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## *Editorial*

For the last few days, the Government of India and the distinguished citizens of India have been considering that in India should be 'Ek Desh-Ek Election'. The issue of holding elections to the Lok Sabha and the state assemblies together has been debated for a long time. Prime Minister Narendra Modi has supported this idea and taken it forward. By the way, the Election Commission, Niti Aayog, Law Commission and Constitution Review Commission have considered this issue. 'Ek Desh-Ek Election' is an ideological venture to hold the Lok Sabha and state assemblies together. Of course, this issue is at the center of debate today, but in the past it has happened in 1952, 1957, 1962, 1967, when the elections to the Lok Sabha and the state assemblies were held simultaneously. This order was broken when the legislatures of some states were dissolved prematurely in the year 1968-69 due to the various reasons. For the first time in the year 1971, Lok Sabha elections were also held ahead of time. In such a situation, it is natural to raise the question that when elections have already been conducted in this way, then what is the problem now?

The world's largest democracy is in our country and elections are considered to be the biggest celebration of democracy. If we see, elections are held every year in some or the other state. Due to this continuation of elections, administrative and policy decisions are also affected, and also a huge burden on the revenue of the country. Certainly in such circumstances the idea of 'one country - one election' seems good at first glance, but whether it is practical or not, experts have different opinions on it. Of course, a stable government is better than repeated elections, but the most important thing for this is to have a consensus and this task is very difficult. In the absence of political consensus, it will not be possible to make necessary amendments to the constitution, because it will require a two-thirds majority, which cannot be done without consensus.

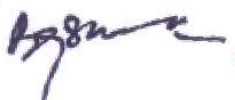
By holding elections once in five years, all the stakeholders i.e. political parties, Election Commission, paramilitary forces, police and citizens can get more time for its preparation. If the elections to the Lok Sabha and the Legislative Assembly are held simultaneously as before, then due to repeated elections, the problem of deviating from the national interest will solve the problem of the politics of the country and secondly, the national resources will also be saved.

It is true that holding simultaneous elections will save the government revenue and time which will not affect the policy decision process. Around the time of elections, it has been seen that the entire administrative staff and political parties become very busy. Due to the

implementation of the Electoral Code of Conduct, development works are also stopped. It is often seen that when the election time comes near, the entire government staff including the ministers gets very busy, with the development of the code of conduct being stalled. Certainly, the constitution will have to be amended to hold simultaneous elections, but this is not something that is too difficult. If there is political consensus, then this work can also be done more easily.

On 'National Voters' Day' in January 2017, former President Pranab Mukherjee, while supporting the elections of Lok Sabha and Legislative Assembly together, asked the Election Commission to try to bring all political parties on one platform, so that consensus can be formed. By holding elections together, not only will the enthusiasm of the voters remain, but it will also save money and will also avoid repetition of administrative efforts. The expenditure of political parties will also be controlled, which will also prevent the problem of spending black money in elections. Repeated Electoral Model Code of Conduct will also not have to be implemented, due to which the public interest works are affected. Government officials, teachers and employees are engaged in electoral duty, which affects children's education and administrative work, it will be curbed. With simultaneous elections to Lok Sabha and Vidhan Sabha, the efficiency of government machinery will increase and the common people will get the benefit from it.

There are also some major challenges before the idea of one country one election, the biggest challenge is to coordinate the tenure of the Lok Sabha and the state legislatures. It is not an easy task to persuade all political parties for a 'one country-one election'. Some political experts believe that the concept of 'one country-one election' may prove contrary to the federal structure of the country. An EVM is currently being used at every polling station with a VVPAT machine for polling. The number of Lok Sabha and legislative assemblies will be doubled. When elections are held simultaneously, we will need more polling officers and personnel and the security system must also be strengthened and for this we will have to increase the number of police and central forces. EVMs and VVPATs will be outnumbered when simultaneous elections are held and their safety will be an important issue.



**Professor Braj Gopal**  
Chief Editor



**Professor Akhilesh Shukla**  
Editor

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## **Police Reforms in India**

• Akhilesh Shukla

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**Abstract-** *Economic progress, too, is a function of a climate of safety and security. Police reform is, therefore, important for India's socio-economic health. Most importantly, the need for reform is dictated by the all-important role of the police as the primary protectors of the rule of law. A policeman on duty at a public place can both burnish or tarnish the image of the entire force, so the police should develop a cordial Police – Area Ratio with the public. Besides their official duties, policemen should involve themselves in social activities like blood-donation, de-addiction camps, police-public meetings and sports activities, with the help of non-government organizations. Transparency in the functioning of the police is essential to win the faith of the public. Night patrolling could be much more helpful in yielding good results as, on the one hand, it breeds confidence among the public and, on the other hand, developed sources in order to get valuable information to curb crime. Indian government should teach Public Relations to Police Officers. Immediate change of Police Act is also necessary.*

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**Keywords-** Police – Population Ratio (PPR), Police – Area Ratio, Police, Civil Service

**Introduction-** Demography is the statistical study of populations, especially human beings. At a glance, it analyzes living population, i.e., changes over time and space in response to birth, migration, aging, death, etc. Its analysis covers complete society or groups defined by criteria such as education, nationality, religion and ethnicity, etc. Demographic studies also analyze the relationships between economic, social, cultural and biological processes influencing the population. The total population of India, as on 01.10.2018, as provided by the Registrar General of India and the Census Commissioner of India is 130.6 crore, approx., comprising 67.7 crore males and 62.9 crore females. Among the States, Uttar Pradesh, with a population of more than 22.68 crore, holds the distinction of being the most populous state in the country, followed by Maharashtra, with a population of 12.37 crore. Among the Union Territories, Delhi, with a population of more than 2.28 crore, holds the distinction of being the most populous UT in the country, followed by Chandigarh, with a population of 0.19 crore.<sup>1</sup>

**Police – Population Ratio (PPR) (Per Lakh of Population)-** Police per lakh Population Ratio (PPR) against sanctioned total Police (Civil + DAR + Armed) during the year 2020 is 195.39.

**Police –Area Ratio (PAR) (Per 100 Sq. Kms. of Area)-** Police per 100 Sq. Kms. of Area Ratio (PAR) against sanctioned total Police (Civil + DAR + Armed) during the year 2020 is 79.80.

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• Professor, Department of Sociology, T.R.S. Autonomous College, Rewa (M.P.)

The BPR&D has been publishing the “Data on Police Organizations” (DoPO), annually, since the year 1986. DoPO as on 01.01.2020 was released. This is for the first time in the history of BPR&D that DoPO for a particular year has been released during the year itself. Much effort has gone into verifying the data.<sup>2</sup>

The salient features of the DoPO as on 01.01.2020 are as under:

A.	1.	Total Sanctioned Police Force in the States/ UTs (Civil + DAR+ Spl. Armed+ IRB)	26,23,225
	2	Total Actual Police Force (Civil + DAR+ Spl. Armed+ IRB)	20,91,488
	3	Vacancy	5,31,737
	4	Strength of Women in Police Force (Civil + DAR+ Spl. Armed+ IRB)/ Percentage	2,15,504/ 10.30%
	5	Percentage increase of Woman Police over the previous year	16.05%
B.	6	Total Sanctioned Strength of CAPFs	11,09,511
	7	Total Actual Strength of CAPFs	9,82,391
	8	Strength of Woman Police in CAPFs/ Percentage	29,249/ 2.98%
C.	9	Number of Police Districts	800
	10	Number of Sanctioned Police Stations	16,955
	11	Number of State Armed Police Battalions	318
	12	Number of Police Commissionerates	63
	13	Number of Police Personnel recruited in 2019	1,19,069
	14	Expenditure on Police Training : Financial Year 2019-20 (Rs. in crores)	1,566.85
D.	15	Population Per Police Person (PPP) - Sanctioned	511.81
	16	Police Population Ratio (PPR) (Police Personnel per lakh of population) - Sanctioned	195.39
	17	Police Area Ratio (PAR) (Per 100 Sq Km.) - Sanctioned	79.80
	18	Police Vehicles available with States/UTs Police	2,02,925
	19	CCTV cameras available with States/UTs Police	4,60,220

Police, Civil Service and Military are a part of coercive apparatus of any state. Modern state is different from the medieval state in terms of making laws which can control the activities of these forces. A democratic state is a constitutional state. Constitutional laws guide the actions of each organ. To keep a check on the misuse of power by any organ of the state, there is a balance of powers. Executive, judiciary and legislature are three organs of the state which balance each other to bring unity of purpose. If any organ goes outside the laws of the state, it can come under the scrutiny of law by another organ. It regulates the relationship between each organ and

citizen. If a citizen feels that he or she is discriminated by any organ of the state, he can resort to judicial review of the state action. Check and counter check help to keep the functioning of the state within the rule of law. A democratic state has to respect the human rights of each citizen and social class and groups. The state has enough space for the movement of each social group. Each group is allowed to protest against the state actions in a peaceful manner. Laws of the state are supposed to protect the rights of a citizen and social group. Democratic state is a limited state vis a vis a citizen and social group. Each social group, be it dominant or subaltern, is protected by the state. A state is basically a limited state except in an unusual situation in a nation's life, such as emergency because of war or internal trouble. The state has laws to restrict the rights of a citizen. In such circumstances the police, civil servants and military have immense powers. These three forces are part of an Administrative State. Moreover they are a permanent part of the executive whereas the political executive is a temporary one. Though they are the subject of control by the political executive, the action of each force can come under scrutiny by the judiciary. In this unit, the relation of each of these forces with the judiciary and legislature, is being analysed. Police is a part of the ancient Indian history. The Mauryan empire did have a police force. During the Moghul period, the Kotwali system monitored the activities of citizens. The British rule created a modern policy by creating a Police Act of 1861. The colonial state allowed the operation of police in a legal manner. They could investigate the criminal case as per the law of the time. The colonial state created a legal framework which limited the police action. Though they served the interests of the colonial masters, at the same time, the laws of the state gave them autonomy. Even the British citizens came under their control to some extent if they committed crimes which were listed by the Police Act. It is wrong to presume that the Police Act served the interests of colonial masters only. This Act is serving the needs of the Post Independent Indian State. Some of the provisions have been amended, but in essence, the Act has been kept intact. Though the National Police Commission (NPC) has suggested for a new Police Act, the democratic government has not yet felt the necessity of scrapping the old Act.<sup>3</sup>

The activities of police have got expanded with the changes introduced by the modern society of India. The Indian society is no more an agricultural society though majority of people live in the villages. But in terms of contribution to the national income, the share of agriculture has declined drastically. The contributions of industry and service sector have increased. This transition to an industrial and modern society has brought certain changes in the society. A transitional society has some peculiar problems which need to be tackled by the police. The Indian society is getting urbanised at a faster rate which creates some problems for the police. The problems of the industrial and urban society are different in nature from the rural society. The rural society has changed because of the social changes introduced by the green revolution and political democracy. The caste hierarchy has undergone a radical change. Land reforms such as the

abolition of Zamindari system has changed the face of the rural society by removing the hereditary social leaders. It has led to a sharp competition among various caste groups for sharing the social power. The changing balance of social forces in rural society gets reflected in politics.<sup>4</sup> The democratic politics has brought some changes in the society. Electoral system has strengthened the democratic character of the society. This has led to sharp competition for political power among the social groups and classes of people. The entry of political parties into rural politics has strengthened the competition after leading to violence. Police intervention is sought in such a political situation, for tackling the criminal elements and gangsterism.

The Challenges before the Police Force are-

- violent agitations by linguistic groups to redraw the political map of India, strengthening linguistic nationalism.

- the tribal groups of the Central India and North Eastern India have organised themselves on ethnic lines.

- movement for land distribution very often leads to violence between the rich and the poor in rural India.

- agitations organised by the political parties to protest the displacement of people due to major environmental projects by the government or by a private party.

- terrorism and militant movements.

- growth of religious fundamentalism leading to violent conflicts.

- caste clashes between the upper and the lower castes on such issues as access to common property or self respect movement.

- violent conflicts between the rural rich and landless labour on the issues of wages.

- violent conflicts between the upper caste and lower caste in towns on the question of reservation of jobs on caste lines.

- while social legislations are made by the state, the responsibility to execute those laws is given to the police. The tackling of crimes against children and women are a major responsibility of the present police.

- introduction of IT has brought in cyber crimes which need to be tackled by the police.

- the growth of underworld in metropolis has created problems for the police.

India is a federal state and the powers are distributed between the Centre and the States. The police administration comes under the purview of the state government. The problems affecting the state need special attention of the police administration. Very often, unable to handle such a situation, they depend on the Central government for help to maintain the public order. The Central government has Central Reserve Police Force and Border Security Force to aid the state governments. These central forces have specific duties but at the same time, they aid the state governments in the case of law and order situation. There are three groups of states that need special central help: (i) states like Jammu & Kashmir which have terrorist problems,

need the assistance of the central police force. (ii) The other group of states is infested with Naxalism which also demand the central help for tackling the situation. (iii) The third group of states where a large-scale communal problem can cause an alarming situation necessitating the intervention of central forces. The central government has created a Rapid Action Force (RAF) within the Central Reserve Police Force. The RAF is an emergency force that is normally airlifted to trouble spots so that quick action can be initiated to contain an explosive situation. Often the central police help in maintaining law and order during the elections times to the State Assemblies and Parliament. The Election Commission has a close interaction with the Home Ministry to call for the central forces to conduct free and fair elections. As there are some areas which are declared as disturbed, the state police try to handle the situation with the cooperation of the central forces. In a competitive political system, there is a large number of political leaders whose life is threatened by the terrorists and need protection by the state. The State has created a Special Security Force drawing from both BSF and CRPF to take care of the VIP movement.

The use of police in India has been frequent and extensive. Very often their non partisan behaviour is questioned. The police is used by a political party or a coalition of parties against their political opponents. Often the police is accused of showing their communal bias while controlling the riot. Majority of them allegedly have caste and class bias and this has led to a negative public perception of the police administration. Various surveys conducted by some independent organizations found that the public do not consider the police as a friendly organ of the state. This perception affects the investigation of crimes. Criticism of the police by the executive, legislature and citizens is very common.

Democracy demands that the police needs to respect the citizens. They have to be helpful to them whenever they come to the police station for filing any complaint.<sup>5</sup> This is the age of citizen friendly police administration. But there are many complaints against the police that an ordinary citizen may not be able to file FIR without offering a bribe to the police officer at the Police Station. The investigating officers use the force in dealing with crime suspects. The public often view the police with suspicion. To quote David Bayley, "the survey results demonstrate forcefully what many close observers of police-public relations in India have long thought namely that the Indian public is deeply suspicious of the activities of the police. A considerable proportion except the police to be rude, brutal, corrupt, sometimes in collusion with criminals and very frequently dealing unevenly with their clients." (The Police and Political Development in India, p. 203) This opinion is supported by the NPC report that the Commission expressed its anxiety over the poor state of police- public relations. (Vol. 5, p. 48) The police administration needs to be citizen friendly for bringing back its credibility before the public. In a democracy, the public evaluates the performance of each service. The police administration needs to reform its organization by which the police officer are aware of the citizen's charter and they provide quick and honest services to them. Credibility in democracy

will be the biggest asset of the police. Improving police behavior is one of the biggest challenges, as mistrust of the police is deeply imbedded in many levels of Indian society. Most of the time, CHRI, citizens do not want to reach out to the police even in times of crisis. The CHRI conducted a survey of police personnel attitudes and the perception of the Indian public in Tamil Nadu, Rajasthan and Assam to assess the impact of the UNDP training. Staff was amazed to see that the doors were literally slammed in their faces in Assam. People did not want to talk about the police at all, and upon some probing, the CHRI found that, among the many reasons for this fear, were claims that there were incidents of people who had walked by a police station had been abducted by the police for ransom. Presently, the CHRI has started a campaign under the slogan, "Police reforms too urgent to neglect, too important to delay" for its India-based programs. Dr. Mukerjee (a member of CHRI) did point out that, in spite of such incidents, the situation of police behavior in India is not so dire. She credits the government with several spirited initiatives to reform the police system at certain points of time. During the emergency of 1971, Prime Minister Gandhi took forceful measures to consolidate her power, curtailing freedom of speech and expression and arresting numerous voices of dissent. When the Janata Party defeated her in ensuing elections, they instituted the Shah Commission, which looked at the malpractices of the previous government, including the behavior of the police forces during the State of Emergency. The new government set up the National Police Commission (NPC) in 1977, headed by Shri Dharamvira to comprehensively review the working of the police system in India and to suggest new reforms to make it accountable to citizens. The NPC produced a series of eight comprehensive reports on this subject and made several recommendations regarding police welfare, training and public relations. However, when Indira Gandhi returned to power in 1981, she disbanded the National Police Commission and allegedly disposed of all the reports. The major recommendations from the disbanded National Police Commission that the Commonwealth Human Rights Initiative is advocating with the present government are-

- that a Chief of Police of a State is to be assured of a fixed tenure of office so as to encourage functional independence. It has been commonplace in India for transfers and postings of officers to be used as a kind of reward and punishment, as a result of which, many chiefs of police have had allegiances to political parties;
- that there be no external interference in police work;
- that a Security Commission should be established in each State;
- that the Police Chief be selected by an independent expert committee; and
- that the Police Act of 1861 be replaced by new legislation.

However, over the last few years, some State governments and police departments have started to draft new legislations for the police, but these fall short in areas like accountability, transparency, superintendence and control over the police and people's participation. The prominent amongst

these are the Madhya Pradesh Police Bill, the Andhra Pradesh Bill, Rajasthan, Himachal Pradesh, Assam, Punjab and last week the Minister of State for Home Affairs mentioned that a committee has been set up by the federal Government to draft a Police Act. However, no one is aware of the details which again leads to legislations with out public participation in the process.

In spite of these political setbacks, though, the prospects for police reform on the judicial front have been quite promising. The Supreme Court has been very proactive with regard to bringing about police reforms. The Supreme Court has passed several positive judgments in this regard:

Havala case: concerning money laundering to foreign accounts: the Central Bureau of Investigation (CBI) (a national police body equivalent to the RCMP) had levelled the charge that politicians were involved in such money laundering and that investigations into these activities were being influenced. The Court CBI should have complete superintendent control over its functions; this case was extremely important in being the first judgement where superintendence and control over police has been indicated.

D.K. Basu judgment: a seminal judgment of ten points that addressed the rights of citizens when they come into contact with the police. The guidelines for arrest and detention should be accessible to all citizens, ie. be posted and visible in every police station. However, this really doesn't happen unless and until there is direct advocacy with officers and chiefs. After the 1996 civil writ petition, the Supreme Court asked the Government to look into whether the ten- year-old recommendations of the National Police Commission could be implemented or not. So the Government constituted yet another Commission. This committee was headed by a retired police chief, Mr. J.F. Ribeiro. After a one-year delay during which there were problems over who would chair the committee, it traveled the country seeking citizens' input and concluded that any recommendations made by the State Security Commission should be non-binding. It was clear that these and other findings of the Committee would clearly result in a dilution of the NPC recommendations. The recommendations made by the Committee were criticized and soon the government instituted another committee in 2000, called the Padmanabhaiah committee. While agreeing with the suggestion of its predecessor that the State Security Commission recommendations should be non-statutory, the new committee stated that community policing should be adopted as a philosophy within the Indian police organization. The Union Home Ministry of India setting up a National Police University that will offer graduate, post graduate and PhD courses to civilians and serving police officers in a range of subjects and pertinent issues like forensic science, biological warfare, criminal psychology, public relations, human rights, insurgency, communal tension and man management.

Police reforms aim to transform the values, culture, policies and practices of police organizations.

It envisages police to perform their duties with respect for democratic



values, human rights and the rule of law.

It also aims to improve how the police interact with other parts of the security sector, such as the courts and departments of corrections, or executive, parliamentary or independent authorities with management or oversight responsibilities.

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## ***Gender Inequality in India: Issues and Challenges***

• PratiBha J Mishra

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**Abstract-** *We proud Indians of 21st century rejoice in celebrations when a boy is born, and if it is a girl, a muted or no celebrations is the norm. Love for a male child is so much so that from the times immemorial we are killing our daughters at birth or before birth, and if, fortunately, she is not killed we find various ways to discriminate against her throughout her life. Though our religious beliefs make women a goddess but we fail to recognize her as a human being first; we worship goddesses but we exploit girls. We are a society of people with double-standards as far as our attitude towards women is concerned; our thoughts and preaching are different than our actions. Let's try to understand the phenomenon of gender inequality and search for some solutions.*

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**Keywords-** Gender Inequality, Discrimination, Sex, Women, Society

**Introduction-** We proud Indians of 21<sup>st</sup> century rejoice in celebrations when a boy is born, and if it is a girl, a muted or no celebrations is the norm. Love for a male child is so much so that from the times immemorial we are killing our daughters at birth or before birth, and if, fortunately, she is not killed we find various ways to discriminate against her throughout her life. Though our religious beliefs make women a goddess but we fail to recognize her as a human being first; we worship goddesses but we exploit girls. We are a society of people with double-standards as far as our attitude towards women is concerned; our thoughts and preaching are different than our actions. Let's try to understand the phenomenon of gender inequality and search for some solutions.

**Definition and Concept of Gender Inequality-** 'Gender' is a socio-cultural term referring socially defined roles and behaviors assigned to 'males' and 'females' in a given society; whereas, the term 'sex' is a biological and physiological phenomenon which defines man and woman. In its social, historical and cultural aspects, gender is a function of power relationship between men and women where men are considered superior to women. Therefore, gender may be understood as a man-made concept, while 'sex' is natural or biological characteristics of human beings.

Gender Inequality, in simple words, may be defined as discrimination against women based on their sex. Women are traditionally considered by the society as weaker sex. She has been accorded a subordinate position to men. She is exploited, degraded, violated and discriminated both in our homes and in outside world. This peculiar type of discrimination against women is prevalent everywhere in the world and more so in Indian society.

**Causes and Types of Gender Inequality in India-** The root cause of gender inequality in Indian society lies in its patriarchy system. According to the famous sociologists Sylvia Walby, patriarchy is “a system of social structure and practices in which men dominate, oppress and exploit women”. Women's exploitation is an age old cultural phenomenon of Indian society. The system of patriarchy finds its validity and sanction in our religious beliefs, whether it is Hindu, Muslim or any other religion.

For instance, as per ancient Hindu law giver Manu: “Women are supposed to be in the custody of their father when they are children, they must be under the custody of their husband when married and under the custody of her son in old age or as widows. In no circumstances she should be allowed to assert herself independently”.

The above described position of women as per Manu is still the case in present modern day social structure. Barring few exceptions here and there, women have no power to take independent decisions either inside their homes or in outside world.

In Muslims also the situation is same and there too sanction for discrimination or subordination is provided by religious texts and Islamic traditions. Similarly in other religious beliefs also women are being discriminated against in one way or other.

The unfortunate part of gender inequality in our society is that the women too, through, continued socio-cultural conditioning, have accepted their subordinate position to men. And they are also part and parcel of same patriarchal system.

Extreme poverty and lack of education are also some of the reasons for women's low status in society. Poverty and lack of education derives countless women to work in low paying domestic service, organized prostitution or as migrant laborers. Women are not only getting unequal pay for equal or more work but also they are being offered only low skill jobs for which lower wages are paid. This has become a major form of inequality on the basis of gender.

Educating girl child is still seen as a bad investment because she is bound to get married and leave her paternal home one day. Thus, without having good education women are found lacking in present day's demanding job skills; whereas, each year's High School and 10+2 standard results show that girls are always doing better than boys. This shows that parents are not spending much after 10+2 standard on girl child and that's why they lack in job market.

Not only in education, in case of family food habits, it is the male child who gets all the nutritious and choicest foods while the girl child gets whatever is left behind after the male members have taken their meals or the food which is low in both quality and nutrition. And this becomes a major health issue in her later years. One of the main reasons for the high incidences of difficult births and anemia in women is the poor quality of food which a girl always gets either in her paternal home or in her in-laws as also is the excessive workload that they are made to bear from their early childhood. So the inequality or discrimination against women is at various

levels in the society, either in home or outside home.

**Gender Inequality in India: Important Data-** Gender Inequality is also reflected in India's poor ranking in various global gender indices.

- UNDP's Gender Inequality Index- 2014: India's ranking is 127 out of 152 countries in the List. This ranking is only above Afghanistan as far as SAARC countries are concerned.
- World Economic Forum's Global Gender Gap Index- 2014: India ranks at 114 in the list of 142 countries of the world. This Index examines gender gap in four major areas:
  - Economic participation and opportunity.
  - Educational achievements.
  - Health and life expectancy.
  - Political empowerment.

**India's position on these indicators was as follows-**

- Economic participation and opportunity: 134<sup>th</sup>
- Educational achievements: 126<sup>th</sup>
- Health and Life expectancy: 141<sup>st</sup>
- Political empowerment: 15<sup>th</sup>

These two important Global Indices show the sorry state of affairs in India as far as gender equality is concerned. Only in case of 'Political Empowerment' India is doing fine which is a welcome sign. But other indices are very poor and a lot need to be done to improve the same.

Gender Inequality Statistics Gender inequality manifests in varied ways. And as far as India is concerned the major indicators are as follows-

- Female Foeticide
- Female Infanticide
- Child (0 to 6 age group) Sex Ratio: 919
- Sex Ratio: 943
- Female literacy
- Maternal Mortality Rate: 178 deaths per 100000 live births.

These above mentioned indicators are some of the important indices which show the status of women in our country.

***Female foeticide*** and ***female infanticide*** are most inhuman of acts. And it is a shame that in India these practices are prevailing at large scale. The data shows that despite the law in place viz ***Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994*** sex selective abortion is still on the rise. One estimate done by ***MacPherson*** shows that more than 100000 illegal abortions are being performed every year in India mainly for the reason that the fetus is of girl child.

Due to this, there is an alarming trend which has come to the notice in 2011 census report; the report shows ***Child Sex-Ratio*** (i.e sex-ratio of children between the age group 0 to 6) at 919 which is 8 points lesser than the 2001 data of 927. The data indicates that sex-selective abortion is increasing in our country.

As far as overall ***sex-ratio*** is concerned, it's 943 in 2011 report as compared to 933 of 2001 which is 10 points increase. Though it is a good sign that overall sex ratio is increasing but it's still tilted against females.

*Female literacy* is at 65.46% in 2011 as against 82.14% of male literacy. This gap indicates a wide gender disparity in India that Indians do not give enough importance to the education of girls.

All these indicators points towards the sorry state of affairs in India regarding gender justice and women's human right. Though every year government starts various schemes and programs apart from existing ones for the benefit and empowerment of women but on the ground there are not enough visible changes. The change will appear only when the mind set of Indian society would change; when the society would start treating male and female on equal footing and when a girl would not be considered as a burden.

**Legal and Constitutional Safeguards against Gender Inequality-** Indian Constitution provides for positive efforts to eliminate gender inequality; the Preamble to the Constitution talks about goals of achieving social, economic and political justice to everyone and to provide equality of status and of opportunity to all its citizens. Further, women have equal right to vote in our political system. Article 15 of the Constitution provides for prohibition of discrimination on grounds of *sex* also apart from other grounds such as religion, race, caste or place of birth. Article 15(3) authorizes the State to make any special provision for women and children. Moreover, the Directive Principles of State Policy also provides various provisions which are for the benefit of women and provides safeguards against discrimination.

Other than these Constitutional safeguards, various protective Legislations have also been passed by the Parliament to eliminate exploitation of women and to give them equal status in society. For instance, the Sati (Prevention) Act, 1987 was enacted to abolish and make punishable the inhuman custom of Sati; the Dowry Prohibition Act, 1961 to eliminate the practice of dowry; the Special Marriage Act, 1954 to give rightful status to married couples who marry inter-caste or inter-religion; Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse) Bill (introduced in Parliament in 1991, passed in 1994 to stop female infanticide and many more such Acts. Furthermore, the Parliament time to time brings out amendments to existing laws in order to give protection to women according to the changing needs of the society, for instance, Section 304-B was added to the Indian Penal Code, 1860 to make dowry-death or bride-burning a specific offence punishable with maximum punishment of life imprisonment.

So there are varied legislative safeguards and protection mechanisms for women but the ground reality is very different. Despite all these provisions women are still being treated as second rate citizens in our country; men are treating them as an object to fulfill their carnal desires; crimes against women are at alarming stage; the practice of dowry is still widely prevalent; female infanticide is a norm in our homes.

Historically, the development of law has been an uneven one. That is to say, more than not, what law promises on paper cannot carry through in reality. That is why law-as-legislation and law-in-practice are most of the time in contradiction with each other. To cite an example, the Indian constitution explicitly enshrines formal equality for women. However, the

lives and experiences of India women relentlessly continue to be characterized by substantive inequality, inequity and discrimination. Gender justice may not be then that much of a caste in the sky. Finally, one must at least clearly suggest what ought to be done. The present feminist analysis is such a modest endeavour which not only attempts to understand the reality but also tries to explain how to change it. "Fight for gender equality is not a fight against men. It is a fight against traditions that have chained them— a fight against attitudes that are ingrained in the society— it is a fight against system— a fight against proverbial laxshman Rekha which is different for men and different for women. The society must rise to the occasion. It must recognize & accept fact that men and women are equal partners in life. They are individual who have their own identity".

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## **An Assessment of Decadal Urban Growth in Ramgarh District (Jharkhand)**

● Shiv Kumar  
●● Gautam Kumar

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**Abstract-** *The rate at which the population, land area, or significant land-use changes in the town is referred to as urban growth. It may be an indicator of development of the region because urban growth directly impacts the country's economic development. The economic and industrial developments attract huge amounts of people from rural areas to urban areas which further led the urbanization. The purpose of this study is to provide an overview of the decadal (2001-2011) urban growth in Ramgarh district. During the 20th century; it was the period when the Indian government started setting up several mining and industrial units to start-up development in Jharkhand regions. These newly established units accelerated the pace of urbanization in the state.*

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**Keywords-** Urban, growth, population, development

**Introduction-** In the study of urban geography, it is particularly important to comprehend the spatial pattern of urban development and land use transition. The urban ecosystem gets strongly affected by the anthropogenic activities especially population growth and land use change (Stow and Chen; 2002). The main cause of growing urban population in India is livelihood opportunities in urban areas (Pradhan, 2004), which pull people from rural areas. The global urban population has reached to about 55% of the total population, and this will rise to about 68% (United Nations, 2018).

The rate of urbanization is highest in the developing nations, like India. According to Census of India (2011) the total urban population in the country was about 377 million (31.16%) and the urban growth rate was about 31.8%. But this rate of urban population growth is not similar in the all parts of country (Balk et al., 2019). The urbanization leads to both expansions of existing cities as well as development of new towns. In 1991 Census, there were only 23 million plus cities in India, which rose to 53 in 2011 (Sudhira and Gururaja, 2012). In India, the most common and successful parameters for urbanization are population size and administrative structure. According to Ramachandran (1989) "Urbanization is fundamentally an economic process". This suggests that as the activities undertaken in a given area become more diverse, the area's identity changes. The main component that influence urban growth comprise natural increase in urban areas, migration, areal reclassification of rural areas into urban areas and the change in

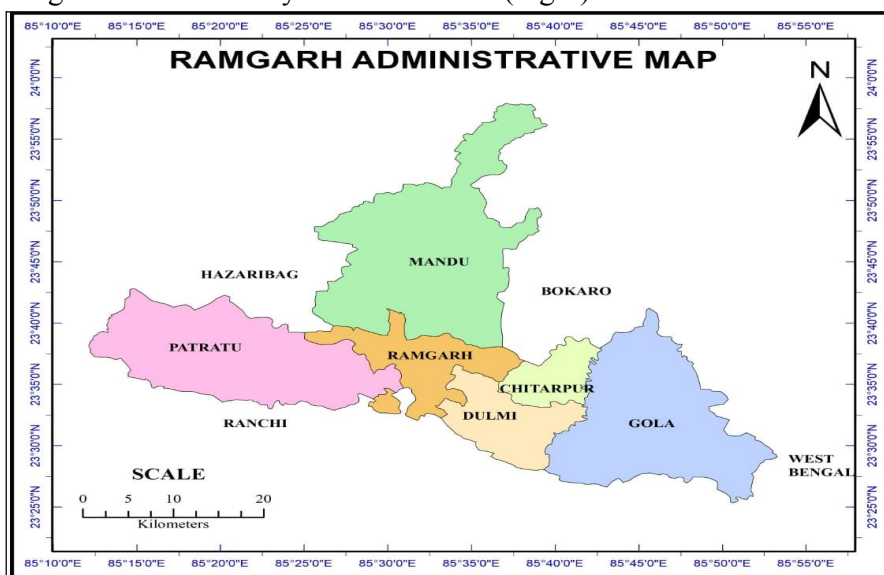
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boundaries of existing town. Urban growth is a consequence of population growth factors; natural increase as well as migration (Bhatta, 2010). The increasing urban population leads to the increase in housing density as well as other infrastructural facilities to meet their needs and desires (Rahman et al., 2011). Thus the growth of population leads to the expansion of build up areas and urban sprawl. Main characteristics of India's

Urbanization have remained unchanged for almost seven decades (Shaw, 2005). Main characteristics of India's urbanization have remained unchanged for almost seven decades (Shaw, 2005). India's urbanization rate has risen from 17.6% in 1951 to just 23.7 percent in 1981 and 27.8% in 2001. In line with its low per capita income, India ranks among the bottom thirty countries in terms of urbanization. Urbanization is a dynamic process that can be analyzed from different viewpoints. Although the correlation between economic development and urbanization in India has been generally strong (Sachs et al., 2002). Urban development is characterized as the rate at which the population, land area, or substantial land-use increases in a town. It may be connected to the initial growth of economic activities in a specific region.

**Objective-** To assess the decadal (2001-2011) urban population growth in Ramgarh district.

**Study Area-** On September 12, 2007, Ramgarh was designated as a district. It was created from the former Hazaribagh District of Jharkhand. It is bordered on the north by Hazaribagh district, on the east by Bokaro district, on the east by West Bengal state's Purulia district, and on the south by Ranchi district. The district occupies an area of 1360.08 km<sup>2</sup> and is located between 23°25' 30" North and 23°58' 00" North latitude and 85°12' 00" East and 85°53' 00" East longitude. The district Ramgarh has just one administrative subdivision, Ramgarh. Ramgarh district is divided into six blocks: Ramgarh, Gola, Chitrapur, Mandu, Patratu, and Dulmi. There are 351 villages and 143 Panchayats in the district. (Fig-1)





**Fig 1**

**Data Source and Methodology-** Data Sources used in this research paper associates to secondary data obtained from Central, District and Other Government Documents, Census Data 2011, District Census Handbook, 2011 and Central Ground Water Board 2013 and District Survey Report has been used to analyze different aspects of urban development in the study region.

The collection of data and the processing of data have been shown through the help of tables in order to get a clear and deep understanding through the MS Excel.

**Result and Discussion-** According to the 2011 Indian Census, the population of Ramgarh district is about 9.5 lakh people, with 52.1 percent of males and 47.9% of women. The district has a high concentration of inhabitants in urban areas, accounting for 44.2 percent (Table-1) of the total population; the remaining 55.8% live in rural areas. The district is also heavily inhabited, with a population density of 708 people per square kilometer, relative to India's 328 people per square kilometer (Census of India, 2011).

**Table 01**  
**Percentage Urban Population Ramgarh District, 2001-11**

S.No.	Name of the Block	2001	2011
1	Ramgarh	40.30	70.42
2	Gola	0	0
3	Mandu	36.36	47.14
4	Patratu	64.96	62.55
5	Chitrapur*	0	43.44
6	Dulmi*	0	0
<b>District Total</b>		<b>40.13</b>	<b>44.13</b>

\*Newly created sub districts

Source: Census of India, 2011

**Table 02**  
**Decadal change in urban population 2001-2011**

S.No.	Name of the Block	Population 2001			Population 2011		
		Total	Rural	Urban	Total	Rural	Urban
1	Ramgarh	254113	151715	102398	161821	47871	113950
2	Gola	125476	125476	0	149810	149810	0
3	Mandu	224844	143080	81764	253032	133757	119275
4	Patratu	235049	82366	152683	247841	92822	155019
5	Chitrapur*	0	0	0	70701	39990	30711
6	Dulmi*	0	0	0	66238	66238	0
<b>District Total</b>		<b>839482</b>	<b>502637</b>	<b>336845</b>	<b>949443</b>	<b>530448</b>	<b>418955</b>

\*Newly created sub districts

Source: Census of India, 2011

Table-2, Shows the Demographic change in the Ramgarh District during the period of 2001-11. Over the decade 2011-2011, the population of this district increased by 109961. The district's rural population has grown by 27851 over the last decade, while the urban population has grown by 82110. Rural-urban migration is a significant factor that often contributes to

rapid urbanization. With a population of 253032 over the decade, Mandu is the most populated among all blocks and with the population 66238 Dulmi is least populated block. Mandu, with a decadal population growth of 28188, and Gola with a population increase of 24334, are the next two cities with the largest population increase.

**Table 03**  
**Percentage Decadal Variation 2001-11 in Ramgarh District**

S.No.	Name of the Block	Total	Rural	Urban
1	Ramgarh	-32.32	-68.45	11.28
2	Gola	19.39	19.39	0
3	Mandu	12.54	-6.52	45.88
4	Patratu	5.44	12.69	1.53
5	Chitrapur*	0	0	0
6	Dulmi*	0	0	0
<b>District Total</b>		<b>13.10</b>	<b>5.54</b>	<b>24.38</b>

\*Newly created sub districts

Source: Census of India, 2011

Table-3, Shows the percentage demographic change in the Ramgarh District during the 2001-11. Over the decade 2001-2011, the decadal population variation of this district increased by around 13.10 %. The district's rural population has grown by 5.54 % over the last decade, while the urban population has grown by 24.38 %. Rural-urban migration is a significant factor that often contributes to rapid growth of urban unit in the block as well as district also. Among all the blocks; Mandu is the most populated block and Gola has recorded the highest increase in population over the decade with 19.39%.

**Table 4**  
**New towns notified in Ramgarh 2001 and 2011**

No. of Towns	2001	2011
1	Ramgarh cantonment (ST)	Ramgarh cantonment (ST)
2	Hesla (CT)	Patratu (CT)
3	Saunda (CT)	Saunda (CT)
4	Balkundra (CT)	Jai nagar (CT)
5	Lapanga (CT)	Hesla (CT)
6	Barughutu (CT)	Balkundra (CT)
7	Kedla (CT)	Lapanga (CT)
8	Ara (CT)	Barkakana (CT)
9	Kuju (CT)	Mandu (CT)
10	Topa (CT)	Taping (CT)
11	Orla (CT)	Barughutu (CT)
12	Sewai (CT)	Kedla (CT)
13		Ara (CT)
14		Kuju (CT)
15		Topa (CT)
16		Orla (CT)
17		Sanri alias tilaiya (CT)
18		Bongabar (CT)
19		Seota (CT)
20		Sirka (CT)
21		Marar (CT)
22		Sewai (CT)
23		Chitar pur (CT)

(ST) Statuary Town, (CT) Census Town

**Conclusion-** With the change in the urban population in the Ramgarh district the Urban Centers have increased from 12 to 23 (Table-4) during 2001-11 where urban population has increased by 4% on the account of rapid urbanization and rural-urban migration activities which has affected the urban growth in the district where possibilities of primary activities are endless due to its locational importance such as Gola, which has emerged as a new Industrial center in the district of Ramgarh which is also known as stone district of Jharkhand. It may be a predictor of regional development because urbanization has a significant effect on the country's economic development. If a city expands, it creates more sources of jobs, resulting in economic development. Economic and industrial innovations entice a vast number of people to move from rural to urban areas, further driving urbanization.

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## **Global Value Chain: A Window of Opportunities and Challenges for women Worker and Entrepreneurs**

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**Abstract-** *The development of Global Value Chain contributes to creation of Job opportunities for Women and Women Economic Empowerment. Globalization has brought a drastic transformation where mix of countries, companies and male and female workers and entrepreneurs come across various Opportunities and Challenges with increasing demand of global services and Need of new technologies. The social division of labour is deeply found in developed and developing countries. This Paper helps us to know the opportunities and challenges faced by women workers and entrepreneurs' in the sector of Agrifood, textile & Clothing and tourism. It also highlight the gaps of Global Pay System among male and female worker. It identify the role and contribution of women and men in Global Value Chain. The paper highlights the initiatives taken by Unilever to provide opportunities to Women instead of cultural restriction, social norms. A few Case lets such as Lestho Textile and clothing Industry, Honduras, Kenya Tourism, case let mentioning changing position and role of Women in Global Business and Management are given in this study to evolve the women worker and entrepreneurs instead of gender equality and gender disparity. The initiatives taken by various Global companies, Policy Makers, NGO's and other Global association to recognize gender equality and women Contributions in strengthening Global Economy. The Paper will be helpful to study and develop Strategies to promote Women's role in Global Value Chain Participation*

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**Keywords-** Global value chain, Opportunities, Challenges, Women Worker, Entrepreneurs, sectors

**Introduction-** Economical, technological, and political shifts as well as changing business strategies have driven firms to unbundle production processes and disperse them across countries. Thanks to these changes, developing countries can now increase their participation in global value chains (GVCs) and thus become more competitive in agriculture, manufacturing and services. (Stephanie Barrientos, 2018). This is a paradigm shift from the 20th century when countries had to build the entire supply chain domestically to become competitive internationally.

GVC analysis explores how the linkages between the production,

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distribution and consumption of these products are globally interconnected and how lead firms control or govern the terms on which different firms participate and upgrade within these chains (Gereffi 1994; Kaplinsky & Morris 2001). GVC is “supporting businesses that are ready and willing to act on women's economic empowerment; enabling players across the value chain ecosystem to drive change.” (UK) “Women have been drawn into GVCs at every level: as farmers, workers, processors, entrepreneurs, buyers, service providers, managers, agents and consumers”. (World Economic Forum, 2018)

Female entrepreneurs face additional challenges of gender-constraints such as access to land, finance, physical infrastructure and support services. Yet, access to skills, finance, productive resources and networks are fundamental to integration and upgrading in GVCs and in meeting the increasingly strict process and quality requirements by global lead firms. Hence, because of restricted access to economic resources, the majority of women are more unlikely to be in a position to take advantage of any new economic opportunity resulting from GVCs than men (Fontana 2011). On-site child care, has been found as a strategy to reduce absenteeism in the apparel, horticulture and tourism sectors (Bamber & Fernandez-Stark 2013; Christian et al 2013), which also contributes to increased productivity and competitiveness in GVCs.

For policymakers, the focus is to boost up domestic value and improve access to resources and technology while advancing development goals. However, participating in global value chains does not automatically improve living standards and social conditions in a country. This requires not only improving the quality and quantity of production factors and redressing market failures, but also engineering equitable distributions of opportunities and outcomes - including employment, wages, work conditions, economic rights, gender equality, economic security, and protecting the environment.

The internationalization of production processes helps in making Global Value Chains work for development offers such as strategic framework, analytical tools, and policy options to address the challenges.

**Literature Review-** Previous studies suggest that GVC plays an important role in engagement of women worker and entrepreneur. Some of the studies are, Lead firms in GVCs have succeeded in creating, expanding and sustaining international networks of production, using direct investment, joint ventures, and subcontracting. Lead firms have benefited from intense competition among suppliers, which has facilitated them to minimize input costs and raise 28 flexibility in their supplier base. Cost reduction, an important driver of GVC integration, coupled with high entry barriers in some segments of GVCs, has increased the profits of lead firms. (*Hussain, April 2017*). A key aspect of social inclusion relates to the engagement of women and youth in economic activities of the value chain resulting in income generation, job creation and poverty alleviation for more marginalized groups of the society. The inclusion of women, the youth and vulnerable groups—an objective of many value chain development program.

Value chain provides numerous job opportunities for youth and women. UNIDO has extensive experience in targeting women and the youth through its projects, in many cases relating directly to value chain development (*Wang, Dec, 2015*). Overall challenges for women SMEs are lack of advanced technologies, limited access to finance and credit, dependency on middle men to market their products. A major reason for this is the status of women in the society restricting their access to education, resources/property and limiting their mobility while making them responsible for all household related work. As a result, women not only lack access to finance and credit facilities but also lack of knowledge on business, technologies and market information. All these restrict their business expansion. Although there are programs and policies as well as certain agencies to support women entrepreneurs, there is still a glaring absence of a mutual network for women entrepreneurs for the promotion, learn new trends and markets (*Chanda Goodrich, Nov, 2018*). As the World Bank stated in its 2012 World Development Report, "Gender Equality Is Smart Economics". Yet, the study of women's economic empowerment and entrepreneurship is limited in the Caribbean as many of the indicators and data sets which measure the outcome of gender parity, and female empowerment are unavailable or aggregated with male data (*Budhu, 2014*). (*Cliff, 1998*), women's concern about business expansion beyond their control:

- Create women entrepreneur self-help groups, provide support and facilitate exchanges to help them discover other women with similar concerns about growth beyond control, also provide examples where growth was possible and how these women were able to cope with business growth while at the same time taking care of their families and dependent others.
- (*Bank, 2018*), lack of access to affordable loans and credits:
  - Set up small credit scheme for the MSMEs managed by women entrepreneurs with favorable terms for business transition from nascent entrepreneurial initiatives to business activities with growth potential for job creation.

Women entrepreneurs have achieved remarkable success. The MSME Development Organization (MSME-DO), the various State Small Industries Development Corporations (SSIDCs), the nationalized banks and even NGOs are conducting various programmes including Entrepreneurship Development Programmes (EDPs). To cater to the needs of potential women entrepreneurs, who may not have adequate educational background and skills, MSME-DO has introduced, A special prize to "Outstanding Women Entrepreneur" of the year is being given to recognize achievements made by and to provide incentives to women entrepreneurs (*Shastri, 2013*). NGO's were involved to empower women to transform their communities through trade-based initiatives. A recent study of garment workers in India found that women receiving such training were more productive, able to perform more complex tasks, and less likely to quit. The combination of personal liberty and enabling resources is a useful

framework for understanding what empowerment entails for women living in circumstances of extreme poverty (*Edward Soule, 2017*).

**Women's participation in different sectors in several countries-** Globally, since 1991, the share of women's participation in the labour force has grown, albeit with differences from region to region and within regions. In the Middle East and North Africa the growth has been slow and fitful, with participation rates remaining well below those of other regions. In Latin America and the Caribbean the share of women in the labour force is increasing at a good pace, however, in Asia and the Pacific there have been declines. (catalyst.org, 2020)

In Top 27 Apparel exporting countries, 60-80 percent of production workers are women (Barrientos 2014). In horticulture 70-80 percent of packing jobs are female (Bamber & Fernandez-Stark 2013), in floriculture women account for 75-80 percent of the workforce (Christian et al 2013). In tourism GVCs, 70 percent of workers are female (Christian 2013). In the electronics sector, over 50 percent of smart phone assembly roles in China are female with often higher shares in other products and countries; women make up around 70 percent of all agents (Batt 2007). In Ugandan floriculture, the majority of senior supervisors are men, while 70-85 percent of harvesters are women. In the Lao rice sector, male farmers are in charge of land preparation while female farmers do most of the drying. Female employees are favored on the assembly line as they are considered to possess elegant ability, perfectionism, acquiescent, adjustable and with little aspiration for career improvement (McKay 2006). In women perceived skill of 'nimble fingers' has resulted in the recruitment of women in the more delicate tasks required for assembly work in mobile phones, apparel and food and vegetables (Christian et al 2013).

Share of women in managerial positions across the globe is growing considerably. From 2002, a steady upward trend of women filling the ranks at greater speed than men is seen, particularly in Asia and the Pacific, Latin America and the Caribbean, and Europe and Central Asia. However, the increase has been markedly smaller in some regions, such as Africa and the Middle East. These gains have yet to lead to a major shift in the gender composition of senior leadership and decision making positions within companies.

**The Global Pay Gap between women and men is widening-** In the United States, women earned on average \$0.82 to every \$1 earned by men in 2018 (82%) for annual earnings. Women are less likely to participate in the gig economy: 26% of women do, compared to 32% of men. And even in the gig economy, women face a pay gap.

