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## *Resource Management: Challenges, Opportunities and Sustainability*

### **Chief Editor**

**Dr. R. V. Bhole**

'Ravichandram' Survey No-101/1, Plot  
No-23, Mundada Nagar, Jalgaon (M.S.)  
425102

### **Editor**

**Dr. Vilas B. Dhone**

**Principal**  
**Chhatraveer Raje Sambhaji**  
**Prashaskiya Seva Mahavidyalaya**

### **Executive Editor**

**Dr. J. V. Dadve**  
**Mr. Dilip B Choudhari**



### **Address**

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## **Importance in Individuals Human Development**

**Dr. Manisha Pandurang Wanjari**

Assist. Prof. & Head Dept. of Home Science Kohinor Arts, Commerce & Science College Khultabad Tal.  
Khultabad Dist. Aurangabad (MH)  
E-Mail: - wnjrmns@gmail.com

### **Abstract**

Human development is the development of the individuals in the respective areas, which are, economic, social, and political. The development of an individual in an appropriate manner can be brought about in enhancing one's skills and capabilities. The family of an individual is regarded to be a supreme institution that contributes towards his overall development. Development of an individual takes place through numerous ways. When individuals are made available different choices, this enables them to analyse the options, identify their strengths and weaknesses and then make the right decisions. In some cases, individuals work on their own to bring about their development, whereas in others they need to consult others. There is a direct connection between human development and family studies.

**Keywords:** Human Development, Family Studies, Individuals, Health, Living, Education, Employment.

### **Introduction**

In colleges and universities, individuals choose this field to pursue Master's and Doctoral programs. The main emphasis of this area is put upon how different ecological and environmental factors influence the various courses of individual and family development over a period of time. The individuals, who choose HDFS as their field, mostly find employment opportunities in areas such as, getting involved in investigations of individuals and families at various stages of development in ways that primarily lead to transformations. Other individuals will acquire knowledge of effecting transformations through prevention, public policy, program evaluation or through the research that might focus on developmental and family processes within the physical, social and cultural frameworks.

The individuals, who pursue doctorate in this field, specialize in a particular area and these areas are reflected in a plan of study. These two concepts are interrelated to each other. The main areas that establish a relationship between these two areas are marital relationships, gerontology, health and well-being in the social framework, marriage and family therapy, parenthood and parent-child relationships, and prevention and early intervention. The individuals pursuing research in this area need to acquire knowledge and information regarding all the above stated concepts. The primary focus of human development and family studies need to prepare the individuals and acquire adequate information on lifelong human development, diversity and culture, promoting healthy individuals and families and basic and applied research.

### **Human Development Approach**

The Human Development approach puts the individuals at the middle of the development program, where economic growth and wealth are considered as the resources to bring about development, and it is not an end by itself. Principally, the starting point for the human development approach is the awareness that the purpose of development is to advance human lives by not only improving upon the source of income but also increasing the variety of aspects that a person can be and can do, such as, being healthy and well nourished, knowledgeable, and to participate within the community life. The basic needs approach was familiarized, putting the basic needs of the people such as, access to basic education, basic healthcare, food, nutrition, water and sanitation. Housing, sanitation, cleanliness, food and nutrition, health and safety are the basic necessities of the individuals; it is difficult for any person to bring about development in other areas, if any of the basic requirements do not get fulfilled.

### **Understanding Human Development**

Human development would always contribute in enhancing productivity. It is regarded as a means to higher productivity. In organizations and institutions, human resources are considered to be assets. The important areas that lead to efficiency in human development are promotion of good educational qualifications, and training and development of skills. Within the organizations, the performance of all tasks and functions require individuals to possess certain educational qualifications and skills, human resources when they will be adequately trained will perform their job duties and enhance productivity. Within the organization, individuals are provided with training regarding the efficient performance of their job functions; hence, adequate training programs would contribute in making the individuals more informative and thus enhance productivity.

The practices of child marriage and female foeticide will also get solved in an appropriate manner through human development. The concept of human development generates knowledge amongst the individuals that females should be given equal importance as the males, and they should not be considered as a burden. In rural areas of the country, males are considered to be the assets and it is believed that they will bring wealth and reputation to the family, whereas females are considered to be liabilities. It is with the impact of human development, that individuals in rural areas have begun to realise the significance of education and now are even sending their girls to school. The practices of female foeticide and female infanticide have been abolished and female children are now considered valuable. The concept of human development has made an attempt to generate awareness amongst the individuals that all persons should be treated with respect, kindness and courtesy. Individuals do not have any right to harm or hurt anybody just for their own purpose.

### **Dimensions of Human Development**

The dimensions of human development have been stated as follows:

**Health:** – Health is considered to be important for all the individuals irrespective of one's age, status or socio-economic background. In order to carry out human development in an appropriate manner, every person should adopt measures to maintain his health conditions. The individual is primarily responsible for his own health conditions, and needs to implement measures in an appropriate manner to maintain one's health.

**Knowledge:** – Human development requires individuals to possess knowledge, education, information, awareness and skills regarding various areas that are important to them in their daily lives. In educational institutions, and organizations, the performance of technical, clerical, managerial, administrative and office functions require the up-gradation of knowledge and skills amongst the individuals.

**A Decent Standard of Living:** – The decent standard of living is directly referred to the aspects that promote honesty, politeness, courtesy, respectability, decorum and uprightness amongst the individuals and in their day to day living activities. In one's standard of living, individuals are required to recognize their responsibilities, work hard and perform their tasks and jobs in an adequate manner.

### **Stages of Human Development**

Human development takes place through different stages and these have been stated as follows:

**Infant Development:** – During this stage, children grow from infants to toddlers. The most important development that takes place for infants is they make an attempt to establish a relationship with others. They learn the first aspects of language, they learn to crawl and possibly walk and become familiar with their environment.

**Toddler Development:** – Toddler development takes place during the age of one to three years. At this stage, children begin to learn many new things, they are able to explore the world around them, and they seem adventurous and want to learn something new.

**Pre-schoolers Development:** – The children get enrolled in pre-schools when they reach the age of three years. In pre-school, children are taught numerous concepts and skills. The information that parents cannot make available to the children can be acquired in pre-school.

**Middle Childhood Development:** – This is the stage that takes place from six to eleven years. During the stage of middle childhood, the children get involved into full time schooling. They begin to develop their academic skills and knowledge and get engaged into creative activities such as, sports, physical activities, dance, music, artworks, handicrafts and so forth.

**Adolescent Development:** – This is the stage that begins from twelve to eighteen years. During adolescence, individuals experience physical changes, develop a unique personal identity, become more independent and are focused on peer relationships. At this stage, people begin to develop their own interests, likes and dislikes. During this stage, individuals are mostly school going; they focus on their studies and work towards making a good career.

**Adulthood:** – He completes his studies and gets engaged into employment opportunities, communicates with the number of individuals, enters into marital relationships, where he or she has to learn how to deal with other people, render an effective contribution in the management of family issues and concerns, he or she develops awareness and information regarding various areas and are motivated towards pursuing of their goals and objectives.

### **Concepts of Family Studies**

This concept makes provision of an understanding about the significance of family within the lives of the individuals. There are a variety of responses to the dilemmas within family studies and these have been stated as follows:

The issues and concerns relating to housing and maintenance and the having appropriate terms and relationships with the family members and other individuals are considered to be integral within family studies. Families prove to be beneficial and supportive to the individuals in numerous ways. Family is regarded to be the first and the foremost institution which imparts information about the values, norms, cultures, ethics, and develops effective communication abilities. It provides nourishment, education and also helps in earning a living by getting engaged in employment opportunities.

### **Objectives of Family Studies**

Family studies is an area that provides knowledge and understanding to the individuals regarding making of informed decisions relating to parenting, adolescence, adulthood, family and interpersonal relationships and housing and living environments. Through participation and acquisition of knowledge about family studies, the individuals will be able to identify the following objectives: Effective decisions can be made when an individual is able to select one out of two or more options. To make wise decisions, a person is required to develop knowledge, information, proficiency and aptitude that are considered necessary. At the initial stage, it is vital to develop a social circle for the child, as interaction with the individuals of one's own age group is considered important. In one's household, individuals always need assistance and help from the other individuals who are termed as helpers and workers. These individuals may belong to different cultures and backgrounds. Therefore, it is vital to communicate in a respectful manner with these individuals and appreciate the diversity of cultures. One of the major goals of family studies is to make the individuals understand that there should not be any kinds of discriminations on the basis of caste, creed, race, ethnicity, religion, gender or socio-economic background; all individuals should be treated equally. Individuals give utmost significance to their families. The institution of the family is considered to be the foundation that contributes in effective growth and development of the children.

### **Barriers to the Development of Individuals and Families**

There is occurrence of barriers within the course of the development of individuals and families and these have been stated as follows:

The prevalence of violence and criminal acts, such as verbal and physical abuse, rape, acid attack, murder, and sexual harassment are regarded to be the areas which women are subjected to in most cases as compared to men. Therefore, it can be understood that discrimination is a major barrier which will not allow women to progress. When individuals reside in the conditions of poverty and backwardness they experience problems in the sustenance of their families and in bringing about development. Some of the barriers are profoundly entrenched in the social and political individualities and relationships, such as, blatant violence, discriminatory laws, exclusionary social norms, inequity in the political participation and inadequate distribution of opportunities. It is vital for the individuals to enrich their lives; therefore, for achieving this purpose, they establish certain goals and objectives. There have been instances, when individuals have become victims of heinous crimes, such as, throwing of acid upon them, rape, sexual harassment and so forth. Individuals who are poverty stricken and are residing in rural areas, send their children to urban areas to earn some money to sustain their living. Education is an imperative area that brings about development of the individuals. There have been numerous cases, when individuals are not able to acquire good quality education and absence of educational qualifications does prove to be a major barrier within the course of development.

### **Conclusion**

The human development can be initiated in an effective manner in a number of ways. For achieving the goal of human development, the individuals are required to interact with each other. For instance, in educational institutions and training centres, to develop their skills, they are required to interact and communicate with the other individuals. All kinds of jobs and employment opportunities enable individuals to communicate with each other and between the family members too effective communication is considered to be an integral part to achieve healthy relationships, bring about health and well-being, pursue a good career, obtain good education, and to develop the qualities of diligence, resourcefulness, conscientiousness, ingenuity and creativity.

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## **Academic Libraries: Resource Sharing**

**Smt.Sarika Bhagwanrao Rengunthwar**

Librarian Kohinoor Arts, Commerce & Science College Khultabad Tq. Khultabad Dist. Aurangabad

Email : sbrengunthwar555@gmail.com

### **Abstract:-**

This information attempts to identify the needs, object and factors effecting networking and resource sharing .In the age of digital evolution and escalating prices of electronic information, resource sharing is critical for effective functioning of libraries. Increased availability of information in digital format and high costs of journal subscription compels the libraries to work together. This information discusses the need and importance of resource sharing, formation of library consortium, its importance and limitation.

**Keywords:** Academic Library, Resource Sharing, E-resources.

### **Introduction:-**

Resources sharing extend the scope of library cooperation to include certain reciprocity and partnership in which each participant has something useful to contribute as well as to receive from others. There is willingness and also the capability to make it available when required. Efforts were made during the 1950's and 1960'ss to formalize the concept of resource sharing largely because of inadequate library budgets and the sudden spurt in the cost of books and subscription of periodicals. This is applicable in sharing of documents, manpower, services, space and equipment. In another word "A term used to describe organized attempt by libraries and information Centers to share materials and services cooperatively so as to provide one another with resources that might otherwise not be available to expensive or just plain not owned resources beyond the bounds of a single institution."

### **History of Library Resource Sharing:**

Resource sharing is not a new concept in the field of libraries. The concept that goes by the term "library co-operation" has been in use all along among those who had been working in libraries. The term however has been replaced by a new coinage-Resource sharing which sound more attractive and makes better sense in this age of hyper inflation and budgetary reduction. Thus resource sharing in libraries has become a necessity, and has gained worldwide acceptance.

### **According to Smith and Parker, as quoted by zhang (1990).**

Networking is more structured type cooperation in which definite organizations is connected by electronic or other means to promote inter library loaning of materials, in-service training loaning of materials, in service training and other sharing or resources. It can be started that library cooperation and resource sharing have been replaced by the modern term networking with the same connotation except technological application for achieving the objectives of resource sharing. Networking has become a very powerful link in the coordination and dissemination of library resources.

### **Objectives of Resource Sharing:**

The basic activity of resource sharing is aimed at maximizing the availability of library materials and services at the minimal expense. The emphasis is on provision of access to information sources rather than possession and ownership of such resources, although ownership is, not completely excluded. The basic assumption is that no library can possess the entire world's literature and, hence, has to depend on other libraries for serving all the needs of its clientele

The objectives of resource sharing are very idealistic. They are aimed at providing convenient access to information to library. Users irrespective of the location of the resources. In other words libraries go beyond their own resources to satisfy the user requirements. This is achieved by sharing the resources of other libraries. The main reasons for this activity are-

1. Reduction in all round cost:
2. Avoidance of unnecessary duplication of information resources and their processing and maintenance costs:
3. Provision of greater access to information resources to a wider category of users; and
4. Development of specialized areas of collection building, each library concentrating on areas of its own concern.

### **Library Resource Sharing and Networking :**

Library is an important organ of Academic Institution, public sector, research and development, special libraries, industries and etc. Library is the only source for getting the information both archived and

current events. Earlier libraries used to acquire books, journals, demand of the users. Technical processing of acquisition was carried out for in a methodical manner. Students and teachers are used to visit a library and spend more time to search the material i.e. the users of the library were habit of reading and making notes. Library cooperation/Resource Sharing/Networking/ Consortia all denote a mode of cooperation among a number of libraries where by the library collection, function or services are shared by a number of libraries. Library user in terms of access to more material or services and or on the library budget in terms of providing level service at less cost, increased service at level cost or much more service at less cost than if undertaken individually.

#### **Areas for Resource Sharing :**

##### **1. Library Cooperation :**

A material includes both documentary and non documentary forms. The function or services that constitute a library system. A material includes both documentary and non documentary forms. The function covers the activities concerning the acquisition, processing, storage , etc. Services include techniques, activities and procedures employed to establish contact between the document and its consumer I.e. lending, reference documentation, translation, etc. Library cooperation also can be looked upon as a broader term than resource sharing or networking or consortia

##### **2. Types of Library cooperation :**

. Based on the geographical area covered, library cooperation may be of

I) International Level: E.g. Universal Availability of Publication (UAP) programme introduced by IFLA , Universal Bibliographic Control (UBC)

II) National Level : E.G. National Social Science Documentation Centre (NASSDOC) .

III) Regional Level and

IV) Local Level.

##### **Needs if Resource Sharing :**

Today documents are available in plenty and their cost is kept on increasing. The growth of literature is also increasing day by day in each and every field of knowledge. They are available in variety of formats so there is always scope of being duplicated. Resource sharing enables libraries to function effectively and efficiently by overcome this difficulty. They would share the documents by overcoming the problem of increased prices and space for storing them.. Libraries by sharing would have access to large number of documents. This way they can satisfy the increasing demand of users. By sharing libraries would provide its users to use documents in different formats. It would also allow them to share the expertise of staff, saving costs and the time of the staff. There is always increase in number of users and information seeker and for users, it is importance to obtain basic knowledge in their subject fields and in their specialized areas . Therefore, it is the responsibility of the library to acquire relevant documents like books, journals, reference tools, advanced treatises, reports etc., which would provide a comprehensive coverage of literature as per the concerned subject fields. Today's library has a dynamic and dual role to play and to provide information pin-pointed, exhaustive and ex-seditious to the research community. Many books and other documents usually go out of print within a short time of their publishing, so majority of the libraries are unable to purchase such titles, space for books as well as other library equipment is limited, increase in the number of books and readers necessitates more space for readers in reading hall as well as for library staff. It is impossible for any library to acquire this unlimited and endless knowledge. The need for library resource sharing can also be explained through the five laws of library science by **S.R. Ranganathan**: the demand of first law is to fulfill if particular book belongs to a particular library is not in demand by the users. The book must be allowed to send/gave on inter library loan. To satisfy the second and third law of library science is in the context satisfaction of library users assumes new importance. Every reader his/her book and every book its reader require special care and attention. The user must get his/her book and every book its reader requires special care and attention. The user must get his/her book and every book its reader requires special care and attention. The user must get his/her reading whether it is available with the library were he/she is registered or any other library. This leads to a problem of storage of books. Thus the problem of shortage of space, with /the help of library cooperation/ resource sharing can be solved to some extent. Due to knowledge explosion users need of pinpointed, exhaustive and expeditious information sources and services. The increased access to information and services by various users at different places in limited cost at same time and access to the existing information and services timely at less cost is answer to libraries must have resource sharing.

**Levels of Resource Sharing:**

1. **Local** : When the libraries seek resource sharing in the nearby areas in town, city and metropolitan cities, it is called local cooperation. This activity can be monitored through telephone as well as by local manager.
2. **Regional** : In this situation resource sharing libraries do not fall within the single town but belong to a region may be north or west. The whole regional libraries will be benefited to a large extent.
3. **National** : National level resource sharing may be achieved among the libraries in country. If the resources of all the libraries of a nation are cooperatively used then, inter library loan services will be facility at national level. For example national bodies like INSDOC, ICSSR, UGC academic Libraries public libraries, social sciences, respectively.
4. **International** : The best example of international cooperation and resource sharing programmed is UNISIST. It has also established world science information system. International agencies like IFLA and FID are also extending their cooperation in this regard. The UNESCO vitiated deposit and exchange of reading material of their libraries is done among the member nation.

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## **Proportion Of Literate Population: A Comparative Study Of Tehsils In Jalgaon District Of Maharashtra State**

**Dr. Kailas Namdeorao Salunkhe**

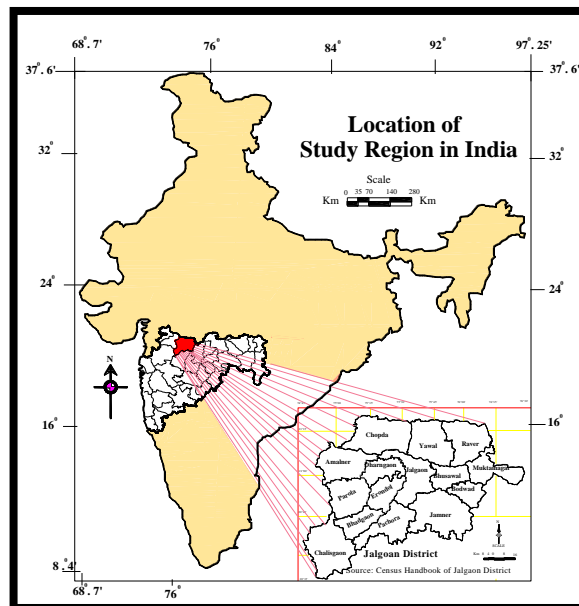
Assistant Professor, Department of Geography, B.S.S.P.M.'s Arts, Commerce and Science College, Songir,  
Tal. & Dist. Dhule (Maharashtra),  
Email: kailas.namdeo@gmail.com

### **Abstract:**

Literacy in India is key for social-economic progress. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) has drafted a definition of literacy as the "ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Jalgaon district is located in the north-west part of the Maharashtra. As per census 2011, out of the total population of Jalgaon district, about 79.73 percent population is literate and 13.9 percent population belongs to scheduled caste, 10.3 percent scheduled tribes and 36.48 percent population is engaged in agricultural activities. The study region is marked by Satpura upland in the north and Ajanta ranges in the south. All Tehsils have different socio-economic status.

**Key Words:** Literate, Proportion, Population, Socio-Economic, Literacy Rat

### **Introduction To Study Region:**



Study region is located in the north of Maharashtra, Satpura Ranges in the north, river Tapi and its bad land and between these vast east-west elongated piedmont plain, Girna, Wghur, Purna, Bori river basins are unique physiographic units.

### **Objectives:**

1. To analyze the tehsil wise proportion of literacy.
2. To classify the tehsils into high, moderate and low literacy rate.
3. To find out the tehsils in which proportion of literacy is more.
4. To find out the tehsils in which proportion of illiteracy is more.
5. To compare proportion of literacy in the year 2001 with 2011.

### **Data Sources:**

Authentic data obtained from census data of 15 Tehsils of Jalgaon district.

### **Data Analysis Techniques:**

#### **Literacy rate**

Also called the "effective literacy rate"; the total percentage of the population of an area at a particular time

$$\text{Effective Literacy Rate} = \frac{\text{Number of Literate Persons aged 7 or Above}}{\text{Population aged 7 and Above}} \times 100$$

aged seven years or above who can read and write with understanding. Here the denominator is the population aged seven years or more.

**Crude literacy rate:** The total percentage of the people of an area at a particular time who can read and write with understanding, taking the total population of the area (including below seven years of age) as the denominator.

$$\text{Crude Literacy Rate} = \frac{\text{Number of Literate Persons}}{\text{Total Population}} \times 100$$

Microsoft Excel and Access software is used to analyze data. Various Statistical techniques are used.

**Discussion:**

Proportion Of Literate Population In Jalgaon District:

Table No. 1 showing the proportion of literate population in the Jalgaon district during the period 2001 and 2011. This table reveals that during the year 2011, Bhusawal is rank first in the literacy rate (78.64%), followed by Jalgaon (75.87%), Amalner (72.095) and Bodvad (71.06%). Well known junctions, transportation networks, developing corporate sectors, educational facilities and socio-economic development etc are the reasons responsible to increase the literacy rate in Jalgaon and Bhusawal tehsils. Considering the growth of literacy during the years 2001 to 2011, it is noteworthy fact that Jalgaon tehsil has alarming growth (13.30%) followed by Amalner tehsil (11.01%). Amalner is a well-known educational center and tehsil place in Jalgaon district. During the ten years lowest growth in literacy is found in only Bhadgaon tehsil.

Table No.1 : Proportion of Literacy in Jalgaon District Years: 2001 and 2011			
Total	2011 % Lit.	2001 % Lit.	% Growth (2001 to 2011)
<b>Jalgaon District</b>	<b>70.03</b>	<b>64.66</b>	<b>5.37</b>
Chopda	64.68	56.33	8.35
Yawal	69.88	64.79	5.09
Raver	69.37	62.30	7.06
Muktainagar	67.14	60.44	6.70
Bodvad	71.06	62.11	8.95
Bhusawal	78.64	71.80	6.83
Jalgaon	75.87	62.57	13.30
Erandol	65.75	58.48	7.27
Dharangaon	69.39	61.67	7.73
Amalner	72.09	61.09	11.01
Parola	66.59	59.17	7.41
Bhadgaon	68.02	63.73	4.29
Chalisgaon	67.13	61.07	6.06
Pachora	67.46	61.86	5.60
Jamner	65.59	59.31	6.27
Source: Census-2001 & 2011			

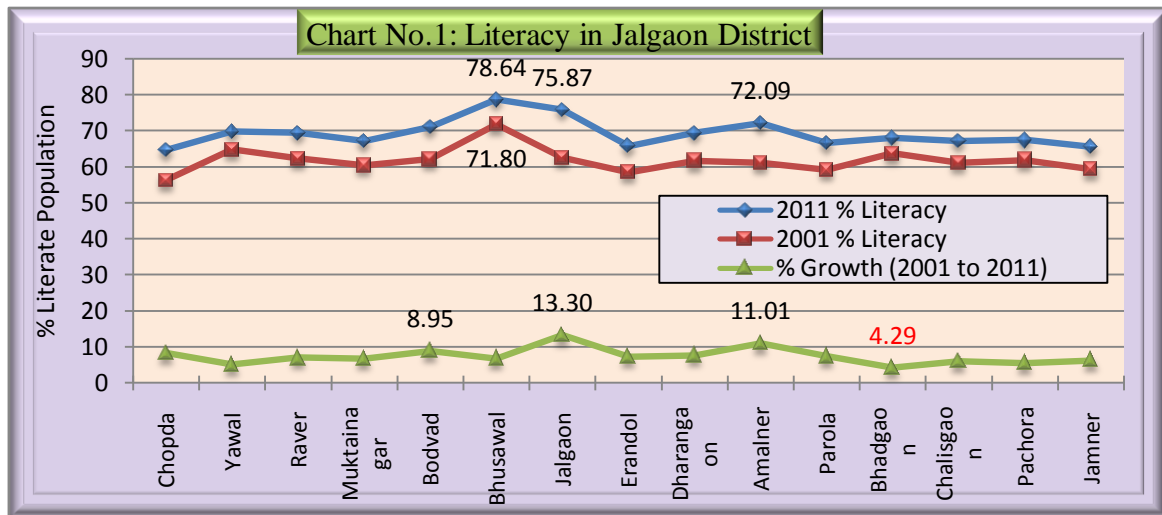
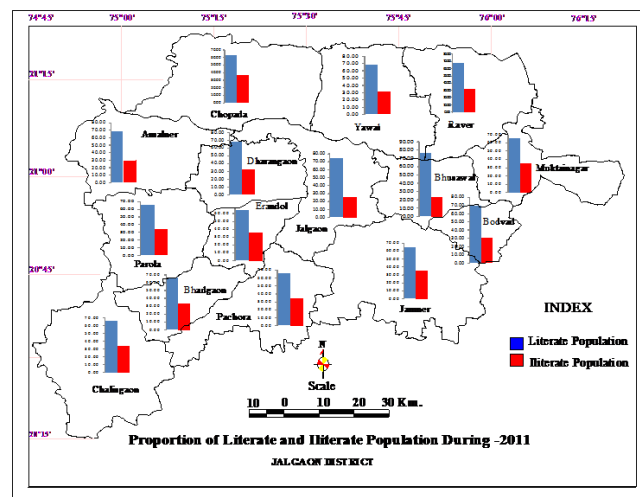


Chart No. 1 displaying the proportion and growth of literacy during the ten years (from 2001 to 2010) in Jalgaon district. It is concluded that more than 70% peoples in Jalgaon district have literate and it accounts the 5.37% growth in the study period. Themap is showing the proportion of literate and illiterate population of Jalgaon district during year 2011.



Map No.2

**Conclusion:**

1. Bhusawal tehsil ranks first in the proportion of literacy (78.64%), followed by Jalgaon (75.87%), Amalner (72.095) and Bodvad (71.06%).
2. Jalgaon tehsil has alarming growth of literacy rate (13.30%) during the study period, followed by Amalner tehsil (11.01%).

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## **Watershed Crises And Its Development of Management**

**Dr. D.B. Ingole**

Assistant Prof. Govt. College of Education, Bhandara.

### **Abstract :-**

River originate in streams that flow down mountains & Hill- slopes. A group of small streams flow down hill-sides to meet larger streams in the valley, which from the tributaries of major rivers. The management of a single unit of land with its water drainage system is called watershed management. It is a technique that has several components. This includes soil & water management & developing vegetative cover. The nature drainage pattern of a watershed unit if managed properly can bring about local prosperity by providing a year-round supply of water, there by improving the quality of life in the area. As it provides water throughout the year, this improves health in the community as clean water becomes available watershed management enhances me growth of agriculture crops & even makes it possible to grow more than one crop in a year in dry areas.

### **Introduction :-**

Watershed management begins by taking control of a degraded site through local participation. People must appreciate the need to improve the availability of water both in quantity & quality for their own area. Once this is adequately demonstrated the community being to understand the project & people begin to work together to promote good watershed management. The first technical step is to take appropriate soil conservation measures. This is done by constructing a series of long trenches & mounds along the contours of the hill to hold the rainwater & allow it to percolate into the ground. This ensures that underground stores of water are fully recharged. This is enhanced by growing grasses and shrub and planting trees (mainly local species) which hold the soil and prevents it from being washed away in the monsoon. However, local grass cover can only increase if free grazing of domestic animals is regulated or replaced by stall feeding. The next measure is to make nala plugs in the streams, so that the water is held in the stream and does not rush down the hill side. In selected sites, several small check-dams should be built which together hold back larger amounts of water. All these measures constitute sound watershed management. It improves the water table & keeps the streams and nala flowing throughout the year.

### **Watershed Management Principles:**

This is land management program that looks at a region from the perspective of all its water-related issues. It can be used to manage a river from its source to its termination. Watershed management could also consider the management of a single valley as a unit, based on its small streams. Saving water from its local source by allowing it to percolate into the ground by nala plugs & check dams instead of allowing it to run off rapidly along the surface during the monsoon, is a major aspect of good watershed Management. This allows underground aquifers to fill so that ground water is recharged. Deforestations a major cause of poor water supply. Afforesting such degraded areas is another important aspect of watershed management. The concept of watershed development has evolved chronologically from the concept of soil conservation and experience gained in its implementation. At the initial stage, the soil conservation technique had a limited objective of construction of bunds, restricting soil erosion, checking nalla flows for achieving infiltration of water etc. on the basis of study carried out by organisations which keep in view this concept carry out scientific study thereof achieve practical success therein and attain success it has however come to notice that scope of this work is required to be enlarged further. This evolved concept has been accepted by India & the Maharashtra State according has embarked on framing programmes of watershed development. The concept of watershed development encompasses the concept of geographical co-ordination of the area. Also the human community in a watershed and its collective capability is the real supportive factor of the concept.

### **Development Programme :-**

The concept of watershed development is not entirely new. In Maharashtra, Mahatma Jyotiba Phule has put forth this concept for the first time in 1887. Following the recommendation of the Royal Agricultural commission appointed by the Government India in 1928, rainfed research centre had been established in the old Bombay state (Solapur, Mohol). Based on recommendation of their research, the programme of soil and water conservation began in Old Bombay State during 1937. Thereafter, the Land Reform Act was introduced in 1942. This empowered the Government to carry out works on private lands during drought condition this resulted into completion of bunding work on 971akh hector of land. The empowered the resulted into completion of bunding work on 971akh hector of land. The Bombay

programme received an impetus and was also given priority for generating employment in the year 1977. Such works were undertaken under the employment Guarantee scheme & soil & water conservation works were once again accelerated as a means of generating employment. The work included soil bunds, nalla bunds, continuous contour trenching, percolation tanks etc.

#### **Peculiarities & Classification of Watersheds in Maharashtra**

Watersheds in Maharashtra have their own characteristic & peculiarities because of complex natural disposition such as geomorphology (1/3hilly, 1/3drought prone,& 1/3 heavy rainfall area). Geology (93.72% of hard rock) and abundant rainfall region (Konkan). Taking into account this situation, it is necessary to accomplish planning of each watershed for development according to their peculiarities. The Groundwater Surveys and Development Agency has delineated the entire river basins and sub-basins of the state into 1505 watersheds. Since most of the area in Maharashtra is covered with hard rock, formation, the geomorphology plays an important role in watershed development. These watersheds have been classified into three zones.

1. Runoff zone (A zone): (tightly dissected and hilly plateau) - 28%
2. Recharge Zone ( B zone) : (Moderately dissected plateau) - 44%
3. Storage Zone (C zone) : (Undissected& valley fill area) - 28%

The plan of development programme for each class of watersheds need to be framed separately in accordance with their peculiar characteristics.

#### **Centrally Sponsored Schemes :**

##### **National Watershed Development Programme(NWDP):**

The scheme is being implemented since 1990-91 in one watershed of each taluka and thus in selected 266 watershed covering 1600 villages covering 9.17 lakh ha. Upto March 1995 in 1.68 lakh ha cultivable area vegetative contour bunds have been constructed and also training in modern agricultural techniques has been imparted to 1.40 lakh farmers.

##### **Drought Prone Area Programme (DPAP)**

This programme is being implemented since 1995-96 in a revised form in 22 districts covering 148 blocks in the state Organisation 235 in number have come forward for undertaking different works of watershed development in 1584 villages allotted to them. The works through Government organizations are being executed in 1338 villages.

##### **River Basin Project Scheme :**

In order to protect the irrigation projects from silting due to soil erosion, the central Government has included this project in the Third five Year Plan. In Maharashtra, it is being implemented on following projects.

<b>Sr.</b>	<b>No Project Name</b>	<b>District Included</b>
1.	Damanganga	Nashik, Thane
2.	UkaiDhuel,	Jalgaon, Nashik
3.	Narmada(SardarSarovar)	Dhule
4.	Nagarjursagar	Solapur, Osmanabad
5.	Pochampad	Nanded

Under this scheme, the ongoing works are executed in 64 watersheds inclusive of 479 villages.

##### **Western Ghat Development Programme :**

For the development of hilly terrain, this scheme is being implemented in Maharashtra since 1974-75. This developmental programme is being executed in 62 talukas of 11 districts covering 2236 villages.

#### **Conventional Measures In Watersheds**

The main objective of the watershed development is to fruitfully utilise the natural resources like water, land etc. thereby achieving maximum agricultural production minimum of expenditure ensuring sustainability in the production. In order to achieve this, different measures are required to be adopted in watershed for soil and water conservation (for increasing water availability of both surface & groundwater). For this while planning from ridge to valley the watershed is divided into runoff zone, recharge zone & storage zone, Initially the necessary works are completed in the runoff, thereafter in recharge zone and then in the storage zone. Such works are mainly classified as vegetative & engineering. The works related to soil & water conservation can be divided on the basis of objectives as follow :-

##### **Mainly for soil conservation**

1. Forestry & forest conservation works.
2. Continuous contour trenching.
3. Contour trenches ( recharges trenches)



4. Contour masonry bunds.
5. Dhalihebhandh
6. Vegetative bunds (soil)
7. Contour vegetative hedges.
8. Majagi
9. Tillage practices.

**Mainly for water conservation**

1. Uncoursed rubble bunds.
2. Gabion structure
3. Nallapluge
4. Village ponds
5. Farm ponds
6. Vanaraibandhara
7. Nallabunds(soil/cement)
8. Check dams
9. Percolation tanks
10. Underground bandharas
11. Kolhapur type weirs.

Though the measure of soil & water conservations are shown separately basically they are interlinked and hence planning for them has to be accomplished together. Broadly the soil conservation measures are mainly related to vegetative & agriculture means & the water conservation measures to engineering means.

**Need to save water alongwith conservation**

Saving water is not yet given the same importance as water conservation. The economical use of water will lead to increasing food production. The quantity of water lost through evaporation from surface storage as well as irrigated fields is tremendous. The shallower the reservoir the more are the evaporation losses. Hence measures minimizing the evaporation should be included in the water-shed development programme. Lot of research has been conducted to prevent evaporation from irrigated fields by covering the land with appropriate material. The wheat husk rice chaff, jowar husk, polythene, plastic & certain chemicals can be fruitfully utilized for the purpose. With these measures 10 to 50% water can be saved as is observed from experiments carried out. All the materials mention above are easily available on the farm but even then these are not used Experience has shown that these measures are underutilized and their use needs to be enhanced. The capacity of soils to hold moisture made available through irrigation & rainfall must be increased which is helpful for crops. This need to be thought of at local level while planning for watershed management. The use of compost fertilizer helps in filling the large voids within the soil which reduces the void space & water can be stored in smaller voids. Hence the increase in organic contents in lighter soil increase its moisture holding capacity. As watershed development is an integrated approach, it is not only necessary to include all such remedies in it to increase & conserve soil moisture but it is also necessary to properly evaluated the scheme with this view.

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## **Land Surface Temperature Intensity (LSTI) analysis is the parameter for the Urban Heat Island (UHI) study**

**Dr. Kiran Hugade**

Asst. Professor, S.S.S.M. Arts, Science and Commerce College, Saikheda, Tal. Niphad, Dist.- Nashik, MS, India

Email: khugade@gmail.com

### **Abstract**

At international level various studies are carried out to identify, delineate, demonstrate and analyze the UHI over the urban areas with the help of satellite images. In the present study the researcher consider the Urban Heat Island (UHI) intensity formula to analyze the Land Surface Temperature Intensity (LSTI) of the study area. The Landsat 8 images are used to derive the LSTI in Geospatial Technologies. The formula for UHI intensity is the difference between urban and surrounding area, this formula is used to calculate the LSTI. The result of the LSTI is positive over the areas which are prone to develop the UHI. For the quantifying the UHI over an area the LSTI analysis is an important aspect.

**Keyword:** - Land Surface Temperature Intensity (LSTI), Urban Heat Island (UHI).

### **Introduction**

The rapid urbanisation occurred in the developing countries due to the dramatic development in the industrial area. These changes lead to alter the surface temperature of the area, as the concrete, built-up area developed the high temperature than the surrounding areas. At global level the UHI is defined as the elevated temperature of an area than the surrounded area (Nichol, 2005). Most of the Urban Heat Island (UHI) studies have been carried out by using the satellite derived images within Geospatial technologies. In the quantitative aspect of the science it is important to delineate the UHI with the help of some statistical parameter. The UHI intensity defined as the temperature difference between the urban area and a reference suburban station is mentioned as (Fung, et. al. 2009). The formula proposed by the Fung, et. al. for the UHI intensity is used for the calculation of LSTI in this study; as the LSTI gives the negative and positive values. The negative values shows the low temperature of the area than the surrounding while the positive value shows the high temperature of the area than the surrounding area; this techniques is very helpful in the UHI studies. The political entity is used as the urban areas while the surrounding suburb areas consider the whole study area for the research purpose.

### **Study area**

The study area is located in the eastern slope of the Western Ghats (Sahyadri Range). The cities of temple have been transforming to the Wine capital of India with the development of the industrial area. The longitudinal extension of Nashik district is 73° 14' East to 74° 56' East and latitudinal extension is 19° 34' North to 20° 52' North Latitude with an area of 15,548 sq. kilometer. The climate of Nashik is pleasant with an average temperature of 28° Celsius and the 650 mm average annual rainfall.

### **Methodology**

Remotely sensed images were used to extract Land Surface Temperature and Land Surface Temperature Intensity of the study area in Geospatial Technology. The surface temperature of the study area is extracted by using the thermal band- Band 10 (10.6-11.2µm) of Landsat-8 OLI sensor. The Land Surface Temperature (LST) and the LSTI of the study area is extracted by using Landsat-8 (OLI) sensor, the following stages were followed.

The thermal band- Band 10 (10.6-11.2µm) of Landsat-8 OLI sensor was used to extract LST.

1. Conversion of digital number to at sensor spectral radiance
2. Conversion of spectral radiance to atmosphere brightness temperature
3. Normalize Difference Vegetative Index – NDVI
4. Land surface emissivity
5. Land Surface Temperature (LST)

All the equations solved in GIS environment; the final map of the LST for each year is derived.

6. Land Surface Temperature Intensity (LSTI)

Formula:

$$LSTI = LSTU - LSTR$$

Where,

LSTI = Land Surface Temperature Intensity

LSTU = Land Surface Temperature of Urban area

LSTR = Land Surface Temperature of Rural or Surrounding area

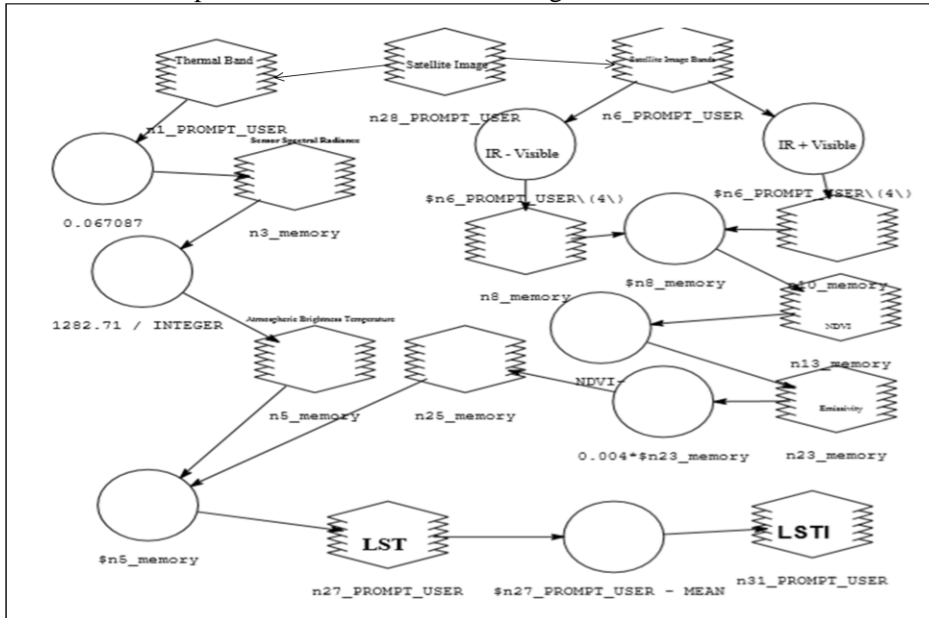
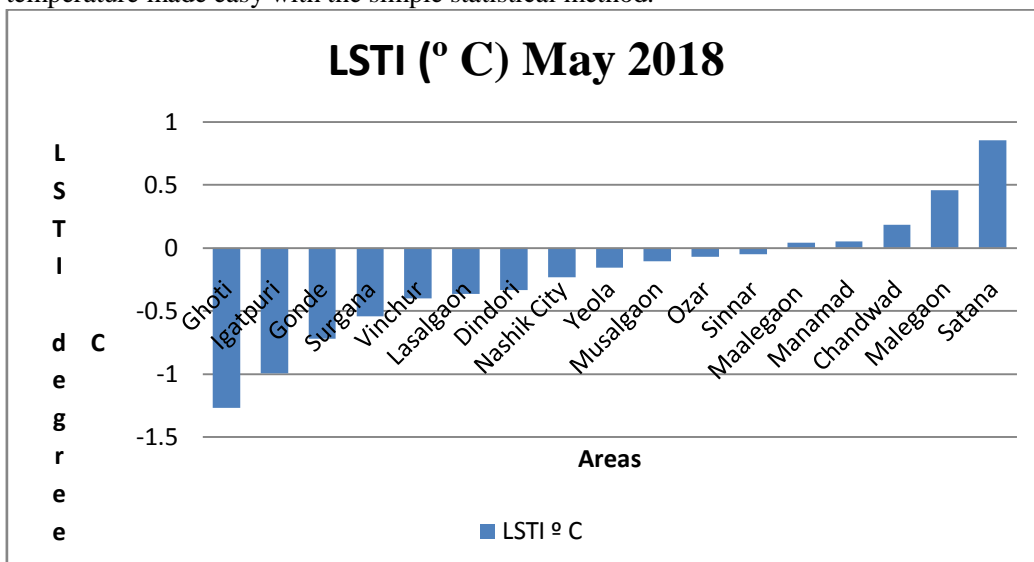


Fig. 02 - Methodology

### Results and Discussion

The LSTI give the detail idea about the UHI formation over the area. The values of LSTI are positive shows the UHI formed over the areas while the negative values gives cold island condition. In this study the urban and industrial centers have the positive values of LSTI so they are prone to develop the UHI with some fluctuation in the LSTI values. As the Fung et. al. proposed the UHI intensity is used in this study for the LSTI analysis it depicted the formation of UHI in best way. For the study of UHI the quantification of the temperature made easy with the simple statistical method.



### Conclusion

It is interesting that the LSTI analysis give more accurate measure for the UHI study as it gives the positive and negative values with reference to the surrounding rural or suburb areas. The study of UHI is the prime subject in front of various researchers; as this phenomenon is vary with space and time. For best understanding of the UHI over the areas the statistical methods are appropriate. This study also proves the existence of the UHI intensity as formulated by the Fung et. al. in UHI studies.

### Acknowledgement

I would like to express my special thanks of gratitude to United States of Geological Survey (USGS- Earth Explorer); satellite images to download for the study purpose. I am also thankful to Savitribai Phule Pune University, Pune.

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## **Spatio Temporal Analysis Of Rural And Urban Population Growth In Dhule District (Maharashtra)**

**Mr. Nikam Chaitanya Ashok<sup>1</sup>, Dr. S. B. Patil<sup>2</sup>, Dr. J. Sharma<sup>3</sup>**

<sup>1</sup>Research Scholar, JJTU Rajasthan

<sup>2</sup>Co-Guide, Assistant Prof. Geography Department, Arts & Commerce College, Akkalkuwa.

<sup>3</sup>Guide, Assistant Prof. Geography Department, JJTU University, Jhunjhunu, Rajasthan.

### **Abstract**

Population dynamics, the forces behind the growth and movement of populations, play a central part in the urbanization process. In preparing a global accounting of urban and rural growth, one is beset by problems of data and definition. Unlike mortality and fertility studies, the criteria for identifying the phenomenon under study are not obvious nor are they necessarily constant from country to country. The urban population is growing several times as fast as in the rural areas, either through natural growth or through migration from rural areas. But rural population in developing countries will continue to grow. The growth of population exerts considerable influence on agricultural changes. Growing population needs more food and essentials of life. The population growth of the district has increased manifold. Shows the Urban and Rural population growth of Dhule district for the census year's 1981 to 2011.

**Keywords:** Rural and Urban population growth, demography, growth rate, components of urban growth, migration.

### **Introduction**

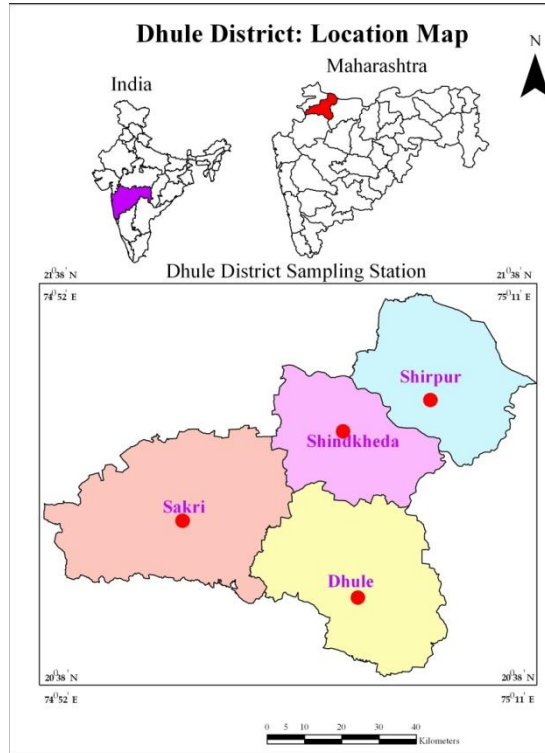
Urbanization is also defined as 'movement of people from rural to urban areas with population growth equating to urban migration' (United Nation, 2005). Urbanization is the increasing number of people that live in urban areas. It predominantly results in the physical growth of urban areas, be it horizontal or vertical as a result of global change. The definition of urban area changes from country to country. There are various ways to define what is urban and what is the part of urban area (Carter 1995). Urban places are not even similar in character. This can be distinguished on the basis of demographic characteristics and available infrastructures.

According to Trewartha, the level of urbanization is defined as the proportion of urban population to total population residing in urban areas by shifting population from village to city and the process of transformation of villages into cities/ towns are called urbanization. According to 2011 Census, the definition of urban area should have "Places having a minimum population of 5000, with at least 75 per cent of male main working population engaged in non-agricultural pursuits and the density of population should be 400 persons per sq. km". Rapid urbanization is responsible for many environmental and social changes in the urban environment and its effects are strongly related to global change issues. Urbanization is closely linked to modernization, industrialization, and the sociological process of rationalization. Population also plays an important role in modern economic development. It is the most potent resource which can alter the entire face of the country, if utilized prudently. Not only it provides trained and skilled man-power for economic reconstruction but like other natural resources it can be exported to earn regular income and meet financial crisis. But an illiterate and unskilled population full of ethnic diversities poses a number of problems whose solution is always difficult to find out. Fast growing population accompanied with maladies of overpopulation not only disturbs the peace and tranquility of the region or the country to which it belongs but may pose serious threat to even the survival of the mankind. That is why population planning and human resource development have become the major topics of debate in today's world, particularly in developing countries like India (Tiwari, R.C.) The process of urbanization historically has been associated with other important economic and social transformations, which have brought greater geographic mobility, lower fertility, longer life expectancy and population ageing. Population growth, economic globalization, improving living standards and urbanization are causing important changes in the global food system and modifying the dietary habits in many parts of the world (Molden, 2007; Godfray et al., 2010). Urbanization more commonly refer to a process of transformation of a rural settlement into an urban one. 'A distinction should be made between the three aspects of the process of urbanization, i.e., behavioural, structural and demographic aspects of urbanization process.

Growth of population in any area has to be gauged in the context of its vital rates. In Dhule region, the mortality rate had been dominating the demographic scene for a long period, while the fertility had been stubbornly unobliging. However, a perusal of the recently released vital statistics clearly establishes.

**Study Area:**

Dhule district is located in the north-western part of the Maharashtra State. It extends between 20<sup>0</sup>38' to 21<sup>0</sup>38' N latitude and 74<sup>0</sup>52' to 75<sup>0</sup>11' East longitude. Dhule district covers an area of 8063.11 sq. km., which is 2.62% of the geographical area of the state. According to the 2011 census, Dhule district has total 678 inhabited villages and 20,50,862 people are residing within the district and Population density of the district was 212 persons per sq.km. Percentages of the rural population are 27.84 percent while 72.16 percent people live in the urban areas.



In Dhule district there are 31.56 per cent population is scheduled tribe. On other hand at the tehsil level wide variation too are found in the Dhule region. Sakri tehsil ranks first with 53.34 percent tribal population followed by Shirpur, Shindkheda and Dhule, tehsils, with 48.05, 24.55 and 13.94 percent respectively.

**Objective**

1. To study spatial pattern of Rural and Urban Population growth.
2. To analyze the spatio temporal changes in Rural and Population growth.
3. To find out the factors affecting on Rural and Urban Population growth.

**Methodology:**

This study is based on the reliable and accurate census data. It is not possible to conduct individual enumeration of the required data from door to door in study region. The required secondary data has been collected from the District census handbook (1981,1991,2001 & 2011), Socio –Economic review and District statistical abstract. The geographical study of over 30 years i.e from 1981-2011 has been analyzed for Rural and Urban population growth. For detailed study of spatio temporal analysis in rural and Urban population growth in tehsils. The collected data has been processed and analyzed by using different statistical and quantitative technique. The tabulated data has been presented by graph.

**Discussion**

Table No. 1.1 clearly reveals that, in last three decades the Rural and Urban population has substantially increased. During 1981-2011 Rural population growth in the Dhule District region has recorded an increase of 58.54 per cent, whereas Rural population growth rate in a region during 1981-91, was 22.17 per cent.

**Table No 1.1  
Dhule District: Rural and Urban Population Growth (1981-2011)**

Sr, No.	Name of Tahsils	Population Growth in Percentage					
		1981-1991		1991-2001		2001-2011	
		Rural	Urban	Rural	Urban	Rural	Urban
1	Dhule	19.13	32.05	16.26	22.79	11.83	22.28

2	Sakri	20.46	NA	09.19	NA	19.92	100.00
3	Shirpur	29.05	30.09	19.72	39.43	25.14	24.65
4	Shindkheda	12.14	29.94	07.08	26.44	12.77	10.20
<b>District</b>		<b>22.17</b>	<b>29.90</b>	<b>12.99</b>	<b>25.18</b>	<b>17.25</b>	<b>28.06</b>

**Source:** District Census Handbooks, 1981-2011, Dhule (M.S.)

**Note:** NA= Not Available

Contrary to this during year 1991-2001 and 2001-2011 increase in the population was 12.99 and 17.25 per cent respectively. Similarly the Urban population growth rate in a total region during 1981-2011 an increase of 111.24 per cent, whereas growth rate in 1981-91 was 29.90 percent. Contrary to this during year 1991-2001 and 2001-2011 increase in the urban population was 25.18 and 28.06 per cent respectively.

During 1981-91 the region's rural population growth was 22.17 per cent. In a large variations in the rural population growth were noticed in tahsils. Among the tahsil of the region the highest rural population growth was found in Shirpur tahsil with 29.05 per cent followed by Sakri tahsil with 20.46 per cent respectively. In lowest rural population growth was found in Shindkheda tahsil with 12.14 per cent followed by Dhule tahsil with 19.13 per cent respectively. In the 1981-91 decades due to the epidemic diseased, natural calamities and of roughs the death rate was increased hence lowest rural population growth has been recorded.(fig.no.1.1)

Fig.No.1.1

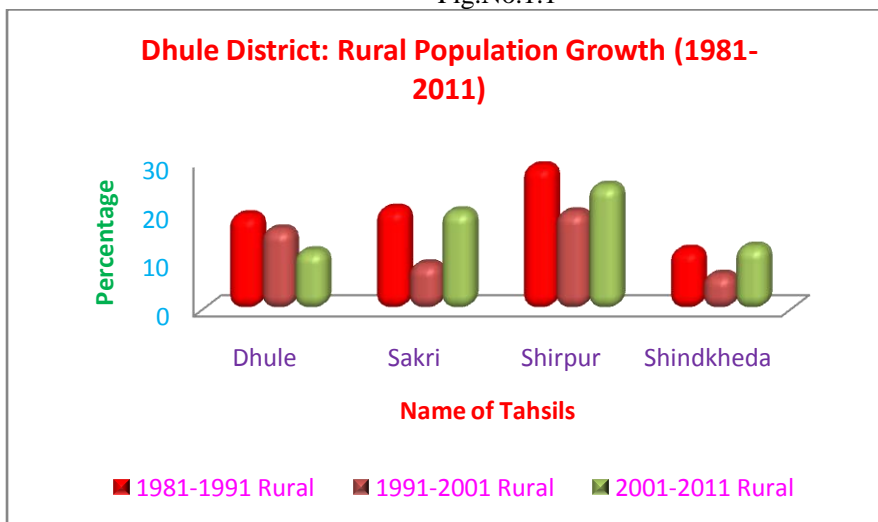
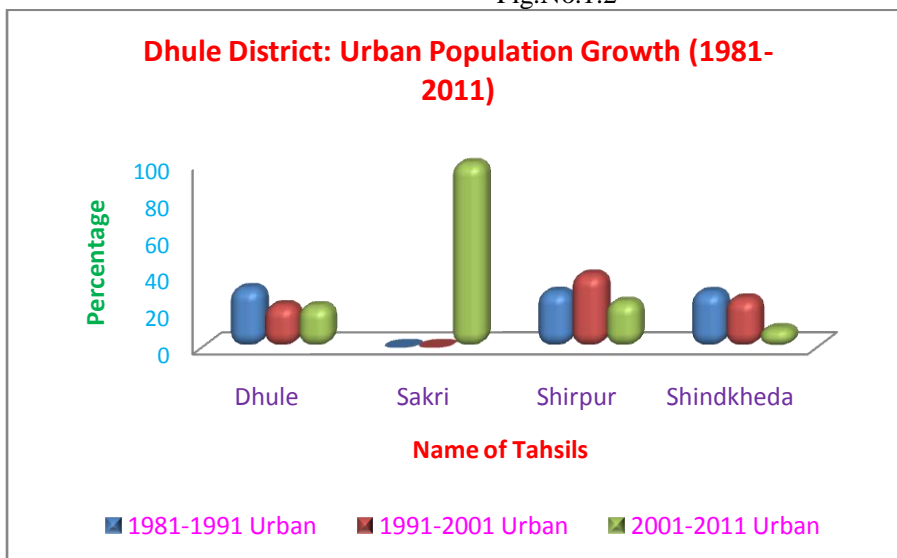


Fig.No.1.2



During 1981-91 the region's urban population growth was 29.90 per cent. In a large variations in the urban population growth were noticed in tahsils. Among the tahsil of the region the highest urban population growth was found in Dhule tahsil with 32.05 per cent followed by Shirpur and Shindkheda tahsil with 30.09 and 29.94 per cent respectively. (fig.no.1.2)



Similarly 1991-2001 in the highest rural population growth was recorded in Shirpur tahsil with 19.72 per cent followed by Dhule tahsil with 16.26 per cent respectively. In lowest rural population growth was recorded in Shindkheda tahsil with 07.08 per cent followed by Sakri tahsil with 09.19 per cent respectively. During 1991-2001 the region's urban population growth was 25.18 per cent. Among the tahsil of the region the highest urban population growth was found in Shirpur tahsil with 39.43 per cent followed by Shindkheda and Dhule tahsil with 26.44 and 22.79 per cent respectively. In this decade due to the migration the negative change has been recorded. This migration happened mainly for the gifting of employment of education. During 2001-2011 the region's rural population growth was 17.25 per cent. In a large variations in the rural population growth were noticed in tahsils. Among the tahsil of the region the highest rural population growth was found in Shirpur tahsil with 25.14 per cent followed by Sakri tahsil with 19.92 per cent respectively. In lowest rural population growth was found in Dhule tahsil with 11.83 per cent followed by Shindkheda tahsil with 12.77 per cent respectively. During 2001-2011 the region's urban population growth was 28.06 per cent. In the tahsil of the region the highest urban population growth was found in Sakri tahsil with 100.00 per cent followed by Shirpur and Dhule tahsil with 24.65 and 22.28 per cent respectively. In lowest urban population growth was found in Shindkheda tahsil with only 10.20 per cent. According to relevant data and observations there is found a wide variation of urban population growth in the study region, state and the country.

