tax	4%	37.00	37.00
3	Sewage Tax	5%	46.25	46.25
4	M.H. Education Tax	1%	9.25	9.25
5	Tree Tax	2%	18.50	18.50
6	Extinguisher Tax	Rs. 6 each	6.00	6.00
7	Sanitation Tax	Rs.30 each	30.00	30.00
		Total	396.75	396.75

(Source : Secondary Data)

2) Category 'B'

Name of Assesses : Shri. Pandurangji Rekhate

Address : Ward No. 2, Warud

Property No. : 08000458 (Taxable value 3500)

Use of Purpose : Residential Zone No. 1

Table No. 7 : Tax Assessment

IRJMST Vol 8 Issue 6 [Year 2017] ISSN 2250 – 1959 (Online) 2348 – 9367 (Print)

Sr. No.	Types of Tax	Tax Assessment	Financial year demand	
			01/04/2014 to 30/09/2014	01/10/2014 to 31/03/2015
1	Consolidated property Tax	27%	472.50	472.50
2	Education Tax	5%	87.50	87.50
3	Tree Tax	1%	17.50	17.50
4	Sewage Tax	5%	87.50	87.50
		Total	**665.00**	**665.00**

(Source : Secondary Data)

3) **Category 'C'**

Name of Property = Residential (Zone No.2), Dhamangaon Rly
Name of Assesses : Shri Vijay Sagane
Property No. 02000233 (Taxable Value 1080)

Table No. 8 : Tax Assessment

Sr. No.	Types of Tax	Tax Assessment	Financial year demand	
			01/04/2014 to 30/09/2014	01/10/2014 to 31/03/2015
1	Consolidated property Tax	23%	124.20	124.20
2	Education cess	4%	21.60	21.60
3	Tree Tax	1%	05.40	05.40
		Total	**151.20**	**151.20**

(Source : Secondary Data)

Recommendation :

1) The person who works in the department of income tax must possesses knowledge of tax assessment and recovery.
2) Instruction about recovery should be given to the tax clerk who is appointed by tax inspector.
3) Tax payment should be considered as our first priority and responsibility by the tax payer. Because Nagarpalika's make available basic facilities to the people.
4) Property tax and other taxes should be assessed through measurement of new home and plots.
5) It should be considered that tax is a national property. So it must be paid regularly by everyone tax recovery should be considered as a mission for particular period.

Conclusion :

1) In Nagarpalika's of Amravati District administrative officer are selected as chief executive officer through competitive examination.
2) The assessment of tax in Nagarpalika's is done on the basis of population.
3) Tax assessment is done as follows
   a) Category 'A' : Achalpur – 27%
   b) Category 'B' : Warud & Anjangaon Surjee – 27%

IRJMST Vol 8 Issue 6 [Year 2017] ISSN 2250 – 1959 (Online) 2348 – 9367 (Print)

c) Category 'C' : 7 Nagarpalika's – 23% or 24%

4) Tax assessment of Nagarpalika is divided into three category A, B, C in these group property tax, tree tax, sanitation tax, fire extinguisher tax, education tax etc. are included.
5) As per the Act 1965 notices can be issued to the people who pay minimum taxes.
6) The tax assessment is done through computerized system.
7) Mapping, plant of property, measurement and seeks, taxable values are included in the assessment of tax.

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A Critical Study of Tax Assessment in Nagarpalika of Amravati District

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Abstract

The income from Tax is considered asaimportant revenue. However, this income sources is important as per our Indian constitution in representative democracy, But the use of taxes income for development is not satisfactory. The action which Government takes on the basis of collected tax is not social beneficial. The process of spending money on various project is doubtful and also corrupted. So this tax assessment is made compulsory by low constitution as per 40 direction constituted in 1949. This study will be focus on the process of Tax collection and assessment in various Nagarpalikas of Amravati District. It is an honest attempt to find out the various method of tax assessment as well as implementation of collected money for social development.

Keywords : *Education Tax, Fire extinguisher tax, Other special Taxes, Property Tax,Tree Tax, Sanitation Tax.*
Classification-JEL : *H21, H22, H27, H31, H71*

1. INTRODUCTION

Tax assessment in India is carriedout at large scale from pre-independence. Tax is the main source of income for India to provide various basic and fundamental facility to the society. Government spend this income on various development. Even today the importance of tax is given. The income from Tax is considered as an important revenue. Though this income sources is important as per our Indian constitution in representative democracy, But the use of taxes income for development is not satisfactory. The action which Government takes on the basis of collected tax is not social beneficial. The process of spending money on various project is doubtful and also corrupted. So this tax assessment is made compulsory by low constitution as per 40 direction constituted in 1949.

In 1965 some rules and regulation are made for the establishment of Nagarpalika as per 74 amendment in constitution from 1994. Nagarpalika, Nagarpanchayt and industrial cities are established on some condition. The first condition is that the minimum population of city must be 25000. The second one is that the ratio of employment in non agriculture business should be 75% of more than this. The third condition that the Nagarparishad has right to take decision regarding status of Nagarparishad and the departments to be included in this.

In Maharastra state the act of municipal corporation Nagarparishad is came into force from 1994. As per Indian constitution section 243 'A' subsection '2' it is declear that the city our place which has lowest population in comparison with big cities will be recognized as Nagarparishad. This study will be focus on the

process of Tax collection and assessment in various Nagarpalikas of Amravati District. It is an honest attempt to find out the various method of tax assessment as well as implemention of collected money for social development.

TABLE 1

Establishment of in Nagarpalika Amravati District

S. No.	Nagarparishad/ Nagarpalika	Year of established	Population (In 2011)
1	Achalpur	1956	107000
2	Anjangoansurjee	1939	56380
3	Warud	1937	45528
4	Chandur Rly	1948	19776
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6	Chandur Bajar	1948	18759
7	Daryapur	1937	36463
8	Morshi	1936	37233
9	Shendurjana Ghat	1948	21748
10	Chikhaldara	1948	5158

2. STATEMENT OF THE PROBLEM

After independence in India the much importance is given to the tax as the main source of income. Tax is also the main income source of variousNagarpalikasin various States. These Nagarpalikas use their tax system as per low to collect various taxes. So this research study is essential to find out the various differences between Nagarpalikas. In this process tax Assistant and tax clerk play very important role. In all these things regarding tax system in Nagarpalika's are critically analyzed.

3. REVIEW OF LITERATURE

In order to complete research paper many references has to be taken and it is important for complete of work. Because researcher has to face lot of problems while researching researcher has to review tax assessment and determination instrument has to considered and various literature which published before.

Agrawal Pavan K. (1991) : In their research article title "The Responsiveness of Personal Income Tax". Publish in research article in news page no. 16 suggested that. Inequality in distribution of income is major defect and for that develops proper method According to report importance given to changes in inco and their elastics result.

Govindrao (2000) : In their resea article title "Analyzed the Tax reform, In Ind Publish in research paper 23. Conclu thataccording to written to much changes taxation system and also comparison betw Direct and Indirect taxes. If changes in structure then eliminate inequality and r important in Indian tax economy.

Menkar Dilip (2006) : In their resea article title, "Local Government in Maharasht Published LokamatNews Paper p.p.nc suggested thataccording to writer Govt. e money in the form of taxes and in panchayt main sources of revenue is tax collected fr public and tax collected by authority.

Rao M. Govinda, Rao R. Kavita (2006) their research articletitle "Trends and Issue Tax policy and Reform in India" published Ind policy reform 20, p. p. 06, 55, 121 conclu that. To Return India written included tax po and in that tax policy considered Direct Indirect tax according to Reports since last years in the world to much changes in taxati system develop country taxation system alw change but under develop country like India i necessary to changes tax structure.

In India larger proportion financial los break down are since it is because unbalanc tax structure for necessary to changes structure for that in domestic production cent Govt. & State Govt. provide revenue a generate Direct and Indirect taxes. And e Income in the form of advance taxes and ot taxes.

Sinha Ria (2010) : In their research art title "Centre for budget and Governa Accountability"accounting A-11, second fl NitiBagh, New Dilhi -110049, P. P. 1 to concluded that. And research paper title International comparison of Tax reigns. As writer developing country like in India m serves of revenue is tax and from taxes cour earn income in that income help in decid financial policy.

In developing country India revenue earn the way of taxes and different expense that we campier this countrylike Canada, America, UK, Japan, Coriea, India looks weeks so writers intensively focus on development.

4. OBJECTIVES OF RESEARCH

i) To study tax system inNagarpalikaof Amravati District.

ii) To Study various taxes which are made applicable to the society.

iii) To reviewNagarpalika's and their population.

iv) To find out which Nagarpalika's collect much revenue.

v) To understand the tax system of various Nagarpalika's of Amravati District on the basis of their status.

5. METHODOLOGY

In order to study tax system of various Nagapalika's, the primary and secondary sources will be used. The information will be collected to give this paper critical attitude. The researcher will visit various Tahsil places of Amravati district to collect information regarding tax system. The method of simple random sampling used for research purpose. The primary information will be gatherd from interviewing ten tax assistant 50 tax clerk(10 as per 5).

TABLE 2
Information Data

Sr. No.	Responded	No of Responded
1	Tax Assistant	10
2	Clerk	50
	Total	**60**

Source: Survey

a) Statistical Tools: The Chi-square test is used a forstatistical analysis of collected information and for the verification of hypothesis.

b) Hypothesis: H_0 :Revenue doesnot increase with tax system of Nagarpalikas.

H_1 : Revenue increase with tax system of Nagarpalikas.

c) Limitation to the study :

i) This paper is limited to study and Nagarpalika/Nagarprishad only of Amravati District.

ii) The findings may or may not be applicable for other Nagarpalikas.

6. DATA INTERPRETATION AND ANALYSIS

TABLE 3
Source of revenue

Sr. No.	Responded Opinion	Opinion	Percentage
1	Strongly Agree	49	82%
2	Agree	8	13%
3	Neither Agree or Disagree	3	5%
4	Disagree	0	0
5	Strongly Disagree	0	0
	Total	**60**	**100%**

Source: Primary Data

From the above table it is found out th as per operation at supervisor clerk 49 (82% revenue comes from taxes.

TABLE 4
Taxes

Sr. No.	Responded Opinion	Opinion	Percentag
1	Strongly Agree	53	88%
2	Agree	5	9%
3	Neither Agree or Disagree	2	3%
4	Disagree	0	0
5	Strongly Disagree	0	0
	Total	60	100%

Source: Primary Data

From the above table it is found out 53 (88%)opinionsShow that tax paymen primary liability of customer so thatNagarp can providebasic facility to society / people.

From the above table found out tha (76%)opinions that tax is the main sourc revenue. The tax recovered is importan

TABLE 7(c)
Tax assessment

Sr. No.	Types of Tax	Tax Assessment	Financial Year Demand	
			01/04/2014 to 30-09/2014	01/10/2014 to 30-03/2015
1	Property Tax	23%	1092.50	1092.50
2	Education Cess	1%	47.50	47.50
3	Employment grantee tax	2%	95.00	95.00
4	Three Tax	1%	47.50	47.50
5	Special Clean tax	1%	47.50	47.50
6	Exstinguisher Tax	1%	47.50	47.50
7	Senitation Tax	2%	95.00	95.00
	Total		**211.50**	**211.50**

Source : Secondary Data

ii) Category 'B'

Name of Assesses : Smt. Govt. hospital Anjangaon Surjee

Address :ward No. 8 Anjangoan Surjee

Property No. : 07001571 (Taxable value 180180)

Use of Purpose :Govt. property

iii) Category 'C'

Name of Property = Non-Residential (Zone No.1) Chandur Bazar.

Name of Assesses :ShriRamnarayanJayswal.

Property No. 03000428 (Taxable Value 9500)

8. RECOMMENDATION

Taxes collected from beneficially have main sources of revenue.

Tax collections have increased with the help of awareness.

Tax assistant and clerk have played important role increasing revenue from taxpayer.

Before independence, British Government had focus on sources of taxation.

9. CONCLUSION

Thecategories 'A' 'B' & 'C' suggested thatTax assessment in Nagarpalikas is the main source of income.Nagarpalika can collect various taxes as per low and this income is used to provide various facilities to the society. It also plays important role to maintain good administration in Nagarpalikas.

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26

नोटबंदी, व वस्तु सेवाकर प्रणाली

डॉ. लालचंद दा. बोदिले
सहाय्यक प्राध्यापक वाणिज्य विभाग, महात्मा ज्योतिबा फुले कला, वाणिज्य व विज्ञान महाविद्यालय भातकुली, जि. अमरावती.

प्रस्तावना :—

८ नोव्हेंबर २०१६ ला नोटबंदी व १ एप्रिल २०१७ पासून जीएसटी (करप्रणाली) लागू करायची आहे. असा अंदाज होता मात्र सप्टेंबर २०१७ वस्तु व सेवाकर लागला. केंद्रसरकारने लोकसभेत व राज्यसभेत जीएसटी चा ठराव जिंकला व संविधानातील १२२ कलम घटनादुरूस्तीसाठी कराव लागेल अशी शिफारस करण्यात आली. २६ नोव्हेंबर १९४९ साली भारतीय संविधानातील भारतीय अर्थव्यवस्था व लोकांच्या गरजेचा विचार करून दर १० वर्षाची भारतीय चलण व्यवस्था बदलविण्याचा अधिकार सरकारला राहील परंतु नोटबंदी बाबत भारतीय नागरीकांना हानी पोहचविणारा नाही याची दक्षता घ्यावी. नोटबंदी ही भारतीय जनतेच्या हिताची असली पाहीजे. २६ जानेवारी १९५० रोजी सर्व भारतात संविधान लागु करण्यात आले. जगाला हेवा वाटेल असे लिखीत संविधान डॉ. बाबासाहेब आंबेडकरांनी लिहीले.

अर्थमंत्री अरूण जेटली यांनी लोकसभेत देशाच्या आर्थिक सुधारणांना चालना देणारे नवे जीएसटी (Good Service Tax) विधेयक गेल्या १९ तारखला संसदेत मांडले या विधेयकामुळे वस्तु आणि सेवाच्या सुलभ देवाणघेवाणीमध्ये पारदर्शकता येणार असून देशाच्या महसूली उत्पन्नात वाढ होणार आहे. सध्या देशाच्या आर्थिक विकासाचा दर ५ टक्के असून तो १० टक्क्यावर जाण्याची शकता नाकारता येत नाही. त्यामुळे २०२० साली भारत देश आर्थिक महासत्ता बनेल हे देशाचे माजी राष्ट्रपती डॉ. एपीजे अब्दुल कलाम यांचे स्वप्न प्रत्यक्षात उतरण्यासाठी केंद्रसरकारने आणी नोटबंदी व लागेचन वस्तु व सेवाकर 'जीएसटी' या स्वप्न सामान्य ग्राहकांना मिळणार आहे. केंद्र व राज्य सरकारकडून लादण्यात येणारे अप्रत्यक्ष कर तसेच 'इन्सपेक्टर राज' आणि करावर कर घेण्याची पध्दत संपुष्टात येणार आहे. जीएसटीच्या अंमलबजावणीमुळे केंद्रीय विक्रीकर, सेवाकर उपकर एलबीटी, सरचार्ज असे विविध प्रकारची करप्रणाली संपुष्टात येणार आहे. त्यामुळे देशात सेवा आणि वस्तुचा व्यापार सुरळीतपणे सुरू होईल त्याचा लाभ राज्य आणि केंद्र सरकारला होणार आहे.

नोटबंदी वस्तु व सेवाकराचे फायदे :

१) काळा पैसा बाहेर काढण्यासाठी नोटबंदीचा घेतलेला धाडसी निर्णय.

वस्तु व सेवा कर म्हणजे संपुर्ण देशातील हा एकच अप्रत्यक्ष कर आहे. ज्यामुळे भारत ही एक एकत्रित समाईक बाजारपेठ होईल.

२) नोटबंदीनंतर बेनामी संपत्ती बाळगणाऱ्या बेईमानावर टाच बसेल.

जीएसटीमुळे जे मोठे कारखानदारी व उद्योगपती यांनी आजपर्यंत कर भरण्यास कुंचराई केली आता तसे होणार नाही उलट हया लोकाकडून भरपूर प्रमाणात कर वसुल करता येईल.

३) नोटबंदीमुळे कॅशलेस व्यवहाराचे प्रशिक्षण देऊन कॅशलेस व्यवहारामध्ये पारदर्शकता येईल.

जीएसटीमुळे इस्टिटयूट ऑफ चार्टेड अकाउंटस ऑफ इंडियाच्या (आयसीएआय) बोर्ड ऑफ स्टडीजचे अध्यक्ष सी. ए. अतुल गुप्त म्हणाले की, १५ ते २० टक्के सीए जे आतापर्यंत प्राप्तीकराचे (इन्कम टॅक्स) प्रॅक्टिस करत होते, ते जीएसटी हे (अप्रत्यक्ष कर) पाहत आहेत ५ ते १० टक्के सीए आपल्या सेवेच्या सोडून खाजगी प्रॅक्टिस करत आहे या जीएसटीच्या व्यवसायात आणखी एक लाख सीए ची गरज आहे. पन अर्थिक मागणीमुळे साधारणी ५० टक्के जास्त देवावा लागेल व सीए ची ही सुध्दा वाढलेली दिसून येते.

४) नोटबंदीमुळे कॅशलेस व्यवहार मोठया प्रमाणात वाढलेले व पैसा घेवून किंवा लागणार नाही व संरक्षण आता असेल.

सध्या सगळ्या किमती या सामान्य नागरीकांच्या

आवाक्याबाहेर आहेत. मात्र जीएसटी मुळे घरांच्या किंमतीत २५ टक्के कमी होण्याची शक्यता वर्तविण्यात येत आहे. जीएसटीचा फायदा उद्योग व्यवसायाला होणार असून, रोजगार निर्मिती वाढेल नवे उद्योगधंदेखील वाढीस लागणार आहेत.

५) नोटबंदीमुळे मोबाईल बँकिंगला प्रोत्साहन देण्यासाठी ग्राहकाला लकी ड्रॉ योजना व व्यापाऱ्यासाठी डिजी धन योजनाला लाभ मिळेल.

जीएसटी मुळे भारतातील ८० टक्के व्यापारी वर्ग कर न चुकविण्याचा मार्ग शोधत होते आणि उत्पन्न जास्त व कर कमी भरण्याचा प्रयत्न करीत होते ते जीएसटी मुळे होणार नाही असे संकेत आहे.

६) नोटबंदीमुळे कितीतरी दिवसापासून घरात डांबून ठेवलेला पैसा जमाखोर दगाबाज लोकांकडून बाहेर पडेल. व नोटबंदीमुळे कॅशलेस व्यवहार चालेल. कॅशलेस व्यवहार अंमलात आल्यास चलणी नोट छापण्याचे प्रमाण व चोरीचे प्रमाण कमी होईल.

जीएसटी मुळे किरकोळ आमजनतेला मिळणाऱ्या जिवनाश्यक वस्तु स्वस्त मिळतील व्यापारी वर्गाना त्याचा कर चुकवावा लागेल.

७) नोटबंदीमुळे विदेशातुन येणाऱ्या नकली (जाली) नोटाना आळा बसेल भारतातील बेईमान दगाबाज लोकांचे कमीशन थांबेल.

जीएसटी मुळे रोजगारात वाढ होईल भारतातील जवळपास सर्वच राज्याचे उत्पन्न वाढेल कर स्वरूपात मोठया प्रमाणात पैसा जमा होईल तोच पैसा विकासाच्या कामाकरीता आणता येईल.

८) भारतातील खेडयामध्ये राहणारे नागरीक शहरात गेले छोटे मोठे उद्योग करू लागले धंदयात जम सुध्दा बसविला नोटबंदी व जीएसटीमुळे रोजगार व व्यवसायावर मंदी आली. मोठया व्यवसायीका समोर न टिकल्यामुळे पुन्हा परत, खेडयात आले. व बेरोजगार झाले.

नोटबंदी व वस्तु सेवाकराचे तोटे :

१) नोटबंदीमुळे ५० दिवसात १०३ गरीब लोकांचा मृत्यु झाला.

जीएसटीमुळे व्यवसायावर प्रतिकुल परिणाम होवून वस्तुच्या किंमती गरीबाच्या आवाक्याबाहेर गेल्या.

२) नोटबंदीमुळे पूर्वी १००० रू. ची जाली नोट एकाजी २००० रू ची जाली (नकली)

जीएसटीमुळे पहिल्या नोव्हेंबर रा रोबाकर प्रणालीमुळे भारतीयांच्या मनात सर्वसामान्य जनतेला रोजगारावर विपरीत जीएसटीबद्दल सांगा तरी कोणालेच झाले नाही. काही थोडयाच दिवसात पर

३) नोटबंदीमुळे कोणताच श्रीम ये उभा राहीला नाही. २००० रू. नकि श्रीमंत व व्यापारी वर्गाकडे जाऊ लाग ते ६ महीने नोटबंदीमुळे मोठे हाल

जीएसटी विधेयकामुळे जकात सेवाकरात समाविष्ट करण्यात येणा व्यवसायीक केंद्र असल्यामुळे म कराचा महसूल केंद्राला दिला जाईल फारच कमी रक्कम राज्याला केंद्राक

४) नोटबंदीमुळे काळा पैसा केंद्रसरकारला वाटत होते. परंतु खोद चूहा अशी हकीगत झाली आहे. त सर्व झाकण्याचा प्रयत्न करतात व मोठा देशाला फायदा झाला असे दाख अर्थतज्ञानी नोटबंदीचे भारतीय केंद्र केले होते. परंतु माहीतीचा अभा जल्दबाजीमुळे नोटबंदी पुर्णपणे फ सुध्दा काही दिवसातच अमेरीकेने

वस्तु व सेवाकर सुरू व भागातील राहणाऱ्या लोकांचा रोजीरो विचार करून जीएसटी हा दुस३ पर्यंत काही गावापर्यंत विद्युत लाई संपुर्ण भारतात कॅशलेसचे व्यवहार देश अती विशाल लोकसंख्येना गरीबी व श्रीमंती ही दरी असून आपल्या देशातच नाही तर पुर्ण व वस्तुसेवाकर लावायला काही भारतीय संविधानात तरतुद आहे. जर करत असेल तर देश विषमते

५) नोटबंदी छोटयां देश ठरेल भारतालाही फायदयाचे ठरण नविन नियम काढला की, तो

नियम काढला की, तो परवा बदलवायचा ारच्या जीआर वर जनतेचा विश्वास उडाला तळ तंत्राचा अभाव असल्याने हे सर्व घडले. एसटी लागु होताच सीए ची मागणी वाढली ल प्रत्येक आर्थिक व्यवहाराला फार ६ काम पहावे लागते आम जनतेला त्रास १ लागेल एखादया कामासाठी १०० रू. ३ होते. जीएसटी आल्यामुळे १०० रू. ,० रू. शुल्क दयावा लागेल. सीए Account) ची मागणी वाढली व काम झाले.

