

ISSN 0973-3914

# RESEARCH JOURNAL OF SOCIAL AND LIFE SCIENCES

HALF YEARLY, BILINGUAL (English/Hindi)

A REGISTERED REVIEWED/REFEREED RESEARCH JOURNAL  
Indexed & Listed at: Ulrich's International Periodicals Directory©,  
ProQuest, U.S.A (Title Id: 715205)

Volume- XXVII-I      English Edition      Year- 14      March, 2019

UGC  
Journal No. 40942  
Impact Factor 3.112



**JOURNAL OF**

**Centre for Research Studies**

**Rewa-486001 (M.P.) India**

Registered under M.P. Society Registration Act,  
1973, Reg. No. 1802, Year-1997

[www.researchjournal.in](http://www.researchjournal.in)

RNI NO. MP BIL 01034/12/1/2005-TC

ISSN 0973-3914

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**English Edition**

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Two years	Rs. 2500	Rs. 3000
Five years	Rs. 5000	Rs. 6000

**Mode of payment-**

- The amount may be deposited in the account number 30016445112 of GAYATRI PUBLICATIONS, SBI Rewa City Branch (IFS Code: SBIN 0004667, MICR Code 486002003). In this case please add Rs. 75 as bank charge. Please inform on Mobile (7974781746) after depositing money.

**Publisher- Gayatri Publications**

Rewa (M.P.)

**Laser Composing- Arvind Vyas**

Rewa (M.P.)

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## *Editorial*

Indian Space Research Organization i.e. ISRO has proved the successful launch of hundreds of satellites of our and other countries of the world. It has proved that it is no longer in the fast-moving space market, but when it comes to protecting the Nation from enemy nations and from terrorists, then there may be a great role of ISRO's satellites- this was recently (26th February, 2019) in Pakistan-based Balakot, the terrorist organization Jaish-e-Mohammad's training camp was destroyed by Indian airstrikes. Regardless of this, opposition parties of Pakistan Media and Government in their country and the opposition parties in India are arguing about the exact number of terrorists killed, but those who believe in the strength of the IAF and the ISRO in particular know how high the accuracy of these air strikes made in the darkness of the night from Miraj-2000 aircraft has been high. Whenever there is a comparison of military strength between two neighboring countries, it is often confined to fighter jets, warships, tanks and missiles and firepower in addition to the number of soldiers. In this, the progress of other areas of science is not added, with the help of which, the country gets an edge in case of any assessment and attack. In fact, today it is a remarkable fact about the military preparations of India that not only fighter aircraft, tank-guns and warships, but dozens of satellites stationed in the sky are giving it such strength that no one can compete with Pakistan.

After the air strikes made by the IAF in Balakot, Pakistan, the country's confidence has increased. At the global level, India had never met such a wide international support to counter terrorism. Congratulations to the army and to each other at every place in the country. Pleasure was on every face. However, a small number of politicians can not rise above the limitations of their narrow mindset. It will be considered as the examples of lightness and misunderstanding of politics. On such occasions, the heart of the nation expresses the common people, without any lam wand. Their explanations are always found to be rational because they do not involve prejudice. This has happened this time too. In the last five-six years, ISRO has set up many satellite space in India, with the help of India's ability to keep a close watch on the surrounding area of about 55 million square kilometers has been done. Observe this statement of Air Force chief BS Dhanoa. The goal we were given was hit. We do not count the number of people who die. If we had dropped bombs in the jungles, why would Pakistan react? This is not just a statement but a direct answer to those political parties who are blaming missiles on the aircrafts of the Air Force on the terror camps. While the ruling party is at the forefront of taking credit for this action, the opposition is not even behind the demand for action. This political scene is worrying. Why is the politics of military bravery? It is true that the foundation of the state itself is only a loss of profit and loss, but the leaders have forgotten that the issue is not of a political

multiplication but of the security of the nation. The evidence of air strikes was first sought by the opposition. The entire opposition including the Congress broke down on the government to demand evidence. The capacity of our airplanes such as MiG-21 was also questioned.

Considering the advantages and disadvantages of the party and the opposition, the bravery of the army is, which is dangerous. The country stands at the threshold of the general elections this time. It seems that the power of getting power has broken all the boundaries. The action of the army is the pride of the whole country, there is achievement, not one of the parties. The Air Force is saying that its work is to be targeted, not to count the corpses but our leaders are engaged in demanding and giving the number of the terrorists killed. Even after the terrorist attack on Uri's military base, our army in Pakistan had a surgical strike, the evidence of which was made public later. So why is there such a hurry to ask the opposition for air strikes? Do the electoral equations stand on the evidence? The Indian army's bravery is convincing. But if politics uses the army as an election weapon, then it is a crime. This state must be closed on the bravery of the army.

We are happy to present this 27th issue of Research Journal of Social and Life Sciences. We hope to receive your intellectual support in the forthcoming issues and similarly the process of academic discussions will continue.

Rewa

March 31, 2019



**Professor Akhilesh Shukla**  
Editor



**Professor Braj Gopal**  
Chief Editor

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## Social Problems of Child Labour

\* Akhilesh Shukla

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**Abstract-** *Social norms and economic realities mean that child labour is widely accepted and common in India. Many families really on the income generated by their children for their survival, so child labour is highly valued. Additionally, employers often prefer top children to be more compliant and an obedient than adults. When children are forced to work, they are often denied their rights to education, leisure and play. They also exposed to situations that make them vulnerable to trafficking, abuse, violence and exploitation. Child Labour may be defined as a person who is below the age of 14 years and is working for an earning.*

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**Key Words-** Social problems, Child labour, Education, Work

The Policy of the Government on the issue of Child Labour The National Policy on Child Labour declared in August, 1987, contains the action plan for tackling the problem of Child Labour. It envisages: A legislative action plan: The Government has enacted the Child Labour (Prohibition & Regulation) Act, 1986 to prohibit the engagement of children in certain employments and to regulate the conditions of work of children in certain other employments. Focusing and convergence of general development programmes for benefiting children wherever possible, A Core Group on convergence of various welfare schemes of the Government has been constituted in the Ministry of Labour & Employment to ensure that, the families of the Child Labour are given priority for their upliftment. Project-based action plan of action for launching of projects for the welfare of working children in areas of high concentration of Child Labour. Child Labour is the practice of having children engages in economic activity, on a part- or full-time basis. The practice deprives children of their childhood, and is harmful to their physical and mental development. Poverty, lack of good schools and the growth of the informal economy are considered to be the key causes of child labour in India. Some other causes of Child Labor in India are cheap wages and accessibility to factories that can produce the maximum amount of goods for the lowest possible price. Corruption in the government of India also plays a major role in child labour because laws that should be enforced to prevent child labor are not because of the corrupt government.

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The 2011 national census of India found the total number of child labourers, aged 5–14, to be at 10.1 million, and the total child population to be 259.64 million in that age group. The child labour problem is not unique to India; worldwide, about 217 million children work, many full-time. As per the Child Labour (Prohibition and Regulation) Act, 1986, amended in 2016 (“CLPR Act”), a “Child” is defined as any person below the age of 15, and the CLPR Act prohibits employment of a Child in any employment including as a domestic help. It is a cognizable criminal offence to employ a Child for any work. Children between age of 14 and 18 are defined as “Adolescent” and the law allows Adolescent to be employed except in the listed hazardous occupation and processes which include mining, inflammable substance and explosives related work and any other hazardous process as per the Factories Act, 1948. In 2001, an estimated 1% of all child workers, or about 120,000 children in India were in a hazardous job. Notably, the Constitution of India prohibits child labour in hazardous industries (but not in non-hazardous industries) as a Fundamental Right under Article 24. UNICEF estimates that India with its larger population, has the highest number of labourers in the world under 14 years of age, while sub-Saharan African countries have the highest percentage of children who are deployed as child labourers. [The International Labour Organization estimates that agriculture, at 60 percent, is the largest employer of child labour in the world, while the United Nations Food and Agriculture Organization estimates 70% of child labour is deployed in agriculture and related activities. Outside of agriculture, child labour is observed in almost all informal sectors of the Indian economy. Companies including Gap, (“Gap Under Fire: Reports Allege Child Labor”. ABC News. Retrieved 22 October 2009). Primark, (Hawkes, Steve (17 June 2008). “Primark drops firms using child labour”. The Times. London. Retrieved 22 October 2009) Monsanto (Bahree, Megha (3 October 2008). “Child Labor”. Forbes. Retrieved 22 October 2009) have been criticised for child labour in their products. The companies claim they have strict policies against selling products made by underage children, but there are many links in a supply chain making it difficult to oversee them all. In 2011, after three years of Primark’s effort, BBC acknowledged that its award-winning investigative journalism report of Indian child labour use by Primark was a fake. The BBC apologised to Primark, to Indian suppliers and all its viewers. [18][19][20] Another company that has come under much scrutiny was Nike. Nike was under pressure to speak up about alleged sweatshops that harbored children that the company was exploiting to make their sneakers. Since then Nike has come out with a separate web page that specifically points out where they get their products from and where their products are manufactured.

Child labour is the practice of having children engage in economic activity, on part or full-time basis. The practice deprives children of their childhood, and is harmful to their physical and mental development. Poverty,

lack of good schools and growth of informal economy are considered as the important causes of child labour in India. The 1998 national census of India estimated the total number of child labour, aged 5–14, to be at 12.6 million, out of a total child population of 253 million in 5-14 age group. A 2009-2010 nationwide survey found child labour prevalence had reduced to 4.98 million children (or less than 2% of children in 5-14 age group). The 2011 national census of India found the total number of child labour, aged 5–14, to be at 4.35 million, and the total child population to be 259.64 million in that age group. The child labour problem is not unique to India; worldwide, about 217 million children work, many full-time. Indian law specifically defines 64 industries as hazardous and it is a criminal offence to employ children in such hazardous industries. In 2001, an estimated 1% of all child workers, or about 120,000 children in India were in a hazardous job. Notably, Constitution of India prohibits child labour in hazardous industries (but not in non-hazardous industries) as a Fundamental Right under Article 24. UNICEF estimates that India with its larger population, has the highest number of labourers in the world under 14 years of age, while sub-saharan African countries have the highest percentage of children who are deployed as child labour. International Labour Organisation estimates that agriculture at 60 percent is the largest employer of child labour in the world, while United Nation's Food and Agriculture Organisation estimates 70% of child labour is deployed in agriculture and related activities. Outside of agriculture, child labour is observed in almost all informal sectors of the Indian economy. Companies including Gap, Primark, Monsanto have been criticised for child labour in their products. The companies claim they have strict policies against selling products made by underage children, but there are many links in a supply chain making it difficult to oversee them all. In 2011, after three years of Primark's effort, BBC acknowledged that its award-winning investigative journalism report of Indian child labour use by Primark was a fake. BBC apologized to Primark, to Indian suppliers and all its viewers. In December 2014, the U.S. Department of Labor issued a List of Goods Produced by Child Labor or Forced Labor and India figured among 74 countries where significant incidence of critical working conditions has been observed. Unlike any other country, India was attributed 23 goods the majority of which is produced by child labor in the manufacturing sector. Article 24 of India's constitution prohibits child labour. Additionally, various laws and the Indian Penal Code, such as the Juvenile Justice (care and protection) of Children Act-2000, and the Child Labour (Prohibition and Abolition) Act-1986 provide a basis in law to identify, prosecute and stop child labour in India.

**Introduction-** Child labour is any work by children that interferes with their full physical development, their opportunities for a desirable minimum of education or their needed recreation. Every child male or female is born with right and gradually grows and develops with social responsibilities. About

this social and cultural myths and conscience reveal that today's children, tomorrow's good citizens in political sense. In most of the under developed and the developing countries, children of inappropriate age are forced to take part in productive activities due to economic distress. Parents of poor class send their children's for work to increase family income while the employers of various business establishments employ children to maximize their profits. The result is economic exploitation of children, this economic exploitation continues both in the organized and unorganized sectors. A large number of children below the age of 12-14 are made to work as Labour's in many places especially in the agricultural and industrial areas. The physical, educational and medical needs of these working children are conveniently ignored. These children's are made to work for long hours. They are often battered by their employers and harassed by their senior colleagues. Unlike the adult Labour's, these child Labour's have no unions of their own to fight for their rights and safeguard their interests. Hence their exploitation continues without any protest. Neither the govt. nor the public is serious enough to make organized efforts to combat this problem. Child labour is a social problem of far reaching consequences. No outside observer can imagine and understand the complexity and magnitude of the problem has different facts also. Without the proper appraisal of the problem is serious cannot be understood.

**Study Area-** Rewa is located at  $24^{\circ}32'$  north  $81^{\circ}18'$  east  $24.53^{\circ}$  north  $81.3^{\circ}$  east  $24.53^{\circ}$ ,  $81.36^{\circ}$  it has an average elevation 275 meters (902 feet). The present study focuses on "Social Problems of child labour in district Rewa (M.P.) so the sample of 'Child labour' has been mostly taken from Rewa town. Rewa had population about 2,363,744 in census 2011 in which male are 1,224,918 and female 1,38,8626, Rewa has an average literacy rate of 73.42% male literacy 62.49% Rewa City has population 235, 442 as per census 2011 male constitute 124,634 and females, 110,788. Rewa city has total 185291, literates in which male 103,599 and female 81,692 approx. average literacy 87.74% male 92.91% and female 81.95%.

**Objectives of the Study-** The purpose of the study is to reduce problems of child laborers by educational programs and social awareness building capacities. The immediate objectives of the study are as follow:

- a. To know the social and working environmental problems of the child laborers in Rewa city;
- b. To explore why the children poor families are becoming or engaging in the private labor force;
- c. To know and identify whether public, private and voluntary organizations work to reduce the problems of child laborers and their related families or not;
- d. To design and suggest holistic approach in which is effective to identify and reduce the problems.

**Methodology and Materials of the Study-** In this study, total numbers of

50 child labourers were interviewed in Rewa City. Simple random sampling techniques were used. Various socio-economic and demographic variables were considered at the time of data collection. But in this paper only socio-economic variables are used. In addition, secondary data also used from various child labour relevant books, articles, documents, and officials through Internet browsing.

**Analysis of data-** Clear and easy statics method has adopted proper analysis of data provided by respondents through interview method, to present correct thoughts of respondents behaviors' and mentality, that has made in the form of simple and under stable through of tabulation for the analysis of data.

#### **Nature of Child Labour :**

**Magnitude of the problem-** The problem of child labour has become a colossal one. India has a largest number of child labourers in the world who are engaged in both organised and unorganized sectors. According to planning commission estimate, there were around 15.70 million child labourers in the age group of 10-14, as early as in the 1983. Of these, 14.03 million were working in rural areas and 1.67 million were engaged in urban areas.

**Different facts of the problem-** Child labour is a social problem of far-reaching consequences. No outside observer can imagine and understand the complexity and the magnitude of the problem. The problem has different facts also. Without identifying the problems of child Labour's like economic, social, and the legal facts one couldn't stop this evil.

- (a) **Child labour in organised sector-** In the organised sector, child labour is mainly found in the rural areas, tea and coffee estates, and mining sectors and even in urban areas.
- (b) **Child Labour in Rural Areas-** a large number of children found to be working in rural areas, it s estimated more than 60% of them are below the age of ten years.

**In The Mining operations** also, boys below 12 years are preferred to carry things inside the tunnels without bending their head. It is said that in the mining sector, 56% workers are children below 15 years.

**Table No.-1**

Occupation	Frequency	Percentage
Motor Mechanic	30	60
Hotel Boy	10	20
Sales Man	05	10
Carpenter	05	10
<b>Total</b>	<b>50</b>	<b>100</b>

This table shows that the children are engaged in occupation to earn money for the backup of their parents.

**Working Conditions of Child Labour's-** Not only working children are found throughout India, but even horrible working conditions exist everywhere. Horrible Working Conditions in Urban and Industrial Areas- Children working

in small industrial units and mining industries are faced with hygienic problems. Some work in dangerously polluted factories while a few others toil near furnaces which burn at a temperature of 1400o centigrade. They handle dangerous chemicals like arsenic and potassium. Continuous inhaling of impure air adversely affects their lungs and creates diseases like tuberculosis.

**Sad picture of working children in urban industrial units:** A large number of children working in leather, glass and brassware industries in slate industries and fireworks etc have sunken chests, and thin bone frames which give them a diseased look.

Table No.-2

Health Hazardous	Frequency	Percentage
Yes	45	90
No	05	10
<b>Total</b>	<b>50</b>	<b>100</b>

This table shows that the maximum number of children is facing many health problems. They do not have any kind of facilities with which they can save their physical standard.

After its independence from colonial rule, India has passed a number of constitutional protections and laws on child labour. The Constitution of India in the Fundamental Rights and the Directive of State Policy prohibits child labour below the age of 14 years in any factory or mine or castle or engaged in any other hazardous employment (Article 24). The constitution also envisioned that India shall, by 1960, provide infrastructure and resources for free and compulsory education to all children of the age six to 14 years. (Article 21-A and Article 45). India has a federal form of government, and child labour is a matter on which both the central government and country governments can legislate, and have. The major national legislative developments include the following:

**The Factories Act of 1948:** The Act prohibits the employment of children below the age of 14 years in any factory. The law also placed rules on who, when and how long can pre-adults aged 15-18 years be employed in any factory.

**The Mines Act of 1952:** The Act prohibits the employment of children below 18 years of age in a mine.

**The Child Labour (Prohibition and Regulation) Act of 1986:** The Act prohibits the employment of children below the age of 14 years in hazardous occupations identified in a list by the law. The list was expanded in 2006, and again in 2008.

**The Juvenile Justice (Care and Protection) of Children Act of 2000:** This law made it a crime, punishable with a prison term, for anyone to procure or employ a child in any hazardous employment or in bondage.

The Right of Children to Free and Compulsory Education Act of 2009: The law mandates free and compulsory education to all children aged 6 to 14 years. This legislation also mandated that 25 percent of seats in every private school must be allocated for children from disadvantaged groups and physically challenged children.

India formulated a National Policy on Child Labour in 1987. This Policy seeks to adopt a gradual & sequential approach with a focus on rehabilitation of children working in hazardous occupations. It envisioned strict enforcement of Indian laws on child labour combined with development programs to address the root causes of child labour such as poverty. In 1988, this led to the National Child Labour Project (NCLP) initiative. This legal and development initiative continues, with a current central government funding of 6 billion, targeted solely to eliminate child labour in India. Despite these efforts, child labour remains a major challenge for India.

For much of human history and across different cultures, children less than 17 years old have contributed to family welfare in a variety of ways. UNICEF suggests that poverty is the big cause of child labour. The report also notes that in rural and impoverished parts of developing and undeveloped parts of the world, children have no real and meaningful alternative. Schools and teachers are unavailable. Child labour is the unnatural result. A BBC report, similarly, concludes poverty and inadequate public education infrastructure are some of the causes of child labour in India. Between boys and girls, UNICEF finds girls are two times more likely to be out of school and working in a domestic role. Parents with limited resources, claims UNICEF, have to choose whose school costs and fees they can afford when a school is available. Educating girls tends to be a lower priority across the world, including India. Girls are also harassed or bullied at schools, sidelined by prejudice or poor curricula, according to UNICEF. Solely by virtue of their gender, therefore, many girls are kept from school or drop out, then provide child labour. The International Labour Organisation (ILO) and Spreading Smiles Through Education Organisation (OSSE) suggests poverty is the greatest single force driving children into the workplace. Income from a child's work is felt to be crucial for his/her own survival or for that of the household. For some families, income from their children's labour is between 25 to 40% of the household income. According to a 2008 study by ILO, among the most important factors driving children to harmful labour is the lack of availability and quality of schooling. Many communities, particularly rural areas do not possess adequate school facilities. Even when schools are sometimes available, they are too far away, difficult to reach, unaffordable or the quality of education is so poor that parents wonder if going to school is really worthwhile. In government-run primary schools, even when children show up, government-paid teachers do not show up 25% of the time. The 2008 ILO study suggests that illiteracy resulting from a child going to work,

rather than a quality primary and secondary school, limits the child's ability to get a basic educational grounding which would in normal situations enable them to acquire skills and to improve their prospects for a decent adult working life. An albeit older report published by UNICEF outlines the issues summarized by the ILO report. The UNICEF report claimed that while 90% of child labour in India is in its rural areas, the availability and quality of schools is decrepit; in rural areas of India, claims the old UNICEF report, about 50% of government funded primary schools that exist do not have a building, 40% lack a blackboard, few have books, and 97% of funds for these publicly funded school have been budgeted by the government as salaries for the teacher and administrators. A 2012 Wall Street Journal article reports while the enrollment in India's school has dramatically increased in recent years to over 96% of all children in the 6-14-year age group, the infrastructure in schools, aimed in part to reduce child labour, remains poor - over 81,000 schools do not have a blackboard and about 42,000 government schools operate without a building with makeshift arrangements during monsoons and inclement weather.

Biggeri and Mehrotra have studied the macroeconomic factors that encourage child labour. They focus their study on five Asian nations including India, Pakistan, Indonesia, Thailand and Philippines. They suggest that child labour is a serious problem in all five, but it is not a new problem. Macroeconomic causes encouraged widespread child labour across the world, over most of human history. They suggest that the causes for child labour include both the demand and the supply side. While poverty and unavailability of good schools explain the child labour supply side, they suggest that the growth of low paying informal economy rather than higher paying formal economy - called organised economy in India - is amongst the causes of the demand side. India has rigid labour laws and numerous regulations that prevent growth of organised sector where work protections are easier to monitor, and work more productive and higher paying. The unintended effect of Indian complex labour laws is the work has shifted to the unorganised, informal sector. As a result, after the unorganised agriculture sector which employs 60% of child labour, it is the unorganised trade, unorganised assembly and unorganised retail work that is the largest employer of child labour. If macroeconomic factors and laws prevent growth of formal sector, the family owned informal sector grows, deploying low cost, easy to hire, easy to dismiss labour in form of child labour. Even in situations where children are going to school, claim Biggeri and Mehrotra, children engage in routine after-school home-based manufacturing and economic activity. Other scholars too suggest that inflexibility and structure of India's labour market, size of informal economy, inability of industries to scale up and lack of modern manufacturing technologies are major macroeconomic factors affecting demand and acceptability of child labour.