- One study of a global online platform for task-based work found that women earn, on average, 37% less than men in hourly wage rates.
  - Another study of Uber rideshare drivers in the United States found that men earned, on average, 7% more per hour than women.
- In the Indian cocoa sector, for example, women are paid less than



men for the same work. In the apparel sector, in some countries, product segments within apparel are paid at different rates, such as in Bangladesh where knitters receive higher wages than weavers with men being concentrated in the former group (Bhattacharya & Rahman 1999; Frederick & Staritz 2012). Wage disparity tends to be lower in call center functions than in other GVCs. In the highly seasonal horticulture sector, women dominate poorly paid and insecure casual work. Structural barriers and cultural restrictions are two factors that contribute to gender gap.

- Despite an increase of women pursuing higher education globally, a gender gap in employment rates remains among highly educated women and men in some countries.
- Unpaid caregiving responsibilities can prevent paid employment opportunities, and this work disproportionately falls to women.

**“The Global Gender Gap Index 2020”**(Schwab, 2019-20): Since 2006 the Global Gender Gap Index has been measuring the extent of gender-based gaps among four key dimensions (**Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment**) and tracking progress towards closing these gaps over time. The report benchmarks 153 countries and provides country rankings that allow for effective comparisons across and within regional peers. **Key Findings:** Globally, the average (Population-weighted) distance completed to parity is at 68.6%, a further improvement since. At the current pace, the Global Gender Gap can potentially be closed in 99.5 years. Gender inequality is not only a pressing moral and social issue... as much as \$28 trillion, or 26%, could be added to global annual GDP by 2025. (MCKinsey Global Institute)

**Identifying and acknowledging the role and contribution of women and men in GVCs:**

**Global value chains and gender equality-** “The textiles and clothing industry is traditionally a female-dominated sector with respect to production, service and administrative duties. In EU countries, women's share on average is about 81 per cent in apparel manufacturing employment, and 51 per cent of textile manufacturing jobs.” (Durán, F. E., Ma, S. M., & Calvache, R. D. (2020))

**Key points from case let of Lesotho textile and Clothing Industry-** Production structure has brought a rapid increase in production capacity, particularly in the foreign-owned clothing industry, and the growing importance of the clothing sector in the country's export structure. It strengthens the societal status of women and improving welfare through the creation of new jobs. Lesotho's textiles and clothing industry has 35,000 to 43,000 employees, the proportion of women among Lesotho's textiles and clothing sector employees is estimated between 70–98 per cent. Majority of females remains in labourintensive tasks that have low educational requirements and wages. Although women are also present in higher administrative tasks, such as in HRD, supervision of production and other managerial positions. Women workers in Textiles and clothing faces tough working conditions due to three main factors: (1) physically challenging, yet

monotonous “production line” work; (2) cultural differences and “harsh” leadership style; and (3) low salaries.

Practices that breach fundamental rights at work (child labour, forced labour, etc.) were taken into care by lesotho. Many Improvement were also made in working conditions and cultural differences.

**Global value chain and gender equality in Fruit and Vegetable Industry-** Fruit and vegetable production is significantly more labour-intensive, for example crop production, several possibilities for value addition, such as processing and packaging. Fruit and vegetable sector value chains involve several stages: factors of production (inputs), production, packaging and storage, processing, and distribution and marketing. Also transport and logistics form an important part of the value chain. While value addition seems to create job opportunities in the sector particularly for women, jobs are heavily gender segregated and women are preferred in the higher parts of the value chain based on preconceptions regarding female abilities. Female participation in production is around 30-40 per cent, in packing and storage around 70-80 per cent and in processing around 50 per cent.

**Key points from case let of Honduras-**Honduras has embodied several production models in its fruit and vegetable sector. It created opportunities for women in production and packaging tasks, and as entrepreneurs. As per traditional norms women has to perform household works with low value addition in their communities; on the other, they have helped women to find employment in the “new” tasks created by modern agriculture. Young women (2025) have been recruited in the sector's value chains (particularly in packaging functions) based on the traditional conception of women's forte in food preparation, which makes them more suitable for selecting, washing and packaging fruits and vegetables. Women take care of nursery work, transplanting and quality control, as well as washing, selecting and packing the produce. These tasks require finesse, meticulousness and particular attention and care. Men were employed in tasks related to the use of machinery, such as transport and logistics. In order to retain an adequate workforce in the face of stiff competition for labour, employers have awarded social protection benefits, including health care and maternity protection, to all workers irrespective of their contract status. Vocational training certificate help to provide agricultural workers with formal recognition of their capacities.

Women's committees were formed to focus on promoting gender equality and the status of female workers. It trained its managers to be alert to sexual harassment and discrimination, and the principle of equality was widely embraced within the organization. Training opportunities for women entrepreneurs in the agricultural sector have improved. Lead companies play a role in promoting female entrepreneurship through improved access to land, finance, training, business development services and technical support. Women Entrepreneur can create contacts and networks, as well as provide women with information and support for taking advantage of various technical cooperation programs.

**Global value chain and gender equality in tourism Industry-** Tourism industry has been praised for providing jobs for women and contributing to poverty reduction. Only 3 per cent of the hotel and restaurant employees in Egypt were women, while in Mali the corresponding figure was nearly 82 per cent.<sup>133</sup> In the Bahamas and Jamaica, women are mainly represented in assistant and cleaning functions, while the management of hotels and restaurants, use of machines and gardening are “male jobs”. In Singapore only two out of 77 women in the hotel sector advanced to the position of chief executive. In Egypt, women rarely advance to higher management positions within luxury hotels, although attainment of leading position in a small hotel is more likely. The value chains of the global tourism sector have been built around the needs and interests of tourists travelling abroad. A typical value chain includes at a minimum (i) global distributors (travel agencies, tour operators), (ii) international transport; (iii) national distribution and transport, (iv) accommodation, and (v) tour organizers in the destination countries. Also, the food and beverages industry, restaurants, handicrafts and support services (food stores, security, banking, internet services, etc.) were added. Work of tour operators, transport, distribution are more likely done by males. The World Tourism Organization (UNWTO) in collaboration with UN has listed women in several aspects that are more favorable from an equality perspective in tourism than in other industries:

For example, in the tourism sector, female entrepreneurs are less likely to upgrade their own businesses. This is because many supplier decisions in the tourism sector are taken by men, who, simply by choosing suppliers from their own personal network, tend to perpetuate a male-centric business network limiting access for female entrepreneurs.

**Key points from the case let of Kenya Tourism-**Kenya is one of the eldest and best established international tourist destinations in Africa. 11 per cent of Kenya's GDP was generated through tourism and related activities. Attracting visitors mainly from Europe (France, Germany, UK, Italy) and the USA, Kenya offers different tourist attractions to these main target markets. Packages covering beach vacations, safaris and cross-regional tours, for instance, are sold through travel agencies, tour operators, or independent entrepreneurs. Initiatives were taken to train women entrepreneurs in cultural handicraft skills and link them directly to customers have proven useful in supporting women's empowerment in certain developing country contexts. Young women are often employed as ticket vendors or in different client service functions. In some firms there are women in management and higher supportive positions, but the smaller, often family-based enterprises are clearly owned and managed by men, and women carry out different assisting tasks. Lack of education is an obstacle to employment for both sexes, but it is particularly restrictive for the employability of women. Women often work in informal jobs, making traditional jewellery or performing in cultural exhibitions. Customary law does not allow women to obtain ownership of land, which in turn reduces their ability to provide collateral for obtaining finance. Women are poorly represented in Kenya Association of Trade Union, a reality that translates into securing the

interests of men as a priority. National tourism policies, together with assessments of the industry's future labour demand adopt specific Objectives to encourage the enrolment of women. Industry associations and trade unions – being inherently male-dominated – need to be sensitized to the benefits of gender equality so that they could take up the role to overturn persisting inequalities and to endorse working conditions and enterprise policies that take into account gender perspectives.

**An Initiative by Unilever:- “Opportunities for Women: Challenging harmful social norms and gender stereotypes to unlock women's potential”-** Unilever's products reach consumers through distributors serving hundreds and thousands of retailers – our customers – operating 8 million stores in more than 190 countries. It collaborate with businesses and civil society organizations to create opportunities for women in extended supply chain, sales and customer development operations and, via products and brands, for consumers. By engaging in partnerships, thought leadership and advocacy across all, they unleash the power of collective action for sustainable, transformational change for society at large. ((LTD), 2007)

**Unilever shares the commitment-**“We envisage a world in which every woman can create the kind of life she wishes to lead, unconstrained by harmful norms and stereotypes”.

Gender equality and empowerment are important because millions of women participate in it, whether as retail business owners, managers or employees. In South East Asia, Latin America and Africa, an estimated 30–40% of these outlets are owned or operated by women. It has initially taken goal of empowering 5 million women in Unilever's value chain by 2020 via program focused on promoting rights and safety, building skills and capabilities, and creating economic opportunity through jobs and livelihoods.

Every day, two and a half billion people use Unilever products to look good, feel good and get more out of life. It spend nearly US\$9 billion a year on advertising, and approximately 80% of our advertisements, worth US\$7 billion, for featuring women.

Some Initiatives of Unilever are as follows-

**1. Shakti, India-** Shakti, meaning 'power' or 'empowerment'. Unilever's long-running door- to-door selling operation in India, where it provides work for over 70,000 women in low-income rural communities. Its success has brought a new level of respect for many of these women, called Shakti ammas, especially in communities where the norm was traditionally for men to be responsible for any commercial enterprises.

**2. Project Guddi Baji, Pakistan-**Unilever has partnered with the non-profit organization Idara-e-Taleem-o-Aagahi and TEVTA, a public vocational training institute, to develop Project Guddi Baji, or Good Sister, which trains women to become home- based entrepreneurs selling Unilever hygiene and personal care brands and providing beauty services. Between 2012 and 2016, more than 4,000 female entrepreneurs are trained, enabling them to reach more than 37,000 people in 135 towns and 2,400 villages.

**3. Clinton Giustra Enterprise Partnership (CGEP), Ethiopia, Haiti, Nigeria-** CGEP creates social businesses that enhance the livelihoods of women by equipping them as entrepreneurs. Through these, CGEP also serves remote populations by creating 'last-mile' distribution networks for products. Unilever is partnering with CGEP in Ethiopia, Haiti and Nigeria to create and scale 'last-mile' inclusive businesses that bring people from low-income communities into the company's value chain. Partnerships were established in 2015, building on Shakti-type model and extend it by collaborating with other suppliers to expand the basket of products women can sell, and offering microfinance loans.

**Caselet: Connecting women-led businesses with large-scale companies-** Women Business Owners “Meet the Buyer” Workshops Nigeria – ExxonMobil Women's Economic Opportunity Initiative ExxonMobil has invested over US\$80 million to implement programs aimed at improving women's economic potential in over 90 countries. (Demirgac, 2015) These programs primarily focus on three priority areas, including:

- Providing women-focused skills training and mentoring.
- Identifying interventions to help guide smart investments.
- Implementing technologies to accelerate women's economic opportunities.

In 2014, the ExxonMobil Foundation partnered with WEConnect International to organize four one-day “**meet the buyer**” workshops across Nigeria. Over 300 women attended the workshops, which were designed to connect local women business owners with ExxonMobil and WEConnect professionals who are skilled in connecting local women-led businesses with global supply chains. The workshop aimed to bridge the gap between local women business owners and multinationals (like ExxonMobil) by providing an opportunity to better understand how to connect, interact and do business with large-scale companies, especially in the extractives industry. As a result of the workshop series, two women-led Nigerian companies – Le Look Nigeria and Muzuka Nigeria Ltd. – secured business contracts with ExxonMobil (ExxonMobil, 2014)

**Case let- Women in Business and Management: The Business Case for change-** According to our global survey almost 13,000 enterprises in 70 countries, nearly half of enterprises reported that women hold fewer than 30 per cent of entry-level management positions. In 60 per cent of companies; fewer than 30 per cent of senior managers and top executives were women. Gender balance, both in the general workforce or among senior managers, is defined as 40-60 per cent. The finding of their report that is of paramount importance is that gender diversity is a smart business strategy: the lack of gender diversity may act as a barrier to enhanced business performance. Most companies of all sizes around the world report that gender diversity helps improve business outcomes. Of the enterprises surveyed reporting improved business outcomes, over 60 per cent report higher profitability and productivity. Gender equality is also a good economics. Increasing women's labour force participation has been shown to boost the gross domestic

product at the national level. (Activities, 2019)

### **1. Opportunities for women in Global value chain-**

Opportunities for women in Global value chain are as-

- Greater economic independence, economic and social empowering.
- Increased awareness to find balanced gender participation across many different dimensions.
- Power to drive behavioral changes within society and at the workplace.
- Advance women in leadership positions.
- Building an inclusive culture and driving change.
- Action-shaping more supportive social norms and challenging outdated stereotypes.

### **2. Challenges that create barriers to participate women in Global value chain:**

Challenges that create barriers to participate women in Global value chain are as-

- Lack of equal opportunities
- Discrimination
- Gender Pay disparities
- Poor support for child care
- Sexual harassment and abuse
- Valorization of women in the labor market
- Harmful social norms and stereotypes about women and men.
- Women's response to potential opportunities in new economic activities is dampened by time constraints due to their primary responsibility for reproductive, care and unpaid work, such as domestic work, childcare, and caring for the sick and elderly
- Poor infrastructure and services

### **Initiatives taken by Companies, Policy-makers, NGO's, Association and civil society advocates-Turning GVCs as a means of driving development-**

#### **Initiatives taken by Companies:**

- Empowering women can be good for a business's balance sheet
- Women entrepreneurs can be “unique assets” and a “crucial part of strengthening supply and distribution chains.
- Targeting women as customers can reap big returns, even in seemingly saturated markets.
- Women account for up to 80 percent of consumer spending, and yet products and services are designed to meet w
- Women's needs and preferences.
- Hiring women in companies improve work culture, occupational health and safety.

**Initiatives taken by Policy Maker-** Policymakers are increasingly turning to GVCs as a means of driving development, including generating

employment and raising incomes. Policy-makers recognize that increasing women's incomes through paid work and entrepreneurship is important, since they are more likely than men to spend on supporting their children, households and communities.

In Uganda, broadly illustrative of Sub-Saharan Africa, 75 percent of agricultural producers are estimated to be women (World Bank 2009). A gender lens in policy making and implementation is required to identify the positions and roles of women and located in GVCs, and what their specific rewards, opportunities and constraints are? Hence, there is a need to conduct gender-based analysis and collect sex-disaggregated data and indicators with regard to employment, activities, rewards and constraints, as well as approaching women groups, female producers' and women workers' associations.

#### **Initiatives taken by UNDP (United Nation Development Program)**

- Strengthen interventions tackling structural changes that accelerate gender equality and women's empowerment rather than engaging primarily in program focused on women as beneficiaries.
- Strengthen the integration of gender equality into UNDP work on environment, energy and crisis response and recovery.
- Better align UNDP programming with its corporate messaging on the centrality of gender equality and women's empowerment to the achievement of sustainable development.
- Building institutional mechanisms for gender mainstreaming such as the Gender Equality Seal and the gender marker which provide measurable standards and incentives to drive progress.

#### **Initiatives taken by OECD (Organization for Economic Co-operation and Development)**

- Internationalization of enterprises is strongly correlated with a higher proportion of women in the workforce: enterprises engaged in both exports and imports usually tend to employ more women. (Lone Riisgaard, May 2010)
- Facilitating women participation in mixed-gender groups and organizations can be important when such groups control access to important resources.
- Addressing gender specific barriers such as lack of information, lack of access to resources, and lack of training can help ensure equal opportunities for participation
- Horizontal and vertical coordination between individual women or a women's group with their buyers or providers of services.
- Helping women to achieve a better functional position in the value chain.

#### **Initiatives taken by ILO (International Labor Organization)**

Gender Sensitive Value Chain Analysis (GSVCA) seeks to identify what value is being added where, and how the final market price is distributed through the chain, with a focus on the differing needs, expectations, impacts, benefits and constraints women and men face along the value chain. GSVCA

can help reduce gender-based inefficiencies in businesses and improving women's participation in value chains. (Global value chain for all inclusive and sustainable future, 2018)

- Technical and managerial training, literacy and numeracy for women
- Gender training for women and their families to increase women's power in the family
- Strengthening women's market information network

#### **Initiatives taken by World Bank**

- Research from across the globe recognizes the importance of creating greater supply and demand for women's involvement in supply-chains through SME's. Women are financially empowered they are likely share or reinvest their financial resources into their family or community through education, health and nutrition. For example, Papua New Guinea (PNG) in 2014, with World Bank support, the government committed to a small grants program to support women entrepreneurs and female economic empowerment in mining areas.
- Knowledge, training and networking opportunities suitable for and aimed at women to encourage female entrepreneurship.
- Promote the development and growth of women led businesses by making targeted micro-loan schemes and skills training more available to women.
- Promote family-friendly business environments that support women to pursue economic opportunities (e.g. encourage maternal or paternal leave policies, introduce or subsidize child care services etc.)

#### **Initiatives taken by IFC, a member of World Bank Group**

- Women's roles are highly varied but they often play crucial roles in processing, determining quality of final output, they act as agro-dealer, agro agents, and small scale farmer.
- Women's are provided with several access training, extension services, and technical information, land ownership, cooperative leadership and participation, access to ICT and mobile technology, access to labor saving technologies.
- Increase supply chain sustainability through training adapted to women's schedules and mobility
- Improved access to women as a new consumer base, Strengthened supplier base, open New or improved markets and increased customer loyalty.

#### **Initiatives by World Economic Forum-**

Nearly 200 governments around the world have signed up to the concrete goal of achieving gender equality and empowering all women and girls by 2030. They recognize that “**gender equality and the empowerment of women and girls will make a crucial contribution to progress across all the Goals and targets**” of the 2030 Sustainable Development Agenda. (Transforming Our



World: the 2030 agenda for sustainable Development, 2017)

**Initiatives taken by other Stakeholders-** All stakeholders – both individuals and institutions – have roles to play in making the changes necessary to close persistent gender gaps. Continue to collaborate with international agencies, civil society groups and governments. Also leverage position to promote change in the business community.

However policies implemented by other GVC actors (most importantly lead firms, industry associations, trade unions and NGOs) are crucial and can play a critical complementary role. Industry associations would be well placed to identify gender-specific constraints and skill gaps in GVCs and come up with innovative approaches to ensure training curricula, courses and other support programs are better tailored to female workers and entrepreneurs needs. Trade unions and NGOs play an important role in raising issues of gender discrimination and exploitation of women producers and workers. Women's groups and associations for workers and entrepreneurs need to be institutionally strengthened and supported by assisting and financing capacity building in networking and leadership. Strong women representation bodies provide female entrepreneurs and workers with a voice in policymaking, increase their bargaining power and can help raise awareness of gender intensified constraints.

#### **8. Other Suggestive Initiatives:**

- The Future of Gender Parity-Growing Professionals will be the forefront of emerging economy
- Some Countries Use Quotas to Increase Women on Corporate Boards-Women held 20% of board director seats worldwide in 2019, an increase from 17.9% in 2018
- Eliminating gender pay gaps
- Increasing women's roles in decision-making
- Developing and implementing work-life balance policies
- Eradicating sexual harassment at work
- Enhancing women's access to non-traditional jobs.

**Conclusion-** The economic liberalization policies that accompany global trade have heavily impacted on employment opportunities, quality of employment and standards of living while accentuating inequality and exacerbating power imbalances. GVCs have been an engine of growth and a significant driver of job creation, especially in the developing world. A value chain comprises of several actors with different interests in the product which is being developed in the chain. Actors therefore become “stakeholders”. Each actor looks at their role from a different perspective. Value chain contributes to gender equality in production and trade relations. It aims to help organizations to design strategies where both men and women can benefit from and which at the same time make (global) value chains more efficient such as by improving the collection, recording and reporting of gender-disaggregated data and information. This will enable tracking of change over time, and better assessment of the outcomes of initiatives to promote gender equality and women's economic

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## ***The Soul of Microfinance in India: Self Help Group with special Reference to Chhattisgarh***

•Raksha Singh  
••Mohua Bhowmick

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**Abstract-** *We all have been sometimes free enough to observe ants working and witnessed how so small ants can even carry weight many times more of their own, which is just the double of their size and its possible only by working together. I feel in the society the concept of microfinance and Self Help Group works with the same instinct. Individuals with their small savings and power join together to achieve greater goals for them. This has been proved by the microfinance institutions and the Self Help Group. If you give a man a fish, you feed him for a day. If you teach a man to fish, you feed him for a life time. The above proverb is so well appropriately fitted for the Self Help Group working in our country. The Self Help Group are making the rural people more self-reliant – economically, socially and psychologically. Significant positive changes are observed in the life of the people after joining the Self Help Group. An integrated effort is being made by the microfinance institutions and Self Help Group for reducing poverty and encouraging self-reliance among the rural people. This article highlights the impact of microfinance with special reference to Self Help Group in Chhattisgarh. Secondary sources of data have been used for the purpose of this study.*

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**Keywords-** Microfinance, Self Help Group (SHG), Self-reliant, Poverty alleviation, Socio-economic, psychological development.

**Introduction-** Microfinance is an age-old concept before it's been popularized by Dr. Muhammad Yunus known as the father of the first micro credit institution formally called as the Grameen Bank in 1976 in Bangladesh and received Nobel Peace prize in 2006. Microfinance generally refers to providing economic help to the poor strata of the society who are earning very less and with little help can be in a better condition. The finance is provided to those whose earnings are very less but are economically active. At present time microfinance industry is growing very fast. Both public sector and private sector banks are providing Microfinance to the lower strata of the society. Muhammad Yunus, Professor of Economics, Grameen Bank, quoted these lines in his lecture at the Nobel Peace Prize Award, Oslo, 10 December 2006, 'All that is necessary to save the poor from poverty is to create a functioning environment. Once the poor can unleash their energy and creativity poverty will vanish quickly.'

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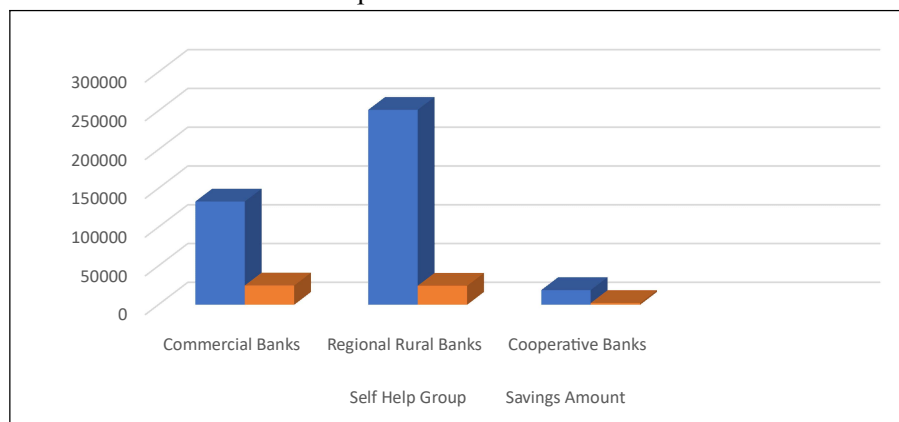
**Why Microfinance?** Maximum people of our country are living in rural areas and have hand to mouth existence where they cannot do anything except attaining the very basic necessities of life. They don't have any collateral to take any financial assistance from any formal financial institutions for improvising their situation. For the financially underprivileged people microfinance acts as a boon which lets them accessible to resources for their upliftment. Most of the time the rural people do not have sufficient amount of money when they are actually in need for their requirements. In rural areas mostly people get inclined to non-formal sources of credit rather than the formal sources due to lack of collateral and fear of undergoing documentation work as most of them were illiterate. Microfinance is providing low-cost financial services to the deprived groups of people. But when it comes to sustainability, a lot more work is required in this area. Microfinance and sustainability are many times in contrary to each other. The fact cannot be ignored that micro finance is working on the lacunas of the traditional financial institutions though different case study lit a ray of hope. This problem was very much taken care of when it's supported by Self Help Group. With the help of the Self Help Group the micro financial institutions are now in a stronger position to reduce the rural poverty. This is supported by the NABARD Annual Report 2020-21.

**Table 01**  
**Savings of Self Help Group with Banks –**  
**Chhattisgarh as on 31 March 2021**

(Amount in Lakh)

Commercial Banks		Regional Rural Banks		Cooperative Banks		Total	
No. of SHGs	Savings Amount	No. of SHGs	Savings Amount	No. of SHGs	Savings Amount	No. of SHGs	Savings Amount
133136	24854.03	251424	24511.55	18916	2199.22	403076	51564.80

Source: NABARD Annual Report 2020-21.



**Self Help Groups-** The poor households in the rural sector of our country are still very much dependent on the informal sources of credit due to the gap of the formal financial institutions in reaching to the core areas, and even if

there are financial institutions it's very difficult for them to fulfil their financial need as they have to go through the various formal procedures. Absence of collateral is another reason of their hesitation in approaching the formal financial institutions. These problems of the rural people are ruled out by the idea of Self Help Group. A typical Self Help Group has 15-20 members, usually belonging to one neighborhood, who meet and save regularly. The members are contributing to the savings according to their abilities. The members can take small loans from the group itself to meet their needs. The group charges interest on these loans which is very less than the informal sources of credit. And after a year or two, if the group is regular in savings, it becomes eligible for availing loan from the bank. The loan is sanctioned in the name of the group and is meant to create self-employment opportunities for the members.

The SHGs help borrowers overcome the problem of lack of collateral. They are now in a position to get financial assistance within their reach. The Self Help Group is also considered as the building blocks for the rural development. It helps women to become financially self-reliant. The regular meeting of the group provides a platform to discuss and act on a variety of social issues such as health, nutrition, domestic violence etc.

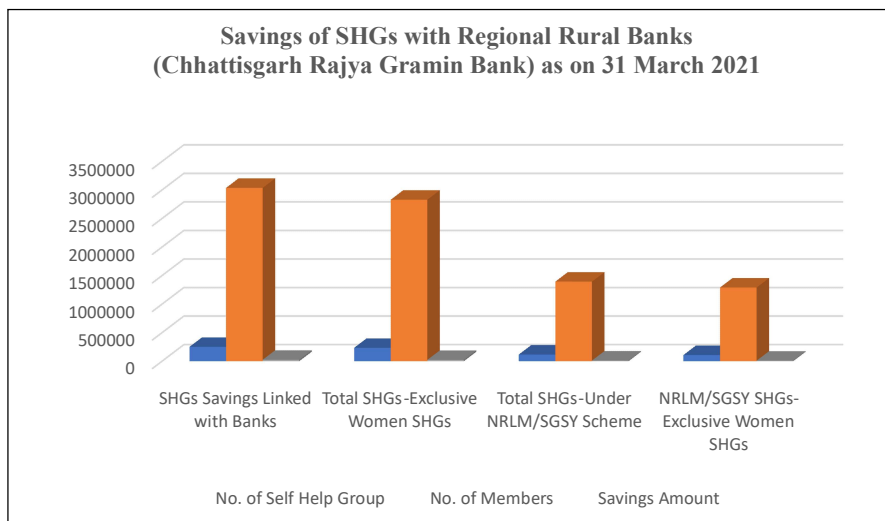
It's been noticed that among the needy, the poor, these groups usually have homogeneous working members. They find it more advantageous as they are in a better position to understand each other. Objective is not only confined in providing financial help but includes educational aspects, health and nutritional aspects, social development, standard of living etc. It is highly required that the Self Help Group should include members from high income group, below poverty level as well as low income families. Some training should be given to the members for smooth functioning and most importantly "Every Self-Help Group should start some social activity."

Among all the institutions working in rural area, the women in Self Help Group are the major players. The Self-Help Group are not the only organization providing finances but various banks and non-banking government organization also provide credit facilities. More and more women belong to the lowest category in the financial pyramid are approaching for loans. It improvises their managerial skill and literacy levels. This helps in reducing the exploitation and isolation of women in the society.

**Table 02**  
**Savings of SHGs with Regional**  
**Rural Banks of Chhattisgarh as on 31 March 2021**

Name of Bank	Details of SHGs Saving Linked with Banks			Out of Total SHGs- Exclusive Women SHGs			Out of Total SHGs- Under NRLM/SGSY Scheme			Out of NRLM/SGSY SHGs-Exclusive Women SHGs		
	No. of SHGs	No. of Members	Savings- Amount	No. of SHGs	No. of Members	Savings- Amount	No. of SHGs	No. of Members	Savings- Amount	No. of SHGs	No. of Members	Savings- Amount
Chhattisgarh Rajya Gramin Bank	251 424	3036 806	2451 1.55	234 158	2828 958	2249 5.32	1161 88	13945 91	11028 47	10755 5	12906 67	9012.2 4

Source: NABARD Annual Report 2020-21.



### Goals of Self Help Groups-

1. To motivate the savings and banking habits among the members.
2. To make them morally strong by providing them financial support at the time of their need.
3. To have an easy accessibility of loan for productive purposes.
4. To create a feeling of togetherness among the members.
5. To encourage the economic, social and psychological development of women.
6. To gain economic prosperity through skill development programmes.
7. To develop collective decision making among women.
8. To encourage team work among the members.
9. To encourage the habit of saving among women and facilitate the accumulation of their own capital resource base.
10. To gain from collective wisdom in organizing and managing their commonly experienced problems by benefitting among each other.
11. To encourage women in taking responsibilities and helps them in their own development and fight against the social disparities happening against the them in the society.

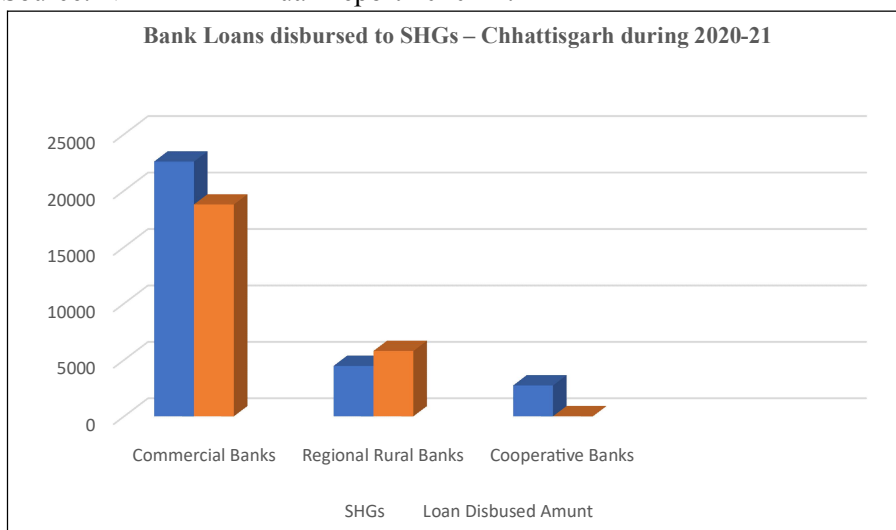
**Mutual Dependence of Microfinance and Self Help Group-** Micro Finance is doing a signature role in the field of rural development. But it is not at all possible without the help of the Self-Help Group. The Self-Help Group is a much deeper concept. An integrated work strategy is required to be done both by the Micro Finance and Self-Help Group. Unless and until they work together, they will not able to bring the desired changes in the rural areas. Micro Finance will help in the financial assistance only but they are not working on the overall development of the rural people, whereas the Self Help Groups are working in the overall development which includes economic development, social development, psychological developmental aspects of people especially for the rural women and thus making the whole

system very strong. There is a requirement of both Microfinance and Self Help Group to work hand in hand for the development of the rural people in all aspects and the development should not only confined to economic development only. There has to be a proper team work between the micro financial institutions and the Self Help Group so that they can bring the changes in every facet of life of the rural individuals. The micro financial institutions can only provide the financial assistance whereas the Self Help Group provides them with the proper directions of how to use that financial assistance in a productive manner by developing their skills in various fields whatever they are good at so that they can be benefitted in all directions.

**Table 03**  
**Bank Loans disbursed to SHGs – Chhattisgarh during 2020-21**  
 (Amount in Lakh)

Commercial Banks		Regional Rural Banks		Cooperative Banks		Total	
No. of SHGs	Loans Disbursed Amount	No. of SHGs	Loans Disbursed Amount	No. of SHGs	Loans Disbursed Amount	No. of SHGs	Loans Disbursed Amount
22576	18774.15	4469	5793.91	2735	2512.88	29780	27080.94

Source: NABARD Annual Report 2020-21.



**Impact of Microfinance-** The influence of micro finance is very intense in the overall developmental criterion. This not only helps in the societal development but in the overall development of the rural person. Most of the things are very much interrelated with each other. The assistance of finance at the time of need for the rural people helps in their skill development which helps them in coming out of their poverty. This helps them to earn more and to irradicate the problem of unemployment in the rural areas of Chhattisgarh. More and more rural people in Chhattisgarh are engaged in farming and lacks any other skills of earning their livelihood. Micro finance with the help of Self Help Group helps in the development of various skills in them which open various avenues for their earning. Micro credit facility provided by the



micro financial institutions helps them in providing their requirements of life and they become more potentially developed in the different dimensions of their life.

**Empowerment of Women-** Not only in our country India but in the whole world the women are being considered as the better half but our social system is not allowing the women to actually work in a democratic manner. They are always placed in the secondary position than men. These Self-Help Group working a lot to bring some differences in their life. The Self-Help Group with the help of Micro Finance Institution tries to bring out their skill and potential according to their capabilities and empowers them to prove themselves. With the help of the Self-Help Group and Micro Finance Institution the women become financial independent and thus is in a better position in the society. The Self-Help Group with Micro Finance Institution is facilitating the women in their developmental work. They are in a better earning position and creates an income opportunity not only for themselves but contributing towards the economic development of the whole country. This financial independence brings a difference in the life of women, by increasing their standard of living and their participation in the decision-making process. The development of women is essential as they not only develop themselves solely but support the whole family's financial development. The women are the maximum participants of the Self-Help Group and thus directly and indirectly helps in the contribution of economic, social, cultural and psychological development.

#### **Review of Literature-**

1. M. Wakilur Rahman, Jianchao Luo , A. S. M. Golam Hafeez and Tongquan Sun (2015) *A Comprehensive Review of Microfinance Impacts, Sustainability and Outreach* The study indicates that though microfinance is there to help low-income group of people, it still lacking in extending its services to those who are actually in need of it. We can say that microfinance is actually in need of proper guidance for providing low-cost financial services to the deprived groups of people. But when it comes to sustainability, a lot more work is required in this field.
2. Juanyi Chen, Y Chang , Garry D Bruton *Microfinance: Where are we today and where should the research go in the future*(2017) A better understanding of both the contributions and limitations of microfinance especially in context of the upcoming entrepreneurship and economic development. Micro Finance is filling the gap of the services which are to be done by the government, or the banking institutions. Much information is provided on how the women entrepreneurs are benefited with the borrowings from Micro Finance. No doubt that Micro Finance in the coming future will provide a good and stable platform for the entrepreneurs not only to grow but to establish them too.
3. Aaron Kumaha Williams Kwasi Boachie *An Investigation into the Impact of Microfinance in Poverty Reduction in Less Developed*

**Countries (LDCs): A Case of a Ghana(2016)** Micro Finance is considered as an institution which reduces poverty. It encourages on the promotion of micro savings, a robust financial sector regulation and definitely an improved and safer financial support. Mostly in underdeveloped countries maximum population belonging to rural areas do not have the basic savings and credit services which makes it difficult for them to come out of their position. A strong contact can be established between the Micro Finance and the poor who has the capacity to use the finance in a productive manner but they get very frail chance of getting any borrowings due to lack of collateral. It's very clearly mentioned that the micro credit and savings should be used as a common tool for poverty alleviation in underdeveloped and developing countries.

4. Sowmyan Jegatheesan, Sakthi Ganesh, and Praveen Kumar S. **Research Study about the Role of Microfinance Institutions in the Development of Entrepreneurs(2011)** The study indicates specifically on the entrepreneurs who want to have their own business but could not due to scarcity of financial availability for the resources they need to run their business. Micro Finance is working as a boon as they access to various financial services. Helping the growing entrepreneurs would help in development of other sections also like improvement in education and health.
5. Shweta Singh, Guido Ruivenkamp and Joost Jongerden **A State of the Art of Self Help Groups in India (2011)** This journal is working with the strategies of Self-Help Group of the development of rural areas with especial reference in enterprise. The new economic policy 1991 has helped in the development of the economy but did very less for the poor strata of the society. Development word cannot be categorized only for economic development but other things like education, health are indirectly associated with which it becomes very difficult for the government to achieve its task. The local people through Self Help Group have participated and contributed in the creation and conduction of various programmes for the local economic development. Capacity Building a very important aspect is taken for the development of local small enterprise.
6. Arjun. Y. Pangannavar **A Research Study on Development of Self-Help Groups in Belgaum District(2014)** The study is specifically based on the Self Help Group not only empowering the members economically but they also help them in political and social development. The Self-Help Group work is considered synonyms to women development, but it's now working to alleviate poverty in rural areas, improvement of standard of living, the development of rural economy and building democratic way of living.
7. Gaurav Joshi **An analysis of women's self-help groups' involvement in microfinance program in India (2019)** The author has discussed the economic as well as social development of

women. The findings also says that various factors are responsible for the women to join Self Help Group includes age, education, family type and distance from the market.

8. M. Saravanan ***THE IMPACT OF SELF-HELP GROUPS ON THE SOCIO-ECONOMIC DEVELOPMENT OF RURAL HOUSEHOLDWOMEN IN TAMIL NADU - A STUDY (2016)***  
The outcome of the study said that though Self-Help Group is a well-known concept for women's development, it tries to bring the attention that women's empowerment is a process to fight against the social customs and its dogmatic rules. Objective is categorized into developing socio-economic status of rural women, alleviating poverty, increasing employment. Various aspects of Self-Help Group have been covered which includes, micro finance benefit for rural poor households, bank and Self-Help Group linkage, economic empowerment, social empowerment, saving and financial decision making, access to credit, employment and challenge to target the real poor and vulnerable sections.
9. Shivam Shakshi, Peto Karoly ***Self Help Groups (SHG) : Micro Finance in India(2018)*** This journal describes that micro finance has been started with the intention of providing finance to the weaker section of the society but it gradually grown in to become the way to help and improve not only the economic but social standard of the poor people.
10. Paul Fagan & Hannah Quinn-Gates & Mengistie Rebsso & Sam Cromie ***The Impact of Self Help Groups on the Psychosocial Well-Being of Female Members in Ethiopia(2020)***The study indicates that a holistic approach to poverty alleviation is required. The poverty alleviation or the women empowerment should not only be the only concern but emphasize should also be on psychological factors such as dependency, social isolation or inclusion, access to education and employment opportunities, low civic participation, humiliation, hopelessness and powerlessness. The study states the lack of financial education among the poor effects in their overall growth. The new development is the Self-Help Group participation promotes members to engage in religious behavior that they never used to do before joining the group. Most of the women were leading a life at home without social network. Self Help Group helps them to come out of their isolation. From this report it's been very clear that Self Help Group is an effective means of improving the multidimensional well-being of its members.
11. Sandhya P.S and Sri Ranjini S ***THE IMPACT OF MICROFINANCE THROUGH SELF-HELP GROUPS (SHG): A STUDY ON THE ECONOMIC STATUS OF URBAN WOMEN WORKING IN PRODUCTION AND MANUFACTURING INDUSTRIES IN MYSURU DISTRICT(2018)***From the grass root level urban poverty has been discussed which is taken into account

very rarely. The women in urban areas are mostly engaged in manufacturing and production industries. The outcome of the study of Self-Help Group by a foreign scholar indicates that group members who are rich are more likely to be benefitted economically. The urban women were benefitted in urban areas by the Self-Help Group by acquiring modern gadgets like mobile phones for their families and thus raising their standard of living. The women in urban areas plays double role, they are the earners of their family as well as responsible for taking care of their family. One thing is very evident, the women in urban areas has improvised their living standard with the help of credit facilities from the Self-Help Group with the help of micro financial institutions.

**Gaps in the Earlier Studies** - From the review its very much clear that most of the studies are focused only on the empowerment of women. Most of the Micro Finance Institutions are working on the development of the economic condition of women and not on their overall developmental aspects. There is enough scope of development in this area. Keeping this in view the further study can proceed towards the overall development of the women in all aspects which will include economic, social and psychological development.

**Objectives**- In order to eradicate poverty from the grass-root level, we need to have a participatory approach to empower women. The women are/or can be a major contributor in the economic development of our country both directly and indirectly as they are working both as a bread earner as well as a family taking care.

- To analyses the attitude of the members of the Self-Help Group towards social impact.
- To study the social and economic condition.
- The various different services provided by the Micro Finance Institution should reach to the actual needy person.
- To remove all the obstacles in the rural developmental path.

**Limitations of Self Help Group and Micro finance Institutions**- Self Help Group and Micro financial Institutions are working hand in hand for the development of the rural people in Chhattisgarh. In spite of this they could not able to achieve the required scale. Basic reason considered for this is the improper working to the centrally administered local development programmes. Though there are various plans and policies for the development of the rural sector, they were poorly implemented. The internal workings of the Self Help Group were also questioned as there is lack of understanding among the members which leads to differences and many were not even aware of the workings of the group because of the dominance of the powerful members. One of the major reasons of their failure is weak financial management as most of the members are inexperienced in managing the marketing and investment of the group which results in low return.

**Hypothesis**- For working out the trends in development of Micro Finance with special reference to Self Help Group in Chhattisgarh the hypotheses are

framed as following-

- A special attention is necessary for the united working of the Micro Finance with Self Help Group in Chhattisgarh.
- More and more rural women to be encouraged to join the Self-Help Group and avail the facility of Micro Finance.
- The loan disbursement process should have encouraged attitude.
- Significant change can be observed in the economic status of women after joining Self Help Group.

**Conclusion-** The Microfinance Institutions need to be centrally administered. The Self Help Group should work on targeted basis so that the standard of living can be raised. It's mostly been observed that the loans from Microfinance Institutions is used for investment purposes and not for consumption purposes. In most of these cases the borrower could not able to pay the full amount. In rural areas the non-agricultural workers and landless labourers are mostly deprived.

The Microfinance Institutions and Self Help Groups need to have an integrated plan in developmental activities. This helps not only in the economic development of the rural areas but also their social development and results in them over all development of the children, the women, the households and the communities. Each member is benefitted and develop the society as a whole.

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## **Impact of Private Education on Common People**

• Pawan Kumar Dubey

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**Abstract-** *Despite the fact that the growth of private schooling in India is obvious, particularly in rural regions, the contours of this transition are little known due to data restrictions. Official numbers frequently understate the number of students enrolled in private schools. Furthermore, there is only a hazy grasp of the efficacy of private education in India. We can argue that private schools must be of higher quality than existing public schools if parents know what is best for their children and vote with their feet. However, two factors point to the necessity for deeper reflection: (a) There is a long history of school quality research in various contexts, particularly in the United States, indicating that much of the apparent differences in schools are due to parental choices that propel children from certain backgrounds into certain types of schools, and (b) the landscape of Indian private schools is dotted with small, unrecognized, and unregulated schools. Anyone who has seen some of these schools would not automatically conclude that private schools are superior to public schools. As a result, it is critical to do empirical research on the influence of private school enrolment on educational attainment.*

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**Keywords-** Private Education, Common People

**Introduction-** Education is the most powerful engine for personal growth. A peasant girl can become a doctor, and a farm worker's child can become the president of a major country, all thanks to education. What distinguishes one person from another is what we make of what we have, not what we are given.

Human, societal, and economic progress are all dependent on education. Education serves more than just economic purposes. It extends to social development, individual health and living situations, and society's overall well-being, with benefits that are known to compound through generations. One of the most potent instruments for eliminating poverty is high-quality education. According to Burchi (2006), studies have shown that basic education is relevant in combating food insecurity and boosting development both conceptually and experimentally.

India's 4.5 lakh privately managed schools are home to over half of the country's students (U-DISE 2019). Indian families of low and middle income are looking for private school alternatives as the policy environment works on reforming the government system to provide quality education to low-income pupils. Omidyar Network India and Central Square Foundation have collaborated on a report entitled 'State of the Sector Report on Private Schools'. Nearly half of India's school-age youngsters attend private

schools, according to the survey.

Based on their own size, privately managed schools make up the world's third largest educational network behind China and India's public school networks (4.5 lakh private schools) (UIS 2019). India's 'unaided' school system has grown rapidly in the previous two decades, serving 9 crore pupils (U-DISE 2019). Parents' demands for improved education across the board are driving this rise. It is no longer the sole province of the wealthy to attend private schools.

About Rs. 1.75 lakh crores are generated by this sector (MoSPI 2019). Due to the size of the sector, the quality of education provided by these schools is vital to the development of our human resources.

**Private Schools-** Surprisingly, the government system has aided the expansion of low-cost private schools in several respects. The Indian government began implementing large-scale primary and elementary education programmes in the 1990s, with a focus on child enrollment. Demand was sparked by community mobilisation activities that included free midday meals, textbooks, and uniforms, among other things. As government schools sprang up all over the country and parents began entrusting their children to them, parental unhappiness grew. The poor quality of government schools was reflected in missing or 'present-but-not-teaching' teachers, low levels of learning achieved by youngsters, and highly obvious corruption in school transactions. While not all government schools are of bad quality, popular views of poor quality are on the rise. Local entrepreneurs have capitalised on this unhappiness by offering a low-cost alternative. As more Indians reach higher economic levels, the number of people who are willing to pay for education is increasing (Commonwealth Secretariat, 2008).

### Growth of private institution

Table 01

S. No	-	Share of Self Finance institutions of Total institutions	Share of Students enrolment to total enrolment
1	-	42. 6	32. 9
2	2007	61. 8	58. 9
3	2012	63. 9	67. 1
4	2015	65. 2	68. 3

**Economic Compulsion-**Globalization is also impacted by education due to cultural blending in schools. To govern their economies, countries have little choice but to rely on education and training in the face of a highly competitive market environment.

**Charting the Pressure of Privatization-** Education is in high demand. Private providers will step in if the government cannot afford to give and support all of the education that parents want for their children.

**Demand Side Pressure-** Because they must raise money from tax payers, the government system is unable to keep up with the increase in enrollment. In this situation, the only way for the education system to grow in response to increased demand is through private provision.

**Push and Pull Factors-** In general, the education system is under pressure to be privatised. Changes in the global economic and social environment are



among the factors. In the event that globalisation is coupled with market liberalisation, the government will be encouraged to seek out methods that are more efficient, adaptable, and expensive.

**Choice and private schooling for the poor-**Privatized education tends not to be available in places where public education has been unable to reach (Lewin, 2007). Due to the emergence of private schools, students now have a choice of schools, both public and private. Markets of providers are supposed to provide better service at reduced costs, as they compete for clients. As stated in the World Development Report 2004, "raising impoverished clients' choice and engagement in service delivery will enable them supervise and discipline providers" (paraphrased) (World Bank, 2003, p. 1)

Ideally, parents would be able to choose from a variety of educational options, and there would be no single provider. As a result of greater responsiveness, accountability, efficacy, efficiency, and quality, this situation should benefit all providers (Kitaev, 2007). Customer dissatisfaction can lead to one of two sorts of activist reactions: either to voice one's objections... in the aim of improving conditions, or to leave the organisation and take one's business somewhere else. ". Vocalization is theoretically possible in most systems, but in practise, those who have the option to do so often choose to do so.

In actuality, markets fail in a variety of situations, such as when a hamlet lacks the demographic base to enable competition among suppliers. Destructive market forces can also occur when, as in the case of a public school, the institution's survival is not based on luring clients. In modern societies, the ability to vote with one's feet is unequally distributed because of income and wealth differences. Inequality in access to the option to exit can have "appalling consequences" such as "ghulam's death".

Indian government schools are criticised for their efficiency and equity, as well as the quality of their infrastructure and instructional materials. There has been an incredible increase in the number of LFP schools during the last 15 or more years. Private (unaided) schooling in India has grown rapidly as a result of under-resourced public schools and significant teacher absenteeism, according to Kingdon.

They claim that private schools have a lot of promise but currently serve the poor. Tooley (2001, 2004) and Dixon (Tooley and Dixon, 2006) are both of this opinion. India was one of the countries where they carried out their research. The predominance of private schools, both recognised and unrecognised, as well as children's achievement and family interviews, were studied in depth (Tooley and Dixon, 2006). It is usually believed that LFP schools have higher standards and more classroom engagement because they are directly accountable to their fee-paying 'consumers'.