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बंदीमुळे सर्वाधिक फरक हा शेती आणि क्षेत्र, शेतमजूर, वाहतुकदार, हमाल, छोटे विक्रेते, ग्रहक व रोजगार निर्मितीवर पडला उत्पादन शेतकरी वर्ग मोळकळीस आलेला आहे पण रोकीचा ग्राहक नाही. व्यवहार व व नसल्यामुळे उत्पादीत माल फेकुन दिल्या दी व वस्तुसेवा करामुळे नवनविन नियमाला ाळली आहे. त्यामध्ये पैसे भरण्याच्या व मर्यादा आणली आहे. त्यामुळे प्रत्येक ाच बसल्यामुळे व्यवहार करणे मुश्किल ा सध्या प्रत्येक व्यवहाराला आधार कार्ड याची मुदत २८ फेब्रुवारी २०१८ पर्यंत ा ३१ मार्च २०१८ पर्यंत राहील साधे धारक विद्यार्थ्याला सुध्दा आधार कार्ड लिंग ाय शिषवृत्ती फार्म भरल्या जात नाही. ईल, विद्युत बिल, आयकर, पाण्याचे बिल. त्येक व्यवहाराला आधार कार्ड अनिवार्य न ते लिंग करण्यासाठी तालुक्याला किंवा जावून लाईनमध्ये उभे राहून सर्वांना करावेच राहे. सामान्य माणसाला किती हाल भोगायला चा अंदाज नाही. शासन पुढे कोणता निर्णय या भरोसा नाही. हे सर्व भविष्यकाळच ठरवेल.

ना. :–

ध्या केंद्रसरकाचा नारा आहे मेक इन इंडीया, इंडीया हे केव्हा होईल जेव्हा राष्ट्र समृध्द वळ नगराचा किंवा शहराचा विकास झाला म्हणजे नाही. तर खेडयाचा विचार करुन ग्रामस्तरीय निर्णय घ्यावा शेतकरी, शेतमजूर, दारिद्रय व विपन्नता असलेल्या देशात नोटबंदी व वस्तु सेवाकर आला असे नाही. यापुर्वी देखील नोटबंदी झाली परंतु आंतरा व गटबाजी झाली नाही. एकीकडे नोटबंदी करता व दुसरीकडे बॅकेला मर्यादा लावता हे सर्व करण्यापुर्वी चलणी नोटा व्यवहारात आणायला हव्या होत्या व नंतर नोटबंदीचा निर्णय घ्यायचा होता. हे सर्व काही देशाच्या हिताकरीता होईल व झाले पाहीजे हे १२५ कोटी जनतेचे म्हणने आहे. काही दिवस त्याची वाट पहावी लागेल. काही प्रमाणात भष्ट्राचार कमी झाला पण हे सरकार कारखानदारीला पोषक सरकार आहे. जाहीरातबाजी व प्रसारण माध्यमे चॅनेल वाले हया सरकारच्या मागे आहेत त्यांना सुध्दा हया सरकार कडून भरमसाठ पैसा व प्रसिध्दी मिळाली.

अडचणी :–

देश चालविण्यासाठी व भष्ट्राचाराला आळा बसण्यासाठी अंतर्गत व बर्हीगत अशा दोन बाजू असतात. अंतर्गत बाजू ही आपल्या हातात होती म्हणून नोटबंदी व सेवाकर लावले. केंद्रसरकारने २०१४ च्या निवडणूकीच्या वेळी भारतातील जनतेला आश्वासन दिले होते की प्रत्येकाच्या खात्यात १५ लाख रू जमा करणार व भारतातील जमा खोराचा जो काळा पैसा बाहेर देशात आहे तो परत आणील परंतु सध्या तरी तसे झाले नाही. नोटबंदी व जीएसटी वर काढलेले सरकारचे जीआर आज जिआर निघालाकी लगेच दुसरा जीआर निघायचा त्यामुळे जनतेचा जीआर वर विश्वास राहला नाही.

सामाजिक, राजकिय व आर्थिक परिणाम :–

नोटबंदी व वस्तु सेवाकर बद्दल सध्या तरी समाजाचे नुकसानच झाले भारत हा पुरोगामी लोकशाहीचा देश आहे. नोटबंदी व सेवाकराचा परिणाम व्यापारी व उद्योजकावर पडला तर ते ग्रहकाकडुन वस्तुच्या किंमती वाढवून काढतील.

नोटबंदी व वस्तु सेवाकराचा राजकीय पुढाऱ्यावर कोणताच परिणाम होणार नाही आमदार, खासदार व इतर पुढाऱ्या मंत्र्याचा पगार व मानधन वाढतानाच दिसते. त्यामुळे राजकीय लोकांना वस्तु व सेवाकराबद्दल

9318

नियम काढला की, तो परत बदलण्याचा ारण्या जीआर वर जनतेचा विश्वास उडाला बळ तंत्राचा अभाव असल्याने हे सर्व घडले. एसटी लागु होताच सीए ची मागणी वाढली ल प्रत्येक आर्थिक व्यवहाराला फार ; काम पहावे लागते आम जनतेला त्रास ा लागेल एखाद्या कामासाठी १०० रू. ९ होते. जीएसटी आल्यामुळे १०० रू. ,० रू. शुल्क द्यावा लागेल. सीए Account) ची मागणी वाढली व काम झाले.

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बंदीमुळे सर्वाधिक फरक हा शेती आणि क्षेत्र, शेतमजूर, वाहतुकदार, हमाल, छोटे वक्रेते, ग्रहक व रोजगार निर्मितीवर पडला उत्पादन शेतकरी वर्ग मोळकळीस आलेला आहे पण शेकीचा ग्राहक नाही. व्यवहार व व नसल्यामुळे उत्पादीत माल फेकुन दिल्या ंदी व वस्तुसेवा करामुळे नवनविन नियमाला ाळली आहे. त्यामध्ये पैसे भरण्याच्या व मर्यादा आणली आहे. त्यामुळे प्रत्येक ाच बसल्यामुळे व्यवहार करणे मुश्किल ा सध्या प्रत्येक व्यवहाराला आधार कार्ड याची मुदत २८ फेब्रुवारी २०१८ पर्यंत ा ३१ मार्च २०१८ पर्यंत राहील साधे धारक विद्यार्थ्याला सुध्दा आधार कार्ड लिंग ाय शिषवृत्ती फार्म भरल्या जात नाही. ईल, विद्युत बिल, आयकर, पाण्याचे बिल. त्येक व्यवहाराला आधार कार्ड अनिवार्य न ते लिंग करण्यासाठी तालुक्याला किंवा जावून लाईनमध्ये उभे राहून सर्वांना करावेच राहे. सामान्य माणसाला किती हाल भोगायला चा अंदाज नाही. शासन पुढे कोणता निर्णय ना भरोसा नाही. हे सर्व भविष्यकाळच ठरवेल.

ना. :–

ध्या केंद्रसरकाचा नारा आहे मेक इन इंडीया, इंडीया हे केव्हा होईल जेव्हा राष्ट्र समृध्द बळ नगराचा किंवा शहराचा विकास झाला म्हणजे नाही. तर खेड्यातला किंवा कामन माणसाने निर्णय घ्याला शेतकरी, शेतमजूर, कामगार व विद्यार्थ असलेल्या देशात नोटबंदी व वस्तु सेवाकर आला असे नाही. यापुर्वी देखील नोटबंदी झाली पण सेवा आंतग व गटबाजी झाली नाही. एकीकडे नोटबंदी करता व दुसरीकडे बँकेला मर्यादा लावता हे सर्व करण्यापुर्वी चलणी नोटा व्यवहारात आणायला हव्या होत्या व नंतर नोटबंदीचा निर्णय घ्यायचा होता. हे सर्व काही देशाच्या हिताकरीता होईल व झाले पाहीजे हे १२५ कोटी जनतेचे म्हणने आहे. काही दिवस त्याची वाट पहावी लागेल. काही प्रमाणात भष्ट्राचार कमी झाला पण हे सरकार कारखानदारीला पोषक सरकार आहे. जाहीरातबाजी व प्रसारण माध्यमे चॅनेल वाले हया सरकारच्या मागे आहेत त्यांना सुध्दा हया सरकार कडून भरमसाठ पैसा व प्रसिध्दी मिळाली.

अडचणी :–

देश चालविण्यासाठी व भष्ट्राचाराला आळा बसण्यासाठी अंतर्गत व बर्हीगत अशा दोन बाजू असतात. अंतर्गत बाजू ही आपल्या हातात होती म्हणून नोटबंदी व सेवाकर लावले. केंद्रसरकारने २०१४ च्या निवडणूकीच्या वेळी भारतातील जनतेला आश्वासन दिले होते की प्रत्येकाच्या खात्यात १५ लाख रू जमा करणार व भारतातील जमा खोराचा जो काळा पैसा बाहेर देशात आहे तो परत आणील परंतु सध्या तरी तसे झाले नाही. नोटबंदी व जीएसटी वर काढलेले सरकारचे जीआर आज जिआर निघालाको लगेच दुसरा जीआर निघायचा त्यामुळे जनतेचा जीआर वर विश्वास राहला नाही.

सामाजिक, राजकिय व आर्थिक परिणाम :–

नोटबंदी व वस्तु सेवाकर बदल सध्या तरी समाजाचे नुकसानच झाले भारत हा पुरोगामी लोकशाहीचा देश आहे. नोटबंदी व सेवाकराचा परिणाम व्यापारी व उद्योजकावर पडला तर ते ग्राहकाकडुन वस्तुच्या किंमती वाढवून काढतील.

नोटबंदी व वस्तु सेवाकराचा राजकीय पुढाऱ्यावर कोणताच परिणाम होणार नाही आमदार, खासदार व इतर पुढाऱ्या नेत्याचा पगार व मानधन वाढतानाच दिसते. त्यामुळे राजकीय लोकांना वस्तु व सेवाकराबद्दल

कोणताच परिणाम पडताना दिसणार नाही.

नोटबंदी व वस्तु सेवाकर यामुळे सर्वच स्तरातील लोकांवर आर्थिक परिणाम जाणवताना दिसतील.

कॅशलेस व्यवहाराचे विविध पैलु :–

भारताचे पंतप्रधान मा. नरेंद्र मोदी व अर्थमंत्री अरूण जेटली यांनी नोटबंदी नंतर कॅशलेस व्यवहाराना प्राधान्य देण्यात येईल. नोटबंदी झाल्यास काळा पैसा बाहेर येईल असे सर्वांना वाटत होते पण तसे झाले नाही केंद्रसरकाला वाटले परंतु पाहीजे त्या प्रमाणात तसे झाले नाही. व्यवसाय करणाऱ्या प्रत्येक व्यवसायीकाला कॅशलेस व्यवहारासाठी डेबीट/क्रेडीट कार्ड स्वॅप मशिन घ्यावी लागेल. ही मशिन घेताना प्रथम १०००० रू. चलान मार्फत बॅकेमध्ये भरावे लागेल ते ठेव म्हणून त्याचे खाते काढावे लागेल व त्यानंतर ही स्वॅप मशिन मिळेल. व त्या मशिनच्या दर महा त्या व्यवसायीकाला जेवढा कॅशलेस मशिनचा वापर केला तेवढा पैसा कर स्वरूपात भरावा लागेल. कॅशलेसचा वापर करणाऱ्या व पेटीयमचे गेल्या नोटबंदीपासून २५ दिवसात २ लाखाहून अधिक व्यवसायिकाना क्युआर कोड दिले जाणार आहे. नोटबंदी नंतर ज्या काही कॅशलेस मशिन बसविल्या त्यापैकी बऱ्याच मशिन बंद पडल्या. व कॅशलेस मशिन ही शोभेची वस्तु बनली आहे. व ग्राहकाला सुध्दा डेबीट व क्रेडीट कार्ड ने घेतलेल्या मालाचा पैसा अदा करायचा असल्यास वस्तुच्या रक्कम अधिक १.५ टक्के प्रमाणे अतिरिक्त भरावा लागेल.

ग्रामीण अर्थव्वस्थेवरील परिणाम व अडचणी :

नोटबंदी व वस्तु सेवाकर प्रणालीवर ग्रामिण अर्थव्यवस्थेवर परिणाम झाला सध्यापर्यंत सुध्दा विद्युत लाईन काही गावात गेलेली नाही. असेल ही पण लोड सेटींग प्रत्येक माणसाला जिवन जगण्याकरिता वेगवेगळया अवस्थेतुन जावे लागते तर जिवनाआवश्यक वस्तु पासून तर कृषी अवस्थेपर्यंत सर्वच गोष्टीवर मर्यादा म्हणजे नोटबंदी व नंतर कर हया दोन गोष्टी ग्रामिण अर्थव्यवस्था कोलमंडली ग्रामीण छोटया व्यावसायीकाचे नोटबंदी व वस्तु सेवा कर प्रणाली नुसार व्यवसायीकाचे धंदे बसले ग्रामिण अर्थव्यवस्थेवर विपरीत परिणाम झाला. ग्रामिण युवकाचा हया दोन कारणाने रोजगार हीगवून गेला स्वयंच्या स्व स्वयंपाकी गॅस, पेट्रोल, व डिझलच्या किंमती यामु त्यामुळे ग्रामिण व शहरी अर्थव्यवस्था अडचणीत

जीडीपीचा दर सकारात्मक दाखविण्या केंद्रसरकार सांख्यिकी विभागावर दबाव आणण प्रयत्न करीत आहे. असा सवाल सुब्रमण्यम स्वा केला. नोटबंदीचा अर्थव्यवस्थेवर आणि जीडी प्रतिकुल प्रभाव पडला नसल्याचे दाखविण्यासाठी सरकार केंद्रीय सांख्यिकी विभागाच्या अधिका सातत्याने चांगले आकडे देण्यासाठी केंद्र सरकार आणतात याचाच अर्थ असा की, नोटबंदीमुळे भ अर्थव्यवस्थेवर विपरीत परिणाम झाला पण स सरकार म्हणतात. की, नोटबंदीमुळे अर्थव्यवस्थेला झाला असा दिंडोरा पीटवीत आहे. स्वामी भा जनतेला सावधतेचा ईशारा दिला की, जीडी तिमाही आकडयावर जाऊ नका ते सर्व बनावट आ आहेत. माझ्या वडीलांनीच सांख्यिकी विभागाची स्थ केली होती म्हणून तुम्हाला सांगत आहे असे म महणाले नोटबंदीमुळे अर्थव्यवस्थेवर काहीच प परिणाम पडला नाही. अशी आकडेवारी देण्याचा सांख्यि विभागावर दबाव आहे. भारतीय अर्थव्यवस्थेवर नोटब प्रभाव पडला आहे. नोटबंदीच्या निर्णयानंतर आकडेव अंदाज कसा काढला, असा प्रश्न की सांख्यि विभागाच्या संचालकाना विचारला असता सांख्यि संचालक म्हणतात. आम्ही दबावात होतो, त्यांनी अ मागीतले आम्ही दिले, असे त्यावेळी संचालकाने सांगितले असे स्वामी म्हणाले याचाच अर्थ असा ग्रामिण अर्थव्यवस्थेवर नोटबंदीमुळे परिणाम व अड दिसुन येतात. कारण नोटबंदीमुळे बॅकाना ३८०० को नोटा मोहन कराव लागला.

संदर्भग्रंथ :

१) दैनिक लोकमत वृत्तपत्र, दि. ५ ऑगस्ट २०
२) दैनिक दिव्य मराठी वृत्तपत्र, दि. २० नो २०१६.
३) दैनिक हिंदुस्थान वृत्तपत्र, दि. ६ नोव्हेंबर २०
४) न्युजपेजर, प्रसार माध्यम बातम्यातील घेत माहीती

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MANAGING PEOPLE TOMORROW

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ABSTRACT

Today the human resources (HK) function is acknowledged to play a critical role in the success or failure of an organisation. A survey of 57 CEO's and HR professionals by the author in May 2006 led to the ranking of these HR challenges in order of importance and criticality to meeting the demands beyond tomorrow

I. INTRODUCTION

Today the human resources (HK) function is acknowledged to play a critical role in the success or failure of an organisation. The expectations are that HR will be vitally involved in doing all that it lakes to provide the right skills, knowledge and attitude at the right place at the right time. To do this, many HR managers are balancing a scorecard that has goals for talent retention and management, organisational culture-management, training for managerial growth, HR capital management and so on.

A survey of 57 CEO's and HR professionals by the author in May 2006 led to the ranking of these HR challenges in order of importance and criticality to meeting the demands beyond tomorrow. It revealed that the most important challenge for business was creating a high-performing culture (47 percent of lop ranks), followed by talent retention (28 per cent of lop rank) and recrt ling in today's context (22 per cent of lop rank). The least importance was given to human capital practices (10 per cent of bottom rank) and HR systems implementation (2B per cent of bottom rank). Surprisingly, a significant 22 per cent of the respondents gave the lowest rank to going global. Some morn insights for companies in India and Asia are in the table.

Let us now discuss some of the issues arising out of this in the context of HR practices today. tomorrow and beyond tomorrow.

II. CREATING A HIGH-PERFORMING CULTURE

Typically, Indian organisations have a long history of high job security, with much of the workforce in the government and public sector and enjoying life-long employment. The more ambitions youth today are aggressive and move across organisations; sometimes staying too short a period to make a real contribution. Added to this was an inheritance of bureaucrat and hierarchica organisations. With a basically feudalistic maddest and paternalistic styles of leadership. over focus on labour welfare an abundance of available manpower, high focus on creation of job- and dominant effects of work restriction by percent labour unions in the 1960 to late 1980 conditions were set to productivity and performance to suffer. Indian organisations came to be heavy and unwieldy. Since 1900's, Maninohan Singh (then Finance Minister) paved the way for liberalisation of economic policies. Foreign competition on Indian soil gave rise to leaner and more productive organisations which had the advantage of leapfrogging technology and cultural barriers. The first response to the liberalisation policies was to streamline operations and trim the excess manpower, giving rise to a wave of early retirement options for a vast segment of the workforce. Today, many organisations have recovered from thn residues of the initial response to liberalisation, and having transformed themselves into lean and efficient work systems, the challenge of creating a high ' performance work culture snerns to take prime importance. Building organisations that sustain themselves and look at long term strategy for surviving and thriving is the top agenda for managers today.

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III. TALENT RETENTION

As the economy grows and demand for goods and services expands, there is a resonant echo in the demand for skills and competencies that help de-liver those goods and services. In some sectors like IT and ITES, which constitute a large chunk.

IV. MANAGING MINDSETS

Teamwork is an individual skill that can be learned. People need to look at organisational nee is above those of individuals. Cynicism needs to be combated on a war fooling and positive organistional membership needs to be reinforced. Many Indian organisations have a feudalistic mindset that believes in a top-down approach, paternalistic leadership, hierarchical functioning, one-way communication and respect for age and seniority. This needs to move in the opposite direction and make way for a more bottom-up approach, team leadership, 360 degrees approach to communication, equalisation across organisational levels of hierarchy, age and seniorily.

V. TRAINING FOR GROWTH

The role of training and development in meeting business challenges of tomorrow is next after creating high performing organizations, talent retention and recruitment. The respondents felt the pressures of global competition to build capability within the organisation. Investment in training content that will deliver skills and competencies, assessment and audit of training effectiveness, are areas of delivery for HR managers. Had it not been for the immediacy and urgency of the challenge of retention and recruitment, this area would have in all probability have had a higher importance in the ranking of HR challenges.

VI. COMPENSATING KNOWLEDGE WORKERS

Indian compensation standards are lower than global medians on take-home pay, and companies have major variances on perquisites and benefits as compared to their global counterparts. Within the country also, meeting the ever-rising expectations of employees is the challenge. It is evident from the kind of salaries being reportedly offered to business school graduates this year, that Indian corporates will have to rise to the challenge of global competition for local talent, and compensation plays an important part of this situation.

VII. RECRUITING IN TODAY'S CONTEXT

Though we have seen high employee turnover levels in most industries, the converse is also true and we have a dearth of competencies needed to sustain and grow businesses. The growing breed of recruitment consultants operating in India is testimony to the fact that -where there is grass, the nomads will travel. A huge vacuum in manpower requirements exists in most companies. Attracting and recruiting the right mix is a high priority agenda for MR practitioners in India. Many arc creating blueprints for a recruitment strategy that optimises sourcing of manpower, creation of the 'right' employment image ad compensation practices that promise the pot of gold at the end of the rainbow to those who join.

The estimate is that almost 50 per cent of candidates recruited by corporate are mismatched to their job requirements. Effective rocruitment strategies are needed to ensure targeted sourcing of candidates, proper assessment procedures that truly measure competencies needed for the job. and an effective assimilation and induction process. The role of manpower forecasting to predict organisational requirements is vital, as many companies now have strategic tie-ups with educational establishments to offer student assistance and placement opportunities to candidate to fulfil their needs. A case in point is font a loon Retail (renamed the Future Group), which has sponsored a Post Graduate Diploma in Business Design at a Mumbai business school with the promise that each year it will absorb 30 students in their ever-expanding retail business. It also works closely with the B-school to assure quality of student intake and curriculum inputs. This works as a mutual win-win situation for organisations who have assured supply of trained managers and for educational establishments that take the opportunity of innovative programme design.

VIII. HUMAN CAPITAL PRACTICES

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The nuts and bolts of manpower efficiency is the lowest priority. Perhaps, past historical encounters with attempts at job evaluation and industrial engineering have shaped this response of our survey participants to assign the lowest priority to human capital practices. In economically surging times like the one we are seeing today, the focus is increasingly on driving business results through creating performance oriented cultures and talent management, and issues like reduction of wastages and excess manpower tend to take a backseat.

IX. CONCLUSION

The human resources function today seems to be engaged in a delivery mode that places immediate emphasis on high levels of performance from existing employees and managing of crises arising out of non-availability of manpower in the form of talent retention and recruiting. People who do not move with the changing demands of the situation pose an additional challenge to HR where the old mindsets need to be aligned to the new. Traditional institution-building perspectives that place emphasis on a vane-driven approach and build organisation culture and networks of interpersonal relationships that enrich and evoke contribution and membership of organisational systems, seem to take a lesser priority. Perhaps the time has come for HR professionals to another at some of their priorities and refocus themselves on matters that are more important

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SERUM ELECTROLYTES (Na &K) PERCENTAGE OBSERVED IN TRIBES OF CHIKHALDARA REGION. (MELGHAT) DIST. AMRAVATI

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ABSTRACT

The present cross sectional study was undertaken among the Trible people of Chikhaldara Region. This study used to investigate serum electrolytes among male and female tribes of Chikhaldararegion.Total 257 Males and 319 Females were taken for examination. Level of serum Sodium and Potassium were calculated by Flame photometry (Kramer 1971) method. The test of statistical significant (t Test) was used to compare population groups. The normal values of Sodium and Potassium, were below standard mean range in various age groups.

Keywords: *Serum electrolyte, Chikhaldara , sodium, potassium.*

INTRODUCTION

Human blood is composed of blood cells suspended in blood plasma and contains Proteins, Glucose, Mineral Iron, Carbon dioxide plasma also sevens as the protein reserve of human body. It plays a vital role in an intravascular osmotic effect that keeps electrolytes in balanced form and protects the body form infection and other blood disorders (Meton et al 1993) (Jyothi et al 2012)

Sodium ions are necessary for regulation of blood and body fluids, transmission of nerve impulses, heart activity and certain metabolic functions (Kaur and Kochar 2009 and 2010). Sodium is an essential nutrient that regulates blood volume, blood pressure, osmotic equilibrium and PH.Sodium chloride is the principle source of sodium in the diet most of it comes from processed foods. The adequate intake for sodium is 1.2 to 1.5 grams per day.