Cigno et al. suggest the government planned and implemented land redistribution programs in India, where poor families were given small plots of land with the idea of enabling economic independence, have had the unintended effect of increased child labour. They find that smallholder plots of land are labour-intensively farmed since small plots cannot productively afford expensive farming equipment. In these cases, a means to increase output from the small plot has been to apply more labour, including child labour.

**Conclusion-** The problem of the child labour has more pronounced now than before. Now it has increased tremendously and became a national issue. As a part of the vulnerable section of people, child labour has some sufferings in the society. They want to get rid of these painful experiences and deserve help from the nation to enjoy the rest of their life. As per the finding of the present study will be identify the effective services and formulate a policy and plan for the child labour in Rewa. Most will agree that eliminating child labour is clearly a goal in the long run. However, in poverty-stricken countries, work and education are often viewed as mutually exclusive in the lives of children. Cultural values and political environments of most developing countries continue to support the use of child labour, and these poses' tough challenges for organizations and individuals engaged in controlling its use.

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## Wane Childhood: Child Trafficking and Media Sensitization

\* Priya Khanna Chadha

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**Abstract-** *This paper addresses the issue of child trafficking in India. Human trafficking is found to be third largest source of making money for organized crime worldwide. Child is a person who is below 18 years of age. Child trafficking is devastatingly destructive to child growth and development and overall growth of the country. It is a serious violation of human right but has remained largely unnoticed due to its clandestine nature. Adolescents comprises 30 percent of world population and India has the largest national population of adolescents about 243 million, almost equal to Western Asia. Majority of Indian adolescents belong to illiterate, poor and marginalized communities who get exposed to multiple vulnerabilities and exploitation by child traffickers. Thousands of children are seen as a domestic servitude, begging on roads, working on shops, construction sites and industries etc where the surroundings are highly toxic and dangerous to their health. This paper talks about the root causes of child trafficking. The paper focuses primarily on three forms of child trafficking namely child labour, child marriage and child begging and initiatives taken by the government to control this menace. Accordingly, it suggests media sensitization in combating child trafficking for better future of children and sustainable development of the country.*

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**Key Words-** Child Trafficking, child labour, child marriage, child begging, government initiatives, media sensitization

**Introduction:** Human trafficking, especially child trafficking is becoming a prevalent issue in India and all across the world. Reports have depicted that human trafficking is third largest source of making money for organized crime worldwide. Child is a person who is below 18 years of age. This is a most vulnerable age. Child trafficking is devastatingly destructive to child growth and development and overall growth of the country. It is a serious violation of human right. India is a country where a large stratum of population lives in villages. They are illiterate, poor and marginalized communities who get exposed to multiple vulnerabilities and exploitation by child traffickers. Thousands of children are seen begging on roads, working on construction sites, shops etc. Children are also forced to work in factories and industries

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where the surroundings are highly toxic and dangerous. Such unhealthy and unfavorable working conditions are threat to innocent lives. Large numbers of children are transported within the country and outside the country across border. Government figures show that two out of five children drop school education before completing eighth class. The number is much more in rural areas where children belong to poor and marginalized society where gender discrimination is merely on caste and religion. Such drop out children often land up being subjected to child labor and child marriage. Cases related to child trafficking remain largely unnoticed due to its clandestine nature. Child trafficking is very prevalent in India and will continue to grow rapidly if not mitigated timely.

#### **Objectives of the present Research Paper:**

- Demographic trends for adolescents
- Reasons behind and different types of child trafficking in India.
- Suggestions and Recommendations to control child trafficking.

#### **Working Definitions:**

**Adolescence:** The task of defining adolescence has remained difficult due to the fact that each adolescent has different and unique transitions from early years to later years of life. World Health Organization has mentioned 'Adolescence' as a critical period which falls between 10 to 19 years. WHO (1995) has categorized adolescence into three developmental stages on the basis of their physical, psychological and social developments. These stages are early adolescence which falls between 10-15 years; mid adolescence from 14-17 years and late adolescence from 17-21 years.

**Child Trafficking:** According to UNICEF report 2007, "A child has been trafficked if he or she has been moved within a country, or across borders, whether by force or not, with the purpose of exploiting the child". According to UNICEF a child victim of trafficking is "any person 18 who is recruited, transported, transferred, harboured or received for the purpose of exploitation, either within or outside a country."

#### **Demographic Trends of Adolescents:**

These stages are early adolescence which falls between 10-15 years; mid adolescence from 14-17 years and late adolescence from 17-21 years. United Nations International Children Emergency fund, UNICEF (1998) mentioned that adolescents comprise 30 percent of the world's population. More than half the world's adolescents live in either the South Asia or the East Asia and Pacific region. India has the largest national population of adolescents aged 10-19 (253 million), followed by China (207 million), United States (44 million), Indonesia and Pakistan (both 41 million). According to Census 2011, Youth Population of India aged 15-24 (232 million) is nearly equal to the total population of 18 Western Asian Countries.

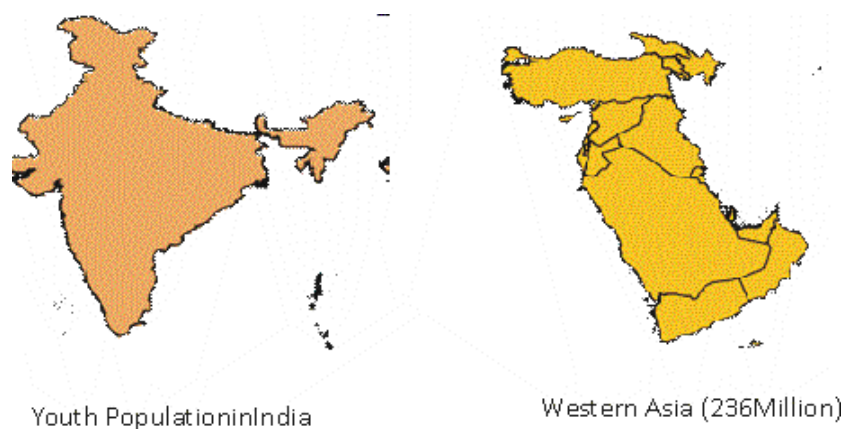


Figure 1.1 Source: Census of India 2010-11  
**Rural and Urban Distribution of Children Population**

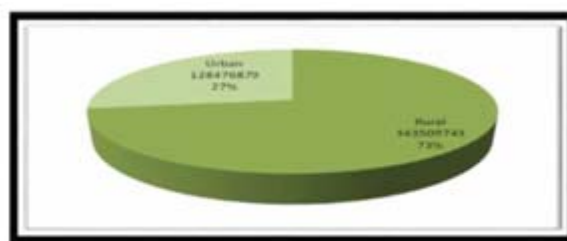


Figure 1.2 Source: Census of India 2010-11

The above figure 1.2 depicts that 27 percent of Indian adolescents lives in urban area and 73 percent lives in rural area. According to reports of Census of India (2010-2011) and in figure 1.3 Uttar Pradesh is leading with 19.27% adolescent's population in the country followed by Bihar

10.55 %, then Maharashtra with 8.15%, West Bengal with 6.81% and Madhya Pradesh with 6.46 %. Putting together this constitutes 52% of children population of the country.

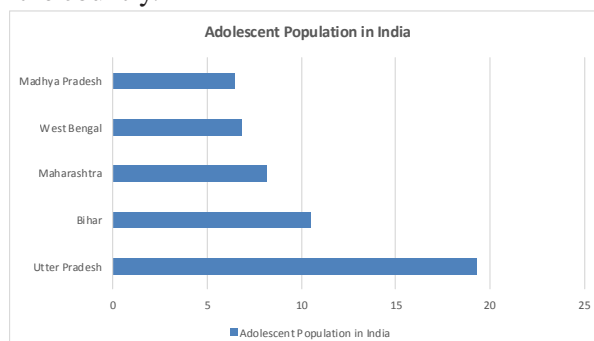


Figure 1.3 Source: Census of India 2010-11

As far as number of people trafficked in India, the figure below depicts that Andhra Pradesh, Karnataka, West Bengal have the largest number of people trafficked.

Figure 1.4 Source: Census of India 2010-11

The figure 1,5 below depicts that the number of intra state or inter district trafficking is high in Rajasthan, Assam, Meghalaya, Bihar, Uttar Pradesh, Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra. Delhi and Goa are considered as receiving states. North eastern states are also high in number but are not much looked. In 2008, 529 girls were trafficked from Assam itself.

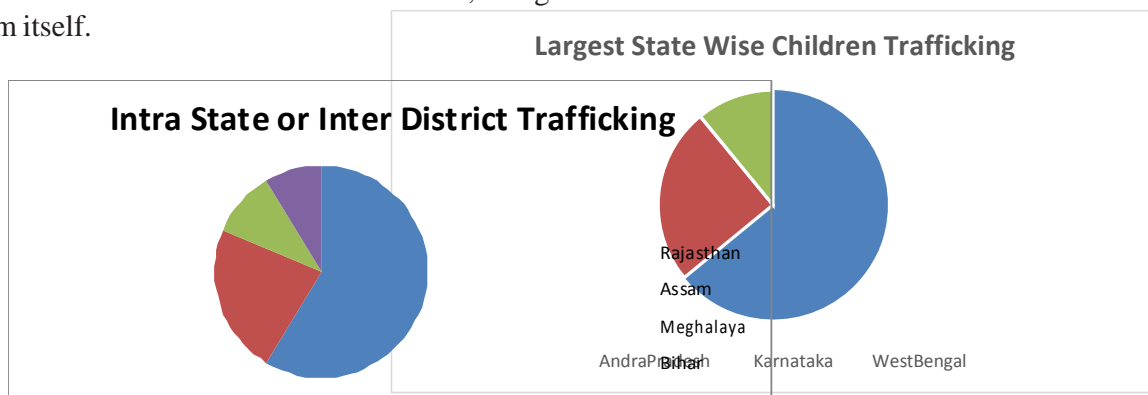


Figure 1.5 Source: Census of India 2010-11

#### Reasons behind Child Trafficking:

There are several contributing factors for child trafficking in India. These factors push children to get trapped in the tripod of the traffickers. Some of the main root causes and vulnerability factors are poor socio- economic conditions of the country, lot of orphan children, lack of child birth registration, lack of awareness, victims of domestic violence, staying on streets and slums, absence of citizenship, easy access to highways and borders, family debts, high density population and unemployment, natural calamities such as

earthquake, floods etc. Lucrative job offers in urban areas, rise in demand of low- paid wage labor, lack of law enforcement, corruption and organized crime, lack of awareness about the motive behind traffickers. Because of these factors large numbers of children are transported within the country and outside the country across border. Though there are various forms of child trafficking but the present paper focuses on the main three forms which are commonly seen in India and they are child labor, child marriage and childbegging.

#### **Child Labor:**

One of the main motives of child traffickers is to push children to forced child labor. According to Minimum Age Convention (1973) Child labor, specifically to children means under a stipulated minimum age, usually 14 at the lowest, being required to work. According to Unicef (2011) that there are about 150 million aged 5-14 in developing countries those who are engaged in various activities of child labor. Adding to this data, International Labor Organization reports that 60% of the children are working in agriculture and about 115 million are engaged in hazardous work and in other forms such as domestic servitude etc. The ILO further submits that though the child labor is coming down at the global level but in the region of sub-Saharan Africa, the number of children aged 5-17 , 1 in 4 children has remained constant and reports have also shown children aged 5-17 are child labor , an increase of 20% in the last five years. According to McCabe (2008) companies like Gap and Nike were using industries “sweatshops” were making trafficked children to make their desired products (p.81). The prevalence of child labor has been reported both in developed and developing countries. In 2017 UNICEF Global data reported that children living in the poorest countries, around 1 in 4 is engaged in childlabor.

#### **Child Marriage:**

Child marriage another form of child trafficking crime prevalent in various parts of the world and also in India due to poor socio- economic factors. Child marriage it is not only a violation of human right but is also detrimental to physical and emotional growth of children. WHO defines child marriage below the age of 18 which includes both boys and girls. According to UNICEF India has second highest number of child marriage. Adolescents’ girls are more victim of this practice because of the patriarchal Indian social system and traditional notions. Child marriage is violation of human right which denies girl right to education and major threat to a child’s health and well being Girls are caught in a situation of powerlessness, abuse and domestic violence. As per the article of John f. Burns (1998) revealed that in 1993 survey in the state of Rajasthan about 5,000 women confessed that 56 per cent had married before age 15, and of these, 17 per cent were married before they were 10. Similarly, Carron (2000) also mentioned that in a survey carried out in 1998, 14 percent of girls aged 10-14 were married in

Madhya Pradesh..

### **Challenges to eradicating child marriage:**

There are many causes of child marriage in India and multiple barriers to its elimination. Poverty, weak enforcement of laws, patriarchal social norms intended to ensure family honor are significant factors that increase the risk of girl being married off while still a child. Also, girls from poor households are more likely to marry as children, since marriage becomes a solution to reduce the size of the family. The cost of marriage plays a big role in families sliding further into poverty, and these high costs contribute to girls being forced to marry when other ceremonies are taking place in the family or when older siblings are being married.

### **Child Begging:**

In 2004, International Labor Organization adopted the definition of begging. Begging is defined as “a range of activities whereby an individual asks a stranger for money on the basis of being poor or needing charitable donations for health or religious reasons. Beggars may also sell small items, such as dusters or flowers, in return for money that may have little to do with the value of the item for sale. “The trafficked children are forced to beg on streets. Such children are deprived of basic fundamental right of living with respect and dignity. They are daily exposed to various healths hazardous and are deprived of basic education, love and family environment. This problem is to combat as in some situations parents force their children and ensure that begging is carried out by them.

### **Constitution of India and Initiatives by government:**

Article 21 – No person shall be deprived of his life or personal liberty except according to procedure established by law.

Article 21 A- The state shall provide free and compulsory education to all children aged 6-14 years in such manner as the state may, by law, determine.

Article 23- Traffic in human beings and beggary and other forms of forced labour are prohibited and any contravention of this provision shall be an offence punishable in accordance with the law.

Article 24- No child below the age of 14 year shall be employed to work in any factory or mine or engaged in any other hazardous employment.

The constitution (amendment 86<sup>th</sup>) Act notified on 13 th December 2002, making free and compulsory education a Fundamental Right for all children aged 6-14 years.

### **Government Schemes and Programmes:**

The government of India has started various schemes for the better living and growth of the children of our country such as Mid –day Meal Scheme, Integrated Child Development Scheme, Integrated Child Protection Scheme, SaryaShikshaAbhiyan, Operation Blackboard, Integrated Programme for street Children, Kishori Shakti Yojana, Wheat Based Nutrition Programme (WBNP), Nutrition Programme for Adolescents Girls (NPAG), Rajiv Gandhi

Creche Scheme For the Children of Working Mothers, BalikaSamriddhiYojana (BSY), Initiatives to Combat trafficking of Women and Children, Central Adoption Resource Agency (CARA), ShishuGreha Scheme, CHILDLINE services, Reproductive and Child Health Programme, Scheme for working Children in need of Care and Protection. Such schemes need more and more media and community sensitization so as to provide protected and safe environment for the children of India.

As per the census 2011 with BetiPahaoBetiBacchahoprogramme, the literacy rate in India has touched 73% but the female literacy rate 64.6% is still lesser than the male literacy rate (80.9%).

However with more and more awareness and media sensitization the gender gap in literacy rate will gradually decrease in the times to come. There are around 60 % programmes emphasizing to combat child marriage which are based on community sensitization and various other programmes which aim to educate girls by offering various schemes, financial incentives and scholarships etc

### **Conclusion:**

Child trafficking is very prevalent in India and will continue to grow rapidly if not mitigated timely. No doubt, with various government schemes, many children are being rehabilitated and made self sufficient but child trafficking is still considered a peripheral issue in many states of the country. The ruthlessness of the dilemma demands more initiatives and programme planning by the government to enforce laws, effective children safety measures is provided to the children for the substantial development of the country. The task is difficult but not impossible to achieve. We can achieve the goal to combat child trafficking by working together and changing the mind set by way of media and community sensitization at all the levels – district, state, national and international for the future development of not only of India but world at large.

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## Some Reflections on the Cultural Aspects of Buksa Tribe of Uttarakhand

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**Abstract-** *Buksa tribe is one tribe among the primitive tribes of Uttarakhand which resides in the areas of Udham Singh Nagar, Dehradun, Nainital, Pauri and Hardwar districts. They have got their separate cultural identity which makes them unique from other tribes residing in Uttarakhand. They have got certain basic features and characteristics which has been discussed and analysed in this paper.*

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**Key Words-** Tribe, Tarai, Culture, Uttarakhand, Marriage, Religion, Family

### Methodology:

Historical, Analytical, Descriptive, Expository, Narrative

### Introduction:

Among the 75 Primitive Tribal Groups in India, including the Buksa. Buksas acquired the status of scheduled tribe in June 1967 and as a primitive tribe in 1981 by the Government of India. According to tribal zones of India, Buksa falls in northern zone. The Bhoksa are found along the slopes of the lower Himalayas in a forested region known as the Tarai. In Uttarakhand, they reside in Udham Singh Nagar, Dehradun, Nainital, Pauri and Hardwar districts. Some Buksas relate the etymology of their name with the English word 'bogus' which later changed into Buksa. Some aged Buksas of Tarai in Udham Singh Nagar District are of the opinion that Buksa is corrupted form of 'Sarva Bhakshi' means omnivorous. Today, this community is pronounced as Buxa, Bhuksa, Boksa, Bhoksa by different people.

In Dehradun, they are known as Mehra, which is said to be a corruption of the Hindi word mehram, which means a knowledgeable person. They are said to have acquired this name on the account of the fact that they were the only community that was employed as guides by travelers in the Tarai. According to the community's own traditions, they are Rajputs from the Deccan that fled to the hills to escape the Muslim conquerors of India. This is said to be reflected in their sub-division, the Rajvanshi, Suryavanshi, Chandravanshi and Dujvanshi, all well known Rajput sub-groups. The Buksa of Bazpur claim descent from Raja Jagatdeo, a great warrior of Rajasthan, who was a worshipper of Durga and who offered his head to her.

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They were secluded from the rest of the Indian society by virtue of their geographical conditions, confining them to their own 'biradari' (social fold). Buksa territory remained a Partially Excluded Area under the Government of India Act 1935 until independence from the British in 1947. The origin of Buksa is not clear. Some Buksas claim them to be migrants from the 'Dharanagri' Desert in Rajasthan. Others say that they are the descendants of the children who were born out of the liaisons between the Rajput women and their servants who fled the Muslim invaders. In general, they are medium or below medium statured. Their eyes are small, the opening of eyelids being narrow, linear and horizontal the face is very broad across the cheek bones and their nose is depressed thus increasing the general fitness of the face. The features of the women are similar to those of the men. The women are, however much more shapely and beautiful than their men. The complexion of both men and women is wheatish or dark wheatish. The colour of their hair is usually black.

The Buksas followed Hindu religion, but after all they purely are a tribal community by anthropological point of view. Despite a clear and distinct impact of Hinduism on their beliefs, the Buksas continue to have a deep faith in the essential ingredients of tribal religion-animism and spiritualism. They are now in every respect in their habits and customs Hindus of the ordinary low caste type and employ Gaur Brahman Priests in their marriage and funeral ceremonies. The Buksas are liberal and broad based in their attitudes towards other religions too.

The Buksas worship and revere most of the Hindu Gods popular among the Hindus of Tarai. Even today they worship various Gods and Goddesses of the Hindu pantheon. There are a large number of local deities and devtas who command great respect from Hindus and Buksa alike. The Buksas claim that they were tribal deities, later adopted by the Hindus. The Kashipur Devi, the Atarriya Devi, the Ilavas Devi, the Gamekheri Devi, and Sundari or Basundari Devi are some of the Goddesses they worship. Sundari or Basundari Devi is most important among them all. She is marriage deity and according to the Buksas, her original abode was at Dharnager in Rajasthan from where the Buksas claim to have originally migrated.

The whole of the Buksa community is divided into two major sects i.e. the 'Deviware' and 'Guruware'. The adherents of Sundari or Basundari Devi are known as 'Deviware'. The Buksas who used to worship Guru Nanak Dev are known as 'Guruware'. There are some deities which can be said to be typical Buksa deities, which are not worshiped by Hindus. These are Bhumsen, Bhumia and Guru Nanak. Bhumsen is the village deity and Bhumia is the family deity. The Buksa do not link Guru Nanak with Sikhism and are quite ignorant of its tenets. The popularity of the Guru among the Buksas is however rapidly decreasing. The main reason appears to be the advent of Sikhs in a big way in Tarai as land grabbers and exploiters.

Besides this, there were Buksas who had a faith on Islam. It is said that the Buksas have been in contact with Muslims for more than four hundred years. The existence of Muswani gotra among the Buksas of Dehradun proves this fact. Two Muslim saints, Sarwar Lakhi and Kalu Sayyid were among the deities worshipped by the Buksas. Zahir Auliya Pir is quite popular among the Buksas of Bazpur who mention that the Pir was originally Kshetriya, who later embraced Islam. He is offered flowers and Matka (earthen pots) during worship.

Despite the fact there is a catholic Mission functioning at Bazpur and Damola are run and managed by Catholic padrees, there has been little impact of Christianity on the Buksas. They worship all natural things like earth, rivers, hills, trees, animals, sun, moon and stones. Master of religious male activities called as Bharara or Bhagat and female called as Bharari or Bhagatin. Every family has separate worship place in house it is called as Thakurji. Head of the family or authorized man-women clean it every day and do worship and pray for blessing of whole family. The Buksas sacrifice and offer animals to holy Gods and Goddess. The Buksas mainly worship Goddess named as Bala Sundar, the wife Thakurji. The dead are usually cremated but in the case of unnatural death the bodies are buried.