As well as the LFP debate, other literature focuses on very different themes. The first argument is that competition and choice may apply to urban Indian contexts where LFP schools are nearly ubiquitous, whereas Kingdon (2007) points out that their prevalence in rural regions is far lower. Pupil achievement levels in LFP schools have been questioned by other

researchers (Singh, 2002, p. 478). Similar to Srivastava (2007), he discovered that head instructors or managers/owners were typically indifferent to quality issues, showing contempt for both their own teachers and their clients' viewpoints. It was discovered by Dreze and Gazdar in 1996 that private school teachers were "poorly trained," while Tooley (2001) makes no mention of teacher training. This has resulted in a "ghettoization" of schooling, according to Vasavi (2003). Such school differentiation also reinforces gender and socioeconomic divisions within communities, as well as in society at large.

**Conclusion-** Privatization has a critical role in expanding education both qualitatively and quantitatively. Private education is encouraged by both the state and federal governments in this country for economic development purposes. However, the educated masses are also affected by the dearth of quality education. While privatisation boosts degree holders and unemployment on one hand, it decreases both. Therefore, they should have access to increasing numbers of chances that will help them prepare for job in organisations or self-employment. Consequently, the study's recommendations could be followed to improve the quality of education offered through privatisation and to reduce its negative influence on education and society as a result.

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## ***Impact of Covid 19 on Industrial Development***

• Arvind Yadav

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**Abstract-** *The Indian economy has been severely impacted by the Covid-19 outbreak. While a number of measures have been proposed by the Indian government to deal with this problem, they include provisions to strengthen food security and increase health care funds as well as the use of sector-specific incentives and extended tax deadlines. The economy is anticipated to suffer through a long period of stagnation due to the impact of the national lockdown, the global economic crisis, and the consequent disruption of demand and supply networks. Today, the global population is faced with a Covid-19 pandemic, which is increasing in the number of countries that are infected by the virus since we do not know whether or when vaccinations will be found. This study seeks to discover the extent to which the global economy was negatively affected by the Covid-19 pandemic in the industrial sector. The results of this study indicate that the shock may have a widespread impact, including on sectors such as manufacturing, financial services, banking, infrastructure, real estate, and services. Additionally, they also provide policy recommendations for certain businesses.*

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**Keywords-** Corona Pandemic, Covid 19, industry development.

**Introduction-** The Indian economy has been severely impacted by the Covid-19 outbreak. While a number of measures have been proposed by the Indian government to deal with this problem, they include provisions to strengthen food security and increase health care funds as well as the use of sector-specific incentives and extended tax deadlines. The economy is anticipated to suffer through a long period of stagnation due to the impact of the national lockdown, the global economic crisis, and the consequent disruption of demand and supply networks. Today, the global population is faced with a Covid-19 pandemic, which is increasing in the number of countries that are infected by the virus since we do not know whether or when vaccinations will be found. This study seeks to discover the extent to which the global economy was negatively affected by the Covid-19 pandemic in the industrial sector. The results of this study indicate that the shock may have a widespread impact, including on sectors such as manufacturing, financial services, banking, infrastructure, real estate, and services. Additionally, they also provide policy recommendations for certain businesses.

On the other hand, both the company's interest in employees' health and the employees' entitlement to fair compensation are to be maintained throughout the payroll process. Reducing the number of employees by reducing the workforce or laying off employees is a common strategy to

preserve corporate finances. Also, some companies that pay their employees a monthly salary do not pay the whole amount in one lump sum. Naturally, these steps are implemented by a company to preserve the money necessary for its long-term operation.

**Research objective-** The research objectives that can be obtained in this study are-

- To study the impact of Pandemic Covid-19 on the industrial sector.
- To study the financial impact of Pandemic Covid-19 on the business.
- To study the effect of Covid-19 on various industries.

**Literature review-** According to the World Health Organization, viruses known as coronaviruses (Cov) attack the respiratory system. This viral disease is known as COVID19. The Corona virus causes anything from a simple cold to severe illnesses, including MERS-CoV and SARS (SARS-CoV). Corona virus is zoonotic, which means it may be transmitted from animals to humans. Wuhan Municipal Health Committee issued an urgent warning on the treatment of pneumonia of unknown origin on December 30, 2019, stating that COVID-19 cases were initiated there. Corona virus is transnational. The Corona virus has now been proven to exist in 188 different countries. Work-life balance and flexible working hours are two of the most important factors that may help increase employee engagement (Setyo dan Lukertina, 2019; Setiyani dan Setyo, 2019).

Sunil is an Indian native (2020) India is among the 15 nations most affected by China's economic slump as the coronavirus epidemic impacts global trade, according to a UN research. ADB predicts that, in addition to lost productivity, the population of Covid-19 victims may lose \$387 million to \$29.9 billion in personal spending due to the pandemic. The majority of business respondents believe that the favourable demand of the fiscal year will account for the entire year's revenue. Affected sectors include tourism, hospitality, and aviation, which have the most to lose from the present crisis. Most people are feeling the impact of job losses and lower incomes as a consequence of lower activity in sectors such as retail, construction, and entertainment. There are manufacturing shortages in a number of sectors, such as automobiles, pharmaceuticals, electronics, and chemical products. caregiving/caregiver assessments (2020) The aim of the study is to collect information on the detrimental impacts of the virus's spread on the Indian economy. In June of 2020, retail inflation will be higher than it is now.

Future Fashion and Emerging Design, 2020 What's happening across the globe is a global pandemic, which is bringing two kinds of problems to nations: health problems and economic problems. Today, health-care reform remains the most important topic on the legislative agenda, but it will become clear that the economy is also confronting a critical problem. To a certain extent, other countries in the world also feel this way. Soon after the global health panic, every nation on the world will have to deal with the economic destruction it causes. This may be particularly troubling in India, where the economy was already on the verge

of collapse when the crisis hit. Additionally, while the physical effects of the illness may be short-lived, the economic repercussions it will trigger will be long-lasting.

Due to it, it is expected that the impact of COVID-19 will be felt across the economy, with regards to both economic growth and foreign trade, as well as the financial markets, unemployment, income, and other variables. In the event of significant disruption of global trade, widespread losses are expected. Export-led growth underpins the Indian economic paradigm, which may be challenged by a virus-related shutdown. Under optimistic and pessimistic projections, accordingly (WTO, 2020). Estimates conducted by McKibbin and Fernando (2020) have placed the global GDP loss due to a low-end pandemic scenario using the Hong Kong Flu as a reference point at US\$2.4 trillion. However, if a widespread pandemic causes an estimated \$9 trillion drop in 2020, this may be the beginning of the end for our global financial system. While Ozili and Arun (2020) were discussing the spillover effects of the COVID-19 virus, which resulted in the closure of financial markets, corporate offices, companies, and events, which may have a significant influence on the economy, Arun praised the social distancing measure of virus control, which allowed financial markets, corporate offices, companies, and events to be closed, which could have a huge impact on the economy.

#### **Impact of Covid 19 on various sectors**

**Agriculture-**Agriculture is one of the most important. According to some estimates, about one farmer commits suicide every 30 minutes owing to debt. Today's agricultural situation has deteriorated to such an extent that a lack of harvest labour and inadequate transportation facilities have been added as additional burdens to farmer community. Farmers' output has been reduced as a result of these circumstances.

**Tourism-**More than one lakh people in India rely on tourism for a living, but everything from Delhi's Chandni Chowk market to the bustling streets of Charminar has come to a halt. In addition, the whole tourist department has been shut down owing to pandemic concerns. According to estimates, the government has suffered an economic loss of between 20,000 and 30,000 crores as a result of the full shutdown of tourism.

**Trade-**Import and export are always two sides of the same coin, which is commerce. Because of the decrease in commerce, foreign flights have taken a significant impact. The first two factors are critical to the Indian economy on a daily basis. In such a broad scenario, the Indian government is obliged to run a significant trade deficit.

**Electronics-** In recent years, India has emerged as a major importer of electronics. Because so many imported products are just laying around in storage, maintaining their functionality has become a greater challenge for the company's service workers. Electronic goods may rise in price if the present situation continues. Unfortunately, the electrical department is trying all they can to escape their tenuous situation, but they're running out of resources.

**Automobile-** At the moment, it is expected that about a million vehicles would be manufactured each year by the several sectors, but not a single

industry has been established. Auto companies stand to lose if this trend continues.

**Human Resource-** Corona virus epidemic hitting employment and salaries across the world that rely on migrants seems likely to lead to a halt in the amount of money migrants' families in the employees' home countries get. Remittances from outside the United States may help distribute the global economic crisis to impoverished nations all around the world. The organization's work will influence the nature and speed of the world's recovery from the coronavirus. Over 1 billion individuals rely on remittances to help them get by. In 2019, an estimated 200 million migrants globally remitted \$715 billion USD back to their families in the US. These estimates peg US\$551 billion in total funding, which has been allocated to supporting 800 million families who live in low- and middle-income nations. Every year, migrant labourers send home hundreds of billions of dollars in cash. This money is critical for the communities and economies in which it is used. The effect of coronavirus on these remittance flows may be substantial.

**Education-** COVID-19 was felt by students as well. None of the schools or educational institutions are open to the general public. Following the successful launch of the Secondary School Certificate (SSC) and Intermediate Board (IB) Examinations, they were cancelled and no new examination schedule has been announced. Even in the financial sector, all transactions and investments are completely suspended. Not only are pharmaceutical companies ramping up their speed, but a significant percentage of them are actually throwing themselves backward. As paper consumption has decreased to its greatest extent, the paper sector has also been greatly impacted.

**Transport-** A third critical point to note is the role of the railway sector in the overall economy. Today, you can begin to fathom how much economic damage could ensue. Also, roads no longer function. In addition, bus wheels were also disabled as a result of the RTC strike, resulting in a fine for the government of rupees to pay for fixing the disabled buses.

**Covid 19 impact on manufacturing industry-** Even the rice milling industry, which had previously seen an increase in output, has decreased in production by half. Before the lockdown in China, worldwide trade had become disrupted due to China's entry into the Golden Blockade. In these sectors, MSMEs had already experienced a pre-lockdown decline in business, with stagnating economies and a slowing market demand and because of supply chain disruptions caused by the Golden Blockade. Some job functions, for example, administrative, customer service, sales, and even some public relations operations, are being conducted from home on a rather restricted scale. Due to the increased repatriation of migrant workers, especially semi- and unskilled employees, many hometowns have seen a surge in people moving back. Even though it only maintains a tiny proportion of its normal staff, one bicycle-parts company has successfully innovated and joined the ventilator industry.

For the most part, the movement of goods, energy, and people has come to a complete halt. Manufacturing small and medium-sized enterprises (MSMEs) are almost entirely reliant on other sectors that have ceased functioning, leading in a reduction in demand and the cancellation of all orders. Only critical industries are able to continue operating. Although, their requests for required inputs from non-essential industries cannot be fulfilled, they still can't get the non-essential industry's products. For example, the paper sector is unable to satisfy the demand for high-quality paper for many industries, including pharmaceutical, food, and sanitary uses. Decreased liquidity flow has ripple effects on the rest of the company, which has serious consequences, including a sudden cut-off of incoming cash flows and the migration of skilled labour across all skill levels.

**Conclusion-** COVID-19 and worldwide industrial product manufacturers face further supply chain disruption, production stoppages, increased costs, and worker displacement as the crisis persists. What long-term and future actions industrial product businesses may anticipate that will help keep them flexible and reduce risk? The impact of the Covid-19 pandemic is considerable in the global economy, particularly in the manufacturing industry, as it influences the availability of materials coming from various countries. In some countries, for example, the United States, Germany, and the European Union, production stops so that it affects the manufacturing industry. After implementing steps, reducing the effect of COVID-19 on the Indian economy will be possible. The government has to undertake targeted fiscal, wider monetary stimulus, and policy rate reduction to assist to counteract the economic effect of the fast-spreading coronavirus. Manufacturers will undoubtedly confront a number of new difficulties as the COVID-19 issue continues to grow. Also, manufacturers will have to think outside of their own self-interest.

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## ***Ecosphere, Development and Sustainability: A Trinity of the Future***

• Chandani Bhattacharjee

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**Abstract-** *The emergence of sustainability over the decades has become the most necessary and plausible solution to manage the anthropogenic issues facing the world today. This decade has been selected by the United Nations as one for Ecosystem Restoration and more effective using sustainability as a tool to manage it better. The paradigms in evolution of thoughts regarding sustainability, ecosystem management has been changing. The key to solve it has become the primary motive of a world riddled with population pressure and paucity of resources. An assessment of carrying capacities of each environmental regimes is the needed approach. Though the demands for resources have only spiked the growth and development, they have put nations at tipping points. Responsible development has become the way forward for all eco spaces. This paper intends to focus on the element of connectedness in environment and development and the reflections of sustainability on the future management of the ecosystems.*

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**Keywords-** Sustainability, Ecosystem management, Carrying capacities, Ecospheres.

**Introduction-** “Human beings are at the center of concerns for sustainable development. They are entitled to a healthy and a productive life in harmony with nature” Principle 1, Rio Declaration, 1992.

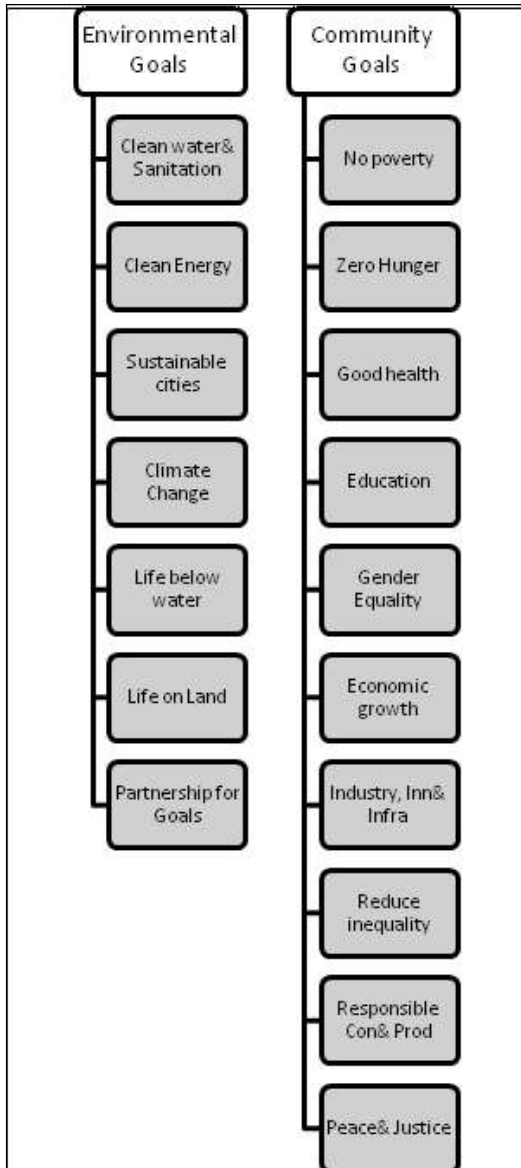
After a modest beginning in the Rio Declaration, the notion of sustainability has carved itself into the global environmental landscape. The concept's aims are commendable and contradictory at the same time. Though created with basic universal acceptance in mind, the idea has resulted in developmental dichotomies that must be discussed and deliberately handled. Sustainability, on the other hand, is a broader word used to handle development responsibly. It is based on effective conservation techniques, which are followed in its execution. The idea's generosity lies in its worldwide acceptability, attempts to universalize the concept, and retention of developmental problems in many economic systems. Apart from the stewardship that it has come to resemble, it would also allow for the depoliticization of the implementation process.

The term "sustainable development" first appeared in *the Brundtland Report, Our Common Future*, a 1987 report published by the World Commission on Environment and Development. In the 1980s, the IUCN's World Conservation Strategy hinted that the conservation of biological resources was not possible without eliminating human misery such as poverty. With this in mind, the United Nations established the World

Conference on Climate Change (WCCD) in 1983 to develop a change agenda for the world's governments. The term "sustainable development" was defined as "development which meets the needs of the present without compromising future generations' ability to meet their own needs" (WCED:43). The United Nations (UN) General Assembly's acceptance of the report gave the term visibility in the global fraternity, and in 1992, leaders formalized the principles of Sustainable Development at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, also known as the Rio Summit or the Earth Summit. Following the institutionalization of the notion at the Rio Summit, 27 principles were developed to address global environmental and governance issues. This Summit was also pivotal in the formation of three fundamental bodies: the UN Framework Convention on Climate Change, the Convention on Biodiversity, and the non-binding Statement of Forest Principles (John Drexhage, 2010: 7). From a political standpoint, it was a success since the world's attention had been focused on worldwide environmental concerns, and there were opportunities for active participation by the signing countries on the agenda drafted. However, the problems were in two areas: first, an overemphasis on the "environment pillar" in the talks, and second, a lack of execution of Agenda 21 goals. This summit was followed by a series of worldwide Conventions to reaffirm the need of achieving a greener planet. Some of these included the 1993 UNCED, which commissioned the CSD (Commission on Sustainable Development) as a follow-up meeting, the 1997 Earth Summit+5 in New York, and the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. These meetings were largely progress reports. The participating nations demonstrated that a number of beneficial outcomes had been achieved, but that implementation efforts at the national and international levels had been generally ineffective. In his 2002 Report on Implementing Agenda 21, United Nations Secretary-General Kofi Annan stated that "progress towards reaching the goals set at Rio has been slower than anticipated" and that "there is undoubtedly a gap in implementation" (United Nations Economic and Social Council, 2002, p. 4). The 2002 World Summit on Sustainable Development saw an intriguing shift in the idea of sustainable growth, with nations focusing more on social and economic development and the creation of the MDGs.

**Understanding Ecosphere and Development-** Biospheres and ecospheres have been used interchangeably. In a systematic fashion, there are the whole ecosystem of the living and nonliving. These are geographical areas that are complete in every way. Ecosystems are defined by a careful examination of the biotic and abiotic components. It was coined by A. Tansley will explain an in-depth examination of certain microregions, including natural, living, and nonliving components. Ecospheres thus involve a study of the connections between geographical space segments. It is necessary to demarcate the ecospheres in order to properly manage any place. Assume a lake ecosystem has an abnormally large algal bloom; managing that environmental scenario would necessitate research into the lacustrine ecosystem, which is a component of the aquatic ecosystem. A good

investigation would involve identifying the origins of the bloom and attempting to manage it.



Ecospheres are home to ecosystems that are unique and must be maintained creatively for long-term use. Most ecosystems include resources that can be used by the economy. The economy and the ecology are inextricably linked. When economic activity expands, a certain level of development is attained, and then deterioration and destruction permeate into the natural environment. Ecological stability is required for an ecosystem to function properly. This type of stability can only occur if the creatures in the ecosystem and the supply of water, air, and land are in balance. To ensure optimum survival, there must be an appropriate balance between the creatures in the food chain, rather than an overwhelming concentration of any one type. An overabundance of any one species creates severe disruption in the energy pyramids and devastation in the ecosystem. Food scarcity occurs, and Darwinian 'survival of the fittest' principles play a part in the natural selection process.

**Development and Sustainability-** The history of ecosystem use began with indigenous tribes that lived in and preserved their commons almost religiously. Sacred groves arose, prompting people to conserve and safeguard the delicate ecosystems. Cults, demons, ghosts, gods, fairies, and spirits were invented to deter economic exploitation of these resource-rich environments. Some regions of the world also practiced coexistence with natural elements and absorbed practices of natural replenishing of resources. Some of the practices that were traditionally followed by man include not consuming certain species of plants and fish during their germination and fertilization stages, rituals to pray to the

natural elements, avoidance of certain trees in specific seasons, leaving good agricultural lands fallow, crop rotation, and so on.

The way forward for ecosystem development will have to follow the Sustainable Development Goals. There are 17 Goals and 168 Targets that have been identified as Sustainable Development Goals. Introduced after the completion of the 8 Millennium Development Goals, these are more specific and expect cooperation from the countries of the world in following them till 2030. These Goals have been divided them into environmental goals and community goals. The environmental goals intend that the global fraternity will work towards the protection and conservation of the global ecosystems. Reduction of Climate Change, using alternative and clean energy for reducing the carbon emission, protection of life, on land, water and below water and to work towards sustainable cities. These Goals become more relevant when the partnership Goal is taken into account.

**Sustainability: The Way Forward-** The globe was confronting a tremendous difficulty in institutionalizing the concept of sustainability to the masses, as seen by the growing deterioration. It was recognized that there were limits to the substitutability of natural resources, as well as the availability of technical assistance to emerging and underdeveloped countries. The notion of sustainability did not take off as a “megatrend” (defined as a substantial shift in economic, social, and environmental circumstances that transform societies and influence societies at all levels, WESS, 2013: 2) and stayed on the outside of government departments. There was a dearth of political will in certain emerging and underdeveloped nations, which was rationalized as developmental pains. The ecosystems that had previously experienced the consequences of unsustainable development found it impossible to apply the new idea all at once, and a setback was already felt.

Almost every government, community, and company has responded to the idea and concept of sustainability in their own unique way. There are serious institutes and government measures in place to guarantee that some attempts in this regard are undertaken. The intellectual fraternity and the community are becoming more aware. Corporates have been educated on the importance of implementing green initiatives as a policy and clearance process with CSR in countries such as India. The bigger question is whether such initiatives will suffice, or whether governments, communities, and corporations must do more. Adams, (2006:2), criticizes the notion of sustainable development, claiming that the concept is lost due to its "looseness in application." It might be used to encompass different concepts, and the people involved in the creation process may not always agree on the meaning and interpretation of the words. All elements of development must be quantifiable and scalable.

As part of the progress of the Goals in Indian development, the NITI Ayog, National Institution for Transforming India, has begun assessing the country's progress in the 13 out of 17 Goals, under a single measurable index that would serve as an advocacy tool and trigger action at the state level, the

SDG India Index. The Index will measure the development of the states and union territories on 62 main indicators based on the outcomes of the Government of India's initiatives and programmes. The criteria varied from relevance to the SDGs, guidance from the National Indicator Framework, data availability in the states and UTs, and agreement from the ministries concerned. It was constrained by its reach, a paucity of data, and the restrictions of equal weightage.

The index, on the other hand, would help governments comprehend and connect existing policies and government programmes with the SDGs. As mentioned in the Niti Ayog Report, "*The SDG India Index is intended to provide a holistic view on the social, economic and environmental status of the country and its States and UTs.*" (Niti Ayog, SDX India, p22). According to the findings, the Sundarban region of West Bengal is a 100 percent achiever, the frontrunner with 65-99 percent is Kerala, Tamil Nadu, and Himachal Pradesh, the remaining states of India are performers with 50-64 percent, and the states of Bihar, Uttar Pradesh, and Assam are aspirants with 0-49 percent. (Niti Ayog, SDX India, p26)

**Conclusion-** "*The economic way of thinking about the environment begins with the recognition that environmental problems are people problems.*" (Wills, 1997:3). The study of sustainable ecosystem management is also a people-centered approach. It has an influence on people, who benefit from the ecology. All improvements in effective management must be people-centered and incorporate all ecosystem components. After an evaluation of the challenges encountered by the individual ecosystem, all ecospheres must adopt the modifications. It should be noted that each ecosystem has a distinct problem, and so the management technique must take this into account while addressing environmental concerns. In the ecospheres, there are no man-made borders, just natural limitations. Deliberation and remedies to environmental imbalances would consequently need more than national identities to address them. For efficient ecosystem management, management concepts must transcend borders and the boundaries of countries and governments must be eliminated. The fragility of the ecospheres, which contain numerous micro niches, must be addressed using contemporary man's creative ways. However, the evaluations and uniqueness of each such ecosystem must be safeguarded and conserved for future generations.

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## **Constitutional Validity Political Perspectives & Future of Article 370**

• Sandhya Shukla  
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***Abstract-** The Issue of Jammu and Kashmir has been a hard nut to crack since the inception of article 370 in the Constitution. The logic and validity of the article has been a long-drawn discourse amongst academia and common people as well. In the post-independent India successive governments were keen to diagnose the issue since the inception of the article, but it could not be done either due to lack of will or the possible resistance on the part of the political leaders of Kashmir and the Government of Pakistan. The resilience of the current government and the decision to abrogate article 370 had an astounding response all over the Nation including the Kashmir valley. What will be the repercussions and how the system devises a mechanism to cope with the issues is to be reviewed in the years to come; but the initiative of the current Government is being commended as a great leap forward towards easing long drawn debate on special status of Kashmir that is now more an integral part of the country than ever before. The valley seems to be overcoming the hangover of the months of restrictions with blocked communications under the huge military deployment added by further Covid-19 lockdown.*

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**Keywords-** Resilience, Relevance, Rejuvenation, Stagnation, Standstill

**Introduction** Two-fold interpretations can be taken for reference to discuss the validity of Jammu Kashmir Reorganization Act. First the "Living tree doctrine" deeply entrenched into Canadian constitutional laws since the "Seminal constitutional case of "Edwards v Canada" also widely known as "The Persons case." wherein Viscount Sankey stated in 1929 decision that-"The British North America Act Planted in Canada is a living tree capable of growth and expansion within its natural limit. This is known as Doctrine of Progressive interpretation.

According to the intent involved in the doctrine is- it doesn't matter much what constitution makers said and wanted at the time of the framing the constitution, The constitution encompasses and regulate the people of the country who evolved and developed the system with time. It is thus immaterial to say- "What was right in 1947 is also right in 2019. The Constitutional provisions and the laws exist not for the stagnation but for rejuvenation.

Second Doctrine is 'associated with the relevance'. Constitutional amendment intend to revisit an issue; a matter concerned with relevance. Article 370 has been the root cause of all the ailing of Jammu and Kashmir and the

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people living in the valley. The issue of article 370 has put the integrity and sovereignty of the nation in question by giving impetus to separatist movements. The current paper intends to review the imperatives of abrogation of article 370 and 35 'A' and analyze its after effect on the Socio-Economic and Political status of Kashmir valley after switching over from an autonomous state with special status to a Union Territory divided in two parts- 'UT of Jammu and Kashmir' and Laddakh.

The Current research paper intends to probe the viability and relevance of abrogating article 370 and explore the relevance of long needed resilience of the current Government to do away with the contentious article.

**Introduction Integration of Indian States After Independence and The Issue of Jammu and Kashmir-** After about 100 years of freedom struggle India finally got independence on 15 Aug. 1947 after being divided into two Part, "India and Pakistan". On the basis of India Independence Act 1947 all the princely state were given option either to accede to India or Pakistan on the basis of self-determination and voting in some part of the country. Area of North west frontier province, west Punjab, Sindh, Eastern Bengal & some portion of Assam got recognised as Pakistan. Whereas except Hyderabad, Kashmir, Bahawalpur & Junagadh all Princely states (about 552) signed the instrument of accession with India before 15 August 1947.

Later on, **Hyderabad** Nizam first signed a standstill agreement on **Nov. 29, 1947** and finally on Sept 17, 1948 after "**Operation Polo**" carried by Indian forces against the secessionist strategy of Nizam, Hyderabad finally got assimilated into Indian union.

**Junagadh** whose Nawab wanted to join Pakistan by sea against the wishes of local citizen of junagadh finally got acceded to India after a plebiscite held on 24 feb. 1948 in which 99% of the population voted to join India.

**Jammu and Kashmir Accession-** On **Aug. 12 1947** Maharaja Hari Singh signed a standstill agreement with both India & Pak. Pakistan has always sought to use deniable violence to achieve its objective of wresting J&K from India. In order to force the Maharaja of Kashmir to accede to Pak. Pakistan engineered the so called tribal raids in 1947, as a result of which to save local citizen of J&K from the Pak. army supported tribal lashkars, Maharaja signed the instrument of accession with India on **26 oct. 1947** which was acknowledged by Sheikh Abdullah the ruler of the state of J&K. Lord Mountbatten accepted the instrument of accession without any condition.

**Issue At UN-** India made a reference to UN on **1<sup>st</sup> jan. 1948** under **Article 35** of the UN charter which permits any member state to bring any situation whose continuance is likely to endanger international peace & security to the attention of the Security Council. The intention behind this reference was to prevent a war between the two newly independent countries which would have become increasingly likely if the tribal invaders assisted first indirectly and then actively by the Pak army had persisted with their actions in Kashmir. Pakistan consistently misled the world regarding its

involvement in Kashmir- Pakistan claimed initially in 1947 that it was not in any way assisting the tribal invaders & was only actively opposing their passage out of fear that they may turn against the local Pakistani population. But later on, in a meeting with Governor General of India Lord Mountbatten, Mohd. Ali Jinnah claimed that he was in a position to call the whole thing off subject to some of the demand met.

The UN commission that visited India in July 1948 found that Pak forces operating in Pakistan Occupied Kashmir (POK). The UN commission on India and Pak. (UNCIP) set up in June 1948 in its Resolution of Aug. 1948 documented the Pak aggression when it stated-"The presence of troops of Pak in the territory of the state of J&K constitute a material changes in the situation since it was represented by Govt. of Pak before the security council". The UN sponsored mediator "**Owen Dixon**" was also constrained to record in his report of 15 sep. 1950 that- "I was prepared to adopt the view that when the frontier of the state of the J&K was crossed on I believe 20 oct. 1947 by hostile elements. It was contrary to international law & that when in May 1948 as I believe, units of regular Pak forces moved into the territory of the state that too was inconsistent with International law"

**UN recommendation for the resolution of J&K issue-** In order to find a solution to the situation in Kashmir created by Pak, India had accepted the option of holding a plebiscite in J&K which would be conditional upon Pakistan fulfilling **Part 1&2** of UNCIP resolution of **13 Aug. 1948** which are given as following-

**Part-1** – All forces regular & irregular under the control of both sides shall cease fire

**Part-2** – Pak would withdraw its troops from POK

**Part-3** – India was also to ensure that the state govt. takes various measures to preserve peace, law & order.

Indian acceptance of this UNCIP resolution was also subject to several conditions and assurances given by UNCIP which are as following-

1. Pak would be excluded from all affairs of J&K
2. Azad J&K govt. would not be recognised
3. Sovereignty of J&K govt. over the entire territory of the state shall not be brought into question
4. Territory occupied by Pak shall not be consolidated
5. Pak troops would be withdrawn completely

**Failure of UN Resolutions-** The resolution suggested by UN failed because Pak never fulfilled the precondition for the plebiscite. Following unilateral action by Pak made UN resolution irrelevant-

1. Pakistan unilaterally ceded a part of POK (Sakshgam Valley) to china in 1963
2. There has been a demographic change on Pak side with generations of Non- Kashmiris allowed to take residence in Part of J&K occupied by Pakistan.
3. Pakistan tried to Impose a military solution on J&K yet again in 1965 by instigation a war against India

**Operation Gibraltar 1965)**- "The people of J&K could not wait indefinitely to decide their future. In any case the UN resolution did not recognise or grant any role to Pakistan in the conduct of plebiscite. "If Pak therefore has not take part in the Plebiscite it really becomes a domestic matter for India" (**V.K. Menon,**

**UNSC, 800<sup>th</sup> meeting 11 Nov. 1957)**- India waited several years for Pakistan to fulfil the preconditions of plebiscite, when that did not happen the people of J&K then convened a constituent assembly in 1951, which once again reaffirmed the accession of the state to India in 1956 and finalised the constitution for the state.

The J&K constitution reaffirms that "the state is & shall be an integral part of the union of India.

**Shimla Agreement-** The **Indo-Pakistani war of 1971** which was a military confrontation between India and Pakistan that occurred during the liberation war in East Pakistan from 3 Dec. 1971 to the fall of Dacca (Dhaka) on 16 Dec. 1971, led to the formation of a new country **Bangladesh** and signing of Shimla Agreement between Prime minister Indira Gandhi and President of Pak Zulfikar ali Bhutto on July 2, 1972. The shimla agreement contains a set of guiding principle, mutually agreed to by India and Pakistan, which both sides would adhere to while managing relations with each other. The following principles of the agreement are however particular noteworthy-

- A mutual commitment to the peaceful resolution of all issues through direct bilateral approaches
- To build the foundations of a cooperative relationship with special focus on people to people contacts
- To uphold the inviolability of Line of control in J&K, which is a most important confidence building measure between India & Pakistan, and a key to durable peace

After the Shimla agreement which was laid stress again by the Lahore Declaration (signed on 21<sup>st</sup> day of February 1999 in Lahore between PM Atal Bihari Vajpayee and Pak PM Nawaj sharif) it was agreed mutually by both India and Pakistan that all future issues will be resolve bilaterally and hence finishes the scope of UN mediation to resolve the J&K issue.

**Genesis of Article 370 & Special Status for J&K-** Prime Minister Jawaharlal Nehru promised that the final integration of the state of J&K with India will be based on the will of the people of the Kashmir. Till that time a temporary provision has been introduced to define the relationship between the state of J&K and the Union of India According to Indian constitution only two Article of the Indian constitution applied in the state of J&K

- Article 1- which established J&K as an integral part of India
- Article 370 – India moved to consolidate its relationship with J&K by enacting Article 370 on **Oct. 17, 1949**

#### **Features of Article 370**

- In case of subject in the State list like all other state power lies with the govt. of J&K

- With subject in the Union and Concurrent list there are two type of provision-
- (A)- If subject is related to defence, for eignaffairs, communication and currency which are mentioned in the instrument of accession, union govt. will make laws only with the consultation of state govt. and that consultation is not concurrence (not binding)
- (B)- With respect to other subject in union and concurrent list union govt. can make law only with the concurrence of the state govt.

**Genesis of Article 35-A** - Article 35-A was incorporated into the Indian constitution in 1954 by an order of the President Rajendra Prasad on the advice of Jawahar Lal Nehru cabinet. The **constitution (Application to J&K) order of 1954** followed the **1952 Delhi Agreement** entered into between **PM Nehru and J&K PM Sheikh Abdullah** extending Indian citizenship to the state subjects of J&K. Article 35-A was added to the constitution as a testimony of the special consideration Indian govt. accorded to the permanent resident of J&K.

The presidential order issued under Article 370(1)(d) which allows the president to make certain exception & modification to constitution for the benefit for the benefit of J&K.

Article 35-A gives the J&K state legislature a complete say in deciding who the permanent resident of the state is. The state legislature can grant its permanent residents special rights & privileges in Public sector Jobs, acquisition of property, scholarship & other public aid and welfare programme within the state.

**Controversies Regarding Article 370 and 35-A** - There are various controversies regarding the introduction of Article 370 and 35-A and J&K issue some of them are as following-

Law minister of that time and constitution assembly drafting committee chairman Dr. B.R. Ambedkar was completely critical about the introduction of Article 370 and Special status to J&K.

- Pakistan time and again by giving reference to Article 370 and 35-A in UN and other international bodies tried to present as J&K is not an integral part of India because it has its own constitution and Flag.
- Because of Article 35-A women's and Girls of Kashmir are facing exploitation and deprivation. They and their children doesn't have right of inheritance of property if they marry outside the state, while the same provision does not apply to men of the state.
- Because of Article 370 various progressive legislation of central govt. were not applicable to J&K without the concurrence of state legislature and because of this provision various essential rights and laws were not available to local citizens of the state such as –  
Right to education, Minimum age of marriage for girls, reservation for SC/ST and backward caste, SC/ST act 1989, Prohibition of employment as manual scavengers and their rehabilitation act and Panchayati Raj act till recently was not applicable to J&K

- This progressive legislation which are fundamental for the survival of a person as a human being with dignity were not applicable to J&K till the abrogation of Article 370.
- In international platform Pakistan is using J&K issue as a bargaining matter, recent example is the comment of US President Donald Trump to mediate on J&K issue while completely knowing that it is a bilateral matter to be solved on the basis Shimla agreement 1972 which was also reiterated in Lahore Declaration of Feb 1999.
- US is negotiating peace deal with Taliban in Afghanistan and is expected to withdraw its forces till Oct. to Dec. 2019 from Afghanistan. Taliban is supported by Pakistan govt. and after US withdrawal from Afghanistan some scholars assume that the centre of terrorist activities might shift to J&K by provoking youths which is inimical to unity and sovereignty of India.
- Because of Article 35-A there is no major FDI investment or private sector investment in the state because outsider can't buy land in J&K which lead to unemployment and unrest in the valley.
- By using the provision of Article 370 and 35-A some vested interest political parties in J&K are instigating youth against the country and trying to create secessionist and separatist tendencies in the state.
- For maintaining peace and tranquillity in J&K about 42,000 armed personnel and civilians lost their life in J&K since Independence some recent examples are-
- Pulwama Terror attack on CRPF convoy which lead to the sacrifice of our 40 CRPF personnel (Feb. 2019)
- Uri attack on Sept. 2016

These above situations made the abrogation of Article 370 inevitable and indispensable for maintain peace and tranquillity in J&K. Some vested interest NGO, intellectuals, Political parties are projecting as if Article 370 is a boon for the citizens of J&K, But actually it proves disastrous for the local citizen of J&K because it is actually the citizens and local residents of J&K who are facing day to day violence, hartal, shutdown, unemployment, and exploitation. Abrogation of Article 370 is necessary for the upliftment & empowerment of the citizen of J&K. It is important of bring the local citizen of J&K in mainstream and contribute for the welfare of the state and the country.

**What changed constitutionally in J&K-** The constitution (application to J&K) order 1954 lists the Article and provision that apply to J&K. These special measures can be altered only on the recommendation of Sadr-i-riyasat of J&K acting on the advice of the council of ministers or by the constituent assembly of that state, as of now there is no constituent assembly. On Aug. 5, 2019 President Ram Nath Kovind issued a Presidential order under Article 370(1) of the constitution. This clause enables the President to specify the matter which are applicable to J&K. As it can be

issued only with J&K govt. concurrence, the notification used the words "with the concurrence of the govt. of the state of J&K". This presumably means the Governor who is now administering the state under President's rule has given his concurrence on the behalf of the state govt. The order supersedes the 1954 order. This effectively means that all the provision that formed the basis of a separate constitution of J&K stand abrogated. The order declares that all the provision of the constitution of India shall apply to J&K. However, some special measures were still needed for the scrapping of Article 370 altogether. Therefore a few clauses were added to **Article 367** of the constitution which contains guidance on how to interpret some provision. The new clauses say when applicable to J&K

- All references to Sadr-i-Riyasat acting on the aid and advice of the council of ministers will be construed as references to the Governor of J&K acting on the aid and advice of council of ministers
- All references to constituent assembly in a provision to Article 370(3) will be construed as references to legislative assembly of state, since constituent assembly does not exist.

**The Jammu and Kashmir Reorganisation Bill 2019** presented in the parliament & passed in both houses of Parliament with two third majority will bring about following changes to the state-

Two Union territories to be formed out of the state of J&K

- a) Union territory of Ladakh (Kargil & Leh district)
- b) Union territory of J&K (all other district of J&K)
- c) UT of J&K have legislative assembly whereas UT of Ladakh does not have legislative assembly
- d) Both UT's to have Lieutenant Governor (L-G) for now the Governor of state will continue as both
- e) Four sitting Rajya sabha members of the state will become MP's of UT of J&K
- f) Five Loksabha seats to go to UT of J&K
- g) Legislative assembly of UT of J&K will have 107 seats to be chosen through a direct election
- h) One Loksabha seat to go to the UT of Ladakh

**Future of J&K and Ladakh-** After the abrogation of Article 370, now it is the responsibility of the govt. to work for the welfare of citizen of J&K and deliver all those promises made by the govt. in the Parliament as soon as possible like free education, employment, peace & tranquillity, empowerment of women & poor, upliftment of the local citizen of the Kashmir, eradicating terrorism and unrest from J&K once for all.

There are very much chances that some vested interest parties will try to create unrest in the valley in the name of independence. Therefore, it is upto the govt. to take the local citizen of J&K under confidence & try to make them understand the benefits of govt. decision by groundwork. There are some recommendations by which govt. can try to create an atmosphere of peace and welfare in the state of J&K-

**Decentralization of Power through Panchayati Raj-** Because of Article 370 for a long duration of time there is no panchayat election in J&K. In previous year under President's rule Panchayat election were held more or less peacefully in J&K. Now govt. gives power to panchayats for the upliftment of the local youth at the village levels. Panchayati raj & decentralization of power is the best way for the empowerment of youth in the state.

- Promote tourism & try to provide employment to local youth in the tourism sector.
- Promote private investment in the state in the form of Hotels, industries & try to employ youth of the J&K by giving some kind of special reservation as applicable in other state by "sons of the soil Policy"
- Work expeditiously in the path of improving the reach of education to each and every child of J&K by opening various Govt. schools, colleges, and universities in the valley.
- Govt. also can use social media platform to spread the details of benefits of Article 370 and also to counter the fake news propaganda by various non-state actors, dissidents and anti –social elements in the Valley.
- Govt also have to ensure the safety, security and protection of indigenous people and culture of Kashmir. In the process of modernisation of J&K "**kashmirayat**" has to be protected.

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## **Relevance of Nehruvian NAM Today**

• Sagarika Panda

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**Abstract-** *Jawaharlal Nehru is a visible presence in public and political discourse. There appears to be some kind of 'Renaissance' of Nehruvian vision since a decade or so. In this context of the study will try to examine whether the grand prescriptions of the Nehruvian world view still has any relevance in this emerging post cold war world order. The paper aims to analyse the adoption of NAM after world war. This paper mainly focused on the relevance of NAM policy today. India underscored as a super power in South Asia due to Nehru's NAM. This paper also discussed how Nam was accepted to maintain peace and friendly relation in international affairs. This paper also explores the involvement of India through NAM in world peace.*

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**Keywords-** NAM, Cold War, world war, Super powers, Indian foreign policy.

**Introduction-** With the aristocratic family background and deep study of history, Nehru was the natural Architect of the Indian Foreign Policy. He was one of the influencing statesman of 20<sup>th</sup> century. From the early days of his premiership, Nehru attempted to prevent Indian Balknization. He fund the different solution from diverse ideologies. He wanted India to have a leadership role in the international order without aligning to the power blocs. He attempted to portray India's image as a neutral nation in International affairs. For the objectives of foreign policy, Nehru moved ultimately to the founding of the NAM. The policy of non-aligned drew a link between the foreign policy and economic policy of India. He believed in international. He tried to maintain honesty and good will in matters of international affairs. Two factors can be adducted to explain Nehru's adoption of Non-alignment ax the lodestar of India's foreign policy. First, He was acutely concerned about the opportunity cost of defense spending. He would divert critical resourcefrom economics development. Second, He was intent on maintaining India's hard-won independence.

**Aims & Objective of Nehruvian NAM-** As a leader of the Non-aligned, it also made a significant contribution towards the process of decolonization. After Independence when world was headed by two superpower, us and USSR, India brought proper alternative to keep away from these blocs. India adopted the policy of NAM. It was plying active and positive role in international affairs to achieve peace and prosperity. NAM is an international organization. According to Nehru Indian interest were global in nature rather than domestic. A significant milestone in the development of the Non-aligned movement (NAM) was the Bandung conference of 1955. The conference was hosted by Indonesian president Sukarno. Who played an significant role in prompting the NAM. The participants declared their

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desires not to be involved in the cold war. It was adopting a declaration for promotion of peace and co-operation among themselves. It also included five principles which named panchasheel. This phase was first used by Nehru in 1954. These five pillars were to lay foundations of sino-Indian relations. Panchansheel later served as the basin of the NAM. The idea of NAM was associated with neutralism from the power blocs. Nehru rightly said that NAM is a policy inherent the circumstances of India. He added new dimensions in principles of NAM in international relations. The pursuits of NAM was in the national self-interest of India. NAM was an alliance of newly independent and long colonized nations. India's determination to stay out of the military alliances with any country of the western and communist bloc defined NAM. It also signified Indian attempts to maintain friendly relations with all countries.

As regards geography, Nehru frequently referred to the importance of India's location and size as a determinant of the policy of NAM. By virtue of location, he argued India not only occupied a pivotal position in Asia. But also a kind of meeting ground between the East and the west. India's vast size also, Nehru often argued, dictated a policy of NAM. Such a big country with relatively abundant natural resources was a potentially big power in its own rights. He could understand small European countries seeking military alliance with bigger states. But he saw no justification for a big state like India thinking in term of such alliance. Similarly no one else was probably as profoundly aware of the determining influence of our economic development on our foreign policy as Nehru. He went to the extent of saying that in the ultimate analysis foreign policy was the outcome of economic policy. His general desire and efforts for establishing world peace, his opposition to the bipolarization of international relations, the cold war and military alliances and the great stress laid by him on the avoidance of war by all possible means, were prompted at least as much by India's primary interest in economic development as by idealistic considerations. The relatively conciliatory policy followed by him towards China and Pakistan. In the face of grave provocations, were also largely due to the fact that he assigned top priority to India's economic developments. It regarded peace on the borders as an essentials precondition for it. Another aspect of our economic development. Which made a policy of NAM almost inevitable. The need for maximizing the quantum of aid unavoidably required for India's economic development.

**Relevance of NAM-** The concept of non-alignment movement began as a policy of non-participation in military affairs. It meant a country should be able to preserve ascertain amount of freedom of action internationally. It was not worthy that the subject of NAM was rarely discussed in constituent Assembly. He was proud of being an Asian. India tried to justify its position by mentioning different reasons. NAM underscored Nehru's preference regarding minimum presence of super powers in South Asia. He had to change this view after the border war of 1962. India had to gain American assistance for its security. It defended against a communist attack. The us became India's most important source of aid until the late 1960. Nehru

desperately accepted American aid. He failed to gain his goals through panchaseel and NAM. He remained hostile to mutual security arrangements. It was not required by either the us and Britain. Indians should publicly renounce NAM.

The NAM is a forum of 120 developing world states. They are not formally aligned with or against any major power blocs. After the UN, it is the largest grouping of states world wide. The movements originated in the 1950, to avoid the polarized world between communist and capitalist states. The NAM was established in 1961 in Belgrade, yougaslavia through an initiative of the Indian PM Nehru. This led to the first conference of Heads of state or Government of NAM countries. The term NAM movements first appears in the fifth conference in 1976. There participate many countries as the members of the movements. The countries of the NAM represent nearly two-thirds of the UN members. It contained 55% of the world population. Membership is particularly concentrated in countries considered to be developing or part of the Third world. Non-aligned countries rarely attained the freedom of Judgement. The NAM Nations were unable to fulfill the role of peace keeper during the Indo-China war 1962. During this period India's NAM stance was questioned and criticized. The NAM and Afro Asian group acted as a limited soft balancing mechanism. 'Naming' and 'shaming' were their operation tools. They worked as norm entrepreneurs in the areas of nuclear arms control disarmament. The NAM declaration on nuclear testing and Nuclear non-proliferation especially helped to test Ban Treaty in 1963. The Tradition of non-use of nuclear weapons or nuclear Taboo, was strengthened due to activism of NAM. NAM countries had played a fundamental role in the preservation world peace and security. The founders of NAM preferred to declare it as a movement but not an organization to avoid bureaucratic implications of latter.

**Conclusion-** After the end of cold war the relevance of NAM has become a subject of big debate in international relations. NAM is no longer relevant because of the changing international environment from Bipolar to uni-polate. But, whatever the world is Bi-polar multi-polar or uni-polar, NAM as a foreign policy of the third world states will continue to remain valid. Still NAM countries to hold relevance to maintain world peace. It has played an active role to stand by its founding principles, ideas and purpose. It has played a role to maintain a bridge between the political and ideological differences to maintain peaceful world order. It is also known to provide the interest of developing countries for each member nation as a platform to raise issues and resolve the same through its principles. In the end, we may safely assume that the NAM as a concept can never be irrelevant mainly if provides a strong base to the foreign policy of its members, Since the end of the cold war, the NAM has redefined itself and reinvented its purposed in the current world system. No doubt it has experienced some slackness after 1989. Yet it remained fully committed to secure the rights and interests of the third world countries. It has the potential to act as a strong movement against international terrorism. Therefore, NAM must continue to live as the movement of the developing countries. It engaged in the pursuit of

international peace, security and development NAM reflects this policy that small countries not need to follow any big countries. They can pursue their own foreign and trade policy independently without any pressure. NAM was based on the principle of democratize the international system. It was also provided an alternative world order. These values and features of NAM make it relevant even today after so many years of end of cold war. Thus, just like the start of cold war provided the ground for NAM in the 20<sup>th</sup> century, the Covid-19 pandemic has provided an opportunity for India to lay the foundation of NAM-II in 21<sup>st</sup> century. The virtual NAM summit hosted by India is a step, in the right direction.