Potassium is also on essential macromineral in humj-an nutrition it is the major cation (positive ion) inside animal cells, and it is this important in maintain fluid and electrolyte balance in the body. Sodium makes up most of the cations of blood plasma at a reference range of about 145 mm^0/L and potassium makes up most of the cell fluid cations at about 150 mm0/L. Plasma is filtered through the glomerulus of the kidneys in the enormous amounts, about 180 litres per day. (Potts et al 1964). Thus 602 g of sodium and 33g of potassium are filtered each day. 1-10 g of sodium and 1-4 g of potassium likely to be in the diet must be reabsorbed. Sodium most be reabsorbed in such a way as to keep the blood volume exactly right and the osmotic pressure correct, potassium most be reabsorbed in such a way to as to keep serum concentration as close as possible to 4.8 mm0l/L (Kumar and Chaudhary 2010).

Most important minerals essential to the body which is consumed as food. Na+ and K+ function together in an electrogenic system in the body called as Na+ /K+ pump. This is used to transfer nutrients across the cell for muscle contraction and relaxation and nerve action. The body needs to keep these two minerals in balance because the work opposite to each other. (buzzle com 2011)

MATERIAL AND METHODS

The present cross-sectional study was undertaken among the tribes of Chikhaldara Dist. Amravati to evaluate level of electrolyte under the guidance of Doctor and medical technician. Blood samples were collected from tribes during the year 2011 to 2013. Analysis of serum biochemical sodium and potassium were carried out by Flame Photometry method by Kramer (1921).

The people were distributed as age group wise. The difference between different age group of tribe male and female were statistically analysed using analysis of variance.

RESULT AND DISCUSSION

COMPARATIVE SODIUM OBSERVED IN TRIBAL FEMALES AND MALES

During serum biochemical studies, the comparative sodium level in different age group of tribal females and males from Chikhaldara, Dist. Amravati (M.S.) warcanalysed. The observed results of level of sodium are represented in table 1while level of potassium indifferent age group of tribal male and female were analysed. The observed results of the study are represented in table 2.

Table 1: Comparative Sodium observed in tribal females and males

Age Group Years	Female			Male		
	N	m	SD	N	m	SD
0 - 5	18	136.67	6.202	12	136.67	14.681
6- 10	17	114.12	39.681	16	134.75	23.618
11- 15	39	126.03	21.173	19	135.11	12.242
16- 20	35	133.03	11.197	30	139.23	9.624
21- 25	63	132.73	19.846	57	140.46	13.125
26 - 30	49	130.59	18.738	17	135.35	12.589
31 - 35	21	132.81	10.279	15	138.33	15.253
36 40	7	122.29	8.301	18	136.22	14.502
41 - 45	19	131.37	11.987	14	134.21	14.208
4 6 50	12	130.75	14.580	19	138.37	11.097
51 - 55	15	130.73	10.361	10	131.50	15.472
56 <	24	124.79	17.134	48	133.90	13.198

Table 2: Comparative Potassium observed in tribal females and males

Age Group Years	Female			Male		
	N	m	SD	N	m	SD
0 - 5	18	3.68	0.757	12	3.77	1.174
6 - 10	17	3.46	0.990	16	4.03	1.022
11 - 15	39	3.92	0.820	19	4.03	0.940
16 - 20	35	3.71	1.150	30	3.96	0.987
21 - 25	63	4.12	1.127	57	4.12	0.903
26 - 30	49	4.16	1.196	17	3.85	0.861
31 - 35	21	3.91	1.028	15	4.10	0.990
36- 40	7	4.00	0.775	18	4.27	1.072
41 - 45	19	3.91	0.830	14	4.23	1.041
46 - 50	12	3.74	0.654	19	4.04	0.923
51 - 55	15	4.45	0.852	10	4.02	0.835
56 <	24	4.17	1.206	48	3.93	0.875

Results indicate that Serum sodium level was observed to be significantly different in females in all age groups. While in males of age group 10-15 and 50 above was observed to be significantly different at 0.05.

Sodium alteration in all age groups suggest the future threats of sodium related disorders. According to Reynolds et al (2013) hypernatremia is an electrolyte disturbance that is defined by an elevated sodium level in the blood shows symptoms such as lethargy, weakness, irritability, neuromuscular excitability and edema. however, such a high level of sodium rarely occur without severe coexisting medical conditions hyponatremia is most common type adrogue et al (2000) which was observed in study area.

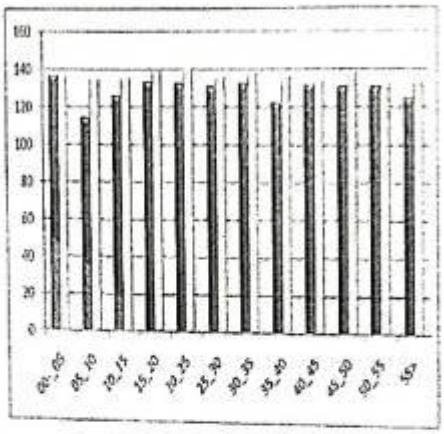


Chart 1:Comparative sodium level observe in tribal females and males

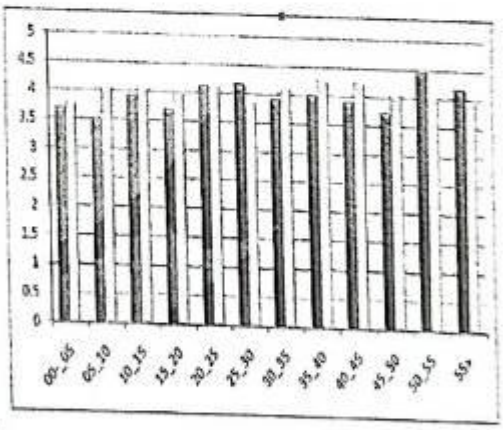


Chart 2: Comparitive potassium level observed in tribal females and males

Serum potassium level in tribal females in age group 35 to 40, 50 to 55 and above 55 while in males of age group 30 to 35, 35 to 40, 40 to 45 ,50 to 55 was not observed to be significantly different at 0.05 while in other age groups it observed to significantly different. The result showed the level was potassium was more significant in female and children of age group 10 and in males of age above 50.

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In present study potassium alteration in all age group also suggest future threats of potassium related disorders. According to Krishna et al (1989)mild hypokalaemia is often without symptoms. moderatehypokalaemia may cause muscle weakness,musclecramps and constipation. severe hypokalaemia results in respiratory depression. severe impairment of skeletal muscle function which was observed in the tribal people of this region.

Dietary electrolyte balance affects the absorption of monosaccharides and amino acid and reduce intestinal uptake of these nutrients like sodium potassium and calciumetc. (Murakami et al 2001). Serum electrolyte are important micro nutrient to the human and plays important role in the body function. its rate of consumption and excretion may vary to the different geographical region. (Tripathi et al 2011). the different types of foodhabits were also responsible for difference in the electrolyte that could lead to hypertension (lertzmann 2005)

At the time of this entry, we were not able to identify specific nutrition literacy studies in study area. among thesepeople there are lakhs of information about food choices, limited or difficult access helpful food and socio-economic constraints such as low level of education and high level of poverty gender discrimination (Baldacci 2009and Zoenner et al). From the above result we focus in future research. future research is needed to solve the nutritional problem of these poor tribes

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HAEMOGLOBIN CONCENTRATION AMONG THE PEOPLE IN SLUM AREA (AMRAVATI, INDIA): SURVEY & DISCUSSION

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Abstract
Selected areas of Amravati city were undertaken for study of Haemoglobin percentage among the Vilas Nagar , Rahatgoan , Lakshmi Nagar, Navsari slum area of Amravati. The cross-sectional study was performed by arranging camp and blood sample were collected from the people of selected slum area for the study of Hb%. By taking consent inform from the respondents at the time of blood collection taking information about their surrounding food and feeding habit blood sample were collected from 157 people of different age groups and sex and Hb % was calculated by Sahil's method. we observed that low Hb% occurs in female as compare to male. Females were anaemic in the selected slum area .
Keywords : Haemoglobin ,anaemia , slum area.

Introduction :
Blood is a life maintaining fluid and contained blood cells and plasma. It carries oxygen and nutrients to all parts of the body and fights against the infection. Different functions including transporting oxygen and nutrients to the lungs and tissues is carried by blood.

Hb is the protein molecule in RBCs cells that carries oxygen from the lungs to the body tissue and returns CO_2 from the back to the lungs. Major function performed by haemoglobin is "ssue oxygen buer" which means haemoglobin in the blood is mainly responsible for stabilizing the oxygen pressure in the tissue. The iron contained in haemoglobin plays a very important role in maintaining the shape of RBCs and that is responsible for red colour of blood .

Structure of Heamoglobin: Haemoglobin is generally made up of four protein molecules globins chains that are connected together, The normal adult haemoglobin molecule contains two alpha and two beta globin chain. Whereas in foetuses and infants beta chain are not common and the haemoglobin molecule is made up of two alpha and two y-chain are gradually replaced by B- chain forming the adult haemoglobin structure. Each globin chain contains an important central structure known as heam molecule which contains iron and is vital in transporting oxygen and Co2 in blood. When haemoglobin level decreases that time obesity increases in the patients and obesity decreases when haemoglobin increases (Culleton et al 2006

Low haemoglobin or anaemia is a common condition among oldr adults with prevalence increasing with age (Buzzle .Com , 2010). Anaemia is associated with increase mortality and poorer physical performance high haemoglobin level is seen in smokers and people living in high altitude area (Right health .com,2001) Anaemia even when mild to moderate affects the sense of well-being resulting in fatigue stress sand reduced work productivity (Hass and Brownie, 2001).

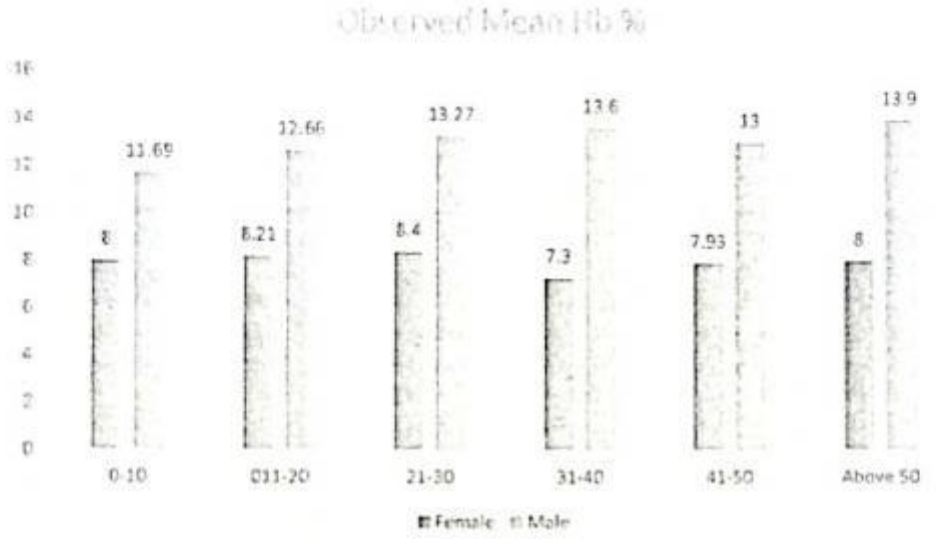
Materials and methods :
The present cross sectional study was undertaken among the people of slum area of Amravati city . by arranging medical the blood samples were collected from the selected slum area to analyse haemoglobin status . haemoglobin level was measured using hemoglobinometer (Sahil's method). the people were distributed as age group wise.

Result and discussion:

During the study ,comparative haemoglobin level in different age groups of female and male from slum area of Amravati city was analysed . The observed results of the study are represented in the table 1 below:

Age Group	Female (mean Hb %)	Male(mean Hb %)
0-10	8.00	11.69
11-20	8.21	12.60
21-30	8.40	13.27
31-40	7.30	13.6
41-50	7.93	13.0
Above 50	8.00	13.9

Table 1: Mean Hb % observed in male and female of slum area in Amravati city



In female there was lower haemoglobin concentration than male . Low haemoglobin or anaemia is a common condition among older adults with increased morality (Zakai et al .2004). (Beutler and Waalen 2006) recently suggested specific lower limits of normal Hb concentration for black Americans male s(12.9 g/dl) and females (11.5 g/dl). (Tantarpale et al., 2012) observed low haemoglobin status of women in Amravati city.

Women health hygiene is the main problem of slum area from babies to adult women they do not pay attention to their health properly. the basic needs are not fulfilled by their families. in the present studies all the age groups women showed anaemic condition (Joan prat 1989) iron deficiency is the main cause of lower haemoglobin in women. about the balance diet unconsciousness among the women is another reason similar investigation by (usamga et al 1994). result of present study indicates that the prevalence of anaemia in this region 56 % (female). In present study low haemoglobin occurs in female as compared to male therefore it is concluded that the female is more anaemic then male.

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Pragmatic influence of Anthropometry and Dietary Position In Tribal Region : Critical Micro Analysis

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ABSTRACT

The research study depict in the paper describe effect of weight gain by using Body mass index (BMI) were used for evaluate nutritional status. Cross-sectional study was undertaken among the tribal people of Chikhaldara region (M.S.) Dist. Amravati. This study used to investigate body mass index (BMI) among male and female tribes of Chikhaldara region. Total 254 males and 265 females were selected by using standard anthropometric techniques to weight (kg), height (m) and body mass index (BMI) were used to find out the nutritional status by Critical Micro analysis. A research also reveals that predominance of under nutrition among the tribal people of both genders. The study concludes that the tribal people are typically affected due to climatic and malnourished practices.

Keywords – Body Mass Index (BMI), nutritional status, Critical Micro Analysis.

1. Introduction :

The present scenario of India pronounced that tribal people add up to about 8 % of the total population in India, with varying magnitude in the different states (Mallikarjuna Rao et al [2006]). They live in exceptional corporeal socio-economic and civilizing milieu inaccessible from general population. In view of their habitable and food lifestyle. They form a distinctive group compared to other populations. Their food intake is influenced by vagaries of nature with large seasonal variations, depending up on availability of agricultural and forest produce several studies have documented a close relationship between the tribal flora and fauna and their nutritional status. (Hanumantha Rao D, Mallikarjuna Rao K 1994).

Though, women and preschool children are known to be most vulnerable group for under nutrition, adolescents' girls are also being recognised as a potential group during which the nutrient requirements are relatively high under nutrition during teenage years, confounded by childhood marriages, leads to higher mortality and morbidity among women and young children (Studied carried out by National Nutritional monitoring Bureau, 2003). World Health Organization (1995) has recommended that anthropometry could be used to assess the nutritional and health status of adults. One such measure now in widespread use is Quetel index which is weight (in kg) divided by height in (m²) (keys et al 1972). Several scholars have emphasized the importance of body mass index as an nutritional assessment (Gupta et al 1976) Rao V.G., Yadav R. et al (2011) observed that tribal preschool children of Gond community had low Hb% with low BMI due to certain adverse realities like insufficient food intake, adverse cultural practice, micronutrient deficiency disorders such as anemia. Melghat is hilly region of Amravati District in Maharashtra State, adjoining Khandwa district in Madhya Pradesh. Almost the whole of Korku population of Maharashtra state is concentrated in Melghat region. Melghat is scheduled area and main resident of area are Korku a scheduled tribe Korku is predominant tribe in the region comprising of 89.27% of tribal population. Other amongst the tribes are gonds, Nihals, Mungias, Bhatus, Gaolies etc. constitute the remaining population. Chikhaldara is a famous city in the Amravati district in the Vidarbha region of the state of Maharashtra. It is the only hill resort in the Vidarbha region that has a cool breezy weather. It is located approximately 1100 meters above the mean sea level. Villages located near Chikhaldara are Badnapur, Morgad, Salona, Semadoh, Sonapur and Devgaon. Korku are typical tribal population of the Chikhaldara region. Korku dialect belonging to Austro-Asiatic linguistic group. The Austro-Asiatic Speakers are considered as the first settler of Indian subcontinent (Roychoudhary, 2001). The life of Korku living in hilly and forest areas revolves round the forest activities. As such agriculture occupies a secondary place in their case. Their main job is work as forest labourers. The crops traditionally cultivated by Korkuare Kodo, Kutki Jagni, Jawas, gram wheat which form their staple diet. The toll of malaria in melghat is very high. Due to this maternal impact the general viability of people is very low and people also fall prey to pneumonia bronchitis and other disease. All these clubbed together known as Melghat fever. It is established fact that body mass index (BMI) is a useful anthropometric indicator of measuring nutritional status of the population (FAO, 1996) and is specifically suitable for large scale. Spread

65

west Space (Adak, 2000 a) (see Reynolds and Mate, 1984). The prevalence of chronic energy deficiency (CED) measured through BMI (James et al 1988). In the Latest (Gopalan, 1992), can be used as the standard of living between population groups (Nube et al, 1998). The appropriateness of using BMI less than 18.5 kg/m^2 as undernutrition are validated to many authors to predict post demographic economic increases mortality and morbidity (Khongsdier 2002). In India the most underprivileged group is the tribal communities both in terms of socioeconomic conditions as well as nutritional status (Bagi 1994, Sharma 2001). Several studies shows these tribes to as high undernutrition among tribals across India (Fernandez Luiz et al 1992, Khongsdier 1997, Adak et al 2006a, 2006b).

Site Selection :

A critical cross sectional study was performed to evaluate BMI and nutritional status of tribal people of Chikhaldara region (Melghat Dist. Amravati.

Instrumentation : Height and weight were measured weight was calculated by weight balance and height by stadiometer.

Data Collection : The nutritional status and background information was collected from each individual through questionnaire as well as tribal committee members consent was obtained for carrying out survey. The age groups were distributed into 0-20, 21-40, 41-60 and 61 and above respectively.

The BMI was computed using the following standard equation.

BMI = Weight (kg)/height (m^2)

2. Methodology, Material and method :

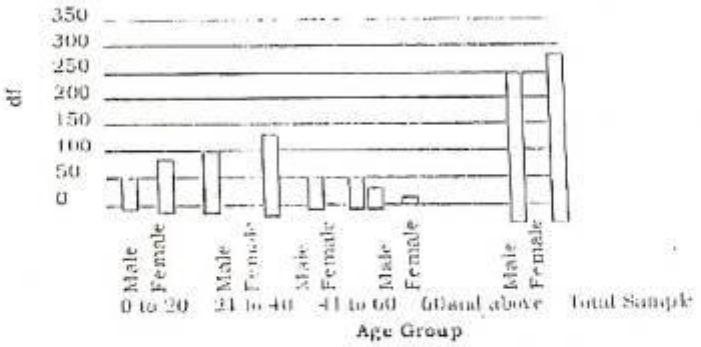
Nutritional status was evaluated following BMI cut-off points to define thinness. The age and sex specific cut-off values were established based on international survey. This classification categories the prevalence of under nutrition according to percentage of population with BMI under 18.5 low, medium and very high critical situation (WHO 1995).

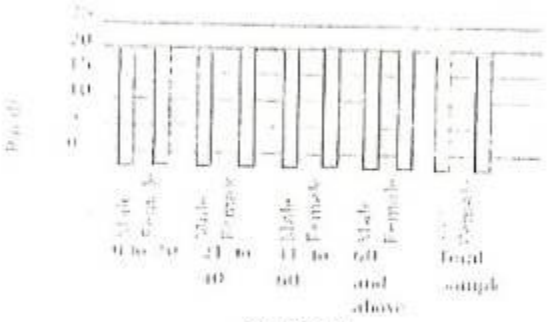
Observations :

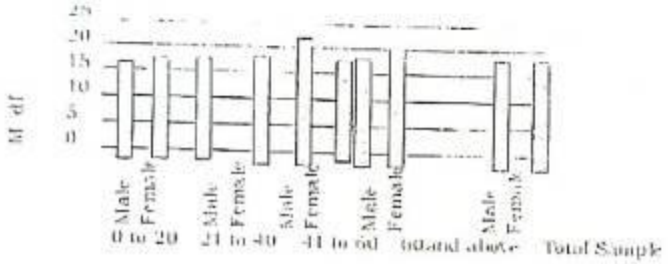
Table 1 BMI observed in male and female tribes of Chikhaldara (Melghat region)

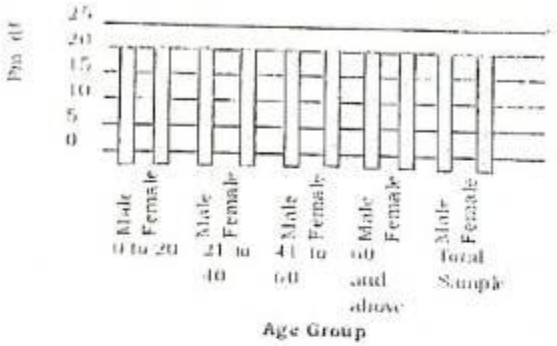
Age Group	Sex	Df	Pm	M	SC	SE	T
0 to 20	Male	54	20.7	17.15	4.596	0.62	5.74**
	Female	85	20.7	17.68	4.438	0.48	6.31**
21 to 40	Male	106	20.7	17.80	2.472	0.24	11.99**
	Female	140	20.7	18.50	2.925	0.25	8.58**
41 to 60	Male	51	20.7	21.20	3.718	0.52	0.98
	Female	45	20.7	17.71	5.074	0.75	3.99**
60 and above	Male	38	20.7	19.00	4.593	0.74	2.31*
	Female	15	20.7	20.58	4.407	1.10	0.11
Total Sample	Male	254	20.7	18.56	3.889	0.24	8.77**
	Female	288	20.7	18.20	3.937	0.23	10.41**

Table 2. Variations of df, Pm, m, SD, SE and t Versus Age Group Sex wise.