**Table No 1.2**  
**Dhule District: Spatio- Temporal analysis Population Growth**  
**(1981-2011)**

Sr, No.	Name of Tahsils	Spatio- Temporal analysis	
		1981-1991 to 2001-2011	
		Rural	Urban
1	Dhule	-38.16	-30.48
2	Sakri	-02.64	00.00
3	Shirpur	-13.46	-18.08
4	Shindkheda	05.19	-65.93
<b>District</b>		-22.19	-06.15

**Source:** Computed by Researcher

During 1981-91 to 2001-2011, this period of large spatio-temporal changes of rural population growth in the study regions. The lowest negative proportion of spatio-temporal changes in rural population growth rate recorded in Sakri tahsil with -02.64 per cent. In Dhule tahsil was highest negative proportion of spatio-temporal changes in rural population growth with -38.16 per cent followed by Shirpur tahsil with -13.46 per cent respectively. In Shindkheda tahsil was recorded positive changes with 05.19 per cent. In Shindkheda tahsil was highest negative proportion of spatio-temporal changes in urban population growth with -65.93 per cent followed by Dhule and Shirpur tahsil with -30.48 and -18.08 per cent respectively. Day by day rural area gets deserted and urban centre are developed rapidly. Population growth rate is not unique it is change in every decade. In every decade urban population growth rate is always higher than the rural population growth. Region behind this is changing mortality of rural people; there is an attraction of urban life.

### **Conclusion**

The urbanization process is slow in Dhule district due to less industrialization. The economy of the district mainly depends upon agriculture and allied economic activities. Only two cities, namely Dhule and Shirpur enjoy the status of first ranked cities. Dhule city being the headquarters hosts industrial, trade & commerce activities. Shirpur is a well-known heavy industries like Gold factory, textile, still, sugarcane industry etc. The proportion of population to total population of the district has increased during the last decade. The process of urbanization is simply defined as increase in proportion of urban population to total population in a region. Therefore it is clear and evident from the discussion that rural and urban population growth, socio-economic condition and quality of life are significantly related to higher population growth has hampered the social and economic development of the study area which have ultimately affected the quality of life of an individual. Population growth rate among rural and urban in the district was increased but the percentage was not high during last three decade. Due to the increasing facilities easy availability of medical facilities, increasing awareness about the health and sufficient production of food grains the population growth was high in concerned tahsils in Dhule district.

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## **Malthusian Theory and Population Growth in India**

**Sudeep Kumar Saket**

Asst. professor of law, Govt. P.G. College, Datia (M.P.)

Email: - sudeep3030@gmail.com

### **Abstract**

Thomas Robert Malthus argued in his theory of population that production of food grains increases in arithmetic progression while population multiplies in geometrical progression as a result, after a certain span of time human population will eventually exceed the production of food grains. this would bring this equilibrium between the supply of food grain and population. Therefore, it becomes imperative to bring back the equilibrium between the two. After studying this paper one shall be able to express the role of effective demand for economic growth, explain the relation between increase in population and economic growth, appreciate the role of capital investment in the industry production and importance of Land Reforms.

### **Introduction**

Since the middle of the eighteenth-century population is been experiencing social economic and political changes because of industrial revolution. one of them is steady fall in mortality especially child mortality followed by infant mortality. Reasons for decline in mortality are like improve Public Health, increase in food supplies owing to agriculture Innovation and smallpox inoculation and vaccination. Because of declining mortality and high fertility population started growing rapidly. The rapidly growing population triggered fear among thinker on the limited resources of land and agriculture yield misery among people. Some writings have suggested adjustments between agricultural production and growing population by checks. The famous economist Thomas Robert Malthus analysed the problem of population growth in other words he was the first economist to study the demographic issues. He propounded the theory of population in US famous book titled as an "Essay on principle of population" in theyear 1798. In the 18th century he conducted an extensive study on population growth in different countries of Europe. His studies showed a rapid increase in the population of these countries and this became a cause of concern for him. He felt that the future of human race is in great danger and so he laid stress on the need to keep population under strict control.

### **Salient feature of the Malthusian theory of population in Indian Perspective**

Till the mid of 19<sup>th</sup> century India like China had witnessed steep fall in Mortality rate and increase in fertility rate. Due to efforts of family planning initiatives both at individual and government level there was check over fertility rate in India and also literacy rate of females has been increased. The rise in per capita income and government beneficial initiatives including advancements in public healthcare services has minimised the expectancy of having a greater number of children among the family members. In the year 2016-17 an economic survey was conducted in which approximately 12 states among 22 reporting state have marked the level which is below to replacement rate of 2.1 per woman. The other states are expected to reach that level in the years to come very soon. The existing population replaces itself from one to next generation according to the average number of children born per women to be termed as the replacement rate i.e., total fertility rate. Features of the theory are as follows, firstly, food grains are produced under the law of diminishing returns that is according to Malthus nature is considered to be miser. This implies that if man tries to produce more food grain he would not be accompanied by the sympathy and cooperation of nature. As he uses more and more unit of his capital and Labour on land, total production would increase undoubtedly, however due to the applicability of law of diminishing returns on land it would result in diminishing growth of food grains thus as he stated earlier Food Supply increases in arithmetic progression that is 1,2,3,4,5 and so on. Secondly, the unchecked population increases much faster than the growth of food supply, i.e., according to Malthus population has a Universal tendency to increase in geometrical progression that is 1,2, 4,8,16,32,64 and so on. It implies that the rate of growth of population is more than the rate of growth in food supply. It is also observed that population tends to double in every 25 years. Thirdly the above mentioned two features of Malthusian theory of population implies that food supplies and population growth are affected by some independent variables. Since food supply is influenced by law of diminishing returns and population, is affected by human fecundity. These can be considered as one of the independent variables. Now these results into the existence of imbalance between Food Supply and population growth. Fourthly, the existence of imbalance between the supply of food grains and growth rate of population makes it difficult for the state to beat its increasing population at

the present level. This difficulty emerges because the increase in population growth is much faster than the growth of food grains, as the growth rate of former follows a geometric progression while for the latter it is the arithmetic progression. The scarcity of food grains not only leads to the problem of starvation but also likely to aggravate the level of malnutrition among human population at a large scale. Also, the occurrence of natural calamities such as drought, epidemics, flood, earthquake, war etc. takes away a huge toll on human life. Malthus called these natural calamities as positive or natural checks on the growth rate of human population. The objectives of these checks imposed by nature is to bring equilibrium between Food Supply as population growth. it is however worth to remember that nature imposes this check only when man fails to control the rapid growth in a population and lastly according to Malthus, man can save himself from natural checks by adopting preventive checks. Preventive checks as opposite to natural checks are manmade checks. Among the preventive checks the following can be considered as some of the important prevented checks like celibacy, abstinence, postponement of marriages, moral restraint. these checks are known as preventive checks as these checks control the growth rate of human populations by delaying or preventing soil bearing.

### **Criticism of Malthusian theory of population**

It was prevalent mostly in UK, Europe and American countries and the position in India is totally adverse to that of different countries. The theory of population as propounded by T. R.Malthus has indeed given a new direction to the field of research. A few criticisms of Malthusian theory of population are given, first, the mathematical form of Malthusian theory of population is objectionable as many researchers however did not agree to this mathematical form of Malthusian theory. It is wrong to assume that population increases by geometric progression and food grain by arithmetic progression and unfortunately Malthus could not provide any evidence or argument in order to provide a support to this mathematical form of growth rate of population and food grains. Second, criticism is that Malthus was not the supporter of scientific innovation that is, he however completely ignored the role of scientific innovations. It is not compulsory that the desired equilibrium would always be established by natural or prevented checks. The scientific innovations can lead to improvement in technology of production that can enhance the supply of food grain or it can also develop some methods apart from the one suggested by Malthus that can keep a check on the growth rate of human population. Third, population growth according to Malthus was related to production of food grains and not with the total production. Malthus confined himself with the growth rate of food production rather than extending it to include the level of total production while explaining the linkage between the growth rate of human population. the society is so well integrated that it becomes difficult to justify the exclusion of Total production while establishing the equilibrium between supply of food grains only and human population. Fourthly, population growth is not always harmful i.e., the Malthus assume that the rapid increase in the growth rate of human population compared to the growth rate of food grains is a cause of concern. this assumption underlines the fact that increasing population growth is not beneficial and this approach thus forms the ground for criticism. It is not justified to analyse the increase in population level from the consumption point of view and always one should however not forget that population is required to carry out the productive activities. lastly, the assumption of Malthus that wherever population growth rate will exceed the growth rate of food grains nature through its agent will bring about a fall in population of that state up to a level where it can be equated with the total production of food grains is in itself is quite absurd to believe as natural calamities can occur in any part of the world. These calamities are not covered by the size of populations rather by human activities that intervene with the nature. It is however not compulsory that nature will take out its revenge only at a place where it has been intervened. Natural calamities are thus beyond the human control and can occur even in less populated countries of the world.

### **Conclusion**

There is no deny in the fact that natural calamities take a heavy toll on human life but since these calamities are beyond human control it would not be wrong to assume that occurrence of natural calamities would be in over populated countries, also it is not necessary that increase in the levels of populations will always be harmful for the society. Population increase is required for the development of any society. Malthusian theory of population though suffers from certain limitations it is indeed a Masterpiece of work which has given a new direction to the field of research. He gathered. the attention of researchers towards the issue of population growth.

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## **Interlinking Of Rivers In India And Its Challenges.**

**Dr. Ashish Shrivastav**

Assistant Professor of Law at Government New Law College, Indore. Advocate M.P. High Court,  
Indore

### **Abstract**

"Climate change does not respect borders; it does not respect who you are- rich and poor, small and big.

Therefore, this is what we call global challenges, which require global solidarity"

The world has witnessed two world wars which were destructive and caused huge loss of life and environment. It also resulted in climate change and spreading of new various diseases after which all countries are trying to get ahead of each other by development and industrialization which is adversely affecting the environment and climate change is now becoming a big threat for the whole world. This is the need of hour to shift the world towards sustainable development in order to achieve a better and more sustainable future for all future generations. This paper aims to understand the interlinking of Rivers and its challenges. What is the history behind the idea of interlinking of Rivers? How the projects are impacting the environment and ecology of our nation? And what approach we should have to follow for sustainable development.

### **Introduction**

India accounts for 18% of the world's population and about 4% of the world's water resources. One of the solutions to solve the country's water woes is to link rivers and lakes. India also sees years of excess monsoons and floods, followed by below average or late monsoons with droughts. This geographical and time variance in availability of natural water versus the year round demand for irrigation, drinking, and industrial water creates a demand-supply gap. River Linking is a project of linking two or more rivers by creating a network of manually created reservoirs and canals, and providing land areas that otherwise does not have river water access and reducing the flow of water to sea using this means. It is based on the assumptions that surplus water in some rivers can be diverted to deficit rivers by creating a network of canals to interconnect the rivers. The purpose of interlinking the rivers is to join the Indian rivers through reservoirs and canals. This will solve the problems of flood and will provide water throughout the year. Farmers will also get benefit as they will not be dependent on monsoon for water etc.

### **Background And History**

The idea of the interlinking of Rivers was first mooted during the British Raj when Sir Arthur Cotton, a British general and irrigation engineer suggested linking the Ganga and the Cauvery for navigational purposes. The National Water Development Agency was established by former Prime Minister Indira Gandhi in 1982. It got a push in 1982 when NWDA was established. However, not much progress was made later. In 2002, the Supreme Court asked the government to finalize a plan for interlinking rivers by 2003 and execute it by 2016. In 2002, it got huge fillip when the government decided to study the feasibility and devised a concrete layout to implement it. However, with the change in government the project was put on hold owing to inter-state disputes and opposition from farmers, tribal groups, civil society and environmentalists. A task force was formed by the government for the same in 2003. In 2012, the Supreme Court again asked the government to start the project. The Supreme Court directed the Ministry of Water Resources to constitute an experts committee to pursue the matter with the state governments. However, it left the implementation of the project on center's discretion citing it to be the executive's purview. In 2014, the Ken-Betwa River Linking Project got Cabinet approval. The linking of Godavari and Krishna was completed in 2015. In March 2021, the governments of Uttar Pradesh and Madhya Pradesh signed an agreement that nudges forward the long-stalled multi-crore, controversial project to link the Ken and the Betwa rivers.

### **Regulatory Body**

Centre Government is contemplating creation of the *National Interlinking of Rivers Authority (NIRA)*. It will function as an umbrella body for all river linking projects and to be headed by a Government of India Secretary-rank officer. NIRA is supposed to be an independent autonomous body for planning, investigation, financing and the implementation of the river interlinking projects in the country. It will replace the existing National Water Development Agency (NWDA). It will coordinate with neighboring countries and concerned states and departments and will also have powers on issues related to environment, wildlife and forest clearances under river linking projects and their legal aspects. It will have the power to raise funds and act as a repository of borrowed funds or money received on deposit or loan

given on interest. It will also have the power to set up a Special Purpose Vehicle (SPV) for individual link projects.

### **Advantages Of Interlinking Of Rivers**

There are various advantages of interlinking of rivers such as:-

**1 Reducing Regional imbalance:** India depends on monsoon rains that are erratic as well as regionally imbalanced. Interlinking of rivers will reduce the amount of surplus rain and river water which flows into the sea.

**2 Irrigation for Agriculture:** Interlinking can provide a solution to the rain-fed irrigation problems of Indian agriculture through the transfer of surplus water to deficit regions.

**3 Reducing Water Distress:** It can help in mitigating the effect of drought and floods to a certain extent.

**4 Other Benefits:** Hydropower generation, Round the year navigation, Employment generation, Ecological benefits as dried up forests and lands will be replenished.

### **Challenges**

Beside the above advantages there are some challenges in the interlinking of rivers.

**1 Threat to environment:** These projects threaten the natural ecology of rivers. The proposed dams could threaten the forests of the Himalayas and impact the functioning of the monsoon system.

**2 Climate change:** In interlinking systems, it is assumed that the donor basin has surplus water that can be made available to the recipient basin. The whole concept goes for a toss if this basic assumption goes haywire for any system due to climate change.

**3 Economic cost:** The interlinking of river results in a huge fiscal burden on the Government. The cost of the projects are very heavy burden and ultimately give raise to many other problems.

**4 Submerging of area:** The use of large diesel pumps, forests and areas due to imbalance in the water level in the rivers may get submerged.

**5 Displacement of people:** The networking of canals and interlinking of rivers would result in displacement of people, mostly tribals and farmers.

**6 Deforestation:** Deforestation is another challenge which could affect the monsoon system and climate change. The loss of forest and wildlife creates imbalance in the ecological system.

**7 Threat to aqua life:** The natural aqua life of the rivers could be threatened by such projects and an adverse effect on the marine life can be due to it.

**8 Effect on agriculture :** Due to construction of many big dams, canals, and reservoirs the surrounding land will become swampy and will not be suitable for agriculture. This can also reduce the production of food grains.

### **Conclusion**

The sustainable development goals which are a blueprint to achieve a better and more sustainable future for all are to be kept in mind while pursuing the development. We must also remember that the Constitution of India the Preamble state about the '*social, economic and political justice*' for the people of India the term '*socialist*' means to use the sources of the country for the welfare of people. The right to a clean and pollution free environment is a fundamental right considered under *Article 21* of the Constitution. In the Directive Principles of State Policy *Article 48A* deals with Protection and improvement of environment and safeguarding of forests and wildlife. It is the duty of every citizen to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures under *Article 51A(g)* of Constitution. Interlinking of rivers has its pros and cons in the economic, political, and environmental implications, it may not be a wise decision to carry out these projects at a centralized national level. Instead, interlinking of rivers may be pursued in a decentralized manner, and more sustainable ways like rainwater harvesting should be promoted to mitigate floods and droughts. There is need to stress upon sustainable development in this modern era.

*"Sustainable development is the pathway to the future we want for all. It offers a framework to generate economic growth, achieve social justice, exercise environmental stewardship and Strengthen Governance"*

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## **Analysis of Population Growth Rate and Dividend in the Development Process of Indian Economy**

**Dr. Subhash Taterao Pandit**

Assistant Professor, Department of Economics Swami Vivekanand Night College of Arts and Commerce,  
Chatrapati Bhavan, Datta Nagar, Ayre Road, Dombivli (East) – 421201

Dist. Thane

subhashpandit2011@gmail.com

### **Abstract:**

India is the second largest country in the world in terms of population. The available population and population dividends are at the heart of the issue. Countries with higher working population receive higher population dividends and countries with higher working population dependents (children and the elderly) are far from population dividends. Man is not only a means of production but also the ultimate goal of all economic production. The study looked at key factors in the context of India's population growth rate and population dividend in the development process of Indian economy.

**Keywords:** Population, Growth Rate, Dividend, Development, working Population, Indian Economy

### **Introduction:**

India ranks second in the world after China in terms of population. It covers 2.4% of the world's land area. At the same time, 17.5 % of the world's population lives in India. Some countries in the world together India alone has a population of 121.43 crore. It is clear from this that India has an additional burden of population. As of March 1, 2011, the population of India was 121.43 crore as per Census 2011. Of these, 62.31 crore are males and 58.75 crore are females. It has a population of 83.55 crore in rural areas and 37.71 crore in urban areas. It is clear from this that most of the population of India lives in rural areas. Between 1901 and 2011, India rose from 23.83 crores to 121.6 crores. In other words, the population has increased by 97 crore in 110 years in India.

### **Objectives of Study:**

1. To study the changing growth rate of population in India.
2. Review of India's population density, age structure etc.
3. Analyzing the population dividend of India.

### **Methods of Study:**

The study on population changes of growth rate and dividend analysis in India is based entirely on the content of the secondary data sources and uses a descriptive analysis method in the study. The information required for the research subject has been collected through various published books, newspapers, reports of government agencies, reports of private organizations, research reports of various scholars, internet etc.

### **Limitations of study:**

1. In this study, only changes in population growth rate and dividends have been considered.
2. This study analyzes the proportion and impact of working population in Indian economy.
3. This study is limited to till 2011 only.
4. The findings of the study are limited to the study period only.

### **Analysis of Population Growth Rate in India**

When measuring the growth rate of Indian population, it is measured in four stages.

1. 1901-1921 Stagnant Population Period
2. 1921 - 1951 Steady Population Growth Period
3. 1951 - 1981 Rapid High Population growth period
4. 1981 - 2011 High Population Growth with Signs of Slowing Down Period

#### **1. 1901-1921 Stable Population Period:**

During the twenty years from 1901 to 1921, the total population of India was 23.8 crore. In 1921, the population increased to 25.13 crores. Of course, there seems to be a nominal increase of 13 crores in the Indian population. This period is called the period of stable population as the population does not appear to have increased much during this period. If we consider the population growth rate from 1911 to 1921, it is seen that during this period it has decreased -0.31%. The reasons for the decline in population during the period 1901-1921 can be seen in the social, health and political structure of the time. In short, due to lack of health care, birth rate and mortality rate are almost the same, the population is stable.

## 2. 1921 - 1951 Steady Population Growth Period:

In the second phase of Indian population growth, the population increased from 25.13 crore in 1921 to 36.10 crore in 1951. In other words, you can see that the population has increased to 11 crore during this period. During this period population growth increased by 1.22% per annum. In detail, the increase in population during 1921-1951 was due to a decline in mortality. This increase is therefore called death-based increase.

**India's population growth rate (%)**

Sr. No.	Census year	Population (In Crore)	Ten-year growth rate	Average annual growth rate	Population density
1	1951	36.11	13.31	1.25	117
2	1961	43.92	21.64	1.96	142
3	1971	54.82	24.80	2.20	177
4	1981	68.33	24.66	2.22	216
5	1991	84.64	23.87	2.16	267
6	2001	102.87	21.54	1.97	325
7	2011	121.09	17.72	1.64	382

Sources: [www.censusindia.gov.in](http://www.censusindia.gov.in)

The analysis of the statistics in the table above is as follows. The first census was taken in 1951 after India gained independence. The total population of India in 1951 was 36.11 crores.

## 3. 1951 - 1981 Rapid High Population growth period:

During 1951-1981, the population increased from 36.11 crore to 68.33 crore. In other words, the population of India has increased by 32 crores in the meantime. You can see that the population growth rate during this period is 2.14% per annum. The increase in medical facilities in the country during 1951-81 increased the life expectancy of the people and resulted in a decrease in mortality. This shows that population growth has exploded during this period. Due to the rapid growth of the population during this period, this period is called birth-based growth.

## 4. 1981 - 2011 High Population Growth with Signs of Slowing Down Period:

Between 1981 and 2011, the Indian population reached its fourth stage. The population has grown from 68.33 crores in 1981 to 121.09 crores in 2011. After 1981, the growth rate of Indian population has slowed down. Between 1981 - 1991, 1991 - 2001 and 2001 - 2011, India's annual population growth rate was 2.11%, 1.93% and 1.64% respectively.

### Analysis of India's Demographic dividend

Population dividend for the development of the economy is the economic growth that has brought about a change in the structure of the country's population. Demographic dividends generally result in lower fertility and mortality. This is because the productivity of the working population increases, which in turn increases the per capita income. Population dividends are essential for rapid economic growth. Demographic dividends have long been seen as an important factor in the economic development of a country. The first population dividend in economic development occurs during the demographic transition process, when the working age population as a share of the total population increases and the percentage of both young and old decreases.

**Age group structure of population or productive and unproductive population (%)**

Sr. No.	Census years	Productive population (%)	Unproductive population (%)		
		15-60 years	0 - 14 years	More than 60 years	Total
1	1951	56.3	31.5	5.6	37.1
2	1961	53.3	41.0	5.7	45.7
3	1971	53.4	41.4	5.2	46.6
4	1981	54.1	36.7	6.2	42.9
5	1991	57.1	36.5	6.4	42.9
6	2001	58.2	35.6	6.3	41.9
7	2011	60.3	30.8	8.6	39.14

Sources: [www.censusindia.gov.in](http://www.censusindia.gov.in)

Population dividends mainly mean that a growing portion of the working or productive population contributes to the process of economic development. Considering the total population of the Indian economy, the productive or working population in India is more than the unproductive population. The following are some of the issues of population dividend in the development process of Indian economy.



### **Demographic Dividend Factors or Issues in the Development Process of Indian Economy:**

1. India is on the middle path of population dividend. Considering the Indian economy, it is time to accelerate economic growth by earning population dividends.
2. Realizing the growing population in the sense of human capital, its proper investment requires secure jobs in which good salaries and opportunities will improve the skills of the workers.
3. Considering the wealth or human capital of the country's growing productive or working population, it can be highly profitable.
4. As India's birth rate declined, so did its mortality rate, resulting in an increase in the productive population.
5. In India, the proportion of unproductive population aged 0-14 and over 60 years in 1961 was 41% and 5.6% respectively. In 2001, the proportion was 35.4% for 0-14 and 7.5% for population over 60 years, and in 2011 it was 30.8% for 0-14 and 8.6% for population over 60 years. This means that out of the unproductive population, the population in the age group of 0-14 is gradually declining.
6. According to the 1961 census, the productive or working population of India was 53.3%, in 2001 it was 57.1% and in 2011 it was 60.3%. This means an increase in the executive or productive population which is necessary and important for the economic development of the country. After studying the change in the total population of India, it is clear that the productive population in the country is increasing. However, the population dividend depends on how the working population is used in the economy.

### **Conclusion:**

People contribute most to the development process of a country. If the population of a country is capable, then the foundation of development of that country becomes strong. Considering the total Indian population in the current economy, it has the second largest population in the world. High birth rates and high mortality rates in the first phase of India's population seem to have balanced the population. In the second stage, the birth rate remains high but the mortality rate is fast. The reason why the birth rate remains high at this stage is because people are clinging to religious norms. Lack of being uneducated shows apathy in terms of birth control. However, the reason for the rapid decline in mortality at this stage is the increase in life expectancy due to the development of medical facilities in the country and improvement in the transport system. In India, the period 1951-1981 is known as the period of high growth. During this period the population was growing at an annual rate of 2.14. This period is known as the period of population explosion. India has seen an increase in the proportion of productive or working population in recent times. Receipts of population dividends depend on how these productive populations are used in the economy.

The demographic dividend is the accelerated economic growth that may result from a decline in a country's mortality and fertility and the subsequent change in the age structure of the population. With fewer births each year, a country's young dependent population grows smaller in relation to the working-age population. India's least economically developed states (Bihar, Uttar Pradesh, Madhya Pradesh and West Bengal) will benefit the most from that demographic dividend. India is at a point in its demographic transition where a focus on the policy environment will maximize the chance of capturing the benefits. The demographic dividend has long been viewed as an important factor for economic development and provided a rationale for policies aiming at a more balanced age structure through birth control and family planning.

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## **An empirical study on current quality of Yamuna River water and its revival potential.**

**Avdesh Bhardwaj<sup>1</sup> Raghav Bhardwaj<sup>2</sup>**

<sup>1</sup>Head, R&D, Juno Terra Technology Private Limited, Delhi, India

<sup>2</sup>Department of Mechanical Engineering, Swami Keshvanand Institute of Technology, Jaipur, India

[raghavdata26@gmail.com](mailto:raghavdata26@gmail.com)

### **Abstract**

India is home to a lot of rivers and a lot of them assume great cultural and religious importance apart from their environmental and economic benefits. Yamuna is one of the significant rivers in India with a rich history and has witnessed a lot over the period of time. But lately its water quality has gone down appreciably to an extent that a lot of researchers now consider it as almost dead with very less chance of revival. This present paper is intended to study the current water quality of river Yamuna and its revival potential. The methodology adopted for this research includes analysis of data obtained from Government Department and scrutiny of the current and possible revival plans. Some recommendations have also been offered for all stakeholders to help revive this holy river.

**keywords:** BOD; COD; DO; Fecal Coliform; Yamuna

### **Introduction**

Within National Capital Territory (NCT) of Delhi the Zone O (River zone) is 52 km long and 800 m – 3.5 km wide depending on the location. In all it covers some 9700 hectares. The major causes of pollution to Yamuna River include untreated Sewage from areas with no sewerage network, outfall of industrial effluent into Drains, dumping of solid waste, construction and demolition waste and bio-medical waste into drains and river, habitation, dairies and dhobi ghats on river embankments, cultivation using chemical fertilizers/pesticides on the floodplain, idol Immersion during festivals, etc. The holy river Yamuna was once the lifeline of Delhi but has now been reduced to an almost dead water body due to excess pollution and the burden of over population. Instead of recharging ground aquifers, the Yamuna is not only depleting the city's groundwater but also polluting it and making agriculture dangerous with its irrigation due to chemical contamination. There have been a lot of plans for its revival like Yamuna Action Plans (YAP) but all failed to revive it till date. Recently the Supreme Court of India directed the Delhi government for maintaining a minimum flow of 353 cusecs per second in the Yamuna River throughout its course to flush away the effluents and maintain good DO values. A lot of researchers have also worked on the water quality aspects of Yamuna River [1, 2, 3] but a lot is still left to be done.

**Objectives** The main objectives of this paper are to study the current quality of Yamuna water and the revival plans for this river.

### **Methodology**

The methodology adopted for this research is included accessing the values of water parameters namely pH, Dissolved Oxygen (DO), Chemical Oxygen Demand (COD), Biochemical Oxygen Demand (BOD) and Fecal Coliform from the government websites [4, 5, 6] from March 2021 to October 2021 for eight sites (Palla, Wazirabad, ISBT Bridge, ITO Bridge, Nizamuddin Bridge, Agra Canal (Okhla), Downstream Okhla Barrage and Asgarpur) and the analysing them with reference to permissible values for class C water quality standards as per CPCB (Central Pollution Control Board). The various revival plans for rejuvenating the Yamuna have been analysed too and its summary reported here.

### **Results**

The permissible values for water quality criteria (class C) have been used for reference and are tabulated in table 1.

Table 1. Permissible Value of water quality criteria (class C)

<b>Parameter</b>	<b>Permissible Value of water quality criteria (class C)</b>
pH	6.5-8.5
BOD	≤3 mg/l
DO	≥5 mg/l
Fecal Coliform	500 MPN/100 ml (desirable) / <2500 MPN/100 ml permissible

The pH values were mostly within the range except for the odd occasions of this study period as shown in fig. 1. The COD values are very high especially at places where industrial wastewater mixes with the river or it is an intersection of two or more streams of wastewater (fig. 2). The DO values indicate that the river water is almost dead at a lot of places (fig. 3) and in need of immediate revival. The BOD values exceed at all places due to the excess amount of municipal sewerage water drained into the river all along in Delhi (fig. 4). The most concerning aspect is the unusually high Fecal Coliform values which pose a lot of health hazard to the people using that water for bathing, washing or cooking etc. (fig.5).

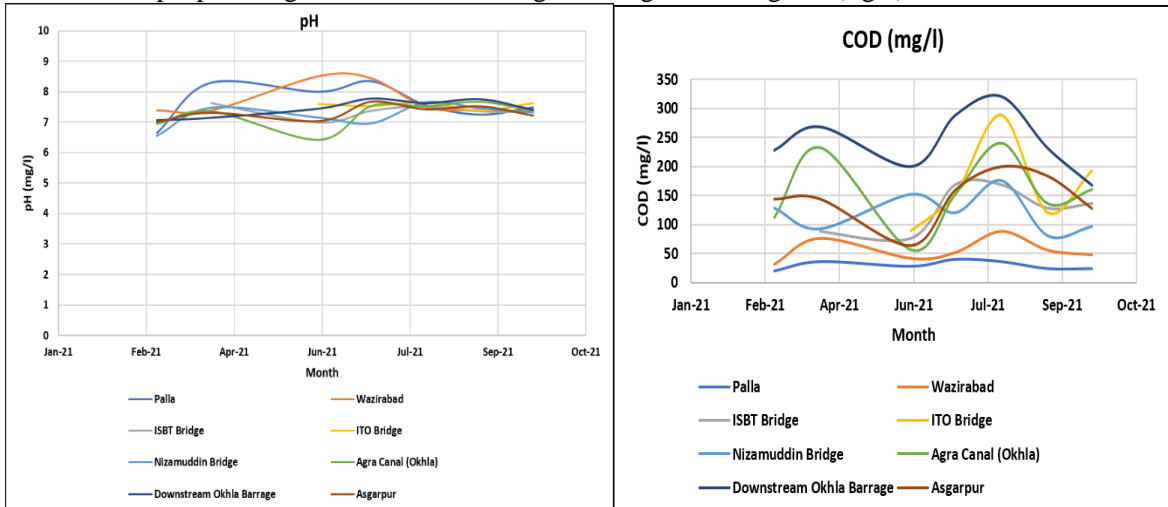


Fig. 1 pH values at different sites. Fig. 2 COD values at different sites.

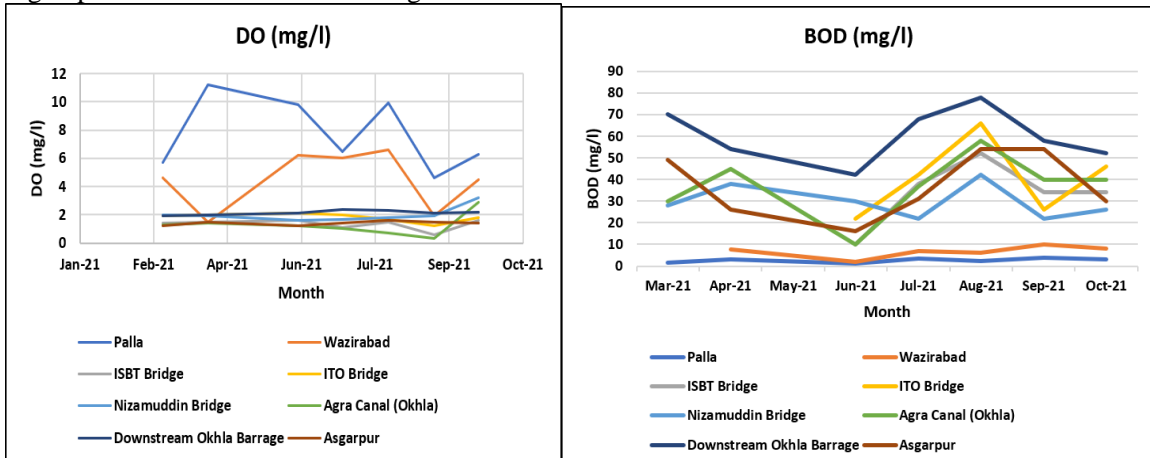


Fig. 3 DO values at different sites. Fig. 4 BOD values at different sites.

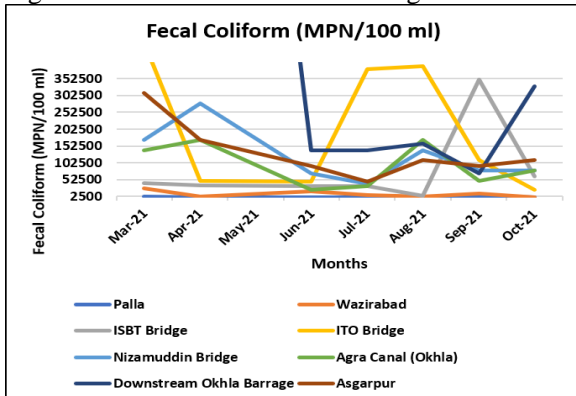


Fig. 5 Fecal Coliform values at different sites.

### Conclusion

It can be concluded that the holy river Yamuna needs to be revived urgently by suitable technical and policy measures to make it Delhi's lifeline again.

### Recommendations

1. The minimum flow rate of 353 cusecs per second must be maintained in the Yamuna River throughout its course to flush away the effluents and maintain good DO values.
2. The various stakeholders in Delhi NCR have common but differentiated responsibilities: The Delhi Development authority (DDA) must ensure removal of squatters from the banks of the river and floodplains, aid in floodplain rejuvenation and protect river bed from dumping of debris, Municipal Solid Wastes (MSW) and Biomedical wastes. The Delhi State Industrial and Infrastructure Development Corporation (DSIIDC) must ensure that all industrial effluent is treated through CETPs before discharge into the river. The Upper River Yamuna Board (URYB) must release adequate water for dilution whereas the Delhi Jal Board (DJB) should provide universal access to sewer facility and convey it to Sewerage Treatment Plants (STPs), treat and dispose it safely. The Municipal Corporations of Delhi (MCD) must prevent dumping of garbage in the drains and river, help in desilting and fencing of drains as well as closing of illegal industries, slaughter houses and Dhobi Ghat in residential areas. Solid waste, idols and plastic waste must be avoided from being thrown in or falling back into the river.
3. Inspiration must be taken from successful projects like Sabarmati River front development to revive Yamuna River.

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## **Trends in Human Development Index of South Asia**

**Deepika Mann**

Doctoral Research Scholar Jindal School of International Affairs, OP Jindal Global University, Sonipat,  
Haryana  
Email Id: dmann@jgu.edu.in

### **Abstract:**

South Asian Region is considered to be one of the world's most promising regions supporting more than one billion population, democratic governments in all the countries and rich cultural heritage. Although South Asia has enormous development potential, it is still facing the real challenge of human development. The purpose of this study is to examine human progress in South Asian countries based on their HDI rankings. The ranking helps in identifying the position of the countries based on the level of human development within the Region. The rankings highlighted the condition of the SAARC region where the gap between promise and reality is widest. Although some progress has been made, the Region is still under the lowest human development indicators.

**Keywords:** Human Development, SAARC, Literacy, GDP, Life Expectancy.

### **Introduction:**

The concept of the Human Development Index (HDI) was proposed long back in the 1990s by the United Nations Development Programme (UNDP). The UNDP defines human development as both the 'process of widening people's choices and the 'level of their achieved well-being (UNDP, 1990)'. The purpose is to provide a single criterion for measuring the three key dimensions of human development: Gross Domestic Product (GDP) per person, life expectancy and literacy. HDI is composed of three basic indicators reflecting longevity, knowledge and purchasing power. Longevity is quantified in the life expectancy at birth, knowledge is quantified in terms of estimated adult literacy, and purchasing power is quantified in terms of GDP to lead a decent living (Lind, 1992). The HDI ranking of South Asia has improved in the past years due to some promising developments in South Asia in the areas of poverty, education, human security and governance, which were considered as the major challenges in the 1990s (Haq, 2000).

### **Importance of Human Development:**

The promotion of human development is important for a nation for the following reasons:

1. Treating people as means to an objective is consistent with human development.
2. Increased productivity of a nation can be achieved by having a workforce that is educated, healthy and skilled.
3. By diminishing human reproductivity, human development aids in lowering the desired family size.
4. There is a link between human development and the physical environment; poverty reduction has been linked to decreased deforestation, desertification, and soil erosion.
5. Reduced poverty and increased standard of living contribute to the health of civil society, bringing more freedom and greater social stability (Streeten, 1994).
6. Human development has political appeal, for it may reduce civil disturbances and increase political stability (Streeten, 1994).

### **South Asian Region:**

South Asian Region consists of eight countries, namely, Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. In 1985, South Asia came up with an economic cooperation organization known as the South Asian Association for Regional Cooperation (SAARC) which includes all the eight nations of South Asia. It is playing a major role in the development of the Region through considering issues beyond its previously restricted agenda and modest targets.

HDI Ranks of South Asian Countries from 2019 till 2000 (UNDP, Human Development Reports 1990-2020).

HDI Rank (1990-2000)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
India	114	114	114	113	113	115	114	112	112	110	127
Sri Lanka	72	70	70	71	68	69	69	69	67	63	70
Bangladesh	123	122	119	118	117	118	119	117	116	114	130
Nepal	124	124	123	122	121	124	123	120	121	120	140
Bhutan *											
Pakistan	120	119	118	120	118	121	121	122	122	122	142
Afghanistan	137	137	135	137	137	139	140	140	140	142	162
Maldives*						99	99	97	94	92	102

HDI Rank (2001-2010)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
India	127	124	129	130	127	126	128	126	134	119
Sri Lanka	70	70	70	70	74	73	77	74	72	72
Bangladesh	130	131	132	134	139	139	139	141	140	140
Nepal	140	138	141	143	149	146	145	144	143	144
Bhutan *					137	138	137	137	136	137
Pakistan	140	140	139	144	145	147	148	147	151	152
Afghanistan	162	161	163	165	170	170	165	168	166	164
Maldives	102	102	102	104	110	106	109	109	108	107

HDI Rank (2011-2020)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
India	135	134	134	132	131	130	129	130	131	131
Sri Lanka	71	72	72	72	70	71	72	72	72	72
Bangladesh	140	139	141	141	138	135	135	134	133	133
Nepal	144	144	143	142	142	143	143	143	142	142
Bhutan	136	134	131	130	129	129	129	129	129	129
Pakistan	153	155	156	156	155	154	154	154	154	154
Afghanistan	166	164	164	164	167	168	169	169	169	169
Maldives	106	104	104	103	102	102	100	98	95	95

Note\*: Data not available for Bhutan from 1990-2004 and for the Maldives from 1990-1994.

#### **Analysis of the above data:**

The UNDP categories HDI in four different categories based on (UNDP, Human Development Report: Reader's Guide, 2020):

1. Very High Human Development (from rank 1-62)
2. High Human Development (from rank 63-116)
3. Medium Human Development (from rank 117-153)
4. Low Human Development (from rank 154-189)

As per the available data of the last three decades of the SAARC Nations, not even a single country fall under the category of Very High Human Development. And as per the latest data of 2020, Sri Lanka (72) and Maldives (95) falls under the category of High Human Development, whereas India (131), Bangladesh (133), Bhutan (129) and Nepal (142) are part of Medium Human Development category. And the two countries, Pakistan (154) and Afghanistan (169), are under Low Human Development. During the first decade that is from 1990-2000, ranking of all the countries was constant which gradually fall during the end of the decade that is in the year 2000. While during the second decade (2001-2010), the progress was not uniform, but there was somehow consistency in the rankings. Even the introduction of Millennium Development Goals in 2000 played a major role in bringing consistency in the HDI ranking as seven out of eight goals focused on the components of HDI which includes, education, health and living standard. In the third decade (2011-2020), there is fluctuation in the ranking during the first five years (2011-2015), whereas; the HDI ranks in the last five years was either consistent or improved. This could be related to the declaration of Sustainable Developments Goals in 2015, which had a positive effect on the ranking. Apart

from this, it could be analysed that almost all human development indicators like health, education, drinking water, sanitation and other infrastructure services are weak in South Asia as a consequence of which HDI show a weak ranking for the SAARC region as a whole, except Sri Lanka and the Maldives.

#### **Criticism of HDI:**

The HDI has received many criticisms over the time period. Most arguments are against the criterion of GDP, as it is based on average that has a tendency to conceal great inequalities. Similarly, other components that are life expectancy and literacy, are also criticized based on their average criterion. Another argument came from the environmentalist who focuses on human development through the lens of environmental sustainability, specifically after the establishment of Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs). Apart from the three major components, HDI does not include factors like individual choice and political freedom, which are also considered important factors affecting human development (Haq M. u., 1999).

#### **Conclusion:**

The Human Development Index has the potential to be a strong tool for global social progress. After analysing the HDI rankings of the last three decades, it can be concluded that South Asian countries have achieved considerable progress in socio-economic indicators like poverty reduction, educational attainment and improved health facilities in the last three decades. But it is still facing the real challenge of Human Development, which is in a continuous state of crisis. Each successive Human Development Index report is a constant reminder of this crisis. Therefore, the Region should focus on sustainable actions for a better future. The condition of the Region can only improve if it focuses on key challenges that are poverty, health and education. And in order to overcome these challenges, SAARC should focus on individual countries through a multi-dimensional approach such as Agenda 2030 of Sustainable Development Goals.

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## **Level Of Expectation On Police Service Quality Factors Among The Public In Kanyakumari District- A Critical Analysis**

**B.Prabin Kumar<sup>1</sup> Dr. P. Nixon Dhas<sup>2</sup>**

<sup>1</sup>B.Prabinkumar, Reg. No. 19223211011001, Research Scholar, St. Judes's College, Thoothoor, Affiliated to Manonmanium Sundaranar University, Abishekpatti, Tirunelveli, Tamilnadu, India.

<sup>2</sup>Dr. P. Nixon Dhas, Assistant professor and head department of Commerce, St. Jude's College, Thoothoor, Kanyakumari District, Tamilnadu, India.

### **Abstract**

Public sector undertaking in developing countries are going through major transformations because consumers are becoming more knowledgeable and demanding. This study presents the service quality of police in particular to Kanyakumari district using Kaiser-mayor – Ohlin (KMO) measure of sampling adequacy and barlett test of sphericity. The survey based approach was used to collect data from 799 respondents. Exploratory factor analysis, “t” test were used to analyse the level of expectation on police service quality factors among public in Kanyakumari district. The findings suggest that the public are satisfied with the quality of service provided by police in Kanyakumari district and offer valuable suggestions by the researcher. The major objective of this study is to highlight the problems of police and the quality of their work in solving law and order problems. A clear demarcation is made between the rural and urban public to know how the police handle their problems. Honesty, trustworthiness, intelligence, acquiring to statutes and friendliness are the areas where more stress is given for the study.

**Keywords:** Service quality, public, policing.

### **Introduction**

The police force constitutes an integral part of the law enforcement machinery in the country. The police perform multiple roles in the society by reducing the incidence of crime, promotion of society, upholding law and order etc. Honesty, excellence and the principle of giving full value for what we receive would become the rule of conduct in both business and personal relationships in “Quality Society”. The citizens of the country pay taxes to the government and expect certain services to be provided to them. The Citizens become the consumers of the services and the police are the service providers. The term “Service Quality” can be defined as the extent of discrepancy between customer's expectation of the service and their perception. Service delivery happens during the interactions between contact employees (government officials) and citizens, Attitudes and behaviors of the contact employees can influence citizens' perceptions of service quality. Found that perceived employee's satisfaction, perceived employee's loyalty, and perceived employee's commitment has a significant impact on perceived product of service quality. The researcher proposed five dimensions by which customers evaluate service quality: Tangibles- the appearance of the physical facilities, equipment, personnel and communication materials. Reliability- the ability to perform the promised service dependably and accurately. Responsiveness- The willingness to help customers and provide prompt service. Assurance- The knowledge and courtesy of employees and their ability to convey trust and confidence. Empathy- The caring, individualized attention the organization provides its customers.

### **Statement Of The Problem**

Due to the quality of goods and services desirable among the most sensitive issues of our times is that the international community has given them a special priority. Low quality of goods and services compared to the expectation of customers create lesser reliability on the service providers among the customers. In the police services, the reliability and assurance are predominant service qualities to generate trust among the public. The need for policing since the beginning of human life was and always felt it was needed. The need for policing and the parallel development of vital communities and increase the risks of living are increasing. Today, the vital importance of the policing industry in the country's economy to its growth and prosperity is inevitable. The policing industry is not only comparable to the developed countries of the world, but also lower in developing countries.

### **Review Of Literature**

Brown and Coulter (2018)<sup>1</sup> found that perceptions of the police are intervened with the perceptions of the political and judicial systems, especially any persons in the lower socio-economic tiers. Cao et al., (2016)<sup>1</sup> revealed that persons in the lower socio-economic tiers hold more negative attitudes towards the police than the wealthy. Boggs and Galliher (2015)<sup>1</sup> found that street respondents rated the police more negatively than household respondents and noted that this was probably due to the



frequent contact of street respondents had with the police. Ben and Wm (2017)<sup>1</sup> concluded that age, contact with the police, neighbourhood and race have a significant impact on attitudes towards the police. Albrecht and Green (2018)<sup>1</sup> found a link between negative contact with the police and negative perception of the police, but all are related upon the respondents perception of whether the contact was positive or negative.

**Objective Of The Study**

1. The main of this study is to analyse the level of expectation on police service quality factors among the public.

**Methodology**

The methodology of the study includes the research design, population of the study, sampling framework, data collection, framework of analysis and limitations. The population of the present study is the total population at urban and rural Kanniakumari district. The urban population is the population at four municipalities in the district whereas the rural population covers the population at nine blocks of the district. The details are shown in Table 1.1.

**Table 1.1  
Population in Kanniakumari District**

Sl.No.	Blocks/Municipalities	Number of population		Total
		Urban	Rural	
1.	Agastheeswaram	-	148419	148419
2.	Rajakhamangalam	-	137254	137254
3.	Thovalai	-	110719	110719
4.	Kurunthencode	-	165070	165070
5.	Thuckkalay	-	167262	167262
6.	Thiruvattar	-	161619	161619
7.	Killiyoor	-	156387	156387
8.	Munchirai	-	177225	177225
9.	Melpuram	-	179535	179535
10.	Nagercoil municipality	208179	-	208179
11.	Padmanapuram	20075	-	20075
12.	Colachel	23787	-	23787
13.	Kuzhithurai	20503	-	20503
	Total	272544	1403490	1676034

Source: Census data during 2010-11.

The urban and rural population of the district are 2.73 lakhs and 14.03 lakhs respectively. In urban area, the Nagercoil municipalities population is higher of 2.08 lakhs whereas in the rural area, the population of melpuram block is higher with the population of 1.79 lakhs.

**Determination of Sample Size**

Since the population of the study is known, the sample size is computed by

$$n = \frac{N}{Ne^2 + 1}$$

whereas n – sample size; N – population and e – error of acceptance (0.05). The

urban and rural samples have been computed separately. The resulted sample sizes are given in Table 1.2.

**TABLE 1.2**

**Determination of Sample Size**

Sl.No.	Nature	$n = \frac{N}{Ne^2 + 1}$	Total sample
1.	Urban	$n = \frac{272544}{272544(.05)^2 + 1} = 399.41$	399
2.	Rural	$n = \frac{1403490}{1403490(.05)^2 + 1} = 399.88$	400
			799

The determined urban sample size of the study is 399 whereas in rural area, it comes to 400. The total sample size comes to 799 respondents.

**Data Collection-** Since the study is completely based on the primary data, a special care was taken to design the interview schedules. The interview schedule is prepared to collect the data from public.

**Tools of analysis**

**Exploratory Factor Analysis** -The exploratory factor analysis is used to narrate the variables into important factors and found the relationship between the variables and narrated factors (Jacques, 1996)<sup>1</sup>. It is also called as narration analysis (Jennifer, 1997)<sup>2</sup>. Before applying the factor analysis, the validity of data for factor analysis have been tested with the help of Kaiser-Mayer-Ohlin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (Hari et al., and 1999)<sup>3</sup>. In the present study, it is applied to narrate the variables into important factors in POLQUAL, factors leading to public satisfaction on policing and requirements for better police services.

**'t' test** - The 't' test is used to find out the significant difference between the two means among the urban and rural respondents. In the present study, the 't' test has been administered to find out the significant difference among the urban and rural respondents regarding their level of expectation, perception and quality gap in service qualities, public's satisfaction on policing and the factors leading to policies satisfaction on policing and requirements of better police services.

**Limitations Of The Study**

1. Only core service quality and POLQUAL have been included to measure the service quality of policing;
2. The present study is confined its scope to only Kanniakumari district;

**Analysis And Discussions  
Important Polqual Factors**

The score of 37 variables in POLQUAL has been included for exploratory factor analysis in order to narrate the variables into POLQUAL factors. Initially, the validity of data for EFA has been tested with the help of Kaiser-Meyer-Ohlin (KMO) measure of sampling adequacy and Bartlett's test of Sphericity. Both these two tests satisfy the validity of data for EFA. The results of EFA are summated in Table 4.1.

**Table 4.1  
Important POLQUAL Factors**

Sl.No.	POLQUAL factors	No. of variables in	Eigen value	Per cent of variation explained	Cumulative per cent of variation explained
1.	Honesty	6	5.7334	15.49	15.49
2.	Ease to contact	5	4.8919	13.22	28.71
3.	Trust worthy	5	4.6084	12.46	41.17
4.	Courtesy	5	4.5996	12.43	53.60
5.	Keep up rules	5	4.2773	11.56	65.16
6.	Knowledgeable	4	3.2417	8.76	73.92
7.	Informative	4	2.9172	7.88	81.80
8.	Friendliness	3	2.0899	5.65	87.45
KMO measure of sampling adequacy: 0.8144			Bartlett's test of Sphericity : Chi square value: 109.49*		

\* Significant at zero per cent level.

The first three important POLQUAL factors narrated by EFA are honesty, ease to contact and trust-worthy, its eigen values are 5.7334, 4.8919 and 4.6084 respectively. The per cent of variance extracted by these factors are 15.49, 13.22 and 12.46 per cent respectively. The next three POLQUAL factors identified by the factors are courtesy, keep up rules and knowledgeable since its eigen values are 4.5996, 4.2773 and 3.2417. The per cent of variation explained by these three factors are 12.43, 11.56 and 8.76 per cent respectively. The last two factors identified by factor analysis are informative and friendliness since its eigen values are 2.9172 and 2.0899 respectively. The per cent of variation explained by these factors are 7.88 and 5.65 per cent respectively. The narrated eight POLQUAL factor's explain the thirty seven variables to an extent of 87.45 per cent.

**TABLE 4.19  
Level of Expectation on POLQUAL factors among the Respondents**

1. Jacques Tay (1996), **Multivariate Analysis Techniques in Social Science Research**, Thousand Oaks, Sage Publications.
2. Jennifer L. Aaker (1997), "Dimension of Brand Personality", **Journal of Marketing Research**, August, pp.347-356.
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- 4.

\* Significant at five per cent level.

The level of expectation on POLQUAL factors are examined with the help of the mean score of the level of expectation on honesty, ease to contact, trust-worthy, courtesy, keep up calls, knowledgeable, informative and friendliness, legitimacy and competence. The mean score of the above said six factors are computed among the urban and rural respondents along with its 't' statistics. The results are shown in Table 4.19. The highly expected POLQUAL factors by the urban respondents are knowledgeable and honesty since its mean scores are 3.9214 and 3.8537 respectively. Among the rural respondents, these two are friendliness and knowledgeable with the mean score of 3.5168 and 3.4473 respectively. Regarding the level of expectation on POLQUAL factors, the significant difference among the urban and rural respondents have been noticed in the case of all eight POLQUAL factors since their responsive 't' statistics are significant at five per cent level.

**Association between the Profile of Respondents and their level of expectation on POLQUAL Factors**

The profile of the respondents may be associated with their level of expectation on POLQUAL

Sl.No.	POLQUAL factors	Mean score among		't' statistics
		Urban	Rural	
1.	Honesty	3.8537	3.4401	2.4676*
2.	Ease to contract	3.6397	3.1617	2.5917*
3.	Trust worthy	3.7239	3.2916	2.5693*
4.	Courtesy	3.8316	3.2643	2.6771*
5.	Keep up rules	3.6718	3.2005	2.3944*
6.	Knowledgeable	3.9214	3.4473	2.5411*
7.	Informative	3.8097	3.3118	2.5089*
8.	Friendliness	3.8960	3.5168	2.0117*

factors. The present study has made an attempt to examine it with the help of one way analysis of variance. All the thirteen profile variables of respondents and their level of expectation in all six SOLQUAL factors have been included for the analysis. The results are shown in Table 4.20

**Table 4.20**

**Association between Profile of Respondents and then level of expectation on POLQUAL**

Sl. No	Profile variables	F Statistics in							
		Honesty	Ease to contact	Trust worthy	Courtesy	Keep up rules	Knowledgeable	Informative	Friendliness
1.	Nativity	3.5081	4.2173*	4.2373*	4.1689*	3.9969*	3.9969*	2.1441	2.0966
2.	Age	2.6554*	2.8884*	2.9098*	2.5141*	2.7874*	2.6684*	1.0886	1.2473
3.	Gender	3.1049	3.4664	3.7031	3.8024	3.6502	3.6041	3.6171	3.5089
4.	Level of education	2.6844*	2.7533*	2.7689*	2.7989*	2.6117*	2.6224*	1.6441	1.5441
5.	Occupation	2.8941*	2.5996*	2.7364*	2.6686*	2.8341*	2.6981*	1.0771	1.1189
6.	Marital status	2.2028	2.3044	2.5022	2.4069	2.1108	2.2309	2.2441	2.1779
7.	spouse's level of education	2.2141	2.3322	2.4217	2.8672*	2.8991*	2.3124	2.0889	2.0226
8.	Personal income per month	2.7989*	2.8924*	3.2173*	3.4664*	2.9792*	2.5684*	2.1121	2.0441
9.	Nature of family	3.1101	3.2667	3.3884	3.5806	3.6049	3.8141	3.6224	3.3818
10.	Family size	2.1073	1.8041	2.5886*	2.0822	2.5644*	2.7334*	1.8919	1.7133
11.	Number of	2.5541	2.8982*	2.9193*	2.9664*	2.1288	2.9289*	1.6414	1.4916

	educated per family								
12.	Number of earning members per family	3.2896*	3.3142*	2.5441	2.7039	2.8964	3.4886*	2.4334	1.5667
13.	Family income	2.9554*	2.9971*	3.3243*	3.5789*	3.7646*	3.3989*	1.5446	1.3446

\* Significant at five per cent level.