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## **English Drama and its Impact on Human Rights**

•Anupam Bhardwaj

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**Abstract-** *This research paper examines the universal concern of human rights. As the human rights are necessary for the all round development of an individual. In the two world- wars human rights were badly affected . The need and necessity of human rights was clearly expressed through the literary works. They (writers) propounded that the human rights must be pr without the distinction of gender, race, colour, religion and nationality. In the twentieth century, John Galsworthy and George Bernard Shaw gave the voice to the social problems in their dramas and tried to create an atmosphere to make the people think from the point of humanitarian approach not by the established canon of society. They left it on the audience or society to find out the solution and it did the work. The central discharged prisoners Aid society & the reformatory and refugee union were formed to help the ex- convicts. Though it is society where we get the opportunity to develop our talents and flourish our virtues and it is here we get the fundamental rights. But it has often seen that society turns into a monster and makes a minor mistake- maker into the worst criminal ending in jail forever or hanged. The research paper throws light how drama plays a crucial role in the enhancement of human rights.*

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**Keywords-** Human Rights, Development, Race, Colour, Religion

**Evaluation of Human Rights in the world-** The topic of 'human rights' is of universal concern that cuts across major ideological, political and cultural boundaries. The idea of the inalienable rights of the human beings was often articulated by poets, Dramatists, Fiction writers, Philosophers and politicians in antiquity.

After the world War I, with the rise of dictatorships, the question of fundamental human right and freedom began surfacing. In 1929, the Institute of International Law adopted a Declaration of International Rights of Man. The French and the United States Constitutions, were ordained not only for citizens but all men. Article I of the Declaration laid down:

It is the duty of every State to recognize the equal right of every individual of life, liberty and property, and to accord to all within its territory the full and entire protection of these rights without distinction as to nationality, sex, race, language or religion.

**Development of Drama –Problems of Social Human Rights**

**The Realistic and Intellectual Drama-** In the first two decades of the twentieth- century, the realistic and intellectual drama arose under the Leadership of John Galsworthy and George Bernard Shaw. Emphasis was given to human rights. Galsworthy dealt with one or the other social problem in his plays like The 'Silver Box' 'Justice' 'Strife' and 'Loyalties'. In the same

way, Shaw gave a realistic and intellectual treatment to such themes as War and Love in his plays like 'Arms and the Man', 'Candida' and 'Man and Superman'.

**Impact of English Drama-** Shylock in The 'Merchant of Venice' represents the Jewish race that used to trade in money-lending and is still engaged in the same trade all over the world. The Jews as such represent not only the money-lending class but also the capitalist class of today and yesterday.

In the nineteenth Century the dramatists realized sufferings of fellow-beings all round them due to various reasons. They found that they were not suffering due to the San Francisco Conference of the United Nations where the Charter of United Nations emerged. The brutality committed by the Nazis and Fascists during the Second World War made it imperative for a World Organization to proclaim and advocate the protection of human rights. Enactment of a charter of universal human rights became imperative. In its endeavour to do so, the U.N. Charter proclaims the sacrosanctity of human rights and fundamental freedoms.

A concrete step in this field was attempted by the adoption of two United Nations Covenants in the year 1966. They are the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights along with an optional protocol annexed to the former. But, very few states have signed and ratified these two covenants. On the other hand, the arrangements made under regional organizations are significant contributions to the international protection of a special mention may be made of European Convention and Human Rights.

No doubt, the charter of the United Nations, the general conventions, the United Nations covenants and other unanimously adopted conventions, have established a legislative framework for the protection of human rights throughout the world. But, it appears from the conduct of the member states that though no one has disputed its legislative character, they refuse to admit its obligatoriness.

**Background of Drama Period-** The Victorian Age had been a great age for England. But the future was less certain because the industries were not expanding quickly and other nations were challenging her supremacy. The Germans were the great inventors they coveted England's world trade. The French, on the other hand, creator of many of her colonies. The Japanese were bidding for the commerce of the Pacific and South America. The Americans were building cotton mills and ships of their own. Among less important nations, the Boers and the Irish, the Indians and the Chinese had all felt the touch of British imperialism. They also resented the Englishman's sense of superiority.

#### **Development of Drama – Problems of Social Human Rights:**

**The Poetic Drama-** The poetic drama or the verse drama arose as a reaction against the realistic, domestic and naturalistic drama of John Galsworthy and Bernard Shaw. The poetic dramatists of the twentieth century returned to blank verse and figurative prose of Marlowe and Shakespeare. The chief poetic dramatists of the period were : T.S. Eliot, W.H. Auden and Gordon Bottomley.

**The Absurd Dramas-** After the Second World War, a new kind of drama with certain novelities was witnessed in English theatre for the first time. The plays which made a debut in the Post-War British Theatre were *Waiting for Godot* by Samuel Beckett, *Look Back* mirrored the impotent anger, directionlessness and purposelessness of the British youths in the backdrop of the post-war grim social realities were surveyed by Martin Esslin in his book "The Theatre of the Absurd".

**Impact of English Drama-** Shylock in *The Merchant of Venice* represents the Jewish race that used to trade in money-lending and is still engaged in the same trade all over the world. The Jews as such represent not only the money-lending class but also the capitalist class of today and yesterday.

Shakespeare has mentioned witchcraft in some of his other plays to reflect the superstitions of the Elizabethan people, similarly he has painted the character of Shylock in the present play only to reflect the attitude of the common people against the whole race of money-lenders, not merely of the Christians against the Jews.

Encyclopedia Britannica gives the following notes on usury or money lending business : - It was only natural, considering the evils produced by usury in ancient Greece and Rome the dramatists should have tried to give an a priori explanation of these abuses.

John Galworthy's play *Justice* is a complete treatise and sad commentary on the problems associated with crime, punishment, justice and prisoners. The very purpose of it is to focus the attention of its readers and audiences on the social, legal, penal and moral problems and to pave the way for social reforms by way of influencing and forming the public opinion. The problem as exposed in the play is what the civilized society is to do with a young clerk who falsifies his employers' cheque and steals their money in order to run away with another man's wife and children alleged to be unhappy with him.

Once a person is caught in the vicious circle of law, he is not able to come out of it. The problems associated with crime, punishment and justice are those of ill-treatment of women, for divorce and rehabilitation. The ill-treatment of Ruth at the hands of her violent and drunken husband provokes Falder to commit a crime for which he has been convicted. Ruth and Falder can not live as wife and husband because she can not get a divorce from her husband unless the latter is guilty of adultery besides violence, She can neither go back to her husband for fear of being murdered by him on the charge of having relations with Falder nor can she live with Falder as his wife without getting a proper divorce. She has no choice but to fall upon her evil days and starve herself and her children or to surrender her modesty for her living. After the death of Falder, Ruth stands as though turned to stone She is badly intrigued. She does not know what to do and where to go. She looks all around like a lost dog. The problems which have been raised in the course of the story have been left unresolved. The dramatist does not offer any solution to them just because his purpose is to draw public attention just to express his grave concern about the weaknesses and shortcomings of the existing legal system and makes an appeal for ratification of injustice to the

former and the fallen dispensed in the name of justice. When justice was first staged in 1910, it impressed the mind of the masses and the legislators so strongly that some reforms in the prison administration were made immediately. The result was that some thoughtful and enthusiastic people formed **The Central Discharged Prisoners Aid Society** and The Reformatory and Refugee Union for providing the ex-convicts with food and work John Galworthy writes:

Justice made a great sensation especially in Parliamentary and official circles. Winston Churchill the new Home Secretary, and Ruggles Brisie, Head of the Prison Commission both witnessed it first with sympathy, the second with a sinking sensation Reinforcing previous efforts, the net result was that solitary confinement was reduced to three months for recidivists, and to one month only for intermediates and star class.

In the nineteenth Century the dramatists realized sufferings of fellow-beings all round him due to various reasons. They found that they were not suffering due to the villainy of some individuals. The culprit responsible for their sufferings was that inhuman and invisible force called society.

Society is an organization of individuals who deserve basic human rights but it acts with less understanding and less intelligence than the individuals composing it. Society has made laws for its protection. It punishes those who break these laws without considering the circumstances in which the individuals acted in the way.

A thief is made not born dire necessities often force a person to steal. Once he is caught he is subjected to such inhuman treatment that he feels impelled to take revenge for this cruel treatment. He steals again and murders people to escape from being caught and becomes a dacoit. Finally he passes a miserable life in prison or is hanged or commits suicide. It is society that drives people to commit crimes and then drives them to their destruction.

The individual is crushed under the mighty wheels of social force. Society as at present constituted is the greatest evil Dramatists therefore, wanted that the individual should be protected against this social monster and be given human rights. In the end, we can quote what more than 150 years ago Emmanuel Kant wrote that:

The intercourse more or less close which has been steadily increasing between the nations of the earth, has now extended so enormously that a violation of the right in one of the parts of the world is felt all over it.

This appears to be the hard reality that the impact of English Drama on Human Rights and the experience of the day and therefore, the international protection of human rights is not only desirable in itself but also goes to the very roots of the whole problem of law and order in international relations, which is not an exercise in idealism but the most urgently felt necessity of the time.

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## **Sundarban's Changing Land Use And Land Cover - A Case Study of Kultali Bloc**

•Jitendra Shukla  
••Kalyan Sardar

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**Abstract-** *The land is a fundamental resource for all living things, including humans, to emerge and flourish. The land satisfies a wide spectrum of human needs, from basic survival to the highest levels of economic development. More than seven billion people compete for food, water, fiber, and shelter in the modern world. Massive conversion of important and scarce land resources to agriculture, construction, development, forest, barren land, water bodies, and other land uses may quickly deplete these resources' ability to support a growing human population. Any human action results in certain changes, some of which are transient and exploitative, while others are long-term and durable. The limited land and soil resources have been put under strain by the expanding population and human activities. The rapid growth of the world's population in the twenty-first century has increased the demand for agricultural land and other resources. Selected block Kultali, South 24 Parganas, West Bengal, are filled with natural resources including forest resources, water resources, soil resources, and population resources. Despite people in this area facing different types of difficulties related to socio-economic environment like poverty, crime, gender inequality, and unemployment, lack of health facility and oppression of women. This study area is located about 120 km. away from Kolkata metropolitan, so it is not very unfortunate. There is extreme inequality of resources among the people in this area.*

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**Keywords-** Sundarbans, Land Use, Land Cover, Resources, Human Activities.

**Introduction-** Sundarban is not only India's but also the world's largest Mangrove Forest. The island of Sundarbans is formed by the sediment deposition of the Ganga and Brahmaputra Rivers. Sundarban in India covers about 4110 sq km area. It is the most important biodiversity region. It is a UNESCO World Heritage site inscribed in 1987 and it has been designated as a Ramsar site since 2019.

Kultali is one of the most important Blocks of Indian Sundarbans. It is a major geographical region where the upper part is occupied by human settlements. The entire region is covered by agricultural land, narrow rural and Marshy lands. The lower part is seen to be occupied mainly by estuaries and vegetation. In a few places in the region, agricultural land and human settlement are found. The rivers of the kultali block get affected by high and low tides. The length of these rivers is very large and the breadth is very wide. The main occupation of the people is mainly the primary economic activity

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and they are indulged in it. The level of education is very low and hence they participate in the primary activities. In comparison to this, people living in the upper part of the kultali block are engaged in different other activities such as service, bricks building, etc. Depending on this they live their livelihood. In the lower part of Sundarbans, people depend on activities like fishing, wood collection, honey collection, and crab collection to live their life. Besides this, they practice agriculture. In recent times, artificial berries are constructed to cultivate fish. These tendencies are increasing at a large rate. Kultali block of Sundarbans is mainly located in the active delta region so the change is not permanent. As the region falls mainly in the lower course of the river, deposition of sediment helps in the formation of lands and vegetation. But people are clearing the vegetation for their settlement and lands for agriculture have been set up. In some places, the river water shows its critical face where the settlement and land for agriculture are affected by the erosion of the river. The fallow lands are converted into agricultural lands and land for settlement by the people using different high technologies. The growth of technology and application has helped the growth of crops three times more than before. For example, the application of different pesticides, insecticides, and fertilizers. Other instruments which are used are power tillers, machines for irrigation for better cultivation, and methods for organic farming is also developed. Besides this, people at present are using multi-cropping in the lands for getting different crops at the same time.

As kultali is a salinity-prone region, (average salinity ranges between 7.5 to 8.5 Ph) the occupation of the people has changed from cultivation to fish production which is seen to be more profit bearing. So, people here tend to practice fish cultivation. With the development of technologies and their implication in agriculture and fishing people of kultali are seen to be raised economically in present times.

### **Objectives**

- i) To investigate the kultali block's land usage and land cover, as well as its evolving trend.
- ii) To see the evolution of agriculture.
- iii) To investigate how people's economic development has changed as a result of changes in land-use patterns.
- iv) To determine how the land is used and which areas will be profitable for the inhabitants of Kultali.
- v) To demonstrate the expansion of fish farming about agriculture in the salty water of the Sundarbans' kultali block.

**Methodologies and Database-** The research is primarily reliant on secondary and primary data collected from a range of sources. The 2011 census supplied population statistics, while the statistical handbook for the district gave a variety of data. Primary data was gathered through a home survey and people's impressions in this area. Following data collection, a variety of methods were utilized to analyze the data and prove the study's hypothesis, as outlined below.

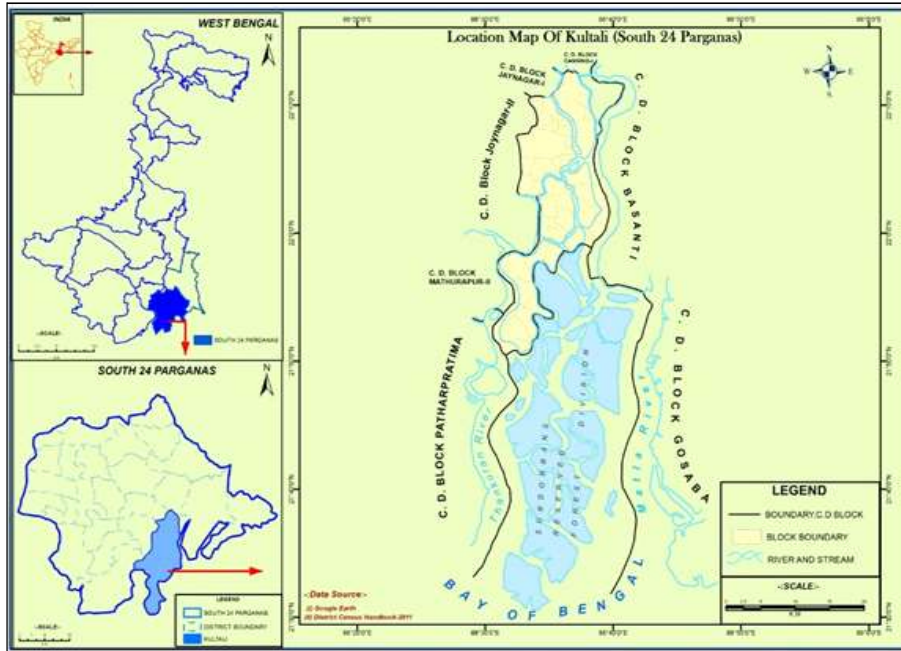


Figure :Location map

**Data collection-** To begin, satellite pictures of the kultali block will be needed to demonstrate changes in land use and land cover. So, from the USGS (United States Geological Survey) (<https://earthexplorer.usgs.gov>), two photos from 2001 and 2021 are downloaded. To portray weather data, climate data was gathered from [globalweatheronline.com](http://globalweatheronline.com). The "District handbook" contains a wealth of information about the kultali block. They're recognized since they exhibit changes in a specific location. Pictures from 2003 and current images were gathered using "google earth pro." Photographs of a given location are collected by going there. To obtain soil maps, I used a website called Digital Soil Maps of the World. The geological map was obtained from the USGS's world geological map. Information is also gathered through surveying the region (via questionnaires).

**StudyArea-** Kultali is that forms an administrative division in the Baruipur subdivision of the South 24 Parganas district in the Indian state of WestBengal. The Kultali CD block is located at  $22^{\circ}05'12''N$   $88^{\circ}35'37''E$ . It has an average elevation of 7 meters (23 ft). The Kultali CD block is bounded by the Jaynagar I and Canning I CD blocks in the north, the Basanti CD block in a part of the east, Sundarbans National Park in parts of the east and south, and the Jaynagar II CD block in the west. The Kultali CD block has an area of 306.18 km<sup>2</sup>. It has 1 panchayat samity, 9-gram panchayats, 120-gram sansads (village councils), 46 Mouzas, and 43 inhabited villages, as per the District Statistical Handbook, South Twenty-four Parganas. Kultali and Maipith Coastal police stations serve this block. The headquarters of this CD Block is at Jamtala.it belongs to a part of Indian Sunderbans. this area consists of approximately 30 big and small islands which are separate from many tidal creeks and rivers. Two important rivers are matla, bidyadhari

flowing from the two sides of the kultali block.

**An overview of agriculture in the study area-** The Tebhaga agitation in numerous portions of the 24 Parganas district led to the passage of the Bargadari Act between 1946 and 1950. Even though the Bargadari Act of 1950 recognized bargadars' rights to a bigger share of the crops grown on the land they tilled, it was never enforced. Large swaths of land, well over the permitted land cap, remained in the hands of the wealthy landowners. Beginning at Kheyadaha gram panchayat in Sonarpur CD Block in 1967, a peasant rebellion against the non-implementation of land reform legislation erupted in West Bengal. From 1977 onwards major land reforms took place in West Bengal under the Left Front government. Land over the land ceiling was acquired and distributed amongst the peasants. Subsequently, "Operation Barga" was aimed at securing tenancy rights for the peasants. In Kultali CD Block 5,859.51 acres of land was acquired and vested. Out of these 5,621.97 acres or 95.95% of the vested land was distributed. The total number of patta holders was 10,375. The Left Front administration in West Bengal implemented extensive land reforms starting in 1977. The peasants were given land over the land ceiling and distributed amongst themselves. Following it, "Operation Barga" was launched to secure peasant tenancy rights. A total of 5,859.51 acres of land was acquired and vested in the Kultali CD Block. 95.95 percent of the vested land was allocated from these 5,621.97 acres. There were 10,375 Patta holders in all.

Report on Human Development According to the Human Development Report for the South 24 Parganas district, the district is largely rural, with 85 percent of the people residing in rural regions. According to a census of the district's population, Scheduled Castes account for 33% of the population. Hindus account for 65.86 percent of the population, while Muslims account for 33.24 percent. The 29 CD Blocks housed 86 percent of the population. In 2005, moreover 4 lakh families were recognized as being poor, bringing the district's poverty rate to 34.11 percent, far higher than the state and national poverty rates.

In 2005, 46.86 percent of families in the Kultali CD Block were poor. In general, the Sundarbans region is impoverished, with households in the BPL category accounting for more than 30% of households in all 13 CD Blocks and more than 40% of households in 8 CD Blocks.<sup>2</sup>

Kultali was ranked 25th out of 29 blocks in terms of living standards. It ranked last among all CD Blocks in terms of infrastructure development. Electricity was available to only 0.15 percent of households in Kultali. Surfaced roads accounted for 0.41 km per square kilometer. The number of bank branches per 10,000 people was 0.21. Lack of irrigation is a serious issue in most of the CD Blocks in South 24 Parganas, but it is more acute in the Sundarbans, where there is little opportunity for employment outside of agriculture. In Kultali, 47.45% of rural households worked in daily/agricultural/other physical labor, 36.67 percent were cultivators, and 5.76 percent worked as weavers.

According to the 1991 census, male literacy was 58.93 percent, while female

literacy was 22.01 percent, resulting in a 36.92 percent gender disparity in Kultali. In 2006, there were 15 secondary and higher secondary schools in Kultali. All except one had access to a library, but only one had access to a computer (lack of electricity is a major constraint).

Kultali has a total of 191.561 kilometers of embankments. The length of these embankments' breaches ranged from 5 kilometers in 2003-04 to 23.4 kilometers in 2006-07. Raised embankments along rivers are vital for the safety of people and the protection of crops from daily tides and tidal surges. The embankment constructions are technologically deficient, and efficient accumulation drainage is required. According to the Human Development District Report, agriculture is a significant source of subsistence in the south Twenty-four Parganas district. The district has only 0.41 hectares of agriculture per farmer. Furthermore, the irrigation systems were not properly extended. Agriculture is still the mainstay of the economy. The saltwater soil in the area is not suited for farming, according to the District Census Handbook, while the non-salt fields are exceedingly productive. Rice is the most important food crop, whereas jute is the main income crop. The CD block has 91 repositories, 4 seed stores, and 38 fair-price businesses in 2013-2014. Kultali CD block produced 4.366 tonnes of Aman paddy in 2013-14, the major crop. According to the Human Development District Report, agriculture is a significant source of subsistence in the south Twenty-four Parganas district. The district has only 0.41 hectares of agriculture per farmer. Furthermore, the irrigation systems were not properly extended. Agriculture is still the mainstay of the economy. The saltwater soil in the area is not suited for farming, according to the District Census Handbook, while the non-salt fields are exceedingly productive. Rice is the most important food crop, whereas jute is the main income crop. The CD block has 91 repositories, 4 seed stores, and 38 fair-price businesses in 2013-2014. Kultali CD block produced 4.366 tonnes of Aman paddy in 2013-14, the major crop.

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As the Kultali block is situated in the active delta region and the rural area, its social, economic, and natural changes are continuously seen. The changes are more actively seen because of modernity.

**Land usage and land cover in 2001-** The number of rivers in the Kultali block is very much. In 2001, these rivers covered an area of 36.5% that is

111.6 sq km. High and low tides were seen. The sea waters enter into the rivers. So, the water is saline. The silt accumulated on the banks of the river and in the middle of the river bed help in the development of trees in saline waters. Saline trees are grown. These saline trees are named mangrove forests. The main rivers are matla and bidyadhari which flow beside the kultali block. Many small rivers are also present. They are piyali, thakuran, kankalmari, nimanियाetc.

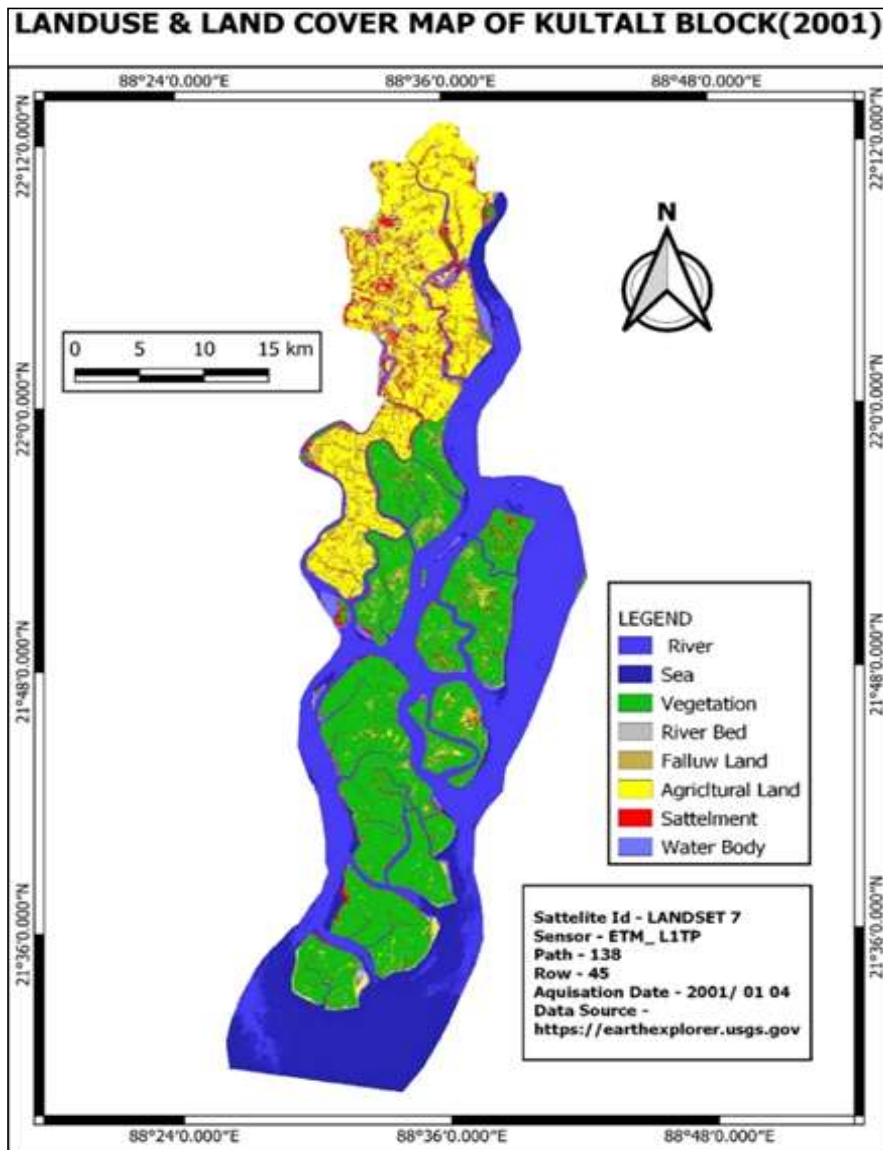


Figure 2: Land use and land cover map of Kultali block (2001)

These rivers join the Bay of Bengal. As these rivers contain salinity, only first cultivation is done. No other works are done on this river water. The Bay of Bengal is situated in the southern part of the kultai block. The parts of the land of kultali merge in the Bay of Bengal.

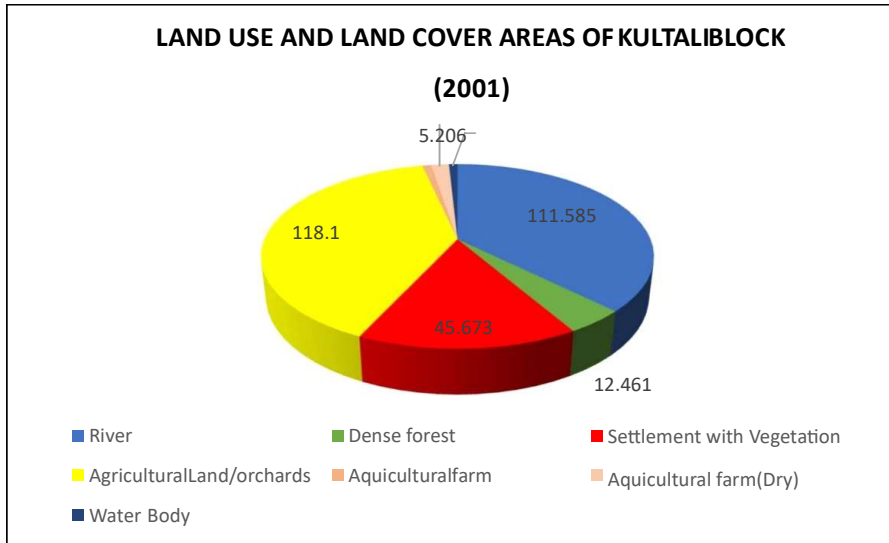


Figure :3 Land use and land cover area of kultali block (2001)

Kultali block is part of Sundarbans. The southern part is covered with vegetation of about 12.46 sqkm. which is 4%. The northern and middle parts of the region have a settlement with vegetation which is about 14.91% that is 45.67 sqkm. This region is mainly considered as the bio diversity region because the vegetation consists of a variety of trees and animals are found. Plants that are grown here are sudari, Goran, bani, Gaya, go data, etc. and animals that are found are tiger, crocodile, monkey, rhinoceros, etc. A large number of people of kultali block to as treasure of money.

The population in the region is very low due to the presence of the region in the lower deltaic region and the opportunities are also less here. So, the fallow lands are seen here.

Due to the lack of development in technology and modernity, the crop population is very low even though the agricultural land is 38.57% that is 118.1 sqkm. These lands were used for the cultivation of paddy every year. The amount of crop produced per hectare was 1.23 tonnes. As the people do not get enough opportunities the population of the region is very low. The houses are built with the woods of the trees from the forest and also of soils. The water bodies of kultali have been left as ideas the wet lands. The total wet lands are 0.815% that is 2.496 sqkm. Sometimes if the water from the wet lands was purified and used as drinking.

Land use and land cover in 2021- The rivers of kultali cover an area of 36.38% that is 111.38 sq km. The river water is saline and tides affect the water of the river. The population in the region is very low due to the presence of the region in the lower deltaic region and the opportunities are also less here. So, the fallow lands are seen here.

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The water bodies of kulturali have been left as ideas the wet lands. The total wet lands are 0.815% that is 2.496 sqkm. So metimes if the water from the sewet lands was purified and used as drinking water.

The southern part of the kulturali block has vegetation cover. The total vegetation cover is 15.38% that is 47.10 sq km. Human interference is destroying the vegetation in this region. Sundarban is declared as a national forest and reserve forest in the year 1984 on 4<sup>th</sup> May. The protection polity toconserve Sundarbans has started which has result edin the declination of human interference.

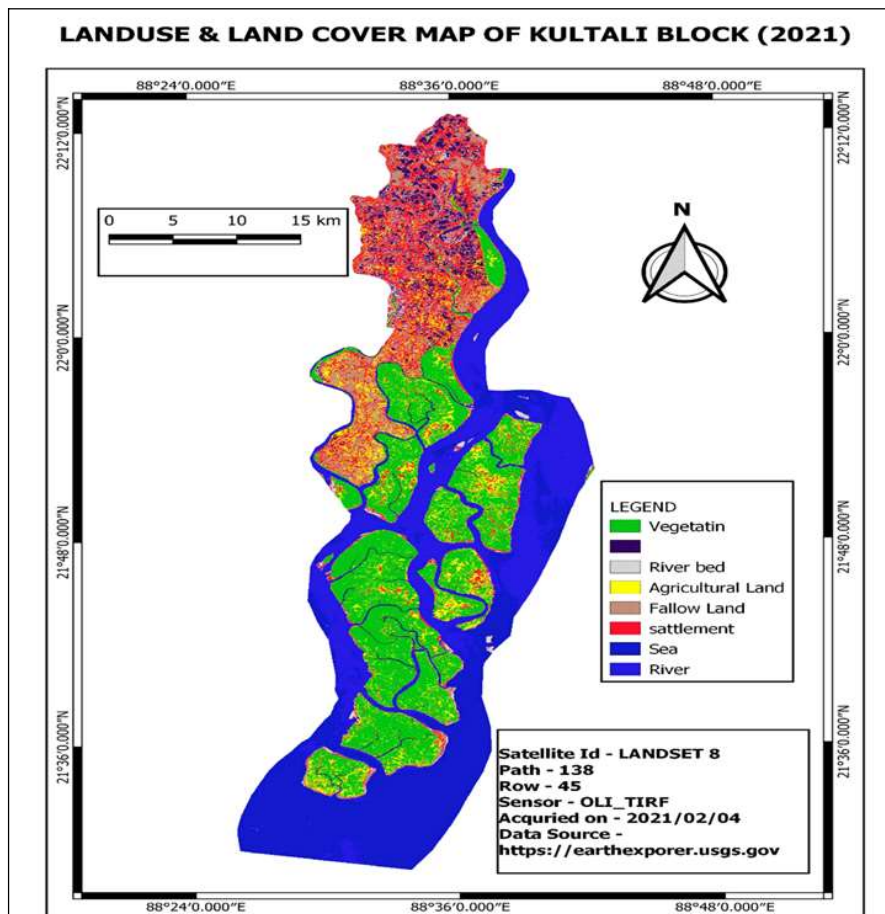


Figure 4: Land use and land cover areas of kulturali block (2021)

The islands are formed on the banks of the rivers or in the middle of the river due to the accumulation of silt. It is slowly be coming and changing into for estand human settlement. The total rivers bed is about 3.95% that is 12.148 sqkm.



At present, the agricultural lands of the kultai block have been reduced. The total agricultural land is 12.45% that is 38.119 sq km. But the production of crops has increased with the development in the field of agriculture. The crop is produced twice a year multi-cropping is also done here. At present the paddy cultivation per hectare one year is 5.378 tones. Besides these different kinds of vegetables and pulses are also grown.

Because of modern agricultural methods and government help, the people of the kultali block are considerably more economically self-sufficient. People are obtaining opportunities; thus, half of the residences are full. There are residences of one, two, and three stories. Currently, people live in modest huts constructed within the forest. Settlement is found in 8.66 percent of the area, which is 26.52 square kilometers.



Plate 1: River side water body and fish farming

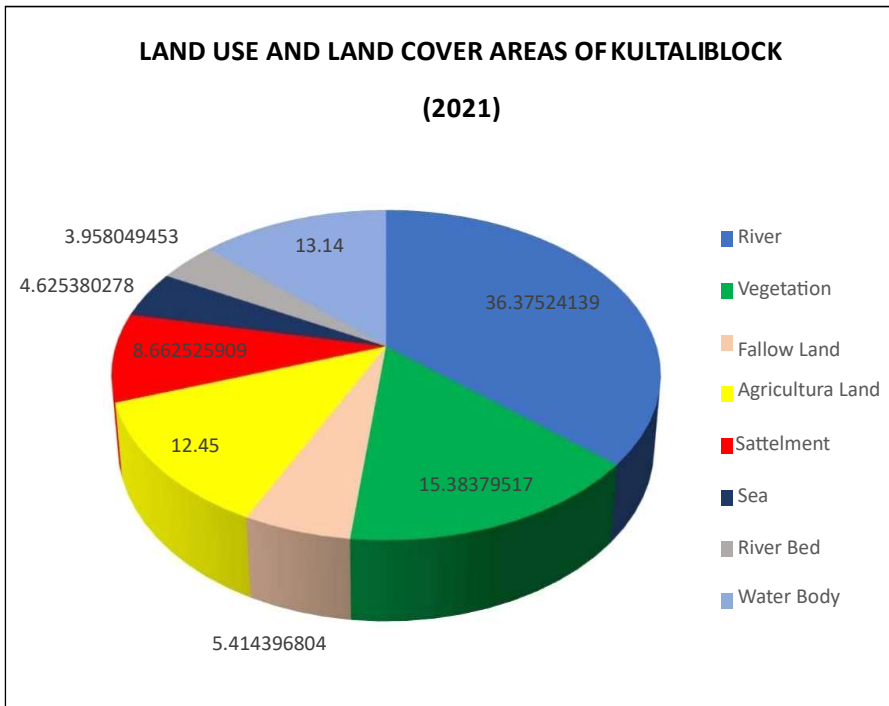


Figure :5 Land use and land cover map of Kultali (2021)  
People who cultivate fish have developed ponds and wetlands in the

kultali block's wetlands, which account for 13.14 percent of the total. On the one hand, it has made fish farming easier, while on the other hand, irrigation waters are used for agriculture and vegetable production throughout the winter months. Changes in land use and land cover in the kultali block:

**Agriculture:**

Agriculture was the main occupation of the people of the kultali block, and it was performed for a specified period. As a result, people have engaged in a variety of other activities. There were a lot of agricultural fields in 2001, however, crop output was not very good. Once a year, the land was cultivated. The crop yielded 1.23 tonnes per hectare per year. However, crop production grew thrice in 2021 compared to the previous year. Two times a year, the land is currently cultivated.



Plate -2: Bitter ground cultivation of kultali block

The overall annual yield is 5.37 tonnes per hectare. The development of new technology, as well as the usage of chemical fertilizers, insecticides, and pesticides, are the reasons behind this. To plant various sorts of vegetables, the edges of the ground are raised to a specified level. Two times a year, these are cultivated. The major crops grown are bitter ground, hinge, chilies, and legumes. Peas, as well as 20-25 other sorts of vegetables, are grown. Water is always present since the ground has been uplifted. As a result, humans raise fish as well. Three types of crops are grown at the same time and on the same piece of land. Agriculture and fishing are practiced in the area, while vegetables are grown on the adjacent elevated land. Agriculture here has now become business-oriented, in response to everyday needs.



Plate -3: Deforestation of kultali block

**Vegetation-** As it was in the history of the Sundarbans, the forest cover of kultali was very high. However, the forest has been depleted due to human development and agriculture. In 2001, the forest cover was 58.13 square kilometers, but it is now 47.11 square kilometers.

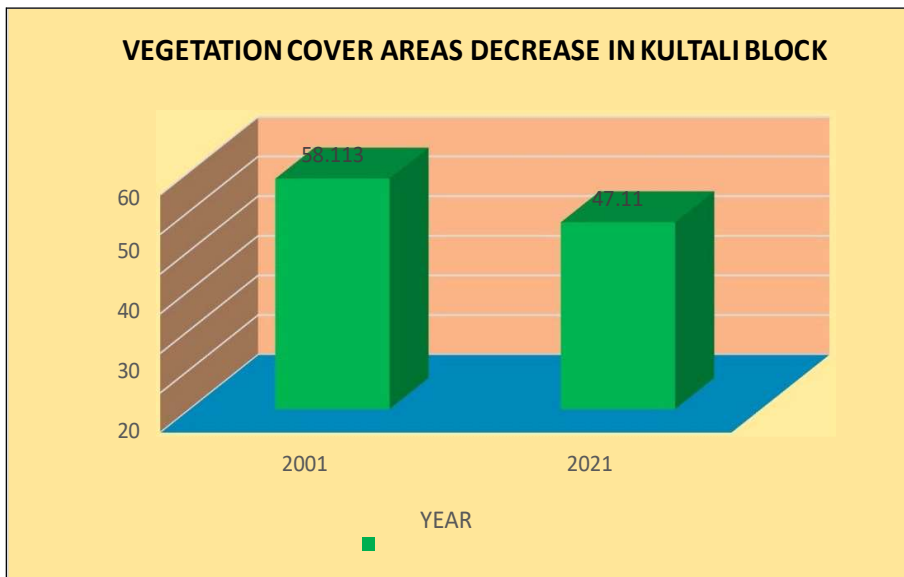


Figure 6: Decrease vegetation cover in kultali block, 2001 to 2021

The damage of the forest has been reduced as a result of government policies. River beds are produced as a result of ongoing sedimentation. To establish a community, the forest is cleared. Agriculture and fishing activities create wetlands. This is how the forest is deteriorating.

**Fishing cultivation-**

In recent years, fishery cultivation in the kultali block of the Sundarbans has proven to be the most profitable. The soil in kultali has salinity because it is located in a salinity region. As a result, the crops are growing at a slower pace. As a result, profit is likewise minimal. The floodwaters also reach agricultural fields, destroying the harvests grown that year. As a result, it is no longer able to raise crops on that particular land after 2-3 years of food. Fishing is best developed here due to the mixture of fresh and salt waters. The fish is likewise growing at a rapid rate. This angler is focused on the

market. Many fishers and presents are processed in industries before being packaged and sold on a national level. Vets, tops, parse, crab, bagda, prawn, and other fishes are cultivated in salt waters, while katla, rui, rupchanda, and other fishes are cultivated in a mixture of salt and freshwater.

### **Conversion of agricultural land to a water body:**

All the fallow land sare converted into agricultural land and fishing and people are making them suitable for cultivation. The profit is more in fishcultivationthanagricultureatpresent.In2001,thewetlandswere0.161%th atis 2.496 sq km. Mostly the lands remained there as fallow land. In 2021, the wetlands have increased to 13.14% that is 40.2 sq km. These wetlands are used for fish cultivation.



### **Human lifestyle:**

Changes in land use reflect changes in people's lifestyles. In 2001, the literacy rate was extremely low. Ninety percent of the population lived in poverty. They were occupied with fundamental tasks. People were going hungry due to a scarcity of food. Within a few days, all of the world's farmed crops will be gone. Because there were no power, hospital, or roads, people lived in starvation and suffering. Slowly, as agriculture has progressed, and with government assistance reads, electricity, flood-control systems have emerged. People have developed mental fortitude.

With the improvement in road connectivity, several varieties of vegetables and grown products are

marketed twice a year. People have become economically self-sufficient on the one hand, while job prospects have increased on the other. The people of Kultali are no longer hungry. Even people do not die if they are not treated properly. People do not need to migrate abroad to find work.

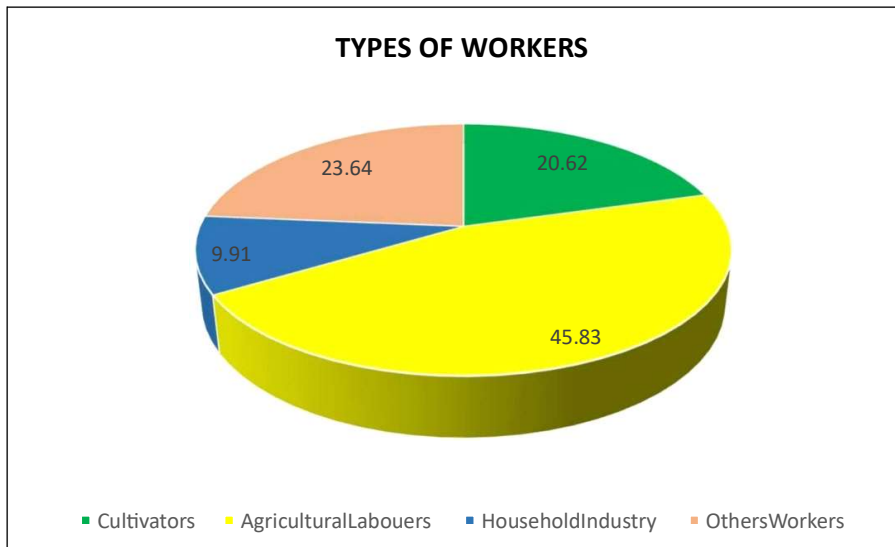


Figure: 6 Types of Workers

**Conclusion-** The land use and land cover of the kultali block have a considerable impact on kultali. Changes in land use and land cover have had a significant impact on people's lives. People have become economically self-sufficient. Because it is feasible to use up to 85-90 percent of the area, the Sundarbans have become a major site for producing flora, fish farming, and agriculture. These profitable businesses have benefited the region's population financially. The literacy rate is thought to be rapidly increasing as the people's economy grows. Because of the surge in literacy rates, social and cultural development is speeding up.

Kultali is a seaside region with a lot of saline soil. In this region, cyclones, storms, and heavy rainfall are prevalent, leading to floods and other natural disasters. As a consequence of various government policies, disaster management, and people's attempts to cope with the crises, these natural disasters have had less of an impact on people's lives.

To be more self-sufficient people have to

Need for introducing more stronger governmental policies.

- a) The region is very much prone to floods because it is located in the lower part and riverine area. For this local people and government should work together to make the banks of the river stronger and higher and the drainage system should be kept more active during this time.
- b) As the region is located in the coastal area, severe frequent cyclones are developed here. So, by the government policy or any other means everyone house needs to arranged as a pukka house.
- c) To prevent disaster Sundarbans plays an important role. So

conservation of Sundarbans is a must and needs to pay additional attention. Not only the government but the local people should have to take responsibility to conserve the vegetation of Sundarbans.

- d) Saline water entering the fields destroys the agricultural lands. So, agriculture does not help in the financial growth of the people. Here people have constructed and made the land elevated to cultivate other crops and vegetables and hence flooded waters can be prevented from entering theregion.
- e) The wetlands contain saline water. Fishes are grown in plenty in these wetlands. So, people are becoming financially strong from cultivating fish rather than agriculture.

The economic, social, cultural, and life of the people of kultali needs to be focused on keeping in mind the above-mentioned reasons which are necessary to look and focus.

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## ***Acquisition of Rural Land for Urban Use in Ranchi District: Issues and Conflicts***

• Shiv Kumar

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**Abstract-** *The study focuses on the acquisition of rural land for urban use in Ranchi and investigates the issues and conflicts related to the topic in Ranchi. The data given in this paper is based on secondary data from various books, journals, articles and news papers concerned with the topic. The present study has adopted some maps and few descriptions to highlight the topic. Few conflicts and issues of Land Acquisition in rural areas of Ranchi has been discussed briefly in this paper. The related issues dealt with are utilisation of land for new flyovers, residential areas and some old issues are like Land Acquisition during establishment of HEC and Airport. The paper also investigates some conflicts which in recent years are in burning news like the Nagri issue for the establishment of IIM Campus.*

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**Keywords-** Land acquisition, Ranchi, Compensation, HEC, Nagri

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**Introduction** A land use conflict occurs when there is disagreement or dispute as to the use of land and/or a feeling that a person's rights or well being or the rights of the environment are being threatened by an action or undertaking of another or the inaction of another. Two major land surveys were carried out in Ranchi district during the colonial period – the first in 1902-10 [Reid 2001(1912)] and a revisional survey in 1927-28 [Taylor 2001(1938)].

According to Parajuli (1996), *adivasi* (tribal) politics in Jharkhand has been 'synonymous with the politics of *jal* (water), *jangal* (forest) and *jamin* (land)' as *adivasi* communities have come into conflict with the state over access to these key natural resources and the uses to which they are put. The potential of community based resource management systems for promoting environmental protection and reducing conflict between stakeholders has received considerable attention since the mid-1980s (Fernandes and Kulkarni, 1983; Mehrotra and Kishore, 1990; Kant *et al.*, 1991).

Displacement affects the constitution right to settle in any part of the India (Singh, 2007). To most rural poor and agricultural communities, land is their sustenance but the project treats it as a commodity. One cannot escape the impression that often it keeps the price low in order to bring the project cost down. That impoverishes and marginalizes the land losers (Fernandes *et. al.*, 2012). In the last two decades however power of eminent domain have also been used for acquisition for private industry and real estate, which is driven, not by the 'noble cause of national development, but

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profit motive'(Saxena, 2012). This development has been responsible for displacement of millions of people from their land and all other sources of livelihood. Growing areas of spread of urban development into rural areas has created many conflicts over landuse (Edelman *et al.*, 1999).

As the specific circumstances that result in resource conflict are often strongly rooted in local history and social relations, as well as being connected to wider economic and power relations, political ecology's multiscale approach can be very helpful for generating different layers of analysis, starting from a very local level and working upwards to a more regional understanding of the problem (Blaikie and Brookfield, 1987; Peet and Watts, 1996).

In recent years, the potential of such 'traditional'community-based environmental management systems has attracted the attention of development policy-makers who recognise that sustainable resource management is closely linked to poverty alleviation (Fisher *et al.*, 1995; Kumar *et al.*, 2000; World Bank, 2000) and that 'the effectiveness of government as a resource manager is improved when it shares power with different user groups' (Kumar, 2004).

Urbanization is becoming a significant phenomenon in the country in the last two decades. This development means new realities and challenge (Bhinde, 2012). Ordinary people are being hit by what governments call necessary austerity measures. They are hitting back in every way they can (Narian, 2012).

**Objective-** To study the issues and conflicts related to acquisition of rural land for urban use in Ranchi.

**Study Area-** Ranchi is a district of the landlocked state of Jharkhand which is endowed with heterogeneous landscape, huge natural resources, dominance of aboriginal habitat and culture. Heterogeneity is observed in geological formation, physical appearance and pattern of development. Ranchi has a total area of 7689 sq km. Its elevation is 629m (2,064ft) above sea level. Its latitudinal extension is 23° 21'N -23° 35'N and longitudinal extension is 85° 20'E-85° 33'E.

Important rivers of this district are the Swarnrekha, South koel and Sankh. Ranchi has a humid subtropical climate. The district experiences pleasant climatic condition as the Tropic of Cancer passes over it. During summer (March to June), the maximum temperature observed is 37°C and minimum temperature is of 20°C. Winters (November to February) are cool having maximum temperature of 22 °C and a minimum of 2°C. The entire district has red soil except a little in portion in south-west where black soil is found. The area under forest cover of Ranchi districts is 159.14 hectares or the forest cover is 20.99%of the total area of the districts or 29.2%of the total area Jharkhand. It has a total population of 2912022 (Census, 2011).

**Material and Method-** The data given in the research paper is secondary data. The collection of data and the processing of data have been shown through the help of tables in order to get a clear and deep understanding.