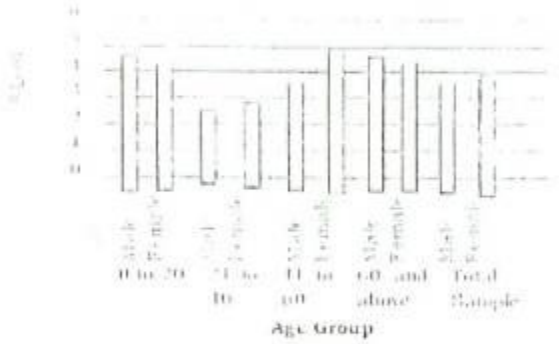



Male
Female
21 to 40
41 to 60
60 and above
Total sample
Age Group


Male
Female
0 to 20
21 to 40
41 to 60
60 and above
Total Sample
Age Group


Male
Female
0 to 20
21 to 40
41 to 60
60 and above
Total Sample
Age Group

467



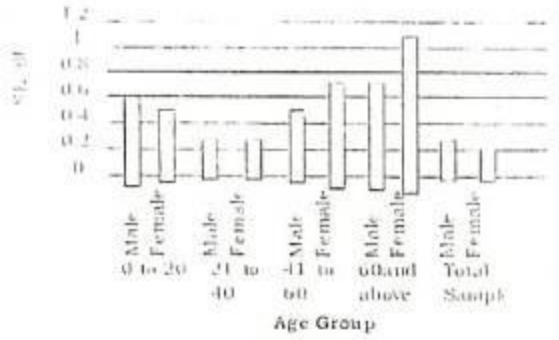




Figure 1. Variation of df Put as SS, SL and t Versus Age Group Sex wise Result

[* - Significant at 0.05 ** - Significant at 0.05 & 0.01 level of significance]

(Critical value for 15 df $t_{0.05}$ = 1.7530, $t_{0.01}$ = 2.6025, for 28 df, $t_{0.05}$ = 1.6859, $t_{0.01}$ = 2.4286, for 45 df, $t_{0.05}$ = 1.6791, $t_{0.01}$ = 2.4121, for 54 df, $t_{0.05}$ = 1.6753, $t_{0.01}$ = 2.4049, for 64 df, $t_{0.05}$ = 1.6730, $t_{0.01}$ = 2.3974, for 65 df, $t_{0.05}$ = 1.6650, $t_{0.01}$ = 2.3740 for 105 df, $t_{0.05}$ = 1.6591, $t_{0.01}$ = 2.3614, for 140 df, $t_{0.05}$ = 1.6556, $t_{0.01}$ = 2.3513, for 254 to 280 df, $t_{0.05}$ = 1.285, $t_{0.01}$ = 1.9617)

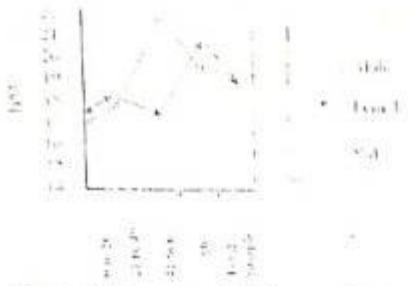


Figure 2. Variation of BMI Versus Age group Sex wise

The above table-1 reveals that the calculated 't' values between standard range mean and obtained BMI mean for various groups i.e. 0-20, 21-40, 41-60, 15.74, 11.99, 0.98, 2.31 and 8.77 respectively, for male. All these values are than critical values of 't' at 0.05 and 0.01 level of significance. Hence there is a significant difference in BMI and standard range of male except for age group 41-60. From the table it is also observed that in all the groups BMI range is within 17 to 19 which is quite less than the standard range mean value for men 20.8 except for age group 41-60 i.e. 20.3 which is above average. For different groups of female i.e. 0-20, 21-40, 41-60, above 60 and total sample the calculated 't' values are 9.31, 8.58, 3.99, 0.11 and 10.41 respectively. All these values are greater than critical values of 't' at 0.05 and 0.01 level of significance except for age group 60+ which non-significant. Hence there is a significant difference in BMI and standard range mean of female. From the table it is also observed that in all the groups BMI range is within 17.8 to 18.8, which is quite smaller than the standard range mean value for female 20.8 except for age group of 60+ i.e. 20.8 which is required value of BMI for females. Hence from the table and graph it is concluded that, the BMI in both male and female tribes of Chikhaldara region is below the standard range mean

2. Result & Discussion :

Malnutrition was wide spread phenomenon in tribal area Carlson (1991) have studied the child malnutrition problem at global, regional as wells county level. Meghalata (2010) studied on nutritional status of Korku tribes in Betul district of Madhya Pradesh observed that there was prevalence of protein energy malnutrition anemia, because korku tribes obtained mean intake of nutrients. Several studies, Dhare and Joshi (1988), Rajesh Sing, Prem Singh (2003) reported that tribal children suffered from highest percentage of severe malnutrition with inadequate nutrition. Nagdda H.L. (2001) examine and assess the tribal health situation which is related to their economic pursuit, nutritional and body measurements. Nutritional anaemia, goitre in women in India and so more in rural and tribal belt. International center for research on women (ICRW) studies stunting was highly prevalent in adolescent boys and girls, ranges from 12 in India to 65% in philipines in contrast the rate of low body mass indices indicative of current under nutrition under nutrition in early childhood may diminish a person's eventually body size malnourished children are typically shorter and lighter than their well nourished peers at the end of adolescent growth. Several studies from India Gupt and Sengupta, 2002] have utilized BMI to study nutritional status of tribal populations. The basic causes of undernutrition in developing countries are poverty, poor hygienic conditions and little access to preventive and health care3 [Mitra 1985].

4. Conclusion:

Therefore BMI has strong association with nutritional status in present study low level of BMI and undernutrition was observed which may be responsible for life threating diseases, higher ratio of maternal mortality. Also poverty illiteracy, very less facilities for health, blind beliefs, socio economic status was affecting each and every aspects of tribal people of Chikhaldara region.

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2.2. Characterization techniques

The synthesized samples were characterized for their structure and morphology by X -ray powder diffraction (XRD; Siemens D5000) and transmission electron microscopy (TEM; Hitachi-800). The X-ray diffraction data were recorded by using CuK_α radiation (1.5406 A^0).

2.3. Measurement of sensing properties

The gas-sensing properties of prepared $LaCr_{1-x}Zr_xO_3$ powders were studied for different reducing gases such as hydrogen sulphide (H_2S), ammonia (NH_3), liquefied petroleum gas (LPG) and carbon monoxide (CO) whose concentration were fixed at 500 ppm in air. The gas sensitivity (S) was defined as: $S = (Ra - Rg)/Ra = \Delta R/Ra$; where, Ra and Rg are the resistance of sensor in air and the test gas, respectively. The gas-sensing properties were measured in a temperature range of 50 – 350^{0}C.

RESULTS AND DISCUSSION

3.1. X-ray Diffraction Study

Figure 1 display the XRD pattern of the sample $LaCr_{0.4}Zr_{0.6}O_3$, calcined at 650^{0}C for 6 h. The XRD pattern showed perovskite with tetragonal structure. The XRD pattern indicates that the product has high degree of crystallinity judged from the high and sharp diffraction peaks. The average particle size of the nanocrystalline $LaCrO_3$ according to the scherrer formula were in the range of 30 – 40 nm.

In order to check the effective Zr content in the perovskitic phase, the relative occupancies of both Cr and Zr were refined. No significant variation from the stoichiometric value was detected for oxygen while the cation refinement lead to the effective composition of $La(Cr_{0.4}Zr_{0.6})O_3$. This composition marks the highest degree of Zr-substitution that can be attained at the Cr site in $LaCrO_3$ at the reaction.

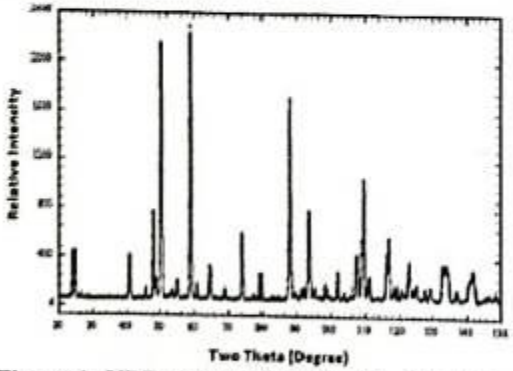


Figure 1: XRD pattern of $LaCr_{0.4}Zr_{0.6}O_3$ calcined at 650^{0}C for 6 h

3.2. Transmission electron microscopy

The morphology of the powder sample has been observed by TEM. Figure 2 shows the TEM micrograph of the $LaCr_{0.4}Zr_{0.6}O_3$ powder with uniform grain size distribution having a small tendency of agglomerates formation. Due to the formation of polycrystalline material particle size are formed at 35 nm.



Figure 2: TEM image of the sample $LaCr_{0.4}Zr_{0.6}O_3$ calcined at 650^{0}C for 6 h.

3.3 Gas Sensing Properties

Figure 3 shows the sensor response (S) as a function of operating temperature for undoped $LaCrO_3$ nanopowder calcined at 650°C for 6 h for various reducing gases like NH_3, LPG, CO and H_2S. The sensor characteristic shows higher response for CO gas as compared to LPG, NH_3 and H_2S at an operating temperature 220°C.

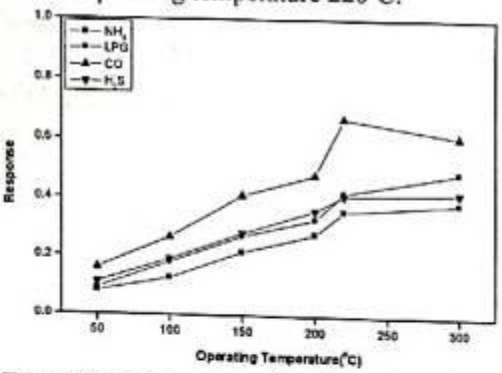


Figure 3: Response as a function of operating temperature for $LaCrO_3$ for different reducing gases.

In order to improve the gas response properties, a great variety of atoms or additives are introduced in the base sensing semiconductor. Figure 4 shows the gas response as a function of different amount of Zr doped $LaCrO_3$ (x = 0.2, 0.4, 0.6 and 0.8). The response to CO gas goes on increasing with increasing amount of Zr. The largest response for $LaCr_{0.4}Zr_{0.6}O_3$ (x = 0.6) was obtained due to more available sites for the oxygen to be adsorbed and in turn to oxidize the test gas. The decrease in response may be due to the insufficient number of sites available on the surface. The partial

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replacement of Cr by Zr ion results in decrease in grain size, which results in larger density of grain boundaries, which increases film's effective exposure area to the CO gas. The chemical composition of the semiconductor is also a key parameter that influences their sensing performance. In fact, composition by itself can affect the microstructure and, thus determine the sensing properties.

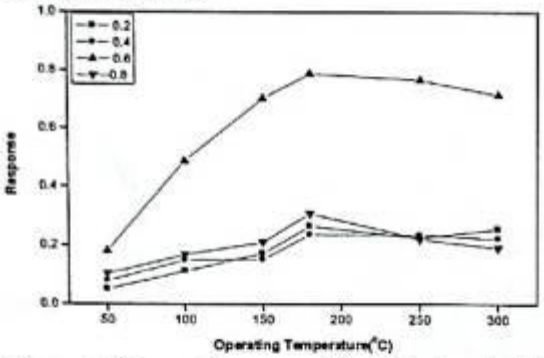


Figure 4: Sensor Response of $LaCrO_3$ doped with different amount of Zr calcined at 650°C. (a) x=0.2, (b) x=0.4, (c) x=0.6and (d) 0.8

Figure 5 illustrates the gas response of $LaCr_{0.4}Zr_{0.6}O_3$ at different operating temperature. It is observed that the sensor has high response to CO gas as compared to LPG, NH_3 and H_2S at 180°C. The high response to CO gas can be attributed to the surface modification by Zr over $LaCr_{0.4}Zr_{0.6}O_3$ film.

Figure 6 shows the dependence of gas response of the $LaCr_{0.4}Zr_{0.6}O_3$ sensor on the concentration level of CO at 180°C. It is clear from the graph that with the increase in the concentration, the response increases linearly up to 200 ppm of CO, after that it saturates. After 200 ppm level of CO, the curve flattens because there would not be enough ionosorbed oxygen species to contribute to detecting mechanisms.

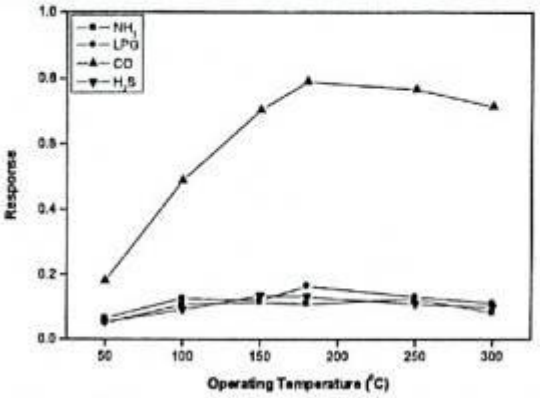


Figure 5: Response to different reducing gases of $LaCr_{0.4}Zr_{0.6}O_3$ as a function of operating temperature.

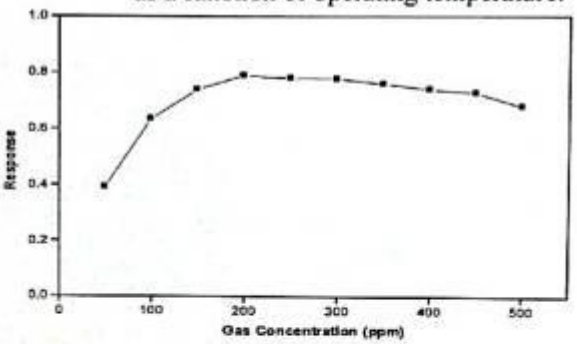


Figure 6: Response of $LaCr_{0.4}Zr_{0.6}O_3$ to CO gas of different concentration at an operating temperature 180°C.

CONCLUSION

Doped and undoped $LaCrO_3$ thick films were prepared by sol-gel citrate method. XRD of $LaCr_{0.4}Zr_{0.6}O_3$ calcined 650°C for 6 h showed good crystalline quality with a grain size 35 nm. It was also found that $LaCrO_3$ sensor exhibited high response for CO gas at 220°C. Further improvement $LaCr_{0.4}Zr_{0.6}O_3$ shows response and selectivity for CO gas at an operating temperature of 180°C.

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PREPARATION AND STUDY OF ALCOHOL GAS SENSING BEHAVIOUR OF $CuFe_2O_4$ THICK FILM RESISTORS

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ABSTRACT

In the present work, thick film of nanostructured Mn doped $CuFe_2O_4$ was prepared by sol-gel method and its ethanol gas sensing properties were investigated. The structural and surface morphological characterizations of the sample were analyzed by means of X-ray diffraction (XRD) and scanning electron microscopy (SEM). The minimum crystallite size of Mn doped $CuFe_2O_4$ calculated from Scherrer's formula is found to be in the range ~20–35 nm. SEM images exhibit the porous nature of the sensing material with a number of active sites. The gas sensing properties of the Mn doped $CuFe_2O_4$ film was investigated for different concentration of ethanol. The maximum values of sensitivity and percentage sensor response were found at an operating temperature 180^{0}C of ethanol. These experimental results show that nanostructured Mn doped $CuFe_2O_4$ is a promising material for ethanol sensor.

Keywords: *Ethanol; sensors; sensitivity; sol-gel*

INTRODUCTION

Gas sensors which can be used in many industries and hospitals are important to environmental monitoring. In order to avoid the toxic gas leaking and endangering the human body, it is necessary to do the detection and examination on different gases. Ethanol vapour has been one of the most extensively studied gases for metal oxide gas sensors, particularly due to the need for small practical devices to detect alcohol on the human breath or even to detect leaks in industrial distribution lines.

Spinel-type metal oxide semiconductors are an alternative for an inexpensive sensors because of good chemical and thermal stability under operating conditions[1-3]. Currently, it is a topic of increasing interest to study the gas sensing properties of ferrites[4-6]. Ferrites show very good surface reactivity and they have temperature dependent surface morphologies[7].

Spinal of the type $M^{2+}M_2^{3+}O_4$ attract the research interest because of their versatile practical application [8]. Spinel ferrites with the general formula AFe_2O_4 (A = Mn, Co, Ni, Mg, or Zn) are very important magnetic materials because of their interesting magnetic and electrical properties with chemical and thermal stabilities [9]. Copper ferrite ($CuFe_2O_4$) is one of the most important ferrites. It has a cubic structure of normal spinel-type. Rezlescu et al [10] reported the high sensitivity of $CuFe_2O_4$ towards LPG, Mn substituted $CuFe_2O_4$ nanoparticles for liquefied petroleum gas sensor [11].$CuFe_2O4$ nanoparticles as a NH_3 gas sensor [12].

In the present study, Mn doped copper ferrite were synthesized by the sol-gel method and tested to sense ethanol gas .The effect of magnese concentration is studied on the sensing response of ethanol gas as compared to pure copper ferrite.

EXPERIMENTAL DETAILS

2.1. Material Synthesis

Four samples with chemical compositions as $CuFe_2O_4$, $Cu_{0.75}Mn_{0.25}Fe_2O_4$, $Cu_{0.50}Mn_{0.50}Fe_2O_4$, and $Cu_{0.25}Mn_{0.75}Fe_2O_4$ were prepared by sol-gel method. The samples are prepared using following analytically pure (AR) grade $Mn(NO_3)_2{\cdot}6H_2O$, $Cu(NO_3)_2{\cdot}3H_2O$, and $Fe(NO_3)_3{\cdot}9H_2O$ as starting materials. Citric acid was used as chelating agent. In order to make ferrite, these reagents in desired stoichiometric ratio were mixed with citric acid in distilled water. Stirring was done on magnetic stirrer for 1 hour at 80^{0}C to obtain homogeneous solution. Gel was obtained by constant stirring and heating the solution at 120^{0}C temperature in pressure vessel. The gel was subjected to calcinations at 650^{0}C for 6 hours in a furnace to obtain the combusted flake form material. By grinding the flakes in mortar and pestle, powdered form of material was obtained.

2.2. Structural Characterization

Structural analysis of synthesized powdered samples was carried out using X-ray diffractometer (Philips 3710, PAN alytical) using Cu-Kα radiation with wavelength (λ = 1.5406 °A), and the surface morphology of the samples was investigated with a Scanning Electron Microscope (JEOL-JXA-8100 SEM). The 10mm diameter size of pellet was made using polyvinyl alcohol (PVA) as binder of each sample for ferrite powder. Two-gram powder sample was uniformly mixed with 5 wt% by weight of PVA. The mixture was pressed in a die and punch arrangement using a hand press machine. The prepared pellets were sintered at 300°C for 3 hours to remove organic PVA. Highly conducting silver paste was applied with the help of n-butyl acetate to make the surface conductive on both sides of each pellet. A gas sensing setup was used for ethanol sensing as shown elsewhere [13]. The gas-sensing characteristics were recorded with reference to time at different operating temperatures and as a function of gas concentration. The

Sensing response was calculated using the given formula [13]:

$$S\,(\%) = [(Ra - Rg)/Ra] \times 100, \qquad (1)$$

where Ra and Rg are the resistance in the air and in the presence of tested gas, respectively.

RESULTS AND DISCUSSION

3.1 Structural analysis

The crystallographic structure of the synthesized $CuFe_2O_4$ and $Cu_{0.50}Mn_{0.50}Fe_2O_4$ nanoparticles were identified by powder X-Ray Diffraction (XRD) measurement. The powder XRD patterns of $CuFe_2O_4$ and $Cu_{0.50}Mn_{0.50}Fe_2O_4$ are presented in Fig.1. All of the main peaks are indexed as the spinel $CuFe_2O_4$ in the standard data (JCPD No: 34-0425). The average crystallite sizes of $CuFe_2O_4$ samples were calculated from X-ray line broadening of the reflections of (112), (211), (213), (105), and (400) using Scherrer's equation (i.e., D = 0.89k/(β cosθ), where k is the wavelength of the X-ray radiation, K is a constant taken as 0.89, h the diffraction angle, and b is the full width at half-maximum. The estimated crystallite size is about 20-35 nm.

The SEM technique was employed for finding morphology of $Cu_{0.50}Mn_{0.50}Fe_2O_4$ as synthesized powder, calcined at 650° C shown in Fig.2.

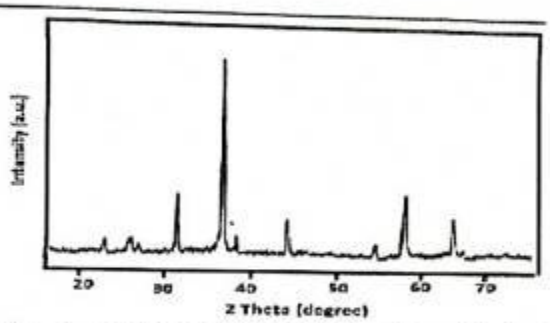


Fig 1 (A):The XRD Pattern of synthesized $CuFe_2O_4$ calcinied at 650°C

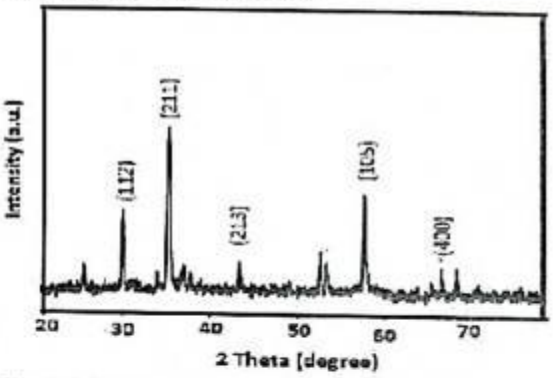


Fig 1 (B): The XRD Pattern of synthesized $Cu_{0.50}Mn_{0.50}Fe_2O_4$ calcinied at 650°C

One can notice the presence of macro-agglomerations of very fine particles. The particle shapes are not well defined. Many large and small pores are present in the whole material. We assumed that the pores are mainly inter-granular because intra-granular pores are not seen on the SEM photograph.

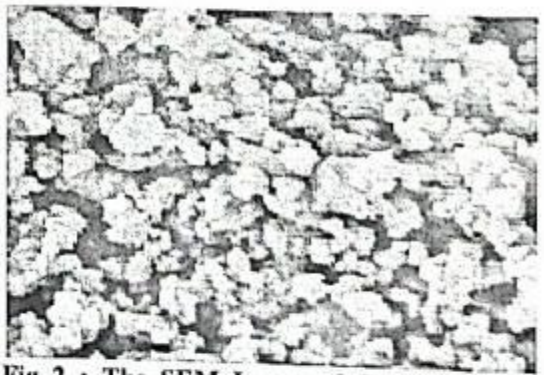


Fig 2 : The SEM Image of $Cu_{0.50}Mn_{0.50}Fe_2O_4$ nanoparticles calcined at 650°C

3.2. Gas sensing characteristics: Fig. 3 shows the sensitivity of $CuFe_2O_4$ to 200 ppm of ethanol gas as a function of working temperature. As evident, the sensitivity increases with the temperature and reaches a maximum value in an operating temperature 250°C. If the

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temperature increases again, the sensitivity decreases. This behavior can be explained in analogy with the mechanism of gas adsorption and desorption.

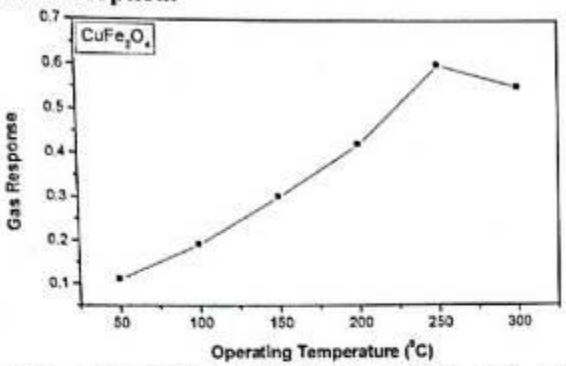


Fig3 : Sensitivity of $CuFe_2O_4$ to 200 ppm of ethanol gas as a function of working temperature.