Regarding the level of expectation on honesty, significantly associating profile variables are age, level of education, occupation, personal income per month number of earning members per family and family since their respective 'F' statistics are significant at five per cent level. The significantly associating profile variables regarding the level of expectation on case to contact are nativity, age, level of education, occupation, personal income, number of educated per family, number of earning members per family and family income whereas in the level of expectation on trust-worthy, these profile variables are nativity, age, level of education, occupation, personal income, family size, number of educated per family and family income. Regarding the level of expectation on courtesy manners, the significantly associating profile variables are nativity, age, level of education, occupation, spouse's level of education, personal income, family size and family income. The significantly associating profile variables regarding the level of expectation on knowledgeable are nativity, age, level of education, occupation, personal income, family size, number of educated per family, number of earning members per family and family income.

#### **Discriminate Expected POLQUAL factors among the urban and Rural Respondents**

Since the level of expectation on POLQUAL factors among the urban respondents is differing from the rural respondents, it is imperative to identify the important discriminate expected POLQUAL factors among them for same policy implications. Initially, the mean difference and its statistical significance have been computed separately. The discriminate power of each POLQUAL factor is estimated with the help of Wilk's Lambda. The results are shown in Table 4.21.

**Table 4.21**  
**Mean difference and discriminate power of expected POLQUAL among Urban and Rural Respondents**

Sl. No.	POLQUAL	Mean score among		Mean difference	't' statistics	Wilk's Lambda
		Urban	Rural			
1.	Honesty	3.8537	3.4401	0.4136	2.4676*	0.1244
2.	Ease to contract	3.6397	3.1617	0.4780	2.5917*	0.1028
3.	Trust worthy	3.7239	3.2916	0.4323	2.5693*	0.1591
4.	Courtesy	3.8316	3.2643	0.5673	2.6771*	0.1709
5.	Keep up rules	3.6718	3.2005	0.4713	2.3944*	0.1503
6.	Knowledgeable	3.9215	3.4473	0.4741	2.5411*	0.1121
7.	Informative	3.8097	3.3118	0.4979	2.5089*	0.1441
8.	Friendliness	3.8960	3.5168	0.3792	2.0117*	0.1648

\* Significant at five per cent level.

The significant mean differences are noticed in the case of all eight POLQUAL factors since their respective 't' statistics are significant at five per cent level. The higher mean differences are noticed in the case of courtesy and informative since their mean differences are 0.5673 and 0.4979 respectively. The higher discriminate power is noticed in the case of case to contact and knowledgeable since its Wilk's Lambda are 0.1028 and 0.1121 respectively. The significant POLQUAL factors have been included to estimate the two group discriminate function. The unstandardized procedure has been followed to estimate the function. The estimated function is:

$$Z = 0.6283 + 0.2473x_1 + 0.1683x_2 + 0.1254x_3 + 0.0639x_4 + 0.1679x_5 + 0.0826x_6 + 0.1642x_7 + 0.1702x_8$$

#### **Conclusions And Suggestions** **POLQUAL in Police Services**

The POLQUAL in police services are measured with the help of 37 variables. These variables are narrated by the factor analysis into honesty, ease to contact, courtesy, keep up rules, knowledgeable, informative and friendliness.

#### **Honesty**

The honesty among the police is measured with the help of six variables. The highly expected variable in honesty by the urban and rural respondents are unbiased policing and fair decision making respectively. The highly perceived variables in honesty by them is 'participative'. In total, the level of expectation and perception on fairness is higher among the urban respondents than among the rural respondents. The significant difference among the urban and rural respondents have been noticed in the expectation of 4 out of 6 variables whereas it is also the same in perception.

#### **Ease to Contact**

The highly expected variable in ease to conduct by the urban and rural respondents are ease to discuss and ease to speak with public respectively. The highly perceived variables in it among them is 'ease to speak with public'. The significant difference among the urban and rural respondents have been noticed in their level of expectation and perception on all five variables in ease to conduct. In total the level of expectation and perception on ease to conduct is higher than the urban respondents than that of the rural respondents.

#### **Trustworthy**

The trust among the respondents is measured with the help of five variables.

Among the urban and rural respondents, the highly expected variables in trustworthy is believability whereas the highly perceived variables among them are provide safeness and keep up words respectively. The level of expectation and perception on trustworthy among the urban respondents is higher than that of the rural respondents.

#### **Courtesy**

The courtesy is measured with the help of five variables. The highly expected variable in manners among the rural and urban respondents are politeness and respect the people respectively. The highly perceived variables are respect the people and body language respectively. The significant difference among the urban and rural respondents have been noticed in the level of expectation and perception on all five variables in it.

#### **Keep Up Rules**

The 'keep up rules' (KUR) is measured with the help of five variables.

The highly expected variables by the urban respondents is effectiveness in work. The significant difference among the urban and rural respondents have been noticed in their level of expectation on all five variables in it. The highly perceived variables in KUR among the urban and rural respondents are No favouritism and strict on law and order respectively. The significant difference among the two group of respondents have been noticed in their perception on four out of five variables in it. The level of expectation and perception on KUR is higher among the urban respondents than that among the rural respondents.

#### **Knowledgeable**

The 'knowledgeable' in the present study is measured with the help of four variables.

The highly expected variable in knowledgeable by the urban and rural respondents is knowledgeable to resolve problems effectively whereas the perceived variables are continuous updation and knowledge about resources respectively. The significant difference among the urban and rural respondents have been noticed in their level of expectation and perception on all four variables in knowledgeable. In total, the level of expectation and perception on competence is higher among the urban respondents than that among the rural respondents.

#### **Informative (IN)**

The 'informative' in the present study is measured with the help of four variables. The highly expected variable by urban and rural respondents is systematic information. The highly perceived variables in IN by the urban and rural respondents are updation of information and free flow of information. The significant difference among the urban and rural respondents have been noticed in the level of expectation and perception on all four variables in IN. the level of expectation and perception on IN is higher among the urban compared to rural respondents.

#### **Friendliness (FR)**

The friendliness among the respondents is measured with the help of three variables. The highly expected variable in PR by urban and rural respondents are friendly approach and friendly interaction respectively. The highly perceived variables in FR by them is 'friendly treatment'. The significant difference among the two group of respondents have been noticed in the perception on all three variables in 'friendliness'. The higher level of expectation and perception on 'friendliness' is noticed among the urban compared to rural respondents.

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## **Food Security in India: Issues and Challenges**

**P. Satheesh<sup>1</sup> Dr.P.R.L.Rajavenkatesan<sup>2</sup>**

<sup>1</sup>Research Scholar, VIT School of Law, VIT University, Chennai Campus, Chennai-600 127

<sup>2</sup>Associate Professor & Head of the Department, VIT School of Law, VIT, Chennai-600 127.

### **Abstract**

The right to food does not imply the right to food for free. Individuals' rights to food must be respected and protected by the state. Food scarcity happens when people do not have access to food or cannot afford to buy it. Food security entails the abolition of all forms of hunger, both current and future. India is the birthplace of the 'Grain is God' concept. It was formerly a land of food security, but in the twentieth century, that security was replaced by food insecurity. The right to food might be viewed as the right to sufficient nutrition. This right is essential for the enjoyment of all other rights, such as the right to life and the right to health. Hunger and malnutrition are responsible for more than half of all deaths worldwide, either directly or indirectly. Hunger is a violation of human dignity as well as a barrier to a country's social, political, and economic advancement. According to international aspects everyone has the fundamental right to be free of hunger. This article focuses on legislative changes taken to secure the right to food, as well as the establishment of administrative agencies and public assistance systems.

**Keywords:** Hunger, Human Dignity, Food Insecurity, Nutrition and Right to Health.

### **Introduction**

Everyone has the fundamental right to be free from hunger and many international conventions and agreement insist the same.<sup>1</sup> The right to food does not imply the right to food for free. Individuals' rights to food must be respected and protected by the state during the emergency like natural disaster or a war. Food insecurity is caused by issues with food distribution rather than food production. What determines food distribution amongst different groups of the population is an important subject. Food insecurity is a notion that refers to the unpredictable, insufficient, or undesirable availability, access, or usage of food at the household level. As a result, households are categorized as either secure or insecure. When one or more people in the household are food insecure, the household is called food insecure.

### **Food Security and Food Accessibility**

Food security, as defined by the United Nations' Committee on World Food Security, means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.<sup>11</sup> Food security is the combination of the following three elements: Food accessibility: food must be accessible in appropriate quantities and on a regular basis. It takes into account local stock and production as well as the ability to import food from elsewhere via commerce or help. People must be able to obtain enough quantities of food on a regular basis, whether through purchase, home production, barter, gifts, borrowing, or food help. Food utilisation: Food consumed must have a beneficial nutritional effect on individuals. It includes household cooking, storage, and hygiene routines, as well as individual health, water and sanitation, feeding, and sharing practices.

### **Impact of Public Distribution System in India**

The Public Distribution system (PDS) arose as a system for managing scarcity and distributing food grains at low rates. The Government of India distributes food grains under the TPDS<sup>iii</sup> to States/Union Territories for above poverty line people and below poverty line families, including Antyodaya Anna Yojana (MY) people. Food grains must be procured, stored, and transported from one state to another by the Central Government. The grains are provided through Fair Price Shops to the poorest members of society. The amount of food grains provided to reasonable pricing shops in various places must be regulated by state governments. The state government is responsible for identifying low-income families, issuing ration cards, and supervising and monitoring the operation of Fair Price Shops. Various parts of society filed a Public Interest Litigation (PIL) before the Supreme Court of India, requesting that the Court intervene in this issue. In *People's Union of Civil liberties v. Union of India*<sup>iv</sup> the Supreme Court of India ordered that food grains in government godowns be utilised to feed people afflicted by the state's prolonged drought. The court stated that safeguarding vulnerable people from famine is vital. The court reaffirmed that the right to life protected by the Indian Constitution includes the right to sustenance. Commissioners were appointed by the Court to oversee the implementation of its orders and provide recommendations. It called for the implementation of a variety of social protection programmes, including

subsidised food-grain programmes for the poor, destitute feeding schemes, school feeding programmes, mother and child nutrition programmes, and programmes that ensured employment to all those seeking labour in rural areas. The right to food means that the government should not interfere with people's livelihoods. Every national statute that contains such provisions must be amended. In order to enable people to earn a living, based on that the Mahatma Gandhi National Rural Employment Guarantee Act, 2005<sup>v</sup> was passed in India. It aims to improve the livelihood security of people in rural areas by guaranteeing a rural household whose adult members volunteer to do unskilled manual work a hundred days of wage employment in a year. It aims to improve rural livelihood security by providing at least 100 days of wage employment to every household whose adult members volunteer to do unskilled manual labour in a fiscal year. The Indian government has a responsibility to ensure that the right to food is respected without prejudice.

### **Constitutional Mandate Regarding Food Security**

The Constitution of India has prevented the discrimination and upholds dignity of individual. Article 21 of the Indian Constitution protects the right to life as a fundamental right. The term 'life' in this Article has been understood by the courts to signify a life of human dignity, not just survival or animal existence. The right to life is defined by the Supreme Court of India as "the right to food, water, a suitable environment, education, medical treatment, and shelter." Article 21 of the Constitution protects the right to life, which includes the right to water and the right to live with human dignity, as well as the fundamental requirements of life, such as proper sustenance, clothing, and a roof over one's head. The right to food is part of the right to life. In *Chameli Singh and Others .v. State of Uttar Pradesh*<sup>vi</sup> the supreme court express its views on right to life ie: The expression 'Life' in this Article has been judicially interpreted to mean a life with human dignity and not mere survival or animal existence. The right to life is described by the Supreme Court of India as "the right to food, water, a suitable environment, education, medical treatment, and shelter." Article 21 of the Constitution protects the right to life, which includes the right to water<sup>vii</sup>. The Directive Principles of State Policy serve as a guide for interpreting fundamental rights, particularly Article 21's right to life. The right to food is fundamental to living a dignified life. The government has a responsibility to ensure food security so that citizens do not go hungry. Among other things, the state must work to enhance the nutrition and standard of living of its citizens, as well as public health.

### **Law Relating to Food Security in India**

The National Food Security Act, 2013 was enacted by the Indian government to ensure that everyone has access to food. A life cycle approach is used in this legislation. In Indian law, the term "food" is defined. Food is defined as any substance intended for human consumption, whether processed, partially processed, or untreated, and includes primary food. Food also includes genetically modified or engineered food or food containing such ingredients, infant food, packaged drinking water, alcoholic drink, chewing gum, and any substance, including water, used into the food during its manufacture, preparation, or treatment, but excludes animal feed, live animals unless they are prepared or processed for placing on the market for human consumption, plants prior to harvesting, drugs and medicinal products, coca leaves, and any substance, including water, used into the food during its manufacture, preparation, or treatment. The Act defines "food security" as a means to supply entitled quantity of food grains and meal.<sup>viii</sup> The law address all vulnerable groups of people and provides that eligible households are given priority which are placed under the Antyodaya Anna Yojana Scheme.<sup>ix</sup> In *Centre for Public Interest vs Union of India & Ors*<sup>x</sup> the Supreme Court of India held that the right to life and human dignity also encompasses the right to have food articles and beverages which are free from harmful residues such as pesticides and insecticides. The Court asked the Food Safety and Standards Authority of India (FSSAI) to conduct periodical inspection and monitor fruit and vegetable markets. The Court held; Enjoyment of life and its attainment, including right to life and human dignity encompasses within its ambit availability of articles of food, without insecticides or pesticides residues, veterinary drugs residues, antibiotic residues, solvent residues. India generates enough food to satisfy the needs of its starving citizens. However, there are no procedures in place to prevent food loss. Food grains cannot be stored or transported in India because of a lack of infrastructure. As a result, half of the food produced is lost before reaching the poor. India continues to struggle with poverty and unemployment. Food security is a broad word that encompasses food availability, accessibility, and price. In granaries, there should be adequate food on hand in case of an emergency. The food that the government provides must be readily available to its residents. The food that the government makes available and accessible must be inexpensive to the poorest citizens. India has regulations and some of the strongest programmes in the world, but it still cannot feed its starving people. The National Food Security Act has a basic flaw in that it delegated power to state governments, and there is frequently tension between the federal government and state governments over food grain allocation. As



a result, many states are experiencing food grain shortages. Obtaining food grains comes at a high price. The state government is unable to cover expenses. States lack the necessary storage and transportation infrastructure to convey food grains. India should promote cooperative marketing associations that can sell food grains directly to buyers. This will eradicate intermediaries and profiteering as well as black marketing. Larger society may have their own warehouse and storage facilities. This will help to reduce storage losses significantly. Food grains should be purchased from co-operative marketing organizations by the Food Corporation of India. Maharashtra, Andhra Pradesh, Tamil Nadu, Uttar Pradesh, and Bihar have all achieved significant advances in cooperative marketing. Members' interests are protected by sugarcane marketing societies in Bihar and Uttar Pradesh. Efforts must be made to deploy technological methods to track food grain waste and rotting. Consumers in Tamil Nadu can get stock information by SMS, and in Chattisgarh, they can get information on when supplies will arrive at the fair pricing shop. The state of Chhattisgarh has a system in place to track the full supply chain from agrarian to customer.

### **Conclusion**

The Supreme Court of India has passed an order time and again to realize the valuable rights such as right to food and directed the concerned authority to distribute the food for needy people through the existing welfare schemes, as well as legitimizing and securing the right to food as a legal entitlement and it is ensured by the National Food Security Act, 2013 but there is vast discrimination in implementing the same. It is important to note here that Indian economy is the fastest growing economy in the world. It has grown to become the tenth-largest economy in the world in terms of nominal Gross Domestic Product. However, India's rapid economic growth has failed to improve food security, most notably during the covid lockdown, when a large number of people (informal workers) lost jobs and were unable to earn money or meet basic needs. In addition to this, the government apparatus was unable to provide all necessary items to those who were in danger during the lockdown.

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1. <sup>i</sup>The right to food. Available at: <<http://www.fao.org/worldfoodsummit/english/fsheets/food.pdf>>. Access on: 14.12.2021
  2. <sup>ii</sup>Food security definition available at < <https://www.ifpri.org/topic/food-security>> Access on :14.12.2021
  3. <sup>iii</sup> Targeted public distribution system
  4. <sup>iv</sup> PIL (Civil) No. 196 of 2001
  5. <sup>v</sup> Act No. 42 of 2005
  6. <sup>vi</sup> AIR 1996 SC 1051
  7. <sup>vii</sup> *Narmada Bachao Andolan .v. Union of India A.LK 2000 S.C3741*
  8. <sup>viii</sup> Section 2(1) and 2(6) of National food security Act, 2013
  9. <sup>ix</sup> Section 2(3) of National food security Act, 2013
  10. <sup>x</sup> SC 681 OF 2004

## Impacts of Agricultural Implements on Soyabean Cultivation in Vidarbha

**Dr. Yogesh Krishnarao Patil**

Head Department of Geography Mahila Mahavidyalaya Gadchiroli 442605

Email Id: patilyogesh40@gmail.com

### Introduction:

The Present Research Work seeks to find out the effects of Agricultural Implements on Soyabean Cultivation in Vidarbha Region. In this research the use of Woden plough, Iron Plough, Threshers, Seeds Drills and Tractors in which districts of Vidarbha is less has proved the need of the hour by increasing agricultural implements to increase the productivity of Soyabean Crop.

**Objectives:** - The specific objectives of the present research work is, To study how Agricultural Implements impacts on Soyabean Cultivation in Vidarbha

**Study Region: Vidarbha:** - The Vidarbha region extended from 18<sup>0</sup>38' to 21<sup>0</sup>43' north latitudes and 75<sup>0</sup>56' to 80<sup>0</sup>55' east longitudes below the Tropic of Cancer. The study region is bounded to its north and north-east by Betul, Chindwara, Seoni and Balghat districts of Madhya Pradesh and to the east and south-east it is bounded by Durg and Bastar Districts of Chhattisgarh state. To the south it is bounded by Andhra Pradesh and the Sothern boundary of Vidarbha region is delimited by Painganga and Pranhita rivers and to the west is Jalgaon and Aurangabad district of Maharashtra State. The region included nine districts i.e. Buldhana, Akola, Washim, Amravati, Yavatmal, Wardha, Nagpur, Bhandara, Gondia, Chandrapur and Gadchiroli.

**Database and Methodology:-** As the present research work has to be done single handedly researcher hope the readers will take into consideration its limitations. The data collected and used for the period 1990-91 to 2020-21 comes both primary and secondary sources.

### Discussion :

**i) Wooden Plough:-** Wooden plough is traditional implements which is widely used by the farmers in the hilly parts of the west. Table No. 1.1 reveals that, in 1990-91, below 5% wooden plough was used in Buldhana, Akola and Wardha districts whereas 5% to 15% Wooden plough was used in Amravati, Nagpur, Yavatmal, Gadchiroli and Chandrapur districts, and above 15% Wooden plough was used in Bhandara (24.43%) district. During 2020-21, below 5% Wooden plough was used in Gadchiroli (0.61%) district, whereas 5% to 15%, Wooden plough used in Bhandara, Nagpur, Wardha, Chandrapur, Amravati and Akola districts and above 15% Wooden plough used in Buldhana and Wardha (21.31%) districts in the same year.

**Table No. 1.1**  
**Different Agricultural Implements in Vidarbha Region**

*Area in 00'Hector*

Districts	1990-91					RANK	2020-21					RANK
	Wooden Plough	Iron Plough	Threshers	Seed Drills	Tractors		Wooden Plough	Iron Plough	Threshers	Seed Drills	Tractors	
Buldhana	9861 (1.41)	408 94 (22)	2957 (15.56)	N.A	947 (20.82)	1	36668 (19.39)	10007 (1.82)	1113 (4.87)	65492 (27.07)	265 7 (19.73)	1
Akola & Washim	2789 2 (4)	322 26 (17.37)	2661 (14)	N.A	868 (19.09)	4	27752 (14.67)	20684 (3.75)	1337 (6.02)	42566 (17.59)	205 4 (15.26)	5.5
Amravati	4519 8 (6.48)	286 15 (15.44)	2606 (13.71)	N.A	787 (17.30)	2	22313 (11.80)	29839 (5.42)	1325 (5.80)	32208 (13.31)	225 6 (16.76)	2
	9753	283	2031		227		40298	68477	957	40089	865	

<b>Yavatmal</b>	9 (14)	51 (15.29)	(10.69)	N. A	(4.99)	<b>7</b>	(21.31)	(12.43)	(4.19)	(16.57)	(6.42)	<b>9</b>
<b>Wardha</b>	3177 6 (4.56)	161 17 (8.09)	1409 (7.41)	N. A	153 (3.36)	<b>8</b>	18656 (9.86)	23708 (4.30)	3962 (17.33)	15357 (6.35)	550 (4.08)	<b>10</b>
<b>Nagpur</b>	8974 7 (12.87)	116 09 (6.26)	2130 (11.21)	N. A	279 (17.79)	<b>5</b>	11878 (6.28)	46033 (8.35)	2909 (12.73)	26209 (10.83)	132 0 (9.80)	<b>7.5</b>
<b>Bhandara &amp; Gondia</b>	1704 28 (24.43)	136 27 (7.35)	2777 (14.61)	N. A	809 (6.78)	<b>3</b>	11016 (5.82)	16734 3 (30.37)	10218 (44.70)	4110 (1.70)	221 1 (16.42)	<b>3.5</b>
<b>Chandrapur</b>	1261 31 (18.08)	997 1 (5.38)	2415 (12.71)	N. A	309 (3.72)	<b>6</b>	19412 (10.26)	99087 (17.98)	883 (3.86)	10449 (4.32)	115 0 (8.54)	<b>8</b>
<b>Gadchiroli</b>	9893 9 (14.18)	406 5 (2.19)	19 (0.10)	N. A	169 (100)	<b>9</b>	1159 (0.61)	85816 (15.57)	114 (0.50)	5463 (2.26)	401 (2.98)	<b>11</b>
<b>Vidarbha</b>	6975 11 (100)	185 475 (100)	19005 (100)	N. A	4548 (100)		18914 5 (100)	55099 4 (100)	22858 (100)	24194 3 (100)	134 64 (100)	

*Source: Livestock Census 1991-92, 2020-21*

*Note: Figures in the brackets indicate %*

**ii) Iron Plough:-** Iron plough facilities deep ploughing as compared to wooden plough. According to their capacity for deep ploughing the iron plough is is drawn either by two, four or more pairs of bullocks depending on the types of soil. The heavy iron plough is preferred in medium to deep black and alluvial soils. As Soyabean is grown in such soils the use of Iron plough is a common phenomenon. During 1990-91, below 5% Iron plough was used in Gadchiroli districts whereas 5% to 15% Iron plough was used in Chandrapur, Nagpur, Bhandara and Wardha districts and above 15% Iron plough was used in Yavatmal, Amravati, Akola and Buldhana (22%) districts. During 2020-21, below 5% Iron plough was used in Buldhana (1.82%) Akola and Wardha districts, whereas 5% to 15% Iron plough was used in Amravati, Nagpur and Yavatmal districts, and above 15% Iron plough has used in Gadchiroli, Chandrapur and Bhandara districts in the same year.

**iii) Seed drills:-** Seed drill use for the purpose of seed sowing in agricultural land. Table 2.11 reveals that, below 5% seed drill has used in Bhandara (1.70%), Gadchiroli and Chandrapur districts, Whereas 5% to 15% seed drills has used in wardha, Nagpur, Amravati districts and above 15% seed drills has used in Yavatmal, Akola and Buldhana districts.

**iv) Threshers:-** It is used for Soyabean cultivation, in 1990-91, below 5% threshers was applied for agricultural purposes in Gadchiroli (0.10%) districts. Whereas 5% to 15% threshers applied in Wardha, Yavatmal, Nagpur, Chandrapur, Amravati and Akola districts and above 15% threshers applied in Buldhana (15.56%) districts. During 2020-21, below 5% threshers used in Gadchiroli (0.50%), Chandrapur, Yavatmal, Buldhana districts, whereas 5% to 15% threshers used in Amravati, Akola and Nagpur districts, and above 15% threshers used in Wardha and Bhandara (44.70%) districts.

**v) Tractors:-** Tractor is an important implement which has become popular in Soyabean cultivation areas due to multiple uses for the preparation of cultivation of land. During 1990-91, below 9% tractors was used in Wardha (3.36%), Gadchiroli, yavatmal, Nagpur and Chandrapur districts. Whereas 9% to 18% tractor was used in Amravati and Bhandara districts. Whereas 9% to 18% tractor was used in Amravati and Bhandara districts and above 18% tractors was used in Akola and Buldhana (20.82%) districts. During 2020-21, below 9% tractors used in Gadchiroli (2.08%), Yavatmal, Wardha, Amravati and Chandrapur districts, whereas 9% to 18% tractors used in Nagpur, Bhandara and Amravati districts, and above 18%

tractors used in Buldhana (19.73%) districts. Tractors used were increased in every district due to increase agricultural literacy and modern techniques.

**Conclusion :**

in Vidarbha used wooden plough, iron plough, seed drills, threshers and tractors during investigation period, so these agricultural implements are not properly suitable for the Soyabean cultivation. If every districts will increased above 30% of each agricultural implements in Vidarbha i.e. beneficial for Soyabean cultivation.

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## **Role of Panchayati Raj Institutions in Environment Protection (Special study with reference to Rajasthan state)**

**Mangi Lal**

Research Scholar (Political Science Department) Jai Narain Vyas University Jodhpur, Rajasthan  
Email – mangilal01071993@gmail.com

### **Abstract : -**

The most talked about and major problem of the world at present is environmental imbalance. The deteriorating relationship of human nature is the most responsible factor for the degradation of the environment. As long as this relationship has been friendly, the elements of the environment have been tolerating our minor blunders. But when the environment was continuously harmed for the fulfillment of material selfishness, its quality began to decline. Contempt of environment in the name of modernity has become a habit. While dreaming of conquering nature, we forgot that human beings are also sons of nature. The basis of his life is also natural things, whose quality is our utmost duty to maintain. The result of our mistake is starting to manifest in the form of pollution. Some crises are becoming question marks for human existence. At present, many environmental problems have come due to air pollution, water pollution, soil pollution etc., due to which global warming, climate change, impact on agricultural production are affecting human health, arising from industrial revolution, materialistic culture has affected human society. By corrupting the road, it has created a crisis not only for the human race but also for the wildlife. If the emission of greenhouse gases is not stopped, by the year 2100, the temperature of the earth is expected to increase by 1.2 to 6.5 degrees. The state of Rajasthan has always been grappling with difficult geographical conditions, unfavorable economic and social environment and natural calamities, so it has become very important to save the environment in the present scenario. Panchayati Raj Institutions are playing an important role in environmental protection in the state of Rajasthan.

**Key words :** - Environment Protection, Panchayati Raj Institutions, Global warming, Green Rajasthan, Ecology and Climate change.

### **Introduction : -**

India is a country of villages. The village is ruled by Gram Panchayats. Pancho is considered as the God in the village. Panchayats can play an important role in environmental protection. In the 73rd Constitutional Amendment Act, making Panchayats 'institutions of self-government' at three levels, a list of subjects under Panchayats has also been provided. The 29 subjects mentioned in the Eleventh Schedule are land reforms, land consolidation, soil conservation, water management, social forestry, minor forest produce, non-conventional energy sources, sanitation and property maintenance, environmental management. Environment is the gift of nature for the maintenance of life on earth. Every element that we use to survive comes under the environment such as air, water, light, land, trees, forests and other natural elements. Environment refers to a phenomenon that affects animal and plant communities. As the population grew and technical knowledge developed, so did the excessive exploitation of natural resources. Due to forest destruction, urbanization, industrialization, population growth, exploitation of minerals, etc., air, water, soil, noise and thermal pollution etc. are increasing. The temperature is expected to rise by 1.2 to 6.5 degrees.

Environment is made up of two components biotic and abiotic. The biological environment includes living beings, animals, plants and micro-organisms. Abiotic environment includes all the non-living elements like air, land, water etc. Correlations between human environment have been studied from various perspectives such as environmental deterministic, possibilist objective, economic deterministic, ecological, neo-deterministic approach. Apart from these perspectives, the movement to save the environment started in the year 1970, through these movements, emphasis is laid on maintaining greenery in the environment, hence the politics inspired by it is called green politics. Ecology and Climate change : - Climate change has caused huge changes in the ecosystem of the whole world. The main idea of the ecosystem concept is that living organisms influence every other element in their local environment. Climate change is one of the most important global environmental challenges affecting food production, water supply, health, energy, etc. It is necessary to study the effects of climate change and suggest its mitigation measures. Together with other observations and studies, space-based global change observation aims to provide a solid scientific basis for the development of national and international policy regarding natural and human-induced change in the Earth system.

**Green Rajasthan Scheme** : - The Government of Rajasthan has started 'Green Rajasthan Scheme' under MGNREGA to promote environmental protection. In which there was a plan to plant lakhs of saplings every year during the rainy season. In the last three years, 1 crore 57 lakh saplings have been claimed under this scheme in Banswara, Dungarpur and Pratapgarh of Rajasthan.

Under the leadership of the United Nations, various countries started taking initiatives to control environmental pollution, which resulted in various environmental conventions. If we look at the world stage, then India has been the only country in the whole world where concern has been expressed in this direction since time immemorial. Aurans are a type of reserved forest in the villages of Rajasthan. They had the authority of community institutions, village panchayats and trusts of temples etc. They can also be called resources of accessible property of Panchayats of rural areas, which have a very important place in the role of rural life. Rural local autonomous bodies have been there in India since ancient times. In the Vedic age, the efficient units of local government existed in the form of sabha, samiti and vidatha organizational units. Lord Ripon's proposal came into force on 18 May 1882, which proved to be a milestone in establishing the institutions of local government. After independence, Panchayati Raj institutions were mentioned in Article 40 of the Indian Constitution. It was inaugurated by Late Prime Minister Pandit Shri Jawaharlal Nehru on 2 October 1959 in Nagaur district of Rajasthan. Constitutional status was given to Panchayati Raj Institutions by the 73rd Constitutional Amendment. Rajasthan Panchayat Raj Act 1994 was passed by the Rajasthan Legislative Assembly which came into force from 23 April 1994. According to this new act, elections were held in December 1994 and January 1995 for all the three levels of Panchayati Raj Institutions (1) Gram Panchayat (2) Panchayat Samiti (3) Zilla Parishad and at present all the institutions are functioning.

Environmental protection is closely related to the life of all living beings and all the natural environment of this earth. The whole earth is getting contaminated due to pollution and the end of human civilization is visible in the near future. Keeping this situation in mind, in 1992, 'Earth Conference' of 174 countries of the world was organized in Brazil. After this, in 2002, by organizing the Earth Conference in Johannesburg, many measures were suggested to all the countries of the world to pay attention to environmental protection. In fact, life on earth can be preserved only by the protection of the environment, otherwise the life cycle of the earth will also end like the planets like Mars etc.

**Role of Panchayati Raj Institutions in Environment Protection** : -

India is a country of villages. The village is ruled by Gram Panchayats. Pancho is considered as the God in the village. Panchayats can play an important role in environmental protection. By which we can save our mother earth from pollution. Panchayats can play an important role in the protection of the environment keeping the following points in mind.

1. Planting more and more trees should be done by explaining to the public how important plants are in our life, plants give us life ie oxygen and take carbon dioxide gas from the atmosphere.
2. Throwing light about the benefits of cleanliness and sanitation in our lives, attention should be paid to cleanliness through proper use of water and waste management.
3. Rain is a good source of clean water, ways to store rain water should be adopted. Water harvesting can also be done in Panchayat land.
4. Arrangements should be made by the Panchayat that any kind of dirt should be dumped in the ponds, lakes, wells etc. of the village so that all the water available in them can be used and the water is not polluted.
5. Apart from the normal crops, agro-forestry should be adopted in the Shamlat land, this will also conserve water, the fertile power of the land will be maintained and it will become a source of income for the panchayat for a long time. By paying attention to agro-forestry in Shamlat land, that land will be utilized properly and the income of the panchayat will also increase.
6. The schemes of various departments run by the government like agriculture, horticulture, women, child welfare, panchayati raj etc.
7. Emphasis should be given on organic farming. Organic farming should be done on the lands of Panchayats, which will improve the Panchayati land.
8. Trees are usually cut for fuel, Panchayat should make arrangements in such a way that only dried branches of trees are plucked for fuel.
9. Understanding the importance of energy conservation, the Panchayat should emphasize the use of renewable energy, spreading awareness about the schemes run by the government for renewable energy, they should be implemented.
10. Keeping in view the land conservation and land health, emphasis should be given on minimum use of chemicals in the agriculture sector.

11. Global warming is a very big problem today, the temperature of the earth is increasing gradually, which is having a bad effect on agriculture and environment, Panchayats should make the villagers aware for the participation of every person in reducing it.
12. Women take the responsibility of the whole house, they should be made a special participant in environmental protection, women are more sensitive, so they will play their part in environmental protection well.
13. Persons who play an important role in environmental protection should be honored by giving commendation letters or awards from the Panchayat and the government, in this way other people of the society will also come forward by encouraging them.

**Conclusion : -**

Today the whole world is concerned about the deteriorating condition of the environment, for this awareness programs should be organized from time to time in collaboration with various departments so that people understand their responsibility towards the environment well and play an important role in its conservation. In this way, with the steps taken by the Panchayat, we can change the picture of the whole of India and save our environment and the earth. Environmental pollution is such a burning problem of the whole world today, which has arisen due to high production and prosperity in developed countries and due to population growth, unemployment and poverty in developing countries. Today, the problem of air pollution, water pollution, soil pollution, noise pollution, nuclear pollution, heat pollution has taken a formidable form in the world. Due to which many problems have arisen in the world like greenhouse effect, depletion of ozone layer, acid rain etc. Due to these, the life of human fauna and flora etc. is being threatened. In the increasing nuclear arms race in the world, increasing pollution has taken the task of adding fuel to the fire. Due to the greenhouse effect, increase in global warming, water air change, increase in the water level in the oceans, impact on human health is affecting agriculture.

World Environment Day is celebrated all over the world on 5th June. The main objective of this day is to protect the environment and keep the whole world free from pollution. Thus Panchayati Raj institutions in the country were established for the purpose of public welfare. Panchayati Raj Institutions in Rajasthan are playing an important role in keeping the environment clean and pollution free and green under the responsibility of all round development of the society. As a citizen of a country and as a resident of this earth it is our responsibility to make this earth clean, clean, beautiful and free from pollution.

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## **Water pollution management in Agriculture Sector**

**Dr. Nandini Pandurang Wagh**

Assistant professor HOD, Department of Geography Pankaj Arts and Science College  
Chopda, Dist. Jalgaon  
nandiniwagh2012@gmail.com

### **Abstract :-**

Water pollution is a major global problem in recent years which requires ongoing evaluation, management and strict implementation of water resource policy for safe survival of plants and animals aquatic creature and human being on this earth. More than 70% of the fresh water in liquid form of our country is converted into being unfit for consumption. Not only India, but other countries are also suffering from the same problem. This has been explained clearly by the help of considerable number of references in this paper. Various sources of pollution such as sewage discharge, industrial effluents and agricultural runoff and their potential has been studied in mass. Various prescribed standards for different category of inland water have been explained. The paper also consists of the potential and extent of various components which pollute the water. Finally, effect of water pollution has been shown in nutshell.

**Key Words:-** Agriculture, Water Pollution, Water bodies, Nutrient, Ground Water

### **Introduction:-**

Water is the greatest gift of nature. India is the country where more than 60% of population depends upon agriculture for their livelihood. Agricultural activities that cause water pollution include confined animal facilities, grazing, plowing, pesticide, spraying, irrigation, fertilizing, planting and harvesting. The main elements of agricultural pollution are:

1. Phosphates
2. Nitrates
3. Pesticides
4. Sediment
5. Faecal bacteria.

Our survival on Earth depends on three basic resources – water, air and soil, nature's three valuable gifts to mankind. Among which water is the most important component as it forms the basic medium for origin of life. Agricultural pollution of surface water, groundwater and marine waters relates to the contamination of drinking water, and harmful effects on ecosystems. This paper is aimed to discuss on the ways that can minimize agricultural impact on surface water and groundwater pollution. The various ways are :-

1. Managing Livestock Grazing
2. Managing Pesticides
3. Managing sedimentation
4. Managing Confined Animal Facility
5. Managing Irrigation

### **Source of Water Pollution :-**

Water pollution is a major global problem which requires ongoing evaluation and revision of water resource policy at all the levels. Water pollution is a serious problem in India as almost 70% of its surface water resource and growing percentage of its groundwater reserves are contaminated by biological, toxic, organic and inorganic pollutants. In many cases, these sources have been rendered unsafe for human consumption as well as for other activities, such as irrigation and industrial need. This shows that degraded water quality can contribute to water security as it limits its availability for both human use and for the ecosystem.

Generally, the pollutants come from three prominent sources-

1. sewage discharged into the river,
2. industrial effluents discharged into the river without any pretreatment and
3. surface run off from agricultural land, where chemical fertilizers, pesticides, insecticides and manures are used.

This makes the river water unsafe for drinking and bathing. About 1500 substances have been listed as pollutants in freshwater ecosystems.



### **Some facts of water pollution :-**

1. Fresh water in the world it is only 2.5 % of total water available. Around 70% of the industrial waste is dumped into the water bodies where they Pollute the usable water supply.
2. The total volume of water available on the Earth is about 1.4 billion km and about 70% of the Earth is covered in water.
3. Fourteen billion pounds of garbage mostly plastic, is dumped
4. into the ocean every year.
5. Plastic waste being a major water pollutant is causing huge destruction of marine life and is believed to be responsible for deaths of more than 10,000 sea mammals, sea,birds and various types of fishes.

Water pollution is a major environmental issue in India. The largest source of water pollution in India is untreated sewage and agricultural runoff due to which most rivers, lakes and surface water in India are polluted.

### **Water Consumption of Indian Agriculture:-**

Consumption of the water for irrigation is rising. The volume of the water used for irrigation in India is expected to increase by 68.5 Tr. liters between 2000 and 2050. India is the one of the world's leading crop producers. Over the years, this has led to an increase in water consumption in agriculture sector. Rice wheat and sugarcane together constitute 90% of the Indian's crop production and are the most water-consuming crops. India has the highest water footprints among the top rice and wheat producing countries. Agriculturally based industries such as textiles, sugar and fertilizer are among the top producers of waste water. Accordingly the pollution related to agriculture sector has also risen.

### **Management of Water Pollution in Agriculture Sector:-**

The various ways that can minimize agricultural impacts of on surface water and ground water pollution are:-

#### **Control of water pollution:-**

Excessive use of the water for agricultural, industries and domestic uses is leading to water pollution, because such excess water is transformed into saline water, Sewage of effluent. Unnecessary use of water must be reduced. Steps should be taken for storage of water in a proper manner.

#### **Managing Irrigation:-**

Farmers can reduce NPS pollution from irrigation by improving water use efficiency. Actual crop needs can be measured with a variety of equipment. Irrigation water is applied to supplement natural precipitation or to protect crops against freezing or wilting. Insufficient irrigation can cause water quality problems.

#### **Managing Sedimentation:-**

Excessive sedimentation clouds the water, which reduces the amount of sunlight reaching aquatic plants; covers fish spawning areas food supplies and clogs the gills of fish. Sedimentation occurs when wind or water runoff carries soil particles from an area, such as a farm field and transports them to a water body, such as a stream or lake. Farmers and ranchers can reduce erosion and sedimentation by 20 to 90% by applying management measures to control the volume and flow rate of runoff water, keep the soil in place, and reduce soil transport.

#### **Managing livestock Grazing:-**

To reduce the impacts of grazing on water quality, farmers and ranchers can adjust grazing intensity, keep livestock out of sensitive areas, provide alternative source of water and shade, and revegetate rangeland and pasture land. Overgrazing exposes soils, increases erosion, encourages invasion by undesirable plants, destroys fish habitat, and reduces the filtration of sediment necessary for building streambanks, wet meadows, and floodplains.

#### **Managing Confined Animal Facilities :-**

Discharges can be limited by storing and managing facility wastewater and runoff with an appropriate waste management system. Runoff from poorly managed facilities can carry Pathogen nutrients, and oxygen demanding substances the contaminant shell fishing areas and other major water quality problems. Ground water can also be contaminated by seepage.

#### **Conclusion:-**

The impact of agriculture on water resources and the impact of water on agriculture will be positively influenced by the participation of farmers in training to implement good agricultural practices. India is a country, where more than 60% population depends upon agriculture. As agriculture is a larger sector causing water pollution, the initiatives for management of the pollution may be effective to control the water pollution up to a greater extent. The people depending upon agriculture can be trained up in this regard to control the situation as far as possible.

Thus proper management of water is needed .Unless it is managed in suitable manner ,it causes number of problems and will ruin of human life . Water pollution control boards in every City for timely management of the pollution problems.

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## **Types and Bases of Organsitions in India: An Assessment**

**Dr Badruddin**

Professor in Political Science, PES's RSN College of Arts & Science, Ponda, Goa

### **Abstract:**

Organization is broad concept in Public Administration which includes the framework, model, setting up, structure, utilization and achievement of goals. It is an integral to human life, institution, society and administration which determine living patterns, level of culture, satisfaction of job, democratic functioning, education, transformation of society, and utility of financial services. In a layman language, organization provides means of human efforts, direction, supervision, fruitfulness, and accomplishments. Some scholars views organization as allocation of duties & responsibilities, managerial efficiency, promptness of work, performance of job, assembling- integrating and coordinating the activities. These practices help to secure physical, mechanical, and human activities to gain men and material benefits. Ever since the beginning of globalization and economic liberalization, India has undergone many ups and down. The paper presents a comparative study of various organizational management like government, public corporation, NGOs and MNCs.

**Key words:** Organization, Management, Public private Sectors, Hierarchy, Coordination

### **Concept of Organization**

Literally, the term 'Organization' refers to the mechanism which helps the individual and society to live together like bonds and social contract to achieve the common goals. In general term, Organization is also related to enterprise, adventure, endeavour, determination, get-up-and-go, initiative, social business, and dynamic process of development. Thus, Organization becomes the means to pursue effective strategy, plan of action, management and attainment of objectives. Large number of scholars of public administration, management and academics have given wider approach to understand the meaning and application of Organization. The prominent ones include: Haimann, Morstein Maxx, Louis Allen, Mooney, Pfiffner, Presthus, Sherwood, Railey, Chester Bernard, and John Guas and the formal and informal organizations. It broadly covers: process of differentiation, integration, grouping of activities, establishment of authority, incorporation of system, sub system, and carrying out the entrusted task. Some scholars believe that Organization is the process of identifying the facts, grouping of power, delegating the authority, administrative accountability and formation of human association. Thus, Organization broadly refers the pattern of ways-means, face-to-face contact, consciously coordinated task, work arrangement, and relations of various tasks. Characteristically, Organization in general include purposeful, specialized-non specialized task of integration system, and services to environment. The subject related to behavior, designing, transmission of decision, channel of communication, authority, leadership and discipline also encircle the activities of Organization. In short, there is a greater need to understand the complexities, limitations, specialized objectives, and authoritative allocation of values which are increasingly important. For some scholars, Organization also include allocation of functions, responsibility, group behavior, and factor enterprises. It also includes: administrative structure, designing and managing.

### **Methods & Objectives**

Organization fundamentally deals various array of activities which are broadly focused around formal and informal organizations. Key objectives like exploration, research and development deals large number of issues like hierarchy, unity of command, span of control, coordination and decentralization widely spread under various public and private organizations in India. Role of civil servants, bureaucrats, personnel administration and governance are being examined in the comparative and institutional methods. In order to understand the broad parameter of Organization, it is better to highlight the structure and function of Formal and Informal Organization.

#### **Formal Organization**

Formal Organization in India often works within the principles of consciously determined action so to enable the people to achieve the desired results. Such outcomes result thorough arrangement of personnel goals, accomplishment of task, allocation of responsibilities, and deliberately created for result oriented management. Most Formal Organizations in India like Ministry of Finance, External Affairs, defense and railways are the ideal examples where rules and regulations are arranged according to mechanical and technical means. Consciously coordinated, communicated and accountability of works enable the proper functioning, designing, identifying, allocating and distributing the duties.

On **positive** sides, Formal Organizations are equipped with formal structure (job assignment), legally bounded, division of work (mechanical and organic solidarity), permanent and rule followers. It is often remain centrally controlled and downwards to communication equipped with hierarchy of power. On the positive sides, the Formal Organization performs better works by using the reasoning of power, social ability, rational choice and fixed predictability, The responsibilities of the individual are better assessed through directional and operational goals. On the **negative** sides, Formal Organizations do not work within effective criteria and support poor social balancing. This often results in process of adjustment and re adjustment. Very often, the interpersonal relations and social communications are slowed down, and minimized where the personnel's are not duty bound resulting in loss of duties and responsibilities. In such cases, individual creativity, spirit, motivation and tendency for doing serious works are hampered and jeopardized as Indian way of functioning are virtually controlled and supervised by media and saffron minds.

#### Informal Organization

Informal Organization in India is rather the result of social interaction, interpersonal relations and feeling of togetherness. Such organizations are increasingly important while considering the complications of modern public administration. Scholars like Elton Mayo and Chester Bernard have beautifully summed as how Informal Organization are important in human relations as integral to social, moral, ethical and human like management. These pertain to various human experiments, group behavior, social mindedness, humane approach, we- feeling, and relational actions. As such, the Informal Organizations are inclined towards social likeminded rather than official complications. In fact, Informal Organizations are based on processional support, inter-activities, personal likings or disliking, and curiosity. In fact, the feelings of togetherness, hand in hand approach, social collectivity, curious union, shoulder to shoulder, and side by side approach are more rewarding in forms of support and services. Large number of NGOs and related activities in India like Bhartiya Kisan Union, Women Associations, Greenpeace Activist, and Amnesty Exponents are the ideal examples. These have powerful impacts on public administration, managerial entrepreneurship, industrial productivity, and job satisfaction. The principles of social rules, peer team feelings, behavior and creative attitude are important consideration to understand the importance of Informal Organization. Recent examples of Kisan Bill can be cited as a relevant case study. On the **positive** side, the Informal Organization have several advantages in social management. Factors related to human considerations, boosting of self image and personality reflections do matters a lot. In several cases, the Informal Organizations work as check and balance to compensate the unlimited use of managerial authority in forms of feedback work experience and job satisfactions. It often works as a platform for promoting the process of socialization (parent, family, friends, society, community, etc) in forms of cohesiveness, self respect, sense of belonging and independent choice. On the **negative** side, Informal Organization may not be workable for smooth management due to conflict of norms (values, caste hierarchy, linguistic differences, religious disparities, and local conditions). Sometimes, Informal Organization has to face the false value 'grape wine' and power politics, party ideology and financial scams. Despite odds and differences about the role of Informal Organization, there are always pluses and minuses. In general, Informal Organization works as a planned, officially stable, service to community, rational choice and flow of information. On the other hand, the Informal Organization remains unplanned, small, dynamic, power prone, emotional and impersonal working through unspecified channels and fast flow of information. In general, both Formal and Informal Organization are integral to organizational developments. A clear cut visionary approach is required to work with 'Formal-Informal Model' of organization in professional, academic, social and economic set ups. It can be a beautiful example to India's major organizational set ups like family system, caste politics, communal harmony and linguistic regionalism.

#### Utility and Importance of Organization in India

Organization is a multidimensional activity which cannot be explained in few words rather it need wider elaboration and analysis. Factors related to public administration, management, geography, population, resources and economic conditions are imperatives to understand the depth. Subject like Public Administration is very important as it touches every dimension of life: be it administration, social system, legislative business, civil services, education, health, and environment. Public Administration organization is now an integral of syllabi in schools, colleges, university system, NGOs and R&D bodies. The following gives an overview about the importance of organization in Indian context.

**Table : Organization-Utility and Importance in India**

SL. No.	Head-lines	Utility and Importance	Performing Initiatives in India/Actions
	Administrative Facilities	Efficiency, Promptness, Minimization of ideology, action against red tapism, defined division of labour, routine culture, balancing act	Marui Suzuki, Nokia, Honda, etc
	Growth & Diversification	Growth of company, offices, expansion, diversification	Reliance, Wipro, Godrej, Tata Motors,
	Enabled Technology	Technology as brain of organization, online services, computer operation, smooth maintenance, minimum labour force, Application	Digital India Mission, IT Cells, E-Governance, Google, Online shopping (Amazon, Flipkart, Myntra, Wellness), Play store, Hotstar, Goibibo, Easemyrtrip, Instragram, OLX India,
	Human Like Approach	Recruitment, Training, placement, job relations, human capital, people-to-people contact, social mindedness	Cooperation, Goodwill, Humane Approach
	Creative & Constructive services	Well defined areas, delegation of authority, social & professional freedom, independent thinking, freedom of interdependence	NGOs, Green Organizations, Amnesties, Social Power, etc
	Stable & Sound Organization	Cooperation, understanding, two-way communication, leadership, accountability, efficiency	Working Employees in Private Firms, Social Behavior, Basic Social Services (Water, Electricity, Education)
	Access to Employee Turn over	Job satisfaction, social security, employee relations, skilled man power	Pension & Retirement Benefits, Gratuities, Provident Funds, LIC, UTI,
	Reduction of Duplicity and Hypocrisy	Duplication, delay, manipulation, dilemmas, poorly defined work	Role of civil servants, minister-bureaucrats relations, Bargain of salaried contractual employees
	Coordination	Togetherness, foster of cooperation & Understanding	Cottage Industries, Social Behavior, employee unions, etc
	Efficient Administration	Resource Optimization, specialization of task, transparency & expansion	Google Services, twitters, UPI, online transactions, etc

**Source:** Data is collected from various online sources

The above said is based on various organizational actions and approaches. The prominent ones include: labour union, students federations, cottage industries, teacher union, human right commissions, minority rights, etc are increasingly important in India.

**Bases of Organization in India: Principles & Problems**

Broadly speaking, organization is based on four fundamental principles: **functions** (role and purpose), **process** (working principles), **clientele** (commodity) and **geography** (area, place, location) and all four are independent variants. All are integral to follow the formal path of process of action. Various agencies like LIC, UTI, EDC, FICCI, RIL, FCI, etc are some examples. Whereas, the process helps to promote skills and talents in easing the process. Generally, when an institution is established, it has to undergo through various technical, legal, administrative and even political hurdles. Examples include: MCI, UGC, NITI Ayog, PCI, HUDCO, etc., whereas, the Clientele is associated with broad knowledge of process. Large number of departments and issues like NHRC, Minority Rights, women programmers, Dalits, rehabilitation, environment, pension & retirement benefits, education, health, social security, and children are some examples. When the question comes about geography, topography, population, and place; issues related to decentralization like Panchayats, Taluka, Municipalities, community services district boards and research centres, are increasingly important. In short, organization can be

beautifully examined in the context of various problems and principles like hierarchy, span of control, unity of command, and coordination.

### Hierarchy

Hierarchy refers to distribution, layer, division, department, top to bottom line, order of arrangement and universal application of steps. The relationship between superior-inferior, higher-lower, or even equal parity in some cases are called as '**Scalar Process**' based on universal principle of coordination. In general practice, the superior authority remains in advantageous position due to designation, higher salary, and even social status. Such structural arrangement is called as 'Scalar Process'. In simplest way, it is a,b,c,d, or 1,2,3, 4, normally based on division of work (labour), specialization of task, managerial efficiency, rule of 'Boss', immediate superior, and order from higher lower (habeas corpus, *quo warranto*). India offers a unique example in the world where the system of hierarchy is fundamentally associated in several walks to social, economic and professional walks of life. It works in caste system (Brahmin, Kshatriya, Vaishya and Untouchables), Banking Management (Regional Manager, Branch Manager, Manager, Assistant Manager, Clerical Staffs), colleges (principal, vice principal, senior teacher, junior teachers and non teaching staffs), civil services (IAS, IFS, IPS), and Judicial System (Supreme Court, High Courts, District Courts and Judicial Magistrate Courts). Question related to bad or good hierarchy remain debated in Indian professional establishments. In general, hierarchy remains an integral to every sphere of organization. Hence, there is general need for an 'Ideal Construct Model' so as to maintain the smooth functioning sub ordinate or assistant authorities. There is a greater need to establish general principle to assess the character of scalar process. Public Administration critiques have supported the scalar process as an instrument of power, coherence and integration of organization. A great American Political Scientist and Administrative Expert Luther Gulick has beautifully summed up the operation of hierarchy. In general, hierarchy works as a powerful mechanism through the process of integration under the security of chain of command. These help for proper decision makings through channels of communication and facilitation of delegations. The process helps to fix the responsibility, universal process of co-ordination where the supreme authority becomes effective and works as the art of administration. Such **advantages** of hierarchy are helpful in various policy agenda, financial accountability, controlled leadership and powerful convincing ability. In some exceptional cases, the principles of hierarchy do not support the administrative polices leading several **disadvantages**. Very often, hierarchical system lacks dynamism and flexibility and hence remains unsuitable for several management policies as it do not yield suitable results. Besides, the process in yielding delay and red tapism bring serious concerns as the works remain divided between various units and department. Due to flow of services from top to bottom, the sub ordinate employees are not often obliged to higher authorities. As the direction flows downwards, often results in inefficacy. In simplest language, the principles of rigidity in administrative set ups do not end in good administration. Within Indian administration, several departments like railways, finance, human resource, and education are such examples.

### Span of Control

Span of Control, central to the theory of organization, literally refers to command of power under head, subordinate assistants, span of attention and span of management. Factors like type of work, personalities, physical distance between superior and sub ordinates, and leadership qualities. In general practice, Span of Control refers to number of number of sub ordinates who are accountable to work, division of labour, delegation of authority, scalar chain command, and unity of command. Literally speaking Span of Control means the distance between tip of person's thumb and little finger when stretched out. In public administration, Span of Control refers to number of sub ordinates and administrators with degree of direct responsibility for unification of efforts. It is the number of range of direct, habitual communication contacts between chief executive, enterprises and affiliated personnel. Factors like to arithmetic and geometrical calculation of authority where the factors of Span of Control like nature of job, nature of responsibility, nature of relationship, and professional conditions matter. While applying the Span of Control in various organizations within Indian system like schools, colleges, universities, research centre, NGOs, and public administration; it becomes rather difficult. A single teacher can effectively teach 10 to 15 students, principal of college can control maximum 10 teachers, IAS officer can control maximum 5 officers, etc and thus the question of effective control remain questionable in terms of accountability. In fact, interlinked factors: nature of work, leadership, age issue, geographical location, social conditions, environment, and per works are important considerations. Other factors like skill, work routine, well planned management, nature of staffs, social communication and

experience are also important in deciding the spirit of Span of Control. Span of Control needs massive revision under new organizational set ups where the nature of work have gone sea change. Factor like e-governance, ICT revolution in public administration, media communication, time –distance factor, digital mediums, automation and mechanical process, have resulted in significant expansion. New techniques of tabulation, calculation, accounting, auditing, soft book keeping, easy access of records, and billing process have brought major changes. These devices have widened the scope of Span of Control. Entry of specialists, intellectuals, experts, consciousness, and new devices have re-written the outdated concept of Span of Control.