The study shows the issues, conflicts and settlement approach. Further the research was done to find out the various significant issues and

conflicts related to land acquisition. Hence to carry out problems with more seriousness, the present study has adopted some maps and few descriptions. Various books, journals, articles and news papers concerned with the topic have also been referred.

Ranchi is an unplanned city. The core city is slowly expanding and urbanization is taking place. Some infrastructural developments are also taking place. Such as housing, residential colonies, schools, colleges, roads, universities etc. The related issues are the flyovers, residential areas; some old issues are land acquisition during establishment of HEC and Airport. Some conflicts which in recent years are in burning news is the Nagri issue for the establishment of IIM campus. These are some issues, conflicts which are highlighted in this research paper.

**Result and Discussion-** Development in Ranchi gained pace after 2000 when Jharkhand was separated from Bihar and Ranchi was made the capital of the Jharkhand state. Price and value of real estate, views of people and development activities hiked. Since then issues and conflicts of land acquisition in Ranchi was put to light.

Land Acquisition is the action of the government where it acquires land from its owners for certain public purpose and gives compensation to the landowners. Acquisition of land in Ranchi has been for various purposes as any other city such as for-

- Government Offices
- Health Sectors
- Education Sector
- Military Cantonments
- Residential Colonies
- Social Welfare
- Other Projects

**Table 01**  
**Various Land Acquisitions**

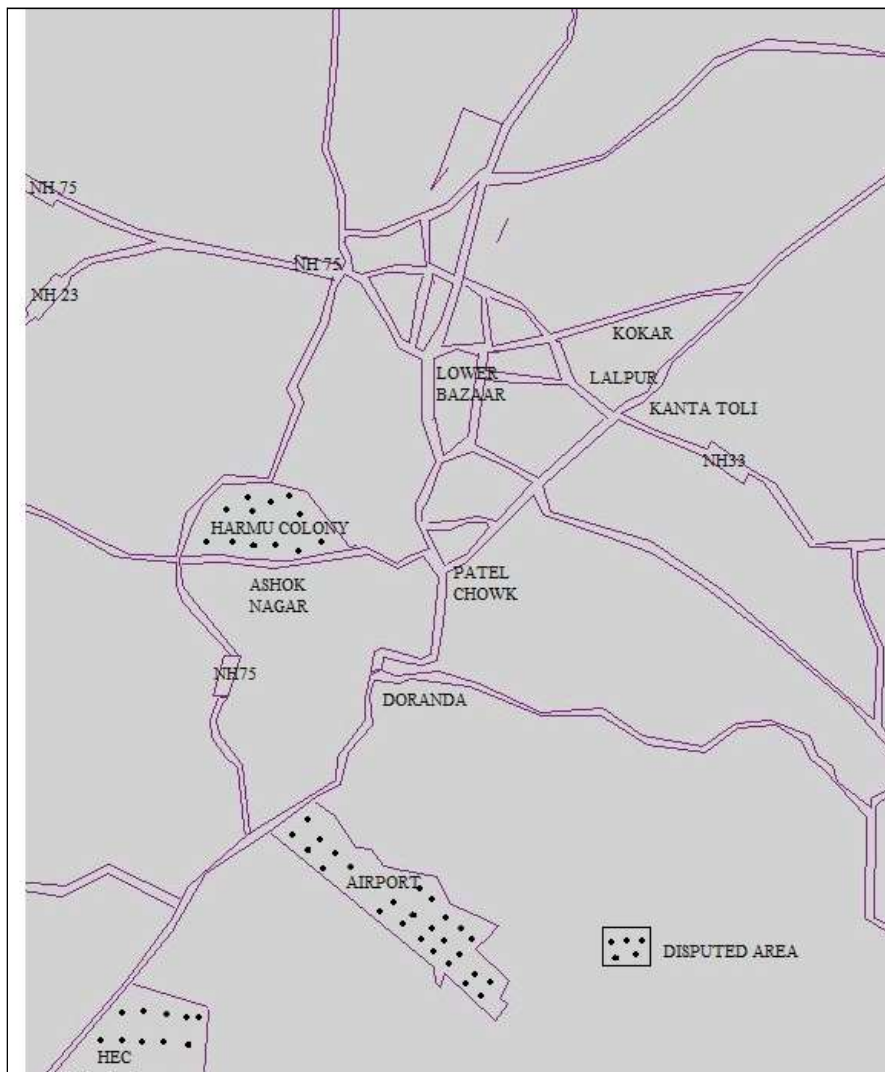
Location	Purpose of Land Acquisition	Land Acquired (in Acres)
Jagannathpur, Dhurwa	HEC Integrated Engineering Complex	9,200acres
Hinoo	Airport	1568acres
Nagri	IIM , IIIT, NUSRL Campuses	227.1acres
From Kanke to Pithoriya	Ring Road	12.6acres

**Source:** Newspaper and Articles.

**HEC Conflict-** HEC was established in the year 1958 as one of largest engineering complex in Dhurwa, Ranchi. HEC alienated 9,200 acres of land from the adivasi community and out this about 2000acre land had been lying idle which was to be returned to the original land owners, but was not done. Instead the government gave it for real estate housing purpose. This was not accepted by the people and the land owners and they started protesting against the acquisition of land. 12,990 families were displaced and out of 36 villages which were displaced 13 villages were completely destroyed while rest was partially shuffled. In the rehabilitation process women were completely left out. Not even a single woman was offered job.

Both the government and the HEC blamed each other and wanted to get rid of the case. All the promises of the government before acquiring the land were all crushed. There was a clash of jawans of CISF and the displaced people and around 20 people were injured. The people were protesting against the acquisition of disputed land of HEC at Murma village by the CISF jawans. Agitations grew more when CISF jawans started destroying the *sarana sthal* (a worship place of tribal's). Around 20 people were displaced people who were protesting for the 3000 acre land. Some men and women who were more than 60 yrs old were seriously injured, jawans hit them with the buts of the gun. The question here arises as to who should be blamed for this. No matter what at any cost it is the land owners and the common people who are affected and has to bears the loss and all the bad consequences.

**Fig 01**  
**Disputed Land Acquisitions in Ranchi**



**Airport Conflict-** The Airport Authority of India (AAI) now wants to expand the area of the Birsa Munda Airport at Hinoo. The authority wants to make it an international airport for which it is facing agitation from the landowners. Airport acquires an area of over 1568 acres of land. The Airport authority wants to extend the runway from 8,900ft to 15000ft. For which it requires 400 acre of land. For this AAI has approached the army for 180 acre of land and remaining land will be acquired from Hinoo, Hundru, Hetu, Hastanda, Kattetoli. Airport villagers clashed with the police over the issue for relief for the airport lands extension.

**Nagri Conflict-** Jharkhand Government acquired land in Nagri village which is 15kms from the main city Ranchi for the campus of Indian Institute of Management (IIM). 227 acres of land were allotted by the government for the establishment of educational institutions campuses which faced a lot of agitation by the people. Over 500 households in village opposed the land acquisition.

In 2010, the Jharkhand Government allotted 72 acres of land for building campuses of IIM, 91.24 acres of land for building Indian Institute of Information Technology (IIIT), and 63.76 acres of land allotted for National University of Study and Research in Law (NUSRL). The agitation grew so much that the government imposed Section 144 (IPC) thrice at Nagri since July, prohibiting farmers from gathering on the farmland.

**Ring Road Issue-** In the year 2008 Jharkhand Government had started acquiring land for the proposed Ring road (12.6 acres of land). The farmers protested against the acquisition of land. But when the lands were taken forcefully they approached the Jharkhand High Court for relief. However the court did not accept the claim but instead the Government ordered to pay the compensation of additional 15% interest and closed the case. One fact is that when the land was supposed to be acquired it costs was Rs 7 per decimal and today the present cost of the same land is worth rupees 1.5 lakhs. The government is willing to pay only 1.55 lakh for 227.71 acres of land and the actual cost of the land today is 341.5 crore.

**Settlement Approach-** Government has projects to widen the important roads of Ranchi where it has to displace people from along the road on both the sides. It has announced various compensation such as if a person's house, his personal property or land is acquired in the process of widening of the road he/she will be provided with different compensation for different property. As mentioned above lot of land has been acquired and people have been displaced in the process of construction of ring road.

People have been displaced earlier by the government, such as the illegal residents from the Naga Baba Khatal by the Municipal Corporation for the purpose of dumping the goods, for parking of the vehicles used in the Nagar Nigam and A-Z company for solid Waste Management in Ranchi near Kutchery.

**Other Acquisitions-** In Ranchi there are different areas where land acquisition has taken place, such as for residential purposes etc. Harmu housing colony is one of example acquisition of land residential purpose. Land has also been acquired for military cantonments in Namkum, Dhurwa

and Dipatoli etc. Health sector includes land acquired by the hospitals, health centers. Schools, Colleges and Universities also acquire large areas of land for the campus. The JSW steel has adopted innovative approach for land acquisition for steel project in Jharkhand. It has constituted village committees to facilitate land acquisition in six villages of Sonahatu block of Ranchi district. This project of JSW was delayed due to land acquisition issues. This project was further shifted to Saraikela-Kharsawan district. In Harmu near Sahjanand chowk, land has been acquired to build mall but due to the land acquisition issue the construction has not started and the area has been walled with tin asbestos.

Acquisition of land also leads to displacement. Houses and villages are destroyed at once no one is spared. No one is there to fight for their rights and no one even bothers to compensate for their land. Not even our government. There are laws and bills passed for land acquisition and displacement.

- Land Acquisition Act, 1894: The most successful tool for a district administration to obtain land for public purpose only.
- Chotanagpur Tenancy Act: Provision 46 and 49 of the CNT Act regulates the sale and purchase of a tribal land. Section 46 allows tribal to tribal land transfer but with permission of the Deputy Commissioner.

### **Suggestions**

- The government before displacing the people should first make certain provisions to acquaint the displaced people with houses and land in some other area.
- Fallow land should be acquired for different purposes instead of acquiring the agricultural land.
- If land has been acquired then the process of displacement and giving up of compensation should be handled with full care, seriousness and it should be made sure by the government that each and every victim of land acquisition have received the full compensation money and should keep a check on the middle man who often misleads the farmers and keeps them devoid of their actual rights.
- To deal with such crucial issues the government needs to be stable whereas we all know that Jharkhand has an unstable government and till date we are under the Presidents Rule.
- Ranchi city needs serious attention because it is growing and acquisition of land is taking place at faster rate. Proper master plans of the city should be made and implemented.

**Conclusion-** Thus it can be concluded that large areas have been acquired for different purpose in Ranchi. As seen in the above analysis the land owners who have been under the influence of land acquisition have not been given the compensation yet. All the promises fail after the land has been acquired. No one bothers to fight for the rights of the victims. So the land

owners have come forward to fight for their rights. All the bills and acts are not actually helping in protecting the agricultural lands of farmers because the farmers are not aware of these bills and act related to land acquisition.

The growing area and spread of urban development into rural areas has lead to or created such issues and conflicts over land use. Government should give proper heed to such issues because it affects the law and order and peace of an area. But the fact that urbanization is a part of development and thus cannot be stopped so there is a need of sustainable urbanization.

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## **Emergence and Expansion of Buddhism in Jammu Region: An Overview Through The Study of Archaeological Remains**

● Naheed Ahmed  
●● Yogambar Singh Farswan  
●●● Devideen Patel

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**Abstract-** *In the present paper, we have studied the significance of Buddhism in the Jammu region. The whole study is based on archaeological remains recovered during various excavations conducted by the Archaeological Survey of India (ASI) at Ambaran. The archaeological literary data revealed that in the Jammu region only a single Buddhist site i.e. Ambaran was identified among several sites excavated by ASI. While in the Kashmir region a large number of archaeological sites represented the Buddhist ruins. These are Parihaspora, Harwan, Ushkara, Malangpur, Pandrethan. Ambaran is one of the earliest centers of Buddhism shaping the religious profile of the Jammu region. The pieces of evidence from the excavation reveal it was a large Buddhist complex. Ambaran and its vicinity were inhabited Buddhist communities from the 2nd century, B.C.E. onwards. Several Archaeological remains were recovered from the site during the excavation including burnt brick structures of various phases, thin and contained grey ware sherds of bowls, a sherd of dark slipped product, a large number of terracotta human figurines; hands, legs, ears, torso parts, etc. Besides this lady figurine with breasts covered with cloth and nipples have shown with four dots, parts of bodies and drapery of Buddha or female devotees, decorative ornaments having floral and other designs, a fly whisk, a headless female deity, and one full and some fragmentary relief heads of devotees with open eyelids and elaborate hair dress and ornaments were visible. Hand-made Terracotta heads and many other human figurines are also found during the excavation. Recent archaeological excavations at Ambaran also revealed the presence of four votive Stupas. This indicates the large monastics complex with stupa existed near Akhnoor. One of the very important finds of the site during the same year is relic casket which is not found elsewhere in Jammu and Kashmir. So based on the archaeological remains we are presenting the results which tell us about the emergence and expansion of Buddhism in the Jammu region as well as the faith, beliefs, culture, and living tradition of these people.*

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**Keywords-** Buddhism, Ambaran, Archaeological remains, Excavation

**Introduction** Jammu and Kashmir played an important role in the expansion of Buddhism. It is gleaned from the archaeological ruins and literary references to hoisting the fourth Buddhist council in Kashmir. It is

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proved that Buddhism was the predominant religion during that period (Ganhars 1956). The archeological evidence of the Buddhist monuments in Jammu and Kashmir goes back to the 2<sup>nd</sup>-century B.C.E. The Buddhist archaeological site in Jammu is represented by the excavated settlement of Ambaran and in Kashmir, it is represented by scientific clearance and excavated settlements from Parihaspora, Harwan, Ushkara, Malangpur, Pandrethan, etc. sites (Mitra 1980).

Though many excavations were conducted by the Archaeological Survey of India in the Jammu region and Ambaran is the only Buddhist site among them. The Buddhist ruins in Kashmir are more in number as compared to Jammu, because Parihaspora, Harwan, Ushkara, Malangpur, Pandrethan sites were investigated and excavated by the archaeologists. The present study aims to provide a cursory glance at these excavated settlements and will also be informed about a comparative analysis of these sites, especially in the spectrum of architecture.

**The emergence and expansion of Buddhism in the Jammu region-** Ambaran was one of the earliest centers of Buddhism shaping the religious profile of the Jammu region. The shreds of evidence from the excavation revealed that it was a large Buddhist complex. Ambaran and its vicinity were inhabited Buddhist communities from the 2<sup>nd</sup> century, B.C.E. onwards. In Kashmir, it has been noted, became a principal seat of Buddhist learning from about the beginning of the second century BC and a large number of aspirants from the neighboring territories flocked to it for study and edification. Among those who visited the valley in the fourth-century mention has already been made of Asanga and Vasubandhu and Kumarajiva and Buddhahadra.

Kashmir was also renowned for learning and obtaining scholarships in China also. So whenever Buddhist monks and scholars from that country came to India, the land where the Buddha was born and lived, either for pilgrimage or in search of further enlightenment as to the doctrines of the faith they made it a point to visit the valley. Roughly speaking, Buddhism as a different faith ended up occurring in Kashmir from the near of the 15<sup>th</sup> century. Later on, we do not find mention of the construction of *vihara*, *chaitya*, etc., or Buddhists living in the valley (Ganhars 1956). The migration of a large number of non-Muslims as well as large-scale adaptation to Islam left, resulting in rare Hindus and fewer Buddhists living in Kashmir. Buddhist influence on the art and architecture of Kashmir has also been considerable (Kak 1971). This is seen as much in the painted scrolls and the sculpture and remains of the ancient buildings in the valley. The art of painting has long been practiced in Kashmir and in other places in the valley.

The valley of Kashmir was at the soul of naturally communal in this success; more predominantly because the Kashmir valley was a favorite place in the Kushana rulers who hated the temperature of Indian plains. The 4<sup>th</sup> Buddhist council was held at Kashmir in Kanishka's time. The Buddhist council held in Kashmir is an event of great implication in the history of Buddhism and besides Hiuen Tsang other authors have also written about it. Writers of Indian history are not decided about whether the great Buddhist

council was held in the time of Kanishka-I or in the time of one of his successors of the same name. It was in his time and because of this council that Kashmir became a great Centre of Buddhist learning. During that time also, the valley was visited by many eminent Buddhist savants and scholars some of whom made this paradisiacal land their abode for a long.

**Ambaran-** This Buddhist establishment has been excavated at Ambaran near Akhnoor on the right bank of Chenab, about 28 kilometers northeast of the Jammu. Ambaran is one of the earliest centers of Buddhism shaping the religious profile of the Jammu region. It is located on the steep gradient of the riverbank, the surface was leveled initially to erect constructions. The inhabitants anticipated the ravages of the flood, hence to negotiate it they constructed various structures along a slope, so that might mitigate the process of denudation. However, it seems that the surface runoff of rainwater from the north was more destructive hence they erected larger constructions (with more width) to check the instant flow of water during torrential rain/cloud bursts and to divert the water to the river. It exhibits the engineering skill of the inhabitants in selecting the site for the construction as well as negotiating with the slope pattern.

**Excavation-** The excavation at Ambaran was conducted by the Archaeological Survey of India (Srinagar Circle) under the supervision of B.R. Mani (IAR 1999-2000). Constructions of burnt brick of various phases were mostly recovered in broken condition, it might be due to constant floods of the Chenab river and unlawful continuous digging processes in the area during the earlier time. The longer axis of stones, taken during flash floods and resting at various altitudes at the site, points towards the path of the river which proposes declining of floods water after removal of stones at the site. The layers of sand, clay silt were observed at several altitudes in most of the trenches (Fig.1). The point that the site was constantly prone to heavy floods is moderately clear in the shapes of high flood levels. The site seems to have been abandoned sometime around the seventh century C.E. because of the floods.

The layout for the excavation (Fig.2) was spread over an area consisting of twenty-four quadrants of nine squares of 10x10 m each (IAR 1999-2000). The width of the cultural deposits varies as per the unusual contours of the site, In Trench number Sq ZA1, Qd4, it was noticed to be 2.90 m dense over the natural soil. The stain is cited as 2.40m above R.L.328.0 which means that the record (HFL) in the current past has been 330.40m above the sea level. It indicates that most of the restricted area of the site was flooded in river flood. It would have been a common phenomenon in ancient excavations.

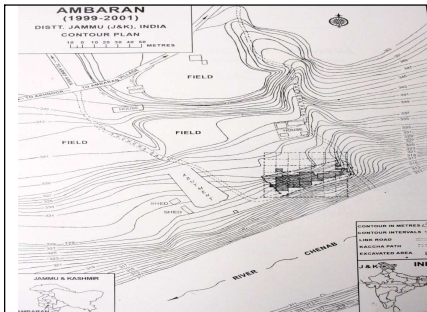
A preliminary study of the site revealed the culture sequence of the following periods (Fig.3):-

- (A) Period-I belong to the Pre-Kushan period from (C.2nd century –1st century B.C.E).
- (B) Period-II belong to the Kushan period from (C.1st century to 3rd century C.E).
- © Period-III belong to the Post Kushan, Gupta period (C.4th century-

5th century C.E).

- (D) Period-IV belong to the Post Gupta period (C.6th century- 7th century C.E).

From Period-I no construction remains were obtained.



**Figure-1. Ambaran a Contour Plan.**



**Figure-2. General View of Excavation at Ambaran (after Sonam 2012)**

The deposit was tinny and confined grey ware sherds of the bowls. A sherd of dark slipped product was additionally discovered other than a couple of such sherds from the surface. Buddhist monastic establishment seems to have been established at the site in period-II, which is revealed in Qd 4 (IAR 1999-2000). All other constructions of period-II are in burnt brick stonework with bricks frequently calculating 36 to 38x24x6 to 7cm (Sisodia 2010). Two constructions with the square plan were observed in Qd 3 and 4, sq. B2, with representative Kushana bricks besides natural ones are at regular interruptions (IAR 1973-74). Ruins of a brick-surfaced pathway were also noticed in front of these constructions. They are most undoubtedly based of votive stupas (Indian Archaeology 1973-74). Due to heavy floods in the stream, they were smashed as unmistakable from the deposits of silt and sand all over the place along with stones on the eastern cross-trench during heavy floods. Sq. C1 includes the trench of excavation started in (1973-74) and soon abandoned after, carried to light a large stage with tapering walls belonging to period Second with bricks collapsed vertically on edges on the top of it. Further excavations at the Ambaran may make it probable to understand the landscape of the construction which seems to be square base of a Stupa.

Two different structural phases of period third were seen, the first having constructions with bricks measure 27x22x7 cm in overall and the 2<sup>nd</sup> phase with bricks of earlier construction recycled, mostly in establishment the walls which most likely damaged due to flash floods in the river (IAR 1999-2000). Ruins of an entry of some significant complex were found in (sq. A2) where there was a focus of terracotta figures and their trashes which were all used for beautifying the wall, perhaps the façade of the entrance of the monastery (Indian Archaeology 1973-74). A stone inclined pathway important towards the north and bordered by the brick wall was also noticed. It seems that the entry was narrowed during the next stage by putting a wall at the southern end of the path parallel to it at the entry.

A large amount of terracotta human body parts like fingers, legs, hands, ears, torso parts that including these ladyfingers with breasts covered with cloth and nipples displayed with four points, parts of bodies and cloths of Buddha or female disciples, attractive ornaments having flowered and other designs, a headless female goddess and one complete and some fragmentary relief head of disciples with open eyelids and decorative hair dress and other ornaments were found (IAR 1973-74). Most of the figures belong to the natural life-size images while the others are possible of smaller images. Outlines of the figures recommend different postures planned for expressions. These terracottas were maybe used to enlarge the wall of the 1<sup>st</sup> phase of period third. These beside further remains of torso, ornaments, and cloth tolerate marks of reinforcement as they were stuck to the surface of the wall.

Extension lead of the walls of the construction of the period-III was found in squares (B1) and (B2). It was noticed that buildings of the 1<sup>st</sup> phase were set additional support and also renovated at different periods during the 2<sup>nd</sup> phase and even after that at these were ruined due to floods (IAR 1973-74). The wall adjoining the gate was outlined in the eastern route in (Qd3) of Sq. A2 & (Qd3) and 4 of (Sq. B2) and it was noticed that its pointed nature and projections were meant to save the construction from natural floods in the river (IAR 1973-74). A maximum number of 31 paths of bricks were set up in it in Qd4 of (Sq. B2) of which the lower 21 paths belong to phase 1<sup>st</sup> and the top ten paths to a later phase when the construction was repaired (IAR 1999-2000). The lower paths slightly planned after three paths each giving the Pointed nature to wall and contain of full bricks even though the top ten paths do not follow the same pattern and were the result of the repairs approved out in the 2<sup>nd</sup> phase or during the IVth period when bricks and flakes were applied to keep the height of the construction in a disorganized manner. A few decked bricks were also found reused for the maintenances of top paths (IAR 1973-74). A rectangular construction with its walls devising a width of (70cm) was uncovered in the direction west of the large construction of the second period. From the ground of the quadrilateral construction, portions of lime plaster were set up lying upside down, maybe the remains of collapsed structure ceiling which was coated with red carpets (IAR 1973-74). The north wall was established damaged due to illegal mining maybe by historic predators in the past. Extending beyond the levels of the 3<sup>rd</sup> period, activity of burning was also observed in the close-up layers at some points which are relatively distinct in the northern division of (Sq. C1) (IAR 1973-74). But it would be early to narrate it to the destruction and invasion by the Huns as no other indication is existing in this regard (IAR 1973-74).

The large compound, which is a monastery, partially lasted during the fourth period when alterations and additions were made in its unique construction, and repairs were also approved. Due to farming and careless diggings at the site, constructions of this era that were closer to the superficial suffered heavy losses. Partitions with only one and two paths of flakes could be established (IAR 1973-74). A four-sided construction which is most likely

a base of the brick pillar was grasped in (Qd4, Sq). A1 besides subsidiary walls and participations in constructions made during this era (IAR 1973-74). A large number of deposits of the era was observed in (Qd1 of Sq. A2) containing of four layers with a separate layer of brick debris of some construction. A Hun coin was found near the base of the pillar in this level (IAR 1973-74).

The tinny deposit of layer ten contains pottery of 1<sup>st</sup> period followed by an abundance deposit, as was evident in (Qd.4 of Sq. ZAI). From the 5<sup>th</sup> Layer to the 8<sup>th</sup> layer belongs to the second period followed by an abundance deposit in the 4<sup>th</sup> layer sealing the stone wall (IAR 1973-74). 2<sup>nd</sup> Layer and 3<sup>rd</sup> layer belong to the third period & 1<sup>st</sup> period to the fourth period. In a maximum of the trenches, a similar stratigraphy was detected depending upon the condition leading to the amount of deposition of flood and nonstructural debris. The Kushana constructions of the second period in (Sq. B2) and C1 were found sealed by the 3<sup>rd</sup> layer and some time by the 3<sup>rd</sup> layer depending upon their survival in the next eras (IAR 1973-74).

As already stated a few parts of grey ware bowls remained found from the 1<sup>st</sup> period. The rest of the ceramic manufacturing of the site is in redware, individually with and without slip (IAR 1973-74). The pottery of the 2<sup>nd</sup> period to the 4<sup>th</sup> period does not have many variations. A speculative view of the Stupa built on this evidence and data of Taxila models recommend that the Stupa has been nearly 9m high. A quadrilateral brick-paved stage was found connected with the Stupa on its eastern side over which certain lamps were found among pottery signifying the use of the stage for worship determination.

Stupas belonging to the Kushana periods and Saka-Parthian in Taxila with those at Kaplan, Dharmarajika, and Jandial monastic formations represent similar constructional patterns observable in their plan and elevation. Attractive moldings at the Stupa centers at A Site near the Taxila near the Gandhara and Ambaran are remarkably the same. An additional common characteristic between these stupas of Ambaran and the Stupa at Taxila is in their essential which is built of pebbles strictly compressed with pebbles or earthen set in mud (IAR 1973-74). A remarkable point to be mentioned for of in these Stupas of Taxila is that they enclosed a small box of gold and a small box of silver in it which enclosed some minute trashes of some beads and bone in the casket. The Kalwan example had in its relic compartment a casket of schist enclosed with twelve rosettes of thin gold sheet, gold-leaf different beads, fragments of bone, and other objects containing copper plate inscription of year 134 of Adzes inscribed in Kharoshthi (IAR 1973-74). Sir John Marshall said that in the 4<sup>th</sup> and 5<sup>th</sup> centuries, it was usual to build the relic compartment of large Stupas high up in their dome in its place of low down in their grounds and that is why the central Stupa at Bhamala belong to the 4th-5th century C.E. did not expose any relic compartment around its base or in its grounds.

Encouraged by the above Taxila mark, it was sure to become some artifact casket in the Stupa base at the site of the Ambaran. For this resolution a 1mt. balk running north to south was reserved and the one-meter

boakconsecutively between (pegs B3 and C3) was distant as the significant point of the four-sided base of a votive Stupa with its existing maximum fourteen paths of brickwork with convex and concave sided molded bricks also plain ones at regular intermissions. It was also observed that the constructions belong to the Kushana period. Additional excavation during the 2<sup>nd</sup> season brought to light the comprehensive plan of the construction which was found to be (6x6 m sq). The base of a Stupa is not a votive one as it later generated a relic casket with burned bones, suggestive of its beginning as a *Sarika* Stupa (Fig.4) (IAR 1973-74). The size includes a 0.30 m wide smock of Stupa all near over which was built the brick veneer of the four-sided base of the Stupa in such a way that it encloses the core of the Stupa including mud mixed with pebbles as in the case of various stupas of Taxila. The present maximum height of the Stupa is (1.10m) on its north and up to the height of (0.65 m) moldings were made completed which plan brickwork constant (IAR 1973-74). The brick layer of the stupa base is (0.60 m) in breadth (IAR 1973-74). The center has both small and average-sized stones. Adorned bricks having groups of dentil supports and other adorned bricks of the container and the *harmika* of the Stupa, a red sandstone yashti, and a few parts of the wedge-shaped thin bricks signifying their use in the *chhatravali* were established from the physical debris covering the Stupa ruins (IAR 1973-74).

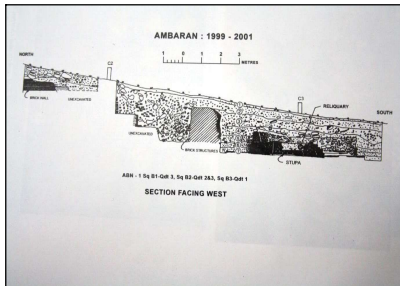


Figure-3. Ambaran section



Figure -4. Saririka Stupa (after Sonam 2012)

The center has both little and medium measured rocks. Brightened blocks having groups of dentil sections and other enriched the harmika of the Stupa and blocks of the drum, a red sandstone ashti and a couple of bits of the wedge-formed thin blocks proposing their utilization in the *chhatravali* were established from the basic trash overlying the Stupa ruins.

Recent archaeological excavations at Ambaran. Which has also revealed the presence of four votive Stupas. It indicates the large monastics complex with stupa existed near Akhnoor. This complex remains in occupation till the end of the 7th Century CE. Correlate with Taxila monasteries that decline in the 6th Century AD. The site is well-known for earlier harvests of the so so-called Akhnoor Buddhist terracotta heads which are well-preserved in a large number of Museums all over the world (Mani 2002). A close similarity of Akhnoor terracotta heads with the Gupta art of Madhyadesa and Gandhara art necessitated further inquiries as the problem had continued unresolved even afterward small scales excavations at the site

in 1973-1974 (IAR 1973-74).

One of the very important finds of the site during the same year is relic casket which is not found elsewhere in Jammu and Kashmir. The excavation carried to the light complete plan of the construction which was *Saririkastupa* (Fig. 5) which was veneered with bricks whereas the core comprised of small and medium-size pebbles. A red sandstone *Yashti*, *Chhatravalih* has been found (IAR 1973-74). A copper reliquary has been found with silver and gold caskets containing charred bone and fifty circular gold and silver sheets along with microbeads of pearl and another bear-like tabular and drum-shaped. In 1999-2001 excavation managed to unearth spokes stupa which is very much similar to Sanghol and Taxila (Marshall 1951).

The constructions at Ambaran are constructed by various materials i.e. burnt bricks and pebbles available from the cemented gravels of the river (Marshall 1951). Most of the foundation of the construction was laid with a row of pebbles surmounted by burnt bricks thereby providing breathing space at their base to withstand the pressure of mild seismic activity as the site is located in unstable zones primarily caused by the northward movement of Gondwana plate. In the case of the spoked wheel (Fig.5) also the spokes were made of burnt bricks whereas the intermediate spaces were filled with pebbles for a similar reason. The monastic establishment of Ambaran has been represented by many constructions including stupas, votive stupas, monastery, and other unidentified constructions made of pebbles and bricks. The liturgical organization was centered around two stupas viz, one with the reliquary drawing more veneration for enshrining sacred relics in the form of corporeal remains (bones), and two, the spoked stupa attracting visitors and laity due to elegant design and elevation (Marshall 1951). That it was a pilgrimage center is indicated by the fact that numerous diverse types of votive stupas were constructed in the vicinity of main stupas.

The ritual officiates were the monks residing in the monastery erected to the north of stupas. The shape of the *vihara* could not be ascertained with perfect delineation due to the non-availability of the complete plan but it indicates the semantic organization of the establishment as a compact unit. Veneration of the sacred relics and the dedication of votive stupas and monastery of resident monks provide enough possibility for this site being one of the most frequented Buddhist centers during its flourishing period. A model of conjectural *saririka* stupa is placed inside the site



Figure: 5. Spoked stupa, Ambaran (after Sonam 2012).

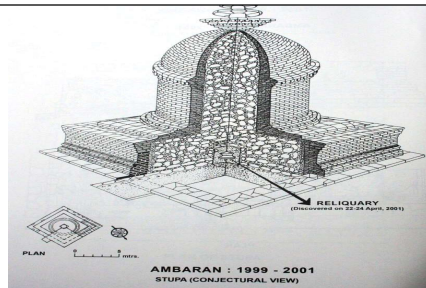


Figure: 6. Ambaran conjectural view of the stupa

museum of Ambaran.

**Discussion-** Located on the right bank of the Chenab River, Ambaran is the early center of Buddhism shaping the religious profile of the Jammu region. Located on the steep gradient of the river bank the surface was leveled initially to erect constructions. The inhabitants anticipated the ravages of the flood. Hence to negotiate it, they constructed various constructions having a sloppy base. So that might mitigate the process of denudation. However, it seems that the surface runoff of rainwater from the north was more destructive hence they erected larger constructions (with more width) to check the instant flow of water during torrential rain/cloud bursts and to divert the water to the river. It exhibits the engineering skill of the inhabitants in selecting the site for the construction. The constructions were constructed with various materials: burnt bricks and pebbles available from the cemented gravels of the river. In most of the constructions, the foundation was laid with a row of pebbles surmounted by burnt bricks thereby providing breathing space at their base to withstand the pressure of mild seismic activity as the site is located in unstable zones primarily caused by the northward movement of Gondwana plate. In the case of the spoked wheel also the spokes were made of burnt bricks whereas the intermediate space was filled with pebbles for a similar reason.

The local name of the Ambaranis Pambaran a village of tehsil Akhnoor, district Jammu is said to have been set up by a scion of Pawar dynasty Amba Jagdev Pawar of Dhar Ujjain and seem like to have been the new capital of Akhnoor. It was named after the family deity Amba, the new capital name was the Ambari one of the names of Goddess Durga. The name got changed slowly into Ambaran. Ambaran is the 8th place in all over the World, where relics of Buddha have been found in a stupa.

According to the various historians Ambaran might have been an important center of Buddhism between the first and seventh century B.C. during the excavation a four historical periods cultural sequence has already been identified at Ambaran. It is supposed to be the only early Buddhist site in the Jammu region. Excavations have discovered terracotta figures, pottery, small sculptures, and burnt brick constructions dating back to the pre-Kushan and the post-Gupta period. Buddhism has a royal support system. But we did not find any epigraphy evidence of the support system. The loss of the royal system is also the main reason behind the decline of the Buddhism in Jammu region. But the main points that how this religion live almost ten centuries so we can say they also support of patronage of the common devotees. Patronage provide by common devotees.

The monastic establishment of Ambaran has been represented by many constructions including stupas, votive stupas, monastery and other unidentified constructions made of pebbles and bricks. The liturgical organization was centered around two stupas viz, one with the reliquary drawing more veneration for enshrining sacred relics in the form of corporeal remains (bones), and two, the spoked stupa attracting visitors and laity due to elegant design and elevation. It is being a pilgrimage Centre is attested by the fact that numerous diverse types of votive stupas were



constructed in the vicinity of main stupas primarily representing a diverse group of people showing allegiance to the establishment. The ritual officiates were the monks residing in the monastery erected to the north of stupas, surviving partly due to the flood and human vandalism. The shape of the *vihara* could not be ascertained with perfect delineation due to the non-survival of the complete plan but it reflects the semantic organization of the establishment as a compact unit. Veneration of the sacred relics, the dedication of votive stupas, and the monastery of resident monks provide enough possibility for this site being one of the most frequented Buddhist centers during its flourishing period.

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## **Psychological Effects of Packaging**

• Deep Shikha Maurya

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**Abstract-** *Packaging is central of effective distribution, sales and use of products and services. Many manufacturing firms have come to the realization that one of their valuable assets is their packaging associated with products. It was found out that consumers are very much aware of the role of packaging. Customers and distributors consider packaging at the point of purchase. They are therefore motivated to buy more of product and services that have attractive packaging in terms of color and label and are of high quality. Quality packaging carries a positive image about a product, making it more appealing and desirable to consumers. Packaging is an effective tool in marketing their product. In designing packaging, the brand name, color and graphic should be able to communicate the attribute and benefits of the products to the consumer. In the middle Ages, wooden barrels became the most frequently used way of preserving goods. They were used for storing all kinds of solids and liquids, protecting them from light, heat, dampness. In the store, the packaging acts as a gateway to the product. Consumers look at the packaging and respond to how it makes them feel at that moment.*

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**Keywords-** Packaging, Consumer, Product, Distributor, Marketing

The packaging material depends on what type of product you are going to send to your customer or loved ones. It is very important that the package you are sending should be safe in your packaging material. Surely you would never want your gift of glass or good looking showpiece arrive to your receiver in bits and pieces. Small items can be packaged in envelopes but for bigger ones you need large size and more safe packaging materials. So that it would not get wrecked. Packaging is a process of covering wrapping of goods in to a package. Packaging is essential for offering goods in safe and secured position to consumers. Packaging's role is threefold-

1. To sell the product
2. To protect the product
3. To facilitate the product

Packaging is defined as a co-ordinated system of preparing food for transport, distribution, storage, retailing, and end use to satisfy the ultimate consumer with optimal cost.

**Packaging-** Packaging is the science, art and technology of enclosing or protecting products for distribution, storage, sale, and use. Packaging as we know it today is the result of a long development process. It is the product of

continues research aimed at finding better methods of packaging the various goods we use, including our food in order to ensure the best protection for them. The very first people to tread the earth, back in the depths of prehistory, sought to conserve the surplus food collected during their hunting, fishing and food gathering for the longest possible time so as to be well prepared for any future food shortage. They used leaves from trees, woven baskets and animal skins to store their food. Terracotta was used to make vessels to carry liquids. The remains of these earthen pots and leather pouches are today the treasure-troves of archaeologist and paleontologist. They teach them much about our ancient ancestor's lifestyle. But it is now clear that these early forms of packaging were very rudimentary and not hygienic with the result that daily life at that time revolved around the search for food. Most developing countries still suffer today from lack of packaging, a deficiency that results in the loss of some 50% of their resources.

In the middle Ages, wooden barrels became the most frequently used way of preserving goods. They were used for storing all kinds of solids and liquids, protecting them from light, heat, dampness. Their considerable robustness allowed them to be transported on the perilous roads of the age and to be carried by boat. It was during the industrial revolution in Europe that packaging really took off. The vast range of products made available to the consumer brought about a change in lifestyle, providing customers with greater choice allowing trade to flourish. The need for food packaging grew.

**Need and Desires**-Consumer buying behavior can be defined as a series of activities people engage in when searching, evaluating, selecting, purchasing, using and disposing of products and services so as to satisfy their needs and desire.

In the store, the packaging acts as a gateway to the product. Consumers look at the packaging and respond to how it makes them feel at that moment. If the consumer feels that the product can potentially satisfy their needs, it influences their buying behavior.

Decision making along path to purchase.

The classical conditioning theory suggests that product packaging directly influences a consumer's perception of the product and the influenced value perception of product is bound to affect consumer's buying decision.

Making a buying decision involves consumers to go through several cognitive and affective mental stages before they make a choice. When consumers recognize a need by themselves or upon provoking, they start to actively look around and consume information available across various channels. Based on what is presented to them during these stages, they form an attitude towards particular choices they begin to trust. After a choice is made, and consumer decides to make a purchase they continue to evaluate their decision while enjoying the product experience.

Perception building across the path. To ease the burden of making a

buying decision , consumers seek inputs from their reference groups family, friends colleagues, reviews on online forums, and several other means. Each of these inputs acts as a signal that affect their attitudes and perception towards the product. But filtering information to find the right signals is difficult and it is even harder to retain this information. There are evidences showing that consumers retain only the information that either appeals to them emotionally or one that strengthen their beliefs.

**An. explanation-**Consumers directly equate price with quality. They expect price with quality. They expect products with high price to offer a high quality experience over other. Through out the decision making process they look for cues to validate their own expectations.

If consumers spent time in validation and available cues indicate a superior quality, they often create emotionalities.

**Conclusion-**The rationale for exploring the psychology behind packaging design is to better understand how we as interaction designers can use digital tools to create value for modern consumers. This analysis leads us to very important conclusions:

1. Packaging is the gateway to product perceptions.
2. People are willing to engage, and digital tools can make it exciting.

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## ***Gender Biases in Buddhist Education***

• Chandni Saxena

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**Abstract-** *Ancient Indian Buddhist Education reflected the same anathema to women's education as was nursed by the contemporary Indian society. Buddha, the enlightened one, did not allow his own foster mother to enter the Buddhist Sangha and it was only after an animated debate with his disciple Ananda that she was allowed an entry into Buddhist life of renunciation and education. But the abhorrence for females continued long after the demise of Gautam. They were restricted by more than one way in their path of getting educated. Men were accorded a much higher degree of reverence and freedom. But despite these curbs and restrictions, Buddhist education can boast of several such women who have earned for themselves the same name and renown as the men of their times. The present study brings to fore the checks and fetters imposed upon women in Buddhist education and their triumphs against all odds.*

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**Keywords-** Buddhist Order or Sangha, Bhikkuni, Theri, Garudhamma , Arhantship

*"..... Woman has as much right to shape her own destiny as man has to shape his..... rules of social conduct must be framed by mutual co-operation and consultation. They can never be imposed from outside. Men have not realized this truth in its fullness in their behavior towards women. They have considered themselves to be lords and masters of women instead of considering them as their friends and co-workers."*

**-Mahatma Gandhi'**

Gandhiji was perhaps voicing the views which have been predominantly flowing in the psyche of both men and women ever since the inception of mankind. If man has done his best to restrain the opportunities for women to grow and develop, woman too seem have accepted her secondary status in the society. This psyche has ruled the roost and both the parties have accepted it as an unwritten law of nature. Such ideas have flowed from man to all his creative manifestations. When Buddha preached the world and organized his *Sangha*, such discriminatory ideas were not far from his mind. He knew that his *Bhikkus* could not help coming in contact with women in their begging rounds. He laid down the rules of correct behaviour of *Bhikkus* towards the women who gave them food. Yet women for him were only regarded as objects to be shunned by those who were serving the religion. He had given no place to them in his original scheme and philosophy of life. When Mahapajapti, Buddha's foster mother, approached her stepson with the request to be received into+ *Sangha*,

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Buddha refused. Still determined, Pajapati and five hundred other women followers shaved their hair, dressed themselves in patched monk's robes, and set out on foot to follow the traveling Buddha. Finally, when they caught up with him, they were exhausted. Ananda, Buddha's cousin and most devoted attendant, asked the reason behind Pajapati's tears and dirty swollen feet. When Pajapati told him the cause behind her plight, he promised to speak to Buddha on her behalf. He sat at Buddha's side and argued in favour of the ordination of woman. The Buddha continued to refuse the request. Finally, Ananda asked if there were any specific reasons why women could not realize enlightenment and enter '*Nirvana*' like men. They too '*are able to realize the fruit of self-attainment or the - fruit of once-returning or the fruit of non-returning or Arhantship*'. Soon, Ananda proved his point and Buddha relented. He admitted that women too could be enlightened. Thus he, with considerable reluctance and misgivings, consented to admit women into the *Sangha*. Pajapati and her 500 followers became the first Buddhist nuns. But he predicted that allowing women into the *Sangha* would cause his teachings to survive only half as long (500 years instead of a 1000)<sup>2</sup>. Thus Gautam Buddha admitted women as nuns five years after his enlightenment and five years after he first ordained men into the *Sangha*<sup>3</sup>. These nuns, before entering the *Sangha*, had to renounce the world and their householders' state. According to the canonical texts, before Buddha allowed Pajapati into the *Sangha*, she had to accept eight '*Garudhammas*' or grave rules, not required of men. They were the basic difference between a *bhikkhuni Vinaya* and a *bhikkhu Vinaya*. They were-

1. A *bhikkhuni* who has been fully ordained even for more than a century, must rise up from her seat, bow down, salute with hands palm-to-palm over her heart, and perform the duties of respect to a *bhikkhu* even if he has been fully ordained only a day. This rule must be honoured, respected, revered, venerated, never to be transgressed as long as she lives.
2. A *bhikkhuni* must not spend the rains in a residence where there is no *bhikkhu*.
3. Every half a month a *bhikkhuni* should request two things from the *Bhikkhu Sangha*. She should ask for the date of the *Upostha* day and come for an exhortation.
4. At the end of the rains-residence, a *Bhikkhuni* should invite criticism both from the *Bhikkhu Sangha* and the *Bhikkhuni Sangha* on any of the three grounds: what they have seen, what they have heard, and what they have suspected.
5. A *bhikkhuni* who has broken any of the vows of respect must undergo penance for half a month under both *Sanghas*.
6. Only after a probationer has been trained in six precepts for two years should she request ordination from both *Sanghas*.
7. A *bhikkhu* must not in any way be insulted or reviled by a *bhikkhuni*.
8. From this day forward, the admonition of a *bhikkhu* by a *bhikkhuni* is forbidden, but the admonition of a *bhikkhuni* by a *bhikkhu* is not forbidden. This rule too is to be honoured, respected, revered,

venerated, never to be transgressed as long as she lives.<sup>4</sup>

These *Garuddhammas* were not the only restrictions on Buddhist nuns. The Order of nuns could not complete any transaction unless it was confirmed by a Chapter of monks and unlike their male counterparts, solitary life was practically forbidden for them. Some nuns qualified themselves in the knowledge of sacred texts and were accepted as teachers of other junior nuns. The students followed their teacher for seven years, learning the *Vinaya*, but she being forgetful, lost it as fast as she received it. It was then ordained that *Bhikkus* should teach *Vinaya* to *Bhikkunis*.<sup>5</sup>

These were those restrictions which were based on the estimate of a woman's worth. The scholars of Buddhism have pointed out that there were many more rules for women than for men. In one version, there were about 250 rules for monks and 348 rules for nuns.<sup>6</sup> The question is why nuns lived in more restrictions than monks? The answer perhaps lay in the way the contemporary society treated nuns as opposed to monks. A monk with only a begging bowl in the jungle was an unlikely target for the muggers. But nuns, wherever they went, were subjected to much harassment. The verbal taunts about their nun hood, which the Indian society considered unnatural, sometimes escalated into physical assault. This was the reason why monks were expected to chaperone the nuns. Gradually, the *Vinaya* made a male presence mandatory at the nuns' religious ceremonies and the estimated worth of the nuns declined in Buddhist education. It slowly reinforced the prejudiced view that women were unable to make any kind of spiritual progress without the guidance of men.

Besides, *Vinaya* reflected the belief of ancient India, that because women existed mainly to please men and have babies, they were much more sex-driven than men. Due to this belief the compilers of the *Vinaya* felt that women needed many and more specific rules than men did. This was also the reason why women held no valuable or important place in the estimation of their male counterparts. A large part of *Theravada* text is devoted to the depiction of women as disgusting creatures too repulsive to be touched. They could be shunned or renounced at free will of their males. This is why monk Nanda, encouraged by his cousin Gautama Buddha, left his wife Janapada Kalyani the day he married her and became *bhikku* in Buddhist *Sangha*.<sup>7</sup>

These observations clearly indicate that women were not accorded a very high status in Buddhism or its system of education. Buddha himself said that it is impossible that women should be "the perfectly rightfully enlightened one", "The Universal Monarch," "The King of Gods", "The King of Death", or "Brahamaa"<sup>8</sup>. But she can definitely attain *Arhantship*. Yashodhara, the wife of Gautam and the mother of his son Rahul was said to have become an *Arhant* after she became a *Bhikkuni* and joined the Order of Buddhist nuns.<sup>9</sup> The *Mahayana Sutras* say that woman can become enlightened but not in a female form. *Bodhisatvabhumi*, dated 4<sup>th</sup> century, states that a woman about to attain enlightenment will be reborn in the male form. This underlines the insufficiency of a female body as the locus of enlightenment.<sup>10</sup>

According to the researches by female scholars of early Buddhism, there were large numbers of nuns during the first few centuries after Buddha's death. However, due to growing hostility of secular society and monks, nunneries were slowly phased out and eliminated. For almost two thousand years in India, where Buddhism was born and in Srilanka, where it first spread, there were no ordained women. Only in recent times there has been a reappearance of Buddhist nuns inspired by their counterparts in other countries.<sup>11</sup>

But despite such discriminations, women in Buddhism earned name and fame for themselves and took prominent part in the work of early Buddhist reformation of Church. In a commentary called *Manorathpurnani* of Buddhghosha in *Anguttara Nikaya*, there is a list of such ladies whom Buddha considered as his chief disciples. Among them, several entered the Order and came to be known as 'Theris'. Thirteen of such 'Theris' have especially been mentioned by Buddha for their merit. Of them, the most distinguished was Dhammadina. She took to religious life and in due courses of time became fit to become a teacher of the Doctrine.<sup>12</sup>

Then there is another commentary by Dharmapala on *Theri-gatha* which was a collection of the verses of women who joined Buddha's Order during his life time. Among those who were said to have attained salvation, 32 'Theris' were unmarried and 18 were married. Among the former, Subha, Anopoma and Sumedha belonged to very rich families, but renounced it to join ascetic life.<sup>13</sup>

Mahapajapati, the foster-mother of Buddha entered the Order with 500 other Shakya ladies and constituted with them the Order of nuns which was hardly inferior to that of monks in piety and scholarly pursuits. In this Order were the ladies who represented different classes and ranks of society. Some such members were Soma, daughter of king Bimbisar's chaplain, Anuptuna, daughter of wealthy parents with no want of suitors to court her, wives of poor straw-plaiter and basket-maker, Queen Khema, Chapa, Sujata, wife of a wealthy citizen, etc. All these women renounced their happy conditions of life and joined the Order. It also contained such women who became its member after the death of someone very close. Among them, the most distinguished was Kisa Gotami who, on the loss of her son, became the disciple of Buddha and subsequently achieved such progress in virtue and philosophical learning that Buddha appointed her the superintendent of the of the convent at Jetavana. The beautiful Sundari also joined the Order on the death of her brother.<sup>14</sup>

These 'Theris' achieved advancement not only in spiritual and scholarly pursuits, but participated in social service and missionary works for their faith. The most renowned of such women leaders was Patachara, who, herself a bereaved mother, gave solace to others in similar conditions.