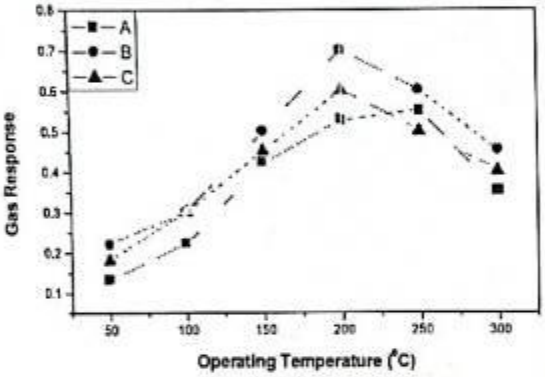


Fig 4: Gas sensitivity of (A) $Cu_{0.75}Mn_{0.25}Fe_2O_4$, (B)$Cu_{0.50}Mn_{0.50}Fe_2O_4$ and (C)$Cu_{0.25}Mn_{0.75}Fe_2O_4$ for 200 ppm ethanol gas

The Gas sensitivity of $Cu_{0.75}Mn_{0.25}Fe_2O_4$, $Cu_{0.50}Mn_{0.50}Fe_2O_4$, and $Cu_{0.25}Mn_{0.75}Fe_2O_4$ as a function of operating temperature range 50 to 300°C for 200 ppm ethanol gas is displayed in Fig. 4. It is clear from the figure that for $Cu_{0.50}Mn_{0.50}Fe_2O_4$, the gas response increases with operating temperature reaches to the maximum at an operating temperature180 °C, and falls with further increasing the in operating temperature. The ethanol may burn before reaching the surface of the film at higher temperatures. Hence, the gas response would have been decreased above 180°C. A larger amount of oxygen-adsorption would have occurred on the surface of the film at 180°C and have facilitated the sensor to oxidize the ethanol gas immediately, giving faster and larger gas response. Other samples $Cu_{0.75}Mn_{0.25}Fe_2O_4$ and $Cu_{0.25}Mn_{0.75}Fe_2O_4$ shows lower ethanol gas response as compare to $Cu_{0.50}Mn_{0.50}Fe_2O_4$

Fig. 5 shows the selectivity of $Cu_{0.50}Mn_{0.50}Fe_2O_4$ to 300 ppm of ethanol gas against various gases like NH_3, LPG, H_2S and CO at 180 °C. It is clear from Figure that, in contrast to pure CuFeO3; the sample shows not only enhanced response towards ethanol but also very high selectivity.

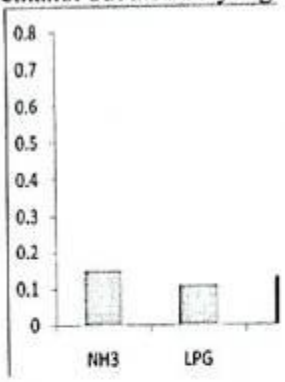


Fig.5: Selectivity of $Cu_{0.50}Mn_{0.50}Fe_2O_4$ for different reducing gases.

Fig. 6 represents the variation of ethanol gas response with the gas concentration of $Cu_{0.50}Mn_{0.50}Fe_2O_4$. For sample $Cu_{0.50}Mn_{0.50}Fe_2O_4$, the response values were observed to increase continuously with increasing the gas concentration up to 200 ppm at 180°C. The rate of increase in response was relatively larger up to 200 ppm, and then saturated after 200 ppm. Thus, the active region of the sensor would be from 200 ppm.

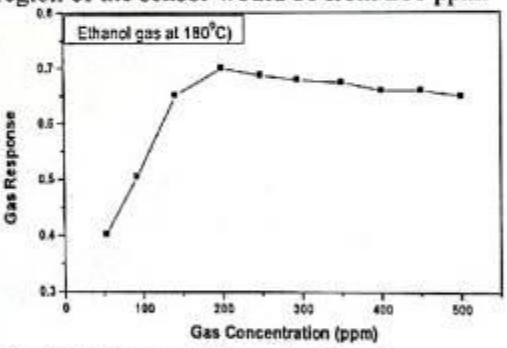


Fig 6: The variation of ethanol gas response with the gas concentration of $Cu_{0.50}Mn_{0.50}Fe_2O_4$

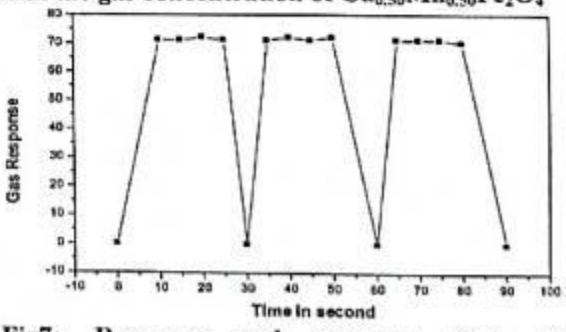


Fig7: Response and recovery time of $Cu_{0.50}Mn_{0.50}Fe_2O_4$

51

The response and recovery of the $Cu_{0.50}Mn_{0.50}Fe_2O_4$ sensor are represented in Fig. 7. The response was quick (~5 s) to 300 ppm of ethanol. Recovery was also very fast (~35 s). The fast response may be due to the fast oxidation of ethanol into H_2O (gas).

CONCLUSIONS

Mn doped $CuFe_2O_4$ thick films were prepared by a sol-gel technique which is a simple and in expensive method. The XRD patterns also show high degree of crystallinity and complete phase formation with grain size of about ~20–35 nm. SEM images exhibit the porous nature of the sensing material with a number of active sites.

From the results obtained, pure $CuFe_2O_4$ showed low response to Ethanol gas. Mn doped $CuFe_2O_4$ thick films were found to be sensitive for Ethanol gas. Among all other additives $Cu_{0.50}Mn_{0.50}Fe_2O_4$ thick film was found to be optimum and showed highest response to ethanol gas at 180 ^{0}C. The $Cu_{0.50}Mn_{0.50}Fe_2O_4$ thick films sensor has good selectivity to ethanol gas against LPG, NH_3, H_2S & CO at 180 ^{0}C.

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STUDY OF FUNGAL AIR ABUNDANCE, DIVERSITY IN INDOOR ENVIRONMENT OF COLLEGE LIBRARY

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ABSTRACT

An investigation of indoor atmosphere of B.D. College of Engineering library, Wardha fungal flora was carried out using petri plate exposure culture plate method. The sites were sampled every month with petri-plates of 10cm diameter for two consecutive years from March 2010 to February 2012. Petri plates were exposed to indoor air of two sections of selected library at one meter above ground level for 10 minutes. One section comprises of reference section i.e. reading room and the other was stack section where books are stored in racks. Total 49 fungal species (451 fungal colonies) of 22 genera were isolated during the period March 2010 to February 2011 and 53 fungal species (417 fungal colonies) of 30 genera were isolated during the period March 2011 to February 2012. The main aim of this research was to study fungal air abundance, diversity and also to analyze the relationship between seasonal variations with fungal species.

Keywords: B.D. College of Engineering library, Petri plate exposure culture plate method, Reference section, Stack section, Seasonal variations

INTRODUCTION

Air is a natural environment for spores of many genera but fungal spores may dominate other components present in the air. Despite its small size and a significant dispersion they have a great impact on human health and different areas of our activities. The concentration of spores in the air strongly depends on the abundance of their formation during the studied period. Fungi, which are not only responsible for paper deterioration and ageing of book in the library but also significantly, affect health of the library staff. The deterioration of library material by microorganism has attracted attention in recent years. Efforts have been made towards reduction of these losses by finding out the condition, causes and weather conditions, which incidentally contribute to the deterioration of library books and other materials. Libraries are the knowledge banks having tremendous collection of books. Books are made up of paper i.e. cellulose and hence can be easily degraded by microorganism including fungi. Fungi play important role in deteriorating of books. Books in the library contain number of thoughts given by the Scientists, Thinkers, Psychologists and Journalists about different methods and subjects which are beneficial to coming generations. Study and preservation of books is also essential and obligatory to promote knowledge for a bright future. Efforts have been made since long back to prevent the books from the harmful effects of fungi and provide them a longer life.

By studying about the harmful fungus (aeromycoflora) present in the air of library we can save the library materials by using safety precautions and also apply it for better health of workers working in that place. Fungal activities, various methods of disinfection such as chemical methods and radiation should be considered for elimination of contaminating fungi. Spreading of such chemicals may minimize the population of harmful microflora but this may affect the health of students, readers, visitors and working staffs in the library. So, use of herbal products as antimicrobial agents may provide the best alternative to the wide and injudicious use of synthetic antibiotics.

Zaska (1997) studied fungi isolated from library materials[1]. Mahajan (1999) studied incidence biodeteriogens in the atmosphere of working library Visakhapatnam[2]. Lugauskas and Krikstaponis (2004) studied microscopic fungi found in the libraries of villnius and factors affecting their development[3]. Shamsian et. al. (2006) studied fungal contaminations in historical manuscripts at Astan Quds Museum library[4], Mushhad, Iran. Kumar et. al. (2007) worked on various aerobiopollutants by using petri plate exposer method inside a library[5]. Katarzyna et. al. (2008) studied microbiological contamination with moulds in working environment in libraries and archive storage facilities[6]. Zotti et.al. (2008) studied microfungal biodeterioration of historical

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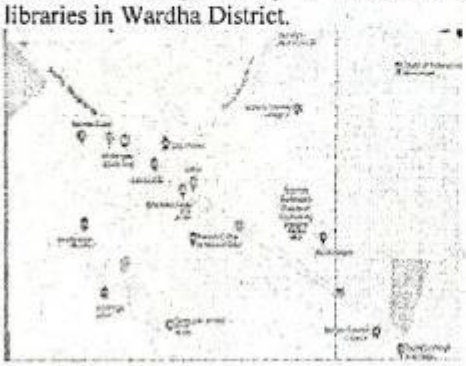
paper preliminary FIIR and microbiological analysis[7]. Nayak and Nanda (2009) studied airborne fungal spores of a college library in an industrial city of Tamilnadu[8].

Bankole (2010) studied a review of biological deterioration of library materials and possible control strategies in the topics[9]. Kumari et. al. (2011) observed comparative aeromycospora in different localities of Gorakhpur (U. P.)[10]. Chadeganipour et. al. (2011) studied bio-deterioration of library materials: study of fungi treating printed materials of libraries in Isfahan University of medical science[11]. Devi (2013) studied aeromycoflora of a college library in Imphal[12].

2. MATERIALS AND METHODS

2.1. The sampling site

Aeromycoflora of indoor environment of library of B.D. College of Science was analyzed for the period March 2010 to February 2012. The selected library was situated at Sevagram Road in Wardha District surrounded by peaceful and pollution free area. This college library is one of the oldest libraries in Wardha District.





Stack section



Reference section

2.2. Sampling procedure

2.2.1 Isolation of fungi from indoor air of library

For the isolation of fungi from indoor air of librar the exposed petri plate method was employed. Th petri plate containing PDA (Potato Dextrose Aga and CzA (Czapek's Dox Agar) media was expose to two sections of library i.e. stalk section an reference section. The petri plates thus expose were brought to laboratory aseptically an incubated at 27±2^0 C for seven days. The funga colonies appearing were picked up and cultured o separate petri plates. They were identified with th help of standard manuals of fungi.

2.3. Statistical analysis

For ecological studies, at the end of the incubatio period of the indoor aeromycoflora, percentag frequency and percentage contribution of fungal flora was calculated with the help of following formulas[13].

$$\text{Percentage frequency (P. F.)} = \frac{\text{Number of observation in which a colony appeared}}{\text{Total no. of observations recorded}} \times 100$$

$$\text{Percentage contribution (P. C.)} = \frac{\text{Total no. of colonies of species in all observations taken together}}{\text{Total no. of colonies of all species}} \times 100$$

3. RESULTS AND DISCUSSION

3.1. Ecological Studies

In the present study, the Percentage frequency and Percentage contribution of fungal spores during the two years of investigation i.e. March 2010 to February 2012 are incorporated in Table 1.

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Table 1: Showing Percentage frequency and Percentage contribution of indoor aeromycoflora isolated from B.D. College of Engineering library

Fungal species	Total % Frequency		Total % contribution	
	Year 2010-11	Year 2011-12	Year 2010-11	Year 2011-12
Zygomycotina				
Mucor circinelloides	8.33	8.33	0.22	0.71
Mucor varians	16.66	-	0.44	-
Rhizopus oryzae	25.00	8.33	0.88	0.23
Rhizopus stolonifer	-	16.66	-	0.71
Syncephalastrum racemosum	-	16.66	-	0.47
Ascomycotina				
Chaetomium funicola	8.33	-	0.22	-
Chaetomium spiralis	8.33	8.33	0.66	0.47
Theilavia terricola	8.33	8.33	0.22	0.71
Cochliobolus lunatus	-	8.33	-	0.47
Eupenicillium purpurogenum	-	16.66	-	0.47
Neosartorya fischeri	-	8.33	-	0.47
Anamorphic fungi				
Alternaria alternata	50.00	100	3.76	11.03
Alternaria humicola	-	16.66	-	0.95
Alternaria tenuissima	25.00	8.33	0.88	0.47
Arthrographis pinicola	-	8.33	-	0.47
Aspergillus caespitosus	8.33	8.33	0.44	1.19
Aspergillus candidus	16.66	16.66	0.88	0.95
Aspergillus flavipes	25.00	16.66	0.66	1.67
Aspergillus flavus	41.66	41.66	2.66	3.11
Aspergillus fumigatus	83.33	91.66	9.31	12.23
Aspergillus nidulans	41.66	33.33	2.21	3.59
Aspergillus niger	91.66	100	51.44	22.78
Aspergillus ochraceous	8.33	16.66	0.44	1.43
Aspergillus oryzae	8.33	16.66	0.22	1.43
Aspergillus parasiticus	16.66	16.66	0.66	1.19
Aspergillus stellatus	16.66	16.66	0.66	0.71
Aspergillus sydowii	16.66	16.66	0.66	1.91
Aspergillus terreus	25.00	16.66	1.10	0.71
Aspergillus versicolor	-	25.00	-	1.91
Beltrania rhombica	8.33	8.33	0.22	0.23
Bipolaris papendorfii	-	8.33	-	0.23
Botryodiplodia theobromae	-	8.33	-	0.47
Chaetomella raphigera	8.33	-	0.22	-
Cladosporium cladosporioides	-	25.00	-	0.95
Cladosporium sphaerospermum	25.00	-	1.10	-
Cristulariella depraedans	-	8.33	-	0.47
Curvularia brachyspora	-	16.66	-	0.71
Curvularia clavata	33.33	50.00	1.33	4.31
Curvularia eragrastidis	8.33	16.66	0.22	0.95
Curvularia lunata	41.66	58.33	3.76	5.51
Curvularia trifolii	8.33	-	0.22	-
Cylindrocladium scoparium	8.33	8.33	0.22	0.23
Drechslera dematioides	16.66	25.00	0.44	1.43
Drechslera tetramera	8.33	16.66	0.22	0.71

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Fusarium chlamydosporum	-	25.00	-	1.19
Fusarium oxysporum	25.00	-	1.77	-
Fusarium pallidoroseum	25.00	16.66	0.88	1.19
Geotrichum candidum	8.33	8.33	1.33	0.23
Gilmaniella humicola	8.33	8.33	0.22	0.23
Gonatobrotrys simplex	16.66	-	0.66	-
Helminthosporium solani	16.66	25.00	0.44	1.67
Monilia fructigena	16.66	16.66	0.88	0.71
Penicillium chrysogenum	33.33	41.66	1.10	2.15
Penicillium citrinum	8.33	-	0.22	-
Penicillium notatum	-	16.66	-	0.47
Periconia hispidula	-	8.33	-	0.71
Phoma glomerata	8.33	16.66	0.22	0.71
Trichoderma viride	-	16.66	-	0.47
Trichothecium roseum	-	8.33	-	0.47

Anamorphic fungi showed great abundance during the investigation period. *Aspergillus niger* was found to be highly dominant fungus having percentage frequency 91.66% and 100%, percentage contribution 51.44% and 22.78% during the investigation period March 2010 to February 2011 and March 2011 to February 2012 respectively. *Aspergillus fumigatus* was also found to be dominant fungal species after the high abundance of *A. niger* which is followed by *Alternaria alternata.*

Tiwari and his coworkers have also reported that *Aspergillus niger* was the most frequent fungal species during the investigation period[14], similar result was also reported by Sharma[15]. Anamorphic fungi recorded as the most contributed fungal groups throughout the study period similar result was also recorded by Sharma and Agrawal[16]. Shabbir reported that percentage occurrence of *Aspergillus niger* colonies was the highest (40%) on Demoiselle crane from Zoological museum of the Punjab University[17]. Jadhav and Lall also recorded that the *Alternaria alternata, A. citri, Aspergillus niger, A. versicolor, Cladosporium cladosporioides* and *Curvularia lunata* as most frequent fungal species of hospital ward at Raipur[18].

Tilak and Saibaba[20] reported *Aspergillus* 11% as the most dominant spores in Aurangabad. Similar result was also reported by Khillare[21]. Verma and Pande have also reported maximum percentage contributions of *Aspergillus* sp. i.e. 10.04% from hospital wards of Jabalpur[22]. Agashe and Anuradha had reported *Aspergillus* contribution 10.7% from hospital ward in Banglore[23].

4. CONCLUSION

During the investigation period, on the basis of group wise variation recorded during investigation, genus *Aspergillus* was found to be most frequent during two years of intensive investigation. *Aspergillus niger* followed by *Aspergillus fumigatus* were found to be the most dominant and frequent fungal species. Similar results were also reported by some researchers[24-30]. One of the reasons of dominance of *Aspergillus niger* might be because of these spores having the capability to multiply faster than the rest and require lesser much favorable condition for germination/propagation. Inspite the highest abundance of genus *Aspergillus*, *Alternaria alternata* was the most frequent fungal species in all the isolated fungi.

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CeO_2 activated ZnO-TiO_2 thick film for CO_2 gas sensor

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Abstract: *Nanocrystalline ZnO-TiO_2 (molar ratio 9:1, 7:3, 1:1, 3:7 and 1:9) synthesized by hydrothermal method. The synthesized materials were used to prepare the thick films and gas sensing characteristics of prepared thick films for 286 ppm CO_2 gas was investigated at different operating temperature. ZnO-TiO_2 (3:7 molar ratio) thick film respond more to CO_2 gas as compared to other investigated films. Further ZnO-TiO_2 (molar ratio 3:7) thick film was activated by using 0.1M, 0.2M, 0.3M and 0.4M CeO_2 solution. The sensing response of all CeO_2 activated films to 286 ppm CO_2 gas was studied at different operating temperature. It is found that 0.3M CeO_2 activated ZnO-TiO_2 thick film exhibited good response to CO_2 gas at operating temperature 290 °C with quick response time (~ 24 s) and less recovery time (~ 72 s). Also film exhibited long time stability and repeatability. The experimental results indicate that the 0.3M CeO_2 activated ZnO-TiO_2 thick film is a very promising material that fulfils the practical requirements for the fabrication of CO_2 gas sensors with good sensing characteristics.*

Keywords: *Carbon dioxide gas, Cerium oxide, Gas sensor, Thick film, ZnO-TiO_2*

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I. Introduction

In general it is believed that green house gases are responsible for global warming. Global warming affects the eco-system, which may lead to disastrous consequences for life on earth. Among the green house gases carbon dioxide (CO_2) play key role because it is the most man-made emission. Since last few years, great efforts have been taken to reduce the global warming. CO_2 monitoring and controlling have been essential to save the world from the effects of global warming and other hazards. It is important to measure the CO_2 concentration in the ppm range for many other applications such as early fire detection, air quality control, food quality control, etc. [1]. The number of options that could be employed to mitigate increases in CO_2 atmospheric levels is limited and will need to include its storage, capture and disposal. Hence it is high time to develop CO_2 sensors with excellent response, small response time, fast recovery, higher stability and more economic.

The physical and chemical properties of materials depend on synthesis routes, governed by the synthesizing conditions. In literature, for synthesis of nanomaterials several routes are described, such as chemical, mechanical, gas phase and molten salt synthesis, etc. Hydrothermal technique is one of the chemical synthesis routes that allow in fabrication of shaped and size oriented materials without melting steps. There are a number of advantages of this technique such as: the short duration of the experiments as compared to classical synthesis methods, crystal size and the level of agglomeration can be controlled, costs of the instrument and energy requirement is low as compared to other synthesis routes and it is an eco-friendly method [2-4].

There have been numerous research publications reporting the successful application of metal oxides in the gas sensor [4-7]. In metal oxide based gas sensors, gas-sensing mechanism is surface controlled phenomena. There are many parameters of materials for gas sensor applications such as adsorption ability, catalytic activity, sensor response, stability, etc. Semiconductor metal oxides like ZnO, SnO_2, Fe_2O_3, In_2O_3, etc. have been investigated for detection of gases [8-10]. However very few of them are suitable to fulfil all these requirements. To overcome these limitations recently researchers are focused on composite materials, like SnO_2-ZnO [11], Fe_2O_3-ZnO [12], ZnO-CuO [13], etc. In addition to binary metal oxides there are number of ternary and complex metal oxides which have emerged as promising candidates for gas detection [14-16]. It has been recognized that sensors developed by mixing of two components together are more sensitive than individual component. This is due to a synergistic effect between two metal oxides [12]. Preparation of mixed oxide lead to the alteration of the electronic structure of the system which causes changes in the bulk as well as in the surface properties [17]. Surface properties are expected to be affected by new boundaries between grains of different chemical composition. It is anticipated that all these phenomenae will contribute favorably to the gas-sensing mechanism [18, 19].

Adequate selection of specific impurities can provides careful control of the sensor operating temperature with an optimum response for a specific gas. Materials like CuO, Fe_2O_3, Cr_2O_3, etc. when dispersed onto the semiconductor oxide films, enhance the sensor response to the gas [14, 20, 21]. Cerium oxide (CeO_2) is most reactive rare earth metal oxide and it has a fluorite structure, with each Ce^{4+} surrounded by eight equivalents, nearest O^{2-} ions that form the corner of a cube. When Ce^{4+} ions are replaced by lower valence cations, oxygen vacancies or lattice defect will be created that can be most reactive site on the surface. The surface and bulk oxygen vacancies occur in CeO_2 are suitable sites for adsorption [22, 23]. CeO_2 has an additional importance in the applications of heterogeneous catalysis because of its redox couple Ce^{3+}/Ce^{4+} and high capacity of store oxygen [23]. The objective of this work is to study the CO_2 gas sensing properties of ZnO-TiO_2 thick film and report the effect of CeO_2 activation on CO_2 gas sensing properties of ZnO-TiO_2 thick film.

II. Material and Method

2.1 Synthesis of nanocrystalline ZnO-TiO_2 and preparation of thick film.

Synthesis of nanocrystalline ZnO-TiO_2 with molar ratio 9:1(sample A), 7:3(sample B), 1:1(sample C), 3:7 (sample D) and 1:9 (sample E) and its characterization by using X-ray diffraction (XRD, XPERT-PRO) and transmission electron microscope (TEM, Techai G2 20) were discussed in our publication [20]. Also formulation of thixotropic paste and preparation of thick films from synthesized material samples (A-E) were discussed in our publication [20].

2.2 Activation of thick film

The thick film of ZnO-TiO_2 (molar ratio 3:7) was activated by dipping it into 0.1M, 0.2M, 0.3M and 0.4M aqueous solutions of Cerium(III) chloride heptahydrate ($CeCl_3\ 7H_2O$) for 30 min. These films were dried in air and fired in heating furnace at 450 °C for 24 h. These films are termed as CeO_2 activated ZnO-TiO_2 thick films.

For the measurements of gas sensing properties of all these thick films, silver electrodes were used for electrical contacts. Gas sensing measurements were carried out on computer-controlled static gas-sensing system. A small Ni-Cr alloy coil was used for heater and a chromel–alumel thermocouple used to monitor temperature. Keithley 6487 picometer cum voltage source was used to measure the sensor current. Test gas was injected into the chamber through an inlet port. The sensor response was defined as the ratio of resistance in air to that in target gas [24].

$$S = R_a/R_g \quad (1)$$

Where,

S - Sensor response

R_a – Resistant of sensor element in air

R_g – Resistant of sensor element in target gas

III. Results and Discussion

3.1 Materials Characterization

The surface morphology and nature of ZnO-TiO_2 molar ratio (A) 9:1, (B) 7:3, (C) 1:1, (D) 3:7 and (E) 1:9 thick films were analyzed by using scanning electron microscope (SEM, JEOL JSM 6380A). SEM micrographs of ZnO-TiO_2 thick films are shown in Fig. 1. It can be seen that, presence of pores indicate that porosity is present and surface roughness of films increases with increase in concentration of TiO_2.