### **Unity of Command**

Unity of Command refers to those employees who receive order from higher and superior authority. It requires that every member of organization for one and all. All the departments should be inter rated under the shadow of powerful authority who can be head (Prime Minister, President, Chief Secretary, Chief Election Commissioner, Chief Military Staff, etc) where the power of administration is concentrated in one hand or inter related bodies where no individual is subject to order by more than one body. However, the subject remain controversial where there are more than one authority of similar rank (cabinet ministers, two chief secretaries, two college principals, etc.), which clearly indicated that Unity of Command is not really practicable in several organizations. Scholars like Henry Fayol, Lutehr Gullick, F.W.Taylor, Marshal Dimock, Pfiffner & Presthus have examined as how the ‘boss’ is important in any organization which are based on corollary of chain of command. In short, the Unity of Command fundamentally refers to higher order, controlled command, controlled supervision, pointed dictation, prestigious order, one man show, one directional approach, autocratic order, and authoritarian attitude. Interesting, all these alternatives are subject to rule of public administration under democratic governance and hence the order of higher authority should be taken as healthy criticism. India presents an interesting case study where legislative powers are virtually controlled by media, selected mind sets, and fixed officials. No public administration can be disloyal to ruling agents.

**Importance** of Unity of Command are directly applicable in several cases even in democratic public administration. These examples include: military order, president order, governor rule, emergency situation, code of conducted and related events. In case Unity of Command is not obeyed in such cases, it leads to chaos, confusion, contradiction and mismanagement of law and order. So some alternative have been suggested to maintain dual or parallel of two or more than two authority to protect discipline and law and order. But in such cases, coordination and understanding should be the principals of organization. Large number of departments in India like finance, human resource, foreign policy, agriculture, health and hundreds of more are examples. It is the duty of each Head or Boss of administration to maintain accountability and transparency in professional services to see that Unity of Command remain the true command for social security, satisfaction and understanding. Several doubts and uncertainties exist when the Unity of Command comes into application. One man show hardly comes into practice in large number of democratic institutions and ombudsman organizations due to inter –related, inter-personal and inter-interaction. Even for several technical and administrative reasons, the boss is the head of ‘technical department’ and ‘boss’ is the head of ‘administrative’ department. But if both departments: technical and administrative work within the same roof, then the concept of ‘one boss’ is unwanted and non-feasible for several practical reasons. Factors like order, instructions, time management, leadership are important considerations. Despite odds and challenges, the Unity of Command remains an important approach of scientific management and public administration to bring efficiency, precision and compactness. The best way is to develop ‘Unity of Command Model’ under one roof of common interest with no political, personal or monetary benefits. Then it makes sense, vision and social ends.

### **Coordination**

Coordination is a process of integrating all parts and functions of organization which is a necessary condition in hierarchy of administration. Scholars like James Mooney, Ordway Tead, J.D. Mooney, Dalton McFarland, Avasthi & Maheshwari have beautifully highlighted the importance of Coordination. In fact, public administration has become increasingly relevant due to inter-connected and inter-linked departmental activities. Such basic principles are supplemented through good human behavior, and flow of social information. In fact, the harmonious blending of pre determined actions are helpful in smooth functioning of administration. No organization is successful without clearly defined goals. Varied factors like shared responsibility, effective communication, rules and procedures are important. In fact, coordination is an important parameter in all activities of life: be is social, economic, cultural and political. Scholars like Mary Parkar and Priffner have accepted the dynamism of administration through coordination only which is based on direct contact, continuity, and reciprocal

understanding. Goals, sense of responsibility, production, sale, accounting and personnel maintenance are important through coordination only.

### **Conclusion**

Various issues related to organization and management in India system significantly differs from western democratic powers like USA, UK, France, Germany, Japan, Canada and Australia. Public administration in such societies are characterized by sound public opinion, free press, and democratic freedom. Unfortunately, however, Indian system of governance failed to fulfill the basic needs of bureaucracy, civil administration, personnel management and basic utility savvies. India urgently needs a sound 'Democratic organizations' based on basic rights of common men, transparent role of administration and greater accountability in social services.

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## **Protection of Biodiversity and the Rights of Indigenous People: A Critical Issue**

**Mariya Fatma<sup>1</sup> Dr. P.R.L. Rajavenkatesan<sup>2</sup>**

<sup>1</sup>**Research Scholar (Full Time), VIT School of Law, VIT, Chennai-600 127.**

<sup>2</sup>**Associate Professor & Head of the Department, VIT School of Law, VIT, Chennai-600 127.**

### **Abstract**

Advent of Science and Technology has led to degradation of our Biodiversity. There are rampant examples of Biopiracy taking place across the globe, which deteriorates our biodiversity as well as stanches away the rights of the indigenous people. There is requirement of international and national framework, where the effort of the indigenous people in conservation of the environment is duly recognized and rewarded. This Article deals with such national and international framework, which helps in recognizing the interest of Indigenous people and rewards them for preserving the nature.

**Keywords:** Biodiversity, Biopiracy, Benefit Sharing, Indigenous Rights and Natural Resources.

### **Introduction**

Earth is full of life, ranging life, but human constitutes on 0.01% of the total life force, rest of it is covered with various species of Flora-fauna and microorganism. Bio-Diversity refers the existence of a large number of different kinds of animals and plants which make a balanced environment".<sup>1</sup> However with the advent of industrial revolution development of biotechnology, there is been an indiscriminate exploitation of these biological resource. These biological resources which are a common heritage of mankind are being exploited for various private purpose. Multi-nationals are claiming their Intellectual Property rights over product of these natural resource obtained by using the traditional knowledge of the Indigenous people. In the process they are debarring the rest of people, especially the indigenous people from accessing the natural resources, who have been custodian of these resources for years.

### **Conservation of Biodiversity and Indigenous People**

Out of the total land coverage, only 31% is covered with forest<sup>2</sup>. These forests are the house of different species of living creature including, plants, animals, and microorganism. They have a diverse genetic makeup which is an integral part of biodiversity. Protection of this biodiversity is an essential requirement to ensure a healthy ecosystem, which in turn is eminent to ensure human rights like, right to Life, health, food right to life, health, food, water, sanitation and healthy environment, livelihood and culture for billions of people across the globe.<sup>3</sup> Due to advent of industrial revolution and development of science and technology, biodiversity around the world is rapidly degrading and destroying, which has a serious and far-reaching impact on human well-being.<sup>4</sup> The rupture in the biodiversity equilibrium affects the whole of the world, but the maximum effect of the same can be observed on the indigenous people. Various scholars have given different definitions of Indigenous people, but in common parlance, it is referred to the original inhabitant of a place especially to the forest and tribal areas. These people have "historical continuity or association with a given region or part of a given region prior to colonization or annexation and they have a very strong links to territories, surrounding natural resources and ecosystems."<sup>5</sup> Because of their intricate relation to their natural environment, these people are among the most affected by biodiversity loss.<sup>6</sup> As the loss of biodiversity not only poses a grave threat to indigenous

<sup>1</sup> Oxford Dictionary available

at <https://www.oxfordlearnersdictionaries.com/definition/english/environment> (accessed on Dec 19, 2021).

<sup>2</sup> "What is forest biological diversity?" Food and Agriculture of United Nations, available at <https://www.fao.org/state-of-forests/en/> (accessed on Dec 17, 2021).

<sup>3</sup> Universal Declaration of Human Rights, 10 December 1948 (General Assembly resolution 217 A), available at <https://www.un.org/en/about-us/universal-declaration-of-human-rights> (accessed on Dec 16, 2021).

<sup>4</sup> Sapra A. & Lenin B, "India: The Biodiversity Act of India: An Introduction", Mondaq Connecting knowledge and people, (12 November 2019) available at <https://www.mondaq.com/india/environmental-law/862744/the-biodiversity-act-of-india-an-introduction> (accessed on Dec 17, 2021).

<sup>5</sup> *Siham Drissi, "Indigenous peoples and the nature they protect", UNEP, 08 JUN 2020, available at* <https://www.unep.org/news-and-stories/story/indigenous-peoples-and-nature-they-protect> (accessed on Dec 19, 2021).

<sup>6</sup> "Human Rights and Biodiversity", United Nations Environment Programme, available at <https://wedocs.unep.org/bitstream/handle/20.500.11822/35407/KMBio.pdf> (accessed on Dec 17, 2021).

peoples' natural resources and livelihoods, but also to their cultural identity and survival.<sup>7</sup> At the same time, they are often considered as biggest protectionist of the biodiversity, but unfortunately they are not credited for their work.<sup>8</sup>

### **Right of Indigenous People over Genetic resource: International Perspective**

The genetic resources found in nature are considered as a common heritage of mankind.<sup>9</sup> And these indigenous people being the biggest conservationist the environment have got a right to protect it. The United Nations Declaration on the Rights of Indigenous Peoples, 2007 (UNDRIP) affirms that "indigenous peoples have the right to the conservation and protection of the environment and their lands, territories and resources."<sup>10</sup> The biodiversity is a rich source of raw materials for industries as they provide Genetic resources and other biological resources like microorganisms, plant varieties, animal breeds, genetic materials DNAs, plasmid, vector etc.<sup>11</sup> Genetic resources that are obtained from living organism, in nature and protected by the indigenous people as such are not patentable but inventions based on them are patentable.<sup>12</sup> Thus there has been rampant issue of Biopiracy, where the knowledge on these genetic resources existing within these indigenous communities are exploited to get patent, without giving them any credit or benefit of any sort<sup>13</sup>. Indian products such as the 'turmeric, neem, basmati rice, ashwagandha, pudina, kalmegh, aloe-vera, karela, jamun and brinjal' have all been patented by foreign firms for different lucrative purposes, leaving the locals deprived of what was actually theirs.<sup>14</sup> So many International conventions have recognized the intricate relationship of indigenous people with nature and have urged the member states to protect the bio-diversity. The "Stockholm Conference"<sup>15</sup> and "Brundtland Commission's report"<sup>16</sup> advocated the sustainable and equitable development of natural resources. "Convention on Biological Diversity" recognizes "to conserve and sustainably use biological diversity for the benefit of present and future generations."<sup>17</sup> The Convention further advocates the conservation of bio-diversity and proposes the Benefit Sharing arising for the technology derived out of the harnessing of genetic resources, using the knowledge of the indigenous people.<sup>18</sup> Article 8 (j) further "commits States parties to respect and maintain the knowledge, innovations and practices of indigenous and local communities which are relevant for conservation and sustainable use of biological diversity."<sup>19</sup> The Convention has numerous provisions which gives guideline to the states, to setup enforcement mechanism to meet the objects and goals of the convention.<sup>20</sup> The Nagoya Protocol, 2010 discusses the issues relating to access and Benefit-Sharing of genetic resources. It also urges that the benefit arising out of technological use of plant Genetic resources should be used for conservation of biodiversity.<sup>21</sup> It also gives importance for saving traditional knowledge

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<sup>7</sup> *ibid*

<sup>8</sup> Benji Jones, "Indigenous people are the world's biggest conservationists, but they rarely get credit for it", vox available at <https://www.vox.com/22518592/indigenous-people-protect-nature-icca> (accessed on Dec 17, 2021).

<sup>9</sup> K Divakaran P. & Dharma Rajan P. "Biological Diversity: A Common Heritage", Economic and Political Weekly Vol. 46, No. 14 (APRIL 2-8, 2011), pp. 15-17.

<sup>10</sup> Art 29 of United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

<sup>11</sup> "Genetic Resources", World Intellectual Property Organization, available at <https://www.wipo.int/tk/en/genetic/> (accessed on Dec 18, 2021).

<sup>12</sup> "Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions", WIPO, available at <https://www.wipo.int/tk/en/> (accessed on Dec 18, 2021).

<sup>13</sup> Patrick Agejoh & Namrita Lall, "Sustainable Traditional Knowledge System in Africa", Global Journal of Comparative Law 8(2):162-181.

<sup>14</sup> Madhu V. & et al, "India -Victim of Bio-Piracy", Indo American Journal of Pharmaceutical Research. (2013), available at <http://www.iajpr.com/index.php/en/> (accessed on Dec 16, 2021).

<sup>15</sup> The first International Conference on Human Environment held in Stockholm between 5-16 June, 1972.

<sup>16</sup> The World Commission on Environment and Development, 1983.

<sup>17</sup> Preamble, adopted in 1992, at Rio-de-Janerio on 5th June, 1992 at the United Nations Conference on Environment and Development ("The Rio Earth Summit"), available at, <https://www.cbd.int/>, (accessed on Dec 16, 2021). [hereafter called CBD].

<sup>18</sup> Objectives, Art. 1 of Convention on Biological Diversity, 1992.

<sup>19</sup> Art. 8(j) of Convention of Biological Diversity, 1992.

<sup>20</sup> Read Art. 15, 16, 19, 20, 21 of the Convention on Biological Diversity, 1992.

<sup>21</sup> Art 9 of "The Nagoya Protocol on Access and Benefit-sharing", available at <https://www.cbd.int/abs/text/> (accessed on Dec 19, 2021).

on utilizing genetic resources. The “Cartagena Protocol on Biosafety 2020<sup>22</sup>” which is a supplement to the Convention on Biological Diversity ensures that adequate protection of biological diversity is obtained in the safe transfer, handling and use of modern biological technology in the field of living modified organisms.<sup>23</sup>

In fact, there are other legislations which not specifically says about indigenous people but rather a similar right for farmers, which is also noteworthy. These ‘Farmers Rights’ give the due credit to the local farmers in their effort to preserve the biodiversity and genetic diversity of different plant resource. The origin of the concept of ‘Farmers Rights’ took place in the “FAO International Undertaking on Plant Genetic Resources”<sup>24</sup>. Further “The International Treaty on Plant Genetic Resources for Food and Agriculture”<sup>25</sup> also gives broad guidelines, in lines with the Convention on Biodiversity with regard to management of Crop Genetic management with the participation of the Farmers. The International Union for the Protection of New Varieties of Plants, 1961 (UPOV) is a *sui-generis* system which protects new plant varieties and allows the breeders community to freely use the protected varieties as a plant genetic resource for further breeding<sup>26</sup>. It is notable that all these international system for protection of plant genetic resources or the genetic diversity is based on the concept preserving biodiversity with the help of traditional Knowledge of Indigenous People.

### **Legal Mechanism for Protection of Biodiversity and Rights of Indigenous People in India**

It is noteworthy to mention here that India is a party to many international conventions cited above, resulted in enactment of laws, to ensure, that the rights of these indigenous people and their effort in conservation of biodiversity is not sublimed in the wake of Intellectual Property. Thus, The Biological Diversity Act, 2002 was enacted to “to provide for conservation of Biological Diversity, sustainable use of its components and fair and equitable sharing of benefits arising out of the use of biological resources and knowledge”.<sup>27</sup> The Act regulated regulates the access to, and use of, its biological resources present in the country. For this purpose the Act mandates approvals “for people to access and use biological resources, or knowledge associated thereto, for research purposes, commercial utilization, bio-survey and bio-utilization, for applying intellectual property or for transferring results of research.”<sup>28</sup> In addition to this, The Protection of Plant Varieties and Farmers’ Rights Act, 2001, through its Chapter IV provides for the provision of Benefit Sharing with the Farmer, if the knowledge and the seeds and plant varieties protected and cultured by The Farmer community is used for getting protection under the Act. In addition, Sec 3(j)<sup>29</sup> of the Patent Act also support non-Patenting of the living Organism or plants and its part, which are direct product of Nature.

### **Conclusion**

Indigenous people are a key player in protection of our environment. They have been transferring their knowledge in the form of Traditional knowledge from one generation to another. This gives them to have an equitable right over the knowledge they share. Exploitation of their knowledge to the degeneration of the environment is not only unethical but it is also against their Right. Various national and International Legislations have been constituted which forms the basis of providing protection to these Indigenous Farmers, which in turn protect the bio-diversity. However, the recent Bill introduced in the Parliament for Amendment of The Biological Diversity Act 2000, is criticized for making Bio-Piracy easier, as the AYUSH practitioners are given exemption from taking permission from State Authority before accessing

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<sup>22</sup> The Cartagena Protocol, available at, <https://www.cbd.int/doc/legal/cartagena-protocol-en.pdf> (accessed on Dec 15, 2021).

<sup>23</sup> Aswini A. & F.Mariya, “At The Crossroads: Legal Protection Of ‘Transgenic Varieties’, ‘Farmer’s Rights’ And ‘Plant Genetic Diversity,” *Droit Penale: Indian Law Journal On IPR*, Vol.1(1).

<sup>24</sup> “The FAO International Undertaking on Plant Genetic Resources”, 25th Session of the FAO Conference-Rome 1989, Resolution 5/89, available at, <http://www.fao.org/3/x5588E/x5588e06.htm#Resolution5> (accessed on Dec 19, 2021).

<sup>25</sup> The International Treaty on Plant Genetic Resources for Food and Agriculture, available at, <http://www.fao.org/3/a-i0510e.pdf> (accessed on Dec 19, 2021).

<sup>26</sup> Bonwoo Koo, Carol Nottenburg and Philip G. Pardey, “Plants and Intellectual Property: An International Appraisal”, *Science, New Series*, Vol. 306, No. 5700, pp. 1295-1297, (2004).

<sup>27</sup> Preamble, The Indian Biodiversity Act, 2002.

<sup>28</sup> *Supra* at Fn 4.

<sup>29</sup> “plants and animals in whole or any part thereof other than microorganisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals”

the biological resources. The bill is also said to be simplifying the process of getting Patent over Traditional Knowledge making, exploitation of natural resources and the indigenous rights rampant. Thus the government should weigh the interest of these natures's conservationist before implementing any laws related to environment. In fact, it should not be only the duty of the government, but the private companies should understand their responsibility toward these Bio-diversity conservation. Timely organized awareness program should be made, to make these indigenous people aware of their Right. Only then the protection of Bio-diversity will be possible in real sense with the protection of the rights of Indigenous People.

## **Tourism Business Approach at Toranmal in Nandurbar District**

**Dr. Prashant R. Torawane<sup>1</sup> Prof. Bhushan D. Patil<sup>2</sup>**

Assistant Professor, P.G. Dept. of Geography P.S.G.V.P.M's Arts, Sci. & Comm. College Shahada Dist-  
Nandurbar (M.S.)

**E-mail:**prashant.torawane@gmail.com, bdpatil642@gmail.com

### **Abstract:**

The tourism business is the largest growing industry in overall the world. Especially in tribal areas, this business has a vast scope to develop the economy, increase the standard of living, bring characteristics of the place in the level of the world and give a new direction to countries of the tourism sector. The tourism business is a tertiary economic activity of human beings and also it contributes to generating employment in any country of the world. From the ancient period, humans were traveling for various reasons, the purpose was different according to need and time. Now in the era of computers and industrialism human life become very fast and stressful, it can turn heavy mental stress as well as increase various health problems. Due to the industrial revolution, the nature of trade and tourism is tremendously changing and India is a major part of this . Maharashtra has tremendous potential for the growth in Tourism business. The tourism activities increased due to the availability of basic infrastructure and the variety of tourist schemes offered by various destinations in Maharashtra. (Tourism Department Report, 2003).

So we have studied the approach of tourism business in Toranmal tourist destination. Toranmal is one of the most important hill stations situated on the plateau of Satpuda mountain of North-western Maharashtra.

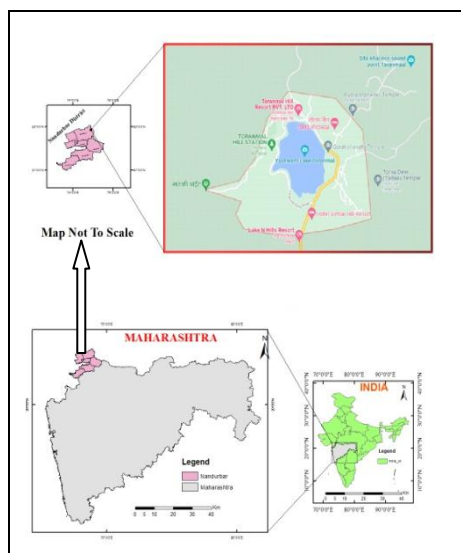
**Keywords:** Tribal tourism, tourism business, tourism possibility, tourism approach.

### **Introduction:**

According to World Tourism Organization (WTO) defines the tourists are “Travelling to and staying in places outside their environment for not more than one sequential year for rest, business and other purposes Tourism also increases the foreign exchange and increase the standard of living (Shrivastava, 2011). There is not much difference between tourism and travel; in general, both terms are used as synonyms (Nanthakumar et al., 2008).India improved its competitiveness in travel and tourism, from occupying the 65<sup>th</sup> position in 2013 and then the 40<sup>th</sup> position in 2017 and then the 34<sup>th</sup> position in 2019, as per the Travel and Tourism Competitiveness Report of 2019 (Travel and Tourism Competitiveness Report 2019 WEF).The tourism business in India, as well as Maharashtra, has remarkable possibilities for growth, given the availability of basic infrastructure and the variety of tourist themes offered by various destinations in Maharashtra. Nowadays tourists' number has increased in religious tourism as well as natural tourism in India, but its strength has somewhere maximum and minimum. An approach to try and find out the new possibilities in tribal hilly tourism regarding 'Toranmal' the tourist place in Nandurbar district, in a current dynamic period of time.

### **Location Of Study Area:**

#### **Map No.01: Location Map of Nandurbar district:**



Details of a physical location of the Dhadgaon tehsil in Nandurbar District in the state of Maharashtra, India. Nandurbar district is situated in the northwestern part of Maharashtra (Map No.01), extends over an area of 5034.23 sq. km. between latitudes 21°00' and 22°03' North and longitudes 73°34' and 74°47' East. Toranmal is located at fourth row of Satpuda mountain ridge in Nandurbar district of Northern Maharashtra State, having 21° 53' N latitude and 74° 53' E longitude, sharing the boundaries of Madhya Pradesh and Gujarat state.

Toranmal is a small plateau region with an approximate area of 41.43 sq. kilometers, Toranmal is the number second air-cooled hill station, a height of 1150 meters from mean sea level. In this area more than 80% population are tribals. The major tribes are Bhil, Pawara, and Naik (PP Sharma et al.2002). Some fruits such as custard apple (Rainy season) strawberry (winter season) and karvand



(Summer season) are famous in the Toranmal region. Toranmal has its own silent cave worshipping feature from the 10<sup>th</sup> century, a favorite place for quite worshipping of god from Navnath Sampraday. Toranmal is one of the most important hill stations situated on the plateau of Satpuda mountain of the northwest part of Maharashtra. ‘Toranmal’ is connected by road to 142 km distance from Dhule and 92 km from Nandurbar. The nearest airport is Surat about 260 km away from Toranmal and the nearest railway station is Nandurbar.

### **Motivation And Objectives Of The Paper:**

#### **The present paper study objective is as follows:**

The present study objective to identify various determinants of the tourism potential of the Toranmal.

#### **Study Methods And Material:**

Current research paper based upon primary as well as a secondary type of data. The information is collected from the local people from the discussion and personal interviews. The secondary data was conducted from the tourist who visited the Toranmal tourist place. The methodology is a significant section of scrutiny. Output or result of scrutiny highly depends on the Methodology that is used for data processing and scrutiny purpose. The following methodology will be applied.

**Process 1:** Primary data will be collected directly visiting the place observation and discussion from local people and tourists present at the time. Secondary data was collected from Published literature, reports from various libraries, Institutes, and government departments, etc. The relevant literature also reference books, bulletins, reviews will also be, etc. obtained through the Internet.

**Process 2:** Various spots were identified which have the crucial tourism potential of Toranmal. Like tourist sight-seen spots.

**Process 3:** With help of collected, analyzed, and processed data, the changing dynamic approach of tourism.

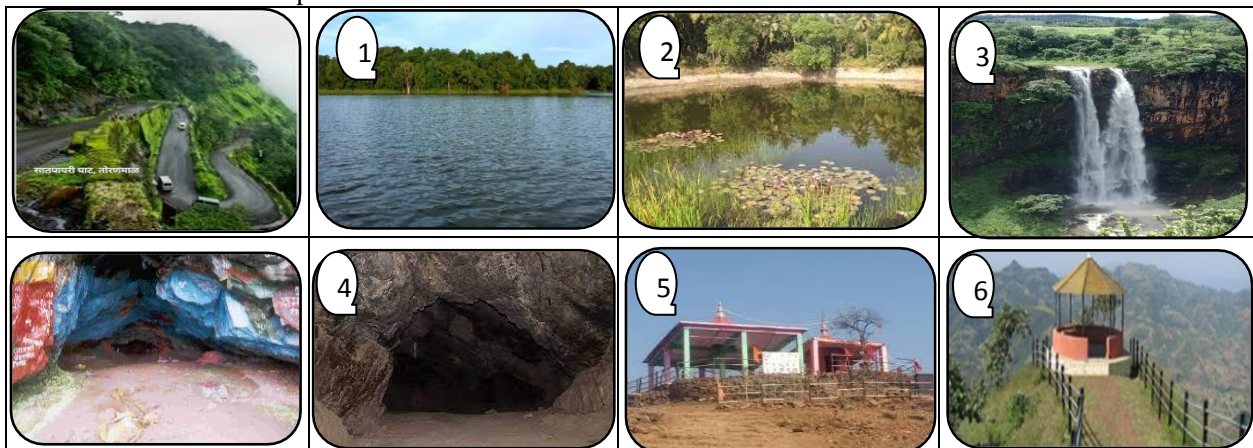
#### **Discussion:**

The Toranmal tourist center is a resembling a large saucer, this hill station is fixed between two hills and one of the popular hill stations in Maharashtra. Toranmal is enriched with a variety of plant and animal life. Apart from the dense forest surrounding the hill station. Toranmal is also famous for its unique and lesser-known culture and tradition. Now a day’s Toranmal has developing potential growth in tourism and the economy. the present study, the importance is given for identify various aspects of tourism potential of the place and overview various facilities of Toranmal.

It has been observed that good accessibility, health facilities, road, and infrastructure facilities, other entertainment facilities, etc. attract a large number of tourists towards Toranmal.

#### **The site seen point in Toranmal:**

The road of Saatpayri ghat, Yashwant lake, Lotus lake, Sita Khai, Nagarjun temple, Aai Machhindranath cave, Tornadevi temple, Khadki point, Aawashabari point, etc. the famous tourist place situated in the different parts at Toranmal hill station.





**1) Yashwant Lake:**Yashwant lake is good looking natural lake having an area of about 1.59 sq. km. The lake name is derived from the former Chief Minister of Maharashtra Shri. Yashwantrao Chavan. Boating and fishing activities are done here.

**2) Lotus Lake:**An attractive site as per name this lake having good looking incident of lotus flowers. A stream originating from this lake flows into Sita Khai creating a wonderful geographical phenomenon.

**3) Sita Khai:** A gorgeous valley named Sita Khai is nearby located 3 km away from Toranmal, during the rainy season beautiful waterfall can be seen in this tourist point. The gorge forming an enthralling waterfall flows in rainy season.

**4) Machhindranth Cave:**Machhindranth Cave- A Naturally formed cave named Machhindranth cave has been used for mediation during the Nath Sampraday era from the 10th century.

**5) Torna Devi Temple:**According to the local inhabitants the Torna Devi Temple is believed to be as old as 600 years. The idol of the goddess is carved out of black stone representing Torna Devi.

**6) Khadki Point:** Khadki Point is a place that offers an interesting view and is also a popularly known tracking region in Toranmal. A must-visit place during the monsoon season as it offers many panoramic views of lush vegetation in the surroundings.

**Special Yearly Event:** In every year during the Mahashivratri, there has a yatra festival organized.

**Nearest Tourist Place:** Tribal goddess Devmogara Mata Temple, Devmogara has situated about 133 km away from Toranmal, Unapdev ( hot water spring) situated near about 48 km away from Toranmal.

**Accessibility:** Local district road connected Toranmal to taluka as well as district place, Shahada is 50 km away from Toranmal, and Nandurbar district place 81 km away from Toranmal.

**Educational Facility:** The government of Maharashtra has run an Ashramshala for academics from 1st to 12<sup>th</sup> standard, and Central Government also opened the 'Ekalavya Model Recidencial School' in English medium for the empowerment of tribal students.

**Health Facility:** Rural Hospital is operated by the health department of the State Government of Maharashtra, which plays a crucial role in health problems even in the corona pandemic RH has been successful to control coronavirus. **Tourist Infrastructure:** Boating facility available for boating, hotels of MTDC available for staying as well as local people also provide short term paying residential facility. **Other Local Infrastructure:** Services such as Telephone, Internet, Post Office, Civic Amenities, Eating Joints Medical, Travel Agents, Local Taxi Operator, present here.

#### **Conclusion and way forward:**

Toranmal is second aircoolhill station in Maharashtra, despite the topography. it is growing day by day, many investors are wishing to open tourism business, from the last two decades. Toranmal having remarkable changes regarding tourist purposes and it is still now growing and in future, it will become on the world level tourism.

#### **Recommendations:**

1. Rope way facility can be created here.
2. Helipad for Helicopters who wish to come here by air rout also will be made.
3. Amusement park for tourists can be established for joyful entertainment.
4. Dormitory for commuters can be constructed here.
5. For Astronomical laboratory Toranmal is a good location it should be build here.
6. Tribal museum for local identification would have to establish here.

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## **Demographic Dividend: Golden Opportunity To Make India A Developed Country**

**Dr. G. Mahalakshmi<sup>1</sup>, Dr. C. Ramesh<sup>2</sup>**

<sup>1</sup>Associate Professor & Head, Department of Economics, Rani Anna Govt. College for Women,  
Tirunelveli-8, Tamil Nadu.

Associate Professor & Head, Research Department of Economics, Aditanar College of Arts and Science,  
Tiruchendur, Tamil Nadu.

Email Id - [gmahaatchu@gmail.com](mailto:gmahaatchu@gmail.com)

### **Abstract**

The demographic dividend is considered as the economic growth potential as a large section of people are in the working-age group of 15 years to 59 years as compared to the non-working age population of below 14 years and above 60 years. The demographic dividend reaps the most benefit through a rising new category of buyers, more women workforce, better productivity, and the possibility of more public spending on productive activities. India has one of the youngest populations in the world with a mean age of 29. India's most valuable asset is the youngest population. Falling birth rate and lower fertility rate lead to an increase in the size of the working-age population in India. As the demographic dividend window is available at different times in different states, it is longer in India than any in other country in the world. This presents a golden opportunity for India to become a developed nation in the near future. Necessary efforts must be vital to harness the full potential of demographic dividend and to build a self-reliant India. This is the perfect time to make use of this unique opportunity to upgrade our nation as a developed country.

**Key Words:** Demographic dividend, Age structure transition, Working age-group, Birth Rate, Fertility Rate.

### **Introduction**

The demographic dividend is considered as the economic growth potential as a large section of people are in the working-age group of 15 years to 59 years as compared to the non-working age population of below 14 years and above 60 years. The demographic dividend is also known as demographic bonus or demographic window as the large youth population offers both a workforce as well as a market. These young people are driving a culture of invention, innovation, entrepreneurship, and diversity and could play a vital role to expedite economic growth.

United Nations Population Fund defines demographic dividend as economic growth resulting from a shift in a population's age structure, mainly when the working-age population is larger than the number of dependents. "The demographic dividend is defined as a rise in the rate of economic growth due to a rising share of working-age people in a population. This phenomenon occurs with a falling birth rate and the consequent shift in the age structure of the population towards the adult working ages" (K.S.James, 2008). India is the second-most populous country in the world next to China and home to a fifth of the world's youth population with an average age of 29. India's most valuable asset is the youngest population. India's age dependency ratio, the ratio of dependents to the working-age population, is expected to only start rising in 2040, as per UN estimates. The age structure of the population presents a golden opportunity to India and this has been called India's demographic dividend. India's demographic dividend in terms of the youth population is a key factor that is expected to propel economic growth at a higher rate. Age composition by residence and broad age groups 0-14, 15-59, and 60+ for the year 2018 at the national level is shown in the following table.

**Population Composition (in %), India, 2018**

Age Groups (years)	Total	Gender		Residence	
		Male	Female	Rural	Urban
0 – 14	25.9	26.4	25.3	27.5	22.6
15 – 59	66.0	65.7	66.3	64.5	69.1
60 & above	08.1	07.9	08.4	08.0	08.3
Total	100	100	100	100	100

Source: SRS Statistical Report

66 percent of the population is aged between 15 and 59 in India in the year 2018, which was 62.5 percent in 2011. It is observed that male-female differences in the age distribution of the population are negligible for all the age groups. However, the proportion of children in the age group 0-14 is higher for

males than females by one percentage. As for as residence is concerned, in the age-group, 0-14, rural population is about five percent more than urban population, whereas in the working age-group 15-59, urban population are more than rural population by 4.6 percent. Rural-urban differences in the 60+ age group are meagre.

**Percentage of population in the working age group (15-59 years), India and States**

S.No.	States	2011			2018			Growth Rate		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Andhra Pradesh	66.4	66.8	66.6	70.4	71.1	70.8	6.02	6.44	6.31
2	Assam	62.5	63.0	62.8	65.2	66.6	65.9	4.32	5.71	4.94
3	Bihar	55.4	56.2	55.8	59.0	60.2	59.9	6.50	7.12	7.35
4	Gujarat	63.9	64.0	63.9	66.8	66.6	66.7	4.54	4.06	4.38
5	Haryana	62.8	64.4	63.6	66.1	67.4	66.7	5.25	4.66	4.87
6	Karnataka	65.5	66.3	65.9	68.7	68.8	68.7	4.89	3.77	4.25
7	Kerala	63.4	65.0	64.3	65.0	66.5	65.8	2.52	2.31	2.33
8	Madhya Pradesh	61.0	60.7	60.8	63.4	63.1	63.3	3.93	3.95	4.11
9	Maharashtra	63.2	64.0	63.6	66.8	67.3	67.0	5.70	5.16	5.35
10	Odisha	62.5	63.5	63.0	66.0	66.8	66.4	5.60	5.20	5.40
11	Punjab	64.3	65.6	64.9	69.0	69.7	69.3	7.31	6.25	6.78
12	Rajasthan	60.2	60.3	60.2	63.7	64.0	63.8	5.81	6.14	5.98
13	Tamil Nadu	65.7	66.4	66.1	68.2	69.0	68.6	3.81	3.92	3.78
14	Uttar Pradesh	59.3	59.7	59.5	64.2	64.5	64.4	8.26	8.04	8.24
15	West Bengal	66.3	66.2	66.3	68.7	68.9	68.8	3.62	4.08	3.77
	India	62.2	62.8	62.5	65.7	66.3	66.0	5.63	5.57	5.60

Source: SRS Statistical Report

The percentage of population in the working-age group 15-59 years is high in Andhra Pradesh (70.8 %) which is followed by Punjab, West Bengal, Karnataka, and Tamil Nadu. Among the major 15 states, the state Bihar stands at last place with 59.9 %. It is encouraging to note that percentage of females is more than that of males in the working-age population in many states and in India. The age structure transition ensures that India has a positive impact on economic growth in many ways. A lower dependency ratio results in a higher generation of surplus for investment which facilitates a higher rate of economic growth. The government could divert the resources to more productive activities from spending on health, education, and welfare schemes for dependent people. More women can enter into the labour market which leads to a spurt to growth. Studies reveal that the working-age population in India is increasing because of the rapidly declining birth rate and fertility rate.

**Birth Rate and Total Fertility Rate - India and States**

S.No.	States	Birth Rate		Total Fertility Rate	
		2008	2018	2008	2018
1	Andhra Pradesh	18.4	16	1.8	1.6
2	Assam	23.9	21.1	2.6	2.2
3	Bihar	28.9	26.2	3.9	3.2
4	Gujarat	22.6	19.7	2.5	2.1
5	Haryana	23.0	20.3	2.5	2.2
6	Karnataka	19.8	17.2	2.0	1.7
7	Kerala	14.6	13.9	1.7	1.7
8	Madhya Pradesh	28.0	24.6	3.3	2.7
9	Maharashtra	17.9	15.6	2.0	1.7
10	Odisha	21.4	18.2	2.4	1.9
11	Punjab	17.3	14.8	1.9	1.6
12	Rajasthan	27.5	24.0	3.3	2.5
13	Tamil Nadu	16.0	14.7	1.7	1.6
14	Uttar Pradesh	29.1	25.6	3.8	2.9
15	West Bengal	17.5	15.0	1.9	1.5
	India	22.8	20.0	2.6	2.2

Source: Economic Survey, SRS Statistical Report

A key driver of this age structure transition has been the steady decline in birth rate and total fertility rate. The birth rate has declined from 22.8 in 2008 to 20 in 2018. As far as States are concerned, the pioneer was Kerala where the birth rate was 14.6 in 2008. Among the major states, the birth rate continues to be high in Bihar, Uttar Pradesh, Madhya Pradesh, and Rajasthan. According to SRS Statistical Report, in India, the total fertility rate was 2.6 in the year 2008 and it has declined to 2.2 in the year 2018. When we look at the states, there is wide interstate variation, with states like Bihar, Uttar Pradesh, and Madhya Pradesh having higher fertility rates, whereas states like West Bengal, Tamil Nadu, and Punjab have a lower rate. It is clear from the above that there are wide variations in the achievement of birth and fertility transition in different States which will enable India to enjoy the fruits of demographic dividend for a few more decades. A study on India's demographic dividend by UNFPA reported that the window of demographic dividend opportunity in India is accessible for five decades between 2005-06 and 2055-56. As there are wide inter-state variations in the degrees and timings of fertility decline, the demographic dividend window is available at different times in different states. Due to this, the demographic dividend is longer in India than in any other country in the world.

### **Conclusion**

India's age structure of the population is a golden opportunity for it to augment its economic growth and enhance the standard of living of its population. However, only a healthy and educated youth population could be benefited from this age structure transition. Therefore, to reap the benefits of the demographic dividend, India has to spend more on health, education, research, and skill development. Furthermore, India needs to pay special attention to labour-intensive sectors which could absorb the increasing labour force. Then only demographic dividend may not turn into a demographic burden. As the demographic dividend window is available at different times in different states, the provision of necessary policy support by both central and state governments is vital to harness the full potential of demographic dividend and to build a self-reliant India. This is the perfect time to make use of this unique opportunity to upgrade our nation as a developed country.

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## **Green Banking Practices Of SBI: A Drive Towards Environment Sustainability**

**Dr.G.Kamalaselvi**

Assistant Professor And Head, Department Of Commerce, GovindammalAditanar College For Women,  
Tiruchendur

E-mail Id :kamalsaravan03@gmail.com

### **Abstract**

The most serious problem the human beings facing during the present days is man-made environmental degradation. Hence, there have been continuous endeavours across the globe to measure and mitigate this problem caused by human activities. Banks are responsible corporate adopting tremendous steps throughout the world to mitigate this problem. The term Green Banking is used by the commercial banks to make the environment green. Banks are developing their strategies to bring out and to promote overall sustainable economic development. Green Banking involve banks to motivate eco-friendly investments and provides loans and advances to the industries who are trying to turn green in order to restore the natural environment. Bank is one of the financing agencies started offering green products and adopting green banking practices to their customers for environment sustainability. Since the State Bank of India is the first commercial bank of adopting green banking practices, it is very imperative to study the initiatives taken by the SBI for promoting green banking and for maintaining environmental sustainability and also the customers' perception towards the green banking practices followed by SBI on the title "Green Banking practices of SBI: A Drive towards environment sustainability".

**Key Words:** Green Banking, Environment Sustainability, Eco-friendly, Financing agent, Green products.

### **Introduction**

The environmental and climate change are the most complicated issues the world is facing today. However, the most serious problem the human beings facing during the present days is man-made environmental degradation. Hence, there have been continuous endeavours across the globe to measure and mitigate this problem caused by human activities. Banks are responsible corporate adopting tremendous steps throughout the world to mitigate this problem. Green Banking is a new phenomenon in the financial world. Commercial Banks are playing a vital role and acting as a financing agent in promoting economic and developmental activities of the country. The term Green Banking is used by the commercial banks to make the environment green. Banks are developing their strategies to bring out and to promote overall sustainable economic development. Green Banking involve banks to motivate eco-friendly investments and provides loans and advances to the industries who are trying to turn green in order to restore the natural environment. Banks are adopting a variety of green banking practices so that they can make little contribution towards the environment green and to minimize the green house effects. This project discusses about customers perspectives on the adoption and usage of various green banking practices introduced by the SBI in Thoothukudi District.

### **Need Of The Study**

In the contemporary era, the disturbance in ecological balance has affected and infected the human beings, animals and the surrounding environment adversely. Environment protection is a recent issue all over the world and so it has become a part of strategy in most of the corporate in the developed countries. Bank is one of the financing agencies started offering green products and adopting green banking practices to their customers for environment sustainability. Innovative products and the use of technologies helps banks and customers to reduce the branch banking and using online banking with utmost care there by aid in environment protection. A lot of guidelines are issued by RBI to make the banks green to protect environment. Since the State Bank of India is the first commercial bank of adopting green banking practices, it is very imperative to study the initiatives taken by the SBI for promoting green banking and for maintaining environmental sustainability and also the customers' perception towards the green banking practices followed by SBI on the title "Green Banking practices of SBI: A Drive towards environment sustainability".

### **Objectives Of The Study**

The objectives of the study are,

1. To findout the social-economic profile of the sample respondents.
2. To assess the most interested green bank products perceived by the customers in branches of State Bank of India in Thoothukudi District.

3. To highlight the major benefits derived from the adoption of green banking practices in branches of State Bank of India.
4. To assess the adoption level of green banking practices by customers in branches of State Bank of India irrespective of age group.
5. To analyze the relationship between demographic profile of the sample respondents such as gender, income, occupation and educational qualification and their level of perception towards the green banking practices in branches of State Bank of India.

#### **Hypothesis To Be Tested**

There is no significant association between level of perception of customers towards the green banking practices adopted in branches of State Bank of India with respect to demographic profile of the sample respondents like gender, age, income, occupation and educational qualification.

#### **Methodology**

This study is compiled with the help of both primary and secondary data. The primary data was collected from the sample respondents with the help of questionnaire. The secondary data has been collected from published records, journals, magazines, textbooks and websites etc. The questionnaire was developed with the help of the questions developed by Dr.Gobinda Deka.

#### **Sampling Design**

State Bank of India is the largest commercial bank in India. In Thoothukudi District, 18 SBI branches are available and those branches are providing services to people. Seven customers from each branch are selected to gather information about the green banking practices of SBI. The researcher went to the branches of SBI and questionnaire was given to the customers and collected the information. Among 128 questionnaire, eight questionnaire were found incomplete. Hence, the data gathered from 120 sample respondents was used to analyse the green banking practices of SBI. Hence 120 is the sample size.

The customers are selected only by convenient sampling method.

#### **Tools Of Analysis**

The data collected through questionnaire were analysed by using tables, percentages, Garrett Ranking Technique, and Chi-Square Test. Garrett Ranking Technique is applied to find out the most interested green bank product perceived by customers of State Bank of India and also to find out the major benefit derived from the adoption of green banking practices in branches of State Bank of India. Chi Square Test is applied to find out the association between the demographic profile of the sample respondents like gender, age, income, occupation and educational qualification and the level of perception of customers towards the green banking practices adopted in branches of State Bank of India.

#### **Analysis And Interpretation Of Data**

The collected data are analysed and the major findings are

1. 60 percent of the sample respondents were female.
2. 50 percent of the sample respondents belonged to the age group of 20 – 30 years.
3. 53 percent of the sample respondents were married.
4. 27 percent of the sample respondents have completed post graduation.
5. 32 percent of the sample respondents are professionals.
6. 32 percent of the sample respondents' earnings were below Rs.20,000.
7. 57 percent of the sample respondents had savings bank account.
8. 42 percent of the sample respondents borrowed personal loan.
9. 40 percent of the sample respondents had period of relationship with SBI from 1 – 5 years.
10. 87 percent of the sample respondents are aware of the green banking facility "Environmental friendly and ethical policies".
11. 57 percent of the respondents are not aware of the green banking facility "Energy saving efforts or environmental".
12. 58 percent of the sample respondents opined that environmental protection, e-banking and use of renewable resources are all green banking practices.
13. The most interested green bank product preferred by sample respondents is "Green mortgages" as revealed by Garrett Ranking Technique.
14. Major number of sample respondents (54.90) perceived "Less use of fuel" as a major environmental benefit as revealed by Garrett Ranking Technique.
15. Major number of sample respondents (60.43) perceived "Time effective" as a major benefit to the customers as revealed by Garrett Ranking Technique.
16. Major number of sample respondents (58.9) perceived "Energy effective" was a major benefit as revealed by the result of Garrett Ranking Technique.

17. The result of Chi-square test proved that “There is no significant relationship between gender, age, income of the sample respondents and their level of perception on green banking practices of SBI. Educational qualification and occupation of the sample respondents are the influencing factors in determining the level of perception on green banking practices of SBI”.

### **Suggestions**

From the analysis of the present study, the following suggestions have emerged.

1. It can be recommended that the SBI should conduct training programmes for the employees to make the customers aware about the benefits of adopting green banking practices of the bank,
2. There should be sufficient publication both from the bankers and also from the government to impart knowledge about the green initiatives taken by the SBI to their customers.
3. Since most of the commonly adopted alternative banking delivery channel used by customers of SBI is ATM, the SBI can display some congratulating statements about the paper savvy, energy, time and cost saved on the screens of ATM to make them to use green practices continuously.
4. Central as well as State Governments, will have to play a vital role to make the people understand the internal meaning of the popular phrase “little drops of water makes a mighty ocean” related with green practices of banks. The government should encourage and support the banks by giving guarantee for the loan sanctioned for green projects.
5. Every action may have two sides; one is bright and other is dark. Fear of security in using online banking and depends completely on technology is a very big issue for the customers of SBI. Therefore customers should be more conscious about the various issues while utilizing these green banking practices. Banks too creates awareness side by side at the time of providing technology based services to their customers.
6. There are unethical practices of hacking of accounts of customers come to know in the news some items. The banks should take utmost care in preventing such unethical practices in their banks.

### **Conclusion**

Green Banking adopted by SBI plays an important and inevitable tool in the present digitalised era to improve the environment and for sustainable development. SBI is facing so many challenges in adopting green banking practices and at the same time getting opportunities to act as responsible corporate citizens in the country. Adopting green banking practices enables the bank to build remarkable image in the society which leads to run profitable banking business. From the present study, it was concluded that the State Bank of India in Thoothukudi District must literate their customers about green banking and should adopt more strategies to save earth and builds bank image in the present era. SBI should give more focus on encouraging customers to avail and use green banking services in future too. This study concludes with the statement “Green banking practices are not only feasible they are now becoming essential” and is a drive towards environment sustainability.

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## **A Study On Training And Development Practices In Banking Employees In Kanyakumari District**

**Mrs. Sindhu .Y<sup>1</sup> Dr. Nadarajan<sup>2</sup>**

<sup>1</sup>Research Scholar,Reg.No:19223231012003 Department of commerce St. Jude's, College, Thoothoor,  
Affiliated to Manomaniam Sundaranar University, Tirunelveli

<sup>2</sup>Former Head and Associate Professor, Department of commerce St. Jude's College, Thoothoor-629176  
Affiliated to Manomaniam Sundaranar University, Tirunelveli

### **Abstract**

Training is an educational process to gain more knowledge and skill to enhance the performance of the employee managing tools without mistake and wastage. Training and development are the major functions of human resource management that can contribute directly to the organisational performance and efficiency. The study focuses on human resource development through employee training and development practice in banking employees.

**Key words:** Training and Development, Bank

### **Introduction**

Training is a short term educational process and utilizing systematic and organisational producers by which employees gain new knowledge and skill for handling the tools without mistake and wastage. The training programmes are conducted to enhance and increase the performance level of an employee, to develop human resource to meet the current as well as future needs of the organization. Training and development facilitate the person make to performance the activities effectively. Now a day the government make many policies in banking sectors system. For.(e.g) cash less transaction, GST, E-transaction, loan etc.

### **Statement of the problem**

After globalization and liberalization, the competition in banking service is increasing at a faster rate. The patients know about various information related to the service offered by banks and also the service quality of banks. Even now, the services and the service quality of banks are not to the level of the international standard. Even after the introduction of lot of automation at banks, the banks are struggling to manage their human resource. It is highly because of their mind-set that there is no need for continuous training and development at their banks. Most of the banks think the cost to be incurred on the training programme but they are not correctly estimating the future income from these programme. Because of the mind-set, the banks are gradually losing their customers base even though they are ready to offer service at lowest price. It affects the productivity and profitability in banks at one side whereas it affects their employee' confidence in working at specific banks.

### **Scope of the study**

The research is undertaken to study the various dimensions of training methods of employees in banking industry in kanyakumari district. The study including only the training methods among employee of bank. It does not consider other factors.

### **Research Methodology**

#### **Objectives of the study**

1. To measure the employee' views on the implementation of the various training programme at banks.
2. To assess the level of Training methods of the bank employee in Kanyakumari District

#### **Hypothesis of the study**

1. There is no significant difference towards training and development with respect to type of bank.
2. There is no significant difference towards training and development with respect to gender.

### **Sampling Technique and Sample Size**

The study is based on the Primary data information has been collected from 120 respondents through questionnaire from kanyakumari District. By adopting random sampling technique, the researcher personally met the employee of bank in Kanyakumari.

### **Tools for Data Analysis**

The statistical tools ANOVA, t – test are the statistical tools used for analysis data

**Table: 1 Reliability statistics**

Variable	Cronbach's Alpha value
Training and development	0.892

Reliability coefficient Alpha value for Training and development shows a reliability and consistency of the scale used in this study are well explaining the overall needed to measure and the results will be more reliable consistent and replicable.

## 5. Result and Discussion

**Table 5.1: One way ANOVA analysis shows mean difference towards Training and development based on Type of Bank**

Variable	Type of Bank	N	Mean	SD	F	p
Training and development	Government Bank	58	3.6317	0.52726	29.893	0.000
	Public Bank	20	3.2341	0.64581		
	Private Bank	42	4.4201	0.54622		
	<b>Total</b>	<b>120</b>	<b>3.1869</b>	<b>0.65947</b>		

Source: Primary data

Training and development obtained F value is 29.893 with a corresponding significant level  $p = 0.000$ . Hence, it can be concluded that the opinion on the training and development differ significantly among the different type of Bank. It is clearly found from the F test shows that there is significant difference towards Training and development with respect to type of Bank. Private Bank employee are highly rated towards training and development when compared respective categories.

**Table 5.2: Independent sample t test shows mean difference towards Training and Development based on gender**

Variable	Gender	N	Mean	SD	t	p
Training and Development	Male	64	3.6743	0.44248	-3.863	0.031
	Female	56	4.0857	0.62833		

Source: Primary data

Training and Development obtained t value is -3.863 with a corresponding significant level  $p = 0.031$ . Hence, it can be concluded that the opinion on the Training and Development differ significantly among the different gender. It is clearly found from the t test shows that there is significant difference towards training and development with respect to gender. Female employee is highly rated towards training and development when compared male employee.

## Conclusion

This research entitled "A STUDY ON TRAINING AND DEVELOPMENT PRACTICES IN BANKING EMPLOYEES IN KANIYAKUMARI DISTRICT" has so far discussed analysis and interpretation. Descriptive research design was adopted in this study. This study has simple random sampling technique to collect data from bank employee in kaniyakumari district. The sample size consisted of 120 employees in this study, training and development was dependent variables. Further these variables were taken to statistical analysis with respect to demographic profiles of the Bank employee. Descriptive statistics, independent sample t test, one way ANOVA analysis were used for data analysis. The analysis found that there is significant difference towards training and development with respect to demographic profile of the bank employee in kaniyakumari District.

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## **Fungi in Peanut and Seeds quality deterioration: a review**

**Rambha Kumari**

Research Scholar Botany Faculty of Science B.N.M.U. Madhepura Bihar

### **Abstract**

This review article will try to give the relationship between seed borne Pathogens and seed quality deterioration and relative biochemical changes occur in seeds and based on the secondary source of information. Intensive crop improvement programme has resulted in the development of large number of high yielding varieties on different crops and more so in Peanut, Though, the initial seed quality and storage environment are important to prolong the shelf life or seeds, the invasion of fungal pathogen also play a major role in decreasing the viability of a seed lot in peanut.

### **Introduction**

It is necessary to study the seed quality changes that occur during storage or seeds as a result of changes in biochemical constituents of seeds due to fungal infection. Grain production of a country depends on good quality seeds. Quality seeds play a very important role for the production of healthy crop. Healthy and Pathogen free seed are the basic requirements for disease free crop. Seeds are stored for a considerable period of time in order to catch the correct season.

It is reported that 25% of the world's crops are affected by fungal growth. In India around 82% of peanut produced is used for edible oil production, 12% as seed and 5% as feed. The seeds are found to be responsible for disease transmission because they carry a number of Pathogens which are associated either in the field or in the post harvest storage condition. Fungi growing on stored seeds, can reduce the germination rate along with loss in the quantum of carbohydrate, Protein and total oil content, includes increased moisture content, free fatty acid content and enhancing other biochemical changes. The tropical climate with high temperature and high relative humidity along with unscientific storage conditions adversely affect the preservation of cereal grains, oilseeds etc, which lead to the total loss of seed quality. Intensive crop improvement programme has resulted in the development of large number of highly yielding varieties in different crops and more so in peanut.

### **Seed borne mycoflora**

Peanut is usually harvested and stored dry in different storage condition. Being an oil seed, it loses its viability within a short period due to the irreversible phenomena of ageing. Under such conditions seeds were also susceptible to fungi, insects and other micro organisms. A gradual decrease in field fungi to slower by an increase in storage fungi was observed in peanut by Bhattacharya and Raha.

### **Biochemical Changes of seeds during storage**

Change in chemical constituents of cell has been related to viability of seeds. It was reported that viability of seeds, by the Verma reported a decrease in carbohydrates and protein content in deteriorated seeds.

### **Biochemical changes due to storage fungi**

By the Ramamoorthy reported that there was a progressive decrease in germination percentage, oil and protein content and an increase in free fatty acids in the stored kernels than in the pods because of the invasion of storage fungi to kernels.

### **Seeds quality changes during storage**

By the Rao (2006) reported a decrease in seed quality in prolonged seed storage of musk melon, onion and pea respectively and Shakuhtal said that germination of Sunflower seeds declined progressively with increase in the period of storage.

### **Seed quality changes due to storage fungi**

Increasing the storage period of peanut seeds up to nine months decreases the viability, while pathogen activity, moisture and sugar content in seeds increase gradually. And seed treatments for protecting seeds from storage fungi. Use of fungicide as seed treatment is the most widely followed management practice in all crops. Fungicides form a zone of protection over the seed surface that reduces seed decay and seedling blight, resulting in healthy and vigorous seedlings.

### **Conclusion**

By understanding the need of healthy and pathogen free seeds as the basic requirement for disease free crop production, the stored commodities especially oil seeds should be taken with much care. Hence by knowing fungal pathogens that occur in storage and the related changes occur in seed quality as result of deterioration in biochemical constituent of the seeds.

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## **Rights Of The Scheduled Tribes And Other Traditinal Forest Dwellers In India: Issues And Challenges**

**Dr.P.R.L.Rajavenkatesan**

Associate Professor & HoD, VIT School of Law, VIT, Chennai.

### **Abstract**

The Forest Legislations had been enacted during British colonial days, reflected the exploitative intentions of colonial and it did not intent for environmental and ecological interests. In initial days, the forest legislations were framed to regulate dealing in forest produce and augment the public exchequer by levy of duties on timber. There was a large-scale deforestation resulting in ecological imbalance and environmental degradation. To protect the forest as well as the scheduled tribes and other traditional forest dwellers, The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 have been enacted but there are issues for the protection of the Scheduled Tribes and Other traditional forest dwellers. In this paper, protection of forest, Rights of the Scheduled Tribes and Other Traditional Forest Dwellers are discussed in detail.