Then, there were other women who were mentioned as successful speakers and preachers. Thus, there was Sukka who, when spoke, attracted people from outside the city. They would not tire of listening to her.<sup>15</sup>

All these women earned renown for themselves despite restrictions imposed upon them in the Order. If they could achieve so high, despite the



prevalence of such grave gender discriminations, what would they have earned without them. Naturally, the general average of intelligence and education among them must have been fairly high. Also, due credit must be given to Buddhism that despite its inferior attitude towards women, it, unlike other sects of the contemporary times, gave them enough space and opportunities to grow and educate themselves. According to C.A. Foley. "..... *Buddhist convents opened out to women opportunities for education and self-culture and varied spheres of social service in which they made themselves the equals of men, supplementing their work in the spread of their faith.*"<sup>16</sup>

Today female scholars of Buddhism are repeatedly voicing their concern over the prevalent inequality in their religion. Even Dalai Lama, during a 2005 conference of Tibetan Buddhist centers has said on the issue-

*"This is the 21<sup>st</sup> century. Everywhere we are talking about equality. Basically Buddhism needs equality....."*<sup>17</sup>

The study can be concluded with more words of His Holiness the fourteenth Dalai Lama-

*"Warfare has traditionally been carried out primarily by men, since they seem better physically equipped for aggressive behaviour. Women -on the other hand, tend to be more caring and more sensitive to other's discomfort and pain. Although men and women have the same potentials for aggression and warm-heartedness, they differ in which of the two more easily manifests. Thus if the majority of world leaders were women, perhaps there would be less danger of war and more cooperation on the basis of global concern--although, of course, some women can be difficult! I sympathize with feminists, but they must not merely shout. They must exert efforts to make positive contributions to the society."*<sup>18</sup>

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## **Influence of Yogic Practices on Self-Esteem Among Female School Going Adolescents**

• Nibu R Krishna

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**Abstract-** *The purpose of the present study was to determine the influence of yogic practices on self-esteem among female school going adolescents. Hundred (100) female school going adolescents were randomly selected as subjects in the age group of 12-16 years from Carmel Convent Senior Secondary School of Gwalior, India. The subjects were divided into one experimental group (50) and one control group (50 subjects) using random method. The duration of practice time was 4 weeks, 30 minutes a day in the morning hours the pre data was collected from the selected subjects before giving yogic training and after the 4 weeks training post data was collected. The data was collected by using the self-esteem questionnaire by Rosenberg. The collected data was analyzed by computing descriptive statistics followed by paired sample 't' test. Results indicated that there was a significant effect of four weeks yogic training on global self-esteem in female school going adolescents. The level of the significance was set at 0.05 level.*

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**Keywords-** Yoga, Self-esteem

**Introduction-** Yoga is a systematic and methodical process to control and develop the mind and body to attain good health, balance of mind and self-realization. Though yoga has the potential power to make us healthy and add to our vigour, still most people lack the knowledge of systematic practice of Yoga. They perform yogic exercises for a short period and when their health improves, they discontinue the yoga practice. For this reason, the effective results of yogic practices cannot be determined perfectly. Many scientists, doctors, psychologists etc., all over the world are extensively studying the beneficial aspects of yoga which encourages us to attain positive health through yoga.

In the present society, yoga is considered an important medical technique for developing the physical and mental functioning of an individual, especially of students with disabilities. It is one of the most important, effective, and valuable tools available for the students with disabilities to overcome their various physical and psychological problems such as anxiety, emotional instability, frustration, poor mental health, and so on. Yoga refers to the system of practices that help to control the mind, body, and soul. It is a holistic path that leads to a sense of peace and well-being. Through different poses (asanas), breathing technique (pranayama), and meditation (dhyana), yoga makes the practitioner aware of his inner self. It

includes cultivation of correct attitudes and reconditioning of the neuromuscular systems.

Self-esteem is an overall evaluation of the person's value, expressed in a positive or negative orientation towards himself. Its development starts from birth and is constantly changing under the influence of experience. Especially important is the role of self-esteem in the process of adolescence.

Yoga had been reported to have shown the beneficial effects on different psycho-physiological variables. Yoga improved the self-esteem level in pre-adolescent school children so same should be employed as part of school curriculum (Bhardwaj, A. K., & Agrawal, G. (2013).

**Objective Of The Study-** The purpose of the present study was to find out the influence of yogic practices on self-esteem among female school going adolescents. Total 100 school going female students (50 experimental group and 50 control group) were selected randomly as subjects in the age group of 15-20 years from Carmel Convent Senior Secondary School of Gwalior, India. Pre data was collected before the training from the selected subjects and post data was collected after giving training. Paired sample 't' test was employed to find the effect of yogic practices on global self-esteem. The level of the significance was set at 0.05 level. Tool used for the collecting the data was self-esteem questionnaire by Rosenberg.

**Training Protocol-** The training program was executed only for experimental group for 4 weeks, five days in a week, 30 minutes a day in the morning hours and control group were did not participate in the training programme, but they perform their daily schedule. Experimental group practiced Asana (Surya Namaskar, Sarvangasana, Matsyasana, Halasana, Bhujangasana, Shalbhassana, Dhanurasana, Chakrasana, Ardha Matsyendrasana, Paschimottanasana, Vajrasana, Yogamudra, Standing kati chakrasana, Tadasana and Shavasana), Pranayamas (Anulom-Vilom and Bhastrika pranayama) and Om Chanting.

**Results And Discussion-** To assess the effect of 4 weeks yogic practices (Asana, Pranayama and Om chanting) on global self-esteem, the mean, standard deviation and 't' ratio was computed by using SPSS-21 version and result pertaining to has been presented in below tables.

**Table 01**  
**Descriptive Statistics of Global Self-Esteem (Experimental group)**

\*Significant at 0.05 level

Variable	Subject	N	Mean	SD		Sig. (two Tailed)
Experimental Group	Pre Test	50	23.3673	2.55517	-2.139	.038
	Post Test	50	24.1020	2.58396		

Table-01 indicates that mean, standard deviation of pre-test of Self-Esteem, of experimental group, which were found to be 23.3673 and 2.55517 and post-test value were found to be 24.1020 and 2.58396. the value of paired sample 't' ratio of Self-Esteem, which were shows that there was significant difference with pre-test and post-test value of GSE. The

calculated value of 't' was found to be -2.139 at 0.05 level of significance.

**Table 02**  
**Descriptive Statistics of Self-Esteem (Control group)**

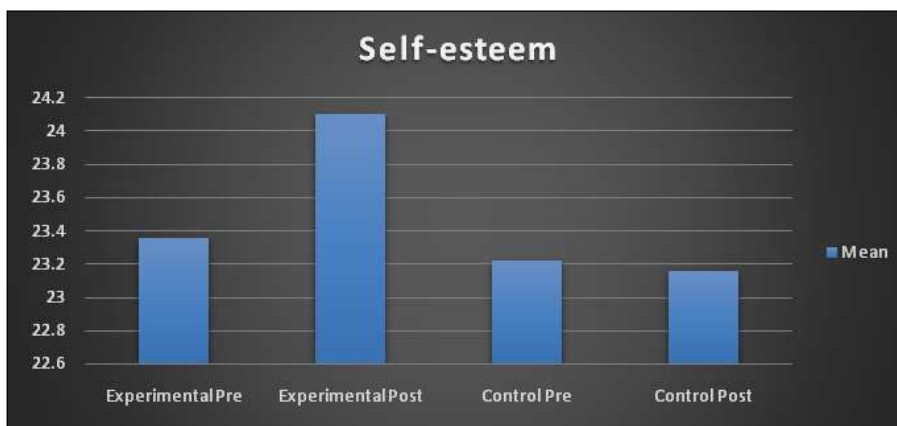
Variable	Subject	N	Mean	SD	't'	Sig. (two Tailed)
Control Group	Pre Test	50	23.2200	2.08287	.477	.636
	Post Test	50	23.1600	2.17931		

\*Significant at 0.05 level

Table 02 the mean, standard deviation of pre-test of GSE of control group, which were found to be 23.2200 and 2.08287 and post-test value were found to be 23.1600 and 2.17931, the value of paired sample 't' ratio of GSE, there is no significance difference found with pre-test and post-test value of GSE. The calculated value of 't' was found to be 0.477 at 0.05 level of significance. The graphical representation of descriptive analysis of pre and post data of global self-esteem for both experimental and control groups has been shown in figure no. 01.

**Figure 01**

**Graphical representation of descriptive analysis of pre and post data of self esteem for both experimental and control groups**



**Discussion And Findings-** This study has been conducted with the purpose to find the effect of four weeks yogic practices on global self-esteem among male school going adolescent. From the study we found that there was a significant effect on GSE in experimental group. The improve GSE in adolescent asana, pranayama and Om chanting can be applied. Abhishek K. Bhardwaj at al. 2013, the present study aimed to assess the effect of yoga on the level of self-esteem on pre-adolescent school going children. For that study, forty four students ages ranged between 10 to 12 years were selected. One month yogic training was given to experimental group and found a significant effect of one month yogic training on self-esteem.

**Conclusion-** The result of the present study reveals significant increase in Self-esteem due to the experimental treatment in experimental group when

compared to the control group.

Self-esteem is directly or indirectly related to self-confidence or is yogic language- spiritual development. Yoga is the only science through which an individual can do the spiritual development or in other alternative words- global self-esteem.

However this research has brought new insight into the potential positive role of yoga on global self-esteem in female school going adolescents.

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## **Significance of Meditative Postures in The Present Era**

• Lokendra Pal Singh Chauhan

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**Abstract-** *In present scenario, the world over people are running behind success in one form or the another, even at the cost of their life, even at the cost of happiness of their family, hardly bothering how their success ruining their children life, their destination in life. The question that springs up before us is why such thing is happening? But we are unable to get to the answer of this question because our own conscience is suppressed my dominating desires which are impelling us to achieve what they deem fit to distract us from the real aim of human life. Human life as sages had been proclaiming before every disciple from many decades is to achieve 'moksha' but we are swayed by the existence of illusion(Maya) in this world and forget our true aim of life. As the scriptures said and as the listeners from word of mouth, human being is in the womb of mother keeps on chanting the name of Lord Narayan and even promises to do the same, the moment it would get birth on the earth, but unfortunately, the Maya covers the conscience in such a manner that hardly the human being gets time to uncover the conscience and go ahead with the achievement of moksh. One needs true spiritually uplifted group, who can guide him to his true aim but one hardly gets Such Guru, who can take him out of that quagmire of illusion. Some people would like to get out, but they are unable to understand its process to come out of it and in the present scenario, finding a true spiritually uplifted Guru is like a mirage and in such a case only through the meditative postures one can attain upliftment of their own where continuous practice and asking questions to himself about their existence can lead them to achieve their true aim of life. Some of the meditative postures which are going to be discussed below if done with full zeal and enthusiasm, one would definitely achieve moksh- the true aim of life and would help you to live disease free life.*

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**Keywords-** Moksha, Maya, Happiness

**Introduction-** Asana means holding the body in a precise posture to bring steadiness to the body and poise to the mind; brings cleanliness in tubular channels, steadfastness and vitality to the body and the mind. Yogasanas are simple actions for keeping the internal and external parts of the body in decent health. Nothing can be accomplished well so long as the internal and external parts of the body are not in good health; if body and the mind are not meticulously related. The people of ancient Greece believed in the principle, "A sound mind in a sound body". By practising asanas, one emancipates himself from physical disabilities and psychological interferences. It is a state of comprehensive equipoise of body, mind and spirit.

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Asana means a state of existence in which one can remain stable, calm, quiet, and comfortable, physically and mentally. Yogasana are practised to develop one's capacity to sit in one position without discomfort for prolonged spans of time, as this is essential during meditation.

**Hints/Rules for Yogasanas-** The ground for practicing asanas should be level, clean and free from noise; must be performed on a mat or a carpet; early morning is the perfect time for, practicing yogasanas ; clothing should be in accordance with the season; men should wear shorts. women should wear a loose blouse and stretch pants; one should remain noiseless while practicing asanas; attentiveness is necessary for an all-round progress of the body and the mind; attention should be on breathing and on the limbs which have any stress or strain; before one commence to practice other asanas, one should perform savasana in order to make breathing normal; no force or jerk should be exerted in the practice of Yogasanas; there should be gradual increase in the time duration in the practice of yogasana; it will help the body to become flexible; one should practice yogasana under the appropriate supervision of yoga experts. ; before carrying out the yogasanas one should take light food; if one is suffering from intricate ailments or severe fever, one should not practise asanas; women should not practise asanas after conception and immediately after delivery; the number of asanas and the duration for each of them should be increased gradually; haste or quickness in coming to the final position from the initial position and vice versa should be avoided; after practising yogasanas, savasana should be performed; Savasana is a perfect asana-the body gets speedy relaxation and becomes energetic.

**Importance of Yogasanas-** Yogasanas give sufficient exercise to the internal organs of the body; one can maintain good health and longevity of life; a small airy place and few equipments are required for yogasanas practice; yoga is a solo-practise, whereas two or more individuals are required in other games ; it helps to develop physical and mental powers to calm the mind and control the senses ; help the body to acquire more resistance power to keep the diseases away; body becomes more flexible; appear younger in age and lives longer; the blood in the blood-vessels is purified; the power of contraction and expansion of lungs is increased and this results in the purification of blood; keeps the spinal cord flexible ; stimulate different glands of the body, which helps the body to acquire a well-balanced growth; cures diseases like constipation, gas-trouble, diabetes, blood-pressure, headache, etc. can be cured; enhances intellectual and spiritual development etc.

**Padmasana-** Padma means a lotus; acquires its name because when performed it resembles a lotus, also known as kamalasana; one of the most important and useful asanas; best suited for meditation and for reciting mantras; beneficial to both men and women. This is one of the basic postures and is often used in the variations of sirsasana and sarvang asana.

**Precautions-** Do not practise after being out in the hot sun for several hours; on the uneven place. No undue strain should be felt. Faulty practice causes discomfort and uneasiness, better to get the guidance from yoga experts; should be done slowly and smoothly.

**Effects/Advantages**

1. Padmasana is one of the most relaxing poses; crossed legs and the erect back keeps the mind attentive and alert; good for curing stiffness in the knees and ankles; useful for Japa, Pranayama, Dharna (Retention Or concentration) , Dhyana (Meditation) and Samadhi (Self-realization) ;stimulates the endocrine glands ;cures disease like asthma, insomnia and hysteria; relieves the body of its excessive fat and it increases the vitality; gives richer blood supply to the pelvic region; stimulates the digestive process.
2. Vajrasna Pelvic Pose. It is easy to remain motionless in this posture;by practising this asana one can achieve a firm and strong posture;good for meditation and pranayama;also called as the prayer pose.

**Precautions-**

1. Sit erect and do not sit on the heels; should be done slowly and smoothly; perform asana on a mat; avoid the asanas on the uneven place. In the beginning, place the palms on the floor while sitting on soles, to support the body weight-this will prevent injury to knees and ankle joints, particularly for those who have stiff joints.

*Note :The knees and the ankles will pain in the beginning but this pain will disappear by itself later on by practicing.*

**Effects/Advantages-**

1. This asana helps digestion and eliminates gas-trouble; constant and systematic practice of this asana alleviates the pain of the knees, the legs, the feet and the thighs; regular practice of this asana increases the secretion from the glands; increases the white corpuscles produced in the spleen; does not suffer from fever, constipation, indigestion, and other minor or major ailments, performed regularly; tones the pelvic region ;helps in meditation.

*Note : This is only asana. which. if practised immediately alter meals. stimulates digestion.*

**Sukhasana**

This is popularly known as tailor's seat, as far as the lower extremities are concerned; significance of this pose is steady, stable, easy and comfortable. In whichever manner comfort and courage is produced, that is known as Sukhasana (simple pose/easy pose) a weak man should adopt such posture; basically it is concentration pose.

**Advantages:**

This is for meditation; helps in concentration; induces mental and physical stability through calming the nervous system; cures of the stiffness in the joints of the limbs; the mind to be firm and alert.

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## **Isolated and Combined Effect of Aquatic Activities and Yogic Practices on Selected Health Related Physical Fitness Variables Among Physically Challenged Children**

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**Abstract-** A research study conducted on isolated and combined effect of aquatic activities and yogic practices on selected health related physical fitness variables among physically challenged children. Eighty (80) students studying at Amar Jyoti school and rehabilitation centre, Gwalior, were taken randomly as subjects of the study their age ranged between 10 to 15 years and divided into four equal groups namely aquatic training group (Exp - I), yogic practice group (Exp - II), combined training group (Exp - III) and control group. The pre-test and post-test were taken before and after the completion of six weeks of training in aquatic activities, yogic practice and combined training. The significance difference between the experimental groups I, II, III and control group the pre-test and post-test were determined through analysis of covariance (ANCOVA). The adjusted post-test means were computed by ANCOVA and the significant analysis were compared by applying post-hoc test. The level of significance of the study was set at 0.05%. The mean difference between said dependent and independent variables (Aquatic training, Yogic Practices, Combined training in relation to flexibility) were -1.39, -1.69, -2.10, -0.30, -0.17 and 0.41 respectively and the mean difference between dependent and independent variables (Aquatic training, Yogic Practices, Combined training in relation to BMI - Body Mass Index) were 0.22, 0.30, 0.48, 0.08, 0.26 and 0.18 respectively. Hence significant difference was found with the comparison of various CI and other statistical values on flexibility and BMI – Body Mass Index of physically challenged children.

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**Keywords-** Health Related Physical Fitness Variables: Flexibility & BMI (Body Mass Index) and Physically Challenged Children

**Introduction-** When the education for all physically challenged children's, act of 1975 was enacted physical education was the only educational curriculum specifically named. There are tremendous changes in physical education and sports science and assumption about now physically challenged children are to be physically educated now changing day by day. This singular identification has placed unique opportunities and responsibilities on physical education profession to serve physically challenged population.

Aquatic activities provide a mean for training and conditioning

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individuals of all ages, and all particularly well suited for developmental and physically challenged children. Today, aquatic activities are used as part of sports medicine and physical therapy programmed and often in rehabilitation of sports injuries. Recent development in rehabilitation and sports medicine include deep water running and adaptive activities. Aquatic activities, as a therapeutic medium, are also used by people with physical, mental, emotional disabilities. It should be pointed out that if a specific aquatic activity is not actually planned and conducted often very little physical activity takes place. Aquatic activities such as water skiing, scuba diving, and boating avenues are for increasing independence and normalization.

Yoga provides a means for people to find their own way of connecting with their true selves. Through this connection with their real selves, it is possible for people to manifest harmony in the current age and for compassion to emerge where hitherto there has been none. Physically and mental therapy is one of yoga's most important achievement. What make it so powerful effective are the facts that are works on the holistic principles of harmony and unification. Yoga has succeeded as an alternative form of therapy in disease as asthma, diabetes, blood pressure, and constitutional nature where modern science has not.

**Means and Methodology-** To facilitate this study and reached up to the valid conclusion 80 (Eighty) students studying at Amar Jyoti school and rehabilitation centre, Gwalior, were taken randomly as subjects of the study their age ranged between 10 to 15 years and divided into four equal groups namely aquatic training group (Exp - I), yogic practice group (Exp - II), combined training group (Exp – III) and control group. The pre-test and post-test were taken before and after the completion of six weeks of training in aquatic activities, yogic practice and combined training. The significance difference between the experimental groups I, II, III and control group the pre-test and post-test were determined through analysis of covariance (ANCOVA). The adjusted post-test means were computed by ANCOVA and the significant analysis were compared by applying post-hoc test. The level of significance of the study was set at 0.05%.

**Table01**  
**Analysis of Covariance of the**  
**Means of Experimental Groups I, II, III**  
**and the Control Group in Flexibility**

Mean	Control Group	EXP. I	EXP. II	EXP. III	SV	df	SS	MS	...
Pre Test	18.1	18.35	18.25	18.05	B/W	3	1.13	0.38	25.30
					W/N	76	729.5	9.60	
Post Test	18.25	19.65	19.95	20.35	B/W	3	50	16.67	2.77
					W/N	76	457.8	6.02	
Adjusted Post Mean	18.25	19.55	20.36	20.35	B/W	3	49.10	16.64	2.73
					W/N	75	456.03	6.08	

\*Significant, table F ratio at 0.05 level of significance for 3, 76 (df) = 2.72, 2 and 75 (df) = 2.73, SV = source of variance, SS – Sum of Variance, MS = Means of Square.

**Table02**  
**Scheffe Post Hoc Comparison of Experimental Groups I, II, III and Control Group in Flexibility**

Control Group	Exp. I	Exp. II	Exp. III	Mean Difference	C.I.
18.25	19.64			-1.39	<b>2.23</b>
18.25		19.95		-1.69	
18.25			20.36	-2.10	
	19.64	19.95		-0.30	
	19.64		20.36	-0.71	
		19.95	20.36	0.41	

**Results of Flexibility-** Table shows that the pre-test means of control, aquatic training, yogic practice and combination training were 18.1, 18.35, 18.25 and 18.05 respectively. The F ratio value was 2.72. When compare to table F value and the obtained F value of 25.30 was lower and not significant at 0.05 level of significance.

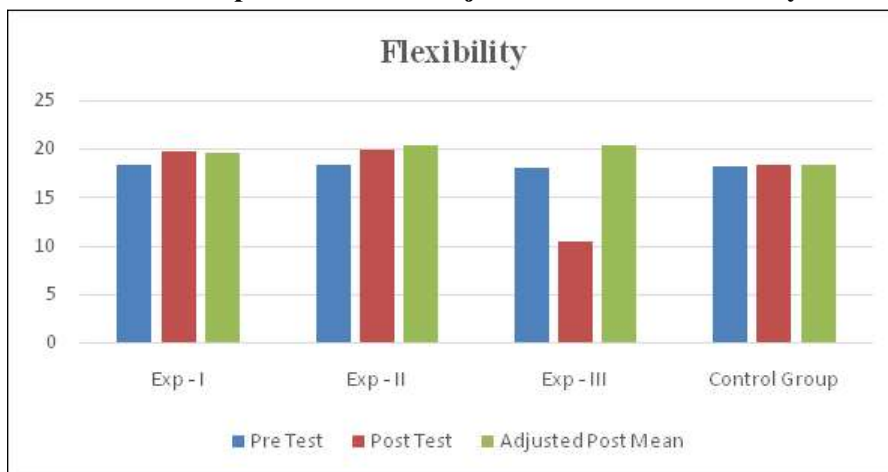
Table shows that the post-test means of control, aquatic training, yogic practice and combination training were 18.25, 19.65, 19.95 and 20.35 respectively. The F ratio value was 2.72. When compare to table F value and the obtained F value of 2.77 was higher and significant at 0.05 level of significance.

Table shows that the adjusted post-test means of control, aquatic training, yogic practice and combination training were 18.25, 19.55, 19.36 and 20.35 respectively. The F ratio value was 2.73. When compare to table F value and the obtained F value of 2.73 was higher and significant at 0.05 level of significance.

Table shows that the adjusted post-test means of control, aquatic training, yogic practice and combination training were 18.25, 19.55, 19.36 and 20.35 respectively.

The mean difference between control and aquatic training, control and yogic practice, control and combined training, aquatic and yogic practice, aquatic and combination and yogic practice and combined training were -1.39, -1.69, -2.10, -0.30, -0.17 and 0.41 respectively. The Scheffe's Post hoc test confidence interval value was 2.23. Hence there was significant difference between control and aquatic training groups, control and yogic training group, control and combined training group.

**Figure 01**  
**Cone Graph of Ordered Adjusted Mean of Flexibility**



**Table 03**  
**Analysis of Covariance of the Means of Experimental Groups I, II, III and the Control Group in BMI (Body Mass Index)**

Mean	Control Group	EXP. I	EXP. II	EXP. III	SV	df	SS	MS	Obt. "F"
Pre Test	15.61	15.60	15.58	15.67	B/W	3	0.10	0.03	4.72
					W/N	76	10.87	0.14	
Post Test	15.56	15.35	15.27	15.10	B/W	3	2.30	0.77	5.45
					W/N	76	10.711	0.14	
Adjusted Post Mean	15.57	15.35	15.27	15.09	B/W	3	2.39	0.80	5.77
					W/N	75	10.33	0.14	

\*Significant, table F ratio at 0.05 level of significance for 3, 76 (df) = 2.72, 2 and 75 (df) = 2.73, SV = source of variance, SS – Sum of Variance, MS = Means of Square.

**Table 03**  
**Scheffe Post Hoc Comparison of Experimental Groups I, II, III and Control Group in BMI (Body Mass Index)**

Control Group	Exp. I	Exp. II	Exp. III	Mean Difference	C.I.
15.57	15.35			0.22	0.34
15.57		15.27		0.30	
15.57			15.09	0.48	
	15.35	15.27		0.08	
	15.35		15.09	0.26	
		15.27	15.09	0.18	

**Results of BMI (Body Mass Index)-** Table shows that the pre-test means of control, aquatic training, yogic practice and combination training were 15.61, 15.60, 15.58 and 15.67 respectively. The F ratio value was 2.72.

When compare to table F value and the obtained F value of 4.72 was higher and significant at 0.05 level of significance.

Table shows that the post-test means of control, aquatic training, yogic practice and combination training were 15.56, 15.35, 15.27 and 15.10 respectively. The F ratio value was 2.72. When compare to table F value and the obtained F value of 5.45 was higher and significant at 0.05 level of significance.

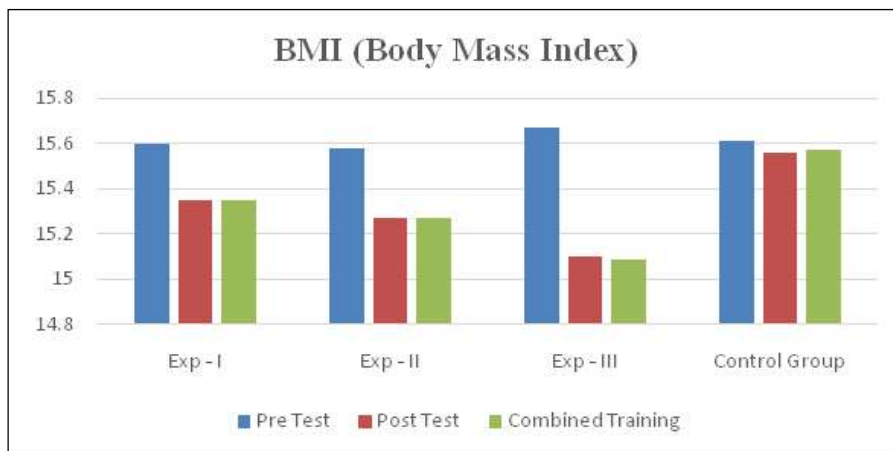
Table shows that the adjusted post-test means of control, aquatic training, yogic practice and combination training were 15.57, 15.35, 15.27 and 15.09 respectively. The F ratio value was 2.73. When compare to table F value and the obtained F value of 5.77 was higher and significant at 0.05 level of significance.

Table shows that the adjusted post-test means of control, aquatic training, yogic practice and combination training were 15.57, 15.35, 15.27 and 15.09 respectively.

The mean difference between control and aquatic training, control and yogic practice, control and combined training, aquatic and yogic practice, aquatic and combination and yogic practice and combined training were 0.22, 0.30, 0.48, 0.08, 0.26 and 0.18 respectively. The scheffe,s Post hoc test confidence interval value was 0.21. Hence there was significant difference between control and aquatic training groups, control and yogic training group, control and combined training group.

**Figure 02**

**Cone Graph of Ordered Adjusted Mean of BMI (Body Mass Index)**



**Discussion on findings-** Findings of the study shows that there was a significant improvement in flexibility of physically challenged children. This may be attributed to the fact due to influence of isolated training of aquatic training, yogic practices and combination of both the training.

Findings of the study also shows that there was a significant improvement in BMI (Body Mass Index) of physically challenged children.



This may be attributed to the fact due to influence of isolated training of aquatic training, yogic practices and combination of both the training.

**Conclusion-** After drawn the results of the study is concluded that flexibility of physically challenged children was significantly increased due to six weeks of aquatic activities and yogic practice and combined training among physically challenged children. This is also concluded that the BMI (Body Mass Index) was optimised or decreased due to six weeks of aquatic activities and yogic practice and combined training among physically challenged children. Combined training of aquatic training and yogic practice also plays a significant role in the performance of flexibility and BMI (Body Mass Index).

**Recommendations-** Yogic practices, aquatic activities must be included in the school curriculum as compulsory program exclusively for differently abled children for their future benefits and enhancement of physical fitness status.

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## **Investigation on Most Prone Injuries Among National Level Wrestlers**

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**Abstract-** *Injuries in Sports are very natural and common. During playing sports and games injury can occur on any part of our body. Now a days occurring of sports injuries is very large in numbers are treated by medical personals. Although combative sports produce more injuries per participants then non-combat sports. In combative sports Wrestling is one of the popular sports in India; it is also one of the oldest famous sports in the world. The Common sports injuries in wrestling are Bone, Joints, muscles, scrapes bruises, tongue cuts, and cauliflower ear etc.*

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**Keywords-** Injurie, Wrestlers, Sports

**Objective of the study-** The purpose of the study, investigation on most prone injuries among national level wrestlers the formulated objective was to analyse the sports related injuries among senior national level wrestlers.

**Methodology-** Questionnaire on the injury experience were distributed to 80 National Wrestlers. The wrestlers were successful participants at the national wrestling championship held in Jalandhar Punjab. The Questionnaire sough the following information-

1. Comprises there items of Questionnaire having responses in relation to occurrence and treatment.
2. Comprises two items of Questionnaire having responses in relation to frequency of injury.
3. Comprises three items of Questionnaire having responses in relation to location of injury.
4. Comprises four items of Questionnaire having responses in relation to causes and beanery breath.

**Table 01**  
**Percentage of responses of**

S.No.	Statements	Response in present	
		Yes	No
1.	Did you suffer from any form of injury during 2018	65%	35%
2.	Do you think causes for your injury is mainly poor fitness?	72%	27.5%
3.	Do you under taken physiotherapy for treatment and rehabilitation	58.75%	41.25%

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**Table 02**  
**Percentage of responses of Wrestlers in relation to**  
**frequency of injury: Wrestlers for three items of Questionnaire:**

S.No.	Statements	Response in present		
		Zero times	Up to 3 times	More than 3 times
1.	How many items did you get injured during competition?	30%	48.75%	21.25%
2.	How many times did you get injured during Practice?	13.75%	61.25%	25%

**Table 03**  
**Percentage of responses of**  
**Wrestlers in relation to types, location of Injuries:**

S.No.	Statements	Response in Percentl1
1.	Did you suffer any injury from the following nature current session Dislocation Fracture Sprain Strain	23.75% 17.5% 22.5% 17.5% 18.75%
2.	Under which situation you suffer injury During Competition During Practice Defect of Equipment By opponent	32.5% 48.75% 5% 13.75%
3.	Mention the body part which suffered most Head Neck Face Ear shoulder Finger Wrist Hip Hand Back Collar Elbow Thigh Calf Knee Ankle Arm	2.5% 10% 20% 50% 25% 25% 10% 5% 5% 0% 6.5% 7.5% 1.5% 1.25% 10% 5% 5%

**Table 04**  
**Percentage of responses of**  
**Wrestlers in relation to types, location of Injuries:**

S.No.	Statement	Response in percent
1.	What kind of Injury you are suffered?	
	Muscle related	30%
	Bone related	16.25%
2.	Joint related	53.75%
	How many times you were seriously/critically injured	
	1Times	40%
	2Times	12.5%
	3Times	6.25%
3.	More than 3 Times	8.75%
	Never	32.5%
	What was your state of mind when injured	
	Depressed	41.25%
	Excited	2.05%
4.	Continent	6.25%
	Relax	10%
	Fear full	13.75%
	Nervous	26.25%
	How many days practice session you lose because of injury	
1 Week	40%	
2Week	23.75%	
3Week	13.75%	
4Week	7.5%	
1Month	15%	

**Finding and Conclusion-** The Findings of the study in relation to injuries among wrestlers revealed many facts about occurrence, frequency, types and causes etc. Finding of the statistical analysis showed higher percentage of responses in relation to question that 65% respondent reported occurrence of injuries during their sporting career. 72.5% respondent reported that their causes in injuries are mainly due to poor fitness. 58.75% responses were given by the respondents that they have to undertake physiotherapy treatment due to severity of the injury. According to 23.75% of wrestler responds that the dislocation was the more prone injury found in wrestlers. 25% of the respondents reported that they were suffered more than 3 times during regular practice session. 50% of the respondents adhere that Ear was the prominent part to suffering from injuries. 53.75% responses recorded that joint related injury was very common among wrestlers. 41.25% responses showed of the time of injury mostly wrestlers were depressed. 40% wrestlers responses was that they have to leave the practice for one week due to the occurrence of injury.

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## ***A Portable Observation Chamber for The Study of Fish Behavior***

•Umesh Shukla

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**Abstract-** *A portable observation chamber used in the study of fish behavior in the natural environment is described. The chamber, containing two observation windows, is constructed of plywood attached to a supporting framework. Adjustable pipe legs permitted observation at various heights either above water or under water.*

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**Keywords-** Chamber, Fish Behavior, Environment

**Introduction-** In the study of fish behavior it is usually desirable to have the organism in as "normal" an environment as possible. The ethologist accordingly has two basic options to bring the organisms into laboratory situations in which he tries to duplicate and manipulate various environmental factors; or to observe the behavior of organisms in their undisturbed natural environment. In either case it is desirable to isolate visually the researcher from the organisms so as not to affect the behavior of the latter.

Some researchers have attempted to duplicate natural stream conditions in artificial channels (Jones and King, 1949; Lindroth, 1954; Chapman, 1962; Hartman, 1965; Mason and Chapman, 1965). Others have used an observation tank in the stream; an underwater tank used in Sagehen Creek was described by Needham (1953). A drawback of such chambers and artificial channels is that they are limited to one location. In many instances it is necessary and desirable to have a chamber that can be shifted to a particular location where a certain activity (e.g., spawning or territorial behavior) can be observed. The chamber described in this paper provides such flexibility.

I designed the portable observation chamber for use on the Yamuna River, Agra (U.P.) study distribution, territoriality, and feeding behavior of young-of-the-year brook *Catla*, and *C. punctatus* as well as spawning activity of lake-run *Catla*, and *C. punctatus*. The chamber was used for observation from both above water and under water positions. It was successfully used in a variety of habitats of different bottom types, water velocities, and depths--even extremely shallow water.

**Description of chamber-** The chamber is a boat-like, flat-bottomed box constructed of 2-cm plywood rigidly attached to a supporting framework of 5 X 10 cm lumber. This framework extends 6 cm laterally beyond the edge of the chamber and contains three holes on each side to receive the six adjustable legs; the holes are protected from chipping with sheet metal plates on either side of the board. The legs each consist of a 1.2-m length of 19-ram

pipe with a floor flange threaded onto the end which rests on the bottom of the stream. Adjustment of the chamber height is permitted by holes in the legs at approximately 6-cm intervals which receive machine bolts upon which the structural framework rests. The legs can be removed for transport. The front, or bow, of the chamber is slanted at approximately 60° from the horizontal. The observer can look out through two 25 x 38 cm plate glass windows; one window is located on the front and another on the bottom near the front. Two heavy duty handles on the bow and stern ends enable handling and towing.

In internal dimensions the chamber is 98 cm wide and 49 cm high at the sides, and has a bottom length of 201 cm and a top length of 230 cm. An observer can comfortably lie down in it on a foam rubber mat and cushions, with room for equipment, such as cameras and a tape recorder, alongside. The saddle-type roof of the chamber consists of a canvas cover, supported on a central ridge formed by a 5 x 10 cm board on edge. One can gain entry by unsnapping the cover partially along one side, folding back the canvas and climbing in.

The chamber is dull green to match streamside vegetation; the canvas roof, originally grey-green, was later painted white to reflect solar radiation and reduce heat in the chamber on hot days.

**Operating procedure-** The chamber was transported on land with a wheelbarrow, as it was too bulky- and heavy for one man to carry. Once in the water it could be floated to the desired location. I usually selected the area to be observed by walking along shore, wading, or canoeing to locate suitable areas with fish (either young-of-the-year or spawners as the case might be). The chamber was towed to the location behind a canoe or small boat, or by the researcher wading in the stream. Most observations were made from above surface with the chamber set 1/2 to 1 meter above the stream bottom. This provided the broadest field of view, and since it was located almost directly above the fish, permitted fairly accurate estimation of distances and of body size. A grid of strings 20 cm apart on a 1 m square wire frame was frequently used on the stream bed as a reference for size and distance.

In order to set up the chamber with a minimum of disturbance at an observation site, I installed and adjusted the front legs on the chamber a short distance away from the actual observation site, usually in deeper water. I then grasped the front legs and lifted the bow out of the water onto my back and, with the stern end floating, pulled the chamber to the desired spot. After the front legs were positioned on the stream bottom, I raised the stern end and adjusted the rear legs to the required height. Finally, the center legs were placed into position. Occasionally the two center legs were not used.

After I had installed and entered the chamber, I waited until fright responses of the fish ceased and normal behavior resumed before recording observations. On many occasions the chamber was set up at dusk and observations started the following day. Often the chamber was left in the same location for several days. When the chamber was entered on subsequent occasions, it was approached cautiously and slowly from the



stern end so that fish in the observation area in front of the bow would not be disturbed. **Discussion and evaluation-** The portable observation chamber proved to be a useful and versatile research tool for behavioral studies on fish. Its portability and shallow draft permitted use by one person in a variety of locations and positions, even in extremely shallow water. Most often it was set up in the stream in shallow water at a height between 1/2 to 1 meter above the stream bottom for observation of young-of-the-year trout. On a few occasions it was positioned such that the stern half protruded onto land with the bow over the shallow littoral water, permitting entry from shore. In addition, it could be positioned on a slant such that the front observation window was submerged for underwater observation; in this position the spawning of *C. punctatus* was observed within 30 centimeters of the window. Although the chamber was too heavy for one man to lift completely, no serious problems arose in positioning it, as each end was lifted and adjusted separately.

Some design problems became apparent with use of the chamber and were corrected or diminished by appropriate modifications. Instability or swaying when positioned high on the pipe legs was largely eliminated with boards placed as cross supports under each end of the chamber. Inadequate ventilation and temperature control were alleviated with small holes drilled above the front observation window. In addition, the canvas was painted white to reflect radiant heat; it was usually left slightly ajar at each end for increased circulation.

Other problems associated with use of the chamber, but not inherent in the chamber design, were encountered. As the most desirable position to observe young-of-the-year fish was from above the water, it was important that the water surface be reasonably calm and the water relatively clear to permit good observations.

**Conclusion-** In summary, the chamber has proved to be a valuable and workable tool in the study of fish in their natural environment. Properly used, and in areas without excessive disturbance from canoeists, it can be effective in behavioral studies of fish of all ages.

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## **Assessment of Planktonic Diversity In Relation to Seasonal Variation of Baya River, Samastipur, Bihar, India**

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•• S.N.P. Yadav

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**Abstract-** Baya river is an important river of Samastipur, Bihar. It is situated about southern part of Samastipur district. It is a seasonal river that means it overflows during the rainy season some parts may be dry during summer. So that it's physico-chemical characteristics of water must be changed according to the season. Thus biotic components of this river also changed by the season. Different parameters like temperature, pH, DO, BOD, COD, TDS, electrical conductivity, transparency, total hardness, total alkalinity, chloride(Cl-) ion concentration, free CO<sub>2</sub> and turbidity are responsible for alteration of planktonic diversity of that river at three different Ghats(stations) viz; Barhauna Ghat(S1), Dhubia Ghats(S2) and Teghara Ghat(S3). Present study of river was carried out in the year 2016-2017

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**Keywords-** Baya river, Ghats, Biotic components, Samastipur.

**Introduction-** Bihar is a landlocked state i.e. surrounded by land not by coastal line. Bihar is a very rich of freshwater bodies i.e. rivers like Ganga, Gandak, Burhi Gandak, Kosi etc, lakes and ponds. They are being used at different places for different purposes. During utilization of these water bodies it is ignore the life of the water bodies. Baya river is also suffering from this problem. Sporadic contributions have been made on the limnology of the ponds rivers and reservoirs in Bihar and Jharkhand at Bhagalpur(Nasar 1975; Nasar and Nasar 1976; Siddiquie *et al* 1980; Saha 1983; and Verma & Munsii 1887); at Patna(Singh and Ahmad 1990); at Hazaribagh( Ramakrishna and Shankar 1982); at Darbhanga (Bazmi 1989, Ahmad 1990, Siddiquie and Bazmi 1990, Kund 1992, Ahmad 1994, Surbhi 1994 and Ahmad *et al* 1996); at Muzaffarpur (Prasad and Verma 1988 and Singh 1992); and at Samastipur (Mala and Sinha 2011).

Present study of the river Baya at three different stations (S1, S2 and S3) in Samastipur district of Bihar, India. Studies were done on variation of planktonic diversity with respect to seasonal variations. Phytoplanktons and zooplanktons both take play a very important role in aquatic food chain for maintain the river ecosystem. Different types of algae to form phytoplanktons, small and lower taxonomic animals are collectively called zooplanktons.

### **Materials and Methods**

**Study Site-** My study area is located southern part of Samastipur district Bihar, India. It started from west of Vidyapati Nagar(S1), at Vidyapati Nagar

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(at Bazitpur, S2), and east ward at Teghra(S3).Its running path is almost fixed. It enters in Samastipur at Mohiuddin Nagar and finally terminates into river Ganga at Teghra in Begusarai district via Vidyapati Nagar (Samastipur) at which longest area of my research.

**Sampling-** Samples of phytoplanktons and zooplanktons were collected manually by different types of nets or gears which are made up of bamboo's steaks and or mesh of polymer in each month.

Along with planktons, for analysis of physico-chemical characteristics of water at different parameters; viz. TDS, pH, Temperature, Electrical Conductivity, Free CO<sub>2</sub>, Turbidity, etc. It is necessary for established the co-relation between diversity and seasonal variation.

**Results and Discussion-** Present study of the Baya river was carried out in the year of 2016-2017 at the three different Ghats (stations). After study of physico-chemical characteristics of water by APHA (2005). I studied the productivity of that Baya river. That means, I studied diversity of phytoplanktons and zooplanktons. The study of Phytoplanktons and zooplanktons were done with respect to population density, species richness and species evenness.

**Physico-chemical characteristics of water-** The important physico-chemical parameters are selected for assessment of water quality of Baya river viz; temperature, electrical conductivity, transparency, TDS ( Total dissolved solid), pH, DO, BOD, COD, Free CO<sub>2</sub>, total hardness, total alkalinity, and chloride ions ( Cl<sup>-</sup> ). All these parameters are analysed with the help of standard analytical methods.

Temperature was measured by thermometer, pH by pH meter, TDS by TDS meter, transparency by Secchi Disk, total hardness by EDTA titration and DO, BOD, COD are analysed by titration method. Rest other parameters are analysed as so on.

Water temperature maximum in Summer at S3 ( Teghra ghat ) was 32.9°C and minimum in Winter at S2 ( Dhobia ghat ) was 19.4°C recorded (Table -1 ). Turbidity ( NTU ) maximum in Rainy season at S3 was 10.50 and minimum in Winter at S3 was 8.00 was recorded. Electrical Conductivity ( u/s ) was maximum in Winter at S3 as 523 and minimum in Summer at S2 as 403 was recorded. Transparency ( cm ) seen maximum in Winter at S1 ( Barhauna ghat ) as 26 and minimum in Rainy season at S3 as 13.5 was recorded. TDS ( mg/L ) maximum in Winter at S3 as 351.5 which indicates that heavy pollution of water and minimum in Rainy season also at S3 as 210.5 which indicates comparatively less water pollution due to running of water of Baya river. pH was maximum in Winter at S3 as 8.2 which indicates water is alkaline and minimum in Summer at S3 as 6.5 which indicates slightly acidic of water.

DO ( mg/L ) maximum in Winter at S2 as 7.7 and minimum in Summer at S3 as 5.2 was recorded. BOD ( mg/L ) was maximum in Summer at S3 as 9.0 and minimum in Winter at S2 as 6.8 was recorded. COD ( mg/L ) was maximum in Summer at S2 as 20.3 and minimum in Winter at S1 was 13.5 as recorded. Free CO<sub>2</sub> ( mg/L ) maximum in Summer at S1 which was recorded as 8.7 and minimum in Winter at S1 as 6.5 ( mg/L ).

Total hardness ( mg/L ) maximum founded in Winter at S1 as 190.0 and minimum in Rainy season at S3 as 145.0 ( mg/L ). Total alkalinity ( mg/L )

maximum in Winter at S1 as 142.0 was recorded and minimum in Summer at S2 which recorded as 121.0 (mg/L). Chloride (Cl<sup>-</sup>) ion was maximum founded in Summer at S1 as 19.5 and minimum in Winter at S3 as 6.1 was recorded (Table-1).

**Population Density-** Population density was ascertained with the help of haemocytometer, to count the different phytoplanktons; a drop of sample was placed in phytoplanktons were settle for five(05) minutes and then an average number was taken. This procedure was repeated four times and overall an average was taken and the number of phytoplanktons per ml. was calculated as follows—

Population density depends upon population 'size' and occupying 'space'. Other characteristics of population which have ecological importance are the 'species composition' and dispersion of individuals in

$$\text{Phytoplanktons/ml} = \frac{\text{No. of phytoplanktons in counting chamber}}{\text{Concentration factor (A)}} \times 10^4$$

Where,

$$A = \frac{\text{Volume of water concentration}}{\text{Volume of water made after Concentration}}$$

the population. Some species are widely scattered. A narrow range of variation also seen in the ecosystem, It indicates that extreme selective pressure in the environment, resulting in the elimination of individuals. On other hand scattering of variations is taken as an indications of weak selection or variable environmental selection allowing the individuals to spread out and occupy a variety of ecological niches. Thus relative proportion of the class wise or taxa wise dominance on the basis of their population present river has been also ascertained.

The annual mean(average) of the population density of phytoplanktons at different Ghats of Baya river was recorded as 9379.67 units/litre(u/L) at Station 1 (Table-2); 11160.17 u/L(Table-3 ) at S2 and 15384.25 u/L (Table -4 ) at S3. At all Ghats (Stations) Cyanophyceae has maximum population density. Maximum population density of phytoplanktons in month of May at all three stations as at S1,48700 u/L (Table -2); at S2, 57631u/L (Table-3); and at S3 , 82537 u/L (Table-4).