The Buksas are famous for their magical activities. The Buksas like to do many magical activities for blessing their agriculture and livestock. Black and white both type of magic they like to use generally. A Seyana also administers to their medical/spiritual needs. The Buksa do not accept water and food from certain neighbouring communities. They are very superstitious and so do not like to start a new job or embark on a new undertaking at certain times. They are hesitant to break old conventions even though it may be to their economic advantage and betterment. They have full faith in super natural powers. It is something which can be ghost of a departed soul. This power can do either good or bad. It is the creator of the rivers and mountain and so on.

The Buksas are endogamous and divided into various clans (Gotras) named after their sub-caste groups and the place of dwelling called 'Khera'. Elliot has mentioned 15 Gotras of the Buksas while Shukla (1974) has stated 56 Gotras named after their Khera or the places of habitations. Every Gotra is exogamous in nature.

The Buksa is a patriarchal, patrilocal and patrilineal community. There is a well family system in this community. Both the nuclear and extended type of families exists among the Buksas. All the sons inherit an equal share of their parental property and the eldest son succeeds his deceased father. It is male dominated community but the female equally wield equal position in different walks of life. It is the Buksa women who make purchases from the market and decide on the finances involved in the marriages of their children. Buksa women help in farm operations and cut wood from the forest. Thus the

women have the dominating role. Buksa male generally wear Dhoti, shirt and white cap. Traditional dress of women is a kind of petticoat, an Angia and Orhni. But now they have started wearing other common dresses worn in the village and nearby township. The Buksa women love to decorate themselves and some are very fond of ornaments. Even small girls wear a few ornaments. The vermilion mark, toe rings and a nose stud are symbol of married women. The ornaments are made of gold or silver. Glass bangles are also commonly used.

The Buksa usually eat what they grow. Their staple diet consists of rice, wheat, vegetables, pulses, mutton, chicken, milk products, fish, wild birds, e.g. partridge, batter, peacock, pigeon and water fowl and wild animals e.g. wild boar, rabbit, sahi and deer. However, since hunting is banned in forest they cannot use more non-vegetable food. Because of poverty they cannot afford expensive mutton and chicken. At present, some Buksas youth are ignoring their traditional food and accepting some fast foods rapidly. Drinking too is common. Both men and women drink on a large scale. Smoking is fairly common among men, women and even children. The use of Biri is almost universal. Tobacco is commonly used for smoking, many smoke Ganja also. Bhang is taken orally as an intoxicant. Chewing pan is very common. In these days they are chewing Pan Masala and Gutkha which is popular among the young people. The development measures of the Government and education changed the traditional living, cropping and agricultural pattern of Buksas as well as their life style. Now, they grow cane and collect minor forest produce also. Beekeeping is also prevalent among them. The changing pattern of their occupation has developed the economic conditions of the tribe.

Buksas houses are made of mud walls with a two sided sloppy thatch. This type of structure is used to prevent the accumulation of water in the rainy season and to increase the longevity of the structure. The houses usually have two Kuccha rooms, each with two doors that open against each other. Houses are used for living, dining, storing and cooking and are very attractive and clean, unlike the Buksas themselves who are dirty. There is a separate building with a thatched roof for the animals. Buksas build their houses in two rows, with the space in between serving as a courtyard. In recent years, however, a few well-to-do Buksa families have constructed Pucca houses, which stand out incongruously in the village. They like contrast colour in dress and wall painting for decoration of house. The marriage by negotiation is a formal way of acquiring mate among the Buksas. Besides the formal way some other ways like marriage by mutual consent and elopement, widow remarriage, divorced marriage, levirate, levirate senior marriage, surrogate, marriage by exchange, Gharjawain marriage and love marriage are also observed by the Buksas. Cross cousin marriages are prohibited.

The loss of Buksa autonomy over their main resource viz. land began at the dawn of India's independence from British rule in 1947, Scarcity of

food caused by the Second World War, as well as by the colonists and their Indian cronies, compelled the Central Government to embark on a strategic plan to increase the production of staple food grains. The shifting cultivator and subsistence practices of the Buksa were of little concern to a government that put national interests before local interests. Herein began the seeds of Buksa displacement from Tarai-an area well known for its fertile soil. Banking upon the reputation of Punjabis as good agriculturalists, the Uttar Pradesh State Government negotiated with the Punjab Government to encourage peasants, landless cultivators and refugees from Pakistan to settle in Tarai. Many from the agriculturally successful plains of Punjab province availed themselves to this privilege. The cultivators were liberally apportioned land by the superintendent in charge of Tarai and Bhabhar government estate in accordance with the provisions of the U.P. (Uttar Pradesh) Tenancy Act, 1939. By early 1948, with the help of the World Health Organization (WHO), the state government began clearing the dense jungles in Tarai to build roads, simultaneously aiming to combat malaria – one of the major causes of death in the area. These initiatives encouraged refugees from Pakistan, the Rai Sikhs and the Hindu Punjabis to enter this area. Increased settlement by these groups brought about a new interface that began radically altering the dynamics of the Buksa routing lifestyle. Renowned for their militancy, the Rai Sikhs and the Hindu Punjabis went beyond what was allocated to them by using force to occupy more Buksa land. Their aggression enforced a relocation of the Buksa to poorly developed villages where the land was generally infertile. While the Central Government turned a blind eye to this catastrophe the UP State Government willingly formalized their forced acquisition of this land. The Buksa is an agriculturist community. Almost all the Buksa population is engaged in agriculture and allied activities. Pressure of increasing tribal population, their pressing needs and fragmentation of land due to growing generations have caused the problem of land alienation among some Buksa families. The economy of the Buksas is thus based on agriculture and animal husbandry. The secondary occupations include service, wage labourers, basketry etc. They also rear cows, buffaloes, goats, horses and poultry birds. They also keep kitchen gardens, collect tendu patta, make ropes and do carpentry. The primitive way of living, illiteracy, introverted nature of Buksas in general, unawareness and lack of employment opportunities have perpetuated their age old pauperism. However, some self employment generation schemes have provided some of the youths an opportunity of employment other than agriculture. The Tarai was generally harsh territory that was difficult to live in. Life in most of the villages is one of continual struggle for existence against wild animals such as elephants, tigers, bears, wild boars, wolves, neelgai and jackals, against the dense forest vegetation, the enervating climate, malaria, dirty drinking water, poor transportation, poor communication and a lack of basic amenities.

The Buksas are keen observers of festivals and like to visit fairs. In their leisure time, they get together in small groups and discuss village affairs and casual scandals. They have numerous folk tales and folk songs. They sing their own traditional folk songs but also enjoy film music and women take part in singing on special occasions. They use several traditional musical instruments. The Buksas love their fold arts. Remarkable fact is that they make handicrafts only for personal use and not for marketing purpose. The Panchayat system is very strong in this group, head of Panchayat called Padhan in local Buksa language. Buksas have very friendly nature, every Buksa people have a best friend in their life, male best friend of male called as Meet or Dilbar and female best friend of female called as sangan. Buksas treat their friend as real brother and sister. They are very hostile and they respect their guests very much. They like to serve best and more food dishes for guests. Indebtedness has also been found among the Buksas for personal reasons like marriage, medical treatment etc.

### **Conclusion:**

Thus the Buksa tribe is a unique tribe of Uttarakhand who have got their separate origination and unique identity. Their physical traits and appearance is different. Their language, dialect, rituals, beliefs, Gods, Goddess, local deities, clothing, ornaments, food, drinks, marriage system is quite unique in nature. They have got patriarchal system but women plays a dominating role in family. The Impact of Islam could also be seen in their culture. The efforts of the government have changed their traditional living as well as agriculture patterns which in turn had developed the economic conditions of the tribe.

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## The Concept of Civil Society: A Theoretical Construct

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**Abstract-** *Foundation of Civil Society is traced from state of nature. To cater inconveniences of state of nature, a supreme body of politics was needed and Civil Society was incarnated as boon of Almighty God. Idea of Civil Society and Political State emerged from the theories of Social Contract by Thomas Hobbes, John Lock and Jean Jacques Rousseau. All the three luminaries of political thought insisted that a sovereign power whether it is Thomas Hobbes' 'Leviathan' or John Locke's 'Community' or Jean Jacques Rousseau's 'General Will' works on the principles of social contract. In the view of Lock, state of nature is not a state of constant warfare. On the contrary, it is a state of peace, goodwill, mutual assistance and preservation. The majority of people at this stage obey the law of nature that is the law of inward morality. It is a condition, as Lock puts it, of perfect freedom to order to their actions, and dispose of their possessions and persons as they think fit, within the bounds of the law of nature, without asking leave or depending upon the will of any other man. Thomas Hobbes elaborates his theory of contract in his famous work 'Leviathan'. Lock on the other hand describes theory of contract in his 'Two Treatises of Civil Government'. Lock agreed that if the monarch ever behaved in a despotic manner, the people have the right to remove him from authority. Lock was not enemy of monarchy but he favoured to establish monarchy by the consent of the people. Rousseau described about contract theory in his later work 'The Social Contract'. Rousseau was a brilliant writer, whose ideas induced the revolutionary upsurge that took the French polity to its foundation. Hegel was the first political philosopher who separated and differentiated Civil Society from State. Hegel thought of Civil Society as a negation of the family and the State as the synthesis of the thesis of family and the antithesis of Civil Society, subordinating Civil Society to the State.*

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**Key Words-** Community, Leviathan, General Will, social contract, endeavoured, civilization inequalities, Law of Nature and State of Nature

**Introduction:** Water takes its own shape. It is well known behaviour of nature. Society also takes its own way to remain alive. Now a day corruption is prevailing everywhere and it seemed that civilized way of living life would not be alive. In real sense idea of Civil Society and Political State emerged

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from the theories of Social Contract<sup>1</sup> by Thomas Hobbes, John Lock and Jean Jacques Rousseau. All the three luminaries of political thought insisted that a sovereign power whether it is Thomas Hobbes' 'Leviathan' or John Locke's 'Community' or Jean Jacques Rousseau's 'General Will' works on the principles of social contract. It is nothing but a gentleman's contract with each and every individual to look after and to uphold their right to life, right to liberty, right to live life with peace, security & self esteem or otherwise the life of the individuals would be anarchy life of state of nature, where there was no code of conduct, no laws and everyone was free to live life with their own feeling disregarding other's genuine interests.

Individuals surrendered their rights to a sovereign body in the anticipation that the sovereign body will give good governance in society; whatever are finer details of different theories of social contract, the ultimate things is that if individuals see that there is no good governance and State commits a breach of trust, people can withdraw their consent from sovereign body. Rousseau tells that dawn of reason was due to entry of thinking men in state of nature<sup>2</sup>. Primarily there was pre-property state of nature. No one was claiming for natural properties but as soon as men developed themselves as thinking entities the era of post property state of nature came into existence. Men started accumulating properties like anything and from this point of time corruption started in societal arena of political world. As time elapsed society saw that representatives of sovereign body are engulfed in corrupt practices to accumulate properties and unaccounted money to their names and their relative's names like anything. According to Hobbes, human beings are essentially egoistic, selfish and quarrelsome; whereas John Locke believes that human beings in society are basically altruistic, selfless, peace loving and good. These decent people felt uneasy symptoms of corrupt practices prevailing in society and a fire of anti corruption thinking sparked in their minds. Here is the foundation point of Civil Society to check, eradicate and annul corruption in every walk of life.

#### **Conceptual Idea of Social Contract in perspective of Civil Society:**

There are two forms of the theory of contract, visually, the governmental contract and the social contract. The first, i.e., the governmental contract postulates a tacit agreement between the government and the people; and the second, i.e., the social contract theory, the institution of a political society by means of a compact among individuals. Mane Gold in the eleventh century developed the idea that a king could be deposed when he had violated the agreement according to which he was chosen. By 'oath at this coronation' a king was supposed to have made a pact with his people to promote a happy & virtuous life. An important recognition of the theory was the declaration of the convention by parliament in England in 1688 that James II 'having endeavoured to subvert the constitution by breaking the original contract between king and people' had made the throne vacant. The theory of the

social contract presents a typical version of the origin of the State from the liberal point of view. This theory treats the State as product of the mutual agreement of men, created with a definite purpose, to serve certain needs. Thomas Hobbes, John Lock and Jean Jacques Rousseau are regarded as main exponents of the theory of social contract.

Hobbes and Lock are from England while Rousseau belongs to France. Hobbes was a tutor to eldest son of Lord Cavendish (Earl of Devonshire- a European state). He elaborates his theory of contract in his famous work 'Leviathan'. Lock on the other hand describes theory of contract in his 'Two Treatises of Civil Government'. Lock agreed that if the monarch ever behaved in a despotic manner, the people have the right to remove him from authority. Lock was not enemy of monarchy but he favoured to establish monarchy by the consent of the people. Rousseau described about contract theory in his later work 'The Social Contract'. Rousseau was a brilliant writer, whose ideas induced the revolutionary upsurge that took the French polity to its foundation. He is regarded as one of the sources of inspiration of the great French Revolution (1789).

#### **The State of Nature:**

It was time when State, a centre of administration was not taken its shape. It was a state of continual fear. The state of nature was a state of war, war of each against all. Hobbes has given a vivid picture of the people in the state of nature. According to Hobbes, the people in the state of nature were selfish and self-seeking. The every action of human being was dictated by their self interests. In the state of nature, there was no law, no justice and no property while these are the creation of State which was later originated. There was no distinction between right and wrong, no notion of justice and injustice and no distinction between good and bad. There was only force and fraud. 'Might is right' was prevailed.

According to Hobbes "we find three principles of quarrel-firstly competition, secondly diffidence and thirdly, glory. The first made man invade for gain, the second for safety and the third for reputation. During the time when men live without common power to keep them all in awe, they were in that condition; there was no place for industry, no culture, no navigation, no commodious building, no society.<sup>3</sup>

Locke draws an entirely different picture of state of nature. In the view of Lock, state of nature is not a state of constant warfare. On the contrary, it is a state of peace, goodwill, mutual assistance and preservation. The majority of people at this stage obey the law of nature that is the law of inward morality. It is a condition, as Lock puts it, of perfect freedom to order to their actions, and dispose of their possessions and persons as they think fit, within the bounds of the law of nature, without asking leave or depending upon the will of any other man. A state of equality also, where in all the power and jurisdiction is reciprocal, no one having more than another'<sup>4</sup> and Lock tells more about state

of nature as 'all mankind are equal and independent, no one ought to harm another in his life, health, liberty or possessions. All the servants of one sovereign master, sent into the world by his order and about his business, they are his property, whose workmanship they are, made to last during his, not one another's pleasure'.<sup>5</sup>

Rousseau paints a fascinating picture of the state of nature in his "Discourse on Inequality". Rousseau describes that men in the state of nature are equal, self sufficient and contented. But due to the rise of civilization inequalities raise their head. In later work of Rousseau 'The Social Contract' he takes a modified view of state of nature. Rousseau strikes a different note- man is born free, but he is everywhere in chains. Rousseau observes "since no man has a natural authority over other men, and since might never makes right, it follows that agreements are the basis for all legitimate authority among men."<sup>6</sup>

### **Theories of Social Contract of Hobbes, Locke and Rousseau:**

Hobbes recognizes that even in the primitive natural State, there are in some sense laws of nature. Their essence is self – preservation. Each man has to preserve his own life. The only way to peace for man is to give up so much of their natural rights as these are inconsistent with living in peace. The contracting parties are not the Community and the Government, but subject and subject. Every man says to every other; 'I authorize and give up my right of governing myself to this man or this assembly of men on this condition that thou give up thy rights to him and authorize all his actions in like manner'<sup>7</sup>. A State is thus created which is sovereign and sovereign power is absolute. Sovereign is the result of the pact. The pact is not revocable at the pleasure of the subjects. Men surrender all their rights to the sovereign. As the sovereign embodies in himself the wills of all, his actions are visually their actions. Law of that State is not counsel but command. Every subject is to obey the command. Sovereign is inalienable, sovereignty is indivisible and the sovereign is unpunishable. The sovereign has a right of judicature. The sovereign is judge of what is necessary for the peace and defence of his subjects and judge of what doctrines are fit to be taught.

According to Lock, "in the state of nature men are free and equal; each lives according to his own liking. The law of nature of Lock stresses the freedom and preservation of all men. The state of nature is not a state of war but it is still full of fears and continual danger. Man's enjoyment of rights is very insecure". The state is created by Lock through the medium of contract in which each individual agrees with every other to give up to the community the natural right of enforcing the law of reason, in order that life, liberty and property may be preserved. Lock gives the power to the community and not to Government. The contract is not abstract but limited and specific. The natural right of enforcing the law of reason alone is given up. The natural right of life, liberty and property were reserved to the individual and these

rights were not given up. The powers were surrendered to a sovereign body named community. The community is supreme; its supreme power is latent. The power of community does not come into play so long as the Government is acting according to the trust placed in it; but when it acts contrary to that trust, the power of community manifests itself in its right to replace that Government by another.

In the work 'Social Contract' Rousseau says that man is essentially good and sympathetic. The state of nature is a period when men were free and equal. On introduction of private property and growth of numbers of people, quarrels arise and man is compelled to give up his natural freedom. His problem is to find a form of association which protects with the whole common force, the person and property of each associate. The problem is solved through a contract and formation of a Community called General Will. In this contract every one surrenders to the Community all his rights. The Community becomes sovereign. Its sovereignty is as absolute as that of the Government in Hobbes. There is no need to limit its sovereignty in the interests of the subjects. The Will of the individual may conflict with the General Will of the Community which contributes the sovereign. Hence the social contract involves a strong agreement that anyone refusing to conform to the General Will shall be forced to do so by the whole body politic. Universal conformity to the General Will is the guarantee to each individual of freedom from dependence on other person or persons. Sovereign body can never be alienated, represented or divided. The sovereign is a collective being can be represented only by him self. According to Rousseau, the Community as General Will is not a party of contract. Individuals surrendered all their rights and therefore, sovereignty is absolute, but Rousseau agrees with the conclusion of Hobbes that Government is absolute. Rousseau made the Community- as- General Will- dependent upon the people. Rousseau makes the individuals surrender his right not to the ruler but to the Community. Rousseau postulates a complete surrender of rights on the part of natural man and thereby makes sovereignty absolute.

These contracts are the agreements between common people and proposed sovereign body to create a declared sovereign body through which governance could be made. The common people expect that governance of sovereign body would be good; they would be looked after delicately. Initially all things were well but as property state entered gradually, the governance developed aberration like corruption, unfair means, absence of honesty, criminalization etc.

The cause of aberration was excessive expansion of works of State. It needed a helping hand to cater the need of huge mass. Civil Society was preparing to incarnate himself as a helping hand in human beings society.

#### **Evolution of Civil Society:**

Civil Society- a term widely analyzed in the eighteenth and nineteenth

centuries- seems to have reemerged in the twenty first century with reformist and many a time with radical agenda. Gradually, when societal strength came to be analyzed in associational and organizational terms, the concept of Civil Society was born<sup>8</sup>. The concept of Civil Society could be traced as far back as the ancient Greeks, its two distinct traditions – the liberal democratic on the one hand and the Marxist on the other. G.W.F. Hegel was the first political philosopher who separated and differentiated Civil Society from State<sup>9</sup>. Hegel thought of Civil Society as a negation of the family and the State as the synthesis of the thesis of family and the antithesis of Civil Society, subordinating Civil Society to the State.<sup>10</sup> Hegel was followed by Karl Marx and Engels in the nineteenth century. In the twentieth century, Antonio Gramsci analyzed the concept of Civil Society. Civil Society constitutes, what Jurgen Habermas called ‘the public sphere’; the structure of modern national state, economic modernization, great connectedness with other societies and what John Dunn, author of ‘Western Political theory’, refers to as “the modern representative democratic republic. Neera chandhoke – author of ‘State & Civil Society’ sums up the meaning of Civil Society as “the public sphere, where individuals come together for various purposes both for their self – interest and for the reproduction of an entity called society. It is sphere of public, formally accessible to all, and in principle all are allowed for entry into this sphere as the bearers of right”<sup>11</sup>.

A classical definition of the concept of Civil Society is given by St. Augustine as “an assemblage of men associated by a common acknowledgment of rights and by a community of interest”.<sup>12</sup> The credit goes to Adam Ferguson for having used the term Civil Society as a way to change the corrupt feudal order and strengthen the liberty of individual.<sup>13</sup> Civil Society was perceived by different scholars in different ways but only uniformity is that Civil Society takes its shape for safeguarding contract achieved between sovereign body and the common public.

#### **Positive Aspects of Civil Society- Specific Reference to Locke:**

Civil Society -a term- has been used very widely to analyze political possibility and to demarcate pathologically from normative conditions, both in politics and in the life of a society at large. A promising approach is to look carefully at how the term- Civil Society- has been used to express a powerful strategic analysis of politics. John Locke has used the term-Civil Society-as a central device for expressing their understanding of the nature and practical significance of modern politics. Locke stood firmly within natural law traditions. According to Locke’s understanding of human politics, nature as whole is subject to God’s power. Human beings are uniquely related to the power of God. They are wholly under the effective control of their creator and rightfully subject to the power of God, they are also bound as intelligent agents to obey his commands, his laws and to act as that law requires them to do. The Law of Nature for Locke is the Law of Nature’s God. As intelligent

agents, human beings can in principle understand that law; can ascertain what it requires, grasps, why they are obliged to obey it, and choose accordingly to do so. As real agents they can also fail to understand it, can misjudge it, can fail to recognize it and consequently choose for these or other reasons to act in direct and profound conflict with its requirement. As free and intelligent agents, they are at least responsible for each and every deviation from the recognition and performance of their natural duties. According to John Locke, human being can and should know their duties under the Law of Nature through the exercise of their reason. Locke's epistemological thesis in the 'Two Treatises on Government' reiterated at the beginning of the Essay itself is that Reason is sufficient for men to judge their duties under the Law of Nature accurately. As John Locke says in the Essay, "The candle which is set up in us shines bright for all our purposes"<sup>14</sup>, our business here is not to know all things, but those which concern our conduct<sup>15</sup>. To Locke there are two fundamental existential conditions of human beings. Either they are independent or they are dependent and under the direction of God on whom they depend. John Locke believed that these are second one whose most fundamental characteristic is that they are dependent intelligent beings. Human beings could not know simply by exercising their natural cognitive powers that how strong and decisive were the sanctions which God enforced with the content. They could not know these merely by their reason the sanctions could not be validly inferred simply from the properties of the natural world. These can be validly inferred by the exercise of reason from the practical relations between human beings and many aspects of them were quite effectively captured in the psychological and categorical structures of mutual human approval and disapproval. One and single thing in Locke's eyes that made these reasons sufficient to guide human conduct was the punishments and rewards of the Deity himself. According to Hobbes, the laws of nature are simply convenient articles of peace<sup>16</sup>.