**Key Words:** Constitution of India, Forest, Natural Resources, Scheduled Tribes and Wildlife.

### **Introduction**

The term environment is derived from French word “environner” which means to encircle or to surround.<sup>30</sup> Forest has covered the majority part of it. Forest are the important natural resources and recognized as protectors of the wildlife of the country. Forest help in maintaining the ecological balance<sup>31</sup>. The Forests have played major role to generate the revenue for the State by way of major supply of raw materials to industrial sector<sup>32</sup>. There was no proper definition for forest. Rather, Food and Agricultural Organization defined the term forest as follows: “All lands bearing vegetative association demarcated by trees of any size, exploited or not, capable of producing wood or other food products<sup>33</sup>”. Every legislation is influenced by the prevailing social and political forces<sup>34</sup>. There is legislative history for the regulation and protection of forest in India and the following acts have been enacted for the protection of same; The Forest Act, 1865, The Forest Act, 1878, The Indian Forest Act, 1927, The Forest Conservation Act, 1980 and The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006<sup>35</sup>. The Supreme Court of India also had given some important input regarding protection of forest<sup>36</sup>. It has been stated in subsequent occasion that while framing the forest law, the law makers will have to consider three factors such as justice to the people, justice to nature and justice to future generations. The Constitution of India have ensured the protection of environment both by the State and also by the people<sup>37</sup> and the relevant cases are available for the same; *M.C.Mehta v. Union of India*<sup>38</sup> The petitioner sought to enforce the fundamental right to a healthy and clean environment as part of the right to life under Art 21 of the Constitution of India. The State is also obliged to direct its policy towards the control of material resources of the community to subserve the common good. The Directive Principle obligate the

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<sup>32</sup>Mahdhav Gadgil and V.D. Vartak, Sacred Groves in Maharashtra: An Inventory, in S.K. Jain (ed), Glimpses of Indian Ethnobotany, Oxford University Press, Bombay, 1981.

<sup>33</sup>Rangarajan M., Fencing the Forests, 1st edn., Oxford University Press (1996) New Delhi, p. 29.

<sup>34</sup>P. Leelakrishnan, Environmental Law in India, 3<sup>rd</sup> edn (Lexis Nexis, Haryana, 2015), p.40.

<sup>35</sup> Available at <https://thelawbrigade.com/wp-content/uploads/2019/05/Ashutosh-Nilakhi-1.pdf> (accessed on 02.12.2021)

<sup>36</sup>*Rural Litigation and Entitlement Kendra v. State of Uttar Pradesh* AIR 1988 SC 2187; *TN Godavarman Tirumulpad v. Union of India* AIR 1997 SC 1228

<sup>37</sup>Art.48 A of the Constitution of India says about protection and improvement of environment and safeguarding the forest and wildlife and Art.51 A (g) of the Constitution of India- to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures;

<sup>38</sup>*M.C. Mehta v/s Union of India* AIR 1988, SC 1037

state to impose the quality of human life by controlling the exploitation of natural resources and protecting the environment<sup>39</sup>.

### **Protection of Rights of the Scheduled Tribes and Other Traditional Forest Dwellers in India**

In the yesteryears, only power full persons both the economically and politically occupied their hold over tribal lands in India. In some cases, poor agricultural family also gave their lands in the forest area<sup>40</sup>. The tribal people were forced for enslavement and extinction due to changing circumstance and it was necessary to protect the tribal people from any kind of extinction. The Supreme Court of India said that the tribal people have every right to live in the forest and any kind of forest diversion ought to be done with the prior informed consent of the tribal people. There was an eviction order in the year of 2002 and more than 170,000 families and 160,000 hectares effected by the order of the Government in the year May,2002. It resulted in introduction of the Scheduled Tribes (Recognition of Forest Rights) Bill, 2005 and 13<sup>th</sup> December in 2005. The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 came into force on December 31,2007. It is pertinent to note here about rights of the forest dwellers such as (i) To claim forest land held before December 13,2005;(ii) Community has every right over minor forest produce, grazing land and water resources;(iii) Government has every right to divert forest land for 13 kinds of developmental activities building of hospital, schools, anganwadis and roads;(iv) Community rights to protect or manage any forest or community forest resource that has been traditionally protected<sup>41</sup>. There are cases for the protection of forest from any kind of exploitation<sup>42</sup>.

The rights of the Scheduled Tribes and other forest dwellers over forest products and forest land have assumed much importance due to faster deforestation. When we look into the historical background of the category of forest land, it was classified as unclassified forest in Government records and ownership of the land also was unclear and it was very clear from the fact that most of the forest was treated as home to a large number of tribals. It is also important to note here that the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 was reviewed by the Supreme Court of India and other related issues regarding forest rights of Scheduled Tribes etc.,<sup>43</sup> The Scheduled Tribes (Recognition of Forest Rights) Act, 2006 have recognized the rights of forest dwellers and those dependent on forests for their livelihood. There are issues in settling the individual and community rights under the Act. The following States have considered the claims of forest dwellers and acted upon in certain extent: Kerala, Tripura and Odisha were among the States which has distributed more than 60 percent of the titles; Rajasthan, Telangana Andhra Pradesh have settled 54 percent of the claim of forest dwellers. It is pertinent to note here that On March,2017, the National Tiger Conservation Authority under the Ministry of Environment, Forest and Climate Change sent a note to all the Chief Wardens to most of the tiger range States and insisted them not to recognize the rights of the Scheduled Tribes and Other Traditional Forest Dwellers. The above order is nothing but against the Wildlife Protection Act,1972 and the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. Sec.38(o) of the Wildlife Protection Amendment Act clearly mention the powers and functions of the National Tiger Conservation Authority and it has been stated here that “no such directions shall interfere with or affect the rights of local people particularly the Scheduled Tribes” and that clause 38 V (5) says that no conservation areas shall be so designated “unless the process of recognition of the rights of tribals and other forest dwellers is complete”<sup>44</sup>. There was an amendment in Mining and Minerals (Development and Regulations) Act,1957 in which It is stated that no prior consent is required from tribal people for mineral mining and government can proceed further to acquire the land.

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<sup>39</sup>Dharmendra S.Sagar, Environmental Law, 1<sup>st</sup> edn (PHI learning private limited, 2012),p.7.

<sup>40</sup>VS Saxena, ‘Social Forestry in Tribal Development’, in Desh Bandhu and RK Garg, Social Forestry and Tribal Development, 1986, p.38.

<sup>41</sup> Available at <https://frontline.thehindu.com/social-issues/article30183954.ece>(accessed on 02.12.2021)

<sup>42</sup>*State of Kerala v. Gwalior Rayons* AIR 1973 SC 2734; *Kamruddin N. Sheikh v. State of Maharashtra* 1996 (4) Bom.C.Rep.209.; *Sri Ram Saha v. State of West Bengal* (1999) 1 Cal LT 399 (HC); *Bhagwan Bhoi v. State of Orissa* 2003 SCC Online Jhar 125; *Doon Housing v. State of Uttaranchal* AIR 2006 Url 11.

<sup>43</sup>*State of Bihar v. Banshi Ram Modi* AIR 1985 SC 814; *Wildlife First v. Ministry of Forest and Environment*, Writ Petition(s)(Civil) No(s). 109/2008; *Orissa Mining Corporation v. Ministry of Environment and Forest & Others* Writ Petition(s)(Civil) No(s). 180/2011; *Adivasi Kanikkar Samyuktha Sangham v. Union of India* WA. No. 724 of 2019 High Court of Kerala.

<sup>44</sup> Available at <https://frontline.thehindu.com/the-nation/subverting-fra/article9796409.ece>(accessed on 12.12.2021)

## **Conclusion**

Based on the above discussion, it is crystal clear that rights of the tribal people and other traditional forest dwellers ought to be protected at any cost and the subversion of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 through direct and indirect means will result in further marginalizing the marginalized. It is an appropriate time to check the lot of activities carried out and in process in forest area such as large dams, mining activities, power plants etc., There are instances where forceful eviction did it by the authority concerned and it should not be done as tribal people and forest dwellers have the rights to be there to protect the entire natural resources. It is also evident from the fact that outsiders are exploiting the forest and not the tribals involved in commercial activities into forests. Therefore, forest and natural resources involved on it should be protected as per the existing law of the law.

## **Ipomoea triloba, L. (Convolvulaceae) a new distributional record for Nanded District of Maharashtra, India.**

**Eanguwar Srinivas Reddy<sup>1</sup> Bembrekar Shivraj Kashinath<sup>2</sup>**

Department of Botany, Baliram Patil, Arts, commerce and science Collage, Kinwat, Dist. Nanded, Maharashtra, India.

[eanguwarsrinivas@gmail.com](mailto:eanguwarsrinivas@gmail.com)

### **Abstract**

The present paper deals with an addition of new taxa of flowering plant to the Nanded District of Maharashtra. Updated information on nomenclature, correct description and locality is provided. This is a new distributional record for this area.

**Key Words:** *Ipomoea triloba*, Nanded District, Maharashtra, new distributional record.

### **Introduction**

*Ipomoea* L. is one of the dominant genera in the family Convolvulaceae. The genus is represented by about 650 species, mainly confined to the tropical and warm temperate regions of the world (Mabberley, 2008). Santapau and Henry (1973) reported c. 60 species for India. Subsequently *Ipomoea mombassana* Vatke (Biju *et al.*, 1998); *I. parasitica* (Kunth) G. Don (Biju, 2002) and *I. Ochracea* (Lindl.) G. Don (Shimpale *et al.*, 2012) have been added to Indian flora, bringing the total number into 63 species in India, (Oudhia P, 2001, 2002 and 2003). In Maharashtra state total number is about 38, (Almeida, 2001, Venkanna and Das, 2001). The *Ipomoea triloba* L. plant under different synonyms. Some of the synonyms are: *Batatas triloba* (L.) Choisy, *Convolvulus dentatus* Blanco, *Convolvulus heterophyllus* Sessé & Moc., *Convolvulus ipomoea* Vell., *Convolvulus mariaannensis* (Choisy) Gaudich., *Convolvulus mariannensis* (Choisy) Gaudich. ex Saff., *Convolvulus sloanei* Spreng. *Convolvulus subquinelobus* W. Wood, *Convolvulus trilobus* (L.) DC., *Convolvulus trilobus* (L.) Desr., *Ipomoea blancoi* Choisy, *Ipomoea galapagensis* Anderson, *Ipomoea krugii* Urb., *Ipomoea mariannensis* Choisy, *Ipomoea parviflora* Vahl, *Ipomoea triloba* var. *quinquefolia* Kuntze, *Ipomoea webbii* Coutinho, *Quamoclit triloba* (L.) G. Don, *Sanilum parviflorum*. Also the name *Ipomoea triloba* L. has been so much popular that different plants have been given the same name which are homonyms and are obsolete now, like: *Ipomoea triloba* Thunb. and *Ipomoea triloba* Vahl. In India it was recorded from Gujarat, Kerala, Karnataka, Maharashtra, Rajasthan, Uttar Pradesh (Dehradun, now in Uttarakhand), Jharkhand, West Bengal, and Jammu & Kashmir. It is also reported from Haryana, Madhya Pradesh by efloraofindia google group. India Biodiversity Portal also reported the species from Meghalaya and Telengana. Recently it has also been reported from Andaman & Nicobar Islands (Magesh *et al.* 2012; Naik *et al.* 2016).

**Common names:** Little bell, Morning glory, Pink convolvulus, Aiea morning glory, three lobe morning glory etc. The plant was originally a native of tropical America (Wagner *et al.* 1999) but is now pan tropical (Stone, 1970).

**Materials and Methods** - During an early morning regular doing up and down by train from Adilabad (Telangana State) to Kinwat travelling on 5 October 2019, the flowering of morning glory of this taxon was observed. This species was found to have very small and pink coloured flowers apparently not matching with any species known till date in Nanded District. The colonies of this plant were seen at old O.P.D. (Hospital) of Railway Station, Kinwat of Nanded District. The plants were collected and identified by pertinent literature (Almeida-1998; Naik, 1998; Yadav and Sardesai, 2002 and Bhuktar and Sardesai, 2009). After critical investigations the plant is identified as *Ipomoea triloba* L. (Voucher No. 287), the specimen is deposited in the herbarium of Department of Botany, Baliram Patil College, Kinwat, Dist. Nanded, Maharashtra, India. Correct and updated citation, a short description along with phenology, G.P.S. and photograph (Plate-1) are presented herewith.

### **Result and discussion**

**Description:** Glabrous annual, twining or prostrate herbs; stem 1-3m long, hairy at nodes. Leaves: broadly ovate 2.5- 5x2-4cm, cordate at base, entire or 3-lobed, acute, glabrous or nearly so. Flowers: on axillary. 1- few flowered cymes, bracts minute; sepals elliptic-oblong, 7-8mm long, distinctly, fimbriate along margins, obtuse, mucronate, glabrous or sparsely pubescent; corolla funnel shaped, 1.5-2cm long, pink or pale purple.

**Capsules:** subglobose, pubescent apiculate. Seeds: glabrous.

**Uses:** The leaves are cooked and eaten as a vegetable and decoction of the leaves is used against stomach ache in Benin, West Africa, where they are sold in local markets (Achigan-Dako *et al.* 2010). It is

considered to be an important plant in honey production in Cuba and other Central American countries (Ordetx, 1949).

**Plate No.-1- Photo of habitat and flower of *Ipomoea triloba* L.**



**Flowering & Fruiting:** October – April.

**Specimens Examined:** Old O.P.D. (Hospital) of Railway Station, Kinwat of Nanded District of Maharashtra, India.

**G. P. S. Location:** N “19<sup>0</sup>62’54.56”, E 78<sup>0</sup>19’97.31”, Accuracy: 2273.0 m.

**Collected by:** Eanguwar Srinivas Reddy on dated 5 and October 2019, (Voucher No. 287

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## ***Acmella radicans* (Jacquin) R.K. Jansen (Asteraceae), an American weed new to Vidarbha region of Maharashtra State (India)**

**Umakant B. Deshmukh<sup>1</sup>, Muknd B. Shende<sup>1</sup>, Eanguwar Srinivas Reddy<sup>2</sup>, Vinayak B. Chavan<sup>3</sup>**

<sup>1</sup>Department of Botany, Janata Mahavidyalaya, Chandrapur. Maharashtra, India.

<sup>2</sup>Dept. of Botany, Baliram Patil Arts, Commerce and Science College, Kinwat, District Nanded, Maharashtra, India.

<sup>3</sup>Dept. of Botany, N.E.S.Science College, Nanded, Maharashtra, India.  
deshmukhumakant979@gmail.com

### **Abstract**

*Acmella radicans* (Jacquin) R.K. Jansen an American weed reported new distributional record from the Vidarbha region of Maharashtra State, India. Its taxonomical description along with phenology, distribution, nomenclature and photographs are provided here.

**Key words:** *Acmella radicans*, Asteraceae, new record, Vidarbha region, India.

### **Introduction**

The tropical genus *Acmella* Rich. belongs to the tribe Heliantheae (Asteraceae), occurs in high altitude grasslands, ombrophilous forest, cerrado, várzea, and in anthropogenous areas (Campos et.al.2019).The genus is represented by about 30 species in the world (Mabberley, 2008). In India about nine species and two varieties of the genus are known to occur (Reshmi and Rajalakshmi, 2016a, 2016b). In India, five species with rayed heads viz. *A. ciliata* (Kunth) Cassini, *A. uliginosa* (Swartz) Cassini, *A. vazhachalensis* (Sheela) Reshmi & Rajalakshmi, *A. ghoshinis* (Sheela) Reshmi & Rajalakshmi, *A. tetralobata* (Reshmi & Rajalakshmi) Reshmi & Rajalakshmi, *A. uliginosa* Sw. var. pentamera Reshmi & Rajalakshmi and with discoid heads four species viz. *A. paniculata* (Wallich ex DC.) R.K. Jansen, *A. calva* (DC.) R.K. Jansen, *A. radicans* (Jacquin) R.K. Jansen, *A. oleracea* (Linnaeus) R.K. Jansen. and *A. radicans* var. *debilis* (H.B.K.) Jansen (Sivarajan & Philip 1984; Sivarajan & Ramesan 1987; Sheela 2007, 2010; Reshmi & Rajalakshmi 2014, 2016). (Reshmi and Rajalakshmi, 2016 a) and (Jagtap and Bachulkar 2015). *Acmella radicans* distributed in India viz Maharashtra State (Bachulkar and Awale 2009), Kerala (Sivarajan and Mathew 1984), Tamil Nadu (Raja et al. 2013), Central India (Mujaffar et.al. 2013), Uttar Pradesh (Vaishya et al. 2013), Tripura (Somnath Bhowmik et al. 2013), Gujrat State (Patel et al. 2015), Andaman and Nicobar Islands (Naik et al. 2014), West Bengal (Maity et al. 2017), Karnataka (www.efloraofindia.com). and Zarkhand ( Bagga and Deshmukh, 2018).

### **Materials And Methods**

During an ethno botanical plant investigation an interesting specimen of *Acmella* was collected from Chikhali Village of Mul Taluka from Chandrapur District, Vidarbha region of Maharashtra State. After a thorough survey of literature and critical examination, this specimen was determined as *Acmella radicans*, it is so far, not recorded from Vidarbha region from Maharashtra State by the earlier workers including (Almeida, 1998; Singh and Karthikeyan, 2000; Singh et al, 2001). About 102 invasive alien plants reported from Chandrapur district (Deshmukh et al, 2012, 2016a, 2016b). The present report of the occurrence of *Acmella radicans*, an American weed as new distributional record for the Vidarbha region, Maharashtra State, India. A brief Taxonomical description along with phenology, distribution, nomenclature and photographs are provided here. Processed herbarium specimens (Voucher No. 245) of the plant are deposited in the P.G. Department of Botany, Janata Mahavidyalaya, Chandrapur. Maharashtra, India.

### **Result And Discussion**

Taxonomic Description : *Acmella radicans* (Jacquin) R.K. Jansen, Syst. Bot. Monogr. 8: 69. 1985; *Spilanthes radicans* Jacq. Collect. Bot. Chem. Hist. Nat. 11(3): 1714. 1804; Sivaraj & Matthew in Anc.Sci. Life 3: 169. 1984; Schrad. in DC. Prodr. 5: 624: 1836. *S. ocyimifolia* (Lam.) A. H. Moore, Proc. Amer. Acad. Sci. 42 (20); 531. 1907. (Fig. 1). Erect herbs; stem terete, minutely pubescent. Leaves opposite, ovate, obtuse at base, serrulate at margin, acute at apex, glabrous, 5-7 pairs; petiole 1 cm long, hairy; puberulous. Head white, discoid, conlike, axillary and terminal, 8 – 10 mm across; peduncle 4 – 7 cm long; peduncle 4 – 7 cm long. Glabrous receptacle; subtire at margin, subulate-obtuse at apex, Involucral bracts oblong, 3- nerved at base, minutely hairy beneath. Paleas keeled along the back, oblong, boat-shaped, concave, 4 mm long, acute or obtuse at apex, glabrous. Corolla tube 2 mm long, bulbous at base, with short neck, 4 – 5 lobed; lobes papillose. Dimorphic achenes with corky and densely ciliate at margins, ellipsoid, obcordate, marginal ones trigonous, brownish-black, laterally compressed, pappus persistent with 2 subequal bristles.





**Fig.1.**Habit of *Acemella radicans* (Jacquin) R.K. Jansen.

**Phenology:** August – February.

**Native:** Central America and Mexico.

**Distribution:** India; Andaman and Nicobar Islands, Kerala Karnataka Tamil Nadu; Tripura, Uttar Pradesh. Maharashtra State, Central India, Gujrat State and West Bengal,Zarkhand.

**Specimens Examined:** India. Maharashtra State .Vidaarbha Region, District Chandrapur, Chikhali Village of Mul Taluka 200 07°59.5”N ,790 41°15.7”E, Collected by Umakant B. Deshmukh on dated 07 and February 2019. Voucher No.- 245.

**Note:** Erect habit and discoid white florets are the distinguishing characters of this species. This is an Alien American Weed invaded in agricultural fields in Chandrapur District. It is the first report of this plant species in this region.

#### **Acknowledgement**

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## **Sand Mining: Impact on the Physical Environment, A Study of Tembhe Bk Sand ghatin Shahada Tehsil of Nandurbar District.**

**Dr. Prashant R. Torawane**

Assistant Professor, P.G. Dept. of Geography P.S.G.V.P.M's Arts, Sci. & Comm. College Shahada Dist-  
Nandurbar (M.S.)

E-mail: [prashant.torawane@gmail.com](mailto:prashant.torawane@gmail.com)

### **Abstract:**

In overall all countries a recent trends in urbanization. Every country or region's development resource is the most important factor. Such as suitable climate, land, agricultural land and industrial development, energy resource, water availability, infrastructures facility such as transportation roads, newly constructional concrete road, bridge over bridge, dams, buildings, and houses, etc. It made such materials are more important like sand, cement, bricks, block, and steel. Those materials are available in our surrounding area of the environment. Some materials are created by man. Some materials are available in our surrounding environment naturally such as sand. Sand is available in rivers, coastal areas, and deserts. Sand mining is the world's largest mining endeavor.

**Keywords:** Sand mining, Physical and Regional Environment, Environmental degradation, River health.

### **Introduction:**

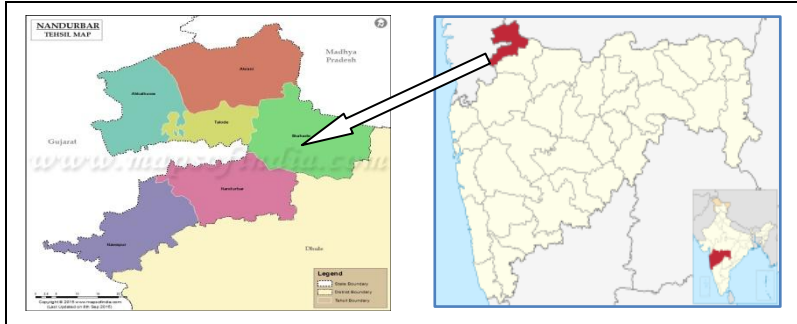
Sand is the most important building material in the construction sector at present time. Sand is used in many ways. These include constriction, concrete, decorative pieces, glass, household items, paving material, and much more. Sand is produced by eroded rocks or weather over a long time period, mostly water and wind, and their sediments are transported downstream. These sediments continue to break apart into smaller pieces until they become fine grains of sand. Give different compositions of sand depending on the type of rock sediment originated from and the intensity of the environment. The most common rock to form sand is granite, where the feldspar minerals dissolve faster than the quartz, causing the rock weathering materials. Sand collected from rivers. Much area's sand mining rate greatly outweighs the rate the sand can replenish, making it a non-renewable resource. But many small and larger rivers have been depleted, causing many environmental losses and degradation in the Tapi river bank at Shahada tehsil in Nandurbar district. Sand and gravel are one of the most important construction and infrastructural necessitate materials. Ensuring their availability is vital for the development of infrastructure in the region. Entire districts and surrounding districts increase the requirement of natural river sand. A large amount of sand has been extracted from the Tapi river sandy ghat. One of them is Tembhe Bk sand ghat, a large amount of sand mining 16325 Brass. In view of its existing demand for building grade sand for the area and around Shahada and Nandurbar tehsil. This sand mining activity had caused many problems of physical environmental.

So I have selected the study of consequences of sand mining activities Tembhe Bk sand ghat.

**Location Of Study Region:**

**Map No.01: Location Map of Nandurbar district:**

Details of a physical location of the Shahada tehsil in Nandurbar District in the state of Maharashtra, India. Nandurbar district is situated in the northwestern part of Maharashtra (Map No.01),



extends over an area of 5034.23 sq. km. between latitudes 21° 00' and 22° 03' North and longitudes 73° 34' and 74° 47' East. Tembhe Bk is sand ghat over Tapi river in Shahada tehsil. This region is located in the northwest part of Maharashtra, on the borders of Gujarat and Madhya Pradesh.

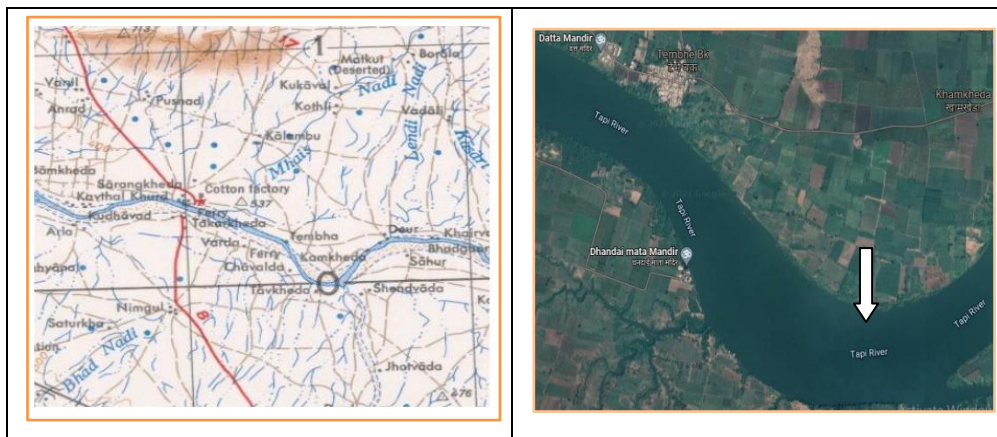
Distance of sand ghat site from major district road Sarangkhedha to Shahada and bridge on Tapi river- 3.74 km and 17 km NW away from Shahada.

**Table No.01,Details of Tembhe Bk. Sand ghat is as below-**

Sr. No.	Name of sand ghat	Tehsil	Name of the River	Area in hectors	Area in cum.	location	
					L x B x D (m3)	Latitude	Longitude
1.	Tembhe Bk.	Shahada	Tapi	2.31	308 x 75 x 2.00	21°24'23.71 27"North	74°34'5.579 7"East

**Source:**Environmental management plan for sand ghats at Nandurbar district(M.S.)

**Map No.02:Sand Ghat Part, Toposheet 46 K/7 and google image.**

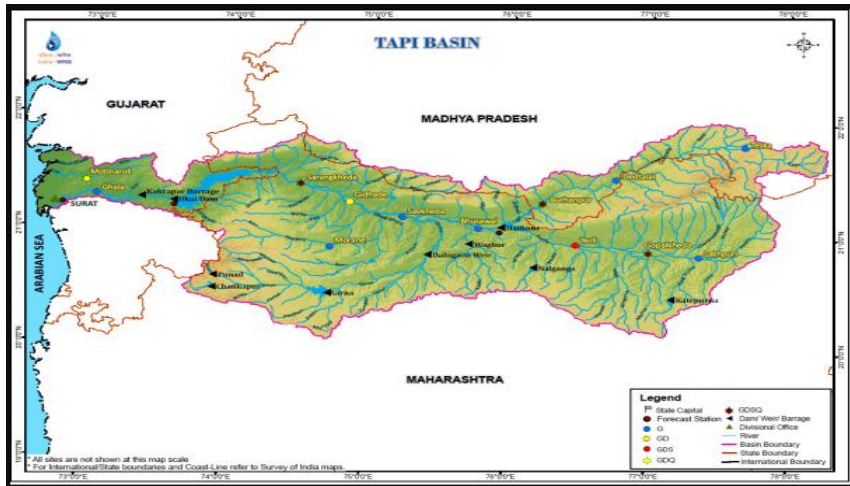


**Motivation And Objectives Of The Paper:**

The present paper's study objective is as follows: Present paper's main objective is to study of consequences of sand mining activities and their impact on the physical environment of Tembhe Bk, Shahada tehsil in the district of Nandurbar.

**Study Methods And Material:**The present paper study based on primary and secondary sources of data. Primary data had been collected by visit at Tembhe Bk sand ghat, in the Shahada tehsil districts of Nandurbar. Secondary data and information collected has been taken from various sources of Mining and collector office reports and environmental management plans for sand ghats at Nandurbar district. Topographical maps (in India, Survey of India map). The sand is a part of 46 K/7 and 1:50,000 scale of a topographical map. The collected data and information were analyzed with help of Tables And Maps.

**Discussion:**



The present paper studies region sand ghat on the Tapi river. The Tapi River is the second-largest westward draining river of the peninsula and outfall into the Arabian sea. its basin has an area of 65,145 Sq.km extends over the states of Madhya Pradesh, Maharashtra, and Gujarat. It lies between 72°33’ to 78°17’ east longitudes and 20°9’ to 21°50’ north latitudes. It originates near Multai RF in Betul district of Madhya Pradesh at an elevation of 752 m. the river's total length is 724 km. The Tapi river along with its tributaries flows over the plains of Vidhrabha, Khandesh, and Gujarat. The Tapi River tributaries are the Panjhra, the Buray, the Bori, the Girna, the Purana, the Mona, and the Sipna. The Tapi flows on the Deccan plateau, the basin is bound on the three sides by hill ranges by the Mahadev hills on the east, by the Satpura range on the north, by the Ajanta Range, and the Satmala hills on the south and by the Arabian Sea on the west. Its basin is well forested while the plains are broad and fertile areas suitable for cultivation.

**Table No.02, The Tapi river state wise drainage area distribution**

Sr.No.	Name of the State	Length	Catchment/Drainage area (Sq km)	% of Total
1.	Madhya Pradesh	282	9,804	15.0
2.	Maharashtra	228	51,504	79.1
3.	Gujarat	214	3,837	5.9
	<b>Total</b>	<b>724</b>	<b>65145</b>	<b>100.0</b>

**Source:**Environmental management plan for sand ghats at Nandurbar district(M.S.)

Table no.2, shows that the drains area of 65145 sq km out of which nearly 80 % lies in Maharashtra. 282 km the river flows in Madhya Pradesh, out of which 54 km from the common boundary with Maharashtra state. Tapi basin’s climate is hot summer and general dryness throughout the year except during the southwest monsoon season. These soil and sand originate from the basaltic Deccan trap and have been considerably affected by natural processes of weathering and erosion. The sand ghat sand fills again during each monsoon period when there will be the live flow of water in the river channel.

**Table No.03, Manpower involvement of sand mining activity**

Sr.	Category	Nos.
1.	Mining supervisor	03
2.	Helpers and Tractor/Truck driver	10
3.	Mining labour	30
	<b>Total</b>	<b>43</b>

Being Tembhe Bk sand ghat average sand mine production is calculated as 129359 tonnes for 260 operational days. Table no.3, By total 43 laborers are involvement in sand mining activity at the same sand ghat. **Source:**Environmental management plan for sand ghats at Nandurbar district(M.S.) To the Tembhe Bk sand mine site without causing undue erosion and degradation. Sand mining various environmental problems are presented below.

**Impact and management of sand mining activity:**

The Regional Environment at Tembhe Bk Sand ghat conceived of due to mining activity is evaluated based on various factors. The emission inventory of the pollutants is as follows. origin of dust, noise pollution, water pollution, impact on land, impact on groundwater, and river health.

**Dust origin and mitigation:**

The main air pollutant would be dust or particulate matter generated by handling and transportation of sand and mineral.

**Dust and air pollution mitigate:**

**Table No.04, Baseline air quality data between 2 to 20 October 2018.**

Sr.No.	Village Name	Tehsil	River Name	Permissible limits as per NAAQ standards 2009			
				PM <sub>10</sub>	PM <sub>2.5</sub>	Sox	Nox
01	Tembhe Bk	Shahada	Tapi	µgm/m <sup>3</sup>			
				100	60	80	80
				42.4	12.9	11.7	13.0

**Source:**Environmental management plan for sand ghats at Nandurbar district(M.S.)

The above Table No.04, shows the impacted sand mine village of Tembhe Bk is baseline air quality data is collected between 2 to 20 October 2018. As per table no.04, the maximum concentration recorded for the Tembhe Bk impacted village for PM10 was found to be 42.4 µg/m<sup>3</sup>. Dust generation is due to the frequent movement of public transport vehicles and tippers carrying the building-grade sand on haulage and transport roads. The envisaged production of building grade sand during the plan period has only 16325 brass per annual of Tembhe Bk sand ghat.

**Impact exact to Noise pollution and its mitigation:**

Noise levels are recorded for the Tembhe Bk impacted village of day time. Maximum and minimum noise recorded is summarized as below:

**Table No.05,Noise levels are recorded for the Tembhe Bk impacted village**

Time	06.0	07.0	08.0	09.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0
Tembhe	41.0	45.9	47.8	44.2	40.2	39.2	55.0	46.5	45.1	50.3	51.0	49.6	47.1

**Source:**Environmental management plan for sand ghats at Nandurbar district(M.S.)

At the Tembhe Bk sand ghat and surrounding area noise is generated by the sand mine equipment and vehicular transportation. When sand is mined manually, an increase in noise levels is minimal and only due to transport activities.

In sand mine project activities, noise generation mitigation measures are proposed, on sand ghat noise-generating is only through the movement of vehicles, exact conformity to periodic maintenance of the condition of the vehicle will be insisted. Noise monitoring at the sand mine work area shall be carried out on a periodic basis to ensure conformity.

**Water pollution and its mitigation:**

**Table No.06,Need for Water for dust suppression and domestic purposes:** The purpose wise change of integrity of the total water inessential is given below:

Purpose	Qty Required m <sup>3</sup> per day
Domestic use	0.86
Dust suppression and plantation	1.0
<b>Total</b>	<b>1.86</b>

**Source:**Environmental management plan for sand ghats at Nandurbar district(M.S.)

Water requirement for dust suppression and domestic purposes and various activists during sand scooping is estimated as per Table no.06, total water 1.80 m<sup>3</sup>per day sand ghat. The water will be required for dust suppression, tree plantation, and domestic use sourced from Gram panchayat Bore-well, RO water provided for drinking use on payment liter cost basis.As the project activity is allotted within the meandering a part of the river bed, none of the project activities will affect the water environment. Sand is in exposed stage to scoop out and much from the river stream. during this project, it isn't proposed to divert or truncate any stream.As per the Government's recommendations, the sand within the riverbed goes to be extracted up to 2m depth only keeping a base layer of 2m within the bed. Thus, the project activities won't have any adverse effect on the physical components of the environment and thus won't have any effect on

the recharge of groundwater or affect the water quality. so on confirm that the project activities shall not affect the Water environment, the next measures are taken up. Mining is avoided during the monsoon season and at the time of floods. this might help with the replenishment of sand within the river bed. Mining below the subterranean water levels goes to be avoided as a safeguard against environmental contamination and over-exploitation of resources. River streams won't be diverted to form inactive channels. Groundwater levels are monitored regularly in and round the sand mining projects. The mining schedule is synchronized with the river flow direction and also the gradient of the land. Mining at the concave side of the river channel is avoided to forestall bank erosion. The meandering segment of the river is chosen for mining in such the best thanks to avoid natural eroding banks and to push mining on naturally building meander components. Mining depth shall be maintained as per the foundations and rules of Sand Mining Policy dated 19.03.2019 and suggestions of Tehsil Level Technical Committee comprising representative of M.S. State H<sub>2</sub>O Department for extraction of sand during the lease period. Water Quality Monitoring for the groundwater, river water, and other surface waters shall be carried out seasonally to create sure that the water quality isn't full of the project activities.

#### **Impact on land and mitigation:**

At the Tembhe Bk sand ghat area, some problems of vehicles movements sometimes cause to cultivation land, human settlements, noise, and public movement and also cause traffic hazards. Also, impacts include river bank damage due to access ramps to the river bed, soil erosion, micro disturbance to groundwater, possible incentive of the changed river course, contamination of sand qualify water due to pool. At the sand ghat keeping at 20m safe distance from the bank of the river. Yet, there may not be any direct impact on the soil quality of the area. The Tembhe Bk sand ghat area mitigation measures a minimal number of accession roads to river bed for which cutting of river banks avoided and ramps are to be maintained. The Tembhe Bk sand ghat area access points to the river bed decided based on the most steepness of riverbank and most human activity. Roads connecting access to river bed made away from the bank, preferably 25m away. At the project activity, areas roads parallel to the river bank. Sand mining activity at the river channel should be avoided on the concave side to prevent bank erosion. Likewise, the segment of meandering a river is to be selected for mining in such a way so as to avoid the natural eroding of river banks.

#### **Impact on ground water and river health:**

The Tembhe Bk sand ghat area impact on the groundwater level scooping of surrounding area. the ground water level of area sand beyond the proposed scooping depth may deplete. At the sand ghat maximal Tembhe Bk scoopable depth of sand is limited keeping sand bed of 2m. The Tembhe Bk total sand depth available is 4.0m. survey committee includes member from GSDA, Nandurbar and approved the depth by monitoring impact of proposed scooping of sand on ground water levels of the area.

#### **River health:**

Mitigation measuring to the river health improve by municipal authorities must arrest their solid, liquid discharge at their own care facilities and should avoid these hazardous matters to drain into the river. Awareness campaigns in the local people must be floated to utilize river management.

#### **Conclusions:**

Several physical environmental issues were created by mine activities at the Tembhe Bk sand ghat area. Those are dust origin, noise and water pollution, impact on land, and groundwater, etc. The larger-scale descent of river bed mining and digger materials the alteration of channel bed form shape leads to various impacts such as erosion of river banks, increase in channel slope, and change in channel structure. These impacts may cause the undercutting and collapse of river banks, the loss of adjacent land and structures, downstream change in deposition patterns, upstream erosion due to the increased carrying capacity of the stream, and change in river channel bed and type of habitat.

The engaged person at the sand ghat is likely to get a lung-related disease like silicosis, after extended influence to the sand particles without protective measures. Dust emissions and other air emissions from sand and ore mining activities are measures.

- 1) Sand and ore mining material transported by road through trucks, on traffic area wet by water spraying of mobile sprinklers.
- 2) To avoid temporary dust emissions at the time of screening activity so as to prevent the spreading of dust.
- 3) To minimize the transportation pollution from the sand transporting vehicles are insisted to permitted, good engine condition and should maintain PUC for good air quality.
- 4) To develop a green belt along the access roads at mine premises and near the sand mining site.

**Recommendations:**

- 1) At the sand mine activities area workers exposed will be provided with dust masks.
- 2) For the conservation of soil afforestation along the village road and along the river bank.
- 3) Periodical health checkups for workers shall be done.
- 4) Plantation maintenance of dense and wide leaf trees along the river bank and tall grass along the riverbank slope.
- 5) Water tankers with spraying provision will be used for daily water sprinkling on impacted village roads to ensure effective dust suppression due to transportation.

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## **“Sustainable Development Through Green Economy In India: A Long Runvision By 2070”**

**Dr. Lokanath Paital**

M.A., M.Phil, Ph.D., Author & Researcher

E-mail ID : lokanathpaital@gmail.com

### **Abstract**

India is the seventh-largest country by area, the second most populous country after China and the most populous democracy in the world. India is not only a dynamic but also a fastest growing economy with a diverse society in the 21<sup>st</sup> century. So the need of the hour demand for a sustainable and holistic development on the basis of balance and harmony between the economic, social and environmental perspectives. Due to the rapid population growth in the world, the green economy has emerged as an important policy framework for sustainable development in both developed and developing countries. It becomes more important as India has become the third largest economy in the world on the basis of Purchasing Power Parity (PPP) with 10.207 trillion dollar and 6<sup>th</sup> in the world on the basis of nominal GDP (IMF Report – 2021). It is expected that, India to be the most populated country as well as the largest economy in the world by 2050. India's Long Run Vision is clearly reflected when the Prime Minister Narendra Modi set India's target for achieving carbon neutrality or net zero emission by the latest 2070 at the COP26 Climate Summit in Glasgow, Scotland on 1<sup>st</sup> November 2021. That's why, India is mainly focusing to attain Zero Defect and Zero Effect' through 'Make in India ' program as green economy reduces environmental risks and ecological scarcities and that aims for sustainable development without damaging the environment. In order to attain Zero effect, we need to control CO<sub>2</sub> emission by increasing dependence on Clean and Green Technology. This paper mainly highlights how India is implementing for a sustainable development through green economy to fulfill the growing needs of the huge population of our country.

**Keywords:-** Sustainable Development, Green Economy, clean and Green Technology, Zero Defect, Zero Effect, A Long Run Vision.

### **Introduction :**

*“We must face up to an inescapable reality : the challenges of sustainability simple overwhelm the adequacy of our responses. With some honourable exceptions, our responses are too few, too little and too late”*

**Kofi A. Annan**

India, a vast country with multi-sided diversities like languages, religions, castes, colours, sex, customs, cultures etc. which makes it 'Unity in Diversity', and it is the biggest strength of our vibrant democratic structure. As the most diverse country in the word, the sustainable development through green economy is the need of the real hour for our country. To maintain the sustainability and holistic development, there is a need for balance and harmony between the economic, social and environmental needs of the country. On the other hand, there is need to strike a balance between development and environment protection. No doubt, for a long run vision, India is walking a sustainable development path and has emphasized on climate justice and poverty eradication. With collective partnership of stakeholders, mainstreaming the essence of sustainable development and environment protection is possible. India's rich heritage and positive outlook towards environment gave a new height to the understanding of environmental issues.<sup>1</sup> However, for a long run vision that is the 2030 Sustainable Development Agenda with 17 sustainable development goals and 169 targets that were adopted in September 2015 demonstrate the scale and ambition of member states in the new universal agenda. On the other hand, the Constitution of India also provides specific provisions for the protection and improvement of environmental quality. Article 48-A of the Constitution says that “The state shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country”. Article 51-A (g) says that, “It shall be duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures”. These provisions highlight the national conscience on the importance of environment protection. The National Environment Policy of the Ministry of Environment, Forests, and Climate Change highlights important principles around sustainable development such as social justice, polluter pays, and entities of incomparable value.

That's why, the National Action Plan on Climate Change (NAPCC) along with the State Action Plan on Climate Change are important milestones for mainstreaming climate in development processes at

the national and state levels. NAPCC has eight national missions that outline priorities for both mitigation and adaptation to combat climate change. The current eight missions are on the areas of solar energy, energy efficiency, sustainable habitat, sustainable agriculture, Green India, water, Himalayan, ecosystem, and strategic knowledge. The government is also proposing to set up new missions on wind energy, health, waste-to-energy, coastal areas, and also redesigning the National Water Mission and National Mission on Sustainable Agriculture. Under the Copenhagen Accord, India communicated its domestic mitigation action as an endeavour to reduce the emissions intensity of its GDP by 20-25% by 2020 in comparison to the 2005 level. More recently in its Intended Nationally Determined Contributions (INDCs), India has announced to reduce the emissions intensity of its GDP by 33-35% by 2030 in comparison to the 2005 level.<sup>2</sup> India's Long Run Vision is clearly reflected when the Prime Minister Narendra Modi set India's target for achieving carbon neutrality or net zero emission by the latest 2070 at the COP26 Climate Summit in Glasgow, Scotland on 1<sup>st</sup> November 2021.<sup>3</sup> In this background, it has been a matter of great academic interest to analyse the "Sustainable Development through Green Economy in India : A Long Run Vision by 2070".

### **Objectives Of The Study :**

The present paper tries to address the following objectives for ensuring the sustainable development through green economy for the second largest populous country like India

1. To know the current position and future prospects of the sustainable development through green economy in India.
2. To know India's Green Growth challenges and how India will achieve net-zero target by 2070.
3. To depict some constructive suggestions for the betterment of India and world.

### **Backdrop Of Sustainable Development And Green Economy:**

Everything available in our environment which can be used to satisfy our needs provide. It is **technologically accessible, economically feasible and culturally acceptable** can be termed as 'Resource'. The process of transformation of things available in or environment involves an interactive relationship between nature, technology and institutions. Human beings interact with nature through technology and create institutions to accelerate their economic development. Resources are a function of human activities and human beings themselves are essential component of resources. But how these resources can be used for the Sustainable Development Goals (SDGs) or Global Goals of the 7.9 billion people in the world, is the matter of huge challenge before every Climate Summit. As resources are limited and populations are growing rapidly, that's why the Sustainable Development Goals (SDGs) are a collection of 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all."<sup>4</sup> The SDGs were set up in 2015 by the United Nations General Assembly(UN-GA) and are intended to be achieved by the year 2030. They are included in UN-GA Resolution called the 2030 Agenda or Agenda 2030.<sup>5</sup> The SDGs were developed in the Post-2015 Development Agenda as the future global development framework to succeed the Millennium Development Goals which ended in 2015.

The 17 Sustainable Development Goals are : (1) No Poverty, (2) Zero Hunger, (3) Good Health and Well-being, (4) Quality Education, (5) Gender Equality, (6) Clean Water and Sanitation, (7) Affordable and Clean Energy, (8) Decent Work and Economic Growth, (9) Industry, Innovation and Infrastructure, (10) Reduced Inequality, (11) Sustainable Cities and communities, (12) Responsible Consumption and Production, (13) Climate action, (14) Life below Water, (15) Life On Land, (16) Peace, Justice and Strong Institutions, (17) Partnerships for the Goals. As these goals are broad and interdependent, two years later (6 July 2017) the SDGs were made more "actionable" by a UN Resolution adopted by the General Assembly. The resolution identifies specific targets for each goal, along with indicators that are being used to measure progress towards each target.<sup>6</sup> The year by which the target is meant to be achieved is usually between 2020 and 2030.<sup>7</sup>

Regarding the backdrop of the green economy, the term green economy was first coined in a pioneering 1989 report for the Government of the United Kingdom by a group of leading environmental economists, entitled Blueprint for a Green Economy (Pearce, Markandya and Barbier, 1989). The report was commissioned to advise the UK Government if there was a consensus definition to the term "sustainable development" and the implications of sustainable development for the measurement of economic progress and the appraisal of projects and policies. Apart from in the title of the report, there is no further reference to green economy. But in 2008, the term was revived in the context of discussion on the policy response to multiple global crises. In the context of the financial crisis and concerns of a global recession, UNEP championed the idea of "green stimulus packages" and identified specific areas where large-scale public investment could kick-start a "green economy" (Atkisson, 2012). It inspired several

governments to implement significant “green stimulus” packages as part of their economic recovery efforts. Thus, in October 2008, UNEP launched its Green economy Initiative to provide analysis and policy support for investment in green sectors and for greening environmentally unfriendly sectors. As part of this Initiative, UNEP commissioned one of the original authors of Blueprint for a Green Economy to prepare a report entitled a Global Green New Deal (GGND), which was released in April 2009 and proposed a mix of policy actions that would stimulate economic recovery and at the same time improve the sustainability of the world economy. The GGND called on governments to allocate a significant share of stimulus funding to green sectors and set out three objectives :– (i) economic recovery; (ii) poverty eradication; and (iii) reduced carbon emissions and ecosystem degradation; and proposed a framework for green stimulus programs as well as supportive domestic and international policies (UNEMG, 2011).

Similarly, in June 2009, in the lead up to the UN Climate Change Conference in Copenhagen, the UN released an interagency statement supporting the green economy as a transformation to address multiple crises. The statement included the hope that the economic recovery would be the turning point for an ambitious and effective international response to the multiple crises facing humanity based on a global green economy. In February 2010, Ministers and Heads of Delegation of the UNEP Global Ministerial Environment Forum in Nusa Dua acknowledged in their declaration that, “The green economy concept can significantly address current challenges and deliver economic development opportunities and multiple benefits for all nations”. It also acknowledged UNEP’s leading role in further defining and promoting the concept and encouraged UNEP to contribute to this work through the preparatory process for the UN Conference on Sustainable Development in 2012 (Rio+20).<sup>8</sup>

### **Sustainable Development Through Green Economy In India:**

Sustainable development through green economy is the only option in the 21<sup>st</sup> century due to the drastic change of the climatic condition of the world. Regarding India, the forces of liberalization and globalization have transformed the Indian economy in the past three decades. Prime Minister Narendra Modi’s government has accelerated these trends by implementing a set of far-reaching reforms, which have led to macro-economic stability, a robust safety net for all and strong growth. We now have one of the most open market economies in the world and are poised to get to \$5 trillion in GDP in the next few years. In other words, our economy can deliver sustainable prosperity in the next few decades. Just as liberalization and globalization transformed the economy in the past, two different yet intertwined forces will likely transform the economy in the future. Firstly, India must have globally leading companies across a range of key sectors such as financial services and manufacturing. These super competitive businesses should define the global productivity frontier so that they can surpass the production processes of the best companies in the world. Secondly, India must also adopt a resource-efficient, low-carbon development pathway to utilize scarce natural resources effectively. There is no other way. Apocalyptic air pollution, dire water shortages, rising temperatures, and extreme climate events have already brought us to the brink of an environmental crisis. Moreover, note that the world needs India’s leadership to achieve the 2 degree Celsius global warming target. In short, India’s growth has to be green. No nation has ever attempted these twin transformations like : high competitiveness and long-term sustainability simultaneously.<sup>9</sup>

Since 2014 to 2021, the Modi government has made impressive progress in ending crony capitalism and strengthening entrepreneurial forces. India has the third-largest start-up ecosystem in the world and our large companies are also pursuing innovation-driven growth. The productivity transformation driven by super competitive businesses is well underway. We now need to consider a comprehensive policy package that will enable us to simultaneously undertake a green transformation. Global best practices and India’s own experiences suggest three focus areas for such a transformation. Firstly, specific and stable policy goals need to be established to set detailed green targets for various sectors. A macro-economic model that factors in current skills, sectoral connections, relative emissions, and financial constraints is necessary to inform such targets going forward. Such a model and then be used to evaluate various green growth scenarios. Decarbonization approaches in the green frontier scenario will drive the growth of green industries, green jobs, green skills, green entrepreneurs and green finance. Global and Indian experience highlights that green targets will have to be pursued in a stable manner cross decades. Most large emitter and pollutants are associated with long-lived (20-30 plus years useful life) assets Investments in green assets will only be possible if there is sanctity of constraints, pricing stability, and contracts policies that are backed up by the full force of law. As a result, these specific and stable policy goals need to be implemented urgently to avoid lock-in with high-carbon assets. Secondly, India may need to revamp its existing institutional framework for environmental governance in order to align it with the country’s green transformation. As demonstrated by global best practices, a comprehensive

institutional framework could include four level like: super sovereign, sovereign, state/province and city. An independent council or board may also be required to monitor report, and verify green targets.<sup>10</sup>

However, highlighting India's growing solar capacity UN Secretary General Antonio Guterres has said the world is moving towards a green economy at a time when "unprecedented" climate change is posing a threat to development. He also said, "Around the world over half of new power generation capacity now comes from renewables. In Europe, the figure is more than 9 percent. In the US and China, new renewable energy jobs now outstrip those created in the oil and gas industries. Globally, over 8 million people work in the renewables sector". He was addressing a UN General Assembly High-Level action event with aimed at invigorating political momentum on climate change, highlighting its deep link to the UN 2030 Agenda on sustainable Development. "As a result, this year, Saudi Arabia announced plans to install 700 megawatts of solar and wind power in India and. And industry experts predict India's solar capacity will double in 2017 to 18 gigawatts. So the trend is clear, the world is moving towards a green economy. Governments and business increasingly understand that there is no trade-off between a healthy environment and a healthy economy".<sup>11</sup> Similarly, power transmission project related auctions in India are gaining momentum to support the country's capacity addition in renewables. According to data from the Ministry of Power, Central Electricity Authority (CEA) and a Crisil report, transmission projects worth almost Rs. 10,000 crores are under various stages of the auction process in the inter-State transmission bidding. Of this, 80% are a part of Green Energy Corridors (GEC). These are dedicated Inter-State Transmission System (ISTS) projects sanctioned by the Ministry of Power to evacuate large-scale renewable energy from zones that are rich in such energy in the country. However India's project bids estimated at Rs. 8,540 crore (80% of the total estimate of Rs. 10,598 crore) are apportioned for these critical GEC projects which are specially designed towards meeting India's enable energy goal of 450 GW by 2030. Thus, of the total Rs. 8,540 crore, a GEC bid worth Rs. 686 crore for renewable energy evacuation from Koppal (Karnataka) has already been awarded while bids worth Rs. 2,800 crore will be lined up within the next month.<sup>12</sup>

No doubt, Covid-19 has immensely changed the discourse of economies globally, cautioning against unexpected future crises. As businesses struggle to make up lost revenue, workers stretch to keep jobs, incomes fall, and gender gaps worsen, governments are overwhelmed trying to chart their recoveries. There is a silver lining – the pandemic has highlighted the urgency of a climate-smart roadmap and shifted perceptions to accept that climate action is an opportunity, not a cost, which must be at the core of the development agenda. On the other hand, while world leaders are gathered at the COP26 Summit to discuss pathways to achieve Paris agreement goals, a green and inclusive roadmap can help quickly rejuvenate South Asia's economy, paving the way for greater resilience and a lower carbon-footprint.<sup>13</sup>

Sustainable development through green economy in India has immense opportunities. As India rebuilds, leveraging innovative financial instruments such as green and sustainability – linked bonds are crucial because their proceeds are earmarked for projects with environmental benefits. For example, the coupon of a sustainability-lined bond can be linked to specific key performance indicators (such as the reduction in greenhouse gas emissions), creating a quantitative commitment of the issuer in their climate agenda. Over the past decade, green finance has moved from a niche market to one that is increasingly mainstream. Globally, the issuance of green debt instruments more than doubled to \$227.8 billion in the first half of 2021, as investors adopt green strategies. More than 30 percent of net flows into investments funds in the second part of 2020 went to climate and sustainable funds. For issuers, green bonds can broaden their investor base while sending a positive signal to the market. No doubts, India is one the right track because having made "consistent and measurable progress" in its energy transition journey, the country ranked 74<sup>th</sup> in the World Economic Forum's Energy Transition Index 2020. With its energy demand slated to double in under 20 years, IFC estimates India's climate-smart investment potential is more than \$3 trillion by 2030. More importantly, this includes renewable energy (\$404 billion), electric vehicles (\$667 billion), green buildings (\$1.4 trillion) and climate-smart agriculture (\$194 billion). So, this volume of investments needs both public and private sector initiatives – about half of the total investment is expected to come from the private sector. This is where green bonds can help, by mobilizing and channeling private sector capital to the clean energy sector, energy-efficient buildings, water and transport. As India is the second-largest emerging market for green bonds so that the diversifying bond markets can contribute to a sustainable and resilient roadmap by expanding markets to new issuers and enabling transactions in new currencies for the self-reliant and prosperous India.<sup>14</sup>

#### **India's Long Run Vision By 2070 :**

Regarding the net-zero target, India's Long Run Vision and commitment was clearly reflected when the Prime Minister Narendra Modi set India's target for achieving Carbon neutrality or net zero

emissions by 2070, at the COP26 Climate Summit in Glasgow, Scotland on 1<sup>st</sup> November, 2021.<sup>15</sup> It was the first time such a goal has been set for the country along with major targets on renewables and reductions in green house gases by 2030.<sup>16</sup> In comparison, the US and European Union have set 2050 as their deadline for achieving net-zero emissions, while China, Russia and Saudi Arabia are aiming for 2060. Net-zero emissions will require reaching an overall balance between greenhouse gas removal from the atmosphere and greenhouse gas emissions.<sup>17</sup> In his address, he pointed that, by 2030, India will ensure 50% of its energy will be sourced from renewable energy sources. India will reduce its carbon emissions until 2030 by a billion tones. India will also reduce its emission intensity per unit of GDP by less than 45%.<sup>18</sup>

More importantly, Modi's net-zero pledge was one of the five he made at the COP26 conference in Glasgow, Scotland. Among the others were that India will increase its non-fossil energy capacity to 500GW by 2030 and that the country will get half of its energy from renewable resources by the same date. Modi also said India will reduce its carbon emissions by one billion ones between now and 2030, and reduce the carbon intensity of its economy by 45% again by 2030. He added that it was the need of the hour to put pressure on those countries that have failed to deliver on their promises about climate finance. Similarly in his address, at a G20 Summit session in Rome, Modi said, "Without concrete progress on climate finance, pressuring the developing countries for climate action is unjust". That's why he recommended at the G20 that developed countries should set aside at least 1% of their Gross Domestic Product (GDP) for financing green projects in developing countries. But earlier on, US President Joe Biden called for global cooperation in his address to COP26 : "We can keep the goal of limiting global warming of 1.5<sup>0</sup>C within reach if we come together". However, Biden offered no new commitments in his speech, though he said he will release a long-term plan to bring the US to net-zero emissions by 2050. On the other hand, China doesn't have any new pledges either and its president, Xi Jinping, isn't even attending the summit. By far the world's biggest carbon polluter, China said recently it will aim to peak its emissions by 2030.<sup>19</sup>

Modi also added that, in the spirit of climate justice, rich developed countries ought to be providing a least \$1 trillion in climate finance to assist developing countries and those most vulnerable. Earlier speaking another event of the COP, Mr. Modi said there had not been as much focus on climate adaptation as much as mitigation and that was an injustice against developing nations. There are changes in cropping patterns, there are floods and a great need to make agriculture resilient to these shocks. He also pointed that sustainable modes of living being practiced in certain traditional communities ought to be made part of school curricula and the lessons from India's efforts at adaptation in programmes such as, the Jal Jeevan Mission, the Swachh Bharat Abhiyan and the Ujjwala scheme ought to be popularized globally.<sup>20</sup> He also held out five goals (Panchamrit) to underline India's commitment to contain climate change in his speech here setting out India's national targets even as he appealed to world leaders to make 'life-style change', a global movement – World-life by shunning 'Mindless consumption' and adopting mindful utilization of resources. He emphasized that, India with a population of 125 crore, constitutes 17% of global population but its contribution to the emission has only been 5%. The five goals are :

1. India is the only big economy that has worked and delivered on the Paris commitment in letter and spirit.
2. Old climate goals won't work, developed nations must commit \$1 trillion for finance and technology transfer.
3. Resists pressure for a 2050 deadline, sets 'net zero' goal for 2070, 10 years behind China's target.
4. Raises renewable pledges to 500GW and fulfill 50% of its energy requirements by clean energy by 2030.
5. Will cut one billion ton of carbon emissions from total projected emissions by 2030; also reduce carbon intensity by 45% in its economy.<sup>21</sup>

#### **Conclusion:**

Despite of the huge COVID-19 crisis, India will be the fastest growing economy in the world in 2021 and 2022 according IMF projection. The IMF has retained its forecast of India's economic growth at 9.5 percent in 2021 and 8.5 percent in 2022. To retain the sustainable growth rate and to fulfill the energy demands, India targets 70% of our energy coming from renewable sources by 2050. That is why, it is the need of the hour that, Indian companies in the renewable sector should rise to the occasion like our IT companies and use 'Make in India', a catalyst for a high growth and create huge opportunities for the youth in our country in order to save the planet and securing the nation from the massive and destructive climatic change. We have no time but it is the best time to adopt and materialize the sustainability through green economy, is the only option for the future generation of our beloved country.