The elemental composition of CeO_2 activated ZnO-TiO_2 (molar ratio 3:7) thick film and ZnO-TiO_2 (molar ratio 3:7) thick film were analyzed by using an energy dispersive spectrometer (EDS). Fig. 2 shows EDS spectrum of (A) ZnO-TiO_2 (3:7 molar ratio) thick film and (B) 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film. From the spectrum, it can be seen that in ZnO-TiO_2 (3:7 molar ratio) thick film there are no other elements than O, Ti and Zn and in 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film there are no other elements than O, Ti, Zn and Ce. The percentage of elements present in ZnO-TiO_2 (3:7 molar ratio) thick film and 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film is shown in table 1. The less percentage of O atoms in the CeO_2 activated film shows that there are lattice defects such as oxygen vacancies.

Fig. 3 shows scanning electron microscope image of (A) ZnO-TiO_2 (3:7 molar ratio) thick film and (B) 0.3M CeO_2 activated (3:7 molar ratio) ZnO-TiO_2 thick film. It shows that the CeO_2 distribution in the microstructure is uniform with open porosity. Hence the surface to volume ratio became maximum this help to enhance the sensor response.

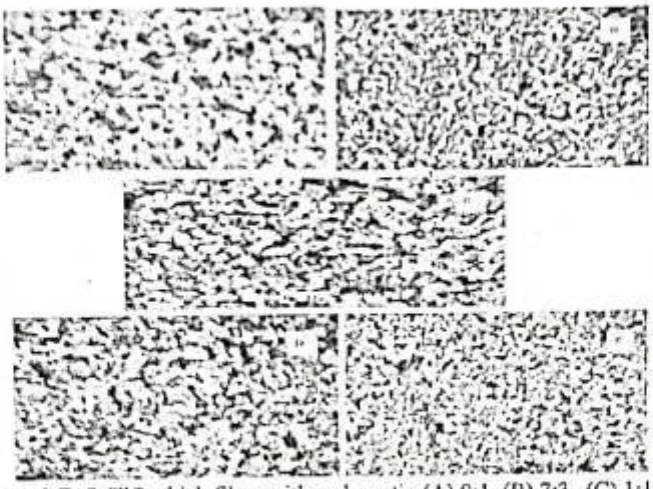


Figure 1: SEM images of ZnO-TiO_2 thick films with molar ratio (A) 9:1, (B) 7:3, (C) 1:1, (D) 3:7 and (E) 1:9.

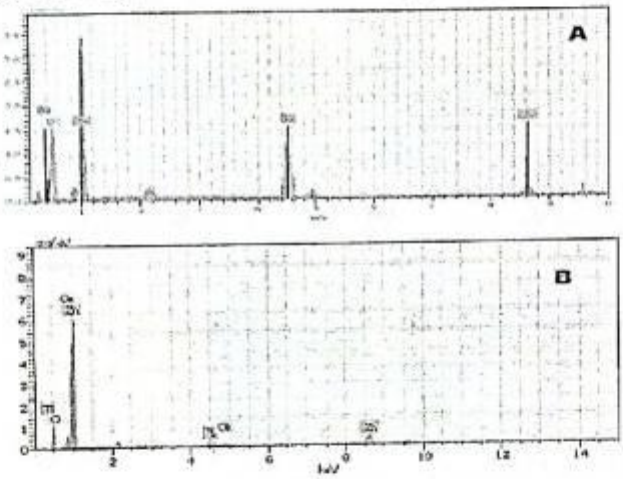


Figure 2: EDS spectrum of (A) ZnO-TiO_2 (molar ratio 3:7) thick film and (B) 0.3M CeO_2 activated ZnO-TiO_2 (molar ratio 3:7) thick film.

Table 1 Composition of 0.3M CeO_2 activated ZnO-TiO_2 (molar ratio 3:7 thick film) and ZnO-TiO_2 (molar ratio 3:7) thick film.

Element	0.3M CeO_2 activated ZnO-TiO_2 (molar ratio 3:7)		ZnO-TiO_2 (molar ratio 3:7)	
	Norm. wt.%	Atom. at. %	Norm. wt.%	Atom. at.%
O	30.11	61.64	33.06	63.80
Zn	33.67	18.94	40.36	19.06
Ti	26.36	17.03	26.59	17.15
Ce	9.86	2.59	Nil	Nil

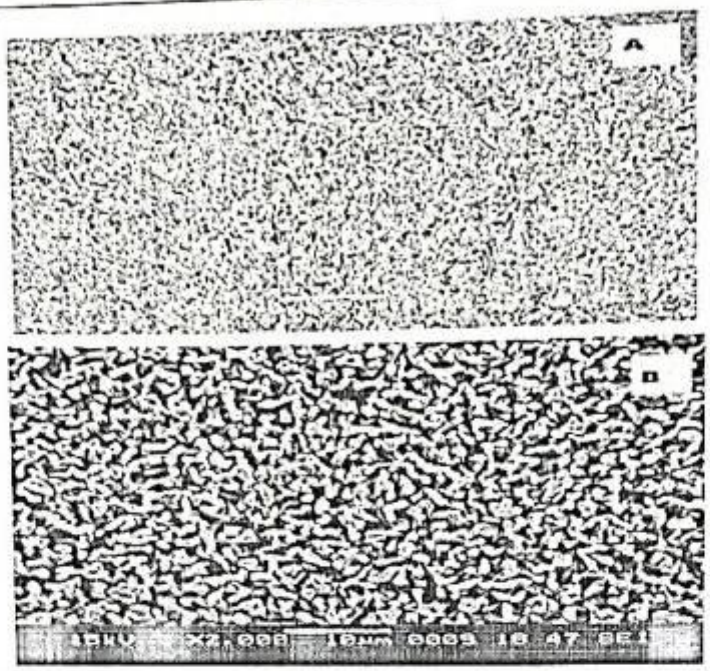


Figure 3: SEM image of (A) ZnO-TiO_2 (3:7 molar ratio) thick film and (B) 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film.

3.2 Gas sensing charactreristics

Fig. 4 illustrates the response of ZnO-TiO_2 thick films with molar ratio (A) 9:1, (B) 7:3, (C) 1:1, (D) 3:7 and (E) 1:9 to 286 ppm CO_2 gas. The thick films were maintained at different operating temperatures in the range of 30 °C to 325 °C and tested for 286 ppm CO_2 gas. From the figure it can be seen that within the studied temperature range, among the tested compositions, ZnO-TiO_2 (3:7 molar ratio) thick film exhibited maximum response of 2.68 towards 286 ppm CO_2 gas at 305 °C.

Regarding the sensing mechanism of semiconductor oxide based materials, the sensing mechanism and change in electrical transport properties are generally involved the adsorption and desorption process of oxygen molecules on the surface of materials and/or direct reaction of lattice oxygen or interstitial oxygen with test gases [28-32]. When ZnO-TiO_2 film is exposed to air, oxygen molecules interact with the film to form adsorbed oxygen ions like O_2^- or O^- or O^{2-} by capturing electrons from the conduction band and this interaction decreases the concentration of electrons in the conduction band. The processes are as follows [33]:

$$O_2\,(gas) \leftrightarrow O_2\,(ads) \quad (2)$$

$$O_2\,(ads) + e^- \leftrightarrow O_2^-\,(ads) \quad (3)$$

$$O_2^-\,(ads) + e^- \leftrightarrow 2O^-\,(ads) \quad (4)$$

$$O^-\,(ads) + e^- \leftrightarrow O^{2-}\,(ads) \quad (5)$$

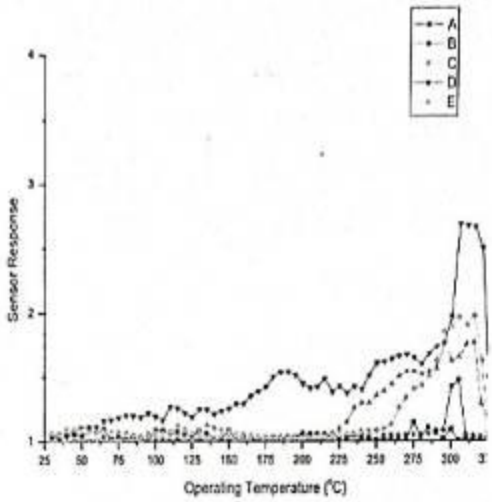


Figure 4: Response of ZnO-TiO_2 molar ratio (A) 9:1, (B) 7:3, (C) 1:1, (D) 3:7 and (E) 1:9 thick films to 286 ppm CO_2 gas.

When the film exposed to CO_2, CO_2 interact with the adsorbed oxygen species present on the film surface. The response of ZnO-TiO_2 thick film to CO_2 can be explained by the interaction of CO_2 gas with film surface. In this interaction the adsorption of CO_2 accounts for the consumption of oxygen and this reaction leads to decrease in film resistance. The sensing response was improved with increasing amount of TiO_2 content in the film. This indicates that there would be increase in amount of chemisorbed oxygen ions. This is due to electrons induced by Ti^{4+}, entering into ZnO lattice can form more chemisorbed oxygen ions on the surface of film [24]. Fig. 4 indicates that ZnO-TiO_2 (3:7 molar ratio) thick film exhibited highest sensing response to 286 ppm CO_2 gas at 305 °C among the all investigated compositions of ZnO-TiO_2 thick films. At the optimum amount of TiO_2 in thick film, TiO_2 species would be distributed uniformly and sufficient to promote the catalytic reaction effectively. Also presence of pores indicates that porosity and surface roughness of films increases with increase in concentration of TiO_2. This would have increased the sensing response of film on the exposure of CO_2 gas.

Fig. 5 shows the response of 0.1M, 0.2M, 0.3M and 0.4M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) films to 286 ppm CO_2 gas at different operating temperatures. The figure illustrates the fact that the CO_2 gas sensing response measured in the studied temperature range significantly changes with different concentration of CeO_2. The thick film activated by 0.3M CeO_2 exhibited maximum response of 31.17 to 286 ppm CO_2 gas at 290 °C. The improved sensing response can be attributed to synergistic effects. At high temperature or in the reduced state or in pure CeO_2, lose some amount of oxygen and, generate oxygen vacancies [34],

$$2\,CeO_2 \rightarrow Ce_2O_3 + O^- \qquad (6)$$

Although it was anticipated that CeO_2 could lose oxygen during reduction at high temperature. When CO_2 come in contact with CeO_2 activated surface, to form carbonates as a product through the participation of surface oxide ions: [1, 35]

$$O^{2-} + CO_2 \rightarrow CO_3^{2-} \qquad (7)$$

These carbonates disappear when they are exposed to oxidizing conditions [35]. Sensor response improves with increasing presence of high-activity catalyst CeO_2, up to 0.3M CeO_2 activation. While an opposite influence happens with further increase in content of CeO_2 due to the fact that it could embarrass the mobility of the carriers to across [36].

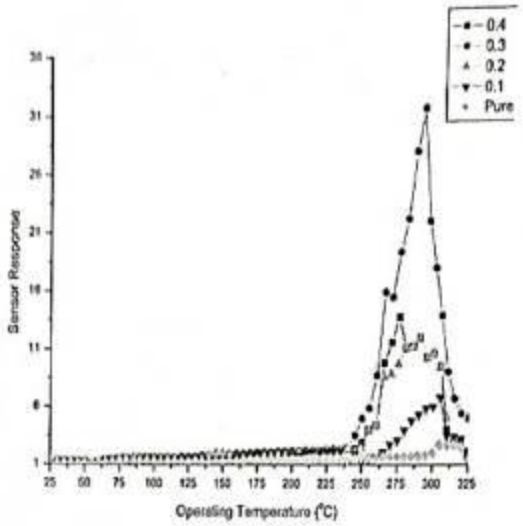


Figure 5: Response of 0.1M, 0.2M, 0.3M and 0.4M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film toward 286 ppm CO_2 gas.

In practical applications, a response and recovery time of sensor for the particular gas is the important factors. Response and recovery times are defined as the time required reaching 90 % of the final stable value. Fig. 6 illustrates response and recovery time of 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film to 286 ppm CO_2 gas at 290 °C. It indicates that response time and recovery time of sensor are 24 s and 72 s respectively. The quick response would be due to faster oxidation of CO_2 gas. The CeO_2 catalyses the reaction and promotes the rapid transfer between the adsorate and substrate. This result may be recommended for practical applicability of the sensor to detect CO_2 gas.

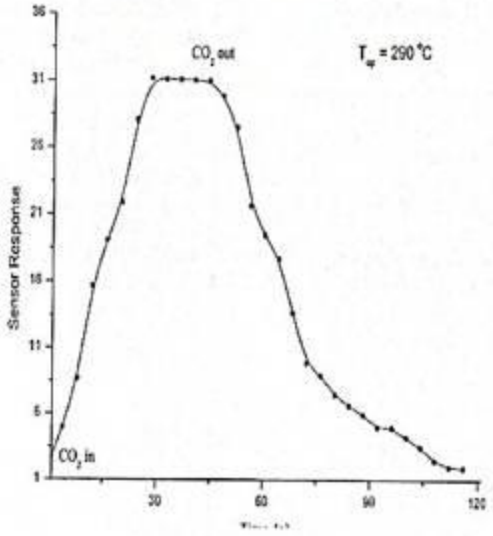


Figure 6: Response and recovery time of 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film to 286 ppm CO_2 gas at 290 °C.

Fig. 7 demonstrates the stability of 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film to 286 ppm CO_2 gas at 290 °C for the period of six months in the interval of 30 days. It is observed that there is no noticeable deviation in the sensor response. This is due to presence of TiO_2 [37].

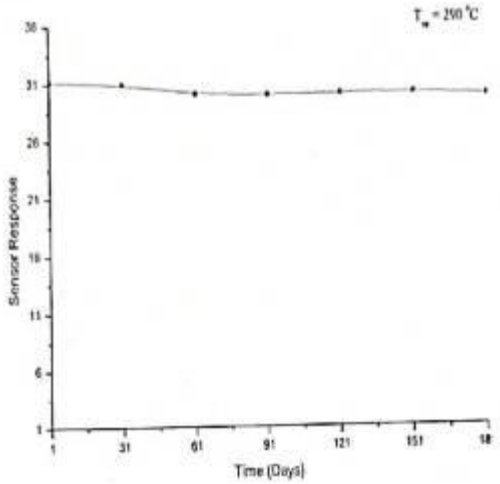


Figure 7: Stability of 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio)thick film towards 286 ppm CO_2 gas at 290 °C.

The response of 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film towards different gases (286 ppm each) like NH_3, CO_2, H_2S & LPG at optimal operating temperature is shown in Fig. 8. The sensor shows excellent response at 290 °C towards CO_2 but a very poor response toward LPG, NH_3 and H_2S. The excellent sensing response of the sensor element to CO_2 gas is because CO_2 molecules easily react with sensor element as compared to the other tested gases at optimum operating temperature 290 °C.

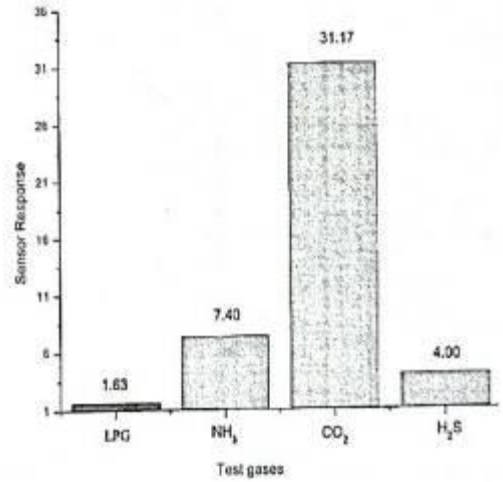


Figure 8: Response of 0.3M CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick film towards NH_3, CO_2, H_2S and LPG at 290 °C.

IV. Conclusions

On the basis of experimental results and its discussions, the following conclusions can be made:

(i) The sensing response of nanocrystalline ZnO-TiO_2 (molar ratio 9:1, 7:3, 1:1 and 1:9) thick films to 286 ppm CO_2 gas was relatively poor than ZnO-TiO_2 (3:7 molar ratio) thick film.

(ii) CeO_2 activated ZnO-TiO_2 (3:7 molar ratio) thick films exhibited enhanced sensing response at comparatively lower operating temperature to 286 ppm CO_2 gas than ZnO-TiO_2 (3:7 molar ratio) thick film.

74

(iii) 0.3M CeO_2 activated ZnO-TiO_2 (molar ratio 3:7) thick film exhibited excellent sensing response 31.17 to 286 ppm CO_2 gas at 290 °C.

(iv) The thick film based on 0.3M CeO_2 activated ZnO-TiO_2 (molar ratio 3:7) exhibited excellent response to CO_2 gas selectively as compared to other gases like LPG, H_2S and NH_3. Also it exhibited quick response time (24 s) to CO_2 gas, rapid recovery time (72 s) and long time stability at 290 °C.

(v) CO_2 gas sensor based on CeO_2 activated ZnO-TiO_2 (molar ratio 3:7) thick film was found to be sensitive to the operating temperature and the amount of the dopant.

Hence 0.3M CeO_2 activated ZnO-TiO_2 (molar ratio 3:7) thick film fulfils the practical requirement for detecting CO_2 gas.

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जागतिक स्पर्धा :भारतीय अर्थव्यवस्थेचा

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प्रस्तावना

'मेक इन इंडीया' आणि 'डिजीटल इंडीया' ची संकल्पना प्रत्यक्षात उतरवणारी भारतीय अर्थव्यवस्था जगात वेगवान व जोमाने वाढणारी मोठी अर्थव्यवस्था ठरली आहे. भारतीय अर्थव्यवस्थेतील ही वृध्दी चीनला सुध्दा मागे टाकणारी आहे. मागील दोन दशकापासून भारताचा विकास दर (GDP Rate) हा जवळपास ७ टक्क्यांच्या आसपास आहे. भारतीय अर्थव्यवस्थेत दिर्घकाळ होणारी वृध्दी ही समग्रलक्षी आर्थिक घटकांतील बदल, सुदृढ बचत व गुंतवणुक, इतर देशांशी असणारे मैत्रीपुर्ण आर्थिक संबंध, सेवा क्षेत्राचा विकास व निर्यात, युवाशक्ती, सरकारच्या धोरणात्मक सुधारणा या सर्वांचा एकत्रीत परिणाम आहे. म्हणूनच जागतिक बँकेच्या अहवालात मोठी व वेगवान अर्थव्यवस्था म्हणून भारतीय अर्थव्यवस्थेचा उल्लेख केलेला आहे.

अभ्यासाची उद्दिष्टे (Objective of Study)

१) अर्थव्यवस्थेच्या क्षेत्रनिहाय वृध्दीचा अभ्यास करणे.

२) स्थूल आर्थिके घटकात झालेल्या बदलांचा अभ्यास करणे.

३) नव्या सरकारेच्या धोरणात्मक सुधारणांचा व नव्या संकल्पनांची आर्थिक विकासातील भुमिका तपासणे.

तक्ता क्र. १

क्षेत्रनिहाय स्थूल देशांतर्गत उत्पादन व रोजगारांतील वाटा (२०१४)

टक्केवारीमध्ये

अ.नं.	क्षेत्र	जीडीपीतील वाटा	रोजगाराचे प्रमाण
१	कृषी व संलग्न क्षेत्र	१७	४९
२	उद्योग क्षेत्र	२६	२२
३	सेवा क्षेत्र	५७	२९

स्त्रोत :- आर्थिक सर्वेक्षण अहवाल सन २०१४-१५

कृषीक्षेत्र :-

कृषी उत्पादनात भारताचा जगात दुसरा क्रमांक लागतो. प्राथमिक क्षेत्र म्हणून ओळखल्या जाणाऱ्या कृषी व संलग्न क्षेत्राचा वाटा २०१४ मध्ये १७ टक्के इतका असुन रोजगाराचे प्रमाण ४९ टक्के इतके होते. भारतीय अर्थव्यवस्थेचा ज्या वेगाने विकास होत आहे. त्या तुलनेत कृषीचा विकास हा खालवत चालला आहे. याचे प्रमुख कारण म्हणजे दुष्काळजन्य परिस्थितीमुळे शेतीच्या उत्पादनात सातत्याने घट होत आहे. म्हणूनच १९५१ पासून कृषीचा स्थुल देशांतर्गत उत्पादनातील वाटा सातत्याने घटत आहे. भारत हा जगात दुध, ज्युट, डाळींचा मोठा उत्पादक देश आहे. तसेच तांदुळ, गहु,

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ऊस, कापुस, शेंगदाणे, फळे व भाजीपाला यांच्या उत्पादनात भारताचा जगात दुसरा क्रमांक लागतो. एकूण निर्यातीत कृषी निर्यातीचा वाटा सध्या १० % इतका असुन भारताच्या कृषी निर्यातीतही सतत घट होत आहे.

उद्योग क्षेत्र :-

आर्थिक विकासात औद्योगिकरणाची भूमिका महत्वाची असुन स्थूल देशांतर्गत उत्पादनातील २६ टक्के वाटा या क्षेत्राचा आहे. तर एकूण रोजगारात २२ टक्के इतके योगदान आहे. भारताचा औद्योगिक उत्पादन निर्देशांक (IIP) सप्टेंबर २०१५ तील ३.८ टक्क्यांवरुन ऑक्टो २०१५ मध्ये ९.८ टक्क्यांपर्यंत वाढला आहे.

सेवा क्षेत्र :-

जगामध्ये भारतीय सेवा क्षेत्राचा झपाट्याने होणारा विकास ही उल्लेखनीय बाब असुन या क्षेत्राचा २००१ पासून साधारणपणे ९ टक्के वार्षिक दराने विकास होत आहे. २०१२-१३ मध्ये या क्षेत्राचा जीडीपी तील वाटा ५७ टक्के इतका जास्त होता. एकट्या सेवा क्षेत्रातून २९ टक्के लोकांना रोजगार पुरवला जातो. माहिती तंत्रज्ञान व बीपीपी क्षेत्राचा झपाट्याने विकास होत असुन या क्षेत्राचे निर्यातीतील योगदान महत्वपुर्ण आहे. सेवा क्षेत्राच्या वृध्दीमुळे भारतीय अर्थव्यवस्था जागतिक स्पर्धेत वेगवान वृध्दी करणारी ठरली आहे.

रिटेल क्षेत्र :-

भारत सरकारने २०१२ मध्ये रिटेल क्षेत्रासाठी परकीय थेट गुंतवणुकीचे नियम शिथिल करुन परकीय प्रत्यक्ष गुंतवणुक मर्यादा सिंगल ब्रँड रिटेलसाठी १०० टक्के व मल्टीब्रँड रिटेलसाठी ५१ टक्के करण्यात आली. भारतातील रिटेल मार्केट हे जगात सर्वात जास्त वेगाने विकसीत होणारे मार्केट आहे. रिटेल क्षेत्राचा भारताच्या जीडीपी तील वाटा हा जवळपास १४ ते २० टक्यांच्या दरम्यान आहे. भारताच्या रिटेलमार्केटचे आकारमान हे ४५० यु.एस. बिलीयन डॉलर इतके मोठे आहे. हा भारताच्या विकासातील महत्वाचा सुचक आहे.