The annual cycle of phytoplankton population has recorded been almost on bimodal pattern with a primary peak of higher magnitude in month May or June and secondary peak of relatively lower magnitude in month November or December. Bimodal pattern of variation in phytoplankton density has also been reported earlier by Grover *et al* (1978); Singh and Swarup (1979); Saha (1985); Verma and Munshi(1987) and Singh (1992).

Annual mean(average) of zooplankton population density at different Ghats of Baya river was recorded as 312.92 u/L at S 1 (Table – 5 ); 310.92 u/L at S2 (Table - 6) and 316.33 u/L at S3 (Table - 7 ). At all three stations maximum contribution of protozoa has been found. No any bimodal pattern found in case of zooplanktons like phytoplanktons.

**Table 01**  
**Physico-chemical characteristics of water of Baya river**  
**Samastipur ( Bihar ) in Period of 2016 - 17**

Physico-chemical characteristics	Summer			Rainy			Winter		
	S1	S2	S3	S1	S2	S3	S1	S2	S3
Water Temperature	32.1	32.3	32.9	29.1	29.3	29.7	19.6	19.4	19.9
Turbidity ( NTU )	8.84	9.10	9.50	9.65	9.60	10.50	8.10	8.50	8.00
Electrical Conductivity( u/s )	411.00	403.00	462.00	503.00	497.00	518.00	507.00	519.00	523.00
Transparency (cm)	18.5	13.6	17.8	19.00	15.2	13.5	26.00	19.00	18.5
TDS (mg/L)	275.7	265.8	281.9	213.4	217.6	210.5	305.2	301.6	351.5
pH	6.87	6.60	6.50	7.50	8.10	7.70	7.60	8.00	8.20
DO ( mg/L )	5.50	5.68	5.20	6.35	6.65	6.10	7.40	7.70	7.20
BOD ( mg/L )	8.50	7.80	9.00	8.20	8.50	8.00	7.80	6.80	8.20
COD ( mg/L )	18.40	20.30	18.10	15.70	19.90	16.20	13.50	15.30	14.80
Free CO <sub>2</sub> ( mg/L )	8.70	8.35	8.15	7.50	6.90	7.20	6.50	7.10	6.75
Total Hardness ( mg/L )	172.0	163.0	161.0	180.0	176.0	145.0	190.0	175.0	165.0
Total Alkalinity ( mg/L )	124.0	121.0	126.0	132.0	130.0	134.0	142.0	131.0	136.0
	19.50	18.20	17.80	13.40	12.60	13.50	7.20	6.85	6.10

**Table 02**  
**Month wise population density of**  
**phytoplanktons at S1 of Baya river in the period of 2016-17**

Months	Cyanophyceae	Chlorophyceae	Diatoms	Other Phytoplanktons	Total
November	3051	153	42	19	3265
December	21372	1442	182	12	<b>23008</b>
January	936	32	476	37	1481
February	1012	21	2359	105	3497
March	1133	5825	668	65	7691
April	2916	105	160	35	3216
May	48203	376	95	26	<b>48700</b>
June	4962	79	0	32	5073
July	2113	90	62	25	2290
August	2304	425	114	42	2885
September	2679	312	783	52	3826
October	7168	240	198	18	7624
Total	97849	9100	5139	468	112556
<b>Mean</b>	<b>8154.08</b>	<b>758.33</b>	<b>428.25</b>	<b>39.0</b>	<b>9379.67</b>
S. D.	13217.32	1571.53	630.84	24.52	13076.58
S. E. ±	3820.03	454.20	182.32	7.10	3779.35

**Table 03**  
**Month wise population density of**  
**phytoplanktons at S2 of Baya river in the period of 2016-17**

Months	Cyanophyceae	Chlorophyceae	Diatoms	Other Phytoplanktons	Total
November	3350	138	36	30	3554
December	30200	1807	195	90	32292
January	1023	20	542	46	1631
February	1121	17	2629	207	3974
March	1219	6152	727	185	8283
April	3731	22	182	100	4035
May	57019	462	105	45	<b>57631</b>
June	6218	89	0	42	6349
July	1809	0	58	20	1887
August	1613	370	186	15	2184
September	2236	292	857	65	3450
October	8200	212	201	39	8652
Total	117739	9581	5718	884	133922
<b>Mean</b>	<b>9811.58</b>	<b>798.42</b>	<b>476.5</b>	<b>73.67</b>	<b>11160.17</b>
S. D.	16211.39	1682.54	701.52	60.02	16126.81
S. E. ±	4685.37	486.28	202.75	17.34	4660.92

**Table 04**  
**Month wise population density of**  
**phytoplanktons at S3 of Baya river in the period of 2016-17**

Months	Cyanophyceae	Chlorophyceae	Diatoms	Total Phytoplanktons	Total
November	4350	140	48	22	4560
December	40200	1910	205	29	42344
January	1323	0	675	146	2144
February	1432	0	145	70	1647
March	1550	10250	2732	210	14742
April	5342	0	705	105	6252
May	81300	671	492	74	<b>82537</b>
June	7230	53	185	55	7523
July	2610	124	115	40	2889
August	2329	450	0	50	2829
September	3238	310	62	28	3638
October	12300	242	912	52	13506
Total	163204	14150	6276	881	184611
<b>Mean</b>	<b>13600.33</b>	<b>1179.17</b>	<b>523</b>	<b>73.42</b>	<b>15384.25</b>
S. D.	22887.49	2781.94	725.98	53.29	22946.27
S. E. ±	6614.88	804.02	209.82	15.40	6631.86

**Table 05**  
**Month wise population density of**  
**zooplanktons at S1 of Baya river in the period of 2016-17**

Months	Protozoa	Rotifera	Cladocera	Copepoda	Other Zooplanktons	Total
November	108	14	6	10	7	145
December	376	78	8	5	0	467
January	313	105	0	8	0	426
February	252	88	3	4	6	353
March	192	98	11	0	8	309
April	429	56	0	0	0	485
May	250	22	0	0	0	272
June	489	26	0	0	9	524
July	107	12	15	6	12	252
August	136	16	19	9	15	195
September	127	13	12	0	4	156
October	441	9	10	7	4	171
Total	3220	537	84	49	65	3755
<b>Mean</b>	<b>268.33</b>	<b>44.75</b>	<b>7.0</b>	<b>4.08</b>	<b>5.42</b>	<b>312.92</b>
S.D.	133.40	36.02	6.27	3.77	4.82	130.57
S.E. $\pm$	38.55	10.41	1.81	1.10	1.39	37.73

**Table 06**  
**Month wise population density of**  
**zooplanktons at S2 of Baya river in the period of 2016-17**

Months	Protozoa	Rotifera	Cladocera	Copepoda	Other Zooplanktons	Total
November	142	17	5	6	8	178
December	260	96	9	8	0	373
January	298	101	7	4	0	410
February	285	114	12	0	13	424
March	316	75	6	0	0	397
April	390	38	0	9	0	437
May	335	46	0	13	0	394
June	377	28	0	0	0	405
July	148	30	14	11	18	221
August	120	18	10	7	16	171
September	116	13	13	14	19	175
October	122	8	16	0	0	146
Total	2909	584	92	72	74	3731
<b>Mean</b>	<b>242.42</b>	<b>48.67</b>	<b>7.67</b>	<b>6.0</b>	<b>6.17</b>	<b>310.92</b>
S.D.	101.47	36.18	5.41	5.0	7.73	114.21
S.E. $\pm$	29.32	10.45	1.56	1.44	2.23	33.01

**Table 07**  
**Month wise population density of**  
**zooplanktonsat S3 of Baya river in the period of 2016-17**

Months	Protozoa	Rotifera	Cladocera	Copepoda	Other Zooplanktons	Total
November	134	9	0	0	12	155
December	210	102	0	0	0	312
January	278	113	0	0	0	391
February	309	129	13	0	11	462
March	323	81	0	0	0	404
April	348	43	0	0	0	391
May	480	42	0	0	0	522
June	479	35	0	0	0	514
July	153	31	0	0	13	197
August	127	13	0	17	0	157
September	119	12	0	11	0	142
October	138	11	0	0	0	149
Total	3098	621	13	28	36	3796
<b>Mean</b>	<b>258.15</b>	<b>51.75</b>	<b>1.08</b>	<b>2.33</b>	<b>3.0</b>	<b>316.33</b>
<b>S.D.</b>	126.83	41.38	3.59	5.36	5.21	143.03
<b>S.E. ±</b>	36.65	11.96	1.03	1.55	1.50	41.33





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## ***Factors Influencing The Patient's Preference for Hospitals: In Context of Kerala***

• Neethu Tomy  
•• Sarita Gautam

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**Abstract-** *Patient's Preference for private hospital is a major public health challenge in a state like Kerala. As per the national health accounts 90.27% of the out-of-pocket expenditure is in the private health care and only 9.73 in public health care and a recent study also shown that 6.7% of rural and 3% urban household pushed BPL due to health care expenses[1]. As a state with low birth rate and high life expectancy it is important to determine the factors behind the preference of private hospitals by patients of Kerala. The objective of the study to determine the factors as well as to get suggestions from the patient's side to improve the current situation.*

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**Keywords-** out of pocket expenditure, Private hospital, Public hospital, Mission Ardrum, e-health

**Introduction-** Health has been declared as the fundamental rights for every people irrespective of the place they are living or the condition in which they live<sup>121</sup>. Kerala is the southern state of India and standing as number one in the health care performance since a long time. The latest report published by NITI AYOOG also concreting the top position of the state<sup>131</sup>. Apart from the environmental changes, outbreaks, privatization of healthcare facilities and as a result of these out of pocket expenditure also become a challenge for the health system of Kerala.

Increasingly, the public sector is unable to meet the demands for health care as per the requirement of the society and the people of Kerala have responded to these inadequacies by increasing private sector use. This trend is not something to good for the community because it will raise health care expenses. This is the time to take actions to change this trend to save the public health care system of Kerala as per the requirement of the community.

**Methodology-** This study is descriptive cross-sectional based on primary data using semi-structured interview schedule in 120 patients who are visited Sreekandapuram Medical Center hospital, Sreekandapuram, Kannur, Kerala during the study period.

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### Socio-demographic profile of the respondents

Characteristics		Frequency	Percentage (%)
Gender	Male	49	40.8
	Female	71	59.16
Marital status	Married	105	87.5
	Single	15	12.5
Education	PG &above	6	5
	Graduate	40	33.33
	Up to 12	34	28.33
	Secondary school	16	13.33
	Primary	21	17.5
	Illiterate	0	0
	Students	3	2.5
Occupation	Government	6	5
	Private	25	20.83
	Farmer	9	7.5
	Business	8	6.66
	Daily wage/Labor	12	10
	House wife/unemployed	55	45.83
	others	5	4.16
Economic category ( as per govt.of Kerala records)	APL	79	65.83
	BPL	41	34.166
Area of living	Urban	92	76.66
	Rural	28	23.33
Religion	Hindu	59	49.166
	Muslim	22	18.33
	Christian	39	32.5
Cast	General	96	80
	SC	9	7.5
	ST	4	3.33
	OBC	11	9.166

Out of 120 respondents 49 were males and 71 were females constituting 40.8% and 59.16% for the male and female respectively. Majority of the participants were married (87.5%) while only 12.5% were unmarried. In terms of educational qualification graduates(33.33%) were largest in number followed by who studied up to 12<sup>th</sup> (28.33%), completed Primary education(17.5%) and 5% of the patients has post graduation and above. it is also interesting that none of the respondents were illiterate. When considering about the occupation, majority of them were house wife/unemployed (45.83%) while least number has government job (5%) followed by Business (6.66%), Farmer (7.5%), Daily wage/Labor (10%) and Private (20.83%).65.83% of the total respondents were under Above Poverty Line(APL), whereas only 34.166% categorized as Below Poverty Line(BPL). As per the area of living, king share live in Urban area (76.66%) and 23.33% in rural area. According to the religion they believe, 49.166% were Hindus followed by 32.5% Christians and only 18.33% Muslims. As

many as 96 numbers constituting 80% belonged to general cast. It is followed by 11 numbers (9.16%) OBC, 9 (7.5%) SC, 4 (3.33%) ST.

**Factors influencing to give preference to private hospitals-** The respondents have been enquired about factors which led them to choose private hospital over public hospital by using a semi-structured interview schedule.

Factors	Level of Significance										Total	
	Very significant		Significant		Less significant		Not significant		... know			
	F	%	f	%	f	%	f	%	f	%	f	%
Location	6	5	11	9.16	15	12.5	88	73.33	0	0	120	100
Infrastructure	5	4.16	49	40.83	15	12.5	51	42.5	0	0	120	100
Availability of modern equipments	23	19.16	94	78.33	3	2.5	0	0	0	0	120	100
Sanitary condition	2	1.66	9	7.5	24	20	85	70.83	0	0	120	100
Availability of specialists	108	90	12	10	0	0	0	0	0	0	120	100
Waiting time	48	40	72	60	0	0	0	0	0	0	120	100
Behaviour of healthcare staffs	4	3.33	55	45.83	16	13.33	45	37.5	0	0	120	100
Competency of healthcare staffs	57	47.5	63	52.5	0	0	0	0	0	0	120	100
Reputation of the doctor	93	77.5	27	22.5	0	0	0	0	0	0	120	100
Availability of medicines	24	20	55	45.83	3	2.5	38	31.66	0	0	120	100
Food provide in hospital	1	0.83	1	0.83	1	0.83	117	97.5	0	0	120	100

(26.66%) said availability of every equipment with good quality is mandatory for the improvement from the opinion of the majority. Availability of specialists (90%), Reputation of the doctor (77.5%) is the major influencing factor for the selection of private hospitals. In the present study Availability of modern equipments (78.33%), Behaviour of healthcare staffs (45.83%) is the factors which have moderate influence among the patients for the preference of private hospitals. In present study as per the opinion of 60% of the respondents, waiting time has great influence on the preference of private healthcare facilities. In present study it was found that 45.83% of the respondents approaching the private hospitals due to the availability of every medicine. In present study as per the opinion of the 52.5% respondents, Competency of healthcare staff has influence on them for their selection of private hospitals. In present study 77.5% of the respondents opined that, reputation of the doctor has high influence on them for the preference of private hospital. In this study most of the respondents of public hospitals In the present study as per the opinion of the majority of the respondents (73.33%) location of public hospital not influencing on them to

prefer private hospitals This study reveal that as per the opinion of 42.5% of the respondents, Infrastructure of the hospital is not an influencing factor for the hospital preference whereas 40.83% of the respondents considering infrastructure as an important factor. In this study 70.83% of the respondent are said Sanitation in public hospital is satisfactory and that is not a factor that influencing them for the private hospital preference.

AS per the medical dictionary, medical error is preventable adverse effect of care, whether or not it is evident or harmful to the patients. This might include an inaccurate or incomplete diagnosis or treatment of a disease, injury, syndrome, behaviour, infection or other ailment. I found that from the opinion of the 99.16% of the respondent's medical error is not an influencing factor for them in the preference of private hospitals and they are considering medical errors are accidental and it can happen anywhere. I found in this study that Severity of the disease has moderate influence on the preference of private hospitals among 40% of the respondents.

#### **Expectations of Patients from Public Hospitals in Kerala**

Expectations	Frequency	Percentage (%)
Friendly behaviour of hospitals staff	33	27.5
Equipped with every facilities	32	26.66
Public hospital health care staff should not discourage patients to visit public hospital and suggest patients to visit private hospital	17	14.16
24* 7 availability of health care services	20	16.66
Better quality treatment in low cost	18	15

As per the open ended questions majority of the respondents are hold a view that they are expecting Friendly behavior of hospital staff from public hospitals followed by Equipped with every facilities by 26.66% .Minority of the respondents said that they are expecting Public hospital with the health care staff should not discourage patients to visit public hospital and should not suggest patients to visit private hospital (14.16%) followed by 15% said Better quality treatment in low cost. Also 16.66% of the respondents expecting 24\*7 availability of services in every public hospital.

#### **Suggestion from the participant's perspective**

Suggestions	Frequency	Percentage (%)
Computerized facilities	57	47.5
Ban of private practice of government doctors	61	50.83
Availability of Private rooms with charges	33	27.5
Availability of Every medicine.	63	52.5
Monitoring of drug distribution to the patient from government pharmacy	45	37.5
Availability of all important diagnostic tests for the patients	19	15.83
Restrictions to the prescribe tests to private diagnostic centres.	26	21.66
Punishment for the misbehaviour of Nurses	15	12.5
More number of beds add to in government hospital	2	1.66
IPD should start from primary Level	19	15.83
Appointment system for the consultation	38	31.66
Availability of more specialists	42	35

The respondents were enquired about their suggestions to improve the present condition and many of the respondents come up with more than two suggestions. Highest number respondents suggested to ensure the availability of every medicines (52.5%) and also to ban private practice of government doctors (50.83%). Computerisation of facilities (47.5%), Monitoring of drug distribution to the patient from government pharmacy(37.5%), availability of more specialist(35%), Appointment system for the consultation(31.66 %) are the other major suggestions from the respondents. Apart from this respondents were suggested for availability of Private rooms with charges (27.5%),availability of all important diagnostic tests for the patients (21.66%),Punishment for the misbehaviour of Nurses (12.5%),More number of beds adds to in government hospital (1.66%)and IPD should start from primary Level by 15.83%.

**Discussion-** As per the National Sample Survey<sup>71<sup>st</sup></sup> though the Government of Kerala is providing treatment in cheapest rate in public hospitals, most of the patients are approaching private facilities without considering the expenditure. There are many factors which took patients away from the public hospitals and attracting towards private hospital for treatment in Kerala. The present study based on factors effecting to give preference to private hospital among patients of Kerala.

In this study data shows that, reputation of the doctor, availability of modern equipments and availability of many number of specialists are the highly influencing factors for the respondents to select private hospital for treatment. As per the opinion of the respondents of the present study, less waiting time due to appointment system & computerized facilities in private hospitals, Friendly behaviour of healthcare staffs in private hospitals than public hospitals, availability of every medicines as per the prescription of doctors and competency of healthcare staff are the factors which has moderate influence for the selection of private hospital. As per the opinion of respondents, staffs in public hospitals are highly educated and they may have good skills but they are not expressing their ability in front of the patients during the public hospital practice but the same doctor found much better during their private practice therefore , staff of public hospital is not competent according to the respondents.

Furthermore, this is important to know the expectations of patients from public hospitals to make public health care system more effective and patient friendly. In this study, respondents were open up about their expectations from public hospitals based on their experience from public hospitals and comparison with private hospitals. As per the data, soft and friendly behaviour of hospital staff towards patients and their attenders is the major expectation of the majority of the respondents. Equipped with every facility in public hospital is the other expectation from the respondents. It will help them to get every diagnosis and treatment at low cost. Many of the respondents expecting 24\* 7 availability of health care services because that will help them to get treatment at night and emergency also. Few of the respondents said that they are expecting better quality

treatment in low cost from public hospitals, because the services are cheap but quality of the services is poor at public hospital. Respondents also expecting public hospital with health care staff who are neither discourage patients to visit public hospital nor suggest patients to visit private hospital.

Moreover, in the present study respondents provide many suggestions to serve better and to improve quality of public health care system. According to the respondents computerisation of public health care facilities is required to reduce the long waiting time and to improve quality of treatment, ban of private practice of government doctors because respondents are believe that private practice of doctors is effecting in their behavior in public hospital, construction of private rooms with charges for the privacy and for the convenience of patient, availability of every medicine to save the time and cost for getting medicines from other private pharmacies, monitoring of drug distribution to the patient from government pharmacy to prevent the purpose full generation medicine scarcity by the staff , availability of all important diagnostic tests for the patients to save the money and time ,restrictions to the prescribe tests to private diagnostic centres to reduce the medical expenses of patients, punishment for the misbehaviour of staff to improve the behaviour of staff. Because every health care staff has important role in patient's wellness., more number of beds add to in government hospital to reduce rush in public hospitals, In Patient Department (IPD) should start from primary Level in public health care system, appointment system for the consultation is required to save the time of patients, availability of more specialists in public hospital to meet the need of patients.

The data of the present study concluded that Kerala as a state with high literacy, government of Kerala need to extent the objectives of the initiatives like “Mission Ardram” and “e-health” based on the patients requirements and their suggestions to decrease the challenges of the public healthcare system due to the excessive privatisation and commercialization of health care services. If government can make some changes in public health care system, more people will come to public hospitals and can prevent the escalation of out of pocket expenditure further and also can the Kerala state can remain as the high performing state in the country in terms of overall health care performance.

**Conclusion-** In the present study, every respondents are visited a public hospital at least once in their life. From the opinion of the majority Availability of specialists (90%), Reputation of the doctor (77.5%) is the major influencing factor for the selection of private hospitals. It has been already established that, availability of specialist is the dominant reason for the choice of private hospitals (singh et al. customers' preference for selecting private hospital: a study in Manipur).<sup>141</sup>

In the present study Availability of modern equipments (78.33%), Behaviour of healthcare staffs (45.83%) is the factors which have moderate influence among the patients for the preference of private hospitals. A study conducted in Oman by Al-Balush et al in 2017 also come up with the conclusion that Availability of modern equipments, friendly behavior of

doctors are the influencing factor for the preference of private hospitals<sup>171</sup> As per the study of Centre for Public Policy Research (2017)<sup>1101</sup> also come up with the conclusion that friendly behaviors of doctors is one of the influencing factors for the preference of private hospitals.

In present study as per the opinion of 60% of the respondents, waiting time has great influence on the preference of private healthcare facilities. This result finding was in accordance with the study done by K Ratha (2018) which also point out the influence of waiting time for the preference of private hospitals<sup>191</sup>

In present study it was found that 45.83% of the respondents approaching the private hospitals due to the availability of every medicine. It is also come up as the one of the major reasons for the preference of private hospitals by a study conducted by Klein in 2011<sup>151</sup>

In present study as per the opinion of the 52.5% respondents, Competency of healthcare staff has influence on them for their selection of private hospitals. In the chapter 3 of the book Health professions Education .A Bridge to Quality written by AC Greiner et al in 2003 said that set of core competencies are important for healthcare providers and current implementation of the competency does not meet the health care needs of the American public<sup>111</sup>

In present study 77.5% of the respondents opined that, reputation of the doctor has high influence on them for the preference of private hospital. Is also proved in a study conducted in Oman by Al-Balush et al in 2017 reputation of the doctor has great influence on the patient's preference of hospitals<sup>171</sup>

In this study most of the respondents (26.66%) said availability of every equipment with good quality is mandatory for the improvement of public hospitals and it is also mentioned in a study conducted by Gullapalli N Rao in Hyderabad reveal that installation modern equipments is important to improve the patient care in hospitals<sup>1121</sup>

In the present study as per the opinion of the majority of the respondents (73.33%) location of public hospital not influencing on them to prefer private hospitals but it has been shown as an moderate influencing factor in a study conducted in Manipur by Rajkumar Giridhari Singh and Dr. Md. Kheiruddin also concluded as a less influencing factor in a study conducted at Oman by Al-Balush et al in 2017<sup>171</sup>

This study reveal that as per the opinion of 42.5% of the respondents, Infrastructure of the hospital is not an influencing factor for the hospital preference followed by 40.83% of the respondents are considering infrastructure as an important factor. According to the study conducted by K Rata in 2018 at Ramanathapuram come up with the conclusion that infrastructure of the public hospital compare to private hospital is not satisfactory and that is the major reason behind the patient's preference of private hospitals<sup>191</sup>

In this study 70.83% of the respondent are said Sanitation in public hospital is satisfactory and that is not a factor that influencing them for the private hospital preference. A study conducted in Pakistan in 2017 by Bakar



Imran et al concluded that sanitation in public hospitals is improved and not a factor for the patient's flow to private hospitals.<sup>131</sup>

As per the medical dictionary, medical error is preventable adverse effect of care, whether or not it is evident or harmful to the patients. This might include an inaccurate or incomplete diagnosis or treatment of a disease, injury, syndrome, behaviour, infection or other ailment. I found that from the opinion of the 99.16% of the respondent's medical error is not an influencing factor for them in the preference of private hospitals and they are considering medical errors are accidental and it can happen anywhere. A study named Medical Errors in Day-To-Day Practice by Raveendra KR came up with the conclusion that medical errors are accidental and the continuous efforts needed to minimize medical error.<sup>161</sup>

I found in this study that Severity of the disease has moderate influence on the preference of private hospitals among 40% of the respondents. It is also revealed in study conducted in Manipur by Rajkumar Giridhari Singh and Dr. Md. Kheiruddin Shah many times due to the severity of the diseases patients are opting private hospitals.<sup>141</sup> In the present study majority of the respondent (27.5%) opined that they are expecting Friendly behaviour from the public hospitals staff. This finding was in accordance with the study done by Al-Balush et al in 2017 which also pointed out friendly behavior of hospitals staffs is an important factor for the patients for their hospital preference.<sup>171</sup>

In this study 26.66% of the respondents expecting public hospitals with availability of every equipment. As per the study K Ratha(2018) advanced technique and modern equipments are the major reason behind the patient's preference of private hospitals.<sup>191</sup>

It was found in present study that 24\*7 availability of health care services are expecting from the 16.66% of the respondents, 15% expecting more quality treatment and 14.16% of the respondents are expecting a Public hospital without discouragement from health care staff to visit public hospital and without suggesting patients to visit private hospital. is already concluded in a study conducted by Soman(2007) in Kerala doctors in government sector also gain through the nexus between industry and profession and he also mentioned that medical care in the state become dehumanized and privatized. Many of the respondents said about the requirement of 24\*7 PHC to manage emergency at night. They are expecting every PHC's with round the clock services. It is also mentioned in the study of K.Rata better quality treatment is one of the major reasons for approaching private hospitals by the patient and if quality in the public health care improve more people will come to public hospitals.<sup>191</sup>

In my study I found that majority of the respondents suggested to ban private practice of government doctors because they believe that due to the private practice doctors are not dedicated in public hospitals. It is already mentioned in article written by Javaid Mali In 2015 in regarding the ban of private practice of government doctors. He said that Policymakers believe that an end to private practice would streamline the health sector as doctors would dedicate their fulltime to the job and he also mentioned that there are people

who believe that private practice of government doctors are more convenient for them than public hospitals.

In the present study 52.5 % of the respondents suggested availability of Every medicines in public hospital pharmacy will attract more patients to the public healthcare system, it is also proved that in a study conducted in the slums of Hyderabad by Kelin in 2011 patients in public hospitals often have to get external medication, private hospitals are given full medication in their own pharmacy and that is the major reason behind the patients preference of private hospitals.<sup>151</sup>

In my study 47.5 % of the respondents suggested computerization facilities in public hospitals to reduce the waiting time and also to improve the quality of services. E-health project of government of India also saying that computerization of facilities will ensure attainment of high quality of health services for all Indians through the cost-effective and secure use of information and communication technologies in health and health-related fields.<sup>1151</sup>

I found in my study that as per the opinion of the 35 % availability of more number of specialists will increase the preference of public hospitals. A study conducted in Manipur in 2011<sup>141</sup> and article published by NCBI in 2011 also come up with the conclusion that more number of specialists will attract more number of patients and it has high influence on them during the selection of hospitals.

In the present study 31.66 % of the respondents said appointment system for the consultation is require in public hospital as well to reduce the waiting time and also to get better quality treatment at minimum time. Online registration system portal of government of India also said that appointment system will make the consultation easy and they are started Aadhaar based online registration system.

In this study 37.5% of the respondents opined to monitor drug delivery to the patients to prevent the purposeful generation of medicine scarcity by the hospital staffs. It is also came up in a study conducted by Subrata Chattopadhyay in 2013 Corruption in the drug delivery is increasing the health care expenses and no public health programme can succeed in a setting in which scarce resources are siphoned off, depriving the disadvantaged and poor of essential healthcare. They are suggesting the requirement of actions with the help of community<sup>1141</sup>

#### **Suggestion from The Researcher Side-**

- Government should move forward with the decision of ban private practice of government doctors.
- Kerala government's decision of to ban private practice of government doctors in 2009 need to make available in practice after discussion with doctors and good background study about the same.
- Expansion of e-health to primary level is required.
- E-health is at the initial stage in the state. If it can expand to not only to Family health centres (FHC) but also to Primary Health centres (PHC) will control the rush in the secondary and tertiary level.

- Require fast expansion of “Mission Ardrum”
- Fast expansion of the mission will solve most of the problems in the public healthcare system of Kerala.
- Ensure availability of every medicine as well there is a need to monitor drug delivery to patients.
- Appointment system can start for the consultation to reduce waiting time
- Private rooms need to construct with payment.
- Construction of private rooms from the CHC level with payment will help government to meet other needs of public hospitals by using this amount and also will attract more number of patients towards public health care system.
- Restrictions for the prescription of diagnostic tests to private diagnostic centres' are required.
- Unlit and unless a necessary, prescription of diagnostic tests should limit in the public hospitals because for getting commotion some of the government doctors are prescribing tests to private centres. It is important to control this to reduce the out of pocket expenditure.
- Training of health care staff for soft skills and stress management
- Stress from the professional life and from personal life of the healthcare staff has important role in their behaviour towards patients and colleagues. Training is the best method to help them to come out from stress to behave good with everyone.
- Flexible working hours for health care staff
- Most of the time due to the non-flexibility in the working time creating problems in the health as well as the personal life health care professionals and the will show that towards patients. So the flexibility will make changes in their behavior towards patients and they become more productive.
- Further study is required to know about the healthcare staff's reaction towards the factors influencing patient's preference of private hospitals in Kerala.

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## **Blasting Techniques of Medium Hard Limestone Salaiya Limestone Mines No Impact of Local Village and Environment**

•Nikhlesh Patel

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***Abstract-** Drilling and Blasting is being widely practiced in India where-in nearly 85% of annual Limestone production is being reported from this method. This method finds application in extraction of Limestone. This method is also amenable to others Minerals Extraction. Blasting impact of local villages and local environment like vibration , noise, air pollution fly rock etc. But salaiya limestone mines adopted optimum blasting method to minimized of impact of local villages and local environment.*

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**Keywords-** Limestone, Environment, Drilling, Blasting

**Method of Working-** The Salaiya Limestone Mine is opencast mechanized mine and falls under category 'A'. The proposed working shall be done by deployment of heavy earth moving machinery for deep hole drilling, excavation, loading and transport. Various mining activities such as drilling, blasting, loading and transportation will be conducted as to ensure maximum mineral conservation and minimum environmental degradation. While planning, quality parameter of the deposit has been taken care as to have maximum blending ratio. The main activities involved will be-

- 1) Development by removal of overburden by Loader/Excavator
- 2) Drilling
- 3) Blasting
- 4) Excavation
- 5) Loading
- 6) Transportation

Systematic working will be done for formation of 3.5 m to 6 m benches Removal of overburden will be done by Excavator and Dumpers. Drilling in hard strata will be done by DTH drills of hole diameter 115mm. For blasting, explosives such as Slurry Explosives/ANFO, Ordinary, Delay and Nonel Detonator, Detonating fuse and Nitrate Mixture will be used for heaving effect and fragmentation of the strata.

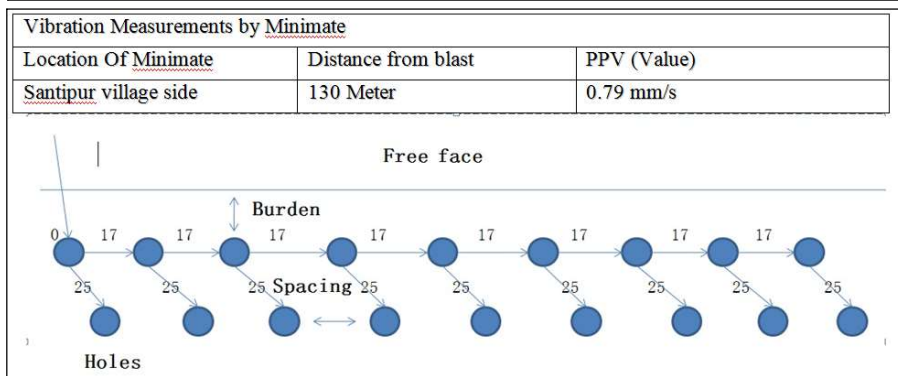
Blasted stone will be excavated, loaded into the dumpers by Excavator and transported to the destination Crushing plant. The overburden will be loaded by Excavator and transported to the dump yard by dumpers. Winning of limestone and handling of waste rock will be done by Excavator of bucket capacity of 3 m<sup>3</sup> and dumper of 25t capacity.

**Blasting-** Blasting is one of the most important operation in the production

cycle of a mine. A strong link exists between blasting and other operations like fragmentation, crushing and loading. The efficiency of different operations vis-à-vis the economics mainly depend upon optimum fragmentation. However, optimization is a dynamic process and requires updating based on many input parameters. Every effort will be made to keep the impacts like ground vibration, Air over pressure, Fly rock, Noise, Dust & fumes well within the permissible limits. The following blasting practices are being adopted depending on the situation for achieving the above results.

**Field Blasting Data**

Blast id 300					Date – 30.01.2020	
Spacing	Burden	Depth		Hole blasted	Hole Dia	Stemming
5 m	4 m	4.5 m		18	115 mm	3 m
Explosive		TLD			DTH	
Prime	Column	17MS	25MS	42MS	7 M	
25 kg	100 kg	09 Nos	09 Nos	—	18	
						02 No



Average Explosive Charge per holes - 6.95 kg/hole

Powder factor - 32.37 Tonnes/Kg

Fragmentation – good

Note- this face limestone is loose so only blasting for better excavator TPH and without blasting 01 meter material not extracted.

**Conclusion-** Salaiya Limestone Mines North Pit Lease Boundary Touch Santipur Village blast id 300 blasting face distance of santipur village in only 300meter The Optimum Blasting technique adopted by Blasting team the Ground vibration is Optimum, Fly Rock is maximum 15 meter on blasting face, Noise Of Blasting, Dust & fumes well within the permissible limits, Blasting is Optimum No Impact of Villages and local environment.

**References-**

1. Scheme of Mining including progressive Mine Closure Plan of Salaiya Limestone Mines.
2. Field data of Blasting taken Mr.Nikhlesh Patel Assistant Manager Salaiya Limestone Mines.
3. Optimum Blasting Techniques of Medium Hard Limestone Mines for Increase

Productivity Project paper by Er. Nikhlesh Patel M.Tech Student, Department of Mining Engineering AKS University Satna (M.P.) And Dr. G.K. Pradhan ,Professor and Dean, Faculty of Engineering and Technology AKS University Satna (M.P.)

## **Supplementary Effect of Methionine on Growth and Survival of *Channa Punctatus Fry***

• Umesh Shukla

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**Abstract-** *The effect of supplementary methionine was studied in Channa punctatus juveniles. Maximum growth was observed in fourth diet containing 3% of supplementation. Minimum length and weight was recorded in control diet which has no supplementary methionine. The results show that increasing amount of supplementation stimulates the growth and survival of the fry.*

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**Keywords-** *Channa punctatus, methionine, nutrition.*

**Introduction-** *Channa punctatus* is a tastiest edible fish, available in all seasons. The larval rearing is an important part in all hatchery systems because *C. punctatus* juveniles are sensitive and mainly accept only zooplankton at the earlier stage after that they accept only animal protein diets due to their carnivorous feeding habit. Nose (1999) studied the methionine requirement in Japanese eel and common carp. Halver et al., (1959) studied in Chinook salmon. Ravi and Daveraj (2011) studied the methionine requirement in *Catla*. This paper presents some preliminary results on the supplementary effects of dietary methionine on the growth and survival of *C. punctatus* fry.

**Materials and methods-** In this experiment, fry were collected from Keetham Lake, Agra and kept in plastic troughs. All the time of the experiment, fishes were transferred into five-liter plastic troughs. Each trough contained ten fishes. Four supplementary test diets were given with duplicate forms and plankton were also given regularly.

Chicken intestine is a major ingredient in all test diets. It consists of 61.62% of protein, 9.61% of carbohydrate, 14.93% of lipid and 7.62% of Ash (Arockiasamy, 2007). Chicken intestine was completely washed, then boiled and ground well after it became a paste-like material, then binder (1%) and supplementary methionine in different concentrations were added. (D.L. methionine – C<sup>5</sup>H<sub>11</sub>NO<sub>2</sub>S) such as Diet I - 0%, Diet II - 1%, Diet III - 2%, Diet IV - 3%. The study was carried out for 30 days and growth was determined.

### **Results and discussion:**

The growth ratio was slowly increased in ascending order (Table 1). Maximum growth in length and weight was obtained in fourth diet fed animals. (Growth in length 43.18% and growth in weight 209.5%). The minimum growth was obtained in control diet containing no supplementation of methionine. Maximum survival was obtained in fourth diet and minimum was observed in control diet.

Table 01: Shows mean weight, length, growth and Survival of *C.*



punctatus fry fed with different percentage of supplementary methionine diet and plankton.

S.No.	Diet I	Diet II	Diet III	Diet IV
1. Mean weight (mg) at stocking	105	105	105	105
2. Mean total length (mm) at stocking	22	22	22	22
3. Number stocked (no)	20	20	20	20
4. Rearing days	30	30	30	30
5. Mean weight (mg) at harvest	172	174	248	325
6. Mean total length (mm) at harvest	26	27.5	28	31.5
7. Survival rate (%)	50	63	70	85
8. Growth in length (%)	18.18	25	27.27	43.18
9. Growth in weight (%)	63.81	65.71	136.19	209.52

The maximum growth and survival was observed in the fourth diet because the source of methionine is only dietary since body cannot synthesis methionine and it is very essential for growth and its deficiency caused cataract in rainbow trout (Cowe *et al.*, 2002). In the case of prawn *P. japonicus* the supplementation of based diet containing squid meal, squid meal extract and squid liver extract by 0.53% methionine gave better growth rates (Kitabayski *et al.*, 1991). The acceptance of the supplementation is slowly increased upto maximum requirement level in all cases.

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## **Live Stock Grazing Behaviour and Herbage Exploitation**

• Anuradha Negi

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**Abstract-** Himalaya have served to mankind in various ways. Man has exploited Himalayas for food, fiber, fodder, timber and in many other ways. Effect of grazing and changing climate on vegetation of grazing lands at Garhwal Himalaya was observed. 10.76% area is classified as pastures and grazing lands. The exceptionally rising bovine population in hill districts of Garhwal has compelled man to migrate to high altitude pastures for fodder. Almost all grazing lands of India have developed as a secondary successional community from denuded forest land (Bor 1960). These grazing lands are maintained in a constant usuccessional stage mainly because of biotic pressure such as grazing, fire and human manipulation (Singh and Yadav 1974). India has the largest cattle population in the world. In the hill areas animals mainly depends on various shrubs, grasses, creepers and tree fodder. The green grass accounts 32% of total green fodder. Present study showed that grazing time changed according to seasons and maximum during the rainy season due to the large production of green biomass. The grazing period of goats was greatest.

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**Keywords-** Bovine, Denuded, Fodder, Pastures

**Introduction-** India has the largest cattle population in the world, It had approximately 198 million ten years back, nearly a quarter of the world's then bovine population. The condition of this huge cattle population in our country is very poor chiefly because the fodder resources of the country are hardly sufficient for even half of the existing number. Further the cattle population is also swelling year by year along with the human population. The last two livestock censuses have shown an increase of 10.7% (Bhatt and Rawat,1992). The livestock is an important component of the State's economy and it contributes a major share to the revenue of the state. Scientist have observed that the livestock in the hilly regions have to exert a lot to obtain the fodder but grazing is the cheapest mode of herbage utilization provided it is adopted on a planned and a scientific way. Grazing and fodder collection are related to each other, both being concerned with the maintenance of livestock. In Garhwal Himalaya all villages contain a number of cattle, oxen, buffaloes, goats, sheep and are kept according to the situation of the village in relation to nearby forest. Reports on grazing behaviour and pressure are few (Spedding 1971, Hodgson 1985, Gibb et al 2004, C. S. Negi 2010 and Paul and Lora 2019).

The natural resources of the Himalaya have been exploited for centuries in an unplanned manner leading to degradation all along. Reckless

cutting of trees, indiscriminate use of grazing areas and absences of rehabilitation programs has led to denudation of hill slopes, which has resulted in critically low biomass availability and adverse effects on livestock production. (ENVIS Bulletin 9 (2),8-18, 2001). Perhaps the most damaging of all local practices in Garhwal Himalaya is the one commonly called overgrazing which disguises the severity of the problem. Overgrazing itself is removal of the top layer of grasses etc. from the soil. Overgrazing leads to the loss of sapling trees, which might otherwise bind soil.

## Results

**Table 01**  
**Grazing hours of hill domestic animals in different seasons (hr./day).**

Cattle	Rainy Season			Winter Season			Summer Season			Average
	Morning	Noon	Evening	Morning	Noon	Evening	Morning	Noon	Evening	
Cow	...	2±0.5	2±1.0	1±0.5	3±1.0	1±0.5	2±1.0	1±0.5	2±1.0	5.3
Buffalo	3±1.5	-	3±1.0	2±0.5	1±0.5	3±1.0	3±1.5	-	3±1.0	6.0
Goat	4±1.5	1±0.5	3±1.0	3±1.0	2±1.0	2±1.0	3±1.0	1±0.5	3±1.0	7.3
Horse	-	5±1.0	-	2±0.5	2±0.5	-	1±0.5	2±1.0	1±0.5	4.3

**Table 02**  
**Pattern of organic matter intake by different animals**

Components	Domestic Animals				
	Cow & Ox	Buffalo	Goat and Sheep	Horse	
Grazing time (min day <sup>-1</sup> ) (mean)	324±36	372±30	480±45	324±21	
Bite rate (Bites min <sup>-1</sup> ) (mean)	40±10.0	30±9.0	50.0±10.0	45.0±11.0	
Daily bites (min <sup>-1</sup> ×10 <sup>4</sup> )	1.2	1.1	2.4	1.5	
Digestibility organic matter g DOM kg LW day <sup>-1</sup> *	11.0	13.4	15.7	12.6	
Faecal matter discharge (kg Lwf. Day <sup>-1</sup> ) (mean)	5.8±1.4	8.3±2.4	1.7±0.6	7.32.2	
Organic matter intake LW (kg day <sup>-1</sup> ) (0 dy wt.)b.	a.	5.9	8.4	1.8	7.4
		2.4	4.0	1.0	3.5
	c.	0.72	1.20	0.30	1.10
		0.90	1.40	0.40	1.30
Intake per bite gm OM LW bite <sup>-1</sup>	0.018	0.023	0.004	0.023	

\* Source – journal of applied ecology (1991), 28, 205-227. Title –

comparative studies of the ingestive behaviour and herbage intake of sheep and cattle grazing indigenous hill plant communities. By j. Hodgson; t.d.a. forbes, r.h. armstrong, m.m. beattie and e.a. hounter.

- a. ODW Kg<sup>-1</sup> day<sup>-1</sup>
- b. ODW g<sup>-1</sup> month<sup>-1</sup>
- c. ODW ton<sup>-1</sup> year<sup>-1</sup>

Table 01 exhibit the grazing time (hr./ day) of domestic animals in different seasons. The grazing time was found to be longest in rainy season as compared with winter and summer months. The average grazing over the whole year was greater for goat (4.3hr. / day). Table-2 shows the pattern of organic matter intake. Grazing time was maximum for goat and sheep, they spent the maximum time in the field (480 min / day) while horses spent minimum time in the field (324 min/ day). Bite rate for all domestic animals was higher during morning and evening hours of the day. The average bite rate was greatest for goat and sheep (50.0 bite/min) and least for buffalo (30.0 bite/ min). Number of daily bites was maximum for goat and sheep (24000 bite/ day) and minimum for buffalo (11166 bite/ day), cows and goats occupied the intermediate position. The value of digestible organic matter was cited from a journal of Applied Ecology. According to this value goat and sheep showed the highest value (15.7) while cow and ox, buffalo and goat and sheep showed the same value (11.0).

The fresh weight of faecal matter was highest for buffalo in a day (8.3 kg/ day) while goat and sheep discharged the minimum faecal matter (1.7kg/ day). This Table also shows the organic matter intake per day by these cattle. It took the oven dry weight the further calculations and changed this oven dry kg. value per day into monthly quintal and yearly/ ton values. Higher values for organic matter intake per bite was observed for buffalo and horse while lowest for goat and sheep, cows and ox occupy the intermediate position.

**Discussion-** Grazing ecology aims at aims at “understanding interactions and interrelationships at the plant animal interface” (Heady and Child 1994). Grazing ecology also derives strength from the concept of coevolution of pasture plants and herbivores (Mc Naughton 1985; Heady and Child 1994). According to Heady and Child four defoliation factors viz. selectively, intensity, frequency and seasonality make up the overall grazing process. Generally, in the hills, forest tree species fodder for domestic animals is not so common. Mostly animals are dependent on fodder grasses either from the grasslands or agricultural straw. These animals are generally visits during day time for grazing in grazing lands in different season. Various observations depict that the grazing time was least during the rainy season due to the large production of green biomass on the grazing land. Hagger (1968) reported that Fulani cattle (Nigeria) spent 5.26 hrs./day and 6.74hrs/day for grazing during dry and wet season, respectively. Goats habitually spend more time grazing, including rangelands with high shrub species (Benavides et al, 2009, Ferreira et al, 2013, Nampanzira et al, 2015). Indeed, goats spent more daily time grazing on shrubland compared to sheep

and cattle, which spent most of the time on the improved rangelands.

In general, maximum grazing time noted during drier and cooler months while least in during monsoon period. Summer season shows moderate period for grazing. In contrast horses grazed as isolated individuals away from herds. Sheep and goats quick to change directions while foraging compared to horses (Negi et al 1993 b). The rate of herbage exploitation was maximum in free open grazing land. It might be open for domestic animals which frequently visited at the site without any interruption. Loss of biodiversity is the most important threat to the conservation and sustainable use of grazing lands in India due to many centuries of cultivation and heavy livestock grazing pressure. The livestock population has increased during the recent past and the problem of grazing has acquired serious dimensions, as a result the vegetative cover is decreasing which has resulted in the loss of top soil due to excessive erosion.

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## **The Iron Content in Paddy Plants Shows Positive Response to The Application of Blue Green Algae**

• Anup Kumar Mishra

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**Abstract-** *The blue green algae as a biofertilizer has proved its potential to overcome the strong adverse effects of chemical fertilizers. Biofertilizers such as Azolla, Rizobium, Azotobacter, and blue green algae are being used since long time. For to maintain the fertility of soil, blue green algae have been imparting a great role in the context. The Paddy (Oryza sativa, L.var. SAKET) plants were taken in experiment. These plants were raised in soil-pot culture conditions. The different Supply levels of blue green algae, nil (control), 50, 100, 150, 200 and 250g bga/kg soil were applied to plants. Increase in bga supply increased the tissue iron of paddy plants, upto 250g bga/kg soil in tops of 30 days and grains of plants, and upto 200g bga/kg soil level in tops of 90 days old plants. Beyond 200g bga/kg soil level, increase in bga supply level decreased tissue iron in tops of 90 days old plants.*

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**Keywords-** Paddy, Bga, BNF, Controlled condition, DM

**Introduction-** The use of organic manure as compared to nitrogen fertilizer is very less expensive, besides being quite safer as compared to the chemical fertilizers. Blue green algae as bio-fertilizers may prove efficient tool for boosting green revolution and to overcome food shortage all over the world.

Among the ecosystems in which blue green algae can be found, wet soils provide an ideal environment for blue green algae to grow. Blue greenalgaerepresenta small taxonomic group of photo synthetic prokaryotes. Some of them posses ability of nitrogen fixation and also possess a tremendous potential for producing a wide range of secondary meta bolities.

The bio fertilizers contains beneficial microorganisms which improve plant growth and protect plants from pests and diseases (El-yazeid et al, 2007). The role of soil micro organisms in sustainable development of agriculture has been reviewed (Lee and Pankhurst, 1992). Bio fertilizers are important components of integrated nutrients management. These potential biological fertilizers would play key role in productivity and sustain ability of soil and also protect the environment as eco-friendly and cost effective inputs for the farmers. They are cost effective, eco-friendly and renewable source of plant nutrients to supplement chemical fertilizers in sustainable agricultural system.