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## **“Water Pollution Control and its Management” – A Serious Problem**

**Dr. Rajat Rabindranath Mandal**

Assistant Professor in Commerce Mahatma Jyotiba Fule Mahavidyalaya, Ballarpur, Dist. Chandrapur  
(M.S.)

e-mail : rajatmandal1001@gmail.com

### **Abstract:**

Water pollution management has become an important and growing concern over the few centuries as more over more waste material is being disposed to lakes, rivers and oceans. This shows the increase in pollution of harmful materials in our foods environment and drinking water. It creates problems of ecosystem in oceans and damaging the plants and animals which are living into the water. As the days passed the population of human began to increase and the health of water become infected and polluted. The level of pollution increases when more quantity of water like lakes, rivers groundwater and oceans etc. are contaminated and growth of dangerous bacteria and harmful chemical occurs. This is because of dangerous product and waste materials are directly passed to the water. In fact today water pollution management and its control is a major problem that the living being faces now-a-days. This makes the millions of different animals and human beings cannot access to healthy water for drinking. The government in our country spends money and time to focus on management of water pollution and its control for our future. Everybody needs water for survive hence we have to take some measures for pollution control and to save water.

Hence, this article will discuss the reasons for water pollution and take some steps to reduce the pollution immediately. Because of increasing population peoples started to house buildings, big industries and factories and larger roads, there is a big physical and huge disturbance of the soil and industries started to accumulate their poisonous wastes into the water, thus causes the pollution. Everyone is responsible for pouring detergents or chemicals from their toilets. This makes the dangerous toxic waste enters the different water sources from different channels. Because of manmade pollution, in rainy season these waste chemicals are flushed into the rivers through the drainage systems.

**Keywords :-** Water pollution, pollution control, pollution management etc.

### **Introduction :**

The pollution of water is occurred by unintentional or intentional discharge of dangerous or toxic materials/chemicals into the various resources of water like ocean lakes and rivers. Without proper management the filtration or disposal of dangerous pollution can affect the health of water and makes problems for survival. It creates dangerous situations for soil, trees and plants and other natural wealth of the earth. This water pollution occurs due to hazardous materials or chemical contact throughout the different resources of water. This includes oil refineries, oil tankers leakage, construction sites and its garbage, residential houses, city street, sewage and dangerous chemical disposal from industries and various factories. Water pollution may caused by man-made or any natural activities. It can be non point sources or point sources. If any point sources pollution detected, it may occurs from single source like specific location of a large factory, oil overhauling or refinery of a ship which contributed a huge amount of water pollution from a single point. This makes pollution across the large quantity of water which affect many kilometer of water oceanic ecosystems, animals habitats and agricultural land etc. where as a non point source of water pollution may occur from various different areas which contribute the larger quantity water based pollution throughout the nature. Especially slum area with poor family residential house and their sewage leakage and various types of other contaminants, city roads where garbage and different chemicals are not properly disposed, chemical dangerous fertilizers used in farming agricultural land contributes the various sources of water pollution. Once the water polluted it becomes dangerous for drinking due to the unsafe or toxic pollutions which contained inside the water. If unsafe or contaminated water is consumed it results into sickness, illness, infections or may occurs death. Hence water pollution management and its control is necessary for human life and animal inhabitant throughout the nature.

**Objectives :** 1) To study the water pollution control and its management and which are the steps for its controlling.

**Hypothesis :** 1) Now a day's water pollution control and its management is a serious problem.

**Methodology :** The researcher want to study the water pollution management and its control and advantages. For this the researcher uses the secondary sources for eg. websites, magazine, e-journals, books etc or any other reliable authentic sources. This study is a explanatory study in nature.

**Causes/Reasons of water pollution:**

1. Water pollution may occurs from unintentional or intentional disposal of dangerous materials/chemicals into the water resources.
2. Rainwater causes the pollutions from air pollution which contain poisonous dust/materials from air causes dangerous water pollution.
3. Water pollution is also occurred from household residential sewage leakage problems or drainage systems.
4. It also caused by single point sources or non single point sources such as oil refineries, large factories, chemical waste produce management facilities, construction sites etc.

**Discussion and Analysis :** Water pollution may cause the end/death of the animals or living being in water. It may kills different types of species such as birds, fishes, dolphins and even whales. If any animals dies all the other animals in the eco-system may affected this result in disturbance of the system. It also affect the human beings by spreading many communicable diseases. Human health can affected by hepatitis through eating of seafood which contaminated by pollution of water. Diseases like, cholera is a common diseases due to contamination of water, and because of this many human health is affected throughout the world.

Gradually water pollution is destroying the balance of whole ecosystem. People faces the problem, because majority of the quantities of water resources are now polluted, hence rehabilitation is going on from many years. Generally, water pollution is an important major crisis which faces the world today, and the water pollution management affects large number of peoples who cannot access to good drinking water.

**Effect / Impact of water pollution :**

1. Toxic dangerous rainfall may occur in areas where air and/or water is polluted with toxic dangerous chemicals/materials.
2. Pollution of water creates diseases, sickness, deformities and infections and even health of human beings, plants and animals.
3. If water becomes polluted it directly affect the animals and humans either through directly consumption or may be indirectly food sources.
4. Degradation of land and other obstacle like algae and plants cover the surface of water resulting it undrinkable so the animals cannot drink the water from that sources.

**Preventions / Solutions to water pollution Management :**

Every one can do this activity and can prevent the water from pollution. Never throw or pour garbage into the sea or any resources of water. By doing this activities you can minimizing the water pollution and by recycling this you contributes to good management practices of good uses of resources.

**Some ideas/points for prevention of water pollution and it management**

1. Trees or plant near the water resources is very important because, when rains the top of soil with their personal chemicals cannot washed away. Large trees always help to prevent soil erosion. Hence, if there is large/big trees it stop the eroding of soil, then the ocean can be, protected.
2. If anyone wish to use proper cleaning liquids, they must sure that the liquid is environmental friendly.
3. If is advised not to put any type of chemicals or oil based cleaner in the sink or toilet because they may contaminate the groundwater.
4. Be careful for the quantity of water you use daily. By observation or daily practice you can save huge quantity of water wastage or large amount of money which are included in the water supply bills.
5. Whenever you are cooking the food, you must careful about excess throw of oil down or fat based waste materials in the drains. Pour the materials in container and discard it as a solid waste or when it dries.
6. Don't make a toilet as dustbin. Stop flushing unnecessary waste product in the toilet. It creates sustainable problem and lead to mass pollution.
7. Proper use of water efficient toilet at our home is necessary. With the help of this you can save the water which may be unnecessarily drained through flush.
8. When maintaining your household lawn don't use chemical fertilizer or patricides, it may creates water pollution through drainage system nearby roads in rainy season.
9. The farmer in our country must graze the animals in their agricultural land when the land is well-vegetated pasture, otherwise it creates soil erosion. In your home garden don't use fertilizer or pesticides for your plants growth.
10. Keep the vehicle in accurate condition to stop air pollution or to stop oil leakage problem.



11. Reduce the use of plastic materials, because if plastic materials are recycle then it is low polluted, but if not recycle, it may creates huge water pollution as well as soil pollution.
12. Large population of people flush the unused pharmaceutical drugs into the drainage system, it creates huge water pollution. Everyone should drop the unused medicines into the drug drop off organized by government or any other organizations.

**Result :** from the above analysis and discussions, the hypothesis of now-a-day's water pollution control and its management is a serious problem is accepted.

**Conclusion :**

Now-a-days, water pollution is a major issues of all the countries throughout the world. Clean water is necessary for everyone lives, so we cannot ignore the actual fact of world's clean water source is decreasing. Thus, government spends huge amount of money to rehabilitate the water resources and save the life of the peoples indirectly. Water pollution is occurred by all citizens, whether they are waste material disposal of big factories or industries, huge oil spills of ships or small scale households. Everything we do in this sense creates destruction or creates problem to the health of water. Hence, don't do the activities like flushing of pharmaceutical drugs into the toilet, don't use pesticides for household garden and plants or disposing plastics material into the sea or any sources of water. However, everyone have still lots of time to prove our self worth to save the mother earth from destruction. We have to live simple or have to change our daily lifestyle for this kind of change. So, save the water and live green.

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## **Review The Concept And Roll Of Rural Urban Fringe Area**

**Dr. Jyotsna Pandey**

Associate Professors, Department of geography S.B.M.P.G.College, Pawanagar, Fazilnagar, Kushinagar,  
Uttar Pradesh.

Email: jpandey964 @gmail.com

### **Abstract**

In the process of urban sprawl, the adjoining areas are being constantly engulfed into urban landscape. As such, the villages lying in the immediate vicinity of cities and towns are gradually acquiring urban character. This peripheral area is known as rural-urban fringe, which have grow around all cities and has assumed a vital significance for in the planning of future city. The study of rural-urban fringe has gained great topical importance and has drawn the attention of geographers, planners, social scientist, administrators and all these interested in the maintenance of town country relationship. Many scholars have studied the fringe phenomenon. Major aims and objectives of the study is to bring out the concept and roll of rural-urban fringe. The cities are growing fast in size and gradually encroaching upon the surrounding rural areas in the process of expansion. The rural-urban interaction between the town and the country-side has created a rural-urban fringe around them, which exhibit an intermixing and overlapping of urban and rural character. The term 'Fringe' denotes such transitional character. Literally, the term 'Rural-Urban Fringe' amalgamates two types of Fringes, rural as well as urban. Thus this transitional zone formed around every urban centre depends upon the impact of the urban area. Greater is the impact of the city larger becomes the extant of its rural-urban fringe. This zone is indeed an aerial expansion of urban activities into the rural centers that have previously been used for non-urban purpose into one for more urban uses.

Various scholars have defined the fringe phenomena. In as early as 1862, Von Thunen propounded that due to land utilization a system of concentric zone develops around every city. Afterwards, Jonas son in 1925 put forth his ' principle of land utilization about the European cities. Same year, park and Burgess advanced the ' Concentric zone theory' and stated that city neighborhood attracts the wealthier class dwelling. For the first time in 1928 MacKaye found that city engulfed the land adjacent to the city boundary and established bill-board, hot-dog stands, fillings stations, garages, stores as well as the residence of people with jobs in the city and part time farmers. MacKaye called this 'metropolitan invasion' which starts from the central city community. In 1933 Chris taller postulated his 'Central place theory', which is rather more popular and realistic than Von Thune's theory. According to W.Christaller "The fringe areas in form of belts or zones, bulging along diverging transport routes, are developed around cities. In 1937, smith publishes his article on rural-urban fringe. For the first time he used the term 'urban fringe' for such a land, which lies outside the city limit with the concentration of non-village, rural non-farm population in which night-club, tourist camp, filling station and low-caste residential houses exist. According to Salter (1940)," an urban-rural fringe is an area, which has a mixture of land uses that are related to farming and urban interest."The most brilliant and universal idea about rural-urban fringe was formulated in 1942 by Wehrewirn. He gave more particle theory about the structure of land use within the fringe area. He identified fringe area as between well recognized urban land uses and area devoted to agriculture. The fact that emerges from his theory is that the rural-urban fringe is really an extension of the city itself, where most of the land uses are in flux. Hence, this area is subject to planning, direction and control. Andrews contributed new thought in 1940, by attempting to differentiate the urban fringe the rural-urban fringe .He defined ' urban fringe ' as the " active expansion sector of the compact economic city" whereas the ' rural-urban fringe' lies adjacent to the periphery of the 'rural-urban fringe'. The year 1942 proved to be a landmark in the fringe studies following the realistic idea of wherein and Andrews. Later on two scholars' klow and Alpake also dealt with this topic. According Alpake the rural-urban fringe includes the "Culture development having taken place outside the political boundaries of cities and extends to the areas of predominantly agricultural activity.

A number of articles were published in 1945 on various activities of the urban fringe. In this context Bringe's work is merely objective of the original article by Andrews was to delineate the patterns of human action which result from various phase of urban unrest. Balk's fringe study opened a new vista. He stated that "the area of urbanization and accessibility is a sole factor in the development of

the fringe." After one year in 1946 Walter Fiery remarked, "urban fringe is a marginal land use area not because of its geographical location, its soil types or its topography but because of its particular degree of accessibility to some central transportation point ." Rode aver (1946) illustrated the urban fringe as a social mirror. He defined the urban fringe as "interstitial area" which lies between an urban unit and its outlying rural farm area. In 1948, Meyers and Beagle tried to delineate the Detroit fringe area with the help of NV-RNF (Non village-rural nonfarm) population data. Dewey (1948) stated that the movement of population into the rural-urban fringe was a movement of urban people. The United State Bureau defined urbanized area and urban fringe in 1950 census and remark that the urban fringe is a part of an urbanized area which is outside the central city or cities: By the end of fourth decade of the twentieth century Asch man spoke something different about fringe studies, which appeared in the writings of Blizzard and Anderson in 1952. Both these scholars studied the urban fringe of two cities- Williamsport and Pennsylvania and defined the rural-urban fringe as " the area of mixed urban and rural land uses between the point where fully city services are available and the point where agriculture land uses predominate (Which includes waste land and wooded areas ).Martin (1953) considered that the fringe boundary should be drawn at the point, "where the pattern of land uses characteristics of th fringe change to the dispersed pattern of open country farming." But the main difficulty with Martin's view is that he did not give any indication as to what extent the density of single family dwellings was considered as an index of fringe characteristics. The urban fringe was classified into two types, the ' limited fringe' and the ' extended fringe' has by Mackain and Burnight in 1953. The ' limited fringe' has its original growth along with the highways lying closely peripheral to the city, whereas the ' extended fringe' lies in the agriculture hinterland of cities settled mostly by urban-oriented people. In 1956 Duncan and Reiss used the term urban fringe to denote the non suburban population of the territory in urbanized areas outside the central city. Their urbanized area contained three components: central city suburb and urban fringe. Kurtz and Eicher (1958) tried to define the fringe area by differentiating between fringe and suburb. In 1960, Golledge opined about urban fringe and state that the fringe area includes such type of land use which are continuously changing. Similarly, Russum<sup>25</sup> (1960) refers to this area as "frontier of discontinuity between the city and country. Conzen<sup>26</sup> (1960) differentiates the character of fringe area in two sections; first the 'proximal' e.g. inner margin and the second one is the 'distal' i.e. the outer margin. In 1962, Wissink<sup>27</sup> identified the fringe area of American cities as 'fringe', 'suburbs' and 'Pseudo suburbs', 'satellites' and 'Pseudo satellites' and in Land use terms called it 'an area of great differentiation'.

Mukherji's<sup>28</sup> major concern of fringe study is to interpret the land use pattern and land use change of Florida's Orland city, pointing out the characteristic of fringe area. According to him the intensity of urban land use, as indicated by the subdivision of land and the extent to which subdivision is made, was chosen as the major criterion for defining the urban fringe area, rather than criteria like density of population or the character of local government etc. R.E. Dickinson<sup>29</sup> in 1964 considers that on the outer borders of the city between the areas of rural and urban land uses there is an intermediate zone which shares the characteristics of each.Jayrajan<sup>30</sup> (1965), has expressed his view about the fringe in his article "what is happening to the fringe areas of our cities". His attempt has been to highlight the nature of fringe area of cities and town, the mode of changes and developments that have occurred in the fringe areas. These types of spontaneous development in many cases have caused several acute problems to the city. Jayrajan's contention is that if the present trend continues in future most of our towns and cities will swallow the productive countryside especially when they are caught in the wave of expansion due to excessive urbanization. Morrile<sup>31</sup> (1965) was more specific as to the mode of fringe expansion, while Harvey<sup>32</sup> considered the nature and economics of urban sprawl in general. Pahl's<sup>33</sup> work focused upon the social character of London's fringe. Pastalan<sup>34</sup> (1967) has given an operation definition of the fringe as an area in transitional from where rural land uses are giving way to urban land uses. While Whiteland<sup>35</sup>, looking into all these differences, was prompted to define the fringe a "heterogeneous region" which derives its units not from homogeneity of forms but from certain factors that influenced its situation. In the year 1967, Garnier<sup>36</sup> supposed the fringe as a phenomenon rather than an area and said that it begins where the continuous built-up town ends. IN 1967, Jadav's<sup>37</sup> study was merely based on land use planning in the rural-urban fringe. He tried to explain the rural-urban fringe as a zone in which various rural-urban characteristics are mixed together. Same year Mayer and Kohn<sup>38</sup> identified problems of competition for land uses preservation of open space as the two most important areas of research interest in the rural-urban fringe.In 1968, Singh<sup>39</sup> illustrated the character of fringe around the KAVAL towns as a finger like expansion of the built-up area along the main thoroughfares. Pryor<sup>40</sup> expressed his view (1968-69) by quantitatively subdividing the urban-rural fringe into an 'urban fringe' and a 'rural fringe'. Oosthizen<sup>41</sup> in 1969 observed the fringe as a quasi-urban area and stated that is the dispersed populated residential area,

not recognized by municipality, situated far away from the metropolitan centre and only known by its original name.

In the beginning of the seventh decade of the twentieth century Ray<sup>42</sup> thought that the area beyond the built-up suburbs may be called the urban fringe. In 1971, Srivastava<sup>43</sup> presented his idea on delimitation and characteristics of urban fringes of Indian cities. Same year, J. Fine<sup>44</sup> studied the suburbs central cities and explained their transitional character as 'myths of suburbia'. Rikkinen's<sup>45</sup> analysis depends on the way in which ownership boundaries affect urban growth and land use changes while Schnore and Klaff<sup>46</sup> (1972) have measured the speed of suburbanization in the United states. Same year, Hyma<sup>47</sup> also presented his idea on the metropolitan fringe development in Madras. H. Carter<sup>48</sup> (1972) remarked that the rural-urban fringe is a region of communities of distinctive nature resulting from the migration of mobile, middle class families oriented to the city and dominated by urban life styles. In 1973 Hudson<sup>49</sup> analyzed statistically the demographic characteristics of the suburban fringe of nine metropolitan centers in U.S.A. Martin<sup>50</sup> (1973) paid attention towards the entire metropolitan area for measuring the density gradient in which he found a tendency for population distribution over space varying between city and suburbs. In 1974 two Indian geographers, Srivastava and Ramchandran<sup>51</sup> worked out on 'Stage model' depicting various stages through which the villages around a metropolis have to pass. James H. Johnson's<sup>52</sup> (1974) viewed, this transitional zone could be recognized on social grounds in which there are separate rural-urban groups of which each exhibit distinctive accusations and attitudes. Nangia<sup>53</sup> (1976) pointed out that the rural-urban fringe is that zone which lies immediately outside the city area and has strong interaction with the city proper in terms of daily commuting, exchange of goods and services and bears an urban reflection on the physical, occupational and demographic structure. Same year Dube<sup>54</sup> (1976) emphasized the urban fringe as an area where extensive tract of land is taken from rural to urban uses, and where the land which was at a time under cultivation is converted into various urban uses. In 1977, Godwa and Mahadev<sup>55</sup> jointly worked on the changing nature of agriculture in the rural-urban fringe of Bangalore city and defined its rural-urban fringe as an area characterized by smaller proportion of farmers to total workers than that in the rural areas, and by a relatively higher proportion of part-time farmers with intensive agricultural production in the form of market gardening and poultry farming. This zone is marked by irregular conversion of agricultural land into urban uses. According to Gopi<sup>56</sup> (1978) the suburbanization denotes the extension of urban values, urban functions and urban land uses in the fringe settlements of central cities. In 1979, Jafari and Sahu<sup>57</sup> Jafari and Sahu<sup>57</sup> study the fringe area of Shillong city and stated that the city is expanding on the fronts of commercial, demographic and social levels.

In 1980, Sinha<sup>58</sup> studied the fringe belt of Patna city and mentions that the fringe is a process which helps to change the neighboring rural area into city units. Kumar<sup>59</sup> (1980) conducted a survey of suburbs of Bhopal city and suggested its land use planning. She presented a model different from that of Von Thunen, by examining the diffusion trend of agricultural innovation. In 1982, Phadke and Sita<sup>60</sup> pointed out the economic characteristics of rural fringe of the Mega city of Bombay. In 1983 Singh and Rao<sup>61</sup> claimed that the urban fringe is an abode of rural-urban migrants and low paid city workers and exhibits an unregulated ugly appearance of the workers who keep the city functioning. In view of Malik<sup>62</sup> the urban fringe is physical growth of a city beyond its corporate area; it grows rather haphazardly and irregularly, due to some factors like land value and accessibility. Singh<sup>63</sup> mentions that the rural-urban fringe is characterized by its morphological aspects and develops in a relatively narrow strip of a hundred to a few hundred meters width along roads; while Yadav<sup>64</sup> writes that rural-urban fringe is a change at the edge of city occurring as a reaction to the congestion, crowding and environmental deterioration of the city core. In view of Lal<sup>65</sup>, the rural-urban fringe is a process of accretion which takes place outside the city area and has generated an area of transition between rural and urban landscape. Sen Gupta<sup>66</sup> defines the fringe as 'suburb' and mentions that, this is rather a more rural area adjacent to the city core, acquiring eventually an urban character and is constantly being engulfed into urban landscape due to urbanization. Thus, the above analysis of the available literature reveals that the rural-urban fringe area created around every city of the world in general and India in particular, is a transitional zone, characterized by the suburban character exhibiting intermingling and overlapping of rural and urban land uses varying in magnitude due to the varying urban impact of the town. This is such an area from which the rural tract is converted into semi-urban and semi-urban into entirely urban uses. I can say, that Rural-urban fringe is a dynamic phenomenon, which is neither rural nor urban. This is the result of the process of suburbanization, which is spontaneous. In view of the planned urban development, this process is to be regulated otherwise it will be difficult to overcome the regional imbalances. In Indian cities, the development of fringe zone and its steady encroachment by the cities without any conscious effort of planning and regulations has been quite common. Bigger the city larger is the size of its fringe. It is tragic

to point out that the cities are swallowing fertile agricultural land of their surroundings without taking into cognizance the shortage of food and other allied agro-products in the country. Simultaneously, the loss of agricultural land is yielding to rural unemployment, rural-poverty, and rural-urban migration. As such, it is high time to explore the ways and means to stop and restrict such encroachments. The vertical development of the Indian cities, asking to the western urban centers has to be adopted so as to minimize the horizontal expansion and the invasion of the country side. While in the developed would the remote villages are fully equipped with all modern urban amenities and appear to be the 'rural crops'. Conversely in India many villages amalgamated within the city corporate area, still remain deprived of even basic urban facilities and public utility services so it's a questions with us, that how we can use this area for planning purposes of the development.

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## **A Study On Implementation Of General Human Resource Development Practices In Banks –A Critical Analyses**

**Mrs. Shyja.k<sup>1</sup> Dr. S. Nadarajan<sup>2</sup>**

<sup>1</sup>Research Scholar, Reg no. 19223231012002 Department of commerce St. Jude's, College, Thoothoor  
<sup>2</sup>Former Head and Associated professor, Department of commerce St. Jude's College, Thoothoor-629176  
Affiliated to Manonmaniam Sundaranar University, Tirunelveli

### **Abstract:**

It is a process by which the employees of an organization are helped in a planned continuous process to acquire capabilities required to perform various functions connected with their present and future roles, develop their general capabilities and hidden potentials which is needed for their own as well as for the organizational development and develop an organizational culture in which supervisor subordinate relationship, team work and link between different sub units are strong which contributes for professional well-being, strong motivation. The main objectives of the study is to analysis of HRD practices in the banks in Kanyakumari district, for data collection all the 259 bank branches are included for the study, the level of existence of HRD practices in the banks in Kanyakumari district, for data collection all the 259 bank branches are included for the study, From the each branch, the bank manager determinants, its consequences of the HRD practices at banks. Hence the applied sampling procedure of the study is 'census method' the primary data used in the present study was collected with the help of the interview schedule. Tools and analysis 'T' test could be used to test the significance difference between the two means in two different samples and the important factors leading to the successful implementation of the HRD practices in banks, the Exploratory Factor Analysis have been administered. is selected for the study since he is well versed in the idea on the implementation, its placement, hierarchy, qualification, reward system, training, performance appraisal, effective counselling, leadership style, investment on HRD, role clarity, pro-active orientation, team-work. Authenticity, risk taking, openness, effective communication, objective orientation, competency building, development HRD programmes, quality of work life, communication and motivation on organisational value motivation to HRD implementation budget allocation for HRD programmes, support from top level management, improving the weak area, shaping of HRD philosophy and plans, clarifying goals and objectives. Setting of standards, trust Career development. The highly implemented GHRD practices in private and public sector banks are style of management and orientation respectively. The significant difference among the private and public sector banks have been noticed in the level of implementation of six out of seven important GHRD practices. In total, the level of implementation of GHRD is higher at private compared to public sector banks. The significantly associating important profile variables regarding the level of implementation of GHRD are year of establishment, decision maker, location of the bank and nature of return on capital employed. The important discriminant GHRD among the private and public sector banks are climate and motivation which are highly implemented in private sector banks compared to public sector banks.

**Key words :** practices, HRD, implementation

### **Introduction:**

The banks' policy makers have realized that the Human Resources or the personnel have to play a vital role for the development of banking industry. Effective utilization of the recruit personnel is keys to the successful management in banking industry. HRD acquires special meaning industry in banking industry due to a variety of factors like a labour intensive industry. Job security, job satisfaction is quite high in the present era of competition. This apart the high quality of banking services and the objectives of banks in achieving the social and economic goal depend on involvement of the employees. The key factors for successful management in banking business depends on right and effective placement of young blood those who are recruit for these purpose. Therefore, present study tried to find out the perception of employees towards Human resources development climate in banking industry at Kanniakumari district.

### **Statement Of Problem**

In order to sustain the challenges it is very important to have be employees engaged as the engaged employees will demonstrate an increased loyalty to the organizations to reach the heights of excellence. It is high time for the organization to effectively utilize the human strengths by generation positive perception attitude among the employees through Human Resource Development Programmes

**Objectives Of The Study** The main objectives of the study is,

1. To study the level of existence of HRD systems in the banks

2. To evaluate the linkage between the implementation of HRD practices and its outcomes in banks.

### **Methodology**

All the 259 bank branches are included for the study. From the each branch, the bank manager is selected for the study since he is well versed in the idea on the implementation, its determinants and its consequences of the HRD practices at banks. Hence the applied sampling procedure of the study is 'census method'. The primary data used in the present study were collected with the help of the interview schedule. The schedule was classified into four parts. The first part of the schedule includes the profile of the banks and the view on the existence of HRD sub-systems at the commercial banks. The second part of the schedule covers the determinants of the implementation of HRD practices and factors leading to the successful implementation of the HRD at banks. The third part of the schedule explains the rate of implementation of various type of HRD practices at commercial banks. The final part of the schedule includes the various outcome of HRD practices. The interview schedule was pre-tested in 20 manager in private and 20 manager public sector banks at Nagercoil town. Based on the feedback on the interview schedule, certain modifications, deletions and additions were carried out to prepare the final draft of the questionnaire and also to prepare the instrumentation for data collection.

### **Tools and Analysis**

#### **'T' test**

'T' test could be used to test the significance difference between the two means in two different samples and the important factors leading to the successful implementation of the HRD practices in banks, the Exploratory Factor Analysis have been administered.

#### **Review of literature:**

**Afroj (2012)** found that HRM practices are crucial for every organizations for the property management for all activities in an organization. The quality of services offered by bank is a function of the HR of the bank.

**Goyal and Shrivastava (2012)** revealed that appropriate HR practices of an organizations can improve the job satisfaction level of the employee and strengthen the employees' commitment towards the organizations.

**Absar et al., (2010)** stated that human resource planning, training and development wire found to have positive impact on job satisfaction.

**Gurbuz (2009)** investigated that participation, empowerment, job rotation; self directed work teams and contingent compensation were positively correlated with employees' job satisfaction.

#### **Limitations Of The Study**

The significant limitations are

The variables related to the HRD sub-system, the determinants of the HRD, the successful implementation of the HRD, the various types of HRD practices and constraints in implementing the HRD at the banks have been derived from the review of the previous studies and also from the views of experts. The same procedure has also been followed in identifying the variables related to the outcome of HRD practices.

#### **Implementation Of General Ghrd Practices In Banks (Ghrdp)**

The General GHRD practices included the activities carried out by the management regarding the human resource development to enrich the performance of the employee and the organisation. The GHRD practices implemented by the organization are differing according to the nature of the industry . The HRD practices included in the present study have been derived from the various studies . The various GHRD practices in the present study are replacement, hierarchy, qualification, reward system, training, performance appraisal, effective counselling , leadership style, investment on HRD, role clarity, pro-active orientation, team-work. Authenticity, risk taking, openness, effective communication, objective orientation, competency building, development HRD programmes, quality of work life, communication and motivation on organisational value motivation to HRD implementation budget allocation for HRD programmes, support from top level management, improving the weak area, shaping of HRD philosophy and plans, clarifying goals and objectives. Setting of standards, trust Career development.

.The important objectives of the general HRD are employee competency development, employee motivation, development and organizational climate development. In order to achieve these three important outcomes, the general HRD instruments have been used by the organization. It is called as general HRD practices. The general HRD practices implemented by the organization differ from organization to organization which depend upon the requirements of the particular bank.

In the present study, the general HRD practices at the banks are confined to 30 variables. The respondents are asked to rate the above said 30 variables in general HRD practices at five point scale



regarding the rate of implementation at their banks. The mean scores of each general HRD practice have been computed in PRSBs and PUBSs separately along with its 't' statistics.

**Level Of Implementation Of General Hrd Practices In Banks (Ghrdp)**

Sl.No	General HRD Practices	Mean Score in		't' statistics
		PRSBs	PUBSs	
1	Placement	2.8163	2.1216	2.6244*
2	Hierarchy	2.6647	2.0314	2.4089*
3	Qualification	2.9123	2.2389	2.7141*
4	Reward System	2.8628	2.1466	2.7443*
5	Training	2.6664	2.0357	2.5919*
6	Performance Appraisal	2.7353	2.1072	2.6414*
7	Effective Counselling	2.8162	2.2417	2.5848*
8	Leadership Style	2.9211	2.8462	0.1247
9	Investment on HRD	2.6653	2.0637	2.4544*
10	Role Clarity	3.0175	2.1125	2.8172*
11	Pro-Active Orientation	2.9681	2.1015	2.9324*
12	Team Work	3.1423	2.1214	2.9829*
13	Authenticity	3.3919	2.3928	2.9433*
14	Risk-taking	3.4064	2.5124	2.9456*
15	Openness	3.5122	2.6019	2.9241*
16	Effective Communication	2.8923	2.0652	2.8914*
17	Objective Orientation	2.9942	2.1124	2.8982*
18	Competency Building	3.1069	2.2095	2.8637*
19	Quality of Work Life	2.7823	1.8964	2.6309*
20	Communication and Motivation on Organization Value	2.6564	2.0453	1.5537
21	Development of HRD Programmes	2.8356	2.0679	2.8949*
22	Motivation to HRD Implementation	2.7463	2.1067	2.3449*
23	Budget allocation for HRD Programme	2.9154	2.2444	2.7244*
23	Support from Top Level Management	2.9154	2.2444	2.7244*
24	Improving the Weak Area	3.2267	2.4187	2.8187*

25	Shaping of HRD Philosophy and Plans	2.9793	2.1457	2.8932*
26	Clarifying goals and Objectives	2.6604	2.0263	2.4776*
27	Setting of Standards	2.9986	2.2157	2.7281*
28	Trust	3.0879	2.1429	2.5918*
29	Career Development	3.1324	2.2064	2.6443*
30		3.2649	2.3632	2.6443*

#### **Significant at five per cent level**

The highly implemented general HRD practices at private sector banks are openness, and risk taking since their mean scores are 3.5122, 3.4064. At the public sector banks, these two variables are leadership style and openness since its mean scores are 2.8462 and 2.6019 respectively. The significant difference among private and public sector banks have been noticed in the view on 28 out of 30 variables in GHRD since its 't' statistics are significant at five per cent level.

#### **Important Ghrd Practices At Banks**

The score on the rate of implementation of each GHRD practices at banks have been included for the narration analysis for further study. The EFA has been administered to narrate the GHRD variables into important GHRD practices. The test of validity of data for factor analysis have been conducted with the help of the KMO measure of sampling adequacy and Bartlett's test of sphericity. Since the KMO measure is greater than 0.5 and the level of significance of Chi-square is at zero per cent level, the validity of data for factor analysis is confirmed. The EFA has accepted only 28 GHRD practices for narration whereas the remaining 2 GHRD practices namely quality of work life and clarifying goals and objective have been dropped since their factor loadings are less than 0.4. The EFA group results into seven important GHRD practices. The number of HRD practices in each important GHRD practices, their eigen value and the reliability co-efficients are given in

Sl.No	Important GHRD Practices	Number of variables in	Eigen value	Per cent of variation explained	Cumulative per cent of variation explained
1	Orientation	8	5.8901	21.03	21.03
2	System	5	3.6786	13.14	34.17
3	Top Management Support	4	3.2091	11.46	45.63
4	Climate	3	2.7491	9.82	55.45
5	Programmes	3	2.6566	9.48	64.93
6	Style of Management	3	2.5299	9.03	73.96
7	Motivation	2	1.9796	7.07	81.03
	Total	28			
KMO Measure of sampling Adequacy: 0.7969			Bartlett's test of sphericity: Chi-square value: 97.04*		

### **Significant at zero per cent level**

The most important GHRD practice narrated by the EFA is 'orientation' since its eigen value and the per cent of variation explained by it are 5.8901 and 21.03 respectively. The next two important GHRD practices are 'system' and 'top management support' since their eigen values are 3.6786 and 3.2091 respectively. The per cent of variation explained by these two important GHRD practices are 13.14 and 11.46 respectively. The other two important GHRD practices are climate and programmes since their eigen values are 2.7491 and 2.6566 respectively, whereas the last two important GHRD practices are style of management and motivation, since their eigen values are 2.5299 and 1.9796 respectively

### **Conclusion:**

The level of implementation of GHRD practices in banks have been studied with the help of 30 variables. The highly implemented variable in private and public sector banks are openers and leadership style respectively. The significant difference among the two group of banks have been noticed in the implementation of 28 out of 30 variables in GHRD. The important GHRD practices narrated by the factor analysis are orientation, system, top management support, climate programmes, style of management and motivation. The highly implemented GHRD practices in private and public sector banks are style of management and orientation respectively. The significant difference among the private and public sector banks have been noticed in the level of implementation of six out of seven important GHRD practices. In total, the level of implementation of GHRD is higher at private compared to public sector banks. The significantly associating important profile variables regarding the level of implementation of GHRD are year of establishment, decision maker, location of the bank and nature of return on capital employed. The important discriminant GHRD among the private and public sector banks are climate and motivation which are highly implemented in private sector banks compared to public sector banks.

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## **The Importance of Evidence By Witness, Threats To His Life And Legal Protection: A Critical Study**

**Bhosale Rakesh Arvind**

Assistant Professor in Law, Karmaveer Bhausaheb Hiray Law College,

Malegaon Camp, Dist: Nashik

E-mail: [rakeshbhosle1986@gmail.com](mailto:rakeshbhosle1986@gmail.com)

**Abstract:** A witness is an important party in case apart from the Complainant and accused. To success criminal justice system it must for individual to provide proper information without any fears and threat. The witness is most important and plays a vital role in both proceedings of civil and criminal cases. The success of a prosecution case only depends on how the witnesses are handled and protected. A witness plays an important role of assisting the court in deciding the guilt of the accused person. Witness play a key role in all stages of criminal proceeding, from reporting of crime & right through to the trial. Therefore, to fair trial is also the independence and freedom of the witnesses, which imposed the guilt of the accused. if their were no protection of witnesses and their families against intimidation, many people would not be to cooperate with the authorities, and the state affairs could cause the justice system to become paralyzed in so many cases. Due to this it is uncommon that witnesses turn hostile. What effort should be made in this regard for achieve the effective witness protection in our justice system. Witnesses are important for successful investigation of crime so its need to have the confidence of witnesses to come forward to assist law authorities. Witnesses need to assure that they will get support and proper protection from criminal groups. In this war against crime, in the absence of any proper law to protect witnesses more witnesses are turning hostile this affects the credibility of the justice delivered system to provide justice. It is crucial for the justice system state should be protecting the witnesses against intimidation and wrongful acts. It's necessary that we should see why witnesses do not want to testify themselves. What are the main reasons and factors which induce the hostility of witnesses and how we can avoid this for proper criminal justice system in India?

**Introduction:**The foundation of well- functioning criminal justice system are witnesses as their co-operation with law enforcement and judicial authorities is essential to find out crime successfully. Protecting witnesses from intimidation or threats from crime suspects is requirement of justice system. In the absence of adequate protection the witnesses are turning hostile. The hostility of witnesses has further complicated and creates so many problems in justice system. so its need to proper protection of witnesses. During the British period their was no systematic enactment relating to witness. The English rules of evidence were followed in the courts. In spite of The British rules our court were still governed by customary laws which were indefinite. Thus in the year 1870, Sir James Stephen prepared a new bill which was passed in 1872 in the form of The Indian Evidence Act, 1882 is basically founded on the English Law of Evidence. The Act has been force from the last one hundred and thirty years. The law commissions of India has suggested and recommend Witness is regarded as one of the most indispensable element in the criminal justice system. Witness may have direct bearing on the conviction or acquittal of an accused, hence it is desired that such witnesses be protected from the wrath of extraneous factors that have the capability to change his stance over a particular case. In a civilized society crime should not be committed and peace should be maintained by the people. It is the duty of every civilian to take necessary steps to eradicate the roots of crimes from the society. Crime is an act which is immoral and a person who commits a crime is an criminal and the act committed by him is illegal. The commission of crime has takes The glaring lacuna of proper legislative framework in the country to protect witnesses is evident because even the term 'witness' is not defined by any criminal statute. In our country witnesses are no longer willing to come forward. Reason is witnesses' face lot of pressure to his life from accused the difficulties faced by the witnesses including life-threatening intimidation against themselves and their families. Whether they are police officers, in further investigations and prevention of crime activities can be hampered due to insufficient witness protection. Other witnesses also facing the same problem including crime witnesses within close relations and family members in sexual offence cases of witnesses who are vulnerable for personal reasons. Place in society gradually. It is a culmination of events and series of acts. . A right of fair trial has been recognized as the heart of criminal jurisprudence and one of the most important facets of democratic policy. A ' witness' is an indispensable aid in the justice dispensation system. The criminal justice system aims to capture and punish the offender.

**Need of A Legal Protection For Fair Evidence:** Protection of witnesses is an important and serious issue which requires discussion, planning and committed a proper implementation. What are the reasons and why the witnesses turning hostile? The draftsmen of the Indian Evidence Act, 1872 were not unanimous with regard to

the meaning of the words “adverse”, “unwilling”, or “hostile”, and therefore, in view of the conflict, refrained from using any of those words in the Act. The matter is left entirely to the discretion of the court. A witness is considered adverse when in the opinion of the judge; he bears a hostile animus to the party calling him and not merely when his testimony contradicts his proof. Generally a witness is labeled as hostile, when he furnishes a certain statement on his knowledge about commission of a crime before the police but refutes it when called as witness before the court during the trial. Thus, a hostile witness is also called as adverse witness, who weakens the case of the side he or she is supposed to be supporting i.e. instead of supporting the prosecution who has presented him as a witness of opposite party in the court of law. The Supreme Court in *Gura Singh V. State of Rajasthan* 35 defined hostile witness as one “who is not desirous of telling of the truth in the instance of one party calling him.” Though there are not enough provisions under domestic law dealing directly with the issue but there are certain provisions under the Indian Evidence Act, 1872 and the Code of Criminal Procedure, 1973 which are helpful in explaining the concept to some extent. The Indian Penal Code, 1860 under Section 191 defines Perjury as “giving false evidence.” Some of the most sensational cases bring this point home. Consider the BMW hit and run case, the best bakery case, phoolan devi and Jessica Lal murder cases, where witnesses turned hostile for reasons such as inducement, intimidation, and threat to life it was found that witness turned hostile for different reasons. It recommended that protection of witnesses especially in sensitive cases would to great extent for preventing them from turning hostile there is need for enactment of comprehensive witnesses’ protection legislation. After doing a through discussion of the Jessica Lal, Phoolan Devi, Best Bakery, and Prof. Sabharwal and other important cases inferred that absence of law to protect witnesses is the main reason for the hostility of witnesses which led to the low conviction rate in India. It’s possible only when a proper investigation is done. For proper investigation plays an important role. The focus on status of witness and witness plays an important role in criminal trial. Witness is an indispensable aid in the justice dispensation system in any civilized society. The amendments are necessary in view of political, social, economic, legal and technological changes. The burden of proof on the accused must be held to be less than required at the hands of the prosecution in proving the case beyond reasonable doubt. Witnesses can be easily perjured, but circumstances properly established rarely mislead. The paramount duty of every court is to separate the grain from the chaff on a careful and scrupulous analysis and if that is not possible gives the benefit of it to the accused lest the innocent be convicted In India, the people fear to give their evidence before the Court. Some of the jurists and judges that mere stringent and swift action for perjury is one antidote to stop the hostilewitnesses.

#### **Major Acts For Protection To Witness In India:**

Protection available to witness has been done under the Code of Criminal Procedure, 1973, Indian Penal Code, 1860 and the Indian Evidence Act, 1872. It is been that under Code of Criminal Procedure, 1973 and Indian Penal Code, 1860 there is no direct provision relating to witness protection except the recent amendment made by Code of Criminal Procedure (Amendment) Act, 2008 which inserted a new section 195A added in the Cr. P. C, 1973 by the same amendment will empower the witness or any other person to file a complaint response to the offence covered under IPC for threatening or inducing any person to give false evidence. This amendment is an initial step in the right direction. But this alone is sufficient. In the Indian Evidence Act, 1872 section 149 to 152 together with section 148 were intended to project a witness against improper cross- examination, a protection which is often very much required. It has however, been seen that the protection afforded by section 148 in not very effectual. These provisions of the Evidence Act have been designed to ensure a fair trial to the accused as he is presumed to be innocent till he is proved of guilty beyond reasonable doubt. However, there are instances where crucial witnesses, i.e., key witnesses or material witnesses, disappear either before or during a trial or a witness is threatened, abducted or done away with. In the above scenario, it becomes imperative that the provisions of the Evidence Act are required to be looked into afresh to ensure fair trial by affording protection to a witness so that true and correct facts come up before the trial Court . There are certain provisions to deal with witness protection under the special statutes also but it is found that these scattered provisions have failed to provide adequate protection. So, there is an emergent need to enact a separate law for witness protection. Prithi Jinta cine artist case, There were several mafia gangs in Bombay demanding huge amounts from the cine artists, producers and film distributors. Some of the mafia gangs are being operated from other countries Due to the fear of mafia gangs; none of blackmailed persons has come forward to report the matter to the police. On receiving demand for money from mafia gangs, Prithi Jinta gave police complaint very boldly. The police doubted whether she would come to the Court to the give evidence. She said before the Press that she won’t fear about mafia gangs, and she would come to the Court to give evidence. Accordingly she attended the Court and gave her evidence. All the newspapers praised her boldness. Therefore, Prithi Jinta and Anardevi stand as a good example for a good witness. They are real heroes in life. India needs such witnesses so that every wrong –doer shall be punished.

### **Witness Protection Need To Be Elaborated:**

- a) The first and most important challenge is with to anonymity of witnesses and the balancing the prosecution between protecting the witness and the rights of the accused.
- b) There are practical problems about such an extensive programme. The most of is that the costs of implementation and infrastructure. When we see about providing bodyguards, security, relocation to another area etc., the costs that are involved are bound to be enormous. With inadequate funds, it can be difficult for implement a witness protection.
- c) No express duty on any agency to consider the needs of witnesses for protective measures under the law.
- d) The protection that is currently offered is discretionary and may therefore appear arbitrary and unpredictable.
- e) It is very difficult to define the scope of witness protection. it Should the protection limited to the witness, or should it include his family, and if so, to what degree?
- f) Should the witness and his family receive protection only during the time of trial, or should it continue indefinitely as long as the threat exists?
- g) The most important problem is corruption . No witness protection programme can function with a corrupt administration. If one is provided with false identities the approved authority is bribed and sells the information, the whole system is undermined. Thus, corruption and political pressure remains the main problem when addressing the hostile situation.

### **Conclusions:**

Developing a witness protection against Threats by the accused or on behalf of the accused Inducement by the accused or on behalf of the accused. Effective witness protection legislation, main problem is highest illiteracy rate so it should increase Legal awareness among the people. Every step of process from investigation to conviction and punishment should be analyzed to identify ways in which witnesses are placed at risk, and potential reforms designed to limit of those risks. The political will to initiate this should be displayed by the government the legal aspects may be looked into by the judiciary and the execution can be entrusted to the police. crime is the most crucial issues facing the country today, and development of effective mechanisms to fight crime is another. 'Crime affects the quality of life' which ultimately has a detrimental effect on the growth of our country.

The Witness Protection legislation is a crucial part of the strategy of crime prevention and without an effective legislation, key witnesses are unlikely to co-operate in giving vital evidence. For any witness protection law, it is essential that it be seen as credible in the eyes of the general public. There are a number of initiatives that can be developed by both the government and judiciary to address crime. However, these initiatives can only be effective if they run parallel to the development of a more effective criminal justice system. Within the criminal justice system, witness protection is one area that requires immediate attention. The witness protection may not be viewed in isolation but must be considered a crucial part of a comprehensive system designed to effectively investigate and prosecute system designed to effectively investigate and prosecute perpetrators of crime. Protection measures will be ineffective if other parts of the criminal justice system do not function well. its highlights the need and significance of witness protection in India. it is conclude that witness is major part of the case, but he has to face certain problems from initial stage of the case till the end of the trial. Many problems he has to face. Keeping in mind the genuine problems of witness the state has to take efforts to solve the problems and help witness to appear before court without fear. Witness Protection Scheme, 2018 provides for protection of witnesses based on the threat assessment and protection measures inter alia include protection change of identify of witnesses, their relocation, installation of security devices at the residence of witnesses, usage of specially designed Court rooms, etc. The question is that whether it's really helpful for actual present situation for WitnessProtection?

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## **Merger of Sbi And Its Associates And Its Impact on Human Resource Management**

**Ashwini Sindhe<sup>1</sup> Dr S. S Rampure<sup>2</sup>**

<sup>1</sup>Research Scholar Dept of Studies and Research in Commerce Gulbarga University Kalburgi

<sup>2</sup>Associate Professor GFGC

Email id- ashwinisindhe.as1995@gmail.com

Email- rampures@gmail.com

### **Abstract-**

A Merger occurs when two or more companies combine their business and assets to convert them into a new company. From the past few years banking industry is being consolidated to reap the benefits of mergers and acquisitions the same happened in India when on 15 Feb 2017, The Union Cabinet approved a proposal to merge five SBI associate banks with SBI But the effects of merger process on human resource management. The result showed that human resource issues are important aspects of mergers. Which if it is not well handled, may impact negatively as well as positively, the paper clarifies the methodology of SBI merger, effect of SBI merger and its impact of Human Resource Management.

**Keywords:** Merger, SBI, Human Resource Management.

### **Introduction**

Human resource (HR) is an inseparable and the most crucial part of any organization (Mayhew,2018).Human resource management is the process of acquiring, training ,apprising, and compensating employees , and of attending to their labor relations , health and safety and fairness concerns ( Dessler,2013).Human resource management benefits organizations by helping to utilize the manpower for the growth ,development and self- satisfaction of the concerned people and not only for the benefits of the organization ( Bahagia ,2014).Thus the system that focuses on human resource development on one hand and effective management of people on the other hand will enjoy human dignity in their employment ( Figures ,2017).Mergers of organization have significantly increased , both domestically and internationally ,during the last decade and service and knowledge based industries such as banking have been most affected by this trend (Kivuti,2103).Companies announce merger for their better performance , for creating a unique image in the mind of coustmers and for increasing their market share and to accomplish their required target , human resouece department also needs to assess the impact on the employees and thus enhance their performance (Kuhan,2000).Studies focusing on their project planning and management aspect of merger and acquisitions are plenty but that focusing on the managing of human resources appear to be scanty ,especially in the SBI where employees performance is affected by the conflicts brought about by the differences in structures and cultures of the merged organizations .This indicates that further research is needed in the current context of impact of merger on human resources management .Thus, this paper tries to explain the various factors affecting the human resource management after merger of SBI with its associate banks. Further the study aimed to fill the existing knowledge gap by carrying out a study on the Effects of Merger on Human resource management in SBI.

### **Objectives**

1. To study the Merger of SBI with its associate Banks.
2. To study the effects of merger on human resource management.

### **History Of Sbi**

State Bank of India (SBI) is an Indian global, open division keeping money and monetary administrations organization. It is a legislature claimed enterprise with its central station in Mumbai, Maharastra. Starting at 2016-17, it had resources of Rs.30.72 trillion and in excess of 14000 branches, including 191 remote workplaces spread crosswise over 36 nations, making it the biggest keeping money and budgetary administrations organization in India by resources. The inceptions of State Bank of India go back to 1806 when the Bank of Calcutta (later called the Bank of Bengal) was set up. The SBI assemble comprises of SBI and five partner Banks. SBI's non saving money auxiliaries /joint endeavors are advertise pioneers in their particular regions and give far reaching administrations which incorporate life coverage, shipper managing an account, shared assets, Visas, calculating administrations, security exchanging and essential dealership, making the SBI Group a genuinely substantial monetary market and India's budgetary symbol. The bank is effectively required since 1973 in non – benefit action called Community Services Banking. All branches and regulatory workplaces all through the nation support and take an interest in vast number of welfares exercises and social causes. Their business is more than managing an account since they

contact the lives of individual's anyplace from numerous points of view. Bharateey spoke (SBI) of contribution to the international community. The Vidhya Mandal was 29, 2011 for the 2011 general election which was followed by Khandesh. SBI promoted me in a new way, people worked alongside the group.

Who donoted between 1.5 and 1.5 million books with the highest amount and who were invited to join organization will start their own business with help of young people who work hard to get the job done. When you use the password, you can do it in a booklet. If you have a text box, you can open it with your account and you will be prompted to do so. Teesara hai ee kevaeesee (apane grahaak ko jaanen).

Subsidiaries of SBI

State Bank of Bikaner and Jaipur (SBBJ) State Bank of Hyderabad (SBH)

State Bank of Mysore (SBM) State Bank of Patiala (SBP) State Bank of Travancore (SBT) Foreign

Subsidiaries of SBI

SBI International (Mauritius) Ltd. State Bank of India (California) State Bank of India (Canada) INMB Bank Ltd, Lagos BANK SBI Indonesia (SBII)

### **Merger Procedure Of Sbi**

Five Partners will join the State Bank of India as of April 1, which will be India's largest accounting history management practice. Bikaner and Jaipur State Bank of India, Mysore State Bank, Travancore State Bank, Patiala State Bank and Hyderabad State Bank and April1, The Exchange will take place between 2017, said SBI in an administrative file. Based on merger of five partners, it is up to SBI to build a world class bank with a base profit of more than 37,000 billion rupees or 555,000 billion dollars. 22,500 branches and 58,000 ATMs. It will have more than 500 million subscribers. With the expectations of leaders and activist, management and the official directors of the partners banks the SBI will become the representative after the merger

### **Effects Of Merger On Human Resource Management Different Working Styles**

As per the study, the major issue which the employees of associate banks are facing in the new merged bank is the different working style of top management. The level of compliances of systems and procedures is much higher in the merged elephant as compared to their earlier organizations.

### **Turnover Issues**

Post-merger voluntary scheme was launched for those who were resistant to change. However, after so many retirements the turnover problem is still continuing in giant bank many employees feel that it is the best option to leave the bank despite of financial benefits given to them as the level of stress has increased so far.

### **Favoritism**

One of the main HR issues found in study was favoritism and biasness in every branch and workstation. If any branch is being headed by any associate bank's employee, then he would favor only those employees who are from the same bank and vice versa.

### **Increased Stress Level**

Those who have been affected by merger are not only the associate bank employee but also the SBI employees has increased but also the SBIs employees as the stress level of both the employees has increased in the new organization the reasons found liable for stress are increased cross selling pressure, increased expectations, increased working hours, changed policies, post-merger trauma etc.

### **Behavioral Issues With Other Employees:**

Most important of the employees of both the entities was the verbal arguments and comments being passed on each other by them regarding who liable for the merger. SBI employees keep on commenting that they have obliged all the associate employees by merging them into them. They are continuously being realized that they are merged by force not by choice.

### **Career Related Issues**

Due to merger, many branches needed to be closed forcibly because of operational drawbacks or location issues. This has decreased many related and promotional opportunities for the employees. Employees even feel that they are not being given chances despite of their eligibility and experience.

### **Insecurity And Anxiety**

The feeling of insecurity and anxiety is very common among both types of employees. Organizational politics and cultural imbalance are out of major reasons found through their responses.

### **Frequent Job Rotations And Transfers**

Transfers have become very common problem of many employees. This issue as they are of the viewpoint that they have been accommodated nearer to their hometowns after the mergers. Many pending request transfers have been executed very nicely by the HR Dept.