The key question for the understanding of Locke's politics is who is to be judged, wherever human purposes and actions come into conflict. In the state of nature, free and equal human beings capable of guiding their actions by the law of Nature, can and do come into sharp conflict with one another. Because they are all free and equal and all subjects to the law of Nature, each has both the right and power to judge when the others breach that law. As Locke himself puts it, that each has the executive power of the law of Nature. They judge and punish each other as agents of the divine creator to whom they all belong. But they are erratic agents of divine power, so they are so far from being impartial in their assessments of the rights and wrongs of conflicts between themselves and others' conflicts, in particular, over ownership and use of natural resources and over monetized wealth become increasingly acute. What is imperatively required is as alternative to the state of nature; that alternative is what Locke himself calls a Civil Society. We might call Civil

Society as a legitimate political order. What a Civil Society provides is in the first place, known standing laws, in the second place, impartial judges and in the third place, effective powers of enforcement in place of the highly undependable coercive capacities of offended individuals and their friends and relations. A Civil Society can in principle be an effective remedy for the state of nature because its members alienate their own right and capacity to judge where the law of Nature has been violated. A true Civil Society can be an effective remedy for inconveniences of the state of nature. No actual existing State is ever guaranteed to provide such a remedy in practice. Locke's most important single conclusion about politics was that most existing human structures of power were very far from meeting the criteria for being a Civil Society. A legitimate political authority can be an effective remedy for many of the inconveniences of the state of nature. But it cannot, of its very nature, hope to be full and consistent remedy for all of them. According to Locke, there must be right of the people to be judged when their rulers have broken their trust. When the people do so, they judge and act upon their judgment, they make an Appeal to Heaven. Heaven is quite literally, the Tribunal which must in the last instance adjudicates what the Law of Nature demands of human agents and punishes and rewards them accordingly. Locke took the idea of an avenging God with the utmost seriousness in his writing- 'the Hand of the Almighty visibly held up and prepared to take vengeance.'<sup>17</sup> It scarcely needs emphasizing that the political presence of the Law of Nature within the human world must be very much weaker if there is Deity concerned to vindicate its demands and enforce them in the end with this overwhelming power<sup>18</sup>.

In usages of Locke, Civil Society does not refer to a political or social substance that can be set over against an existent State. What it refers to in modern terminology is essentially the State liked the non pathological State. To deserve liking, it has to be as effectively purified state of nature as it can be. This is never effectively purified. In Locke's usage, Civil Society is the optimal remedy for the state of nature. But it is necessarily imperfect remedy; one which cannot in principle be made perfect. If we want to think accurately and powerfully demarcate pathological from non-pathological social and political conditions, it is the conceptual foundation of the category of natural jurisprudential thinking.

#### **Negative Face of Civil Society with Marxist Fervour:**

Marx's view of bourgeois economic life was much more straight forward. Marx was agreed with the fact that modern society was defined by a split between man as citizen and man as private individual. Marx did not believe that the cleavage between universal and particular could be resolved within the existing regime of private property. Marx's analysis of Civil Society either dismissed or ignored the trait of communal mutuality to which Hegel attached so much importance.

According to Locke, 'wherever any number of men are so united into

one society, as to quit everyone his executive power of the Law of Nature, and to resign it to the public, there and there only is a Civil Society. This is done wherever any number of men in the state of nature, either into society to make one people, one body politic under one supreme Government'<sup>19</sup>.

Civil Society is the realm of political association instituted among men when they take leave of the state of nature and enter into a common wealth. Men leave the state of nature because of its inconveniences rather than its savageries<sup>20</sup>.

The highest stage of ethical substantiality is ethical life which is divided into three moments- family, Civil Society and State. To Hegel, the creation of Civil Society by fostering self subsistent individuality is a great achievement of the modern world<sup>21</sup>. Self-interest and self –assertion are the motives of activity in Civil Society. Marx's Civil Society was a Hobbesian nightmare of isolated and aggressive individuals bound together precariously by the cash nexus. The process of atomization began with the demise of feudalism. Man leads a double life a heavenly and an earthly life. In the heaven of political life, he regards himself as a communal being, full of public spirit and mindful of the general interest. In the earthly existence of Civil Society he acts as a private individual, treating other human beings as means to his own ends and even reducing himself to a mean in the playing of alien market forces<sup>22</sup>. The spirit of Civil Society is the spirit of pure egoism. Civil Society becomes the chief source of human alienation, 'an expression of the separation of man from his community, from himself and from other men'<sup>23</sup>. To Marx, the real relationships of Civil Society penetrate every nook & corner of the State, thus negating its claim to express the universal interest. No longer will Civil Society be a mass of conflicting egoism; no longer will the State be an abstract, unreal community. Civil Society was not simply a neutral space of market exchange. It was primarily an ethical realm of solidarity held together by the force of moral sentiments and natural affections<sup>24</sup>. To A Gorz, the existence of a State separate from Civil Society is the essential prerequisites to the autonomy of Civil Society. Other prerequisites of Civil Society are space for self organization, voluntary exchange and alternative thoughts. Civil Society embraces a plurality of movements and aspirations. Plurality means not simply as a plurality of parties and trade unions but as the coexistence of various ways of working, producing and living, various and distinct cultural area and level of social coexistence<sup>25</sup>. It is sharp contrast between conceptual understanding of civil society in positive premises of John Locke and negative perseverance of Marx. When the contract between governance and governed is being breached easily and repeatedly by the ruling body itself, the importance of Civil Society becomes remarkable.

### **Conclusion:**

Civil Society is evolved from state of nature. To cater inconveniences of state of nature, a supreme body of politics was needed and Civil Society

was incarnated as boon of Almighty God. Civil Society is nothing but *Lokshahi* as narrated by veteran socialist leader of State of Bihar in India, Jai Prakash Narayan. *Lokshahi* is an unseen power above the government to enroute the government in right direction. In the aura of *Lokshahi*; governments hardly derail towards corruption or immoral track. Civil Society never takes executive power on its hand, but it resides over the legal-executive body of society to look after and to check aberration of that authority.

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## **Rural economy: Challenges and opportunity**

\* Smrita Kumari

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**Abstract-** *The Indian economy has been emerging as an economy of new challenge and possibilities since independence, economic development is the center of economic crisis, the most important problem of economic world and economic thought. The purpose of all worlds economics is economic developments generally the problems of all small scale economies of the world are some but all the countries of the world solve their economic problems in different ways by using and allocating resources available in its economy.*

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**Key Words-** Economic crisis ,rural development,planning commission liberisation, demography, unemployments, disguised employment

India economy is a mixed as well as rural economy, therefore rural areas have a different role in economic development of India which have try to increase continuously under various schemes.

### **Rural Development:**

The problems of rural development of India is multi dimensional and complex. Rural development ingeneral and allevaiation of rural poverty in particular has been one of the plants of development strategy of Indian planning. With the onset of process of librilisation in 1991 rural development programs were added new vigorous by re-structuring them in a manner that a frontal attack could be made on rural poverty.

The problems of rural poverty mass. illetracy acute unemployments underemployment and disguest employments still a serious challenges before the planners and policy makers in the country in general and Bihar state in particular.

The state of Bihar lies at the lowest ledder of developments in the country and incidences of poverty, illetracy, unemployment far exceed the national average.

Bihar is located in the eastern part of the country. Bihar is bounded on the north by Nepal ,on the south by Jharkhand, on the east by west Bengal and on the west by Uttar pradesh. Bihar is divided into nine division viz bhagalpur darbhanga, kosi , magadh,munger, patna purni saran and tirhut. Patna is the capital city of the state.

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\* Chapara

S.No.	Facts of census 2011	Facts in number
1.	Total population	10,40,99,452
2.	Density of population	880
3.	Literary rate	61.80%
4.	Urban population%	10.47
5.	Rural population%	89.53
6.	Male literacy in %	71%
7.	Female literacy in%	51.50%
8.	Sex ratio	918%

Bihar; administrative divisions.

S.No	Name of administrative divisions	Number of administrative division.
1.	District	38
2.	Divisions	09
3.	Sub- divisions	101
4.	Development blocks	534
5.	Panchayats	8471
6.	Revenue village	45,103

Economic status of Bihar:- Bihar is one of the fastest growing state in India. Gross state domestic products of bihar for the year 2013 14. Has been around 3683.37 billion INR. By sectors its compositions in agriculture is 22 percent, industry is 5 percent and services is 73 percent.

The growth rate of Bihar economy was non uniform over the year. During the first five years since 1999-2000 the economy had grown at an annual rate of 3.50 percent, with the economic policies pursued by the state governments since 2005-06 which include much higher level of annual plan outlays the economy had grown at an annual rate of 10.93 percent during 2004-05 to 2010-11 at constant price. This is one of the highest among the growth rate of different Indian states.

Bihar has a number of major public sector projects like the oil refinery of india oil corporation and fertilizer manufacturing plant of Hindustan fertilizers corporation at barauni, pyrites, phosphates and chemical Ltd at Ajmer, cotton spinning mills at Siwan, 13 sugar mills in private sector and 15 in public sector located in south and north bihar.

The economy of Bihar is predominantly agrarian. More than 85 percent of the working populations is directly engaged in agriculture. Rural development programs in bihar from the first five year plan to Eleventh **Five year plan:-**

**First-five year plan (1951-1956):** the first five year plan accepted the suggestions of health survey committee and first primary health centre was established in October 1952 a part of the community development program based on the major function of PHC under the integrated approach to the development of health services was medical care control of communicable disease maternal and child health, collections of vital statistics protections of water supply and environmental sanitation, conduct of school health program.

**Second five year plan 1956-1961:** the second plan also pointed out that the benefits of economic development must accrue more and more of the relatively less privileged classes of society." The government's approach to poverty reduction was of three dimensions the first one is growth oriented approach. The second one is a special programme called intensive agriculture district program was started in 1960 to boost the food grains production through a concentration of financial, technical extension and administrative resources. The third one is the rural manpower program in 1960 for seasonal unemployment and underemployment a large number of people depends on wage employment for their livelihood such people were having no source of income during the lean agriculture season when employment opportunities shrink. RMP was taken up in 32 CD blocks on a pilot basis with the objective of providing employment for 100 days in a year.

**Third- five- year plan (1961-1966):** the third five year plan stressed agriculture and improvement in the production of wheat, but the brief sino-indian war of 1962 exposed weakness in the economy and shifted the focus toward the defence industry and the Indian army.

In 1965-66, India fought a war with Pakistan. There was also a severe drought in 1965. The war led to inflation and the priority was shifted to price stabilization.

**Fourth five year plan (1969-1974)** in 1970 self employment program were introduced at the national level the program were designed to provide skills. Subsidized credit and infrastructure support to small farmers and agricultural labourers.

**Fifth- five year plan (1974-1978):** IRDP in India is among the world's most ambitious program to alleviate rural poverty by providing income generated assets to the poorest of the poor. This program was first introduced in 1978-79 in some selected areas but covered all the areas by November 1980. During the sixth five year plan (1980-85) assets worth 47.6 billion rupees were distributed to about 16.6 million poor families.

TRYSEM is a centrally sponsored scheme was launched by the governments of India in the departments of rural development on 15<sup>th</sup> August 1979 with the objective to provide technical skills to rural youth from families below the poverty line to enable them to take up self employment in different rural activities. The block development offices have the responsibility to select

the eligible youth belonging to the target groups with the help of village level.

**Sixth five year plan (1980-1985):-** the state government launched a scheme in 1980-81 to enable the members of legislature to execute the small scheme of their choice that are development and are based on immediate felt local needs, as per the guidelines issued for this purpose under this scheme rs 50.lakh has to be provided to each members of the states legislative.

**Seventh five year plan (1985-1990):-** the technology mission on drinking water and related water management was launched in 1986, named as the national drinking water mission. This was one of the five societal mission launched by the government of india the NDWN was renamed Rajiv Gandhi national drinking water mission in 1991.

RGNDWM was launched with the following objectives:-

- to cover all non source problem habitations.
- To evolve cost effective appropriate technology to solve specific problems.
- To take conservation measures for sustained supply of water.
- To improve performances and cost effectiveness of ongoing proramms.
- To create awareness on uses of safe drinking water.
- To promote community participation.

IWDP has been under implementation since 1989-90 where in wastelands are being developed with the active participation of stake holders user groups, self help groups and PRTS.

Here, the projects are sanctioned in favour of DRDAS/zps for the period of five years. IWDP is a 100% central sector scheme. The cost norm is rs 4000 per hectare the basic objective of this scheme is to take up integrated wastelands developments based on village / micro wastelands plans. The scheme also helps in generations of employment in rural area besides enchainings peoples participations in the wasterland developments programs at all stages.

**Eight –five year (1992-1997):** MPLADP was launched in december 1993 as a central sector scheme to enable members of lok sabha and rajya sabha to executed the schemes of their choice that are development and based on locally felt needs within the guidelines for this purpose.

The basic objective of this programme is to facilitate immediate execution of small but locally important schemes whose execution may otherwise span over a huge period the works which can be carried out under this scheme are constructions of buildings for school hostel libraries and shelters for old/ handicapped, constructions of link/ approach roads culverts bridges, public irrigation and public drainage facilities etc. as indicated in the guidelines.

The governments of india provides cent-percentage fund for this scheme. Each MP has the choice to suggest work to the tune of rs two crores per year to be taken up in his/her constituency.

This scheme was started in august 1995 by the government of india this scheme is sponsored by the state government it was transferred to the state sector scheme after 2001-03. This scheme provides a sum of 20000rs to a person of a family who becomes the head of the family after the death of its primary breadwinner.

**Ninth- five year plan (1997-2002):-** JGSY has launched on 1<sup>st</sup> april 1999 by the central as well as the state government for building the rural infrastructure.

Jawahar gram samridhi yojna (JGSY) is the restructured, streamlined and comprehensive version of the jawahar rozagar yojana. This scheme was designed to improve the quality of life of the poor. The programme will be implemented as centrally sponsored scheme on cost sharing basis between the centre and the state in the ratio of 45:25 respectively.

**Tenth-five year plan (2002-2007):-** the national food for work programme was launched in November 2004 in 150 most backward districts of the country identified by the planning commission in consultation with the minister of rural development and the state government.

The objectives of the program was to provide additional resources apart from the resources available under SGRY to 150 most backward district of the country so that generation of supplementary wage employments and providing of food security through creation of need based economic social and community assets in these district are further intensified.

The full act MNREGA is one of india biggest social securities program .the fullact is a come into force on 2 february 2006 and was implemented in a phased manner the primary objective of the act is augmenting wage employment . MNREGA is the first ever lw internationally that guranatees wage employments at an unprecedented scale. Funding from central governments is 100% of wage for unskilled manual work while 75% of material cost of the schemes including payments of wage of skilled and semi-skilled worker state government 25% of materials including payments of wage to skillrd and semi skilled worker cost.100% of unemployoment allowance by state government.

**Eleventh- five year plan (2007-2012):-** Adequate provision has been made for the state shar in continuing centrally sponsored schemes like swarna jayanti gram swarozgar yojana jay IWOP,DPAP AND NREGA. Water and land management institute PRDA administration yojan gokul gram and godan yojana and community developments program are proposed to be continued into the 10th plan. The state government is supporting 5 new schemes namely state rural road connectivity C M rural housing , master plan SGSY, training IEC and sutradhar scheme. An amount of rs 23.15 crores was available 2006-07 as per previous balance and other receipts in which state share is rs 0.49 cross out of which upto November 2006rs 22.42cr spent which is 96.05% For the year 2007.08, rs 31.40cr ceiling is proposed in which rs 0.80cr is

stated share hence for xith plan ceiling is proposed for rs 224-80cr.

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## Growth and Performance of Msme's in M.P

\* Neha Agrawal

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**Abstract-** *This is the well known fact that Micro, Small and Medium Enterprises (MSMEs) play an important role in the development and growth of economies of any country. MSMEs are the backbone of the Indian economy and have become engine of economic growth in India. The micro, small and medium (MSMEs) enterprises play a significant role in contribution to the development of Indian economy in terms of production system, employment generation, export output, GDP etc. This paper closely analyses the growth and prospects of the Indian MSME sector in MP.*

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**Key Words-** MSME, Growth, Prospects

**Introduction:** Micro, small and medium enterprises (MSMEs) in India and abroad have shown impressive quality and versatility in keeping up a predictable rate of development and business age amid the worldwide subsidence and financial slowdown. Indian economy amid the ongoing years has demonstrated a calculable development execution by adding to formation of vocation chances to a huge number of individuals, in upgrading the fare potential and in expanding the generally speaking financial development of the nation. Expeditious and suitable monetary improvement, viable money related strategy and tremendous capital inflows were extraordinarily instrumental in the bounce back circumstance of the economy. As an impetus for financial change of the nation, the MSME area is to a great degree urgent in tending to the national targets of connecting the provincial urban partition, decreasing destitution and producing work to the abounding millions. It is subsequently, basic that India receives a reasonable strategy system that gives the expected driving force to grab the openings and make an empowering business condition with a specific end goal to keep the energy of development and comprehensive improvement. It is similarly vital that the MSME area must address the infrastructural insufficiencies and is very much engaged to address the developing difficulties for its maintainable development and survival in a all-inclusive aggressive request.

Enabling Environment for Growth of Finance in the MSME Sector: The three principle mainstays of the empowering condition analyzed are-

(a) Legal and regulatory framework

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- (b) Government support
- (c) Financial infrastructure support

MSMEs work in a very focused condition and require an empowering situation to support development. Balanced monetary help, a solid regulatory system, and motivations advancing development by budgetary foundations can fundamentally expand the infiltration of formal money related administrations to the MSME area.

**Objective of the Study:** The major objectives of the study are as follows:

- To analyze the performance and growth of MSMEs in the last few years.
- To study the growth in the number of MSMEs, capital investment, labour employment, output and exports.
- To reveal the contribution of MSMEs in GDP.

**Data and Methodology:**

The Data required for the study has been collected from secondary sources. The Data Collection includes (i) Annual Reports of Ministry of Micro, Small and Medium Enterprises, Government of India, (ii) Various Websites related with the relevant information of MSMEs (iii) Papers from Journal's (iv) Articles and (v) other relevant sources for MSMEs. Data collected for a period of ten years from 2007-08 to 2017-18 for which the relationship tested. The relevant data of MSMEs' growth and performance collected and presented, which belongs to after the introduction of MSMED act, 2006 only.

**Definition of MSME:**

Definitions which have been operationalized for the purpose of study are as follows: According to the provision of *Micro, Small & Medium Enterprises Development (MSMED) Act, 2006* the Micro, Small and Medium Enterprises (MSME) are classified in two Classes:

- a) **Manufacturing Enterprises:** The enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the industries (Development and regulation) Act, 1951 or employing plant and machinery in the process of value addition to the final product having a distinct name or character or use. The manufacturing enterprises are **defined in terms of investment in plant and machinery.**
- b) **Service Enterprises:** The enterprises engaged in providing or rendering of services and are **defined in terms of investment in equipment.** The limit for investment in plant and machinery / equipment for manufacturing / service enterprises, as notified, are as under:

### Definition of MSME

Classification of MSMEs	Manufacturing Enterprises – Investment in Plant & Machinery	Service Enterprises Investment in Equipments
<b>Description</b>	<b>INR</b>	<b>INR</b>
Micro Enterprises	up to Rs.25 Lakhs	up to Rs.10 Lakhs
Small Enterprises	above Rs.25 Lakh & up to Rs.5 Crores	above Rs.10 Lakh & up to Rs.2 Crores
Medium Enterprises	above Rs.5 Crores & up to Rs.10 Crores	above Rs.2 Crores & up to Rs.5 Crores

### 3.2 2 MSMED Act, 2006:

The Micro, Small and Medium Enterprises Development (MSMED) Act, 2006 seeks to facilitate the development of these enterprises as also enhance their competitiveness. It provides the first-ever legal framework for recognition of the concept of “enterprise”, which comprises both manufacturing and service entities. It defines medium enterprises for the first time and seeks to integrate the three tiers of these enterprises, namely, micro, small and medium. The Act also provides for a statutory consultative mechanism at the national level with balanced representation of all sections of stakeholders, particularly the three classes of enterprises; and with a wide range of advisory functions.

### Growth in The Number of MSME, Capital Investment, Labour Employment, Output And Exports in Madhya Pradesh:

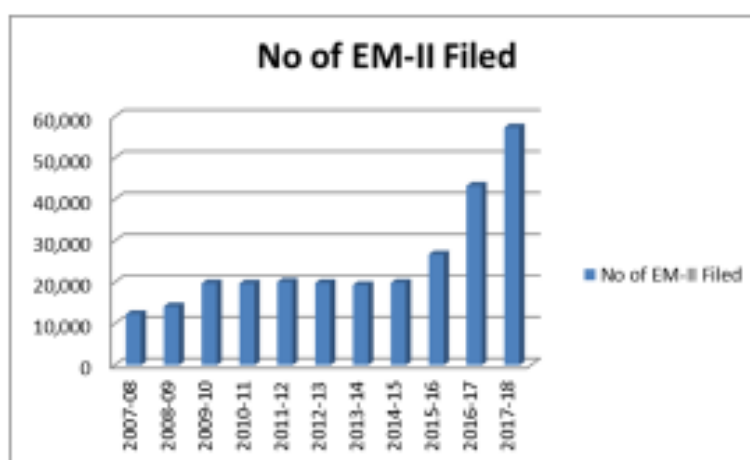
Micro, Small and Medium scale industries have played a significant role in all the developed economies primarily for the economic growth, job creation and poverty reduction in the State. The government has a huge responsibility to provide a business friendly environment and most importantly to encourage entrepreneurs.

A large part of any state’s economic growth depends upon the condition of business environment and its commitment to medium and small scale industries.