अलिकडच्या काळात भारताच्या आर्थिकवृध्दीबरोबरच स्थुल आर्थिक घटकांत महत्वपुर्ण बदल होत आहे. आर्थिक वृध्दी साध्य करण्यासाठी या समग्रलक्षी घटकांची अनुकुलता आवश्यक असते. चलनवाढ आटोक्यात, व्यवहारतोल अनुकुलता, परकीय गुंतवणुकीचा वाढता ओघ हे आर्थिक विकासाचे निर्देशक मानले जातात. जागतिकीकरणाचा स्विकार केल्यापासून भारताच्या व्यवहारतोतात अनेक चढउतार निर्माण झाले आहे. निर्यातीत होणाऱ्या वाढीच्या तुलनेत आयातीत होणारी वाढ ही कमी असल्याचे जाणवते. त्यामुळे भारताला नेहमीच चालु खात्यावरील त्रुटीचा सामना करावा लागत आहे. जुलै-सप्टेंबर या तिमाही मध्ये चालु खात्यावरील तुट ही ८.२ बिलीयन यु.एस. डॉलर इतकी आहे. हेच प्रमाण मागील वर्षाच्या याच तिमाहीत १०.९ यु.एस. बिलीयन डॉलर इतके जास्त होते. चालु खात्यावर निर्माण होणाऱ्या तुटीस तेल आयातीच्या बिलात मोठ्या प्रमाणात होणारी वाढ कारणीभुत आहे. कच्चा तेलाच्यास आयातीचे परिणाम हे ११८.७ बिल्ीयन डॉलर जीडीपीच्या ११.११ टक्के इतके जास्त आहे.

परकीय गुंतवणुकदारांच्या भारतीय अर्थव्यवस्थेवरील विश्वास वाढल्याने भारताच्या परकीय प्रत्यक्ष गुंतवणुकीचा ओघ सातत्याने वाढत आहे. २०१४ मध्ये परकीय थेट गुंतवणुक ही २१.६ बिलीयन यु.एस. डॉलर वरुन

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२०१५ मध्ये ३४.९ बिलीयन डॉलर इतकी वाढली आहे. नोमुरा अहवालानुसार निव्वळ परकीय प्रत्यक्ष गुंतवणुकीचा देशातील ओघ हा स्थूल देशांतर्गत उत्पादनाच्या १.७ टक्के असुन मागील वर्षाच्या तुलनेत वाढला आहे.

भारत सरकारने परकीय प्रत्यक्ष गुंतवणुकीच्या बाबतीत उदार धोरण स्विकारले असून काही क्षेत्रात 100 टक्के गुंतवणूकीस मान्यता दिली आहे. 2000 ते 2010 या काळात भारताने 178 बिलीयन डॉलर परकीय गुंतवणूक आकर्षित केली आहे. अर्थव्यवस्था मजबूत होण्याच्या दृष्टिने ही बाब उल्लेखनीय आहे. भारताच्या परकीय राखीव विनीमयाचा विचार करता, असे दिसून येते की, 2015 च्या डिसेंबरच्या पहिल्या आठवडयात 352.5 बिलीयन डॉलर इतके परकीय राखीव विनिमय डिसेंबरच्या शेवटच्या आठवडयात 408 बिलीयन डॉलरपर्यंत वाढले आहे. आर्थिक स्थैर्य साधण्यासाठी किंमत स्थैर्य असणे गरजेचे आहे. आर्थिक सर्व्हेक्षण अहवालानुसार चलनवाढीचा दर हा 5 ते 5.5 टक्याच्या दरम्यान राहणार असल्याचे स्पष्ट केले आहे.

आर्थिक व्यवहारात पारदर्शकता यावी यासाठी नव्या सरकारने अनेक धोरणात्मक सुधारणा केल्या आहेत. त्याचाच भाग म्हणून नियंत्रणमुक्त डिझेल किंमती, गॅस अनुदान थेट खात्यात जमा करणे, परकीय थेट गुंतवणूकीच्या आवाक्यात संरक्षण व विमा क्षेत्राचा समावेश, कोळशावरील वटहुकुम ही महत्वाची पाऊले उचलली आहे. आधुनिक भारत या संकल्पनेतून मोदी सरकारने 'मेक इन इंडिया' आणि 'डिजीटल इंडिया' या दोन महत्वपुर्ण घोषणा केल्या आहेत. आर्थिक विकासाचा वेग वाढण्याचे हे एक महत्वपुर्ण कारण मानले जाते. कारण भारताच्या निर्मित क्षेत्रास उत्तेजन देण्याचे कार्य या घोषणेने केले आहे. मोदी सरकारच्या या धोरणामुळे अनेक परकीय कंपन्या आपल्या सेवांचा भारतात विस्तार करू पहात आहे. त्यातून गुंतवणूकीत वाढ होऊन अर्थव्यवस्थेला चालना मिळत आहे. डिजीटल इंडियाच्या माध्यमातून प्रामुख्याने डिजीटल पायाभूत संरचना, डिजीटल वितरण सेवा, डिजीटल साक्षरता वाढवणे या तिन गोष्टींवर प्रकाश टाकला आहे. या व्यतिरीक्तही भारत सरकारने डिजीटल रोजगार विनिमय, स्मार्ट सिटी, अमृत (AMRUT) हे नवीन प्रकल्प सादर केले असून एकंदरीत यातून देशाच्या रोजगार निर्मितीस मोठा वाव व पायाभूत सेवा-सुविधांचा विकास होण्याच्या संधी निर्माण झाल्या आहेत.

सारांश :-

भारतीय अर्थव्यवस्था ही जगात सर्वात झपाटयाने विकास करणारी अर्थव्यवस्था आहे. सेवा क्षेत्राची वृध्दी, गुंतवणूकदारांचा अर्थव्यवस्थेवरील विश्वास, अनुकुल समग्रलक्षी आर्थिक घटक, सरकारच्या धोरणात्मक सुधारणा, माहिती तंत्रज्ञान व आधुनिकीकरण या सर्वांच्या सहाय्याने भारतीय अर्थ व्यवस्थेने जागतीक स्पर्धेत आपले स्वतंत्र अस्तित्व निर्माण केले आहे. म्हणूनच पुढील काळात भारतीय अर्थव्यवस्था तिसरी मोठी अर्थव्यवस्था होण्याची शक्यता आहे.

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13

नवे आर्थिक धोरण व स्वदेशी चळवळीची गरज

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अविकसित व विकसनशील राष्ट्राकरता विकसित राष्ट्रे ही नेहमीच संदर्भ समूहाच्या (Reference Group) स्वरूपात राहिली आहेत. या राष्ट्राना जाणता अजाणता आदर्श मानून त्याचे अनुकरण करण्याची प्रवृत्ती विकसनशील समाजात आढळून येते. स्वातंत्र्यपूर्वकाळ व स्वातंत्र्योत्तर काळातील पहिल्या एका दशकात ब्रिटन व इतर युरोपीय राष्ट्राच्या विकासाची प्रतिकृति आमच्या डोळ्यासमोर होती. नंतरच्या काळात साम्यवादी विचारांनी भारावून जावून आम्ही विकासाची रशियन प्रतिकृति डोळयासमोर ठेवली व त्याची स्पष्ट छाप विकास योजनांचा अधिक्रम ठरविणाऱ्या आमच्या धोरणावर दिसत होती. १९६३ मध्ये तत्कालिन पंतप्रधानांनी राष्ट्रीय विकास सामतीपुढे अशी स्पष्ट कबुली दिली की उद्योगधंद्याच्या विकासाचे मागे लागत असताना आम्ही पेती या आमच्या पायाभूत उद्योगाकडे दुर्लक्ष केले आहे. आमची अर्थव्यवस्था मजबूत करण्याकरता व प्रगतिशील करण्याकरता कृषी उत्पादन वाढवून आपला पाया मजबूत करणे आवश्यक आहे. आमच्या देशाची आर्थिक सत्ता आज काही कंपन्यांच्या हातात केंद्रीत झाली असून मी हे मान्य करतो की, त्या कपन्याना नियंत्रणात ठेवण्यास माझे सरकार अपयशी ठरले आहे.

१९६९ मध्ये परत राष्ट्रीयीकरणाची लाट आली. सर्वंग लोकप्रियतेकरिता वेगळे आर्थिक धोरण निश्चित करण्यात आले. बँकाचे राष्ट्रीयीकरण करण्याचा निर्णय घेण्यात आला. त्यापाठोपाठ कोळसा खाणीचे राष्ट्रीयीकरण करण्यात आले. विमा कंपन्या सरकारी नियंत्रणाखाली आल्यात. एक कणखर समाजवादी पाऊल उचलल्याचा आभास निर्माण झाला. कारण राष्ट्रीयीकरणामागच्या हेतू बहुतेक नंतर त्याकाळात अनेक शंका निर्माण झाल्या. सरकारी क्षेत्रात हे व्यवसाय म्हणावे तेवढे यशस्वी ठरले नाहीत. यात धोरणा पेक्षाही अंमलबजावणीतील अप्रामाणिकपणा कारणीभूत ठरला व १९९१ मध्ये संकटग्रस्त आर्थिक परिस्थितीला तोंड देण्याकरता मुक्त व खुल्या अर्थव्यवस्थेच्या धोरणाचा आम्ही स्वीकार केला व बहुराष्ट्रीय कंपन्याना भारतात मुक्तपणे भाडवल गुंतविण्याची अनुमती आम्ही दिली. नुसती अनुमती दिली नाही तर, त्यांनी भाडवल गुंतवणूक करावी म्हणून याचना सुरू केली व या याचकांत पश्चिम बंगालच्या सरकारपासून तो महाराष्ट्राच्या युती सरकारपर्यंत सर्वच सरकारे अहमहमिकेने सामिल झालेत. ४०—५० वर्षाच्या काळात एखाद्या राष्ट्राच्या आर्थिक धोरणात इतका पराकोटीचा बदल केवळ विकासाची स्पष्ट दृष्टी नसल्याचेच लक्षण म्हणता येईल. केवळ औद्योगिकीकरणाने दारिद्रय दूर होणार नाही, याची एकदा प्रचिती आल्यानंतर देखील परत आम्ही त्याच सापळ्यात स्वत:ला अडकवून घेतले आहोत, गेल्या ५० वर्षात संरक्षित अर्थनीतीने जे काही थोडे भारतीय उद्योग उभे राहिले होते ते देखील या जीवघेण्या स्पर्धेत धोक्यात आले आहेत.

या सर्व पार्श्वभूमीवर स्वदेशी या आपल्या प्राचीन मूल्याची उपयोगिता तपासून पाहण्याची वेळ आली आहे. स्वातंत्र्य चळवळीच्या काळात लोकमान्य टिळक व महात्मा गांधीनी स्वदेशीला स्वातंत्र्य लढ्याचे नैतिक अधिष्ठान मानले. खादी ग्रामोद्योगाचा प्रचार केला. विदेशी वस्तुची होळी केली. त्यामागे त्यांचा एक स्पष्ट दृष्टिकोन होता. देशातील गरीब व बेरोजगार लोकांना योग्य ते काम व उत्पन्नाची संधी दिल्यानेच देशातील गरिबी दूर करता येईल व हे तेव्हाच शक्य होईल जेव्हा आम्ही आमच्या देशात उत्पादित झालेल्या वस्तुच वापरू. परदेशात जाणारा पैसा वाचवू शकू. त्या काळात स्वातंत्र्य व स्वदेशी या दोन भिन्न कल्पना नव्हत्या तर एकाच नाण्याच्या दोन बाजू होत्या. परंतु दुर्दैवाने स्वातंत्र्यानंतर आता स्वदेशीचे महत्व संपले

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Issue : XVII, Vol. I
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ISSN 2249-4081
April 2019 To Sept. 2019 32

भारतातील मानव संसाधन विकास एक अभ्यास

डॉ. इंद्रजीत राजपूत
अर्थशास्त्र विभाग,
महात्मा फुले वाणिज्य,विज्ञान व विठ्ठलराव
रावळ कला महाविद्यालय,
भातुकली, जि. अमरावती

RESEARCH PAPER - ECONOMICS

10

प्रास्ताविक :

सामान्यपणे परंपरावादी अर्थशास्त्रज्ञानी संख्यात्मक दृष्टीकोनातून विकसित देशांच्या संदर्भात आर्थिक विकासाची संकल्पना मांडली. त्यामुळे त्यांनी नैसर्गिक संसाधने आणि भौतिक भांडवलास आर्थिक विकासाच्या प्रक्रियेत महत्व दिल्याचे आढळते. त्यांच्या मते राष्ट्रीय उत्पन्नात व दरडोई उत्पन्नात वाढ होणे म्हणजे आर्थिक विकास होय. परंतू काही विकसित राष्ट्राच्या उत्पन्नात वाढ होवून ही मानव संसाधन विकासाकडे दुर्लक्ष केल्याने त्याच्या आर्थिक विकास फारसा होवू शकला नाही. या उलट काही विकसनशील देशांनी मानव संसाधनास विकासप्रक्रियेत तुलनेने जास्त महत्त्व दिल्यामुळे जलद आर्थिक विकासाचे व सामाजिक कल्याणाचे उद्दिष्टय साध्य करता आले. हा वास्तव अनुभव पाहता आधुनिक विशेषता कल्याणकारी अर्थशास्त्रज्ञांनी गुणात्मक दृष्टीकोनातुन विकसनशील देशांच्या संदर्भात आर्थिक विकासाची संकल्पना विकसित केली. मार्शल, शुल्टरा, डेनिसन, केड्रिस, कुझनेटस, डॉ. डाल्टन इत्यादी अनेक अर्थतंज्ञांनी आर्थिक विकासाच्या प्रक्रियेत मानव केंद्रबिंदू मानून मानवी संसाधनाचे महत्व व आवश्यकता निशद केलेली आहे. लोकसंख्येची संख्यात्मक व गुणात्मक आणि आर्थिक विकासाची बदलती दिशा यांच्या परस्पर संबंध असतो. विकसनशील देशातील मानवी साधन संपत्ती आणि विकास यांच्यातील निकटचा संबंध असल्याचे स्पष्ट होते. त्यामुळे जलद आर्थिक विकासाचे उद्दिष्टय विकसित मानव संसाधनाच्या पाठबळाशिवाय शक्य नसते. प्रा. हार्बिसन यांच्यामते आर्थिक विकासाच्या प्रकियेतील मानवी संपत्ती हा सक्रिय

Issue : XVII, Vol. I
GLOBAL ECONOMIC RESEARCH
IMPACT FACTOR 3.96
ISSN 2249-4081
April 2019 To Sept. 2019 33

सजीव घटक असून तो भांडवल संचय, उपलब्ध नैसर्गिक व भौतिक साधनसामुग्रीचा अधिक कार्यक्षम वापर करू घेतो. सामाजिक, आर्थिक व राजकीय संघटना उभारून राष्ट्राचा विकास घडवून आणते. सर्वसाधारणपणे देशातील मानवी संसाधनाच्या विकासासाठी शिक्षण व प्रशिक्षणातून विविध क्षमताचा विकास करणे, पिण्यासाठी शुध्द पाण्याचा पुरवठा, स्वच्छता, सकस सत्वयुक्त आहाराची उपलब्धता, कुटुंब नियोजन, आरोग्य विषयक व तत्सम सेवा सुविधा उपलब्धता, देशातील श्रमशक्तीला सातत्याने उत्पन्न मिळवून देणाऱ्या पुरेसा रोजगार संधी उपलब्ध करून देणे व लोकांच्या, राहणीमान सुधार करणे व त्यांना निरोगी सुदृढ दीर्घायुष्य मिळणे गरजेचे आहे. या सर्व बाबीसाठी गुंतवणूक व खर्चाची आवश्यकता आहे. मानवी साधन संपत्तीचा विकास खर्चिक व दीर्घकालीन स्वरूपाची बाब ठरते. त्यातील गुंतवणूकीचे दृश्य परिणाम भोजणे, गुंतवणूकीचा परतावा शोधणे या बाबी शक्य होत नाहीत. परंतू ज्या देशांनी यात सातत्याने मोठया प्रमाणात गुंतवणूक करतात ते विकासाचे दीर्घकालीन मोठे लाभ प्राप्त करत असल्याचे स्पष्ट होते. (उदा. इंग्लड, अमेरिका, जपान, इस्त्राईल इत्यादी) भारतासारख्या कृषीप्रधान विकसनशील देशांला शाश्वत विकासाचे, समाजवादी समाजरचना प्रस्थापित करणे अथवा समन्यायासह आर्थिक विकासाचे दीर्घकालीन उदिदष्ट साध्य करण्यासाठी मानवी संसाधन विकासात मोठया प्रमाणात गुंतवणूक करणे आवश्यक आहे.

भारत व महाराष्ट्र राज्यातील मानव संसाधनाची सद्यस्थिती :

नियोजन काळात भारत व महाराष्ट्र राज्यात ग्रामीण व शहरी भागात सर्व स्तरावर लोकसंख्येत मोठया प्रमाणात वाढ झाली आहे. सन २००९ च्या जनगणनेनुसार भारताची आणि महाराष्ट्र राज्यातील लोकसंख्या अनुक्रमे १०२.७ कोटी व ९.४७ कोटी पर्यंत वाढली. या वर्षात अनु.जातीची लोकसंख्या भारतात १७.६९ कोटी तर महाराष्ट्र राज्यात १.७१ कोटी पर्यंत वाढली आहे. एकुण लोकसंख्येशी अनु.जातीच्या लोकसंख्येचे प्रमाण १७.२३ टक्के राहील आहे. तर अनु. जमातीची जवळपास ८.२० टक्के एवढी लोकसंख्या आहे. तसेच सर्व स्तरावर ग्रामीण लोकसंख्येचे प्रमाण शहरी लोकसंख्येच्या प्रमाणात तुलनेने फार जास्त आहे. परंतू नियोजन काळात यात घटीची अल्प प्रवृत्ती आढळून येते. सन २००९ मध्ये ग्रामीण लोकसंख्येचे भारतातील प्रमाण ७२.२२ टक्के तर महाराष्ट्र राज्यात त्यापेक्षा कमी म्हणजे ५७.६० टक्के एवढे आहे. वाढत्या लोकसंख्येमुळे ग्रामीण व शहरीभागांत बेकारी, व्यापक दारिद्रय, आर्थिक विषमता, शैक्षणिक सुविधाचा अभाव, लोकसंख्येतील घटते स्त्री-पुरुष, अपुऱ्या उपलब्ध आरोग्य विषयक व तत्सम सेवा व सुविधा, आधारभूत संरचना यांच्यावरील वाढता बोजा इ. समस्या निर्माण झाल्यामुळे मानव संसाधन विकासाची प्रक्रिया खुंटत असल्याचे आढळून येते. परिणाम स्वरूप युनाटेड नेशन्स डेव्हलेपमेंट प्रोग्राम मार्फत २००७ च्या १७७ राष्ट्रासाठी तयार केलेल्या मानव विकास निर्देशांकाच्या (HDI) अहवालात भारताचा क्रमांक १२८ वा आहे. नियोजन काळात

Issue : XVII, Vol. I
GLOBAL ECONOMIC RESEARCH
IMPACT FACTOR 5.93
ISSN 2249-4081
April 2019 To Sept. 2019 54

प्रयत्न करून ही मानवी संसाधन विकासाचे जे निर्धारक आहेत त्यात भारत प्रगती करू शकला नाही. तर राज्यनिहाय तयार केलेल्या मानव विकास निर्देशांक अहवालात महाराष्ट्र राज्य पीछाडीवर आहे. तुलनेने शेजारी चीन, श्रीलंका या देशांनी या दृष्टीने चांगली प्रगती केली आहे. म्हणजेच भारतात मानव संसाधन विकासासाठी प्रत्येक पंचवार्षिक योजनेत केलेली तरतूद अपूरी आहे. शिवाय सदोष आर्थिक निती, अपुरी अकार्यक्षम प्रशासकीय यंत्रणा व भ्रष्टाचारामुळे सरकारी योजनांचे लाभ खऱ्या गरजु लोकांना फारसे मिळत नाही. थोडक्यात देशातील मानवी संसादनाचा विकासासाठी मोठया प्रमाणात प्रयत्न करणे आवश्यक आहे.

तक्ता क्र.१

भारत आणि महाराष्ट्र राज्यातील एकूण सर्व व अनुसूचित जातीची ग्रामीण शहरी लोकसंख्या (१९८१, १९९१,२००१ च्या जनगणेनुसार)

(लोकसंख्या-कोटीत)

बाब/वर्ष	भारत			महाराष्ट्र		
	१९८१	१९९१	२००१	१९८१	१९९१	२००१
एकुण सर्व i) ग्रामीण	५४.५८	६३.६२	७४.१४	४.०८	४.६२	५.५७
ii) शहरी	१३.९४	२१.०१	२८.५३	२.४०	३.२८	४.१०
iii) एकूण	६८.५२	८४.६३	१०२.७०	६.४८	७.९०	९.६७
iv) ग्रा.लो. प्रमाण (%)	७९.६६	७५.१८	७२.२२	६२.९६	५८.४८	५७.६०
अनु. जाती i) ग्रामीण	८.७५	१०.०२	१२.०१	०.२९	०.५६	०.९५
ii) शहरी	१.९५	३.९३	५.६८	०.१६	०.३२	०.७६
iii) एकूण	१०.७०	१३.९५	१७.६९	०.४५	०.८८	१.७६
iv) ग्रा.लो. प्रमाण (%)	८९.७५	७१.८०	६७.९०	६३.३७	६३.४५	५५.७५
v) एकुण लो. अनु. जातीच्या लो. प्रमाण (%)	१५.६२	१६.४८	१७.२३	६.७५	११.०९	१७.६८

Issue : XVII, Vol. I
GLOBAL ECONOMIC RESEARCH
IMPACT FACTOR 5.95
ISSN 2249-4081
April 2019 To Sept. 2019 55

तक्ता क्र. २

भारत आणि महाराष्ट्र राज्यातील स्त्री - पुरुष प्रमाण व एकुण लोकसंख्येतील स्त्री लोकसंख्येचे प्रमाण (एकुण सर्व/अनु. जातीचे)

बाब / वर्ष	भारत			महाराष्ट्र		
	१९८१	१९९१	२००१	१९८१	१९९१	२००१
एकुण सर्व स्त्री. पुरुष (%)	९३४	९२७	९३३	९३३	९३७	९२२
अनु. जाती स्त्री पुरुष प्रमाण(%)	९४९	९४०	९३८	९४१	९३७	९२८

भारतातील मानव संसाधन विकासाची सद्यस्थिती :

१) शिक्षण आणि साक्षरता :

मानव संसाधन विकासाच्या दृष्टीने शिक्षण हा घटक सर्वात महत्वपूर्ण आहे. शिक्षणाला मानवी संसाधनातील गुंतवणूक मानले जाते. भारतीय अर्थव्यवस्थेतील सर्व समस्या सोडवण्याचे शिक्षण हे प्रमुख साधन ठरते. नियोजन काळात या दृष्टीने केंद्र व राज्य सरकारांनी केलेले प्रयत्न अपुरेच ठरतात. युनिसेफच्या अहवालानुसार भारतात ग्रामीण भागात प्राथमिक शिक्षणाच्या सेवा व सुविधा फारच तोकड्या आहे. तर तांत्रिक प्रशिक्षणांच्या सेवा व सुविधा अद्यापही पोहचल्या नाही. भारतात १९८६ ला राष्ट्रीय शैक्षणिक धोरण ठरवले व त्या १९९२ सुधारणा करण्यात आली. त्यानुसार प्राथमिक शाळेतील नोंदणी दर १०० टक्के साध्य करणे, १४ वर्षाच्या आतील बालाकांना सक्तीचे शिक्षण, शिक्षणसंस्था व शैक्षणिक दर्जात पर्याप्त सुधारणा करणे या बाबी महत्वाच्या मानल्या. त्या दृष्टीने १४ वर्षाच्या आतील बालकांना मोफत शिक्षण देण्याची घटनात्मक तरतुद केली. तसेच सर्व शिक्षा अभियान कार्यक्रम राबवला जातो. तरीपण ६-१४ या वयोगटातील प्राथमिक शाळेतील नोंदणी दर १०० टक्के करणे शक्य झाले नाही. तो वर्ष १९५० मध्ये ३२.१० टक्के होता.