### **Lose Of Positions And Identity**

As the systems have been changed, the hierarchy has also been changed. Many of the earlier employees on higher positions are now losing their positions as well as seniorities. All this has made them feel better to leave the organization than to go down. However, a different learning attitude has also been found among a few employees regarding the same.

### **Increased Customer Traffic**

The entities post-merger is that the customer traffic in each branch has increased. The reason might be the closure and merger of many branches. The customer base has been increased as stated earlier in the study. This has increased their working hours and ultimately their stress level has boosted up instead of the morale.

### **Job Satisfaction**

They are treated equally, But due to differences in pay, perks, promotion policy. Associate employees feel that they are getting secondary step motherly treatment. But it is also true that both have come through different exams. Hence the same pay, perks, promotion aspect can't be given to that associate employees because it can reduce the morals and promotional aspect of existing employee like SBI.

### **Recruitment**

The bank merger may result in rationalization of branches, roles and functioning getting collapsed, shared vouchers, over capacity and excess staff leading to VRS etc. Cost imperatives will be the one to key drivers. This could impact the recruitment process for while although one can't say for sure for how long.

### **Conclusion**

The study has shown that mergers have several implications for both workers and organizations itself. It could also be seen that human resources issues are the most neglected ones. The issues which usually crop up are as a result of poorly managed human resource and it suggests that managing mergers are acquisitions related organization change is a complex and difficult task. The present study throws light on such HR related issues faced after merger. State Bank of India mega merger with its associate's banks have been anything but smooth for some of latter's employees whereas officers and clerks working for the erstwhile associate banks feel that they give a raw deal with several instances of arbitrary transfers and many officers losing out on their seniority post the transfer. Moreover, researchers, banking institutions and students could take the study as a reference to analyze and evaluate the relationship between employee performance and employee compensation, employee performance and employee motivation and employee performance and employee job security. Since the study has not used complicated models to evaluate merger effects it is useful to non-professional readers as well. Likewise, students undergoing similar study can find this study helpful to understand the effects of merger on SBI with its associates' banks on Human Resource Management.

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## **Effect of COVID-19 on Indian Agriculture**

**Ganesh Motiram Kapse**

Assit Professor in Department of Geography, Late N. P. Waghaye College Lakhani, Dist- Bhandara (MS)

[Kapseganesh7@gmail.com](mailto:Kapseganesh7@gmail.com)

### **Abstract :-**

The ongoing health crisis around COVID19 has affected all walks of life. Protecting lives of people suffering from the disease as well as frontline health responders have been the priority of nations. Governments have swung into actions since the Corona virus attack created an unprecedented situation. India declared a three-week nation-wide lockdown till mid-April in the initial phase, which has subsequently been extended till May 3 for achieving satisfactory containment of the virus spread. During these challenging times, how does Indian Agriculture respond to the crisis and how do government measures affect 140 million farm households across the country and thereafter impact the economy of a very important country in the developing world? We assess the immediate challenges that COVID19 has posed to the farm sector and suggest mitigation measures to ensure a sustainable food system in the post-crisis period. Immediately after the nation-wide lockdown was announced, the Indian Finance Minister declared an INR 1.7 trillion package, mostly to protect the vulnerable sections (including farmers) from any adverse impacts of the Corona pandemic. The announcement, among a slew of benefits, contained advance release of INR 2000 to bank accounts of farmers as income support under PM-KISAN scheme. The Government also raised the wage rate for workers engaged under the NREGS, world's largest wage guarantee scheme. Under the special scheme to take care of the vulnerable population, *Pradhan Mantri Garib Kalyan Yojana* (Prime Minister's scheme for welfare of the poor), has been announced. Additional grain allotments to registered beneficiaries were also announced for the next three months. Cash and food assistance to persons engaged in the informal sector, mostly migrant laborers, have also been announced for which a separate PM-CARES (Prime Minister Citizen Assistance and Relief in Emergency Situations) fund has been created.

**Keywords:-** COVID 19 Pandemic, Economic Impact, Indian Agriculture

### **Intraduction:-**

The world is sliding rapidly towards a recession. The Covid-19 pandemic will shut down large parts of the world economy for at least a few months more. IMF managing director Kristalina Georgieva stated on March 23, 2020 that the outlook for global growth in 2020 was "negative." Recovery, if any, is expected only in 2021. According to the International Labour Organisation (ILO), the rise in unemployment because of Covid-19 could be up to 25 million worldwide. When the crisis began, it was thought that the slowdown would be restricted to China. Under such an assumption, the OECD countries expected that their growth rate for 2020 would be down by only about 0.5 percentage points. Considering the possibility of the slowdown spreading out of China also, it was estimated that the growth rate of OECD countries would fall from 2.9 per cent in 2019 to 1.5 per cent in 2020. All those scenarios are now out of date. OECD countries can expect negative growth rates in 2020.

### **Study Objectives:-**

The present study has the following objective, i) To study the Discussion of the Effect of Covid-19 on Indian Agriculture ii) To understand in an Economic Impact on Agriculture.

### **Data Base & Methodology:-**

The data has been furnished from the related articles, research paper. Some data has furnished the websites & as well as time magazine for the present research paper the secondary source have been used. The articles regarding to it have been read thoroughly. The descriptive and analytical research method has been used for this research paper

### **Economic Impact on Agriculture: India**

Let us first start with the question of prices. It is important to note that even before the Covid-19 pandemic began, Indian economy was facing a rise in food prices. Data show that food inflation had begun to rise from the middle of 2019, reaching, by January 2020, levels previously attained in 2013-14 (Figure 8). Data on the wholesale price indices (WPI) for selected crop groups, available only till February 2020, show that while WPI for food articles has been rising from August 2019 onwards, the rise was driven by a rise in the prices of vegetables; within vegetables, the price of onions, followed by potato and tomato, drove the WPI up (Figure 9). While onion prices have come down, vegetable prices remained high even in February 2020.



Figure 8 Food inflation rates in India, January 2012 to February 2020 (Source: Tradingeconomics)

Figure 9 Percentage change in the WPI of important agricultural commodities, y-o-y (Source: MOSPI)

According to the RBI's 7-th bimonthly monetary policy **statement**, dated March 27, 2020: "as regards inflation, the prints for January and February 2020 indicate that actual outcomes for the quarter are running 30 bps above projections, reflecting the onion price shock". However, the RBI's assessment is that food inflation pressures will fall, since aggregate demand is likely to weaken because of the Covid-19 crisis. Consumer price indices (CPI) for food also indicate a similar trend of a rise after August 2019, with some weakening in January and February 2020 (Figure 10). The point is that if inflation rises in March 2020 and later, it will be on top of an already rising price curve.

As the lockdown proceeds, these prices can be expected to rise, just as in the Western economies, the rise driven by panic buying and supply bottlenecks. Despite such price rises,

#### **Response of the Government of India**

The response of the Indian government in agriculture has involved three policy measures.

1. It has announced that most agricultural activities will be in the essential list. It has exempted farm workers in the fields, farming operations by farmers, agencies engaged in procurement of agriculture products including MSPs, *mandis* notified by the State Governments, inter- and intra-state movement of harvesting and sowing related machines and manufacturing, packaging units of fertilizers, pesticides, and seeds among others.
2. It has announced that the first instalment of the PM-Kisan payment to farmers, i. e., Rs 2000, will be paid up front to farmers. It has also announced that the wages under MGNREGS will be raised from Rs 182 to Rs 202 per day.
3. The Reserve Bank of India (RBI) has announced a moratorium on agricultural term loans (including crop loans) for a period of three months.

If we consider the responses of governments across the world, these interventions appear insignificant. In fact, the up front payment to farmers from the PM-Kisan scheme is not even worth calling a package, as this money was anyway going to be paid to the farmers between April and June.

The US Congress has passed a Covid-19 stimulus package of \$2 trillion, of which \$9.5 billion is **earmarked** for the agricultural disaster fund. In addition, there is a \$14 billion funding for the Commodity Credit Corporation (CCC) that can be used by the US Department of Agriculture (USDA) to assist producers. These packages will assist livestock and dairy producers, growers of fruits, vegetables and nuts, and small businesses related to agriculture

1. The payment to farmers through PM-Kisan should be raised to at least Rs 12,000 per year, and 50 per cent of this amount (Rs 6,000) should be paid immediately. Tenant farmers should be included as beneficiaries of the scheme.
2. There should be an immediate expansion of the Pradhan Mantri Fasal Bima Yojana (PMFBY) to ensure compensation payments to farmers affected by the Covid-19 pandemic.
3. Holders of all MGNREGS job cards should be provided an unemployment allowance or assistance, worth at least half the payments to be received by them, assuming 100 days work/year.
4. The Government should take steps to ensure that food grain is distributed to all households outside the priority list also for a period of three months at the rate of 5 kg per capita per month.
5. There should be efforts to arrange food, shelter, and clothing to all migrant workers in villages. Steps should be explored to provide migrant workers with cooked food by the government agencies.

6. The Government should consider waiving the interest costs of all outstanding crop loans and ensure a fresh flow of credit to small and marginal farmers for the kharif season of 2020.

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## **The diverse character of India is underlying in its unity**

**RooufAhmadMalla<sup>1</sup> Irfan Hassan Ganaie<sup>2</sup>**

<sup>1</sup>Lecturer, department of geography, GDC Kulgam, Jammu and Kashmir, India

<sup>2</sup>Lecturer, department of geography, GDCsogam, Jammu and Kashmir, India

### **Abstract**

Extremes and diversities of the physical features and varying climatic conditions have accumulated cultural heterogeneity in India. There are vast stretches of desolated areas of Ladakh and on the other end Gangetic plain constitute the highest population densities in the world. The vast stretch of India comprise a rich mosaic of languages, cultures, religions, races and thus is heterogeneous in character and spirit. All levels of economic development, from purely tribal, agricultural, industrial and commercial economies exist simultaneously. India is often called 'epitome of the world' for its physical and cultural diversities.

**Key words:** diversity, language, religion, heterogeneity

### **Introduction**

Unity in diversity means living in association in lieu of having heterogeneity in terms of political, social, and economic differences. India is a large country with exceptional diversity because they speak different languages, have various types of food, celebrate different festivals and practice different religions and traditions. Indian landscape has dry deserts, snow covered mountains, fertile alluvial tracks and lush green canopy which is rich in great variety of flora and fauna. India has also numerous variations in races, cultures and languages. The crackerjack characteristic of the country of India is that, in spite of diversities in different fields- physical, social, linguistic, cultural and religious there is a fundamental thread of unity in the history of India. India is a great example of the doctrine of one in many. There are differences in ideologies, rituals and customs between different religious communities in India but since centuries they are brought up by same mother land.

### **Land of diversities**

India being a vast country has great diversities and contrasts. The extremes of physical and human characteristics of India are actually extreme. The southern part of India is the oldest and least disturbed and calm landmass on the earth's surface, while the northern part which comprises the greater plains and Himalayan mountain ranges are dynamic in character and hence represent the most recent formations. These mountain ranges in the north represent the youthful topography with sharp peaks and steep sided valleys while the peninsular plateau in the south shows old and senile topography with wide valleys and gently rising ridges. Himalayas are the youngest and Aravalli's are the oldest mountain ranges of the earth's surface. Contrasting characteristics are also found in Himalayan and peninsular rivers of India. Himalayan rivers are descending from snow covered areas and hence are perennial as they receive water in dry season also due to snow melt. On the other hand peninsular rivers are fed by rain and they are termed as seasonal rivers because the flow of water decreases considerably in dry season. More pronounced are the climatic contrasts than physiographic contrasts. Due to diverse topography and vast north and south extent, India has high regional climatic diversity. During winter the mercury may go as down as  $-40^{\circ}\text{C}$  at Drass in Jammu and Kashmir while, at the same time it may be as high as  $20-22^{\circ}\text{C}$  at Thiruvananthapuram in Tamil Nadu. Cherrapunji in Meghalaya receives 1221 cm of annual rainfall while Jaisalmer situated in the Thar desert of Rajasthan receives just 12 cm. Tura, in the Garo hills sometimes receives as much in a single day as Jaisalmer receives in 10 years. Diversity is also there in the weather phenomenon. Mumbai, Chennai, and Konkan coast experiences maritime pleasant weather whole year. On the other end, interior parts, Punjab, Rajasthan, western U.P have to suffer from extremes of weather both in winter and summer seasons. Most parts of the country receive maximum precipitation during summer, Kashmir and south-eastern parts receive maximum precipitation during winter. Almost all the major religions; Hinduism, Christianity, Muslims, Buddhism and Judaism are found in India with significant proportions. Religion governs the lifestyle of people, their food habits, clothing, shelter and also economic activities for example, Muslims consider wine industry profane; similarly Hindu beliefs hamper the development of meat industry.

### **Unity in diversity**

In spite of presence of immense diversity, India has been able to project itself as a single territorial unit with respect to physical, political, social, and economic contrasts. The individual or social differences like skin colour, caste, creed, cultural and religious practices etc. are not looked upon as conflict rather these differences enrich the nation as a whole and make it a diversified country. The greater plains play a unifying role between Himalayan mountains and peninsular plateau. The monsoonal rainfall for a few months in a year associated with agricultural activities are an all India phenomena. This monsoonal rhythm of seasons provides a strong element of uniformity. The emergence of small-scale self-sufficient social units have played a significant role in uniting the country. The radical character of the people of India have opposed economic concentration. Hindus, Muslims, Christians and Buddhists are being brought up by centuries by the same mother land, even if there are differences in the customs, rituals and traditions between these communities.

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## **SWOT Analysis of Tadoba-Andhari Tiger Reserve in Chandrapur District of Maharashtra**

**Dilip B. Choudhari**

Asst. Professor, Department of Geography, Chhatraveer Raje Sambhaji Prashashkiy Seva Mahavidyalaya,  
Morwa, Dist. Chandrapur

E-mail: [dilipbchoudhari@gmail.com](mailto:dilipbchoudhari@gmail.com)

### **Abstract:**

Tadoba-Andhari Tiger Reserve is one of the largest tiger reserves in Central India. The Tadoba-Andhari Tiger Reserve is a region known as an animal paradise. The core and buffer zones of the Tadoba-Andhari Tiger Reserve are home to a wide variety of rare species of plants, animals and birds. Reserve having a good number of tourists and revenue. At the same time Reserve having very much unused potential with some problems. To utilize the potential of Tadoba Andhari Tiger Reserve, there is a need to do proper planning of available sources. Details study of Tadoba-Andhari Tiger Reserve regarding Strength, Weakness, Opportunities and Threats is essential. SWOT analysis is the best method for proper planning to sustainable development of TATR. This paper will study of all these four aspects of the Tadoba Andhari Tiger Reserve and suggest the measure to the stakeholders.

**Keywords:** SWOT Analysis

### **Introduction:**

Tadoba-Andhari Tiger Reserve is an important wildlife tourist destination in the Chandrapur district of Central India, famous for its tiger density. There is a need to analyze the relation between tourism development and geographical factors in Tadoba-Andhari Tiger Reserve (TATR) and to understand the impact of this Reserve on the community in the area. Along with the growing tourism, the issues of rehabilitation of tribal people affected by the Tadoba-Andhari Tiger Reserve, the problems of the peoples who lived in the buffer zone, the incidence of Man-Animal conflict, etc. are also increasing day by day. SWOT analysis gives planning oriented output to the concern planner. This method is use mainly in management field. SWOT analysis can be used to build organizational or personal strategy. Steps necessary to execute strategy-oriented analysis involve identification of internal and external factors selection and evaluation of the most important factors, and identification of relations existing between internal and external features.<sup>45</sup> Strengths and weaknesses are usually considered internal, while opportunities and threats are usually considered external.<sup>46</sup>

SWOT analysis of Tadoba Andhari Tiger reserve can help to identify hidden potential and sustainable development of reserve as International Tourist destination, as well as Home Town of Endgerened species.

### **Location Of Study Region:**

The Tadoba-Andhari Tiger Reserve is located in the eastern district of Chandrapur in Maharashtra. 20° 4' 53" North to 20° 25' 51" North Latitude and 79° 13' 13" East Longitude to 79° 33' 34" East Longitude. The Reserve will be extended to 1727.17sq.km. is spread across the area. This includes 625.40 sq. km. of core zone and 1101.77 as the buffer zone. On April 9, 1955, Tadoba National Park was formally created enclosing an area of 116.55 sq. km. area. Also on 25/02/1986, Andhari Wildlife Sanctuary had been established in 508.85 sq. km. area. The Tadoba Andhari Tiger Reserve came into existence in 625.40 sq. Km. area on 27/12/2007 by merging Tadoba National Park and Andhari Wildlife Sanctuary on 23/02/1995 (116.55 + 508.85 = 625.40), both Tadoba National Park and Andhari Wildlife Sanctuary were declared as Core or Critical Tiger Habitat. Then after on 5/5/2010 1101.77 sq. km. area was declared a buffer zone around Tadoba-Andhari Tiger Reserve. It covers a total of 79 villages.

### **Objective Of The Study:**

- 1) To analyze the Strength, Weakness, Opportunity and Threat of the Tadoba Andhari Tiger Reserve.
- 2) To identify the potential of tourism and challenges before the management of Tadoba Andhari Tiger Reserve
- 3) To suggest the various measure for the sustainable development of Tourism and Conservation of Biodiversity

<sup>45</sup> Pickton, David W.; Wright, Sheila (March 1998). "What's swot in strategic analysis?". *Strategic Change*. 7 (2): 101–109

<sup>46</sup> Minsky, Laurence; Aron, David (23 February 2021). "[Are you doing the SWOT analysis backwards?](#)". *Harvard Business Review*.

**Hypothesis:**

- 1) Tadoba Andhari Tiger Reserve has a lot of unused potential of Tourism .
- 2) There is scope to improve in infrastrural facilities, skill development, and conservational measures.
- 3) Tadoba Andhari Tiger Reserve can play major role in the conservation of Biodiversity and socio-economical development of surrounding area.

**Methodology:**

Present study is based on the secondary data collected from Field Director office of Tadoba Andhari Tiger Resreve, Tiger Conservation plan Volume I to IV. The data related with employment generation is collected by researcher visits and observation. The facts about facilities and tourist views is based on conducting some interview with tourist and other stakeholders. SWOT analysis is based on the work done earlier in the field of tourism and conservation.

**SWOT Analysis of Tadoba Andhari Tiger Reserve**



**A) Strengths:**

**1) Number of Tiger:** There are 101 leased tigers in Tadoba-Andhari Tiger Reserve. Along with tiger there is 109 Leopards. A data show that Population of Tiger is continues increasing, it is good because Tigers are the main attraction of the tourist and main objective of this reserve is conservation of tigers.

Year	Number of Tiger in Core	Number of tiger in Buffer	Total
2006	34	-	34
2010	69	-	69
2014	51	12	63
2018	82	19	109

**Source:** Tiger Status Report- 2018, National Tiger Conservation Authority, Govt. of India

**2) Birds and other Animals:** About 581 different species of Animals and Birds including Leopards, Deer, Nilgai, Sambhar, Dog, Cat, Bear, Bird, Insects, Butterflies etc. are seen living in Tadoba Andhari Tiger Reserve. There are 80 Species of Mammals, 192 Species of Aves, 54 Species of Reptiles, 84 Species of Pisces, 68 Species of Butterflies, 11 Species of Amphibians, 122 Species of Insects .<sup>47</sup> These are important strengths of Tadoba Andhari Tiger Reserve.

**3) Dense Forest:** Tadoba-Andhari Tiger Reserve is famous for its dense forest including 87% of the total area is reserved. These forest have a variety of Mixed Forests, There are 56 types of large trees Species, 19 types of shrubs Species, 22 types of medicinal plants Species, 13 types of grasses and 12 to 14 types of vines Species.<sup>48</sup> This biodiversity of Flora is a major strength of this Reserve

<sup>47</sup> Zoological Survey of Tadoba Andhari Tiger Reserve 2006.

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**4) Central Location in India:** Tadoba-Andhari Tiger Reserve has a central location in country and it is located only 150 km from Nagpur International Airport. Therefore, it is convenient for domestic and foreign tourists to travel here.

**5) Big area of the Reserve:** Tadoba Andhari Tiger Reserve having a 625.40 Sq. Km. Area in Core and 1101.77 Sq. Km. in Buffer Zone. Total Area of reserve is 1727.17 Sq. Km. This wide size is conducive to the expansion of Wildlife Conservation.

**6) Healthy Prey Base:** The prey density of Tadoba Andhari Tiger Reserve is 58.42 prey available in per sq. Km. So there is a strong food chain for Top Carnivorous. It is also a major strength.

S.No.	Factors in Food Chain	Numbers
1	Primary Producer (Herbs)	402,25,90,000
2	Primary Producer (Tree)	5,09,63,000
3	Herbivores	99,368
4	Tiger And Leopards (Carnivores )	220

**Source:** 1) C. Kunhikanna, N. rama Rao, and S. S. Bisen (2018) "Vegetation ecology of Tadoba National Park, Chandrapur, Maharashtra", A Research Article published in journal of Interdisciplinary Bioscience, Issue-I, Vol. 1 pp 40-41 2) Field Director Office of Tadoba Andhari Tiger Reserve , Mul road, Chandrapur

**7) Water Sources:** Tadoba Andhari Tiger Reserve has a large water resouces. Irai and Andhari River, Backwater of Irai Dam, Tadoba Lake, Telia lake, Pandharpauni Lake, and some other small Nala's are there present. This is one of the positive strength of Tadoba Andhari Tiger Reserve.

#### **B) Weaknesses:**

**1) Quality of basic Facilities:** The quality of basic facilities like drinking water, clean bathrooms, resting places, etc. required for tourists in Tadoba Andhari Tiger Reserve are not very good. This is a major affecting factor to tourism development.

**2) Untrained Human Resources:** Tourism managers, tourist guides, gypsy drivers etc. have not been trained on various soft skills related to tourism and conservation. This creates difficulties in presentation before the Tourists.

**3) Deciduous Forest:** The forests of Tadoba Andhari Tiger Reserve are tropical deciduous forests. As a result, the leaves of the trees fall off in summer. As the shade diminishes, so does the grass in most places. Therefore, herbivores have to roam for fodder for some time.

**4) Unavailability of water throughout the year:** Most of the reservoirs in Tadoba Andhari Tiger Reserve are not perennial. Therefore, in summer, animals have to go for drinking water on artificial ponds or ponds in the buffer zone. There they are more likely to hunt.

**5) Low width of Buffer Zone:** As per NTCA guidelines, core area should be at least 10 km from boundary line. There has to be a wide buffer area. However, in the southern part of the Reserve, the buffer area is found to be less than 10 km. As a result, there is not enough natural habitats for wildlife.

**6) Defective Advertisement:** In Tadoba Andhari Tiger Reserve, only tigers are kept at the center of advertisement. Therefore, if tigers are not seen, tourists get annoyed. However, if other animals, birds, forests, various types of tourism are included in the advertisement, the satisfaction level of tourists can be increased.

#### **C) Opportunities:**

**1) To become Tiger Capital of Central India:** As the number of tigers in the Tadoba Andhari Tiger Reserve continues to grow, there is an opportunity to become the tiger capital of Central India.

**2) Chances to increase Foreign Tourists:** There is a huge potential for growth of international tourists if the tourism potential is utilized in a planned manner. If we consider Three Year Data from 2016-17 to 2018-19 then we can see the trend of Foreign Tourist to visit Tadoba Andhari Tiger reserve is increasing day by day.

#### **Foreign Tourist Arrival Data in Tadoba Andhari Tiger Reserve**

Year	Foreign Tourist in Core Zone	Foreign Tourist In Buffer Zone	Total
2016-17	4080	1612	5692
2017-18	5205	1453	6658
2018-19	6064	2144	8208

**Source :** Field Director office (CORE), Tadoba Andhari Tiger Reserve, Mul Road, Chandrapur

**3) Economic Development of Surrounded Area:** As many employment opportunities are available through tourism, the citizens of this area have a great opportunity for economic development. 2393 person get various jobs from Tourism and Conservative Activities in Tadoba Andhari Tiger Reserve. Near about 3

to 4 thousand people are indirectly engaged in various services. And thousands of people has got employment from forest of Tadoba Andhari Tiger Reserve.

**4) Scope for promotion of Tribal culture at International level:** The area has a large tribal population. Through tourism, there is scope for globalization of tribal culture (various arts, objects, food, etc.).

**5) Scope for development of Cultural Tourism, Medical Tourism, Eco Tourism along with Wildlife Tourism:** Considering the geographical and cultural factors of the Tadoba Andhari Tiger Reserve, a large number of Eco Tourism, cultural and medical tourism can be developed here.

**D) Threats:**

**1) Man-Animal Conflict:** Man-Animal conflict is the major obstacle here. This is because the incidence of Man-Animal conflict is increasing day by day and people and pets are being killed in it. About 25 people have died and 94 injured in the last 7 years during 2012-13 to 2018-19. And also 3653 cattles killed by Tiger and Leopards during same period.

**2) Rehabilitation of affected people and problems of citizens in buffer zone:** Without resolving the problems of project affected tribal and citizens of buffer zone, they cannot be included in the wildlife and forest conservation as well as tourism development process.

**3) Encroachment of emerging coal mines:** Tadoba Andhari Tiger Reserve area has a large amount of coal underground. So people in the private sector are trying to cut down these forests and mine coal. At present, various environmental organizations have succeeded in stopping coal mines. Example: Go Back Adani Protest. But future threats still remain.

**4) Fire in Forest:** Frequent forest fires in summer cause burning of grass and plants. This appears to have a negative effect on the animal's food chain and also conservation of Biodiversity.

**5) Poaching of wildlife:** Hunting of wild animals is also a major obstacle. Considering the demand for different body parts of different animals in the international market, even tigers are hunted by poacher.

**6) Misbehavior of tourists:** Sometimes the overzealous tourists do not seem to be following the rules of tourism imposed by the Reserve management. Therefore, it is seen that such activities are taking place which will disturb the wildlife. Such incidents are a blow to the basic concept of wildlife tourism.

**Conclusion and Suggestion:**

The Tadoba-Andhari Tiger Reserve is a region known as an animal paradise. We found Teak forests cover 11.48%, mixed forests 76.16%, grasslands 7.17%, and treeless areas 5.19% of the total area in Core Zone. Mixed forests 63.09%, Zudapi Forest 1.82%, and treeless areas 35.09%. of the total area in Buffer Zone. The rich flora and fauna of the Tadoba-Andhari Tiger Reserve prove the potential for wildlife tourism here. The Tiger density in Tadoba Andhari Tiger Reserve is 1 tiger in 17.10 sq. Km. The Tadoba Andhari Tiger Reserve is on the 6th rank among the Tiger reserve in India in terms of tiger density. Therefore, more opportunities for tiger sightings at the Tadoba Andhari Tiger Reserve are available to tourists here. Due to the large number of grasses and trees available at the Tadoba Andhari Tiger Reserve, the number of prey in the 2018 census is as high as 99,638 and its density is 58.42 per Sq.Km. Along with the growing number of tigers, the number of tourists is also on the rise. The growth rate of international tourists is 10.59%. While promoting the Tadoba-Andhari Tiger Reserve, tigers, as well as other animals and forests in Tadoba-Andhari Tiger Reserve need to be advertised. The government should make efforts to solve the problems of the project affected and buffer zone citizens and involve them in wildlife and forest conservation. Which can help the locals to control Man-Animal conflict, hunting, forest fires, etc. Quality Training should be imparted to the Tourist Guide, tourism managers, forest department staff of Tadoba Andhari Tiger Reserve. Through these, efforts should be made to convey the tourism as well as environmental importance of the Tadoba Andhari Tiger Reserve to the tourists. A large number of geographical, historical, religious, and cultural tourist sites are present in the surrounding area of Tadoba Andhari Tiger Reserve. This tourist spot is still not used as much as it should be in terms of tourism development. Taking advantage of these factors can increase the number of wildlife tourists. The tourist circuit can be created by connecting the Tadoba Andhari Tiger Reserve with other tourist spots in Chandrapur District. Tadoba-Andhari Tiger Project can become the most visited tourist destination in Central India through a positive process of planning and management.

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## **Security Problems and Security System in Online Banking Transactions**

**Jayshri Banasode**

Associate professor, Dept. of Commerce, Chandrabai Shantappa Shendure College, Hupari

### **Abstract**

The fast growth of internet over the past some years have increased use of online banking. Online banking includes online transactions payment without face to face interaction. Online transactions give birth to security threats, there are new fraudulent and sophisticated techniques being developed by fraudster, for that some online transaction methods have been developed. Customers demand for anywhere, anytime service, but on the other hand the increase in the use of online facilities result in increase of criminal activities like spamming, ATM frauds, credit card frauds, Phishing, identity theft, denial of service and most of others has lend credence to the view that online is contributing crime in banking sector. The challenges that oppose online banking are the concerns of security and privacy of information. The purpose of this research paper is to study security threats in online banking, various possible measures for prevention and detection of security threats in order to minimize frauds and make internet a safer, sound and trusted environment to consumers and merchants during online banking.

**Keywords:** Online banking, Phishing, Malware, Spyware

### **Introduction**

Online banking systems have become quite popular in the some years. It is an online transaction system that enables different customers to conduct online financial transactions on a website. Customers from an online banking can handle their accounts with their own electronic devices as an Internet connection is available. Online banking is also referred as e-banking, Internet banking, and virtual banking. There are mainly two phases in online banking system, registration phase and login phase. Registration phase of all the banks are having nearly similar structure. Login phase is divided into two safety levels, first is using user id and transaction password and second level password security is using advanced system like grid authority card, one time password, QR code, Security questions, E-token and Biometric systems etc. All this security systems are developed to protect customer's bank accounts from any member. Bank information can be compromised by expert criminal hackers by modifying a financial institution's online information system, corrupt data, spreading malicious viruses and degrade the quality of an information system's performance. So, High level password security systems are used by banks to protect from such type of attacks or frauds.

### **Online Banking**

Online banking refers to the use of Internet as a remote delivery channel for banking services such as opening a deposit account or transferring funds at different accounts etc. Further, it is a desirable opportunity for banks where the key to success is customer adoption. There is evolution in development of online banking.

### **Security problem in Online Banking**

Information such as identity and personal data, passwords are frequently related with personal property, privacy and may present security concerns if leaked. unlawful right of entry and usage of private data may result in consequence such as identity stealing, as well as theft of assets. Information security problem include:

- 1. Internet scams:** Internet scams are patterns that betray the user in several ways in attempt to take advantage of them. This attacks are created to make the fraud with private assets of bank customer directly rather than personal data through false undertakings, assurance tricks.
- 2. Phishing:** Phishing is a type of scam where the scammers masquerade as a trustworthy source in attempt to gain private data such as credit card data and PINs etc. through the internet. Phishing frequently happens through quick messaging, email and it fools the user by showing any financial fake site in its genuine format. These forged websites are frequently planned to look identical to their genuine counterparts to avoid misgiving from the costumers.
- 3. Malware:** Malware, generally spyware, is malicious software camouflaged as legitimate software planned to accumulate and transmit private data, such as PINs, without the bank customer's consent or information. They are often spread through e-mail, software and files from unofficial places. Malware is one of the most prevalent safety apprehensions as often it is impossible to decide whether a file is infected, in spite of the source of the file.
- 4. Spyware:** Spyware can enter in any system as hidden components of free programs. They can monitor web usage, keystroke logging and virtual snooping on user's computer activity.

**5. Virus:** Virus is a computer program that designed to replicate itself from one computer to another. It can slow down user system or corrupt its files and memory. File-sharing and Email facilities are the main reason for spreading viruses.

**6. Worm:** This is malicious programs that replicate or reproduce it until all the storage space on a computer drive will be filled. It uses system time, speed, and space when duplicating. It can also interrupt internet usage.

**7. Identity theft:** Identity theft is a crime in which a fraudster obtains key pieces of personal data, such as bank information, driver's license number or date of birth, in order to impersonate somebody. The personal data open to the elements is then used criminally to apply for credit, buying goods and services, or gain right of entry to bank accounts.

**8. Investment or share sale (boiler room) fraud:** Boiler room fraud is an attack in which illegal or aggressive misspelling of bogus, vastly or valueless expensive stocks are takes place by share fraudster. If the victims mistakenly invest money with this fraudster, surely lose his all money invested.

**9. Lottery fraud:** In this category of fraud attacker send e-mail messages or fake letters, which recommend the user that won a lottery. To take the benefits of this, they are asked to respond email message with some private banking information of victim, this include his complete personal information and bank account details. Then, after getting this mail from victim attacker can use this information to commit further fraud.

**10. Trojan horse/Trojan:** Trojan horse is the most dangerous type of attack in which attacker can directly gain unauthorized access to sufferers systems. This virus enters in sufferer system with the help of different legitimate software. An updated antivirus and firewall can protect any user from this type of attacks.

#### **Security Systems for Online Banking**

**1. User id and Transaction Password:** New York introduces online banking using user id and text password in the since 1980. To access online banking facilities, a customer have to register him with a unique id and password for user confirmation. The new User id must be 6 to 19 characters and the password must be 8 to 17 characters and must contain at least 2 numeric and 2 alpha characters. Customer can set security data to email address, Security Queries, Authentication Pass Phrase and Computer Registration. User can access and take full benefits of online banking services.

**2. OTP:** One-Time Password (OTP) Service Using Mobile Phone Applied to Personal online Banking was implemented first time in japan, since 2007. This is an authentication service that makes use of an OTP in addition to the conventional password and ID for personal identification. User can use this OTP for improved security during online transaction by downloading special password-generation software to their mobile phone.

**3. QRP:** code - QRP that is fast Response Protocol, is a secure authentication system that uses a two factor authentication by combining a password and a camera equipped mobile phone, where mobile phone is acting as verification token. It is very secure and also very easy to use for encrypted data. It is very secure protocol for use on un-trusted computers.

**4. Biometric:** Biometric is purposely used for secure ATM transaction. In such a transaction, the use of a biometric mechanism such as retinal scan, hand geometry or fingerprint scan can greatly advance overall security. All customers need to do is register their biometric information at a bank's branch. Then they will be able to withdraw money from ATM by just providing their biometric password and providing their Pin number and date of birth.

**5. QR code and OTP:** To eliminate threat of phishing and to verify user identity the system with the combination of QR code and OTP was developed. QR-code can be scanned by user mobile device which overcome the limitation of traditional password based system. This improves more security by using one time password (OTP) which hides inside QR code.

**6. Grid Authority Card:** Grid authority Card is a card that facilitate in preventing the fraud at the initial stage itself such that the fraud could not take part. In this system, the customer submits credit card credentials along with the respective Grid Characters on the grid card associated with the credit card. Grid card contains the alphabets associated with the numeric numbers printed. These grid codes are generated at random by the user interface application through which the customer is connecting to the Payment Gateway via secure internet connection.

**7. E-Token:** E-Secure Token affords an additional security feature when logging on to online Banking. The E-Secure Token provides a One-Time-PIN (OTP), which should be used to access the online Banking sites, together with password and username. Each OTP is only valid for one session; therefore the E-Secure Token should be used to produce an OTP with every login. To obtain login OTP user have to switch on his

E-Secure Token using the On/Off Button. Then enter 4 digit secret pin. User's E-Secure Token LCD screen message will then show his login OTP.

**8. Security Question:** Based on research for multifactor authentication and fraud risk mitigation, the confirmation process was strengthened for online Banking users by reducing the number of opportunities to correctly answer security challenge questions. Users selected three security challenge questions to be presented during multifactor authentication, and had up to five prospects to correctly answer those questions. Specifically, a user was presented the first security challenge question and had two opportunities to answer correctly.

**9. SMS banking:** SMS Banking is a service that affords customers to access their account information via mobile phone. SMS banking facilities are functioned using equally pull and push messages. Push messages are those that the bank selects to send out to a user's mobile phone, without the consumer initiating a request for the information. Pull messages are those that are commenced by the customer, for obtaining information, using a mobile phone or executing a transaction in the bank account.

### **Protect Online Banking Service**

**1. Passwords secure:** password make them hard to guess, differ them: Try to use unlike passwords for different services, Change passwords frequently and never write them down.

**2. Always log off:** Always consider to log off from banking site and close your browser after completion of online banking.

**3. Password-protect your computer:** Never forget to give a strong administrative and master password to your computer. This will avoid other customers from using it if it is left or stolen unattended.

**4. Cautious where go online:** Avoid using Banking or any other internet facilities that necessitate passwords at internet cafe, libraries or any other public sites to avoid the risk of information being copied and abused later leave.

**5. Don't use administrator mode:** Don't use administrative mode because anyone who gain access to it will then have nearly boundless rights to see downloaded software or stored information. It's far superior to make a user account and log in with that for every day usage.

**6. Use a personal firewall:** It is a minor program that assistances to protect your workstation and its contents from unknowns on the internet. There are many effective plans to choose from. Common viable examples include Check Point Zone Alarm (free) and Windows Norton Personal Firewall, Firewall, and Personal Firewall.

**7. Use an anti-spyware program:** Anti-spyware programs currently available include Ad Aware, Microsoft Defender, Spyware Blaster, Spy Sweeper, Spyware Blaster and Sunbelt Software Security Spy.

**8. Block spam e-mail:** Spam e-mails are specially used for phishing attacks, tempting to click on links that can directly download malware to your computer or direct you to a fake website. That's why, for security purpose it is better to remove any e-mail form an unrecognized source as soon as possible.

**9. Install effective anti-virus software:** Using anti-virus software, but the software should be updated regularly to provide complete system protection.

**10. Be aware to potential fraud:** Be alert that there are some fake websites designed to pretend you and gather your personal data. Sometimes links to such websites are enclosed in e-mail messages asserting to come from financial institutions or further trustworthy organizations.

### **Conclusion**

Development of the security technology and mechanism of the online banking, as well as the gradual improvement of the security solutions of the online banking systems, the online banking is becoming more and more secure. Study found that different technologies have played an important role to control the risk factors through Authentication system. The implementation of appropriate authentication methodologies should start with an assessment of the risks faced by the online banking systems. Bank should educate the bank customers about ways to avoid skimming by holding educational sessions of bank customers and transmitting security tips in mass media. Mobile and Internet should widely be used for this purpose. Bank should use biometric. ATM machines to prevent the hacking of password and these can be used even by an illiterate person. It is found that bank customers are not very much aware of online banking and adoption rate is low. Keeping in mind the huge potential of online baking in India, it is suggested that bank should focus on online banking awareness. Study found that online banking security and privacy concern is high.

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## "भारत में जल प्रदूषण के मुद्दे और इसके प्रभाव।"

दर्शना आर.चावडा

शोध विद्यार्थी समाजकार्य भवन सौराष्ट्र यूनिवर्सिटी राजकोट।

chavdadarshana1993@gmail.com

### संक्षेप :

बढ़ती जनसंख्या के साथ दिन - प्रतिदिन जल की आवश्यकता भी तीव्रता से बढ़ रही है। परन्तु जल की उपलब्धता सीमित है, लेकिन जल स्रोतों जैसे नदी, झरनों और भूमिगत जल से निरंतर तीव्र गति से पानी निकालने से इनमें पानी की कमी भी हो रही है और पानी की गुणवत्ता में भी कमी आ रही है। अतः यह आवश्यक है कि उपलब्ध पानी का अधिक से अधिक उपयोग किया जाय। यह तभी होगा जब व्यर्थ किये जल को पुनः चक्रित करके, उपचारित या अनुपचारित करने के पश्चात ही कुछ विशेष कार्यों के लिये प्रयोग किया जाय। पुनः चक्रित का अर्थ है दूषित जल को उपचार (शोधन) संयंत्र या जलसंकाय में डालने से पहले पुनः प्रयोग में लाया जाय। इस प्रकार दूषित जल को बार बार पुनः चक्रित करके उपचारित या अनुपचारित रूप में एक ही प्रयोगकर्ता द्वारा प्राप्त किया जा सकता है।

### प्रस्तावना :

जल प्रदूषण जल में अनिच्छित या अवांछनीय पदार्थों का मिला होना या पाया जाना ही जल प्रदूषण कहलाता है। जल प्रदूषण एक सबसे गम्भीर पर्यावरणीय समस्या है। जल प्रदूषण मानव की अनेक गतिविधियों के कारण होता है जैसे औद्योगिक, कृषि और घरेलू कारणों से होता है। कृषि का कूड़ा - कचरा जिसमें रासायनिक उर्वरक और कीटनाशक मिले होते हैं। औद्योगिक बर्हिखावों के साथ - साथ विषालु पदार्थों का मिलना, मानव और जानवरों का निष्कासित मल जल सभी जल प्रदूषण का कारण हैं। जल प्रदूषण के प्राकृतिक कारणों में मृदा अपरदन, चट्टानों से खनिजों का रिसाव और जैव पदार्थों का सड़ना निहित है। नदियाँ, झरने, सागर, समुद्र, ज्वारनदमुख, भूमिगत जल स्रोत भी बिंदु और गैर बिंदु स्रोतों के कारण प्रदूषित होते हैं। जब प्रदूषक किसी निश्चित स्थान से नालियों और पाइपों के द्वारा पानी में गिरता है वह बिंदु स्रोत प्रदूषण (Point source pollution) कहलाता है। निश्चित स्थान फैक्टरी, पाँवर प्लांट, सीवेज ट्रीटमेंट प्लांट हो सकते हैं। इसके विपरीत गैर बिन्दु स्रोत (Non - point source) में प्रदूषक बड़े और विस्तृत क्षेत्र से आते हैं जैसे खेतों, चारागाहों, निर्माण स्थलों, खाली पड़ी खदानों और गड्डों, सड़कों और गलियों से बहकर आने वाला कूड़ा सम्मिलित है।

### विषय और विचार :

#### जल प्रदूषण (Water Pollution) :

जलीय वातावरण जैसे नदी, तालाब, झील आदि में नुकसानदायक पदार्थों के एकत्रित होने को जल प्रदूषण कहते हैं।

#### जल प्रदूषण के मुख्य स्रोत (Major Sources of Water Pollution)

##### घरेलू अपमार्जक (Household Detergents) :

इसमें विभिन्न प्रकार के साबुन सर्फ विम, फिनाइल आदि घरों की नालियों से नदी व तालाबों तक पहुंचता है। इससे यूट्रोफिकेशन (तालाब में कार्बनिक पदार्थ अधिक व जल कम) की समस्या भी रहती है।

##### वाहित मल (Sewage) :

घरों से निकला मल मूत्र व कूड़ा करकट वाहित मल बनाता है इससे नदी तालाब व झीलों का जल अशुद्ध हो जाता है।

##### कृषि उद्योग के प्रदूषक (Agricultural Pollutants) :

खरपत्वारनाशी, कीटनाशी, पेस्टीसाइड आदि जैव रासायनिक प्रदूषक होते हैं।

##### औद्योगिक रसायन (Industrial Chemicals) :



अम्ल, क्षार, कोयला, फिनोल, पारा, जिंक, कास्टिक सोडा आदि।

**ईंधनों का जल में मिलना :**

कोयला डीजल, पेट्रोल, तेल आदि।

**रेडियोधर्मी पदार्थ :**

नाभिकीय विस्फोट तथा नाभिकीय ऊर्जा प्रकम से निकलने वाले विकीरण से उत्पन्न होते हैं।

जैसे यूरेनियम, थोरियम आदि में

**जल शोधन में :**

जल को शुद्ध करने वाले रसायनों की अधिकता से भी जल प्रदूषण होता है।

**जल प्रदूषण के मुख्य प्रभाव :**

- 1 जलीय जन्तुओं में आक्सीजन की कमी।
- 2 प्रदूषित जल से सिंचाई करने पर फसलों को नुकसान
- 3 जल प्रदूषित रोग पीलिया, हिपेटाइटिस, डायरिया आदि रोग हो सकते हैं।
- 4 हृदय, फेफड़े गुर्दा मस्तिष्क आदि से सम्बन्धित रोग हो सकते हैं।
- 5 प्राकृतिक सन्तुलन बिगड़ जाता है।

**जल प्रदूषण का नियंत्रण निम्नलिखित सावधानियों को अपनाकर जल प्रदूषण को नियंत्रित किया जा सकता है :**

1. अपने तरीकों में बदलाव लाकर पानी की जरूरत को कम किया जाना चाहिए।
2. उपचारित या अनुपचारित किये बिना पानी का पुनः उपयोग किया जाना चाहिए।
3. जहाँ तक सम्भव हो उपचारित जल का पुनः चक्रण अधिकतम की जाय।
4. पानी को बेकार और व्यर्थ कम से कम करना चाहिए।

**नमामि गंगे कार्यक्रम :**

एक नदी के रूप में गंगा का राष्ट्रीय महत्व है, लेकिन प्रदूषण को नियंत्रित करके नदी के संपूर्ण मार्ग की सफाई की आवश्यकता है। केंद्र सरकार ने निम्नलिखित उद्देश्यों के साथ 'नमामि गंगे' कार्यक्रम आरंभ किया है।

1. शहरों में सीवर ट्रीटमेंट की व्यवस्था कराना।
2. औद्योगिक प्रवाह की निगरानी।
3. नदियों का विकास।
4. नदी के किनारों पर वनीकरण जिससे जैवविविधता में वृद्धि हो।
5. नदियों के तल की सफाई।
6. उत्तराखंड, यूपी., बिहार, झारखंड में 'गंगा ग्राम' का विकास करना।
7. नदी में किसी भी प्रकार के पदार्थों को न डालना भले ही वे किसी अनुष्ठान से संबंधित हों, इससे प्रदूषण को बढ़ावा मिलता है। इसके संबंध में लोगों में जागरूकता पैदा करना।

**जल प्रदूषण रोकने के उपाय :**

1. मल मूत्र कूड़ा करकट के निस्तारण की उचित व्यवस्था।
2. उद्योगों से निकलने वाले प्रदूषकों के निस्तारण की व्यवस्था।
3. जल को कीटाणु रहित बनाने में उचित रसायनों का प्रयोग
4. मृत जीवों को गड्डों में दबाना
5. सीवर की व्यवस्था।
6. कृषि में न्यूनतम रसायनों की व्यवस्था।

7. रेडियो धर्मी पदार्थों को गहराई में गाढ़ना ।
8. नदी, तालाब के आसपास नहाना कपड़े धोना आदि पर नियन्त्रण ।

**निष्कर्ष :**

जल प्रदूषण बढ़ती हुई जनसंख्या और औद्योगिक विस्तारण के कारण जल के अविवेकपूर्ण उपयोग से जल की गुणवत्ता का बहुत अधिक निम्नीकरण हुआ है । नदियों, नहरों, झीलों तथा तालाबों आदि में उपलब्ध जल शुद्ध नहीं रह गया है । इसमें अल्प मात्रा में निलंबित कण, कार्बनिक तथा अकार्बनिक पदार्थ समाहित होते हैं । जब जल में इन पदार्थों की सांद्रता बढ़ जाती है तो जल प्रदूषित हो जाता है और इस तरह वह उपयोग के योग्य नहीं रह जाता । ऐसी स्थिति में जल में स्वतः शुद्धीकरण की क्षमता जल को शुद्ध कर पाती । यद्यपि, जल प्रदूषण प्राकृतिक स्रोतों ( अपरदन, भू - स्खलन और पेड़ - पौधों तथा मृत पशु के सड़ने - गलने आदि ) से प्राप्त प्रदूषकों से भी होता है, तथापि मानव क्रियाकलापों से उत्पन्न होने वाले प्रदूषक चिंता के वास्तविक कारण हैं । मानव , जल को उद्योगों, कृषि एवं सांस्कृतिक गतिविधियों के माध्यम से प्रदूषित करता है । इन क्रियाकलापों में उद्योग सर्वाधिक महत्वपूर्ण सहायक है ।

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## प्राकृतिक वातावरण में उपलब्ध संसाधनों का संरक्षण

**Dr. Manita Kaur Viridi**

Assistant Professor Govt. College Bichhua, Chhindwara (M.P)

[Email.drmanitakaurviridi@gmail.com](mailto:Email.drmanitakaurviridi@gmail.com)

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प्राकृतिक वातावरण के साथ जब माननीय ज्ञान का अर्न्तसंबंध होता है। तब प्रतिफल के रूप में मानवीय भूदृश्य विभिन्न रूपों में प्रदर्शित होते हैं। ये भूदृश्य प्राकृतिक वातावरण के सांभजस्य का प्रतिफल है। कोई भी साधन संसाधन की श्रेणी में तभी आता है जब उसमें मानवीय आवश्यकताओं को संतुष्ट करने की क्षमता होती है। पृथ्वी के धरातल से जो भी पदार्थ उपलब्ध है उन सबको संसाधनों की श्रेणी में नहीं रखा जा सकता, इसका कारण है कि संसाधन होते नहीं हैं बल्कि निर्मित किये जाते हैं संसाधनों की उपयोगिता मुख्यत मानव की वैज्ञानिक प्रगति समय एवं पूजा के साथ—साथ सांस्कृतिक विकास पर आधारित होती है। संसाधन वे स्रोत हैं जिन पर दीर्घकाल तक मानव समाज निर्भर रह सकता है। संसाधन विभिन्न देश एवं काल में अपने स्वरूप एवं मात्रा में परिवर्तनीय होते हैं संसाधन के अन्तर्गत पृथ्वी पर निहित समस्त संसाधनों, उनकी विशेषताएं, उनका उत्पादन एवं उपयोग तथा प्राणियों पर इसके पड़ने वाले प्रकार को सम्मिलित किया जाता है संसाधन के अन्तर्गत प्राकृतिक संसाधन नियोजन का अध्ययन किया जाता है। मानव की विभिन्न आवश्यकताओं की आंशिक या पूर्णरूप से पूर्ति करने वाले स्रोत को संसाधन कहते हैं। संसाधन एवं मानव में अन्योन्याश्रित संबंध है। मनुष्य के जीवन यापन और जीवन की गुणवत्ता के लिए संसाधन बहुत जरूरी है।

**रिभाषिक शब्दावली (keywords):** :—प्राकृतिक, संसाधन, संरक्षण, वातावरण ।

### प्रस्तावना ;Introduction)%&

संसाधन एक ऐसी प्रकृति और मानवीय सम्पदा है, जिसका उपयोग हम अपनी आवश्यकताओं की पूर्ति में करते हैं। दूसरे शब्दों में मानवीय जीवन की प्रगति, विकास तथा आस्ति संसाधनों पर निर्भर करता है। प्रत्येक प्राकृतिक संसाधन मानव जीवन के तकनीकी विकास द्वारा ही संभव है। भूमि, सूर्यातप, पवन, जल, वन एवं वन्य प्राणी मानव जीवन की उत्पत्ति से पूर्व विद्यमान थे। इनका क्रमिक विकास तकनीकी के विकास के साथ ही हुआ। मनुष्य ने अपनी आवश्यकतानुसार संसाधनों का विकास कर लिया है। पृथ्वी पर विद्यमान तत्वों को जो मानव द्वारा ग्रहण किये जाने योग्य हो संसाधन कहते हैं। प्रकृति में विभिन्न प्रकार के संसाधन पाये जाते हैं, जिनके निर्माण का मूल स्रोत प्रकृति है तथा ये सभी मानवीय प्रकार के नवीन स्वरूप में स्थापित हो जाते हैं तथा ये सभी मानवीय प्रकार से नवीन स्वरूप में स्थापित हो जाते हैं। इस प्रकार प्रकृति मानव के लिए संसाधनों का निर्माण करती है जिनको मानव अपने प्रयासों, इच्छाओं और तकनीकी दक्षता से अपने योग्य बनाता है लेकिन इसका वास्तविक भौतिक आधार तो प्रकृति प्रदान कराती है। मनुष्य अपने वातावरण संसाधनों का दोहन करके आर्थिक तंत्र को मजबूत करता है। वह भौतिक वातावरण को परिवर्तित करता रहता है जो उसकी रुचि, कौशल तथा शक्तियों पर निर्भर करता है। लेकिन मानव द्वारा प्राकृतिक पर्यावरण की एक सीमा होती है जिसके बाहर जाने पर संसाधनों के सृजन के स्थान पर ह्रास प्रारंभ हो जाता है।

मानव द्वारा प्रकृति में विद्यमान संसाधनों को अपने उपयोग में लेकर उद्देश्य पूर्ति को विकास का आधार माना जाता है। मनुष्य इसका दोहन प्राचीनकाल से करता आ रहा है। धीरे धीरे इनके तीव्र दोहन से संधृतता पोषणीय विकास की आवश्यकता महसूस की जाने लगी तथा वर्तमान समय में इनके आनुपातिक उपयोग हेतु इन्हें वर्गीकृत कर योजना बनायी जाने लगी है। संसाधन अनेक प्रकार के होते हैं जिनके वर्गीकरण के आधार भी भिन्न भिन्न हैं। स्वामित्व की दृष्टि से संसाधन तीन प्रकार के होते हैं जो क्रमशः व्यक्तिगत, राष्ट्रीय तथा अन्तरराष्ट्रीय हैं। संसाधन जिस प्रकार, मनुष्य के जीवन यापन के लिए अति आवश्यक है, उसी प्रकार जीवन भी गुणवत्ता बनाए रखने के लिए भी महत्वपूर्ण है। ऐसा विश्वास किया जाता है कि संसाधन प्रकृति की देन है। परिणाम स्वरूप, मानव ने इनका अंधाधुंध उपयोग किया है, जिससे कई समस्याएं उत्पन्न हो गई हैं। किसी क्षेत्र के विकास के लिए संसाधन की उपलब्धता एक आवश्यक शर्त है। परंतु प्रौद्योगिकी और संस्थाओं में तदनरूपी परिवर्तनों के अभाव में मात्र संसाधनों की उपलब्धता से ही विकास संभव नहीं है संसाधन किसी भी तरह के विकास में महत्वपूर्ण भूमिका निभाते हैं।

**अध्ययन के उद्देश्य;व्हरमबजपअमद्ध :-**

1. संसाधनों का न्यायोचित उपयोग सुनिश्चित करना ताकि वे वर्तमान के साथ—साथ भावी पीढ़ियों की आवश्यकताओं की भी पूर्ति कर सके।
2. वनों की कटाई जहां तक संभव हो रोका जाना चाहिए।
3. संकटग्रस्त पर्यावरणीय संसाधनों का संरक्षण करना।

**आंकड़ों का संकलन;ब्वउचपसंजपवद व किंजंद्ध—** प्रस्तुत शोध पत्र पुस्तकालय अध्ययन ,इंटरनेट, समाचार पत्र—पत्रिकाओं ,भारत सरकार के विभिन्न संस्थानों के प्रकाशन, द्वारा किया गया है।

**शोध प्रविधि; नैमित्तिकी डमजीवकवसवहलद्ध** — शोध पत्र में ग्रंथालय अध्ययन पद्धति एवं विश्लेषणात्मक अध्ययन पद्धति का उपयोग किया गया है।

**विश्लेषण ;Analysis) :-**

प्राकृतिक संसाधन प्रकृति से प्राप्त और अधिक संशोधन के बिना उपयोग लाए जाते हैं। जैसे — वायु, नदियों और झीलों का जल, मृदा और खनिज १२०० वर्षों पूर्व तीव्र गति वाली पवने एक संभाव्य संसाधन थी, परंतु आज वे वास्तविक संसाधन हैं। जैसे की नीदरलैंड के पवन फार्मों में पवन चक्की के प्रयोग से ऊर्जा उत्पन्न की जाती है। भारत में पवन फार्म तमिलनाडु के नगरकोईल तथा गुजराज के तट पर देखे जा सकते हैं। उत्पत्ति के आधार पर संसाधनों को जैव और अजैव संसाधनों में बांटते हैं। मृदा चट्टाने और खनिज जैसे निर्जीव वस्तुएँ अजैव जबकि पौधे और जंतु जैव संसाधन हैं। संसाधनों का सफलतापूर्वक उपयोग करना और उन्हें नवीकरण के लिए समय देना, संसाधन संरक्षण कहलाता है। हमारे पर्यावरण में उपलब्ध प्रत्येक वस्तु जो हमारी आवश्यकताओं को पूरा करने में प्रयुक्त की जा सकती है और जिसको बनाने के लिए प्रौद्योगिकी उपलब्ध है जो आर्थिक रूप से संभाव्य और सांस्कृतिक रूप से मान्य है, एक संसाधन है एक संसाधन कोई भी प्रकृति या कृत्रिम पदार्थ या ऊर्जा है जिसका उपयोग मानव जाति के लाभों के लिए किया जा सकता है। प्राकृतिक संसाधन वे हैं जो प्राकृतिक रूप से पर्यावरण में विद्यमान हैं, अर्थात् वे मानव द्वारा निर्मित नहीं हैं वे मिट्टी, पानी, धूप, हवा, पौधे, कोयला आदि हैं।