The Government of Madhya Pradesh since the last decade has been very supportive of inclusive growth through special focus on MSMEs.

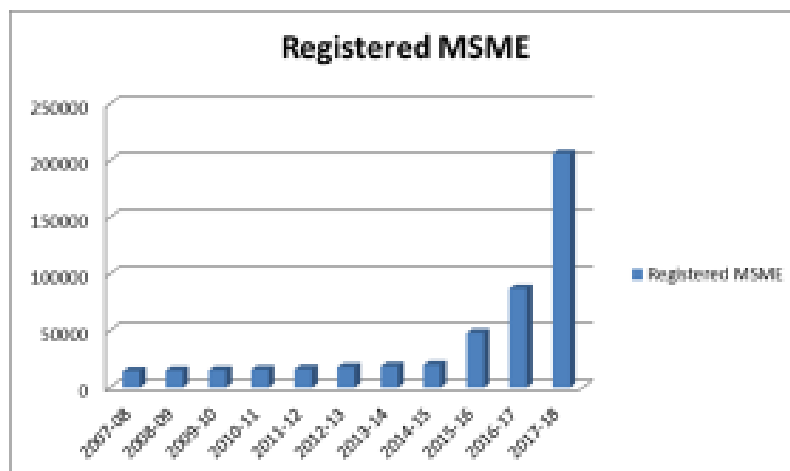
The Number of MSME as per the Entrepreneur’s Memorandum –II are as follows:

Year	No of EM-II Filed	Growth Rate
2007-08	12,319	-
2008-09	14183	15.13%
2009-10	19748	39.24%
2010-11	19704	-0.22%
2011-12	20104	2.03%
2012-13	19832	-1.35%
2013-14	19374	-2.31%
2014-15	19903	2.73%
2015-16	26740	34.35%
2016-17	43296	61.91%
2017-18	57393	32.55%

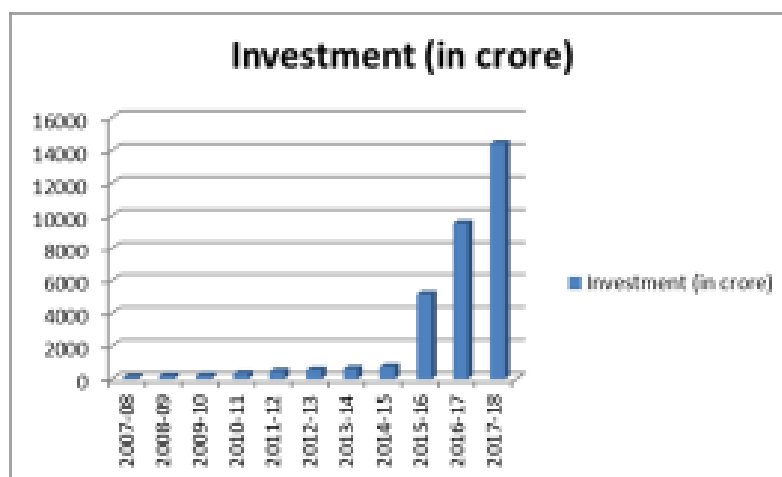


**Micro Small and Medium Enterprises in M.P.**

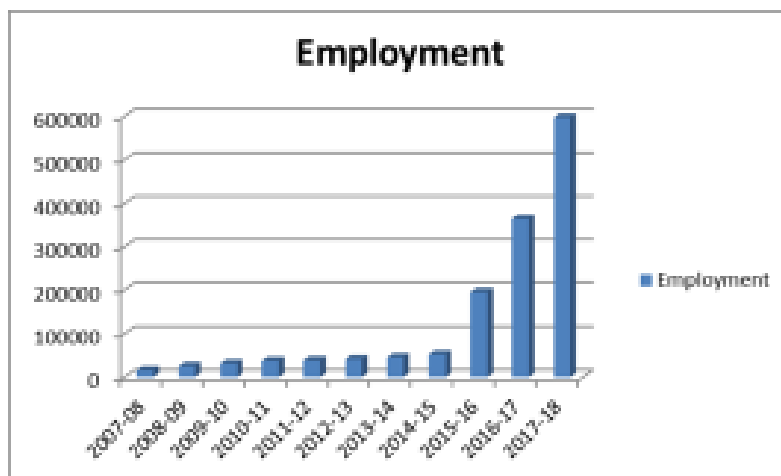
Sr. No.	Year	Registered MSME	Investment (in crore)	Employment
1.	2007-08	14300	110.89	15680
2.	2008-09	14890	186.97	25083
3.	2009-10	15219	220.65	31074
4.	2010-11	15765	320.90	36987
5.	2011-12	16240	455.01	38000
6.	2012-13	17910	550.40	40760
7.	2013-14	18660	620.49	45007
8.	2014-15	19835	750.04	51571
9.	2015-16	48179	5171.45	194761
10.	2016-17	87071	9547.32	363812
11.	2017-18	206142	14401.67	596990



MSME has shown constant growth in number of MSMEs every year. It was 18660 lakhs registered MSMEs in 2013-14 which increased to 19385 in 2014-15 till 206142 lakhs in 2017-18 which has shown impressive growth trend of increasing registered MSMEs.



Madhya Pradesh's MSME sector has also attracted significant investment which presents the confidence of investors in the state of Madhya Pradesh.



The surge in growth of MSME Industry in Madhya Pradesh has generated a significant level of employment for Madhya Pradesh over the years.

The steps taken by MP government can be summarized in following points:

- Skill development programs to fill the gap of skilled manpower required for MSMEs;
- Development of Clusters;
- Creation of separate department addressing the needs of MSMEs;
- Promotion of establishment of new vendor units nearby mother units;
- Number of ineligible industries have been reduced from 52 to 19;
- Marketing assistance;
- Promotion of sub-contracting to develop local vendors; and
- Fiscal assistance to MSMEs.

Aside from special incentives gave to MSMEs, the state government is additionally enthusiastic about advancing entrepreneurship. The Government has propelled a few plans and projects to advance entrepreneurship in MP and to help the first generation entrepreneurs.

The State Government is good to go to endeavor and accomplice the investors, innovators, entrepreneurs and technocrats in achieving the change and understanding the “Make in MP” concept, in accordance with “Make in India” vision to make Madhya Pradesh a manufacturing hub.

#### **Output:**

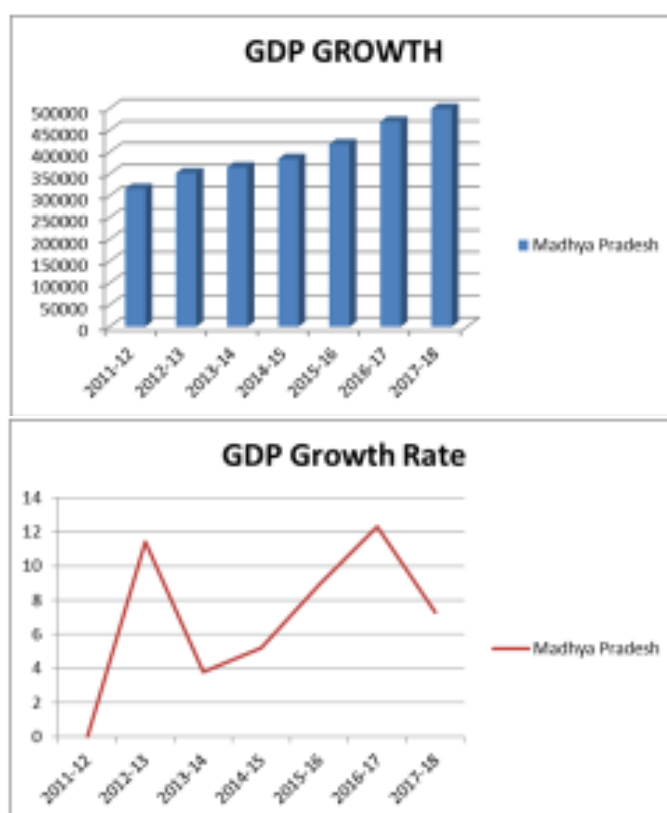
Madhya Pradesh, located in heart of India, is the second largest state in the country by area, the sixth largest state in India by population and ninth largest by Gross State Domestic Product (GSDP).

Madhya Pradesh is among the fastest growing states in the country. The nominal GSDP of Madhya Pradesh for the year 2013-14 was Rs. 3.65 lakh crore. The State recorded a 11.4 percent growth in its GSDP over the period of 2012-13. In last four years alone, the State’s GSDP has grown at

more than five per cent consistently which is significantly better than the national average.

At Base (2011-12) prices

Year	Madhya Pradesh	Growth Rate
2011-12	315562	-
2012-13	351683	11.4%
2013-14	365134	3.8%
2014-15	383944	5.2%
2015-16	417949	8.9%
2016-17	469393	12.3%
2017-18	499102	7.3%



### Exports:

Madhya Pradesh is one of the quickest developing States of India. Since its formation in 1956, Madhya Pradesh has developed from being an agriculture and mining based economy to an industry/administrations based economy. With a region of in excess of 150 lakh hectares being under development, agrarian harvests, for example, soybean, wheat, paddy, jowar, maize, gram, masur, tuar and mustard are the principle crops. The state has a wellbuilt framework that has pulled in interests in different areas. The development of industrial products among the best export items means that

the rise of industrial sector in Madhya Pradesh.

### Exports: Performance and Potential:

Exports is an area where the State has significant scope for improvement. As against its 11th position in terms of output<sup>1</sup>, the State ranked only 15th in terms of its share in India's total exports, with exports valued at US\$ 4436.8 million in 2016-17.

HS Code	Item/ Commodity	2012-13	2013-14	2014-15	2015-16	2016-17	Share of the commodity in MP's total exports in % (2016-17)	Share of MP in India's total exports of the commodity in % (2016-17)	AAGR (2012-13 to 2016-17)
300490	Medicaments consisting of mixed or unmixed products for therapeutic or prophylactic purposes, put up in measured doses incl. those in the form of transdermal administration or in forms or packings for retail sale	193.3	168.7	314.0	440.5	789.0	17.8	8.1	48.2
230400	Oilcake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of soya-bean oil	1044.6	1126.4	443.1	119.5	286.9	6.5	51.7	3.6
300420	Medicaments containing antibiotics, put up in measured doses including those in the form of transdermal administration or in forms or packings for retail sale	134.3	142.5	132.5	167.4	171.4	3.9	17.8	6.9
760110	Aluminium, not alloyed, unwrought	0.5	22.6	210.6	211.0	170.8	3.9	9.0	125.09
630260	Toilet linen and kitchen linen, of terry towelling or similar terry fabrics of cotton (excluding floor cloths, polishing cloths, dishcloths and dusters)	0.1	-	18.6	75.8	133.1	3.0	12.3	191.2
520100	Cotton, neither carded nor combed	78.3	64.9	40.8	134.1	125.2	2.8	8.1	41.9
520524	Cotton yarn; (not sewing thread), single, of combed fibres, 85% or more by weight of cotton, less than 192.31 but not less than 125 decitex (exceeding 52 but not exceeding 80 metric number), not for retail sale	68.3	85.8	115.6	127.2	106.6	2.4	14.0	13.5

630532	Flexible intermediate bulk containers, for the packing of goods, of synthetic or man-made textile materials	50.6	49.3	95.4	102.3	95.9	2.2	20.8	23.0
520523	Cotton yarn; (not sewing thread), single, of combed fibres, 85% or more by weight of cotton, less than 232.56 but not less than 192.31 decitex (exceeding 43 but not exceeding 52 metric number), not for retail sale	81.7	69.6	78.3	86.0	84.3	1.9	11.8	1.4
550410	Staple fibres of viscose rayon, not carded, combed or otherwise processed for spinning	71.1	45.1	62.5	60.7	77.6	1.7	25.1	6.8
TOP 10		1723.0	1774.9	1511.5	1524.6	2040.9	46.0	--	5.7
TOTAL		4182.5	4351.9	4129.5	3967.6	4436.8	100.0	1.6	1.7

Source: DGCIS; Exim Bank Research

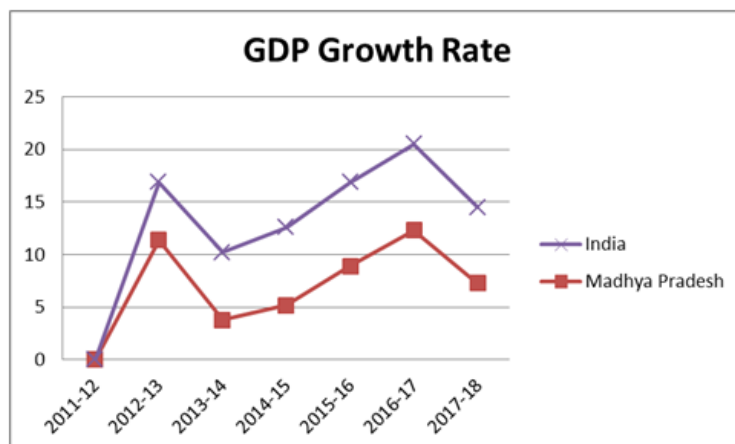
\* AAGR of last 3 years

**Principal Commodities exported from Madhya Pradesh in 2016-17**

Item/Commodity	Share %
Drug Formulations, Biologic	23.1
Cotton Yarn	7.8
Oil Meals	6.6
Cotton Fabrics, Made ups etc.	5.7
Aluminium, Products of Aluminium	4.8
Manmade yarns, fabrics, madeups.	4.6
Bulk drugs, drug intermediaries	4.5
Electric machineransequipments	3.1
Cotton raw including waste	2.9
Auto components/ parts	2.3
Others	34.6
<b>Total</b>	<b>100</b>

**Comparative Growth of MSME on the basis of GDP in India V/S Madhya Pradesh at (2011-12) prices**

Year	Madhya Pradesh	Growth rate	India	Growth rate
2011-12	315562	-	8736329	-
2012-13	351683	11.4	9213017	5.5
2013-14	365134	3.8	9801370	6.4
2014-15	383944	5.2	10527674	7.4
2015-16	417949	8.9	11369493	8
2016-17	469393	12.3	12298327	8.2
2017-18	499102	7.3	13179857	7.2



### Findings:

- 1) The Registered MSMEs has demonstrated consistent development in number of MSMEs consistently. It was 14300 lakhs enrolled MSMEs in 2007-08 which expanded to 19385 of every 2014-15 till 206142 lakhs in 2017-18 which has demonstrated noteworthy development pattern of expanding enlisted MSMEs.
- 2) The Same is evident from the table where in 2007-08 investment was 110.89 crores. This increased to 750.04 crores in 2014-15 which then increased to 5171.45 crores in 2015-16 and 9547.32 crores in 2016-17. Further, in 2017-18 the same increased to 14401.67 crores.
- 3) The same is evident from the table in 2007-08 the employment in Madhya Pradesh was 15680 which increased to 51571 in 2014-15 and 194761 in 2015-16. In 2016-17 it further increased to 363812 and in 2017-18 to 596990.
- 4) Madhya Pradesh is among the fastest growing states in the country. The nominal GSDP of Madhya Pradesh for the year 2013-14 was Rs. 365134 lakh crore. The State recorded a 11.4 percent growth in its GSDP over the period of 2012-13. In last four years alone, the State's GSDP has grown at more than five per cent consistently which is significantly better than the national average.
- 5) The top 10 principal commodities from Madhya Pradesh contributed 65.4% to the State's total exports in 2016-17. The highest exported commodity was Drug Formulations and Biologicals at US\$ 1026.3 million (share of 23.1%), followed by Cotton Yarn at US\$ 345.5 million (7.8%), Oil Meals at US\$ 294.4 million (6.6%), Cotton Fabrics, Made ups etc. at US\$ 253.1 million (5.7%) and Aluminium, Products of Aluminium at US\$ 213 million (4.8%). Whilst the top 10 principal commodities contributed 65.4% to the total exports of Madhya Pradesh in 2016-17, the top 10 exported products at 6 digit level constituted 48.0% of the State's total exports in 2016-17, reflecting the narrow

base of its exports.

- 6) The MSME sector in MP has maintained a higher rate of growth as compare to India. It is clear from the data of table that the growth rate of MSMEs in MP is much more in the ear 2012-13 as compared to overall GDP of India, and has increased in the ear 2016-17. This indicates that the contribution in GDP of MSME sector in MP has been much higher as compared to overall MSME sector in India.

### **Conclusion:**

The MSME sector in India and especially in the State of Madhya Pradesh has undoubtedly witnessed significant growth from the year 2008-09 to 2017-18. The facts and figures clearly show the number of registered units both in India and in Madhya Pradesh has increased, which has also led to substantial growth in investment and employment. The State is blessed with considerable nationalized financial institutions and private banks which have approached to stretch out monetary help to the MSME division. Without their help, this rate of development would not have been conceivable. The State has the refinement of building a solid and energetic industrial base, which consolidates the intrinsic strengths of large industrial public sector undertakings, large and medium privately owned industries and a very wide and dispersed small scale sector. It is considered as a standout amongst the most merited industrial locations for setting up enterprises in the nation. The State has been reliably seeking dynamic viewpoint to meet the changing needs of the economy and industry.

Thus, this clearly indicates an increasing trend in growth of MSME sector all over in the State of Madhya Pradesh.

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## **The spread of moral message through Visual Narratives: A study of selected paintings in 17th century south India**

\* Kishore Kumar. S

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**Abstract-** *The mythological stories written in Sanskrit such as Ramayana and Mahabharata were considered as standard one. However, the vernacular versions appeared as if they happened in their own regions, and hence localized the characters in their own versions. The local narratives also well-known not just in its locality, but also in its surroundings. They were circulated among the masses in different ways; the custom of reading, street plays and depictions as visual narratives. It is believed that the visual narratives have been powerful and effective media in conveying message. In fact, they played vital role in influencing the society. For this, I took two stories as case studies; Ranganatha Ramayana, a Telugu text depicted in Chengam, Tamil region and the story of Manuneeti Chola, a Tamil local legend depicted in Lepakshi, Telugu region, both as narrative paintings. This, this paper discusses and tried to understand how the narratives carried forward from one place to other throughout the generations through visual narratives without borders in terms of language and political boundaries which helped to spread moral message.*

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**Key Words-** Visual narratives, morals, paintings, legends and vernacular.

**Introduction:** The visual narratives has been playing important role in the subject of art- whether it is sculpture or painting. In fact, the narratives in visual representation generate attentiveness and curiosity to the viewer. The artist of this period specialized in executing narrative paintings, the story sequences are mostly from Puranas, Mahabharata and Ramayana epics,<sup>1</sup> which resulted in depicting some of such popular stories. The depiction of popular themes as a painting have been endless culture which was continuing for centuries in accordance with their own style in the period throughout India. Vijayanagara paintings too are not exceptional in executing such themes. The paintings are of Ramayana, Mahabharata and puranic scenes depicted in large scale throughout the region. Not only these themes, but also regional popular themes like the legend of *Manuneeti Chola* and *Ranganatha Ramayana* depicted as visual narratives. The most interesting aspect here is that these stories spread to or depicted in the region other than their origin. *Ranganatha*

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*Ramayana* depicted in Tamil region and the legend of *Manuneeti Chola* in Telugu speaking region. *Ranganatha Ramayana* written by Gona Buddha Reddy in 13<sup>th</sup> century who was an independent ruler of a small part in present southern Telangana. It is said that they were loyal to the Kakatiyas. The text depicts the story of Ramayana where Hanuman, the monkey king, drags wife of Ravana by hair after he went to see Sita, which we do not find in original Ramayana. This story portrayed in the paintings of VenugopalaParthasarathy temple at Chengam. The legend of *Manuneeti Chola* (Chola king who follows the law of Manu) being mentioned in Tamil literature as a metaphor for justice. This story seen depicted as paintings in Virabhadra temple, Lepakshi. Both the stories carry the moral story that probably to convey the masses. Hence, the paper delineates how these story depictions jumped to the other parts from their origin. Before going into detail, better understand the tradition of painting and the story of themes tell about.

#### **Tradition of Paintings:**

The art of painting has long history, it's been continuing since the ages. We find evidence of this art even in prehistoric times as painted in caves such as Bhimbetka, the prehistoric site. Since then, the art continued as leisure. Later, it has been patronized and became the symbol of religious and state's ideology. The art of painting found mention in classical literature- discussed in the works belong to the early centuries of Christian era such as the writings of Kalidasa, Harsha and Vatsayana.<sup>2</sup> *Silpasastras* do not deal separately with divine and human portraiture, but speaks only of representations of man. *Brihat-Samhita* gives general description that the measurement of images based on the class. *VisnudharmottaraPurana* also gives description of proportions on the basis of superior and inferior. It shows that Measurement of portraiture changes in course of time. However, the image or portraiture measurements generally are a sort of ideal.<sup>3</sup>

The paintings produced from the patronage of Delhi sultanate, Deccan Sultans and Mughals displayed secular themes such as hunting scenes, images depicting the rulers, courtly narratives, and international affairs and so on. However, in the case of the paintings produced in the courts Hindu rulers mostly remained depicting mythological stories. The cult of *BhagavataPurana* being major theme depicted in the court of Rajputs that consist of the life of Krishna, his childhood and his intimate life with Gopis are portrayed. If we observe Mural paintings on the walls of temple/palace were the most significant for ideological dissemination in medieval south India, especially in the Vijayanagara times. The temple mandapas, audience halls and palaces vividly painted with the legends and mythological stories. In fact, it is said that the temple in south India considered incomplete without pictorial art. Nevertheless, only a portion of them survived and most of them are vanished for diverse reasons.

Temple Paintings of Vijayanagara phase began in 14<sup>th</sup> and 15<sup>th</sup> centuries.