In developing countries like India where there is immediate need to

rely increasingly organic fertilization of soil these bio-fertilizer play a role in minimising dependence on inorganic nitrogenous fertilizers. The bio-fertilizers, otherwise called microbial inoculants are preparations containing live or latent cells of efficient strains of nitrogen fixing micro-organisms used for seed or soil application. The main objective of applying inoculants is to increase the number of such microorganisms in soils or rhizosphere and consequently improve the extent of micro-biologically fixed nitrogen to plant growth. Application of bio-fertilizers in combination with organic nitrogenous fertilizers has a key role to play in the economic management of nitrogen needs of crops. In India, considerable progress has been made in the development of blue green algae based bio-fertilizer technology. It has also been demonstrated that this technology can be a powerful means of enriching the soil fertility and improving rice crop yields.

Blue green algae have drawn much attention as prospective and rich sources of biologically active constituents and have been identified as one of the most promising groups of organisms capable of producing bioactive compounds (fish & codd 1994, schlegel et al...1999). De (1939) attributed the natural fertility of flooded rice field soil and its maintenance to the process of biological nitrogen fixation by blue green algae.

**Material and method-** Experimental plants were raised in soil culture under pot culture conditions in the laboratory. Plants were raised in 8" clay flower pots with a central drainage hole. The inner surface of the pots along with top 3" of outer rim was lined with acid washed polythene provided with a central hole superimposed on the drainage hole of the pot. Normal water was used during culture work. All the plants were raised in the soil, 1.5 cm deep holes were made with glass rod of 3mm diameter and seeds were put in these holes, carefully, covered loosely with soil of the same pot.

Normal water was used during culture work. After the seeds emergence, plants were thinned to a uniform number in each pot. Subsequent thinning was done whenever needed. For the experiment, there were six pots. The pots were arranged in 3 blocks A, B and C. In each block there were two pots, one pot was meant for control treatment and other one with BGA treatment. In each block the treatments were completely randomized.

For studies, the Paddy (*Oryza sativa*, L. var. SAKET) plants were raised in soil pot culture. Soil samples were collected in a clean polythene bags after surface scraping and brought to the laboratory. Calculated amounts of normal water were applied daily to pots to provide as far as possible uniform soil moisture conditions. All samples were drawn at the same time and placed in the shade. The 3 blocks a, b and c was sampled at the same time.

Soil was separately mixed with required amount of blue green algae. There after it was air dried thoroughly grounded and mixed. For through mixing required amount of BGA were mixed with small amounts of soil, divided and mixed again and again. Then these amended soils were mixed with bigger amounts of soil similarly, and finally these soils were mixed with bigger lots of calculated soils required for experiments. Soil mixing was

done on separate clean chart to avoid any contaminations. Mixed soils were filled in pots.

Iron was determined calorimetrically as ferrous ortho-phenanthroline complex by the method described by Humphries (1956). The colour was determined in Elico CL-20A Photo-electric calorimeter using blue green filter.

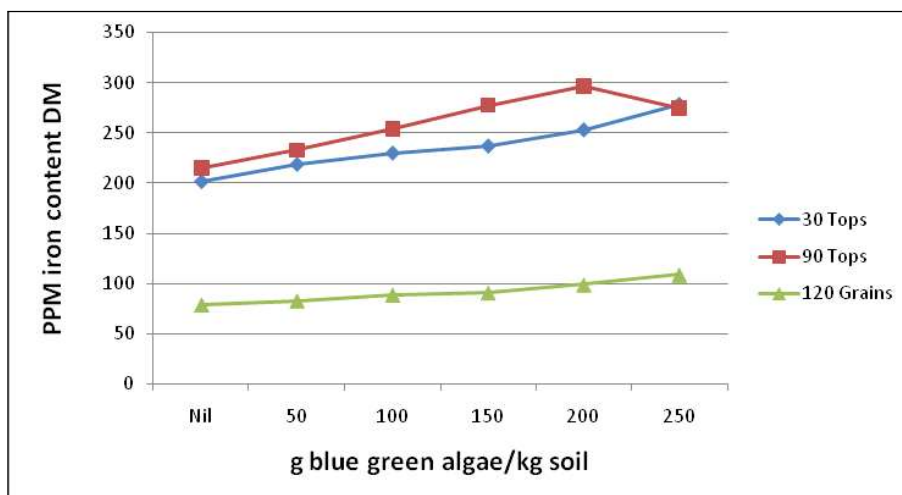
**Result-** 100 g bga/kg soil over 50g bga/kg soil, 200g bga/kg soil over 150g bga/kg soil in both tops of 30 and 90 days old plants and in grains, 250g bga/kg soil over 200g bga/kg soil in tops of 30 days and in grains of plants, and 150 g bga/kg soil over 100g bga/kg soil in tops of 90 days old plants showed highly significant (P=0.01) increase in iron content. Increase in tissue iron at 150 g bga/kg soil over 100g bga/kg soil level was found to be significant (P=0.05) in 30 days old tops and insignificant in grains of plants.

However, at 250g bga/kg soil over 200g bga/kg soil level in tops of 90 days old plants a highly significant (P=0.01) decrease in tissue iron was observed.

Maximum tissue iron was found at 250g bga/ kg soil level in tops 30 days and in grains, and at 200g bga/ kg soil level in tops of 90 days old paddy plants.

### Effect of The Blue Green Algae as Biofertilizers on Iron Content of Paddy (Oryza Sativa, L.Var. SAKET) Plants

Plant		g blue green algae/kg soil					
Age (days)	Part	Nil	50	100	150	200	250
PPM iron content DM							
30	Tops	202	219	230	237	253	278
90	Tops	215	233	254	278	297	275
120	Grains	79	83	89	91	99	109



**Discussion-** The blue green algae have inhabited much of the surface of the earth for billions of years and today they are responsible for a significant amount of biological nitrogen fixation (BNF). The tropic independence of blue green algae made them suitable for use as bio fertilizers. Blue green algae are widely distributed organisms all over the world and can be found in



extreme habitats, from hot springs to arctic regions.

Blue green algae dominate a wide range of diverse environments characterized by extremes of temperature, desiccation, pH, salinity, light intensity and nutrients (Whitton, 2000). Many blue algae tolerate high levels of ultraviolet irradiation (Sinha et al, 1999) permitting them to survive at the soil surface.

In conformity with the results of the present study, Rai et. al., 2000 reported that blue green algae are good colonizers of the nitrogen poor soils, and that through their nitrogen input into the environment they may help to create habitats suitable for other species. Many blue green algae have the capacity to manufacture nitrogenase. Because the enzyme complex is anaerobic, significant fixation by unicellular, colonial and some filamentous species occurs only in the absence of air. Therefore, only heterocystous species are valuable as biofertilizers. Blue green algae i.e. biofertilizers have several advantages over chemical fertilizers. They are non-polluting, inexpensive, utilize renewable resources. In addition to their ability of using free available solar energy, atmospheric nitrogen and water. Besides supplying  $N_2$  to crops, they also supply other nutrients such as vitamins and growth substances (Wagner, 1997). *Anabaena* and *Nostoc* have been recorded among the common nitrogen fixing blue green algae in rice fields. The use of blue green algae as nitrogen based biofertilizers is reported in many rice growing countries of the world. This was because of the increased cost of chemical fertilizers, that cause soil and water pollution, changes soil structure and produce microflora. In comparison, blue green algae is a cheap source of N, which does not cause pollution. It improves the organic matter status and water holding capacity. Venkataraman (1981) reported that open air soil culture is simple, less expensive and easily adaptable by farmers. As mentioned earlier, blue green algae has minimum growth requirements of sunlight, simple inorganic nutrients and moisture.

In 1977, Verghese stated that the demand for chemically fixed nitrogen is bound to be on increase and the nitrogen gap is likely to double in India by 1984, which would be difficult to bridge in the wake of the energy crisis.

So in conclusion we can say that use of blue green as biofertilizers is important to sustain the fertility of soil.

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## **Trend and Structure of Urbanization in India**

• Indu Mishra

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**Abstract-** *Being an old cultural hearth India has a long tradition of urbanization which has continued since 3000 B.C. the days of the Indus valley civilization. The cities of Mohenjodaro and Harappa in Indus Valley may be cited as the examples of prehistoric urban development in India. It is estimated that the percentage of urban to total population in India was higher in the last quarter of the 17th century in Comparison to the last quarter of the 19th century. A number of towns and cities developed in the country mainly because of social, economic, cultural and political reasons.*

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**Keywords-** Structure, Urbanization, Phenomenon

**Introduction-** Urbanization in India is a most significant phenomenon of the twentieth century which has affected about all aspects of the national life. Being the second most populous country in the world after China, India's fast growing urbanization has a regional as well as world-wide impact. Now India stands on third rank among the countries of the world after China and U.S.A. in the terms of absolute size of urban population. Here about 286.12 million people live in urban places. Thus, India's urban population constitutes a sizeable proportion of the world's urban population. "This can be well corroborated from the fact that every 12th city dweller of the world and every 7th of the developing countries is the Indian" (Tiwari, R.C., 2010, 816).

Being an old cultural hearth India has a long tradition of urbanization which has continued since 3000 B.C. the days of the Indus valley civilization. The cities of Mohenjodaro and Harappa in Indus Valley may be cited as the examples of prehistoric urban development in India. It is estimated that the percentage of urban to total population in India was higher in the last quarter of the 17th century in Comparison to the last quarter of the 19th century. A number of towns and cities developed in the country mainly because of social, economic, cultural and political reasons.

Though some of the towns could develop as industrial centres during the British period, they established trading centres to export the raw materials from India and to sell their finished products in the huge market of the subcontinent. The British also established many cantonments at the strategic points to administer the country" (Husain, M., 2009, 329). Ambala, Pathankot, Meerut, Udhampur, Agra, Jhansi, Jalandhar etc. were some of such developed towns.

**Trends of urbanization since 1901-** According to Census of India, 2001, nearly 286.12 million people in the country live in urban places constituting

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about 27.8 percent of total population. On the basis of trends of urbanization in India during the 20th century, following three distinct phases may be identified (Table-1)

**Table-1**  
**Growth of Urbanization in India since 1901**

Census Year	No. of towns <sup>1</sup>	Total urban population (million)	Decadal variation (percent)	Percentage of urban to total population
1901	1834	25.85	-	10.84
1911	1776	25.94	0.35	10.29
1921	1920	28.09	8.27	11.17
1931	2049	33.46	19.12	11.99
1941	2210	44.15	31.97	13.86
1951	2844	62.44	41.43	17.29
1961	2330	78.94	26.41	17.97
1971	2531	109.11	38.23	19.91
1981	3245	159.46	46.14	23.31
1991	3609	217.61	36.47	26.13
2001	3799	286.12	31.48	27.81
2011	4041	377.11	31.80	31.16

**1. Period of Slow Urbanization (1901-31)-** In the beginning of twentieth century (1901), the urban population of India was 25.85 million forming 10.84 percent of total population. The growth rate of urban population during first and second decades was amazingly low being only 0.35 percent and 8.27 percent respectively. The growth has been steady till 1931 but after that the urban population showed an explosive growth. The decadal growth rate in India's urban population in third decade was recorded as 19.12 percent. In 1931, about 3346 million people forming 11.99 percent of total population of the country lived in 2049 urban places.

**2. Period of Medium Urbanization (1931-61)-** The period between 1931 and 1961 may be considered as a period of medium urbanization in India. The year 1931 shows a significant demographic divide in the history of urban growth in the country. In 1931 urban population of the country was 33.46 million which rose to 44.15 million in 1941, 62.44 million in 1951 and 78.94 million in 1961. Thus, the percentage of urban to total population rose from 1.99 percent in 1931 to 17.97 per cent in 1961. The decadal variation was recorded as 31.97, 41.43 and 26.41 during fourth, fifth and sixth decades respectively. The number of towns which was 2049 in 1931 became 2330 in 1961.

**3. Period of Rapid Urbanization (1961-till now)-** The urban development in India got momentum after 1961 due to the stabilization of the economic development and industrial growth. Consequently the urban population of the country increased from 78.94 million in 1961 to 286.12 million in 2001 showing a growth of 262.0 percent during 40 years. The percentage of urban to total population which was 17.97 percent reached 23.31 percent in 1981 and 27.81 percent in 2001. Similarly, number of towns and cities rose from 2330 in 1961 to 4041 in 2011. It is marked that, here the urban Agglomeration is treated as one unit otherwise number of towns comes to be 7935.

**Regional distribution pattern of urbanization in india-** India's 377.11 million people forming 31-16 percent of its total population live in 4041 urban places but the distribution of towns and urban population even level of urbanization (percentage of urban to total population) is not even in the states and union territories of the country. The map shows that some states have higher level of urbanization while some other have very low and are in its initial stage. On the basis of level of urbanization all the states and union territories are classified into following three groups.

**1. Highly Urbanized Regions (50 percent and above)-** Three small political units-Delhi (97.5 percent), Chandigarh (97.3 percent), and Puducherry (68.3 percent) are highly urbanized where more than 65 percent population resides in urban centres. Due to small area and high concentration of urban population the urban density in Delhi and Chandigarh is above 7000 persons per square kilometre. Puducherry also have urban density above 1400 persons per Km<sup>2</sup>. Delhi is the national capital while Chandigarh is the capital of Punjab, Haryana and Chandigarh Union Territory, Lakshadweep, Daman and Diu, Goa and Mizoram are also small regions and are highly urbanized.

**2. Medium Urbanized Regions (25-50 percent)-** This category of urbanization includes states and union territories of the country where level of urbanization ranges from 25 to 50 percent.

The states and union territories of this group are Tamil Nadu, Kerala, Maharashtra, Gujarat, Karnataka, Punjab, Andaman and Nicobar Islands, Haryana, West Bengal, Andhra Pradesh, Manipur, Madhya Pradesh, Uttarakhand Nagaland, Jammu and Kashmir, Tripura and Sikkim.

**3. Less Urbanized Regions (Less than 25 per cent)-** 10 states and union territories combinedly are included in this category. In this category Rajasthan stands on highest position followed by Jharkhand. In Uttar Pradesh, Arunachal Pradesh, Chattisgarh and Meghalaya about 20.0 percent population lives in urban centres. Other states such as Odisha, Assam, Bihar and Himachal Pradesh have very low percentage of urban population (below 20 per cent). Himachal Pradesh (10.0 percent) is the least urbanized state followed by Bihar (11.3 percent) and Assam (14.1 percent).

The results show that India urban population has increased from 2.58 crores in 1901 to 37.71 crores in 2011 due to rapid industrialization and rural to urban migration. Percent urban has increased from 11% to 1901 to 34% in 2011. Urbanization in India has been relatively slow compared to many developing countries.

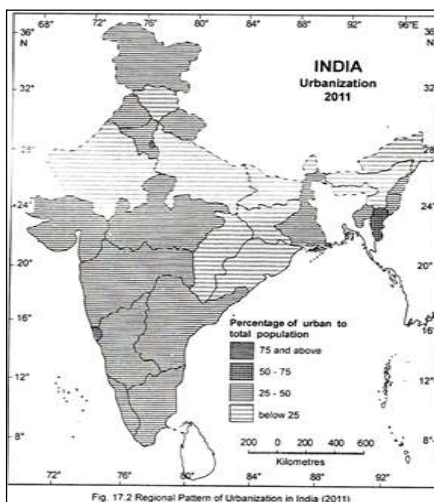


Fig. 17.2 Regional Pattern of Urbanization in India (2011)

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## **Community Institutions; SHG : A Fighter For Women & Girls Against Violence During Covid 19 Pandemic**

•Shashank Shekhar Thakur

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***Abstract-** COVID-19 seems to be similar to the pandemics in the past since this too has resulted in an increase in cases of domestic violence. According to Bradbury-Jones and Isham the lockdown imposed to deal with COVID-19 has granted greater freedom to abusers. Several media reports indicate a surge in cases of domestic violence in various countries. According to Kagi though a drop was observed in the overall crime rates in Australia, the domestic abuse rates increased by 5%. Some charities in Australia also raised concerns about COVID-19 misinformation being used by the abusers to further control and abuse the victims of domestic violence. This brief highlights emerging evidence of the impact of the recent global pandemic of COVID-19 on violence against women and girls. It makes recommendations to be considered by all sectors of society, from governments to international organizations and to civil society organizations in order to prevent and respond to violence against women and girls.*

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**Keywords-** SHG, Gender, Domestic violence, Covid-19 pandemic, Public health.

**Introduction-** This brief highlights emerging evidence of the impact of the recent global pandemic of COVID-19 on violence against women and girls. It makes recommendations to be considered by all sectors of society, from governments to international organizations and to civil society organizations in order to prevent and respond to violence against women and girls. At the onset, during, and after the public health crisis with examples of actions already taken. It also considers the economic impact of the pandemic and its implications for violence against women and girls in the long-term. It is a living document that draws upon the knowledge and experience of a wide range of experts who support solutions to end violence against women and girls, attentive to the country context in which the crisis is occurring.

**Trends and issues-** Violence against women and girls (VAWG) is a human rights violation, a universal issue, with great impact on victims/survivors, their families, and communities. Almost 18 per cent of women and girls aged 15 to 49 years who have ever been in a relationship have experienced physical or sexual Violence by an intimate partner in the previous 12 months. The figure rises to 30 per cent when considering violence by a

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partner experienced during women's lifetime. More than a third of women who are intentionally killed are killed by a current or former intimate partner. Although violence by a partner is one of the most common and widespread forms of violence against women and girls, they experience violence in a variety of contexts – in times of peace or conflict, or in the wake of conflict and in diverse spheres:

the family, the community and broader society. Rapid advances in technology provide another avenue for cyber +violence against women. Available data show that less than 40 per cent of the women who experience violence seek help of any sort. Among those who do, most look to family and friends. Less than 10 per cent of those women seeking help seek help from the police. The existing crisis of VAWG is likely to worsen in the context of COVID-19. Emerging data shows that since the outbreak of COVID-19, reports of violence against women, and particularly domestic violence, have increased in several countries as security, health, and money worries create tensions and strains accentuated by the cramped and confined living conditions of lockdown. More than half of the world's population was under lockdown conditions by early April.

**In France**, for example, cases of domestic violence have increased by 30 per cent since the lockdown on March 17<sup>6</sup>. Help lines in **Cyprus and Singapore** have registered an increase in calls by 30 per cent and 33 per cent, respectively. **In Argentina**, emergency calls for domestic violence cases have increased by 25 per cent since the lockdown started. In **Canada, Germany, Spain, the United Kingdom**, and the **United States**, government authorities, women's rights activists and civil society partners have indicated increasing reports of domestic violence during the crisis, and/or increased demand for emergency shelter.

#### **Impact of covid-19 on women and girls**

1. Pressure on essential services
2. Domestic violence
3. Cyber violence
4. Restricted movement





**In Australia, a Women's Safety New South Wales survey reveals** that 40 per cent of frontline workers have reported increased requests for help by survivors, and 70 per cent have reported that the cases received have increased in their level of complexity during the COVID-19 outbreak. Increase in reports of domestic violence is happening at the same time that services are being compromised. Life-saving care and support to women who experienced violence (i.e. clinical management of rape and mental health and psycho-social support) may be disrupted when health service providers are overburdened and preoccupied with handling COVID-19 cases. Even where basic essential services are maintained, a collapse in a coordinated response between different sectors, i.e., health, police and justice and social services response, and social distancing will mean that sectors will be challenged to provide meaningful and relevant support to women and girls who are experiencing violence. In other cases, where movement is restricted, and/or where access to quality essential services is limited, or being administered differently, as a result of social distancing (e.g. counselling by phone, emails or other platforms), requests for help have been decreasing. A domestic violence helpline in Italy, for example, reported it received 55 per cent fewer calls in the first two weeks in March because many women found it difficult to ask for help during the lockdown. A similar drop in calls was reported by a women's shelter network in the north of France. This is a worrying sign of women without recourse, who cannot access resources which can help them to cope or escape situations of violence. Women and girls at this time may not be able to reach networks, organizations that provide support and recognize abuse (e.g. women's rights networks, teachers, health workers, faith leaders, community development

officers, etc.). Also given the existing gender digital divide, women and girls in many countries, especially those who face multiple forms of discrimination, may not have access to a mobile phone, computer, or internet to access services or be able to safely use these at home as they may be closely monitored by the perpetrator and other family members. Where women have access to technology, on-line violence against women is also increasing. Before COVID-19, one in 10 women in the European Union reported having experienced cyber-harassment since the age of 15 (including having received unwanted, offensive and sexually explicit emails or SMS messages, or offensive, inappropriate advances on social networking sites). During COVID-19 and moving restrictions, the use of online platforms has increased. This has been used by some as an opportunity to groom young people into exploitative situations. According to Europol, online activity by that seeking child abuse material is increasing. Millions of women and girls are using videoconferences frequently, sometimes daily, to work and study. According to diverse media outlets, social media posts and women rights experts, different forms of on-line violence are on the rise including stalking, bullying, sexual harassment, and sex trolling. Examples include unsolicited pornographic videos while they are dialling into a social event via a virtual chat room. Alongside increased reports of VAWG, we are also seeing greater complexity of violence. The Ebola pandemic demonstrated that multiple forms of violence are exacerbated within crisis contexts, including trafficking, child marriage, and sexual exploitation and abuse. COVID-19 is likely driving similar trends at present. Women's fear and experience of sexual violence and other forms of violence in public spaces is also likely to escalate, as we have already seen in the Philippines and India, as COVID-19 takes a foothold in urban and rural areas, where social distancing has emptied streets, and transport, except for those who are performing essential services. Workers in healthcare professions at the forefront of the COVID-19 response, 70 per cent of whom are women, also face multiple risks to their health, wellbeing, and safety. There have been increased reports of both physical and verbal attacks on healthcare workers in **China, Italy and Singapore.**

#### **Economic impact of violence against women and girls during covid19-**

The social and economic costs of violence against women and girls are substantial, with broader costs associated with delivering services to victims, as well as the costs related to the criminal justice response. The global cost of violence against women and girls (public, private and social) is estimated at approximately 2 per cent of global gross domestic product (GDP), or US\$1.5 trillion. That figure can only be rising as violence increases now, and continues in the aftermath of the pandemic. A predicted rise in the different forms and manifestations of violence against women and girls will not only exacerbate the economic impacts of the COVID-19 crisis but will also slow down

economic recovery across the world. The economic impact of COVID-19 resulting from the widespread closure of businesses and industries puts increased financial strain on communities, particularly in segments of the population that are already vulnerable. Women disproportionately work in insecure, lower-paid, part-time and informal employment, with little or no income security and social protection, such as health insurance– and are therefore less protected from economic recession in times of crisis. Experience from the Ebola and Zika outbreaks shows that epidemics exacerbate existing inequalities, including those based on economic status, ability, age and gender. The stark socio-economic inequalities will place the most vulnerable groups of women at an even higher risk of violence. In the



aftermath of the crisis, violence against women and girls will continue to escalate, at the same time as unemployment, financial strains and insecurity increase. A loss of income for women in abusive situations makes it even harder for them to escape. The financial impact of COVID-19 will also affect the capacity of local women's organizations, to advocate for policy reforms on violence against women and girls and for service provision to survivors of violence over the long-term.

**Barriers to reporting amidst a pandemic-** The series of COVID-19 lockdowns in India diminished the opportunities of reporting of domestic violence cases. Here's why-

- ***Restricted movement:*** The lockdown incapacitated women by preventing them from moving to safer places in cases of violence and abuse. With men and women cohabiting together for longer periods, the privacy of women plummeted and instances of violence rose.
- ***Handicapped mediums of communication:*** The whatsapp number launched by the NCW had a limited reach as only 38% of women in india own phones and fewer have an internet connection, making this platform inaccessible to majority of women in the country.
- ***Reduced contact with the natal family:*** Natal family is usually the first point of contact for the victim. They are not only essential in supporting the victim in filing a complaint but also facilitate filing of complaints to the police. The constant presence of the perpetrator

made it difficult for the victims to contact their first respondent which ultimately deterred them from reporting to institutionalised channels.

- ***Unavailability of the formal support system:*** The machinery under the Protection of Women from Domestic Violence Act had not been identified as an essential service during the lockdown. Hence, the protection officers were not able to visit households of victims, NGOs were not able to have physical interactions with them and the police officers being at the frontline in our effort to tackle COVID-19 were overstretched to help victims effectively.
- While the nationwide restrictions have been relaxed, various state and district level lockdowns are invoked every now and then, allowing the pandemic of domestic violence to sprout alongside. We must not count violence against women as an inevitable outcome of a crisis but improve the otherwise delayed policy implications to address the situation.

### **Examples of responses from governments and civil society organizations**

#### **Ensuring Safety of Women**

- **In Canada**, domestic violence shelters are to remain open during the lockdown. A Canadian aid package was recently announced to include \$50 million to support shelters for those facing sexual violence and other forms of gender-based violence. In Quebec and Ontario, domestic violence shelters are deemed as essential services and must remain open during the lockdown.
- **In Italy**, instead of the survivor having to leave the house of an abuser, prosecutors have ruled that in situations of domestic violence the perpetrator must leave the family home.
- **In France**, as shelters exceed capacity, alternative accommodation is being provided for domestic violence survivors by hotels, and other countries including in the Caribbean are also exploring alternative accommodations.
- **In China** the hashtag #Anti Domestic Violence During Epidemic has taken off as part of advocacy with links to online resources - helping to break the silence and expose violence as a risk during lockdown.
- In the **Eastern Cape, South Africa**, support is being allocated to accelerate community-level service delivery for survivors of GBV, with dedicated focus on women in the informal economy, as well as young girls and women affected by HIV and AIDS.
- **Australia, France and the UK** allocated additional dedicated funding to support women experiencing violence and to organisations providing services.

**Innovative Solutions-** Many online and mobile technology service providers are taking steps to deliver support to survivors during this period of limited mobility and increased demand, such as free calls to help lines in Antigua and Barbuda agreed by two telecommunications firms.

- In **Madrid, Spain**, an instant messaging service with a geo location function offers an online chat room that provides immediate psychological support to survivors of violence.
- In the **Canary Islands, Spain**, women can alert pharmacies about a domestic violence situation with a code message “Mask-19” that brings the police in to support.
- In **Cumbria, UK**, police have enlisted postal workers and delivery drivers in looking out for signs of abuse. A popular app called 'Bright Sky' provides support and information to survivors, but can be disguised for people worried about partners checking their phones.
- **Virtual Justice System-** Strategies and tools to address the slowdowns in the justice system because of institutional closures are important to avoid impunity. In Kazakhstan, lockdown has caused cancellation of planned court sessions and cases of violence are being adjourned.
- **Argentina** has taken steps to address delays in the judicial processes and has extended protection orders for survivors to 60 days.
- In **Colombia** the government has issued a decree to guarantee continued access to services virtually, including legal advice, psychosocial advice, police and justice services including hearings. Other countries are using virtual means to keep the justice system operating, such as having a domestic violence survivor teleconference into court proceedings.

**Recommendations for actions-** It is critical to address the increase of violence against women during COVID-19 through accelerated and concerted efforts of governments, international and national civil society organizations and UN agencies. The needs of women and girls who face multiple forms of discrimination need to be prioritized.

**Governments-United Nations agencies-**

1. Allocate additional resources and include evidence-based measures to address violence against women and girls in COVID-19 national response plans.
2. Strengthen services for women who experience violence during COVID-19
  - Treat services for women who experienced violence as essential services.
  - Strengthen services, including shelters, through capacity rapid assessments, and through design of risk assessments, safety planning and case management, adapted to the crisis context, to ensure survivors' access to support.

- Ensure psychosocial support for women and girls who experienced violence and frontline health and social support workers.
- Expand the capacity of shelters, including re-purposing other spaces, such as empty hotels, or education institutions, to accommodate quarantine needs.
- Strengthen help lines, including through protection from sexual exploitation and abuse (PSEA), online counselling and technology-based solutions such as SMS, online tools, and social support networks.

#### **Build capacity of key services to prevent impunity and improve quality of response**

- Raise awareness of police and judiciary about the increase of violence against women and girls during COVID-19 and provide training on how to respond, protect and refer victims and survivors to appropriate services.
- Train first responders on psychosocial support, including health workers, law enforcement and court officials and emergency shelter and counselling staff still operating during the crisis.
- Provide training for education and child services staff on safety and referral information for children who may be experiencing abuse at home or who may be vulnerable to online predators.

#### **4. Put women at the centre of policy change, solutions and recovery-**

- Ensure support for grassroots women's rights organizations, especially those that provide essential services to hard-to-reach, remote and vulnerable populations.
- Ensure women's organizations and women's community organizations participate in the decision-making processes so that needs and concerns are identified and included in prevention of and responses to violence against women and girls.
- Consider the role of women's organizations in recovery plans and the longer-term solutions to address the increase of violence against women and girls during COVID-19.



**Ensure sex-disaggregated data is collected to understand the impact of COVID-19 on violence against women and girls and inform the response-**

- Collect sex-disaggregated data on the incidence of violence against women and girls, including domestic violence (including psychological and economic violence) and sexual violence, recording place of occurrence.
- Collect data on the needs and capacity of services to respond to the increased demand from women and girls in the context of COVID-19.
- Ensure any data collection effort does not put women and girls at greater risk of violence and distress.

**Recommended actions for civil society organizations- united nations agencies-** Strengthen advocacy and engagement of different actors to address violence against women and girls during COVID-19

- Build strong advocacy and awareness about increased violence against women and girls during COVID-19.
- Proactively challenge gender stereotypes and harmful masculinities, accentuated under COVID-19 circumstances (e.g. increased household care work for women, financial insecurity/unemployment), with targeted messages for men in order to encourage healthy ways of coping with stressful situations.
- Engage with media outlets to continue to raise the visibility of increased violence against women and girls, demonstrating how the risk factors that drive violence are exacerbated in the context of COVID-19.
- Provide information, including through public service announcements, to survivors of domestic
- Violence for example on service referrals or how to safely continue employment, using accessible formats for different groups of women.
- Sensitize and engage the private sector using available global guidance on how to prevent and respond to violence against women and girls, including female employees who work from home during COVID-19 and experience domestic violence.
- Ensure that local and regional authorities make public spaces safe for women and girls throughout different stages of the pandemic.

**UN women's partnerships in action-** UN Women is working with its partners to ensure that measures to address violence against women and girls are included in the COVID-19 response and recovery at country, regional and global levels, in line with the principle of leaving no one behind.

The UN Trust Fund to End Violence against Women (UN Trust Fund) is reviewing all current grants to identify prospective bud- get lines that could be quickly reallocated to provide immediate assistance to local

women's organizations in these challenging times. Subject to donor contributions, the UN Trust Fund will also establish a COVID-19 Funding Window with two specific streams-

1. Support for existing civil society organizations funded by the UN Trust Fund (grantees) – with priority for small women's organizations – providing additional core funding to help them adjust to challenges arising as a result of the COVID-19 crisis and to ensure the stability of projects and sustainability of the organization in the longer term.
2. A “COVID-19 Response” targeted Call for Proposals that will fund new projects specifically designed to support women and girl survivors of violence in the contexts created by the COVID-19 pandemic.

***Gender-responsive and locally relevant responses to COVID-19 and violence against women and girls, with women in key decision-making roles-***

- Globally, through our UN Safe City and Safe Public Spaces Initiative, we work with local governments, justice/police/health sectors, and grassroots women's organizations, to deepen support across municipal departments (transportation, parks, public work spaces, sanitation, and housing) in ensuring safe public spaces for women and girls during the crisis.
- Several offices monitor and/or undertake rapid assessments of violence against women and girls and COVID-19 (**Fiji, Malawi, South Africa, Tonga, Vanuatu**), as well as service providers capacity, support help lines, and disseminate relevant guidelines, including through the Safe and Fair programme in the ASEAN region.

As a result of these assessments, the Safe and Fair programme reports increased risk of sexual exploitation and violence to returnees travelling home, and increased risk of psychological violence to women migrant workers who lost their jobs and are no longer able to support their families.





### **Provision of quality essential services adapted to the current pandemic context-**

- **UN Women Kenya** is training and equipping frontline health providers with mental health and wellbeing programmes for families.
- Partners are supported to update referral pathways and service delivery protocols (**Vanuatu, Sudan, Trinidad and Tobago**).
- **In Fiji**, guidance on on-line services provision to survivors of violence was provided. A code of conduct is in place to do no harm in working with community representatives and village leaders.
- As part of the **EU-UN Spotlight Initiative**, in **Jamaica and Grenada**, support through technological capacity building is provided to the Bureau of Gender Affairs, the law enforcement sector and the judiciary to respond to COVID-19.

### **Increase of knowledge and awareness-support for community mobilization-**

- Partners are contributing to mass media/social media sensitization on COVID-19, increase of violence against women and girls and its prevention. This includes a focus on positive masculinities/sharing of household responsibilities and supporting domestic and vulnerable workers (**Antigua and Barbuda, Malawi, Sudan, Tanzania, Uganda, Zimbabwe and Morocco**).
- Engaging with telecom mobile companies to deliver messages and provide services (**Antigua and Barbuda, South Africa**).
- As part of the **EU-UN Spotlight Initiative**, in **Guyana**, interventions challenging violent masculinities and CSOs advocacy on ending violence against women and girls are adapted to COVID-19 context, including through technology.
- **In Georgia and Turkey**, we advocated for companies to support their personnel, including survivors of domestic violence.

**COVID-19 and gender violence-** COVID-19 seems to be similar to the pandemics in the past since this too has resulted in an increase in cases of domestic violence. According to **Bradbury-Jones and Isham** the lockdown imposed to deal with COVID-19 has granted greater freedom to abusers. Several media reports indicate a surge in cases of domestic violence in various countries. According to Kagi though a drop was observed in the overall crime rates in Australia, the domestic abuse rates increased by 5%. Some charities in **Australia** also raised concerns about COVID-19 misinformation being used by the offenders to further control and abuse the victims of domestic violence. **Allen-Ebrahimian reported that China witnessed a three- fold increase in the cases of domestic violence after imposing quarantine. Different states in the United States also reported an increase of about 21–35% in domestic violence. Even the UK has been facing concerns due to rising family violence.** There has also been an

apparent increase in the number of domestic homicides. The Refuge website recorded an increase of 150% in the calls about domestic abuse. An article in **The Indian Express draws attention to the fact that a vast majority of people in Mumbai do not have household water connections. With rising summer temperatures, people spending more time at homes during lockdowns, and emphasis on handwashing, there comes the need for household water. Consequently, many women are turning to underground water market operating under the cloak of darkness. Moreover, women have been spending more time queuing up for water and often approach the market in the wee hours of mornings where they often face verbal and sexual harassment.** Despite this increase in incidents of gender-based violence, Jagori, a Delhi-based NGO, has witnessed a drop in calls on its helpline numbers by 50%. This could be because of the fear of getting discovered by their offenders at home according to Jaya Velankar, Director Jagori. According to **Bradbury-Jones and Isham** the lockdown imposed to deal with COVID-19 has granted greater freedom to abusers. It has become easier for the abusers to enforce control tactics by limiting the access of the victims to phones, internet, and other people **van Gelder et al** Also emphasized that the lockdown limits familiar support options. In an article published by BU today, **Rothman** who is a professor of Community Health Sciences raised concerns about declaring sale of guns to be essential services in some states of the United States. This increases the likelihood of fatal interpersonal violence. Fielding pointed out that the victims of abuse may even be scared to visit a hospital for treatment of their injuries due to the fear of contracting the COVID-19 disease.

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## **The Effect of Blue Green Algae on Nitrogen Composition of Sunflower Plants**

• Anup Kumar Mishra

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**Abstract-** For studies, The Sunflower (*Helianthus annuus*, L.var. KBSH-1) plants were taken in the experiment. These plants were raised in soil-pot culture conditions. The different Supply levels of blue green algae, nil (control), 50, 100, 150, 200 and 250g bga/kg soil were applied to plants. With the increase in bga supply level upto 250g bga/kg soil level, tissue nitrogen of both stem and leaves of both 30 and 90 days old and seeds of sunflower plants, increased. A highly significant ( $P=0.01$ ) increase in nitrogen content was observed in both stem and leaves of 30 and 90 days old plants and in seeds at all the levels of bga supply over control, except at 50g bga/kg soil level in stem of 30 days, where significant ( $P=0.05$ ) increase in tissue nitrogen, and in seeds insignificant increase in nitrogen content was observed, over control.

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**Keywords-** Sunflower, bga, BNF, controlled condition, DM

**Introduction-** There is a great role of blue green algae in sustenance of soil fertility by enhancing the quantity of various nutrients in soil. In this fashion bga also improve the nitrogen content of soil. The various supply levels of blue green algae as biofertilizers leave impact on the growth and composition of sunflower plants. The blue green algae as bio fertilizers are proving to be strong alternative of chemical fertilizer, and thus improving the environmental health.

The blue green algae have inhabited much of the surface of the earth for billions of years and today they are responsible for a significant amount of biological nitrogen fixation (BNF). The tropic independence of blue green algae made them suitable for use as bio fertilizers. Blue green algae are widely distributed organisms all over the world and can be found in extreme habitats, from hot springs to arctic regions. Among the ecosystems in which they can be found, wet soils provide an ideal environment for blue green algae to grow. Blue green algae represent a small taxonomic group of photosynthetic prokaryotes which some of them are able to do nitrogen fixation and also possess a tremendous potential for producing a wide range of secondary metabolites. Blue green algae have drawn much attention as prospective and rich sources of biologically active constituents and have been identified as one of the most promising groups of organisms capable of producing bioactive compounds (fish & codd 1994), Schlegel et al... 1999). De (1939) attributed the natural fertility of flooded rice field soil and its maintenance to the process of biological nitrogen fixation by blue green algae.

The bio-fertilizers, otherwise called microbial inoculants are preparations containing live or latent cells of efficient strains of nitrogen fixing micro-organisms used for seed or soil application. The main objective of applying inoculants is to increase the number of such microorganisms in soils or rhizosphere and consequently improve the extent of micro-biologically fixed nitrogen to plant growth. Application of bio-fertilizers in combination with organic nitrogenous fertilizers has a key role to play in the economic management of nitrogen needs of crops. In India, considerable progress has been made in the development of blue green algae based in bio-fertilizer technology.

The blue green algae as biofertilizers are proving to be strong alternative of chemical fertilizer, and thus improving the environmental health. In addition to this, blue green algae are imparting a great contribution towards establishment of strong biodiversity on the planet, Rai et. al., (2000) reported that blue green algae are good colonizers of the nitrogen poor soils, and that through their nitrogen input into the environment they may help to create habitats suitable for other species.

**Material and Method-** Experimental plants were raised in soil culture under pot culture conditions in the laboratory. Plants were raised in 8” clay flower pots with a central drainage hole. The inner surface of the pots along with top 3” of outer rim was lined with acid washed polythene provided with a central hole superimposed on the drainage hole of the pot. Normal water was used during culture work. All the plants were raised in the soil, 1.5 cm deep holes were made with glass rod of 3mm diameter and seeds were put in these holes, carefully, covered loosely with soil of the same pot. After the seeds emergence, plants were thinned to a uniform number in each pot. Subsequent thinning was done whenever needed.

For the experiment, there were six pots. The pots were arranged in 3 blocks A, B and C. In each block there were two pots, one pot was meant for control treatment and other one with BGA treatment. In each block the treatments were completely randomized. The experimental pots were arranged in north-south direction and were kept raised from the ground at a height of one feet avoiding any surface contact of the drainage holes with the ground to eliminate any contamination.

For studies, the Sunflower (*Helianthus annuus*, L.var. KBSH-1) plants were raised in soil pot culture. Soil samples were collected in a clean polythene bags after surface scrapping and brought to the laboratory. Calculated amounts of normal water were applied daily to pots to provide as far as possible uniform soil moisture conditions. Sampling was generally started at 8:30A.M. and completed in an hour. All samples were drawn at the same time and placed in the shade. The 3 blocks a, b and c were sampled at the same time.

Soil was separately mixed with required amount of blue green algae. There after it was air dried, thoroughly grounded and mixed. For through mixing required amount of BGA were mixed with small amounts of soil, divided and mixed again and again. Then these amended soils were mixed with bigger amounts of soil similarly, and finally these soils were

mixed with bigger lots of calculated amount of soils required for experiments. Soil mixing was done on separate clean chart to avoid any contaminations. Mixed soils were filled in pots.

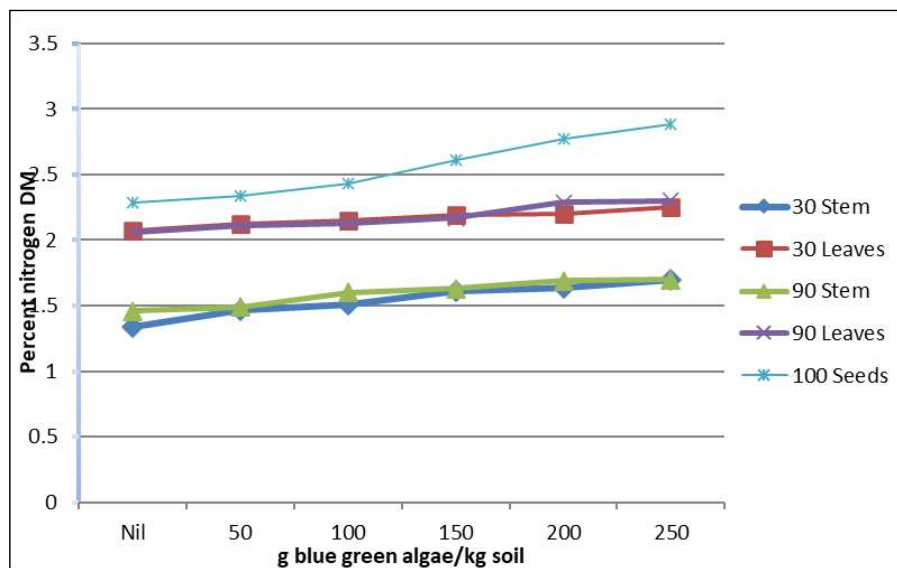
Nitrogen was determined by semi-micro-kjeldahl method. For estimation of nitrogen, 100 mg dry matter was treated in cold for 2 hours with 2% salicylic acid in  $H_2SO_4$ . The salicylic acid was removed by heating with powdered sodium thiosulphate. The sample was then digested by the method of Chibnall et al. (1943). 3 ml. of nitrogen free sulphuric acid and 0.2 gm of catalyst, prepared by grinding potassium sulphate, copper sulphate and sodium selenate, was added. The digestion was carried out on an electric hot plate until the digest had become blue. The digest was made to a suitable volume. The ammonia produced was distilled by steam distillation in Markham apparatus into a boric acid buffer in ammonia free atmosphere and estimated by titration with N/140 sulphuric acid containing Conway 'O' malley indicator (Conway & 'O' Malley, 1942).

**Result-** Except at 150g bga/kg soil over 100g bga/kg soil in stem of 30 days, at 100g bga/kg soil over 50g bga/kg soil in leaves of 90 days and at 250g bga/kg soil over 200g bga/kg soil in seeds, where value showed significant ( $P=0.05$ ) increase in tissue nitrogen, a highly significant ( $P=0.01$ ) increase in nitrogen content was observed at 100g bga/kg soil over 50g bga/kg soil in leaves of 30 days and stem of 90 days, at 150g bga/kg soil over 100g bga/kg soil in leaves of 30 days, at 150g bga/kg soil over 100g bga/kg soil and 200g bga/kg soil over 150g bga/kg soil in both stem and leaves of 90 days and in seeds of sunflower plants, and at 250g bga/kg soil over 200g bga/kg soil in leaves of 30 days old plants. However at 100g bga/kg soil over 50g bga/kg soil in stem of 30 days and in seeds, at 200g bga/kg soil over 150g bga/kg soil in both stem and leaves of 30 days, and at 250g bga/kg soil over 200g bga/kg soil in stem of 30 days, and in both stem and leaves of 90 days old plants, values failed to show any significant increase in nitrogen content.

Maximum value for nitrogen content was found at 250g bga/kg soil in both stem and leaves of both 30 and 90 days old plants and in seeds of sunflower plants.

### **Effect of the blue green algaeas bio fertilizer son nitrogen content of Sun flower (*Helianthusannus*, L.var. KBSH-1) plants**

Plant		gbluegreenalgae/kgsoil					
Age (days)	Part	Nil	50	100	150	200	250
		Percent nitrogen DM					
30	Stem	1.34	1.47	1.51	1.61	1.64	1.70
	Leaves	2.07	2.12	2.15	2.19	2.20	2.25
90	Stem	1.46	1.49	1.60	1.63	1.69	1.70
	Leaves	2.06	2.11	2.13	2.17	2.29	2.30
100	Seeds	2.29	2.34	2.43	2.61	2.77	2.88



**Discussion-** The use of latest innovations in agriculture arena has resulted in significant increase in productivity. There is a however, a growing concern about the adverse effects of indiscriminate use of chemical fertilizers on soil productivity and environmental quality. Blue green algae offer an economically attractive and ecologically sound alternative to chemical fertilizer for realizing the ultimate goal of increased productivity.

The blue green algae as a bio fertilizer is a strong alternative of chemical fertilizer in improving the soil quality. Bio fertilizers such as rhizobium, Azotobacter, and blue green algae are being used since long time. The blue green algae is used as a important tool to maintain the sustenance of the bio diversity.

In 1977 Verghese stated that the demand for chemically fixed nitrogen is bound to be on increase and the nitrogen gap is likely to double in India by 1984, which would be difficult to bridge in the wake of the energy crisis.

Blue green algae dominate a wide range of diverse environments characterized by extremes of temperature, desiccation, pH, salinity, light intensity and nutrients (Whitton, 2000). Many blue algae tolerate high levels of ultraviolet irradiation (Sinha et al, 1999), permitting them to survive at the soil surface.

Many blue green algae have the capacity to manufacture nitrogenase. Because the enzyme complex is anaerobic, significant fixation by unicellular, colonial and some filamentous species occurs only in the absence of air. Therefore, only heterocystous species are valuable as bio fertilizers. Blue green algae i.e. biofertilizers have several advantages over chemical fertilizers. They are non-polluting, inexpensive, utilize renewable resources. In addition to their ability of using free available solar energy, atmospheric nitrogen and water. Besides supplying  $N_2$  to crops, they also supply other nutrients such as vitamins and growth substances (Wagner,1997). Anabaena and Nostoc have been recorded among the



common nitrogen fixing blue green algae in rice fields.

The use of blue green algae as nitrogen based biofertilizers is reported in many rice growing countries of the world. This was because of the increased cost of chemical fertilizers, that cause soil and water pollution, changes soil structure and produce microflora. In comparison, blue green algae is a cheap source of N, which does not cause pollution. It improves the organic matter status and water holding capacity. Venkataraman (1981) reported that open air soil culture is simple, less expensive and easily adaptable by farmers. As mentioned earlier, blue green algae had minimum growth requirements of sunlight, simple inorganic nutrients and moisture.

In agreement with the present results were the findings of Jacq and Roger (1977), Roger and Kulasooriya (1980) and Omar (2001) who reported blue green algal cultures or extracts enhanced germination, promoted growth of roots and shoots and increased protein content of the grain. The effect of nitrogen fixing blue green algae that were isolated from saline soils on growth and yield of rice grown in the green house and field were studied by Anonda et al. (1990). Under green house conditions, the N<sub>2</sub> content in straw, grain yield and protein content of rice were significantly increased.

The current study was preformed to assess the effect of nitrogen fixing blue green algae to improve the natural poor sandy soil. The data presented revealed the beneficial use of blue green algae in comparison with the controlled (untreated soil) without any consideration to other treatments employed in this study. The aim of the present study was to design a soil system supported with microalgae and other soil conditioners that change the physical and chemical properties of that system in order to improve the surrounding environment of crop plants. It is evident from the present results that the inoculation of the different microalgal species to the investigated soil caused a significant enhancement of both physical and chemical properties of soil.

The biofertilizers contains beneficial microorganisms Which improve plant growth and protect plants from pests and diseases (El-yazeid et.al, 2007). The role of soil microorganisms in sustainable development of agriculture has been reviewed (Lee and Pankhurst, 1992, Wani et.al.1995). Biofertilizers are important components of integrated nutrients management. These potential biological fertilizers would play key role in productivity and sustainability of soil and also protect the environment as eco-friendly and cost effective inputs for the farmers. They are cost effective, eco-friendly and renewable source of plant nutrients to supplement chemical fertilizers in sustainable agricultural system.

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