प्राकृतिक संसाधनों के आगे चलकर संपूर्ण और अक्षम्य संसाधनों में वर्गीकृत किया जाता है। प्रचलित संसाधन वे हैं जो सीमित हैं और निरंतर उपयोग के साथ समाप्त हो जायेंगे, उदाहरण के लिए, कोयला, प्राकृतिक गैस आदि। जबकि अटूट संसाधन वे हैं जो मानव उपयोग द्वारा समाप्त नहीं किये जा सकते हैं, उदाहरण के लिए, पवन ऊर्जा और जल शक्ति आदि। जैसे दुनिया की आबादी खतरनाक दर से बढ़ रही है, प्राकृतिक संसाधनों की खपत बढ़ रही है। इसलिए, इन संसाधनों को परिस्थितिक संतुलन बनाये रखने और उन्हें भावी पीढ़ियों के लिए बचाव के लिए संरक्षित किया जाना चाहिए। अपने विनाश या शोषण को रोकने के लिए संसाधन के उचित प्रबंधन को संरक्षण कहा जाता है। प्रकृति हमें अपनी दैनिक आवश्यकताओं के लिए सभी आवश्यक चीजें प्रदान करती है। अधिक संसाधनों और मानवीय लापरवाही के कारण हमने अपने संसाधनों को अत्यधिक दोहन करना शुरू कर दिया। यदि यह जारी रहा, तो हमारी भावी पीढ़ी के लिए कोई संसाधन नहीं बचेगा। संसाधनों के संरक्षण की आवश्यकता है।

संसाधनों के संरक्षण के लिए हमें क्या-क्या करना चाहिए— पर्यावरण संसाधनों का एक सीमा में उपयोग करना चाहिए, पर्यावरण संसाधनों को बर्बाद और बेकार नहीं करना चाहिए, वनों को नहीं काटना चाहिए। और हमें व्यर्थ में पानी नहीं बहाना चाहिए। परिस्थितिक संतुलन का समर्थन करके जीवन का समर्थन करना। यह सुनिश्चित करने के लिए कि आने वाली पीढ़ियाँ संसाधनों तक पहुँच बना सकेंगी।

हमें यह पर्यावरण संसाधन विरासत में मिले हैं इसलिए हमारा दायित्व है कि हमें भी आने वाली पीढ़ी को यह विरासत में देना है यह सोचकर पर्यावरण संसाधनों का उपयोग करना चाहिए।

संसाधन एक ऐसी प्राकृतिक और मानवीय सम्पदा है जिसका उपयोग हम अपनी आवश्यकताओं की पूर्ति में करते हैं। दूसरे शब्दों में मानवीय जीवन की प्रगति, विकास तथा अस्तित्व संसाधनों पर निर्भर करता है। प्रत्येक प्राकृतिक संसाधन मानव जीवन के लिए उपयोगी है, किन्तु उसका उपयोग उपयुक्त तकनीकी विकास द्वारा ही संभव है। भूमि सूर्यातप, पवन, जल, वन एवं वन्य प्राणी मानव जीवन की उत्पत्ति से पूर्व विद्यमान एक क्रमिक विकास तकनीकी के विकास के साथ ही हुआ। इस प्रकार मनुष्य ने अपनी आवश्यकतानुसार संसाधनों का विकास कर लिया है। स्पष्ट है कि पृथ्वी पर विद्यमान तत्वों को, जो मानव द्वारा ग्रहण किये जाने योग्य थे, संसाधन कहते हैं जिम्मरमैन ने लिखा है कि, संसाधन का अर्थ किसी उद्देश्य की प्राप्ति करना है, यह उद्देश्य व्यक्तिगत आवश्यकताओं तथा सामाजिक लक्ष्यों की स्तुति करना है।

**संसाधन ;Resource)** एक ऐसा स्रोत है जिसका उपयोग मनुष्य अपनी इच्छाओं की पूर्ति के लिए करता है कोई वस्तु प्रकृति में हो सकती है हमेशा से मौजूद रही हो लेकिन वह संसाधन नहीं कहलाती है, जब तक की मनुष्यों का उसमें हस्तक्षेप न हो। हमारे पर्यावरण में उपलब्ध हर वह वस्तु संसाधन कहलाती है जिसका इस्तेमाल हम अपनी आवश्यकता की पूर्ति के लिए कर सकते हैं जिसे बनाने के हमारे पास प्रौद्योगिकी है और जिसका इस्तेमाल सांस्कृतिक रूप से मान्य है। प्रकृति का कोई भी तत्व तभी संसाधन बनता है जब वह मानवीय सेवा करता है। इस संदर्भ में १९३३ में जिम्मरमैन ने यह तर्क दिया था कि, अपने आप में न तो पर्यावरण और न ही उसके अंग संसाधन हैं, जब तक वह मानवीय आवश्यकताओं को संतुष्ट करने में सक्षम न हो। वनस्पतिक प्रजातियों का कृषि, उद्योग एवं चिकित्सा के क्षेत्र में महत्वपूर्ण उपयोग होता है। वन्य जीव परिस्थितिकी तंत्र के महत्वपूर्ण घटक हैं अतः इनका उचित संख्या में परितंत्र में उपस्थित रहना पर्यावरण संतुलन को बनाये रखने के लिए नितान्त आवश्यक है। गत कुछ वर्षों में अनेक वन्य जीवों की संख्या में लगातार कमी आती है। इतना ही नहीं कई अन्य वन्य जीव—जन्तु विलुप्त होने की कगार में पहुँच गये हैं विश्व में अफ्रीका के बाद भारत में सबसे अधिक जीव—जन्तु पाये जाते हैं विश्व प्राणी अधिनियम १९७२ की अनुसूची १ में १३३ दुर्लभ जीव जन्तुओं की जातियों में से लगभग ७५००० प्रजातियों भारत में पायी जाती है।

१९९६ के अक्टूबर माह में मॉस्को में हुए विश्व संरक्षण कांफ्रेंस बिना किसी सर्वमान्य नतीज पर पहुँचे सम्पन्न हुआ। इस सम्मेलन का आयोजन अंतराष्ट्रीय प्रकृति एवं प्राकृतिक संसाधन संरक्षण संघ ने आयोजित किया

था। १९७२ से पहले वन्य जीवों की सुरक्षा के लिए कोई व्यवस्थित कानून नहीं था। इसके पहले राज्यों द्वारा जो संरक्षण कानून बने थे उनमें बहुत सी कमजोरियाँ थी। सरकारी स्तर पर १९५२ में दुर्लभ जन्तु प्रजातियों की सूची बनायी गयी थी, लेकिन उस समय उसमें केवल १३ प्रजातियाँ ही शामिल थी। वन्य प्राणियों की सुरक्षा के लिए १९७२ में भारतीय वन्य प्राणी (सुरक्षा) अधिनियम के नाम से एक केंद्रीय कानून बनाया गया। संरक्षण के सभी प्रयत्नों का तथ्य स्थिर क्षेत्र ने जंपदमक थमसकद्ध है। किसी भी सुदृढ विकासशील कार्यक्रम के लिए, आवश्यक पदार्थों की अतिरिक्त पूर्ति के सतत् प्रयासों के लिए सर्वप्रथम स्थान देना चाहिए। इस प्रकार के नये संसाधन एक बार प्राप्त हो जाने पर, उनके पतन, प्रदूषण, खराब होने की अवस्था और विनाश के विरुद्ध संरक्षण होना चाहिए। उदाहरण के लिए, प्राचीन काल में मानव जाति के लिए गलतदंग से बनायी गई नहरों और खुले जलाशयों से वाष्पीकरण के द्वारा पानी की बहुत बड़ी मात्रा नष्ट हो जाती है। इस प्रकार की हानियों को अब रोका जा सकता है। संरक्षण तकनीको का उद्देश्य अधिकारिक रूप से और कुशलतापूर्वक उपभोग को प्रोत्साहित करना है तथा व्यर्थ जाने वाले पदार्थ को रोकना है। मनुष्य हर बार एक गौण वस्तु का नया उपयोग करता है। इन प्रकार वह समाप्त संसाधनों की पूर्ति का प्रयास कर दूसरे रूप से संरक्षण ही करता है। इस प्रकार की तकनीके, जो निम्न स्तर के पदार्थों को उपयोग के लिए सम्भव बनाती है तथा प्राप्त संसाधनों द्वारा अनेक मूर्तियों को जन्म देती है। सुदृढ संरक्षण के लिए आवश्यक है। प्रारंभिक काल में केवल उत्तम संसाधन को ही प्रयोग में लाया गया। उदाहरण के लिए अनेक देशों में केवल अच्छे स्तर का लोह अयस्क ही इस्पात बनाने में प्रयोग होता रहा है। आजकल मनुष्य का वातावरण बोध महत्वपूर्ण हो गया है। संसाधन आकलन की ओर मानव समाज अब अधिक आकृष्ट है जिसके लिए उपग्रहीय प्रणाली, दूरस्थ सम्बेदन तकनीकी और हवाई छाया चित्रण का प्रयोग हो रहा है तथा सम्बर्धन सबसे महत्वपूर्ण पक्ष बन गया है। अब मनुष्य अंतरिक्ष के प्रति सचेत है। पृथ्वी पर जनसंख्या विस्तार के निस्तारण की सीमाओं को ध्यान में रखकर अंतरिक्ष में मानवीय निवास की सम्भावनाओं को देखा जा रहा है। आज खनिजों के आधार पर ही अनेक देशों ने अपना आर्थिक विकास किया है। कृषि, पशुपालन, मत्स्य उद्योग लकड़ी काटना प्राथमिक आवश्यकतायें पूर्णतया खनिज पर ही आधारित है।

#### **निष्कर्ष ;Conclusion) :-**

बिना संसाधन के विकास संभव नहीं है लेकिन संसाधन का विवेकहीन उपभोग तथा अति उपयोग कई तरह के सामाजिक, आर्थिक तथा पर्यावरणीय समस्या उत्पन्न कर देते हैं। अतः संसाधन का संरक्षण अति आवश्यक हो जाता है। संसाधन राष्ट्र की अर्थव्यवस्था के आधार पर निर्माण करते हैं। भूमि, जल, वन, वायु, खनिज के बिना कोई भी कृषि व उद्योग का विकास नहीं कर सकता है। ये प्राकृतिक पर्यावरण जैसे की वायु, जल, वन और विभिन्न जैव रूपों का निर्माण करते हैं, जो कि मानवजीय जीवन एवं विकास हेतु आवश्यक है। संसाधन मानव जीवन को सरल व सुखद बनाते हैं, संसाधनों के बिना हम जीवन की कल्पना भी नहीं कर सकते। आज संसाधन की उपलब्धता हमारी प्रगति का सूचक बन गया है। इसलिए संसाधनों का हमारे जीवन में बड़ा महत्व है। निष्कर्ष रूप में कहा जा सकता है कि प्राकृतिक वातावरण में उपलब्ध संसाधनों को बहुमूल्य सम्पत्ति ;अंसनइसम भेजकर उनका इस प्रकार सदुपयोग एवं भविष्य के लिए संरक्षण किया जाना चाहिए कि वह किसी देश एवं उसकी वर्तमान एवं भावी पीढ़ियों के लिए अधिकतम लाभदायक सिद्ध हो सके। इसी प्रकार लुप्त होते संसाधनों का परिक्षण भी आवश्यक है ताकि उनके अस्तित्व की सुरक्षा हो सके।

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## महाराष्ट्र राज्य व नागपूर जिल्ह्यातील लिंग गुणोत्तराचे तुलनात्मक अध्ययन (1901 ते 2011)

मुकेश रा. खारकर<sup>1</sup> डॉ. सुषमा ल. दामोदरे<sup>2</sup>

<sup>1</sup>संशोधक विध्यार्थी, वसंतराव नाईक शासकीय कला व समाज विज्ञान संस्था, नागपूर

<sup>2</sup>सहा. प्राध्यापक भूगोल विभाग, वसंतराव नाईक शासकीय कला व समाज विज्ञान संस्था, नागपूर

[kharkar.mukesh1986@gmail.com](mailto:kharkar.mukesh1986@gmail.com)<sup>1</sup> [dr.s.damodare@gmail.com](mailto:dr.s.damodare@gmail.com)<sup>2</sup>

### सारांश

आज आपण वैज्ञानिक युगात वावरत असलो तरीही लिंगभेदभाव हा प्रत्येक समाजात दिसून येतो. भारतामध्ये लिंगभेदभाव हा फार पूर्वीपासून विरोधाभासी राहिला आहे. एकीकडे स्त्रियांनी आकशाला गवसनी घलावी तसेच एकीकडे पुरुषांची मत्तेदारी मानल्या जाणा-या व्यवसायात स्त्रियांनी प्रवेश केला आहे. मात्र दूसरीकडे तिला समाजात द्वितीय श्रेणीतील नागरीक म्हणून मानल्या जाते. संविधानाने दिलेले अधिकार हे कागदोपत्री सर्वांना समान असले तरी देखील प्रत्यक्षात स्त्री पुरुष भेदभाव होतांना दिसून येतो. त्यामुळेच आज संपूर्ण जगातील देशांमोर लिंग गुणोत्तरातील तफावत वाढली आहे. भारता बरोबरच महाराष्ट्रातही लिंग गुणोत्तरा संदर्भात परिस्थिती ही गंभीर आहे. त्यामुळे सदर लेखामध्ये महाराष्ट्र राज्य व नागपूर जिल्हा येथील 1901 ते 2011 या वर्षातील लिंग गुणोत्तर यावर लक्षकेंद्रीत करण्यात आले आहे.

### प्रस्तावना

भारतामध्ये महिलांची स्थिती ही फार विरोधाभासी दिसून येते. एकीकडे महिलांना दुर्गा काली सारख्या देवीचे रूप मानले जाते व पुजले जाते तर दुसरीकडे जीवनाच्या प्रत्येक क्षेत्रात स्त्रियांना पुरुषांच्या तुलनेत कमी दर्जाची वागणूक दिली जाते. लिंग भेदभाव किंवा लिंग गुणोत्तरात कालानुरूप होत गेलेली तफावत ही नविन गोट नसून ती आपल्या समाजात फार पूर्वीपासून अस्तीत्वात आहे. मुलीं विषयी समाजातील लोकांमध्ये असलेला पूर्वाग्रह आणि भेदभाव यातूनच स्त्रीभूणहत्या विधवा पुनर्विवाहाची तरतूद नसणे सती प्रथा या सारख्या समाज विरोधी प्रथा निर्माण झाल्या. आज प्रगत युगामध्ये त्याचे रूपांतरण नियोजित लिंग हत्येमध्ये झालेले दिसून येते. म्हणजेच आज वैद्यकीय क्षेत्रात झालेली प्रगती नवनवीन उपकरणांचा विकास ज्यामध्ये अल्ट्रासाऊंड तंत्रज्ञानाच्या वापरामुळे लिंग निवडीची सोय झाली आहे. लिंग गुणोत्तर हे स्त्रियांच्या स्थितीचे संयुक्त सूचक आहे. त्यातून दर हजार पुरुषांमागे महिलांची संख्या दिसून येते. नैसर्गिक लिंग गुणोत्तर हे स्त्रियांकरीता अनुकूल असले तरी विकसनशील देशांमध्ये त्याचे विपरित प्रतिनिधित्व केले जात आहे. भारता बरोबरच भारता शेजारील देशांमध्येही लिंग गुणोत्तरासंदर्भातील स्थिती ही संमिश्र पाहावयास मिळते. भारता बरोबरच महाराष्ट्रातही लिंग गुणोत्तरा संदर्भात बरिच तफावत दिसून येते. प्रस्तुत लेखामध्ये महाराष्ट्र राज्य व नागपूर जिल्हा यांचा लिंग गुणोत्तरा संदर्भात तुलनात्मक अभ्यास केला आहे.

### उद्देश

1. महाराष्ट्र राज्य व नागपूर जिल्ह्यातील लिंग गुणोत्तराचा तुलनात्मक अभ्यास करणे.
2. महाराष्ट्र राज्य व नागपूर जिल्ह्यातील ग्रामीण शहरी व एकुण लिंग गुणोत्तराचा अभ्यास करणे.

### गृहीतक

महाराष्ट्र राज्य तसेच नागपूर जिल्ह्यात एकुण व शहरी लिंग गुणोत्तराच्या तुलनेत ग्रामीण लिंग गुणोत्तरातील तफावत कमी आहे.

### अभ्यासपध्दती

प्रस्तुत शोध लेख पूर्ण करण्यासाठी सांख्यिकीय आकडेवारीचे संकलन दुय्यम स्रोतांच्या माध्यमातून करण्यात आली आहे. तसेच विविध लेख पुस्तके अहवाल तसेच प्रकाशित साहित्याचा वापर करण्यात आला आहे. लिंग गुणोत्तरा संबंधीची माहिती ही जिल्हा जनगणना पुस्तिकेतून घेण्यात आली आहे. तसेच प्रस्तुत लेखाकरीता योग्य त्या संख्याशास्त्रीय पध्दतीचा व आकृत्यांचा वापर करण्यात आला आहे.

### अभ्यास क्षेत्र

प्रस्तुत शाध लेख लिहिण्याकरीता महाराष्ट्र राज्य व महाराष्ट्र राज्याच्या विदर्भ प्रांतातील नागपूर जिल्ह्याची निवड करण्यात आली आहे. महाराष्ट्र हे भारतातील मध्यप्रदेश व राजस्थान नंतर तिसरे मोठे राज्य आहे. महाराष्ट्राला गुजरात मध्यप्रदेश छत्तीसगढ तेलंगाना कर्णाटका आणि गोवा या राज्यांची सिमा विविध बाजूनी असलेल्या महाराष्ट्र राज्याचे क्षेत्रफळ 307713 चौ.कि.मी. आहे. राज्याचा अक्षवृत्तीय विस्तार 15°8'उत्तर अक्षास ते 22°1'उत्तर अक्षांश आहे तर रेखांशीय विस्तार 72°6'पूर्व रेखांश ते 80°9'पूर्व रेखांश दरम्यान आहे. महाराष्ट्र राज्याने देशाच्या एकुण क्षेत्राच्या 9.37 टक्के क्षेत्र व्यापले आहे. नागपूर जिल्हा हा महाराष्ट्र राज्याच्या पुर्वेकडील एक जिल्हा असुन महाराष्ट्र राज्याच्या उपराजधानीचे ठिकाण होय. नागपूर जिल्ह्याचा अक्षवृत्तीय विस्तार 21°09'उत्तर अक्षास ते 21°15'उत्तर अक्षांश आहे 79°05'पूर्व रेखांश ते 79°09'पूर्व रेखांशीय विस्तार आहे. जिल्ह्याचे एकुण क्षेत्रफळ 9892 चौ.कि.मी. इतके असुन येथे 14 तालुके आहेत. या जिल्ह्यास पूर्वेला भंडारा दक्षिन आग्नेय ला यवतमाळ दक्षिन नैवृत्य ला वर्धा पश्चिमेस अमरावती जिल्हा तर उत्तरेस मध्यप्रदेश राज्याची सिमा आहे.

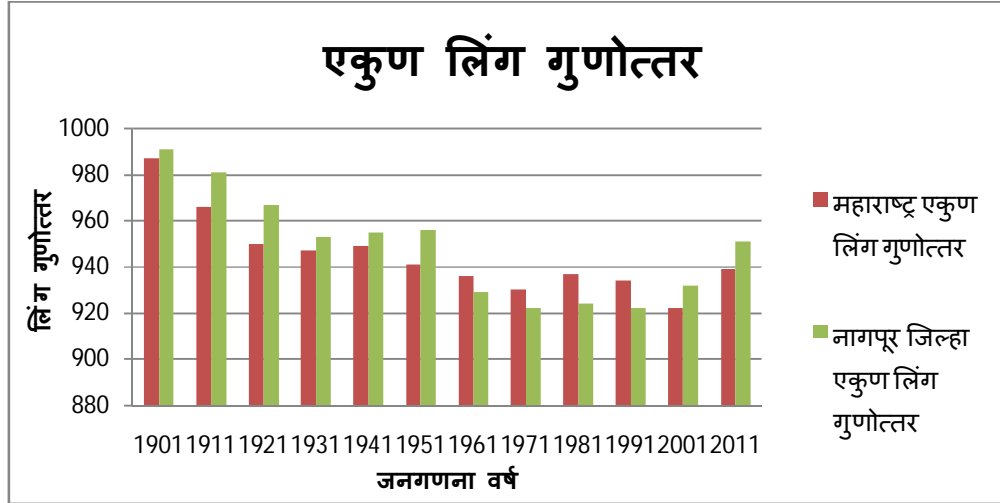
### लिंग गुणोत्तर

लिंग गुणोत्तर हे एखाद्या ठिकाणच्या दिलेल्या एकुण लोकसंख्येतील पुरुष आणि स्त्रीयांचे प्रमाण दर्शविते. दर हजार पुरुषांमध्ये असलेली स्त्रीयांची संख्या म्हणजे लिंग गुणोत्तर होय. लिंग गुणोत्तर हे विविध लोकसंख्या शास्त्रीय मापदंडांपैकी एक महत्वाचे मापदंड आहे. लिंग गुणोत्तर हे प्रत्यक्षात असलेल्या स्त्रीया व पुरुषांचे प्रमाण आणि भविष्य काळातील लोकसंख्येच्या प्रजनन क्षमतेचे संकेत देणारे आहे. आज स्त्री लिंग गुणोत्तर खुपच विस्कळीत झाले असुन लिंग गुणोत्तराची योग्य पातळी राखणे ही काळाची गरज आहे.

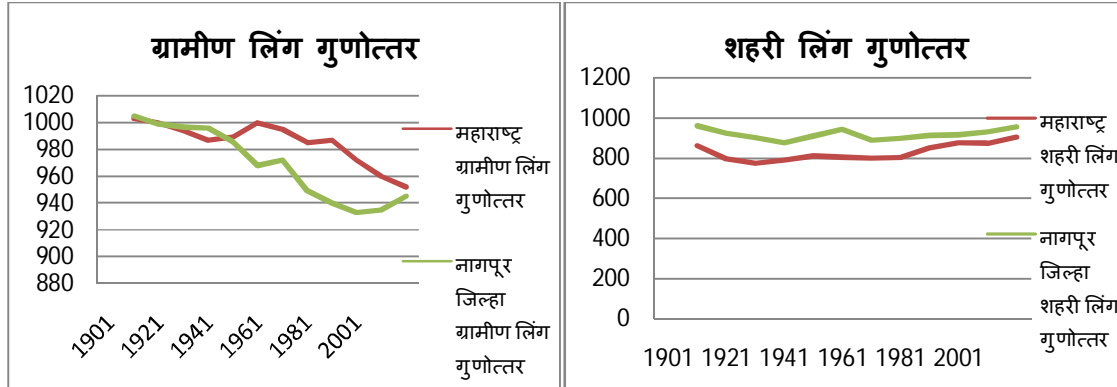
### महाराष्ट्र राज्य व नागपूर जिल्ह्यातील लिंग गुणोत्तर 1991 ते 2011

जणगणना वर्ष	महाराष्ट्र राज्य			नागपूर जिल्हा		
	लिंग गुणोत्तर एकुण	लिंग गुणोत्तर ग्रामीण	लिंग गुणोत्तर शहरी	लिंग गुणोत्तर एकुण	लिंग गुणोत्तर ग्रामीण	लिंग गुणोत्तर शहरी
1901	987	1003	862	991	1005	961
1911	966	1000	796	981	999	926
1921	950	994	776	967	997	902
1931	947	987	790	953	996	877
1941	949	989	810	955	986	910
1951	941	1000	807	956	968	942
1961	936	995	801	929	972	890
1971	930	985	802	922	949	899
1981	937	987	850	924	940	912
1991	934	972	875	922	933	915
2001	922	960	873	932	935	931
2011	939	952	903	951	945	954

सारणी क्र. 1 स्रोत: जिल्हा जनगणना पुस्तिका



आलेख क्रमांक 1



आलेख क्रमांक 2

आलेख क्रमांक 2

उपरोक्त आकडेवारीसारणी क्र. 1 व आलेखाचे निरिक्षण करता असे लक्षात येते की आलेख क्रमांक 1 3 एकुण लिंग गुणोत्तर व नागरी लिंग गुणोत्तरामध्ये महाराष्ट्राच्या तुलनेत नागपूर जिल्ह्यात दा हजार पुरुषांमध्ये स्त्रीयांची संख्या जास्त आहे. ग्रामीण लिंग गुणोत्तरासंदर्भात आलेख क्रमांक 3 मात्र मागील ब-याच दशकांमध्ये महाराष्ट्राच्या तुलनेत नागपूर जिल्ह्यामध्ये लिंग गुणोत्तर कमी आहे. महाराष्ट्रातील एकुण लिंग गुणोत्तर विचारात घेता महाराष्ट्रात 1901 साली लिंग गुणोत्तर हे दर हजार पुरुषांमागे 987 स्त्रीया होत्या. त्यात घट घेउन 2011 साली त्याचे प्रमाण 929 इतके झाले. म्हणजेच या काळात ब-याच मोठ्या प्रमाणात स्त्रीयांची संख्या ही कमी झालेली दिसून येते. हिच परिस्थिती ग्रामीण लंग गुणोत्तरा संदर्भातही पाहावयास मिळते. मात्र 1901 च्या तुलनेत 2011 मध्ये शहरी लिंग गुणोत्तरात वाढ झालेली आहे. नागपूर जिल्ह्यातील एकुण लिंग गुणोत्तरात 1901 साली दर हजार पुरुषांमध्ये 991 इतक्या स्त्रीया होत्या त्यात घट होऊन 2011 मध्ये ते प्रमाण 951 इतके झाले. त्याच प्रमाणे ग्रामीण व नागरी लिंग गुणोत्तरातही घट झालेली दिसून येते. महाराष्ट्र व नागपूर जिल्ह्यात एकुण लिंग गुणोत्तरात 1961 ते 2001 या काळात बरीच घट झालेली दिसून येते. महाराष्ट्रातील शहरी लिंग गुणोत्तराच्या प्रमाणात 1911 ते 1961 या वर्षात घट झाली त्यानंतर मात्र त्यात वाढ झालेली दिसून येते. 2011 च्या आकडेवारीचा विचार करता यावरून असे म्हणता येईल की 2001 ते 2011 या काळात एकुण तसेच शहरी व ग्रामीण लिंग गुणोत्तरात वाढ झाली आहे

#### निष्कर्ष

लिंग व्यवस्थेतील शक्तीहीनतेचा दिसनारा चेहरा म्हणजे महिले कडे पाहले जाते. पुरुषांच्या पाठिंब्याने स्त्री ला संक्षम बणविण्याऐवजी तिला कसे अशक्त बनविता येईल याचा विचार करण्यात येतो. या करीता सामाजिक प्रक्रिया आणि संरचनात्मक आणि सांस्कृतिक जाळे उद्ध्वस्त करणे आवश्यक आहे. ज्यामुळे स्त्री संक्षमीकरणाच्या



प्रयत्नास चालना मिळेल. एखादे देश, राज्य अथवा क्षेत्रातील लिंग गुणोत्तरातील बदल हा तेथील समाजाच्या अंतर्गत सामाजिक-आर्थिक आणि सांस्कृतिक घटकांवर प्रभाव टाको. भारत जगातील अशा काही देशांपैकी एक आहे जिथे पुरुषांची संख्या स्त्रियांच्या तुलनेत अधिक आहे. त्यावरून असे लक्षात येते की, गेल्या काही दशकांमध्ये गर्भपाताच्या घटनांमध्ये वाढ झाली आहे. त्यामुळे बाल लिंग गुणोत्तरात होत असलेली घट ही स्त्री भ्रूण हत्येची प्रथा तसेच लिंग निदान करणे सुरू असल्याचे दर्शविते.

#### **उपाययोजना**

1. लैंगिक निवडक गर्भपात करणा-या गुन्हेगारांना कठोर शिक्षा करण्यात यावी त्या करीता कठोर कायद्यांची अमलबजावणी व्हावी.
2. प्रत्येक स्त्रीची प्रसूती ही रूग्णालयातच व्हावी त्याकरीता गर्भवती महिलेच्या नोंदनी पासून ते प्रसूती पर्यंत तिचा पाठ पूरावा करणे गरजेचे आहे.
3. दिवसेंदिवस वाढत असलेल्या महिलेचा छळ, हिंसा व पिळवणूकी संदर्भात दोशी व्यक्तीवर कठोर कार्यवाही व शिक्षेची तरतूद असावा.
4. ज्या पालकास फक्त मुली आहेत त्यांच्या करीता विविध योजनांची अमलबजावणी करण्यात यावी. जसे की, त्या मुलींच्या शिक्षणकरीता शिष्यवृत्ती व आवश्यक शैक्षणिक साहित्याचा पूरवठा करणे व त्यांच्या शिक्षणास प्रोत्साहन देणे.
5. असंतुलित लिंग गुणोत्तराचा मुद्दा हा शैक्षणिक संसोधन आणि धोरणात समावेश करण्यात यावा ज्यामुळे संतुलित लिंग गुणोत्तर हे स्थानिक आणि जागतिक सार्वजनिक हित सांभाळले जाईल.
6. तसेच महिलांकरीता मोफत आरोग्यविषयक सुविधा, आयकर मध्ये महिलांना विशेष सवलत, एखाद्या महिलेवर झालेल्या अत्याचारा विरोधात सामाजिक संस्थांद्वारे जन आंदोलन पुकारले जावे. प्रसार माध्यमांनी महिलांवर होणारे अत्याचार, हिंसा, स्त्रीभ्रूणहत्या व असंतुलित लिंगगुणोत्तराच्या विरोधात जाहिराती प्रसिध्द करणे यासारखे अनेक विविध उपाययोजना लिंग गुणोत्तरातील तफावत दूर करण्यास उपयोगात आणता येतील. तसेच मुलंता वाचविणे, महिला संदर्भात भेदभावाची भावना दूर करणे लिंग गुणोत्तर संतुलित करण्याकरीता व स्त्रीभ्रूणहत्येविरोधत मोहीम चालविणे गरजेचे आहे.

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## भारतीय लोकसंख्येची वयोरचना

प्रा.डॉ.सुरेश सामाले

अर्थशास्त्र विभाग प्रमुख, स्व.नितीन महाविद्यालय, पाथरी जि.परभणी

Email : [samalesuresh@gmail.com](mailto:samalesuresh@gmail.com)

### प्रस्तावना :

कोणत्याही देशाची प्रगती ही त्या देशातील लोकसंख्या आणि तेथील नैसर्गिक साधनसंपत्ती यावर अवलंबून असते. त्या देशातील लोकसंख्या आणि त्या देशाचे उत्पादन यांचा परस्परंशी अगदी निकटचा संबंध असतो. लोकांच्या राहणीमानाचा दर्जा मुख्यतः त्यावरून ठरत असतो. लोकसंख्येचा आकार, स्त्री पुरुष प्रमाण, व्यवसाय विभागणी लोकांची उपक्रमशीलता, तांत्रिक ज्ञान या घटकांवरच त्या देशातील नैसर्गिक साधनसंपत्तीचा पर्याप्त उपयोग केला जातो. विकसनशील देशात वेगाने वाढणारी लोकसंख्या ही एक गंभीर समस्या ठरते. भारतातही लोकसंख्येच्या अतिरिक्ततेमुळे लोकसंख्या विस्फोटाची (Population Explosion) स्थिती निर्माण झाली आहे. प्राचीन काळापासून लोकसंख्या व तिची वैशिष्ट्ये यांविषयीचे औत्सुक्य लोकांच्या मनात असल्याचे काही दाखले आपल्याला इतिहासात सापडतात. ख्रिस्तपूर्व ३२१ ते २६९ या काळात लिहिलेल्या कॉटिलीय अर्थशास्त्र नामक भारतीय ग्रंथात तसेच आर्देन-इ अकबरी या ग्रंथातही लोकसंख्याविषयक विवेचन केलेले आहे. परंतु लोकसंख्येच्या शास्त्रशुद्ध अभ्यासाचा पाया घालण्याचे श्रेय मात्र जॉन ग्रॅट (१६२०-७४) ह्या ब्रिटिश संशोधकाकडे जाते. लोकसंख्या अभ्यासात आकडेवारीला असाधारण महत्त्व असते. जनगणना व नाव नोंदणी याचा इ. चा अलिकडच्या काळात सार्वत्रिक वापर होत आहे. यावरून लोकसंख्या दर्शविली जाते. एकोणिसाव्या शतकाच्या आधी लोकसंख्येची आकडेवारी अंदाजाच्या स्वरूपात होती.

### अभ्यासाचे उद्दिष्टे :

१. लोकसंख्या संज्ञेचा अर्थ समजून घेणे.
२. भारतीय लोकसंख्येच्या संरचनेचा अभ्यास करणे
३. लोकसंख्या संरचनेचा परिणाम अभ्यासणे.

### लोकसंख्येचा अर्थ :

'लोकसंख्या' म्हणजे एखाद्या भौगोलिक प्रदेशात राहणाऱ्या व्यक्तींची संख्या होय, लोकसंख्या मोजण्याला जनगणना म्हणतात. प्रत्येक देश आपल्या लोकसंख्येची ठरावीक कालखंडानंतर गणना करतो. हा कालखंड बहुतेक १० वर्षे एवढा असतो व दरवर्षी वाढीव संख्येचा अंदाज प्रकाशित केला जातो. लोकसंख्या, मानव संसाधन आणि आर्थिक विकास यांच्यात धनात्मक सहसंबंध आहे. वाढत्या लोकसंख्येतून श्रमशक्तीचा पुरवठा होतो. शिक्षण आणि आरोग्यविषयक सुविधांमधून मानवसंसाधनाची उपलब्धता वाढते. यातून आर्थिक विकासाचा वेग वाढतो, पण जोपर्यंत लोकसंख्या आधिक्य होत नाही. देशाची लोकसंख्या पर्याप्त असते, राष्ट्रीय उत्पन्न व दरडोई उत्पन्नात वाढ होते तो पर्यंत वाढतो. लोकसंख्या आर्थिक विकासाला पोषक ठरते. वाढत्या लोकसंख्येतून लोकसंख्या आर्थिक विकासासपोषक ठरते. वाढत्या लोकसंख्येतून लोकसंख्याआधिक्य निर्माण झाले तर त्यातून दारिद्र्य, बेरोजगारी, विषमता, नागरीकरण यासारख्या सामग्रलक्ष्यी समस्या निर्माण होतात. या समस्या आर्थिक विकासात बाधा निर्माण करतात.

### लोकसंख्या :

लोकसंख्या आणि आर्थिक विकास यांचा जवळचा संबंध असतो. न्यून लोकसंख्या आणि अतीलोकसंख्या आर्थिक विकासामध्ये बाधा निर्माण करते. लोकसंख्या जसजशी वाढत जाते तसतसा कट्या लोकसंख्येचा पुरवठावाढतो, उपभोक्त्यांची संख्यावाढते. त्यातून रोजगार उत्पादन आणि उत्पादनात वाढ होऊन आर्थिक विकासासगतिमान होतो. अती लोकसंख्येतून बेरोजगारी, दारिद्र्य, विषमता, अन्नधान्य पुरवठा, स्वच्छता व आरोग्य, शिक्षण आणि प्रशिक्षण विषयक समस्या निर्माण होतात. या समस्या आर्थिक विकासाला खाऊन टाकतात. असले तरी गेल्या चार दशकांत अतीलोकसंख्या असणाऱ्या देशांनी वाढत्या लोकसंख्येला आपली कमजोरी न मानता तिला

आपली शक्ती मानले आहे. आज जगातील चीन, इंडोनेशिया, भारत, जापान, दक्षिणकोरिया, रशिया, तैवान या देशांनी वाढत्या लोकसंख्येच्या सहाय्याने आपला विकास गतिमान केला आहे.

### लोकसंख्येची वयोरचना :

लोकसंख्येतील बाल्यगट आणि वयोवृद्ध गट या अनुत्पादक लोकसंख्येपेक्षा कर्त्या लोकसंख्येचे प्रमाण जास्त असणे हे विकसनशील मानवसंसाधनाचे लक्षण मानता येईल. भारतात एकूण लोकसंख्येचे ते १४ वर्ष १५ ते ५९ वर्ष आणि ६० वर्षापेक्षा जास्त वयोगट असे तीन गटांत वर्गीकरण केले जाते. या विभागणीवरून अनेक बाबी समजण्यास मदत होते जसे एकूण लोकसंख्येत लहान मुलांचे प्रमाण किती, तरुण व प्रौढ म्हणजे कर्त्यालोकसंख्येचे प्रमाण किती, वयोवृद्धांचे प्रमाण किती, लहान मुलांचे प्रमाण जास्त असेल तर शिक्षण घेणाऱ्यांची संख्या किती, लहान मुला चेतरेणात रूपांतरण किती झाले होते. तरुणाची संख्या तुलनात्मक कमी असेल तर बालमृत्यू प्रमाण जास्त आहे हे कळते. कर्ती किंवा उत्पादक लोकसंख्या किती आणि अनुत्पादक किती इ. समजण्यास मदत होते.

लोकसंख्येची वयोगटानुसार विभागणी (टक्केवारीत) वयोगट प्रमाण (टक्केवारीत) दर्शविणारा तक्ता

वर्ष	१४ वर्षाखालील लोकसंख्या	१५ ते ६० वर्षे वयोगटातील लोकसंख्या	६० वर्षापेक्षा जास्त वयोगटातील लोकसंख्या
१९९१	३८.८	६०.२	१.०
१९३१	३८.३	६०.२	१.५
१९६१	४१.०	५३.३	५.७
१९७१	४१.४	५३.४	५.२
१९८१	३९.७	५४.१	६.२
१९९१	३६.५	४७.१	६.४
२००१	३५.५	५८.२	६.३
२०११	२९.५	६२.५	८.०

भारतात एकूण कर्त्या लोकसंख्येचे प्रमाण १९९९ मध्ये ६०.२१% होते. बाल्य वयोगट प्रमाण ३८.८९६ आणि वृद्धांचे प्रमाण फक्त १% होते. १९६१ मध्ये हेच प्रमाण अनुक्रम ५३.३६४१.१६ आणि ५.७१% होते. यावरून स्पष्ट होते की, त्या लोकसंख्येचे प्रमाण कमी झाले व बाल्यगट आणि वृद्धांच्या प्रमाणात वाढ झाली. ही वाढ मृत्यूचे प्रमाण घट्टीचे संकेत देते. हे प्रमाण २००१ मध्ये अनुक्रमे ५८.२१%, ३५.५१% आणि ६३% झाले. यात कर्त्या लोकसंख्येचे प्रमाण वाढलेले आहे. पण बाल्यगट प्रमाण कमी झाले यातून जननदर कमी होण्याचे संकेत मिळतात. तर वृद्धांच्या प्रमाण वाढीतून सरासरी आयुर्मानातील वाढ दर्शविते. २०११ मध्ये हे प्रमाण अनुक्रमे ६२.५% ३५.५% आणि ८.०% झाले.

बाल्यगट आणि वृद्ध वयोगटाची लोकसंख्या अनुत्पादक असते. याचा भार कर्त्या लोकसंख्येवर पडतो. एकूण लोकसंख्येत यांचे प्रमाण १९६९ मध्ये ४६.७% होते. ते १९९१ मध्ये ४२.९१% झाले. पण या काळात बाल्यगट संख्या जास्त कमी झाली. २०११ च्या जनगणनेत तर बाल्यगट प्रमाण आणखी कमी झाले. हे प्रमाण भविष्यात आणखी कमी झाले तर तरुण वर्गाचे प्रमाण कमी होईल. २००१ ते २००६ या २५ वर्षांच्या काळात भारतीय लोकसंख्येची काय स्थिती राहिल यांचे प्रकल्पन करण्यासाठी सरकारने राष्ट्रीय लोकसंख्या आयोगावर ज्या तांत्रिक गटाची नियुक्ती केली होती त्या गटाने सरकारला डिसेंबर २००६ मध्ये सुधारित अहवाल सादर केला. भारतीयांचे सरासरी आयुर्मान वाढलेले आहे. याचा विचार करून तांत्रिक गटाने लोकसंख्येचे ते १४ वर्ष १५ ते ६४ वर्ष आणि ६५ वर्षापेक्षा जास्त वयोगट असा बदल केला. एकूण लोकसंख्येत कर्त्या लोकसंख्येचे प्रमाण वाढणे आणि अनुत्पादक लोकसंख्येचे प्रमाण घटणे हे आर्थिक विकासासाठी शुभसंकेत मानले जातात. कारण कर्त्या लोकसंख्येमुळे श्रमशक्ती चा पुरवठा वाढून रोजगार, उत्पादन यांच्यात वाढ होऊ लागते आणि त्यातून आर्थिक विकास गतिमान होतो.

भारतात १९६१ पासून सातत्याने अनुत्पादक लोकसंख्येचे प्रमाण कमी होऊन कर्त्या लोकसंख्येचे प्रमाण वाढलेले आहे. १९६१ मध्ये कर्त्या लोकसंख्येचे प्रमाण ५३.३% होते. नवव्या योजनेतील माहितीनुसार २००२ मध्ये ५९.४१% पर्यंत वाढले. २०११ मध्ये ६२.२४ पर्यंत वाढले. लोकसंख्या प्रक्षेपणानुसार २०२६ मध्ये ते ६८.४% पर्यंत वाढलेले असेल. अनुत्पादक लोकसंख्येचे प्रमाण कमी होणे हा लोकसांख्यिकीय लाभांश स्पष्टकरणाचा प्रमुख कारक आहे. भारतात १९७१ मध्ये अवलंबित्व गुणोत्तर ०.९० हाते ते २०११ मध्ये ०.५९ पर्यंत कमी झाले. कमी झालेले

अवलंबित्व लाभांश निर्माण करेल, अशी अपेक्षा पंचवार्षिक योजनांमध्ये करण्यात आली. परंतु भारताला अपेक्षित लाभांश प्राप्त झाला नाही तो प्राप्त करण्यात पुढील प्रमुख अडथळे आहेत.

१. कर्त्या लोकसंख्येचे मानवी संसाधनात म्हणजेच श्रमशक्तीत रुपांतरण होण्यासाठी शिक्षण, प्रशिक्षण आणि आरोग्यविषयक सुविधांवर खर्च होणे आणि त्यात वाढ होणे आवश्यक असते. परंतु भारताला शिक्षण आणि आरोग्यविषयक क्षेत्रातील मागासपण मानवीसंसाधन निर्मितीत अडथळा ठरत आहे.
२. आर्थिक सुधारणाकाळात ज्याप्रमाणात श्रमशक्तीत वाढ झाली त्याप्रमाणात रोजगाराच्या संधी निर्माण झाल्या नाहीत. त्यामुळे बेरोजगारीत वाढ झाली. आर्थिक सुधारणाकाळात जो आर्थिक विकास झाला तो रोजगारविरहितविकास (Jobless Growth) आहे. आर्थिक सुधारणाकाळात खासगी क्षेत्राने फारशा रोजगार संधी निर्माण केल्या नाहीत. सार्वजनिक क्षेत्रातील गुंतवणूक कमी झाल्याने या क्षेत्रातही नव्याने रोजगारसंधी निर्माण झाल्या नाहीत. भारतात जर लोकसंख्येचा लाभांश प्राप्तकरायचा असेल तर सरकारने असे काही धोरण आखावे, की ज्यातून नवीन रोजगार संधी निर्माण होतील. भारतात कर्त्या लोकसंख्येकडे विशेषतः ग्रामीण लोकसंख्येकडे शिक्षण, प्रशिक्षण अभाव आहे. त्यांच्याकडे कौशल्य नाही. शिक्षण, प्रशिक्षण सुविधांचा विकास आणि त्याबरोबरच कौशल्याचा विकास केला तरच कर्त्यालोकसंख्येचे श्रमशक्तीत रुपांतरण होऊन लाभांश प्राप्त होईल. सरकारने रोजगार वाढ आणि प्रशिक्षण व कौशल्या विकासावर लक्ष दिले नाही तर कर्ती लोकसंख्या वापराविना पडून राहिल, म्हणजे बेरोजगारी वाटेल असे झाले तर लाभांशा ऐवजी लोकसांख्यिकीय समस्या निर्माण होतील.
३. भारतात लाभांश प्राप्त होण्यात तिसरी महत्त्वाची अडचण म्हणजे स्त्री श्रमशक्तीचा पुरेसा वापर न होणे. भारताच्या एकूण लोकसंख्येत निम्मा हिस्सा स्त्रियांचा आहे. जर यांना योग्य शिक्षण, प्रशिक्षण, कौशल्य विकास प्राप्त झाले नाही तर देशातील जवळ-जवळ निम्मे श्रमशक्ती वापराविना पडून राहिल. जर स्त्री श्रमशक्तीचा वापर करून आर्थिक वृद्धीवर वाढवायचा असेल म्हणजे लोकसांख्यिकीय लाभांश प्राप्तकरायचा असेल तर स्त्री शिक्षण, प्रशिक्षण कौशल्य विकासावर भरद्यावा लागेल. याबरोबरच नारीशक्तीकरण, माता, बालसंगोपन यावर भरद्यावा लागेल.

अशा प्रकारे सरकारने योग्य धोरण आखले आणि राबविले तर भारताला लोकसांख्यिकीय लाभांश प्राप्त होईल. धोरण आखणी आणि राबविण्यात विलंब, कुचराई झाली तर लाभांश प्राप्त होणे एकदुःस्वप्न ठरेल. म्हणजेच लोकसांख्यिकीय समस्या निर्माण होतील.

#### **संदर्भ :**

१. भारतीय अर्थव्यवस्था, प्रा.प्र.रा. कुलकर्णी, विद्या बुक्स पब्लिशर्स, औरंगपुरा, औरंगाबाद.
२. ग्रामण नागरी प्रश्न आणि समस्या, डॉ.दा.धो. काचोळे, कैलास पब्लिकेशन्स, औरंगाबाद.
३. भारतीय अर्थव्यवस्था, डॉ.एन.एल. चव्हाण, प्रशांत पब्लिकेशन्स, जळगाव.
४. दै. लोकमत.

## भारत में जल बंटवारे के विवाद

डॉ महेन्द्र कुमार पटेल

सहायक प्राध्यापक (विधि) शासकीय स्नातकोत्तर महाविद्यालय बीना, जिला सागर म|प्र|

email id – mahendrapatel.mp14@gmail.com

रहिमन पानी राखिए बिन पानी सब सून  
पानी गए न ऊबरे मोती मानुष चून

### सारांश

नदियां हमारी पुरातन भारतीय संस्कृति की पोषक हैं हमारे देश में पहले दूध की नदियां बहती थी वहां अब पानी का व्यापार हो रहा है पर्यावरणीय दृष्टि से जल का अधिक दोहन हो रहा है, इसके बंटवारे पर विवाद अच्छा संकेत नहीं है भारतीय संविधान एवं संविधिक प्रावधान से जल से संबंधित विषयों का संरक्षण किया जाकर नियंत्रण, वितरण एवं प्रयोग का उपबंध किया गया है। विवाद के निवारण के अधिकरण के प्रयास, कार्यप्रणाली एवं विलंब के कारण अप्रभावी साबित हो रहे हैं। जल राष्ट्रीय संपत्ति है। प्रक्रियात्मक जटिलताओं से प्रावधान भी अप्रभावी साबित हो रहे हैं।

### प्रस्तावना –

भारत में अंतरराज्यीय नदियों जल विवाद का एक महत्वपूर्ण मुद्दा है इसमें उपयोग, बंटवारा और नियंत्रण जैसे तथ्यों पर विवाद की स्थिति उत्पन्न होती है किसी भी देश में जल की उपयोगिता एक महत्वपूर्ण कारक रहता है भारत में ही 600 मिलियन लोग गंभीर जल संकट का सामना कर रहे हैं और यह आने वाले वर्षों में स्थिति और खराब होने की संभावना है भूजल संसाधन का अति दोहन हो रहा है कहीं सूखा कहीं बाढ़ या गिरता जलस्तर से संघर्ष की स्थिति उत्पन्न हो रही है। नदियां जमीनी स्तर पर जल का एक प्रमुख स्रोत है, पर्यावरणीय और सामाजिक, सांस्कृतिक धरोहरों में से एक जल को हमें सहेजना एवं आधारभूत संरचना को मजबूत करना राज्य की ही नहीं वरन हमारी, आपकी नैतिक, सामाजिक, एवं संवैधानिक जिम्मेदारी है राज्य का भी एक महत्वपूर्ण कार्यों में से एक है।

### संवैधानिक प्रावधान-

भारतीय संविधान की सातवीं अनुसूची की राज्य सूची में 17वें क्रमांक पर जल विषय उल्लिखित है जिसमें सम्मिलित है- जल प्रदाय, सिंचाई, नहर, जल संग्रहण, जल शक्ति, ड्रेनेज एवं तटबंध आदि जिस पर राज्य कानून बना सकता है। संघ सूची की प्रविष्टि क्रमांक 56 केन्द्र सरकार को शक्ति प्रदत्त करती है कि वह लोकहित में संसद द्वारा घोषित परिसीमा तक अंतरराज्य नदियों और नदी घाटियों के विनियमन और विकास करें। संविधान का अनुच्छेद 262 प्रावधान करता है कि संसद कानून निर्मित कर किसी अंतरराज्यीय नदी या नदी-दून के या उसमें जल के प्रयोग, वितरण या नियंत्रण के संबंध में किसी विवाद या परिवाद के न्यायनिर्णयन के लिए उपबंध कर सकेगी। संविधान में किसी बात के होते हुए भी संसद कानून द्वारा यह प्रावधान कर सकेगी कि सर्वोच्च न्यायालय या कोई अन्य न्यायालय उपरोक्त विवाद के संबंध में किसी विवाद या शिकायत के संबंध में अपनी अधिकारिता या अपनी शक्ति का प्रयोग नहीं करेगा।

### अन्य संविधिक कानून-

जल विवाद को निपटाने के लिए नदी बोर्ड अधिनियम, 1956 एवं अंतरराज्यीय जल विवाद अधिनियम, 1956 बनाये गये। इन कानूनों द्वारा जल के उपयोग एवं बंटवारे से उदभूत विवादों या प्रतिस्पर्धा या संघर्ष की स्थिति से बचने के उपचार बताए गए हैं। 1956 के अंतरराज्यीय जल विवाद अधिनियम के अंतर्गत राज्य सरकार केंद्रीय सरकार से राय मांग सकती है यदि विवाद बातचीत से नहीं सुलझ सकता हो, तब जल विवाद अधिकरण का

गठन किया जाता है और वह उस पर न्यायनिर्णयन प्रदान करता है। इस अधिनियम में 2002 में सरकारिया आयोग की अनुशंसा पर संशोधन किया गया कि एक वर्ष के भीतर जल विवाद अधिकरण निर्मित किया जाए एवं 3 वर्ष के भीतर विनिश्चय किया जाए। वर्ष 2017 में 1956 के इस अधिनियम में संशोधन के लिए संसद द्वारा विधेयक लाया गया जिसमें परिकल्पित किया गया कि एक स्थायी अधिकरण की स्थापना की जाए इसमें विवाद निराकरण समिति (Disput Resolution Committee) के गठन भी प्रस्तावित था।

#### **भारत के कुछ प्रमुख नदी जल विवाद अधिकरण-**

1. कृष्णा जल विवाद अधिकरण द्वितीय 2004 इसमें कर्नाटक, तेलंगाना, आंध्रप्रदेश, एवं महाराष्ट्र राज्य पक्ष थे।
2. महानदी जल विवाद अधिकरण, 2018 में ओडिशा और छत्तीसगढ़ पक्ष थे।
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उपरोक्त गठित अभिकरणों द्वारा विवादों को निपटाने में अधिक विलंब किया गया जैसे गोदावरी जल विवाद 1962 में निवेदन किया गया, अधिकरण का गठन 1968 में किया गया एवं पंचाट 1979 में पारित हुआ। इसी तरह कावेरी जल विवाद अधिकरण का गठन 1990 में हुआ एवं उसका अंतिम पंचाट 2007 में पारित हुआ। अधिकरणों द्वारा दिए गए दिशा-निर्देशों का अनुपालन सुनिश्चित होना चाहिए। इन पंचाटों का पारित होने के पश्चात भी राज्य भारतीय संविधान के अनुच्छेद 136 के तहत विशेष अनुमति याचिका के साथ अनुच्छेद 21 के जीवन के अधिकार का हवाला देकर याचिका फाइल कर सकते हैं। भारत में लगभग 20 प्रमुख नदियां बँसीन हैं जिनका कई राज्यों में विस्तार है। नदियां राष्ट्रीय संपत्ति हैं परन्तु यह अधोषित है। इसे घोषित कर नदी जल को अपना मानने की प्रवृत्ति पर अंकुश लगेगा।

#### **उपसंहार एवं सुझाव-**

नदियां हमारी पुरातन संस्कृति की वाहक रही हैं, जल राष्ट्रीय सम्पत्ति है इस पर विवाद होने के निपटाने के तरीकों एवं प्रक्रिया में सुधार की आवश्यकता है। शहरों का नियोजित विकास होना आवश्यक है, नियम और कानूनों में अस्पष्टता एवं शिथिलता को समाप्त करने का प्रयास ही नहीं समग्र प्रयास होने चाहिए। जल का दुरुपयोग रोकना, पर्यावरणीय चेतना का आम जनता में प्रसार-प्रचार अधिकरण द्वारा विवाद निपटान में प्रक्रियात्मक अत्यधिक विलंब एवं औद्योगिक घरानों द्वारा प्राकृतिक धरोहरों का अतिदोहन आदि ऐसे कारक हैं जिससे उपचार प्रदान करने में आसानी हो सकती है। विवाद निपटान का स्थायी अधिकरण की महती आवश्यकता है, साथ ही साथ विधिक, प्रशासनिक संवैधानिक एवं राजनीतिक समस्याओं से निजात पाने की कार्ययोजना तैयार की जानी चाहिए। बातचीत एवं संवाद संचार के माध्यम से माध्यस्थता, एवं अन्य तरीके जो गैर परंपरागत हैं उनसे भी विवादों को सुलझाने से भी इन समस्याओं से बचा जा सकता है। राष्ट्रीय जल निति का पालन सुनिश्चित हो, जल स्रोतों का संरक्षण हो। जल विषय को समवर्ती सूची में सम्मिलित किया जाना चाहिए। न्यायपालिका की सहायता के बिना संस्थागत मॉडल अपनाकर विवादों का निपटारा होना आज की महत्वपूर्ण आवश्यकता है।

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## **Chief Editor**

**Dr. R. V. Bhole**

'Ravichandram' Survey No-101/1, Plot, No-23,  
Mundada Nagar, Jalgaon (M.S.) 425102

---

### **Chief Editor**

**Dr. R. V. Bhole**

'Ravichandram' Survey No-101/1, Plot  
No-23, Mundada Nagar, Jalgaon (M.S.) 425102

### **Editor**

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