However, some scholars believe that none of the paintings of Vijayanagara has survived prior to 16<sup>th</sup> century. The narratives of the foreign visitors to Vijayanagara confirm the existence of wall paintings during that period. AbdurRazzak, an ambassador from Persia, visited the city in 1443, describes paintings on the walls of the houses in the market, saying, 'on the two sided of avenue formed by the chambers are represented figures of lions, panthers, tigers and other animals'.<sup>4</sup> The chronicle of the Portuguese traveler DomingosPaes, visited during Krishnadevaraya times, praises the art of painting and sculpture he witnessed, also mentions the life like portraits of Krishnadevaraya and his father at the entrance of the palace door.<sup>5</sup> The story is that Krishnadevaraya appreciates the painting in his palace while showing it to Tenali Ramakrishna, his close companion.<sup>6</sup>

This glory of patronizing paintings was continued under the successors of Krishnadevaraya and later under the patronage of Nayaka Kings. Though we do not find any written records about the paintings in Nayaka times, most of the paintings in Tamil region now surviving are belongs to Nayaka times only. We find those paintings in temple complexes throughout Tamil region. We get a glimpse of life of the Vijayanagara people too through the paintings of the period. Many paintings indicate the kings, officials, soldiers and common people in their depictions. Men who helps to king or royal class are shown which clearly differentiates from the royal people (generally shown wearing crown, dignified clothing and jewellery) in a way that they were tying turban to their head, cloth to their waist and most of the cases wearing no jewellery. These kinds of representations are clearly observed in paintings in Jain temple, Virupaksha temple and Virabhadra temple and others.

Paintings also give us information on customs and amusements, and religious beliefs of the medieval period and show aspects of social life lead by ordinary people. Music and Dance played an important role in the cultural life of Vijayanagara. Both the folk songs and classical ones were equally popular among the masses and the higher classes. These found reflection in the paintings of the period. A large variety of musical instruments were used by the artists such as *Veena*, *Venu*, *Mridanga* and the like. During those days, at least a modicum of knowledge, if not proficiency in performing, was considered as basic characteristic of culture. Since a visual representation of vocal music is impossible in the sculpture, contemporary music was represented in sculpture and paintings through musical instruments only. Hence these paintings take us back to that period.

Vijayanagara art is a mixture of several elements from different schools such as Deccan, Chalukya, Chola, even in some extent of Kalinga.<sup>7</sup> The new phase of art under the period mostly follows southern tradition. In the early stages, the Chalukyan influences are easily discerned in the Telugu and Kanarese areas but in course of time, as the dominion expanded, a true Vijayanagara style developed with a predominantly southern emphasis. This

was more apparent in architecture and sculpture than in paintings which had its own peculiarities. In fact the painters inherited many things from the Chola murals but transforming everything in their own way, they started their own trend in southern paintings. Predecessors of Vijayanagara followed the classical tradition in representing the deities as powerful youth and ever young with no touch of mustaches. Vijayanagara artist chose the god with mustaches occasionally to be furious, brave and courageous. Vijayanagara tradition shows slight moving away from the classical tradition, with depiction of Tripurantaka series, which shows the god in fury.<sup>8</sup> In turn there is a distinct Vijayanagara influence on other school of art such as Deccani Kalam of miniature. There is a reflection of Vijayanagara pictorial form and techniques even in Orissa, where the mighty arm of Krishnadevaraya penetrate by his triumph over the Gajapati. Echoes of Vijayanagara paintings felt even in Malabar which was outside their domain.<sup>9</sup> Every school of art maintained their style despite the fact that they influenced each other. Now, in modern period, the Lepakshi paintings have continued to influence generation of artists. It is practiced, even today, as a craft.

The artists of south India used different methods to prepare colours on their own. For preparing colours first the materials used to be crushed into powder then grind it to a fine paste. The paste would be mixed with river water and strained gum. Twigs of tamarind tree used to prepare charcoal for sketching. Hair of different animals used to prepare brush depending on the different stages of paintings such as camel or goat hair for broad washes, squirrel hair for finishing work and for drawing fine lines special kind of grass which look alike pointed blade were used.<sup>10</sup>

The Paintings of Vijayanagara period were done in a technique called fresco-secco, the painting on the dry wall. It is believed that the process of execution in this technique, the skill and quickness did not require.<sup>11</sup> Paramasivan study shows that the lime plaster was mostly used in this technique in paintings of south India. It consists of mixing pigment with lime (powder) water, sandy clay from the river and applying it on the dry plaster on wall. The artist takes care of keeping surface smooth before applying plaster. In these techniques, pigments do not go much deeper into surface and the plaster is thin in measurement. Surfacing the plaster can go leisurely and slow.<sup>12</sup> It also said that the Vijayanagara painter taken care of removing all impurities in lime. Paintings of any kind followed the standardized method, whether it is on ceilings or cloth. Light colors were used for the preliminary works like yellow or red and ended with black outlines.<sup>13</sup> In general the colour combinations in the south Indian paintings are extremely diverse in tone, they used red, black, blue and bluish-green, orange, white and yellow-ochre. The Primary sketches for framework were made with a light colour such as yellow or red and then flat tones are added. Background colours are usually filled with red and yellow, shading in modulated tones is not known before 18<sup>th</sup>

century. George Michell writes, variations in styles are regionally determined in some extent<sup>14</sup> as we know that the Vijayanagara Empire was extended to the different parts composing it that one can see a variety of modulation or variation in details of styles in the treatment of identical subjects. This could be to the individual painter, but also possible that the same painter in different places would try different style. It is also depending on the nature of the local customs and taste of the patron or to please the patron.<sup>15</sup> Therefore, possibly the Vijayanagara artist was very particular in treating subjects in identical of similarities and variations. We can observe such things found in almost all the murals.

Elaborate costumes and cloth designs are seen in both the temples, but the style been extremely different from each other and it shows the brilliance of artist in executing them. This shows the regional variation. This brilliance are being expanded and elaborated in Nayaka period further. It indicates that the Vijayanagara artist was fond of showing towering jeweled crown and lavish display of jewellery especially for deities. It can be said that the Vijayanagara artist used most lavish ornamentations and embellishment, are the beautifying factors. It is also believed that different varieties of costumes, headdresses, lavish jewellery used probably to justify the lack of variety in facial features. Maintained unique dress style or costume to be able find and different portraiture one and another.

Most of the male figure shown bare bodied covering head with conical cap or turban and some men like musicians and soldiers wore long coat kind of clothing to cover their body. Male attire in the paintings reveal quite accurately how the pleated part of dhoti was pulled between the legs and tucked in at the back. The dhotis are usually rather plain where white with stripes and tiny dots. Men of high class wearing dhoti covering almost their legs full with Khandwa apart from ornamentation on neck, chest, and arm. Men of working or serving class also wearing dhoti but seen it above knee. The women were seen with varieties of costumes and ornaments.

#### **The themes in the Paintings:**

The paintings of this period are found of diverse themes depicting the Puranic personalities like Rama, Krishna, Arjuna, Shiva as well as Jain legends. Illustrations are shown in processions with the participation of dancers, musicians, soldiers, and panels are also found depicting courtly scenes. They are intended to convey not merely spiritual/religious messages but also moral and social/political ideas. It is said that these paintings give easy means of reading stories without being forced to listen the narratives through people. Paintings of this study pertained to be two themes; one being the depicting the legend of moral story where it shows how the king serves his subjects in terms of providing justice, and the other being the story of Ramayana.

The murals depicting the legend of *Manuneeti Chola* are found on the high ceilings of the Virabhadra temple in Lepakshi. They were noticed by A H

Longhurst in 1912-13, but no attempts were made to protect the paintings, which acted as catalyst for further worsening condition to lose its brightness. Later scholars like C. Sivaramamurti and Stella Kramrisch made some attempts to describe its importance. Then the Lepakshi turned out to be scholarly attention for their remarkable range of subject, different figures and variety of costumes.<sup>16</sup> Range of ceilings are found throughout the inner and outer mandapa, and Garbagriha as well. Some of them are survived, which are still very clear and many of them around outer Mandapa are cannot be recognizable as they have vanished badly. Possibly the paintings in this temple belongs to the 16<sup>th</sup> century assigned to the Virupanna, the minister of Achutadevaraya. The paintings in the enclosed mandapa depicted identified with the God Virabhadra, either side of the god are seen Virupanna, his brother and other male and female attendants are shown standing.

The temple has the unique distinction of having incorporated the characteristics of Architecture, sculpture and painting of the period.<sup>17</sup> Paintings in this temple draw our attention for various reasons- the use of colours, depicting pictures, its decorations and various stories within one temple complex are very interesting. Painting mainly with Jain conventions of the palm-leaf manuscripts of central India during the thirteenth and fourteenth centuries, is found done at Lepakshi on a mega scale on the inner roof of space of these temple halls. It is highly interesting to see the peculiar results of this sudden change of scale, in the individual items of the compositions. The highly subdued emotion in all the characters, the preference either of the profile or frontal positions exclusively and the rich geometric design printed on the garments impress even a casual visitor to that shrine.<sup>18</sup>

The ceiling is divided into a number of strips, and the individual strips are separated into square or rectangular panels. Each panel depicts a particular scene, or part of one, in keeping with the theme of representation in the central panel. The ceilings of the natya-mandapa of Lepakshi have eight panels depicting themes from mythology, such as the manifestations of Shiva, Shiva as Kiratha (boar hunter), scenes from Shiva's wedding with Parvati, the scenes from Krishna's childhood, and finally the legend of the compassionate King *Manuneeti Chola* who dispensed justice even to animals. In the outer mandapa of the temple, the episode depicting childhood of Krishna, Rama and his marriage scenes are not visible clearly. Unfortunately, they all have faded away. However, some paintings can be figured out from the fragments. The paintings that have survived are the most outstanding murals in India. They are also the best among the Vijayanagara style of pictorial art. The drawings are eloquent, natural and full of vitality.

The legend of *Manuneeti Chola* (Chola king who follows the law of Manu) is also being mentioned in Tamil literature as a metaphor for justice. The legend also found in sculptures at Tiruvarur. The story says that the King renowned for the sense of justice for which he hung a bell in front of his court

palace so that anyone can ring the bell, if they are in need for justice. One day, the king comes out of his palace after hearing the sound of bell rung by a cow in sorrow. He found that, in complaint, the calf of the cow was killed under the royal chariot run by his own son. He, thus, kills his son under the wheels of chariot as punishment, the way in which the calf was killed, in order to deliver justice. He makes himself suffer as the cow. The legend ends where lord Shiva impressed with the justice done to cow and brings back both calf and the son of the king alive.<sup>19</sup> The story depicted meticulously in the paintings at western panels of Virabhadra temple in Lepakshi. Some of the pictures are very clear and some has faded away. Calf has shown under the chariot wheel where the cow seen in wave mode (Annexure I); cow ringing the bell in complaining king where he is shown listening to cow, which is witnessed by Gandharvas in the sky (Annexure II); the very next panel display cow in the court where king giving his judgment (Annexure III); the arrival of Shiva shown sitting on bull with his consort Parvati where calf, cow and Child lying in the ground, the King, his wife and his other attendants shown in praying mode, and this panel also shown showering of flowers by celestial from the sky (Annexure IV). We could understand that this legend being circulated throughout south India irrespective of its origin whether it is Telugu or Tamil. The Vijayanagara kings were not projected themselves as the successors of Cholas and yet this story being depicted in the Lepakshi, the core region of Vijayanagara. It might be because of its nature and validity of the story that display the righteousness of king which they could have believed applicable or followed by any society irrespective of religion and the place where it originated.

Branfoot opines that during Nayaka times growing prominence on Ramayana and Mahabharata stories in their portraiture.<sup>20</sup> In fact, these mythological stories had been the subject matter for the arts and literature for a long period. Though the idea of temple painting was noticeably to decorate special places through the murals, they were mainly illustrative (descriptive or explanatory) and didactic (moralistic or instructive) especially the paintings of Vijayanagara times.<sup>21</sup> Even few devotees commissioned the paintings in the form of illustrated manuscripts,<sup>22</sup> which is also found in many temple complexes.

Venugopala Parthasarathi temple at Chengam depicts the story of Ramayana. The panels in this temple are identified with the Ramayana episode drawn from the Telugu text *Ranganatha Ramayana* of 13<sup>th</sup> century. Interestingly, the episodes we find here cannot be found in any other places. Though most of the panels of the story are faded away, the episode of Yuddakanda of Ramayana is clearly visible—we see the war scenes which damaged substantially. Some of these murals are from post war. They show the final victory over *Ravana* and the return of *Sita* and *Rama*, and their reunion. Other panel shows the coronation of *Rama*. Most interesting part here

is that the depiction of a scene shows hanuman dragging ravana's wife Mandodari by hair and her upper cloths are almost shows stripped (Annexure VI). The depictions end with the coronation of Rama-Sita.

The scene Hanuman dragging Ravana's wife by hair described in the *Ranganatha Ramayana*, which cannot be found in any other versions of *Ramayana*. Most interesting part is that this story found depicted only in Chengam temple. The story of Rama or Ramayana considered as most appropriate text for following the Hindu dharma after the dharmasastras. Therefore, the episodes of this epic seen ideal and the depiction or visualization seen are followed as the day-to-day dharma for men and particularly for women. The depiction of *Ranganatha Ramayana* in the Chengam can be understood in other way that the rulers were the Nayakas by the time who were predominately of Telugu origin and would possibly easy for the circulation of such popular text among its rulers, elite and scholarly world, the telugu speaking people were also living in good number in regions Karashima notes and moreover the story not new to others so the depiction of this story in the Chengam might have done.

In general, the paintings describe some ideal or moral story as mentioned above. These stories also gives some kind of message to the masses, where the righteousness of king (at least people imagine after visualizing these painting that how the king is or how he has to be with his subjects) in one, and in another, the story of Ramayana which was very ideal to that society. This might have an impact on their day to day activities such as following social norms and being ideal. Through these particular visuals probably people were expected to believe righteousness of kingship or else it might be ideal for the royal class to project themselves as ideal in the case of the legend of *Manuneeti Chola*. In the case of Ramayana, on the other hand, people always believed it as ideal for human kind whether it is for wife or husband. It is very much predictable that the nature of the then society (and even now most of the cases) where, if women were being accused of any offense or misconduct or else men's misconduct against her, she only would be punished. This we witness in the case of Sita. A women being wife of *Rakshasa* also shown punishing in the visuals, which derived from the episode of the text *Ranganatha Ramayana*. Hence, it can be understood that the paintings of the period intended to give some message.

**Annexures****Annexure I**

The royal prince shown driving the chariot where the calf seen under the wheels of chariot.

**Annexure II**

Cow rings the bell

**Annexure III**

Picture showing, the king listens to the cow and delivers justice, Lepakshi

#### Annexure IV



Shiva Blessing Manuneeti Chola, Lepakshi.

#### Annexure VI



A picture from Chengam- Picture showing that the Hanuman Manhandling mandodari.

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## Relating the Cultural context between the Late Harappans and the Painted Grey Ware Culture

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**Abstract-** *At the beginning of about first millennium B.C.E. a different type of pottery called, the Painted Grey Ware appeared in the Ganga Valley. The distinctive features of this ware are the superior quality of the paste formed of well-levigated clay, and fine thin well-burnt fabric achieved with an equally distributed heat in the kiln and agreeably smoothed grey surface. The Ganga valley region dominated by the Indus-Saraswati Ganga system witnessed human activities connected with the domestication of sheep and goat, indicating the development of a well-settled culture of rural communities using pottery in the second millennium B.C.E. and hence enriched our knowledge of the chronological sequence of the concerned area.*

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**Key Words:** Culture, Civilization, Tradition.

**Introduction:** The significance of ceramics for the reconstruction of ancient cultures needs not to be emphasized. Ceramics are the key constituents of materials unearthed during the excavations. They help to distinguish, define, demarcate and delineate a culture. With the passage of time, the art of pottery making deviated from the domain of ordinary family life and turned out to be a highly specialized craft. So far as India's cultural traditions are concerned, many archaeologists are of the opinion that the emergence of crude hand-made and ill-fired pottery signalled the breakdown of Indian civilization. The appearance of pottery made on the turntable was an indication of developing culture, and that epoch-making innovation of the potter's wheel and the subsequent development in pottery technology, particularly in the methods of firing and surface treatment, was evidence of a full grown civilization. Baidyanath Saraswati was of the opinion that there was a sense of continuity and that was evident from the fact that the archaeologist has traced the development of Indian Civilization on the basis of studying ancient pottery making cultures showing signs of cultural uniformity (Saraswati 1978).

The beginning of the historical period in India was generally placed around 600 BCE which witnessed the emergence of two great historical

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figures, the Buddha and Mahavira. It was considered that with an increase in trade and commerce, writing developed, urbanization began and economy consolidated. This series of events in the second Urbanization covers the period from 6<sup>th</sup> Century BCE to roughly 3<sup>rd</sup> Century CE, in which last three centuries are considered as the climax of Urban Growth. According to B.R. Mani: “It is highly likely that this date may go back further into antiquity if the events recorded in our epics and Puranas can be corroborated by archaeological evidence” (Mani 2016).

Among the excavated painted Grey Ware sites of the Gangetic Valley, Hastinapur, Ahichchhatra, Mathura and others have been identified as centres of urbanization. The archaeological remains and antiquities unearthed from these sites such as the structures of baked bricks, items of luxury, evidence of crafts and trade and coinage are helpful in determining the nature and growth of the urbanization.

#### **Traditions and technology:**

The evolution of the technique of pottery-making in India probably took place in pre-historic times. After the decline of the Harappan Civilization, India witnessed an uninterrupted phase of rural cultures in the protohistoric Ganga Plains with the arrival of PGW culture symbolizing the emergence of a new unprecedented era in South Asian Archaeology (Roy 1984). Being a harbinger of an enduring cultural life in the fertile plains of the Upper Ganga Basin, the PGW with its beautiful form and finish represents a sophisticated pottery tradition labelled as the deluxe ware of the age (Tripathi 2012). Painted Grey Ware denotes a cultural and a ceramic tradition with a highly evolved technique that may be described as soft grey pottery having an excellent fabric, firing and finishing. The fabric is so distinctive that it is the safest measure to distinguish it from the cruder forms to which it degenerated later. The pottery is made with well-worked quality clay. Sometimes, though we come across variation in shades of grey colour from soft ash grey to brownish grey and often a reddish grey, the core of ware remains grey distinguishing it from the traditional redware in the assemblage of the period.

When we discuss briefly the technique of the manufacturing of PGW, it may be said that after a laborious preparation of the clay. It seems to have been thrown on a fast rotating wheel to obtain the desired shapes. The surface was then trimmed and smoothened with the use of scrapers. Some geometric designs were painted on the surface in black or deep chocolate brown colours. The paint was applied to the pot before it was baked (Tripathi 1976). The brush used for painting the PGW was not fine. Strokes are thicker at the starting point and thinner towards the end. In certain cases, they are very thick. The design such as floral patterns and sun symbols are common features with the frequent occurrence of spirals, concentric circles, swastikas and sigma (Singh 2009). Among the shapes of daily use in this pottery, mention may be made of several types of bowls, dishes, basins, vases and miniature vases.

Some uncommon varieties like 'lota' shaped vase, spouted vessel, ring base etc. are also found.

The main concentration of the sites yielded PGW from 1100 B.C.E. to 500/400 B.C.E. are found in the Indo-Gangetic divide, the banks of river Sutlej and the Upper Ganga Plains. Although geographically PGW culture had an area of expansion covering from the Indo-Pak border in Rajasthan and Punjab to Central Ganga Yamuna Doab, but its maximum frequency is in Haryana (35.8% of the total sites), second largest in Uttar Pradesh (30.3% of the total sites) And Punjab comes after (14.2% of the total sites) and Rajasthan comes at fourth place (with 11.2% of the total sites). In India, PGW is found in two contexts: (i) from the late Harappan phase, which is a pre-iron phase, and (ii) in association with iron. According to Upendra Singh, "Found in four kinds of stratigraphy contexts, important evidence of the PGW material culture is available from the excavated sites of Hastinapur, Ahichhatra, Alamgirpur, Kampil, Kausambi, Shravasti and others" (Singh 2009). The PGW culture extends from the dry bed of Ghaggar in Bahawalpur and north Rajasthan eastwards across the water shade of the Ganges and the Indus to the Ganges-Jamuna Doab. The presence of PGW at Thapli, Purola and other sites in Garhwal has taken this culture to the hills (Nautiyal et. al. 1987). Given its wide geographical distribution and chronological range, it is surprising to note that there are regional variations both in pottery as well as associate remains. The dynamic of the respective regional cultural growths infused a stage of material expansion.

During this period society appears to have been fairly settled. If we accept the hypothesis that PGW culture represents the later Vedic culture as largely believed by scholars or the Mahabharat (Lal 1954-55), there is little doubt that there was a social stratification: also the society had begun to organise itself according to the functions. Archaeological data, however, does not offer much help in arriving at such a conclusion in this respect. Nevertheless, it may be said that the society was self-sufficient which indulged in some luxuries like weaving clothes, metal ornaments and indulged in sports like hunting and dice throwing.

#### **Observation:**

After having discussed the dynamics of the existing ceramic traditions in the Ganga Valley from 1200 BCE to 200CE, claims can be put forward that the material culture of Painted Grey Ware has been indispensable for the proper evolution of the relatively lesser-known facets of the ancient societies. Stratigraphical evidence yielded the fact that although there had been cases of overlap between the Painted Grey Ware and the later Northern Black Polished Wares in the sites of Atranjikhhera, Ahichchhtra, Roper, Shravasti and Kausambi. The NBPW culture appearing in the final phases of PGW cultural deposits completely replaces it. It displays that society was standing on the brink of rapid development and progress was evident from the fact that

coinage which was altogether lacking during the PGW period had come into vogue in the NBPW periods which is clear from the wide usage of 'punch-marked' silver and copper coins. To talk of further material cultures, though the fabric form and finishing touch of both the cultures are pretty much similar the beautifully crafted terracotta human figurines in the NBPW phase as compared to the crude forms of the earlier stages was an indication (Mani, 2016) (Saraswati, 1978) (Singh, 2008) (Lal, 1954) (Tripathi, The rise of civilization in the gangetic plains: the context of painted grey ware, 2012) of the fact that an overall improvement in the art and craft is attested at the NBPW period displaying an all over prosperity in comparison to the preceding PGW period (Tripathi 2012) (Nautiyal, Khanduri, Nautiyal, D.L.Rajput, & Bhatt, 1897). Besides the construction of tanks and wells for irrigation, improvisation of erstwhile existing weights from the PGW phase in the NBPW periods was indeed a great sign for ushering in of modernity. In a nutshell, the process of development initiated during the PGW phase gathered momentum during the NBPW period. Thus, we can conclude by saying that: "Considering the pattern of unity in diversity in the pottery-making cultures as also in the higher forms of culture, it seems unlikely that the grand design of Indian culture is the product of one particular region or locality" (Saraswati 1978).