महाराष्ट्र राज्यांनी केंद्र सरकार बरोबर राज्यात अनेक शैक्षणिक योजना व कार्यक्रम राबविले आहे. शिक्षण व साक्षरतेच्या बाबतील महाराष्ट्र राज्याचा क्रमांक देशात ४ था आहे. भारतीय अर्थतज्ञ विवेक देब्रॉय व लविश भंडारी यांनी इंडिया टुडे भारतातील राज्यांची दशा आणि दिशा रिपोर्ट २००७ च्या अहवाल महाराष्ट्र राज्यांनी मागील दशकात शिक्षण व आरोग्य क्षेत्रात फारशी कामगीरी केली नसल्याचे स्पष्ट केले. सन २००१ च्या जनगणेनुसार महाराष्ट्रातील एकूण साक्षरता प्रमाण ७७.२९ टक्के तर अनु जातीचे ६५.२५ टक्के एवढे होते. स्त्रियांचे, अनु-जातीचे साक्षरता प्रमाण सर्व स्तरावर तुलनेने फारच राहिल्याचे स्पष्ट होते. केंद्र सरकारने शिक्षणावरील खर्चाचे उद्दिष्ट GDP च्या ६ टक्के करण्याचे सुनिश्चित केले. प्रत्यक्षात (२००४-०५) केंद्र व राज्य सरकार मिळून GDP च्या केवळ ३.४९ टक्के उद्दिष्ट साध्य केले आहे. म्हणजे या दृष्टीने देशांतील राज्यांची उदासिनता स्पष्ट

Issue : XVII, Vol. I
GLOBAL ECONOMIC RESEARCH
IMPACT FACTOR 5.95
ISSN 2249-4081
April 2019 To Sept. 2019 55

तक्ता क्र. २

भारत आणि महाराष्ट्र राज्यातील स्त्री - पुरुष प्रमाण व एकुण लोकसंख्येतील स्त्री लोकसंख्येचे प्रमाण (एकुण सर्व/अनु. जातीचे)

बाब / वर्ष	भारत			महाराष्ट्र		
	१९८१	१९९१	२००१	१९८१	१९९१	२००१
एकुण सर्व स्त्री. पुरुष (%)	९३४	९२७	९३३	९३३	९३७	९२२
अनु. जाती स्त्री पुरुष प्रमाण(%)	९४९	९४०	९३८	९४१	९३७	९२८

भारतातील मानव संसाधन विकासाची सद्यस्थिती :

१) शिक्षण आणि साक्षरता :

मानव संसाधन विकासाच्या दृष्टीने शिक्षण हा घटक सर्वात महत्वपूर्ण आहे. शिक्षणाला मानवी संसाधनातील गुंतवणूक मानले जाते. भारतीय अर्थव्यवस्थेतील सर्व समस्या सोडवण्याचे शिक्षण हे प्रमुख साधन ठरते. नियोजन काळात या दृष्टीने केंद्र व राज्य सरकारांनी केलेले प्रयत्न अपुरेच ठरतात. युनिसेफच्या अहवालानुसार भारतात ग्रामीण भागात प्राथमिक शिक्षणाच्या सेवा व सुविधा फारच तोकडया आहे. तर तांत्रिक प्रशिक्षणांच्या सेवा व सुविधा अदयापही पोहचल्या नाही. भारतात १९८६ ला राष्ट्रीय शैक्षणिक धोरण ठरवले व त्या १९९२ सुधारणा करण्यात आली. त्यानुसार प्राथमिक शाळेतील नोंदणी दर १०० टक्के साध्य करणे, १४ वर्षाच्या आतील बालाकांना सक्तीचे शिक्षण, शिक्षणसंस्था व शैक्षणिक दर्जात पर्याप्त सुधारणा करणे या बाबी महत्वाच्या मानल्या. त्या दृष्टीने १४ वर्षाच्या आतील बालकांना मोफत शिक्षण देण्याची घटनात्मक तरतुद केली. तसेच सर्व शिक्षा अभियान कार्यक्रम राबवला जातो. तरीपण ६-१४ या वयोगटातील प्राथमिक शाळेतील नोंदणी दर १०० टक्के करणे शक्य झाले नाही. तो वर्ष १९५० मध्ये ३२.१० टक्के होता.

महाराष्ट्र राज्यांनी केंद्र सरकार बरोबर राज्यात अनेक शैक्षणिक योजना व कार्यक्रम राबविले आहे. शिक्षण व साक्षरतेच्या बाबतील महाराष्ट्र राज्याचा क्रमांक देशात ४ था आहे. भारतीय अर्थतज्ञ विवेक देब्रॉय व लविश भंडारी यांनी इंडिया टुडे भारतातील राज्यांची दशा आणि दिशा रिपोर्ट २००७ च्या अहवाल महाराष्ट्र राज्यांनी मागील दशकात शिक्षण व आरोग्य क्षेत्रात फारशी कामगीरी केली नसल्याचे स्पष्ट केले. सन २००१ च्या जनगणेनुसार महाराष्ट्रातील एकूण साक्षरता प्रमाण ७७.२९ टक्के तर अनु जातीचे ६५.२५ टक्के एवढे होते. स्त्रियांचे, अनु-जातीचे साक्षरता प्रमाण सर्व स्तरावर तुलनेने फारच राहिल्याचे स्पष्ट होते. केंद्र सरकारने शिक्षणावरील खर्चाचे उद्दिष्ट GDP च्या ६ टक्के करण्याचे सुनिश्चित केले. प्रत्यक्षात (२००४-०५) केंद्र व राज्य सरकार मिळून GDP च्या केवळ ३.४९ टक्के उद्दिष्ट साध्य केले आहे. म्हणजे या दृष्टीने देशांतील राज्यांची उदासिनता स्पष्ट

Issue : XVII, Vol. I
GLOBAL ECONOMIC RESEARCH
IMPACT FACTOR 5.95
ISSN 2249-4081
April 2019 To Sept. 2019 37

२. आरोग्य विषयक आणि तत्सम सेवा सुविधा क्षेत्र :

शारिरिक व बौध्दिक दृष्टया विकसित मानवी भांडवल देशाच्या आर्थिक विकासात उत्पादकता वाढीच्यासाठी उपयुक्त ठरते. म्हणुन स्वातंत्र्य प्राप्तीनंतर लगेचच नियुक्त झालेल्या भोर कमिटीने सार्वजनिक आरोग्य व सुविधांचा पाया घातला. नियोजन काळात केंद्र व राज्य सरकारांनी सार्वजनिक आरोग्याचे प्रश्न सोडविण्यासाठी तसेच लोकांना आरोग्य विषयक व तत्सम सेवा, सुविधा पुरवण्यासाठी विविध योजना व कार्यक्रम राबविले. त्याचे फलित म्हणजे दर हजारी जन्मदर (२१.८४) तर मृत्यूदर (८.५) पर्यंत कमी झाला. तसेच जन्मावेळी आयुर्मान सरासरी १९५१ ला ३६.७ वर्ष होते ते २००१ मध्ये ६४.६ वर्षे इतपत वाढले आहे. देशातील स्त्री व पुरुष आयुर्मान अनुक्रमे (६६.९१ वर्षे) व (६३.८७वर्षे) एवढे आहे. तरीपण जन्मदर, मृत्युदर, बालमृत्युदर, प्रसूती वेळी मातांच्या मृत्यूदर, कुपोषण यात घट करण्याचे अपेक्षीत उद्दिष्टये फारसे साध्य होऊ शकले नाही. नियोजन काळात आरोग्य विषयक सेवा व सुविधा यात क्षेत्रात GDP च्या सरासरी २.९८ एवढी गुंतवणूक करणे शक्य झाले महाराष्ट्र राज्यात यापेक्षा वेगळी परिस्थिती नाही. योजना काळात एकूण योजना खर्चाच्या केवळ ३.३० टक्के खर्च या क्षेत्रावर केल्याचे स्पष्ट होते. देशातील वाढत्या लोकसंख्येनुळे आरोग्य विषयक सेवा व सुविधाची मागणी व पुरवठा यात मोठी दरी असल्याचे आढळून येते.

३. रोजगार आणि दारिद्रय :

मानवी साधन संपत्तीचा विकास देशातील व्यक्ती व कुटूंबांना मिळणारा रोजगार व उत्पन्नावर अवलंबून असते. म्हणजेच मानवी साधनांचा विकास देशातील दारिद्रयाच्या प्रमाणावर अवलंबून असतो. डॉ. अमत्यै सेन याच्या मते ज्या राष्ट्रात दारिद्रय अधिक त्या देशातील मानवी संसाधनाचा विकास कमी पहावयास मिळतो. डॉ. वसंत गोवारीकर यांच्यामते भारतासारख्या विकसनशील देशातील अतिरिक्त श्रमशक्ती ही विकासासाठी मारक ठरत नसून पुरक ठरते. त्यासाठी मानवी भांडवलाचा पुरेशा विकास व नियोजन करण्याची गरज आहे.

सामान्यपणे युरोप, कॅनडा, अमेरिका, जपान इ. विकसनशील देशातील लोकसंख्येत कर्त्या लोकसख्येचे व श्रम शक्तीचे प्रमाण ४५ ते ५२ टक्के च्या दरम्यान आहे. त्या तुलनेत भारतातील हे प्रमाण ३८ ते ४२ टक्के एवढे आहे. म्हणजेच भारतात जवळपास ६० टक्के एवढी लोकसंख्या परावलंबी आहे. हे अल्पविकसित पणाचे लक्षण मानले जाते. भारत व महाराष्ट्र राज्यात शहरी भागापेक्षा ग्रामीण भागात कर्त्या लोकसंख्येचे प्रमाण जास्त असल्याचे तसेच अनुसूचित जातीतील कर्त्या लोकसंख्येचे प्रमाण सर्व स्तरावर जास्त असल्याचे पहावयास मिळते.

सन २००१ मध्ये एकूण श्रमशक्ती पैकी ७.३२ टक्के लोक बेकार आहेत. तर महाराष्ट्र राज्यातील बेकारीचा दर ७.२० टक्के एवढा आहे. ग्रामीण बेकारीचा आणि अनुसूचित जातीचा बेकारीचा दर सर्व स्तरावर तुलनेने जास्त असल्याचे दिसून येते. भारतात कर्त्या लोकसंख्येपैकी

Issue : XVII, Vol. I
GLOBAL ECONOMIC RESEARCH
IMPACT FACTOR 3.95
ISSN 2249-4081
April 2019 To Sept. 2019 58

६५.१० टक्के आणि महाराष्ट्र राज्यात ६१.२५ टक्के लोक प्राथमिक क्षेत्रात कार्य करते. नव्या आर्थिक धोरणाच्या काळात देशातील रोजगार निर्मितीच्या दरात घट झालेली पाहावयास मिळते. त्यामुळे ग्रामीण भागात व अनुसूचित जाती जमातीत दारिद्र्याचे प्रमाण अधिक असल्याचे आढळून येते. सन २००१ मध्ये एकूण कुटुंबापैकी भारतात ४३ टक्के, महाराष्ट्र राज्यात ५२ टक्के कुटुंब दारिद्र्य रेषेखाली राहतात. तर एकूण लोकसंख्येपैकी भारतात ३०.८० टक्के व महाराष्ट्र राज्यात ३६.२४ टक्के लोकसंख्या दारिद्र्य रेषेखाली राहते. या तुलनेने सर्व स्तरावर अनुसूचित दारिद्र्याचे प्रमाण अधिक असल्याचे आढळून येते.

तक्ता क्र. ५

सन २००१ मध्ये भारत आणि महाराष्ट्र राज्यातील दारिद्र्य रेषेखालील कुटुंबाचे व लोकसंख्येचे प्रमाण

राज्य/तपशील	एकूण सर्व		अनुसूचित जाती	
	कुटुंबाचे	लोकसंख्येचे	कुटुंबाचे	लोकसंख्येचे
भारतातील				
i) ग्रामीण	४१	३२.६०	४०	४४.६०
ii) शहरी	३२	२७.४०	५६	४३.१०
iii) एकूण	४३	३०.८०	५८	४३.५०
महा. राज्यातील				
i) ग्रामीण	६०	३८.१०	६९	५५.१६
ii) शहरी	४१	३४.२८	६२	३८.९८
iii) एकूण	५२	३६.२४	६६	४७.६२

निष्कर्षात्मक शिफारशी :

वरील विवेचनावरून भारतातील व महाराष्ट्र राज्यातील मानवी संसाधन विकासाची सद्य स्थिती स्पष्ट होते. तसेच यात फारशी प्रगती न झाल्याचे आढळून येते. मानवी संसाधन विकासासाठी पुढील शिफारशी केल्या आहेत.

१. नियोजन काळात विशेषता नव्या आर्थिक धोरणाच्या काळात लोकसंख्येत वाढ झाली तसेच आर्थिक वृध्दीचा दर ८ टक्क्यापर्यंत वाढला. परंतु मानव संसाधन विकासाच्यात शिक्षण, रोजगार, दारिद्र्य, आरोग्य विषयक सेवा व सुविधांच्या उपलब्धतेत प्रगती

Issue : XVII, Vol. I
GLOBAL ECONOMIC RESEARCH
IMPACT FACTOR 5.95
ISSN 2249-4081
April 2019 To Sept. 2019 39

झालेली दिसून येत नाही. त्यामुळे आर्थिक व सामाजिक समस्या निर्माण झाले आहेत. तसेच शाश्वत समन्यायासह आर्थिक विकासाचे उद्दिष्टय साध्य करण्यात आडथळे निर्माण झाले आहेत. केंद्र व राज्य सरकारने मानवी संसाधन विकासात मोठया प्रमाणात गुंतवणूक करणे आवश्यक आहे. केंद्र व राज्य सरकारांनी मिळून मानवी संसाधन विकासात मोठया प्रमाणात म्हणजेच किमान GDP च्या ३५ ते ३० टक्के आणि राज्य सरकारने किमान योजना खर्चाच्या ३५ टक्के रक्कम या क्षेत्रावर खर्च करणे आवश्यक आहे.

२. मानव संसाधन विकासासाठी लिंग भेद विरहीत संकल्पना स्वीकारून देशातील स्त्री भांडवलाचा विकास करण्यासाठी त्यांना शिक्षण, आरोग्य विषयक सेवा व सुविधा, रोजगार संधीची उपलब्धता करून देण्यासाठीमोठया प्रमाणात गुंतवणूक केली तर आर्थिक विकासाच्या प्रक्रियेला गती मिळेल.

३. भारतात व महाराष्ट्र राज्यात अनुसूचित जाती, अनुसूचित जमाती इतर मागासवर्गीय व दुर्बल घटकांच्या मानवी संसाधन विकासाची प्रगती फारशी झालेली नाही. या मानवी संसाधनाच्या विकास करून आर्थिक विकासाची प्रक्रिया गतीमान करणे शक्य होईल. त्यासाठी केंद्रीय व राज्य सरकारने त्या घटकांच्या लोकसंख्येच्या प्रमाणात शिक्षण, आरोग्यविषयक सेवा व सुविधा, रोजगार संधीची निर्मिती यासाठी राबविण्यात येणाऱ्या योजनांवर खर्च करावा. उदा. SCP, TSPइ.

४. भारतीय नियोजन आयोगाने राज्य निहाय तयार केलेल्या मानव विकास निर्देशांकातील क्रमवारी विचारात घेऊन राज्यांच्या योजनांचा आकार निश्चित करावा, अशी शिफारस योजना आयोगाचे उपाध्यक्ष के.सी. पंत यांनी केली. त्या नुसार राज्यनिहाय मानवी संसाधन विकासासाठी शिक्षण, आरोग्य विषयक क्षेत्र, रोजगार निर्मिती इ. बाबत आवश्यक तरतूद करण्याचीही तजवीज करावी.

समारोप

शाश्वत आर्थिक विकास व समाजवादी समाज रचना प्रस्थापित करण्याचे दिर्घकालीन उद्दिष्ट साध्य करून, अतिरिक्त श्रमशक्तीच्या आधारे जगात सन २०२० पर्यंत भारताला

Issue : XVII, Vol. I
GLOBAL ECONOMIC RESEARCH
IMPACT FACTOR 5.95
ISSN 2249-4081
April 2019 To Sept. 2019 60

आर्थिक महासत्ता बनायचे असेल तर मनुष्य बळाच्या विकासासाठी मोठया प्रमाणात गुंतवणूक करणे व त्याचे नियोजन केल्याशिवाय शक्य होणार नाही.

संदर्भ सूची :-

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२. प्रा. के. एस. माथगे, आर्थिक विकास व मनुष्यबळ विकास, योजना एप्रिल १९९७
३. श्री. बी. एस. पद्मनाथन, आरोग्य क्षेत्रांची आव्हाने योजना जानेवारी १९९९
४. प्रा. डॉ. दिपक भामरे, नवीन आर्थिक धोरण व मनुष्यबळ साधन सामग्री समोरील आव्हाने योजना सप्टेंबर २०००
५. डॉ. एस. वाय. पाटील, मानव विकास अहवाल - २००१ एक समालोचन, योजना डिसेंबर २००७
६. देसाई, मालेराव भारतीय अर्थव्यवस्था २००५
७. दत्त सुंदरम भारतीय अर्थव्यवस्था २००७
८. इंडिया टुडे, राज्यांशी दशा आणि दिशा सप्टेंबर २००७

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HUMAN RESOURCE MANAGEMENT REVIEW: MAKING SENSE OF HR IN FAMILY FIRMS: ANTECEDENTS, MODERATORS, AND OUTCOMES

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ABSTRACT

Family business researchers have felt increasing distress with the lack of understanding about how families that are their structure, relationships, emotions, and goals – shape how families manage family firms, leading to calls to more fully incorporate "family science" theories about the nature of family into research about family firms. It seems likely that families' first impact in family firms will be on how employees are treated and managed. Thus, this special issue brings together papers that offer an early glance at what is to be gained by leveraging theories about family to help explain how families influence human resource management within family firms, and how human resource management, in turn, impacts key family firm outcomes.

Key words: Human resources, review, family firms, Antecedents, Moderators, And Outcomes.

INTRODUCTION

"All happy families are alike; each
unhappy family is unhappy in its own way."
- Leo Tolstoy, from Anna Karenina
"Govern a family as you would cook a small fish –
very gently."
- Chinese proverb

As the above quotes suggest, the governance of a family and by extension family firms is complicated. Family firms are the most common type of organization in the world, and they differ considerably from non-family firms in their goals, behaviors, and outcomes. They pursue unique goals, such as the desire to pass the firm to the next generation (Gómez-Mejía, Haynes, Nuñez-Nickel, Jacobson, & Moyano-Fuentes, 2007), and their unique goals regularly nurture distinctive behaviors. For example, while family firms regularly hire family members (Jaskiewicz, Uhlenbruck, Balkin, & Reay, 2013), they are also less likely to fire employees – even during economic downturns (Block, 2010). Although research on human resource management (HRM) in the context of family firms is still relatively scarce, the few existing studies support the idea that family firms differ substantially from non-family firms, as well as from each other, in their human capital management (Griffeth, Allen, & Barrett, 2006; Perez-Gonzalez, 2006), compensation and compensation systems (Gómez-Mejía, Larraza-Kintana, & Makri, 2003), performance appraisal (Gómez-Mejía, Nuñez-Nickel, & Gutierrez, 2001), knowledge transfer (Cabrera-Suárez, De Saa-Perez, & Garcia-Almeida, 2001; Jaskiewicz et al., 2013), organizational citizenship behavior (Arregle, Hitt, Simon, & Very, 2007), and workplace justice perceptions (Van der Heyden, Blondel, & Carlock, 2005). Despite a growing number of important insights describing how HRM in family firms differ from non-family firms, as well as from each other (e.g., Gagne, Sharma, & De Massis, 2014), theory is only beginning to emerge to explain how these differences emerge and how they shape important outcomes in family firms. One reason for the absence of research on the topic is that scholars have not paid sufficient attention to the connection between families and family firms' HRM practices. Indeed, family business researchers have felt "growing discomfort" with the lack of understanding of the family in the family business context (James, Jennings,& Breitkreuz, 2012).

Because it is not known how families' diverse structures, family-member relationships, family goals, and emotions affect HRM. Practices, the effect of families on family and non-family employees' psychological contracts, organizational citizenship behavior, workplace deviance, or any other factor known to impact organizational processes and outcomes remains largely in a black box. Fortunately, we do not need to start from scratch to generate theory that explains differences among families and the ways in which these differences might influence HRM practices and their outcomes in family firms. Researchers from education, psychology, and sociology have already done much and summarized it under the heading:

important HR practice, and shows how nepotism interacts with the HRM system.

OUTLOOK AND CONCLUSION

Despite emerging insights on the uniqueness of HRM practices among family firms (Gagne et al., 2014), we still lacked theory on how family structures, relationships, emotions, and goals shape the evolution of HRM in family firms and how HRM, in turn, influences key outcomes among family firms. With this special issue, we took an important first step toward filling this gap. Specifically, the papers in this special issue take important steps toward providing answers to the following three broad questions: First, what are the family-based antecedents of HRM in family firms? Second, how do family members interact with non-family employees in the family business? And third, how do families manage HRM practices that are unique to family firms, and toward what organizational consequences? Taken together, the seven following papers shed light on the family-based origins of HRM in family firms, their consequences – good and bad – and mechanisms for families to deal with the uniqueness and complexity of their HRM. We hope that the papers offer a modest step toward new family-based theories of HRM in family firms and spurs more research on the topic. In this context, the Special Issue culminates with an interview that two of the Special Issue Editors, Peter Jaskiewicz and Jim Combs, conducted with Gary Powell and Jeffrey Greenhaus. These two influential scholars have helped draw researchers' attention to the work-family interface. They have done much to explain how employees bring their home-life into the workplace and vice-versa, and described ways that employees manage the interface between the two (Greenhaus & Powell, 2006, 2012; Powell & Greenhaus, 2010a, 2010b). Family business is a unique domain because when these owner-managers bring their home life into the workplace, the impact is magnified throughout the firm. We asked about emerging trends in the workplace, among families, and the interface between them, and together we draw implications that might help family business and HRM scholars identify important questions that merit time and attention.

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