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## **Psychological Analysis of a Hidden Crime against Women In India: Domestic Violence**

\* Veena

\*\* Mihir Pratap

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**Abstract-** *Violence against women is becoming a very critical issue, especially domestic violence. Domestic violence or abuse is a pattern of aggressive and intimidating behaviors that abusers use to control their intimate partners through fear and intimidation, often including the threat or use of violence. It is described as "domestic" violence in response to this movement's history of women telling other women about the violence they experienced in their own homes. Abuse can be verbal, emotional, physical, sexual and economic, and based on power and control. People often think of domestic violence only in terms of the cuts and bruises that are physically visible. In reality, it is a pattern of assaultive and coercive behaviours designed to control another person. In 2006 the World Health organization (WHO) conducted a worldwide study and noticed a significant prevalence of domestic violence. Thus it is a global problem among which the Indian society is much more affected. In Indian patriarchal society women are forced to live under a special kind of psychological pressure. This paper determines the psychological analysis and personality characteristics of the theories behind this violent behaviour. According to psychoanalytical theory sexual and instinctive drives known as the libido which derives its energy from the Eros basically motivates human behaviors. In case of repression of such libidinal urges there was an emergence of aggression and abusive behavior. In this paper all possible psychological theories have been analyzed which explains the violent behaviour of a person with his partner, further explaining the diagnostic measures needed to be taken care of.*

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**Key Words-** Domestic Violence, Psychological, Intimate partner violence (IPV)

**Introduction:** "Violence against women" has been defined in Article 1 of the UN Declaration on the Elimination of Violence against Women, 1993 to mean: "any act of gender-based violence that results in or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats

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of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life.”

Historically, domestic violence has been identified as a social disease (Gilligan, 1996; Alpert, 2002) and as a major public health crisis (Department of Justice, 2007; National Center for Injury Prevention and Control, CDC, 2011; Hamel, 2012; Black, Basile, Breiding et.al;. 2013; Eckhardt, Murphy, Whitaker, et.al, 2013).

Violence against women shall be understood to encompass, but not be limited to, the following: Physical, sexual and psychological violence occurring in the family, including battering, sexual abuse of female children in the household, dowry-related violence, marital rape, female genital mutilation and other traditional practices harmful to women, non-spousal violence and violence related to exploitation. Gender-based violence against women is a crime and a human rights violation that occurs, often repeatedly, in the lives of a great number of women around the world.

**Objective:** This paper has following objectives:

- To analyze the concept of domestic violence.
- To examine the status of domestic violence against women in Indian scenario.
- To explore psychological analysis for domestic violent behaviour.
- To point out **treatment and** recommendations for domestic violent behaviour.
- To point out some suggestions for our society and for government to overcome such violence.

**Methodology of the research:**

This paper has been prepared by the methodology of desk review or reading and analysis of data's and text. Under this method number of primary and secondary sources have been looked and analyzed.

**Concept of Domestic Violence:**

Domestic violence or abuse is a pattern of aggressive and intimidating behaviors that abusers use to control their intimate partners through fear and intimidation, often including the threat or use of violence. It is described as “domestic” violence in response to this movement’s history of women telling other women about the violence they experienced in their own homes. Abuse can be verbal, emotional, physical, sexual and economic and is based on power and control. People often think of domestic violence only in terms of the cuts and bruises that are physically visible. In reality, it is a pattern of assaultive and coercive behaviors designed to control another person.

• Physical abuse	• Threats or acts of abuse against children, significant others or family pets.
• Sexual abuse or assault	• Isolation: includes controlling the victim's time, activities and contact with others. Financial exploitation is described as the illegal or improper use of funds, property, or assets.
• Psychological abuse	• Neglect: the refusal or failure to fulfill any part of a person's obligations or duties.
• Emotional abuse	• Homicide-Suicide is described as killing a person and then killing oneself.

### Canvassing Domestic Violence against Women in Indian Context:

Every third women, since the age of 15, has been faced domestic violence of various forms in the country which is reported by the National Family Health Survey (NHFS-4) released by the Union health ministry. According to the survey, 27 per cent of women have experienced physical violence since the age 15 in India. This experience of physical violence among women is more common in rural areas than among women in urban areas. Domestic violence cases, where women reported physical abuse in rural and urban areas, were at 29 per cent and 23 percent, respectively.

The Protection of Women from Domestic Violence Act 2005 (PWDVA) provides a definition of domestic violence that is comprehensive and includes all forms of physical, emotional, verbal, sexual, and economic violence, and covers both actual facts of such violence and threats of violence. In addition, the PWDVA recognizes marital rape and harassment for unlawful dowry demands, as a form of abuse.

Most of the times perpetrators of this violence have been the husbands. 31 per cent of married women have experienced physical, sexual, or emotional violence by their spouses. The most common type of spousal violence is physical violence (27%), followed by emotional violence (13%). The survey reported that among married women who have experienced physical violence since the age of 15, 83 per cent reported their present husbands as perpetrators of the violence. However, for women who are not married, the experience of physical violence stems from the most common perpetrators, which includes mothers or step-mothers (56%), fathers or step-fathers (33%), sisters or brothers (27%), and teachers (15%).

However, the most worrying part of the spousal-violence is that almost every third married women, who has experienced spousal violence, reported experiencing physical injuries, including eight per cent who have had eye injuries, sprains, dislocations, or burns and six per cent who have had deep wounds, broken bones, broken teeth, or any other serious injury. Yet, only 14 per cent of women who experienced this violence sought help to stop it. But the helplessness of stopping the violence being inflicted on them isn't the

only worrying factor. Women in India, surprisingly, are supportive of domestic violence.

Data from the survey shows women in India between the ages of 40 to 49 were most supportive of domestic violence, with 54.8% in agreement. The percentage justifying abuse is marginally lesser among younger women. 47.7% of girls between the age of 15 and 19 agreed with

violence by husbands. This marginal difference in attitudes of women towards domestic violence is also visible in urban and rural areas. While 54.4% of rural women surveyed across the country agreed with domestic abuse, only 46.8% of urban women supported such violence.

### **Psychological analysis of Domestic violence:**

In Indian society women have been made home based prospects and the debtor's indebtedness has become auspicious. Due to illiteracy women were lagging behind in the society and now due to lack of proper knowledge of rights they became victims of domestic violence. Patriarchal social system also has been a major cause of domestic violence against women because the owners of the house family's property continue to be male and women are fully dependent on their father and husband and on their son in the old age. Due to this pressure and to keep pressurized domestic violence continues to be used but it is also a very psychological reason why a man who is persecuting a woman. Some psychological theories also strive to investigate the causes and reasons behind the act of domestic violence but no single theory would fully explain domestic violence against women, since it is multi-factorial. According to psychoanalytical theory sexual and instinctive drives known as the libido which derives its energy from the Eros basically motivates human behaviors. In case of repression of such libidinal urges aggression or abusive behaviour emerged. Social learning theory revealed that humans learn behaviour by observing them in others, therefore men who observed their parents physically abusing each other were almost three times more likely to have hit their own wives. Johnson M.P., Ferraro K.J. (2000). Bandura's Power based theory affirmed that the present day marital violence by men towards their wives is an attempt to establish or maintain power when her behaviour becomes unacceptable to them, Bandura A. (1973). A foreign psychologist, John G. Taylor gave 1000 such studies in which men persecuted their partners. He found in his study that the following psychological behaviors were found in such violent men.

**The feelings of jealousy:** Is such that there is a sense of jealous in such violent people that they envy women and because of this they do not want to see them grow.

**Control work behaviour:** These people have a tendency to control the behavior of others. They take min max on every small thing. Do not go here, Do not go out, why do not wear it, do not wear this, do not wear that etc. They want to take total control on their wives and for this they use their power to

control their wives.

**Separatist behaviour:** owners of such violent personality want women to be completely separated from their maternal family and friends, and completely dependent on their husbands. Do not have any connection with anyone else so that they can control and assault.

**Force sex behaviour:** Such a person wants to suppress his wife by using his full superiority and power through establishing a sexual relationship against her desire.

**The men's conservative thinking:** Those men with sexual sensibilities are owners of conservative thinking and consider themselves to be the king of their palaces or house, which holds the traditional rights to torture the wife. Such violent men are very clever but lazy and because of this there is no reason to believe that this person is doing such violent behavior. Normally when a women raises voice against her husband then she is silenced by saying that you are so fortunate to have such husband .Some diagnostic symptoms and some clinical criteria's are given in DSM-IV(Diagnostic and Statistical Manual of Mental Disorders) -

**Antisocial personality disorder:** Lying fraud, penalty for others for happiness for personal gain.

**Borderline personality disorder:**such people are extreme idealists and they also have masters of bipolar personality disorder, some in the outside and some in the house.

**Soul-wide or self centered personality disorder:** the masters of such a personalities are loving themselves, just for example Hitler was the master of a self born personality,therefore he believed strongly in controlling others.

Shainess (1977) has discussed some of the key qualities of the personality of such men who oppress women like The Obsessive Compulsive type , The Depressive Type of personality and The Passive aggressive type - **Ambiguity Forgetfulness, Blaming, Lack of healthy Anger, Fear of Dependency, Fear of Intimacy etc .**

Several studies have been found in which the “mood instability,” “aggressiveness” and “impulsiveness” personality traits are associated with the characteristics of borderline and antisocial personality disorders (PDs), which are frequently identified as being related to intimate partner violence type of domestic violence (Fower and Westen,2011). The “mood instability” personality trait applies to individuals tending towards sad or irritable moods and fluctuations in their temperaments and beliefs, exhibiting impulsive and radical reactions. Such traits are also characteristics of borderline personality disorder (Carvalho,2011). The “aggressiveness” trait is associated with people who are disregardful of others in order to get what they want, are incoherent and are usually violent; whereas the “impulsiveness” trait relates to individuals who exhibit impetuous reactions, a fondness for violent activities, a knack for inventing excuses and a tendency toward getting into trouble (Carvalho, 2011).

The latter two traits (aggressiveness and impulsiveness) evidence characteristics of antisocial personality disorder (APA, 2014).

### **Treatment and Recommendations:**

**Cognitive Behavioral Therapy (CBT)**-Most therapists combine cognitive and behavioral therapies to replace a person's unhealthy thoughts with positive and healthier perceptions. Aside from cognitive and behavioral another branch of CBT is dynamic or an examination of the person's early childhood to identify the possible cause of that person's personality disorder. (Taft, Murphy, King, Musser & De Dey, 2003). In practice this will involve an exploration of the origins and maintenance of beliefs that legitimize violence, including the impact of key developmental experiences, such as trauma. Perpetrators are helped to acquire new skills to make them to manage interpersonal conflict in ways that do not involve violence, with problems relating to anger, mental health and substance use often identified as key targets for intervention.

- **Dialectical Behavior Therapy (DBT)**-Other forms of DBT are also considered helpful in treating personality disorders. For example, DBT is indicated for the treatment of borderline personality disorder, a disorder where suicidal thoughts and self mutilation actions are common. During a DBT session, the therapist assures the patient that their behavior and actions are understandable and valid. By the end of the therapy, the patient should be able to change disruptive or unhealthy behavior.

- **Inter-Personal Therapy (IPT)**- However , in practice most programs draw on elements of both theories sociological and psychological explanations of violence reflecting a common view about the nature of the problem as generated within a context of gender relations, socialization and learning, and an orientation to intervention that focuses on changing behaviour and ways of thinking about interpersonal relationships.(Day, Chung, O'Leary, & Carson,2009).

- **The Feminist Psycho-Educational Approach** of the Duluth Model (Pence & Paymar,1993) has been particularly influential in Australia. This identifies the importance of a social and cultural patriarchal ideology that allows men to control women. Program activities are thus designed to teach perpetrators to recognise abusive behaviour as a deliberate attempt to assert power and control, with group facilitated exercise used to explore the use of various non violent strategies that promote intimate relationships built on respect, trust and equality(Gondolf, 2012).

- **Family Focused Therapy(FFT)**- Family-focused therapy was developed by David Miklowitz, Ph.D., and Michael Goldstein, Ph.D., for treating bipolar disorder. It was designed with the assumption that a patient's relationship with his or her family is vital to the success of managing the illness. Family therapy, sometimes called family focus therapy or family systems therapy, is a type of psychological therapy that works to change the relationships within families to help them better deal with a wide range of

problems. FFT includes family members in therapy sessions to improve family relationships, which may support better treatment results. Asen, E.(2002)

- **Group Therapy-** Group Therapy is important because it allows the batterer to be confronted by his peers on his behavior. The primary instinct for humans is for relational attachments and social connections to the family, community and society (Bowlby, 1969, 1976, 1988; Lieberman, 2013). Humans are wired for social experience and because group therapy is the natural therapeutic modality to work on those natural instincts as domestic violence is a major disruptive force impairing connectedness. Group therapy focuses on weekly topics about: respect, effective communication skills, honesty, non violence and how to handle your emotions.

- **Individual Therapy-** This is also a good form of treatment because it gives the batterer more time to express himself without the interruption of others, but even in this therapy the batterer has to be strongly confronted and held accountable for his behavior. Sometimes the batterer/abuser will want to bring his partner to the sessions.

Some work should be done in this direction by both the family and the society, to overcome the challenge of domestic violence against women:

- First of all society should make a positive attitude in this direction as a result a safe environment created for women with because they require some psychological support.
- The most important step in this direction will be providing education to women. Because this is the weapon from which she can escape any kind of violence.
- The government should make effective policies, legislations at every level of the projects.
- The government and some NGO should provide some vocational training and rehabilitation programs for awareness.
- Ensure that all women irrespective of sex, caste ,religion, location etc. are entitled to human rights and their inherent dignity must be respected at all times.
- Role of Women's Organizations and NGO's mere legislations are not enough. The time has come when the women's organizations and NGO s both at the center and state level should work together and bring social awareness.
- Training and sensitization of police officers, judiciary and medical professionals on issues concerning persons, particularly the violence they face, should be made mandatory. There must be a standard procedure for investigation and medical examination adopted by the investigative agencies while investigating cases of sexual assault. These procedures should be formulated on the basis of specific needs of women.
- The media and social media should also play its role in this direction

and highlight the problems of domestic violence against women to different forums and also file cases in their support; as because in near future, there can be thousand of cases where women will be subjected to domestic violence.

### **Conclusion:**

At the end, it can be concluded that the attitude of the society needs to change. We have to create a positive environment in which women can feel safe psychologically. The psychological functioning of survivor proves to be pathetic because of the cold attitude of society. Literature review also supported the fact that whenever any kind of domestic violence had occurred at home, all the people got affected by that negatively and mostly children and women face the misery most of the time. In conclusion I need to say that batterers can change they can stop this behavior and treat their intimate partner the way they should be treated. I have seen many men change, I remind myself that people aren't their behavior, it's just what is manifested on the surface and we must get beneath that and deal with the root cause. Because as a society we can't afford to have women and children living in fear any longer. Let's shout it from the highest heights "There is No Excuse for Domestic Violence".

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## **A study of familial adjustment with exceptional child**

\* Kumari Nitu Singh

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**Abstract-** *We discuss how rare children with disabilities affect parents. We examine a broad area of family and parental issues directly related to rare children with various types and degrees of exceptional condition. We review the family as a social system defined by a set of purpose, roles, and exceptional. Each family member Tradition or other means disorder can significantly affect the family unit over time.*

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**Key Words-** Familial Adjustment, Children, Disabilities, Social System

### **Introduction:**

This Article deals with results showing the effect of independent variables under studies. Agitation, adjustment and insecurity were treated as dependent variables. On the other hand, exceptionalities in children is treated as an independent variable. A child with physical, intellectual, or behavioral problems presents unique and diverse challenge to the family unit (Chandler, 1987; Pueschel, 1986; Sherman, 1988). In one instance the child may hurt the family into crisis, resulting in major conflicts among its members. Family relationships may be weakened by the added and unexpected physical, emotional, and financial stress imposed on them (Shelton, Jeppson, & Johnson, 1987). In another instance, family members may see this child as a source of unity that bonds them together and actually strengthens relationships. Many factors influence the reactions of family members: the emotional stability of each individual, religious value and beliefs, socioeconomic status, the severity of the child's disability, to identify only a few.

Other reaction on the part of family members include shock, uncertainty, disappointment, anger, frustration, guilt, denial, fear, withdrawal, and rejection (Blacher, 1984; Bristor, 1984; Crnic et al., 1983; Rose 1987). The level of impact varies, but for most parents such an event creates a family crisis of considerable magnitude.

Nowhere is the impact of an exceptional individual so strongly felt as in the family. The birth of an infant with disabilities may alter the family as a social unit in a variety of ways, Parents and siblings may react with shock, disappointment, anger, depression, guilt and/or confusion. Relationships

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between family members often change, in either a positive manner or a negative one. The impact of such an event is great, and it is unlikely that the family unit will ever be the same.

Petermann and Petermann (2003) supported that a child's behaviour could be characterised as social insecure behaviour in case of social isolation and demonstration of social anxiety, excessive shyness, withdrawal and social avoidance. Generally, social insecurity is synonymous with: a) separation anxiety (the child refuses to be separated from one specific adult, to get out of the house, and to correspond to any social invitation), b) social anxiety or phobia (it concerns anxiety towards less familiar persons, and anxiety for evaluation regarding child's behaviour in performance's circumstances), and c) generalized anxiety disorder (the child is characterized by generalized anxiety concerning his/her skills, success and competence on handling problems during every day life) (Mouratidou et al., 2007).

#### **Hypothesis:**

1. The parent exceptionalities would show less adjustment than their Counterparts.
2. It was hypothesized that the parent of exceptionalities would show more Insecurity than the parents of normal children.
3. The sibling of exceptionalities would show more anxiety than their counterparts.

#### **Methodology:**

##### **Sample:**

The two groups exceptionalities families and non exceptionalities family were selected from urban population of Chapra, Siwan and Gopalganj district. The total number of respondent is 200 in which 100 selected were exceptionalities families.

##### **Research Tools:**

1. Mohashin Samsad adjustment inventory.
2. Mohashin insecurity-security scale.
4. Anxiety scale by Sinha
3. Personal data sit developed by researcher.

##### **Mohsin Shamsad Adjustment:**

In the present study Mohsin-Shamshed Adaptation Bell Adjustment Inventory (1987) was used here for measuring adjustment of the respondents. It measure home, health, social and emotional beside overall adjustment. Originally this inventory was developed by H.M. Bell in 1934. In the process of adaptation the inventory was subject to Hindi adaptation by Mohsin and Shamshad with a view to making it more useful and suitable for Hindi speaking students. The standardization sample consisted of intermediate and undergraduate Arts and Science students and belonging to different rule and urban collects. It was considered a desirable and suitable inventory to be used in the present study for measuring the adjustment of the subjects. This adjustment

inventory consisted of 135 items defined as a result of item analysis out of 140 items. However, this inventory was revised in 1998 in the light of the doctoral research by the late Khursheed Jahan, the then reader in psychology in the department of psychology. Patna University and the number of items were reducing to 125. The inventory measures 4 different dimension of adjustment of adjustment such as Home, Health, social and Emotional separated as well as over all. indicate low adjustment and view verse. Number of item related to each dimension of adjustment is give is given in table 1

**Table no. 1**

Areas of adjustment	Number of total terms		
	1	2	3
			(Present form)
Home	35	35	31
Health	35	31	29
Social	35	34	32
Emotional	35	35	32
Total:	140	135	124

#### **Insecurity-Insecurity and Parents of Exceptionalities:**

It was hypothesized that the parents of exceptionalities would show more insecurity than the parents of normal children. Maslow insecurity scale was administered to the respondent belonging to these group and then score obtained were collected. When SD and SE of the score were collected in such case and the significance of difference between two means was examined by using t test.

**Table no. 2**

Variable	Group	N	M	SD	SE	t	df	P
Insecurity-security	Parents of exceptional children	100	17.94	6.82	.68	15.36	98	.01
	Parents of normal children	100	35.46	9.30	.93			

#### **Anxiety and Siblings of Exceptionalities:**

It was hypothesized that the siblings of exceptionalities would show more anxiety than their counterparts. The obtained score were displayed in table no-6 for the analysis of the obtained data t- test was employed. The obtained result were discussed and interpreted in the light of relevant studies or rational the details are given below.

**Table No-3**

Variable	Group	N	M	SD	SE	T	df	P
Anxiety	Sibling of exceptional children	100	39.12	8.66	.86	16.30	98	.01
	Sibling of normal children	100	32.16	6.15	.61			

**Personal Data Sheet :**

A personal Data sheet was prepared by the researcher himself to collect relevant information with regard to age, sex, region (Urban-Rural), Ordinal position, size of the family, occupation, and income of the family.

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## **A comparative study of sensation seeking between Adventure and combative sports**

\* Rakesh Kumar Verma

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**Abstract-** *Sensation Seekers around the world have always been looking for the 'extra-kick' that could make them feel contented. Though, this contentment is simply temporary and short-termed in nature. Such people have climbed the summits, walked on ropes between high buildings, indulged in risky activities like base jumping, rafting and skiing down the slopes. The fun and contentment they accomplish by participating in these activities remains with them for a while, but it withers away slowly and they feel the urge to look for something more exciting and challenging. And that is the sheer fun and nature of sensation seeking. The present study aimed at comparing the sensation seeking levels of adventure (paragliding (PG) and river rafting) and combative sports (boxing and wrestling). It was hypothesized that there would be significant differences between their sensation seeking levels.*

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**Key Words-** Sensation Seeking, Adventure Sports, Combative Sports, Paragliding, River Rafting, Boxing and Wrestling.

**Methods:** The study involved 160 randomly selected male subjects (adventure sports = 80, combative sports = 80) between the age of 18 – 35 years. The necessary data for the study was collected using the Sensation Seeking Scale – V (SSS – V) developed by Marvin Zuckerman in 1971 (revised in 1996).

**Result:** No significant differences were found between Adventure and Combative Sports on the variable Sensation Seeking and its sub-variables boredom susceptibility and thrill & adventure seeking. However, significant differences were found for the sub variables disinhibition and experience seeking.

**Conclusion:** On the basis of the study, it is concluded that the sensation seeking level of Adventure and Combative Sports is same.

**Introduction:** Human beings have been a remarkable race among those who existed on this earth. They have always strived to do the impossible, conquer the unattainable and march towards the unknown. They have done this to satisfy the urge of contentment. Sports provided them a perfect platform to satisfy this urge. Through sports, they challenge one-another and always try to show their supremacy by winning over others.

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Sports are activities which involve muscles and mind of the performers. Therefore, a blend of both physiological and psychological well being is required to perform optimally. In the last couple of decades, the world of sports has seen a spurt in terms of both physiological and psychological scientific innovations. Researches in the field of sports have found out various psychological factors that aid in the augmentation of sports performance. Sensation seeking is one of such factors that has caught the eye of the trainers and coaches. Sensation seeking is being seen as a trait that helps us in picking up a sport. People take pleasure in participating in different sort of activities. Such activities can be both risky and dangerous. This sense of risk or danger provides them the necessary fuel to indulge in such activities. High sensation seekers tend to choose sports like base jumping, rope walking, paragliding, bungee jumping etc., which involve higher risks and stimulations. On the other hand, low risk activities like climbing a low wall, talking to a stranger, playing a game etc, are the choices of low sensation seekers.

Simply speaking sensation seeking may be regarded as thrill seeking, fearlessness, or stimulus seeking. Initial works and researchers on sensation seeking were started in early 1960's. These works were inspired by the thoughts that different people had different levels of stimulations and arousal. Therefore, the need to measure these differences was felt and questionnaire was prepared (Zuckerman M. et al. 1964). Sensation seeking is the urge for varied, novel and complex sensations, experiences and readiness to take social and physical risks for the sake of such experiences (Zuckerman 1979). Zuckerman stated that high sensation seekers had the tendency to perform better when exposed to higher level of sensation or arousal. Zuckerman's (1979 and 1994) theory projected that there were individual differences in optimal arousal and arousability levels. He further opined that some might feel contended by participating in very-low risk activities like breaking a glass or shouting in the streets. On the other hand some might indulge in high-risk activities like riding a racing bike at a very high speed or walking on the edges of a high building. Still others might prefer base jumping or reaching the summit of a high mountain to satisfy their lust for sensation. All these sensations work as energy boosters for future competitions.

Zuckerman and Kuhlman (2000) opined that if you ever confronted a situation where you were face to face with terms like 'wait', 'consider' or 'think again', it was the starting of an action that involved risk, though at primary level. They added that the process of decision making was very much influenced by the results of the risk involving actions. If punishment was the results of a risk taking action, the decision making process would be adversely affected. They further added that there was difference between sensation seekers and sensation avoiders. Sensation seekers indulged in activities like cigarette smoking, alcohol consumption, high-risk sexual actions and liking towards risky sports whereas sensation avoiders remained away from such

activities. Mc Kay S. et al. (2018) brought forward that sensation seeking was directly or indirectly positively associated with greater perception of resilience. They concluded that sensation seeking increased resilience by reducing stress responses and by increasing a person's resources to handle harsh conditions. They highlighted the importance of regarding sensation seeking as a multifaceted construct that could support healthy development through resilience building.

### **Objective Of The Study:**

The objective of the comparative study was to explore the differences between adventure and combative sports on the psychological variable of sensations seeking. It was hypothesized that the sensation seeking level of adventure sports would be higher than that of combative sports.

### **Methodology :**

#### **Selection of subjects:**

The sample consisted of a total of one hundred and sixty (N = 160) randomly selected male sportspersons in the age group of 18 and 35 years; 40 each from Paragliding, River Rafting, Boxing and Wrestling. Para-gliders and river rafters were national level competitors whereas; boxers and wrestlers had participated at All India Inter University (A.I.I.U.) level.

### **SUBJECTS**

Sports	Sub-sports	Age group (In Years)	Level of Participation	Gender	Number of Participants
Adventure Sports	Paragliding (PG)	18 – 35	National	Male	40
	River Rafting	18 – 35	National	Male	40
Combative Sports	Boxing	18 – 35	A.I.I.U.	Male	40
	Wrestling	18 – 35	A.I.I.U.	Male	40
<b>TOTAL</b>					<b>160</b>

**Selection of Test Scale:** After going through the literature, the Sensation Seeking Scale – V (SSS – V) in the form of questionnaire was selected to measure the sensation seeking level of the subjects.

S. No.	Variable	Name of the Test	Constructed/ Developed by	Year
1	Sensation Seeking	<b>Sensation Seeking Scale – V (SSS – V)</b>	Marvin Zuckerman	1971 (Revised –1996)

**Collection of Data:** The requisite data from the Para-gliders was collected from Bir-Billing in Kangra, Himachal Pradesh in October 2015------. Data from the rafters was collected from Rishikesh and Haridwar in Uttaranchal in May 2016. Boxing data was collected from Kurukshetra University, Kurukshetra, Haryana during the All India Inter University Boxing Championship held in November 2015. Wrestling data was collected from University of Mysore, Karnataka during the All India Inter University Championship held in January, 2016.

**Statistical Techniques Employed:** The necessary primary data for the study was collected using the questionnaire. To meet the objectives of the study, the following statistical tools and procedures were adopted. The analysis was completed using the following:

1. The 't' – Test was applied for the comparison of means of the two samples on each variable. The level of significance was set at 0.05 levels.
2. One way ANOVA was used.
3. Cross bars

The data has been represented using the tables and bar charts.

**Results of the Study:** The results obtained from the study on the psychological variable Sensation Seeking of adventure and combative sports have been presented in the succeeding tables. The interpretations of the tables have also been specified accordingly along with the tables. The graphical exemplification has also been presented for the sub-variables of sensation seeking for the mean comparison.

#### **Sub-variable: Disinhibition**

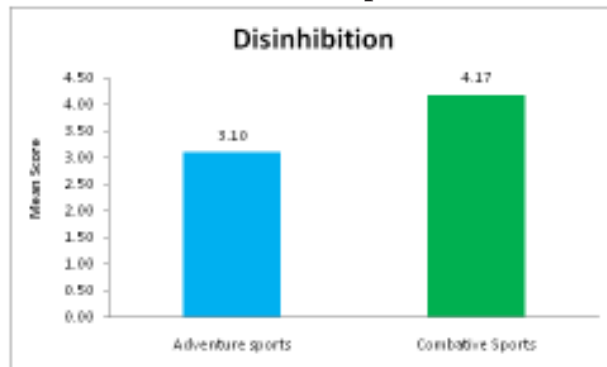
**Table 1**  
**Differences between Adventure and Combative Sports on the sub-variable Disinhibition**

	N	Adventure Sports		Combative Sports		t-value	p-value
		Mean	Standard Deviation	Mean	Standard Deviation		
Disinhibition	80	3.10	1.74	4.18	1.84	3.796	.0001*

\* Significant at 0.05 level

The above table presents the mean values ( $\pm$  SD), t-value and the p-value of Adventure and Combative Sports with respect to the sub-variable disinhibition. The Adventure sports group when compared to the Combative Sports group exhibited statistically significant differences with respect to the sub-variable disinhibition as the p-value was found to be less than the alpha value ( $p < 0.05$ ). The graphical exemplification of the same has been presented below.

**Figure 1**  
**Mean Score of sub-variable Disinhibition of Adventure and Combative Sports**



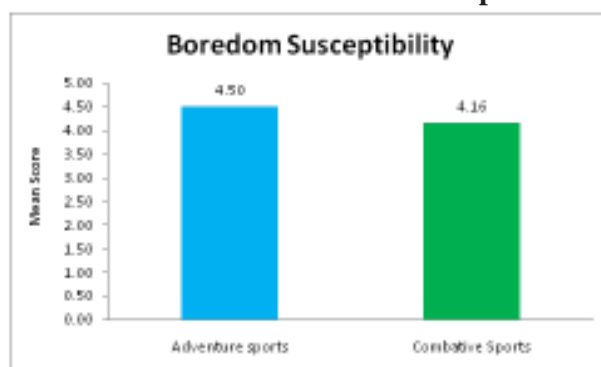
**Sub-variable: Boredom Susceptibility**

**Table 2**  
**Differences between Adventure and Combative Sports on the sub-variable Boredom Susceptibility**

	N	Adventure Sports		Combative Sports		t-value	p-value
		Mean	Standard Deviation	Mean	Standard Deviation		
Boredom Susceptibility	80	4.50	2.12	4.16	1.66	1.119	.265

The above table presents the mean values ( $\pm$  SD), t-value and the p-value of Adventure and Combative sports with respect to the sub-variable boredom susceptibility. The Adventure Sports group when compared to the Combative Sports group did not show any statistically significant differences with respect to the sub-variable boredom susceptibility ( $p > 0.05$ ). The graphical exemplification of the same has been presented below.

**Figure 2**  
**Mean Score of sub-variable Boredom Susceptibility of Adventure and Combative Sports**



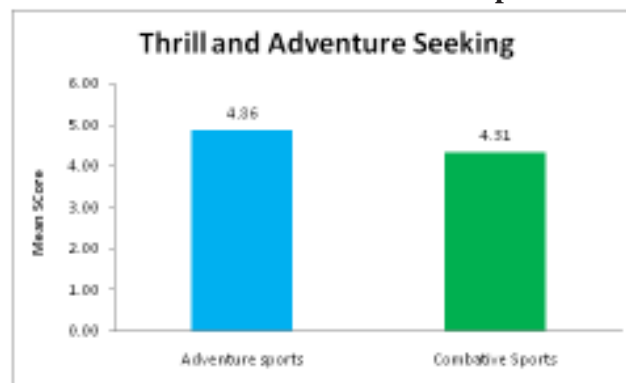
**Sub-variable: Thrill and Adventure Seeking**

**Table 3**  
**Differences between Adventure and Combative Sports**  
**on the sub-variable Thrill & Adventure Seeking**

	N	Adventure Sports		Combative Sports		t-value	p-value
		Mean	Standard Deviation	Mean	Standard Deviation		
Thrill and Adventure Seeking	80	4.86	1.89	4.31	1.76	1.902	.059

The above table 3 clearly shows the mean values ( $\pm$  SD), t-value and the p-value of Adventure Sports and Combative Sports with respect to the sub-variable thrill and adventure seeking. It is observed that there are no statistically significant difference ( $p > 0.05$ ) between Adventure Sports group and Combative Sports group on the sub-variable thrill and adventure seeking. The results have been graphically exemplified in the below table.

**Figure 3**  
**Mean Score of sub-variable Thrill and Adventure Seeking**  
**of Adventure and Combative Sports**



**Sub-variable: Experience Seeking**

**Table 4**  
**Differences between Adventure and Combative Sports**  
**on the sub-variable Experience Seeking**

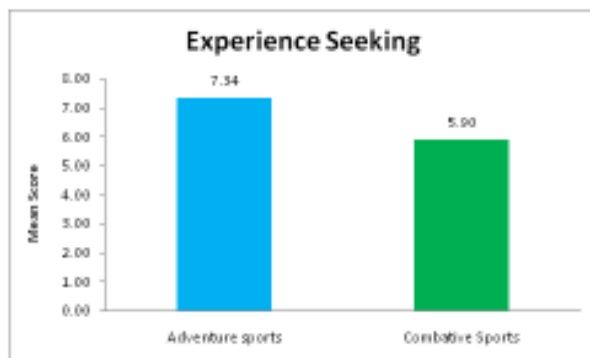
	N	Adventure Sports		Combative Sports		t-value	p-value
		Mean	Standard Deviation	Mean	Standard Deviation		
Experience Seeking	80	7.34	1.97	5.90	2.04	4.528	.0001*

\* Significant at 0.05 level

Tables 4 portray the descriptive statistics for Adventure Sports and Combative Sports for the sub-variable experience seeking. The mean value for the Adventure Sports group is 7.34 whereas it is 5.90 for the rafting group. Statistically significant difference has been found between Adventure Sports group and Combative Sports group with respect to the sub-variable experience seeking ( $p < 0.05$ ). Graphical representation of the results has been presented

in figure 4 below.

**Figure 4**  
**Mean Score of sub-variable Experience Seeking**  
**of Adventure and Combative Sports**



**Variable: Sensation Seeking**

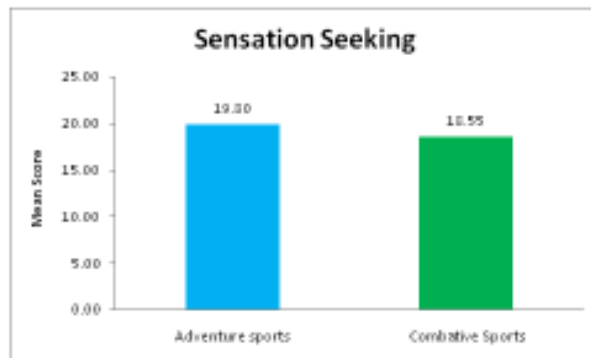
**Table 5**  
**Differences between Adventure and Combative Sports**  
**on the variable Sensation Seeking**

	N	Adventure Sports		Combative Sports		t-value	p-value
		Mean	Standard Deviation	Mean	Standard Deviation		
Disinhibition	80	3.10	1.74	4.18	1.84	3.796	.0001*
Boredom Susceptibility	80	4.50	2.12	4.16	1.66	1.119	.265
Thrill and Adventure Seeking	80	4.86	1.89	4.31	1.76	1.902	.059
Experience Seeking	80	7.34	1.97	5.90	2.04	4.528	.0001*
Sensation Seeking	80	19.80	4.69	18.55	4.23	1.769	.079

\* Significant at 0.05 level

Table 5 clearly shows the mean values ( $\pm$  SD), t-value and the p-value of Adventure and Combative Sports with respect to the variable Sensation Seeking. The Adventure Sports group when compared to the Combative Sports group exhibited no statistically significant differences with respect to the variable Sensation Seeking as the p-value is greater than the alpha value ( $p > 0.05$ ). The graphical exemplification of the same has been presented below.

**Figure 5**  
**Mean Score of Variable Sensation Seeking**  
**of Adventure and Combative Sports**



### Conclusion:

On the basis of the above study it is concluded that no significant differences exist between Adventure and Combative Sports with respect to the psychological variable of Sensation Seeking. Significant differences were found between Adventure and Combative Sports on the sub-variables disinhibition and experience seeking. However, no significant differences were found for the sub-variables boredom susceptibility and thrill & adventure seeking between the two groups. The results of the study are partially supported by Breivik G. et al. (2017) as they found out that people having tendency for risk-involved activities had higher sensation seeking score. The results of the present study are also partially in line with the findings of Verma A. et al. (2017) and Glicksohn J. et al. (2018) as they found that the involvement in higher risk taking activities increased the level of sensation seeking among participant.

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## **Gender influence upon the choice of career option between establishment of an enterprise and procurement of job: Perspective of students of professional courses of India**

\* Purusotam Vishwakarma

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**Abstract-** *This paper examines gender influence upon the choice of career option between establishment of an enterprise and procurement of job for the students of professional courses of India. The hypothesis of the paper is "getting job is easier than establishment of an enterprise". To test the hypothesis total 120 respondents pursuing professional courses are taken. They are divided on the basis of gender equally. 60 respondents are male and 60 respondents are female. Again these students are further subdivided on the basis of type of institution (government and private) and academic achievement level (high academic achiever students and low academic achiever students). Altogether the sample is divided in 8 subgroups and each group contained 15 respondents. The respondents are asked four questions in 5-point likert scale regarding their choice of career option between entrepreneurship and procurement of job. The findings show that gender has some influence upon the choice of career option between establishment of an enterprise and procurement of job except for the students of professional courses from government colleges. Female gender has distinct preference for job in comparison to entrepreneurship. Male gender also prefer job but they are not much confident in their preference. Some groups of students namely high academic achiever male students from government colleges, high academic achiever male students from private colleges and low academic achiever male students from private colleges are seen to be inclined towards entrepreneurship in comparison to job.*

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**Key Words- Gender, Career, Enterprise, Procurement**

**Introduction:** Gender in India has always been the topic of discussion. The reason for discussion over gender is the social construct in which gender has always been viewed. In a patriarch society, like Indian society, the social supremacy of male gender over female gender is evident. Girls are kept confined within the four walls of houses indulging with drudgery and struggling with basics. On the other hand boys are given preferences and autonomy. But with passes of time, things are changing. It is changing with need, focus and

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demand for gender equality. Now girls are not considered less than the boys. They are being treated as at par with boys. Gender discrimination is increasingly boycotted. Now girls are given proper education and training. With the help of this education and training girls are doing fairly good in every walk of society. They are occupying bigger roles and responsibilities. From the field of arts, TV & Entertainment, sport, defence, corporate, business, glamour, fashion, education, science and technology, politics and many more, everywhere girls have proved their worth. No sector is immune from being the witness of ability, dedication and efficiency of girls. Their efforts are now being substantially calculated as the contribution in nation building. But still their representation is low. Every woman of the nation is not contributing their bit in the development of nation. Economic survey conducted for India by OECD in November 2014 clearly enlists the low female economic participation as one of the major findings. Currently the contribution of women in workforce is limited to 24 percent. Head of the UN women in has also indicated that India's GDP will leapfrog by another 4.2% if women in India contribute to their full potential to the economy.

Thus low participation may be attributed to various factors such as political and social factors, personal and family factors etc. It has been seen that women are selective in choice of profession. Teaching jobs, jobs in banks, call centres, BPO etc which are safe and easy to maintain work life balance are preferred by girls. But there are girls who go beyond and take adventure while accepting challenging jobs like job with Indian army or military, administrator or managing directors, career as sport persons etc. Some few among them even proved their worth in entrepreneurial pursuit.

Now entrepreneurship which *prima facie* seems a risky endeavour is supposed to be tougher for girls. Women entrepreneurship which is the process where women organise all the factors of production, undertake risk and provide employment to others is a big deal in India. But the women of India are dealing it with increasing rate of success. Women entrepreneurship which means concept of entrepreneurship executed by women has evolved gradually. Earlier the 'work' of women has not recognised as work. Their work is supposed to be secondary and sub ordinate to men works. Women entered in entrepreneurial activity because of poor economic conditions, high unemployment rate and other forcing factors. In Babylonia, about 200 BC, women were permitted to Business and work as Scribes. By the 14<sup>th</sup> century, in England and France, women were frequently accepted on a par with men as carpenters, saddlers, barbers, tailors and spurriers. Dress making and lace making guilds were competed more with men for some jobs but were concentrated primarily in textiles mills and clothing factories. In 1950s, women nearly 25% of both industrial and service sectors of the developing countries. In 1980s, 53% of females and 65% of males of Industrialised countries were in non agricultural sector. As a result of economic crises of 1980s, and the

commercialisation and modernisation of economy, women lost employment in agriculture and in industry. This pushed women in urban areas to find suitable solutions for generating income which resulted in emergence of self employment largely in micro business in the informal sector.

Now in 21<sup>st</sup> century where girls are treated at par with boys, economy is facing unemployment problem whose rate is alarmingly high. Entrepreneurship which generates job and other domino effect is considered one of the solutions. Promotion of entrepreneurial potentiality is high now. Entrepreneurial cult is being provided. Now in such a situation what student thing about entrepreneurship? Is there any gender influence on entrepreneurship or not? If a boy and a girl both receive equal level of professional education and training then what would be their choice of career option? Are they equally inclined to or disinclined from entrepreneurship? Are they happy with the job which also seems tough? What they think about these is something interesting and important.

#### **Objective of the study:**

The main objective of the study is to evaluate the gender influence upon the choice of career option between entrepreneurship and procurement of job. The paper also tries to identify the factors acting as hindrance in promotion of entrepreneurship and the solution of the same. The preferences of highly qualified and professionally groomed boys and girls are the subject matter of the study.

#### **Literature Review:**

Literature on the entrepreneurship in general is numerous. The different aspects of entrepreneurship have also witnessed a lot of study making available literature on entrepreneurship richer. For instance Gloria V. Javilionor and Georag R. Peter (1973) studied the family connection of entrepreneurship where he said that entrepreneurship in India is a family phenomenon rather an individual approach. To enter into the field of entrepreneurship one's connection with family business becomes helpful. Berna (1966) studied the entrepreneurship in Chennai and found that entrepreneurs are having diverse background like caste, occupations and classes. Generally business is started with small scale operation which is further expanded and diversified. This expansion and diversification is attributed to education and training of the entrepreneurs. Likewise some other people have also studied the different aspect of entrepreneurship such as rural entrepreneurship, entrepreneurship in technological industry, small scale industry and entrepreneurship etc. Entrepreneurship among women in particular has also been studied. Some notable study on women entrepreneurship is being presented below:

Colette Dumas (2001): In his study titled 'Micro enterprise training for low income women; the case of the community entrepreneurs programme', it is found that community training programme emerged helpful in setting small business units for low income rural women. The study also highlighted

the importance of training programme in order of helping unemployed rural women in achieving self sufficiency through entrepreneurship.

Sangita Kamdar (2002): In a study titled “women and economic development” Mrs. Kamdar pointed out that gender discrimination has remained a central issue to women economic development. Though, education has bridged some gap but more independence is required which can be supplied through education and training.

Sivaloganathan (2002) in a research paper she emphasised that gender inequality is still remaining and a woman has to travel miles to come at par with male counterparts. The problem that women still faces are gender rooted. Because of the disadvantageous status that women have, several issues such as low wages, exploitation, lack of finance, education and socio-economic status have yet not solved.

Sakthi Dasgupta (2003) she studied the organised women in her paper titled “women organising for socio economic security. She found that organisation of SEVA are far better than their counterparts who are unorganised women workers in various areas such as access to credit, training, loan for housing, health care services including health insurance.

Natarajan et. al. (2003) in a paper titled “competencies of women in entrepreneurs” said that personal variables like age, education, experience, location, status and nature of operation has nothing to do with the competencies of women entrepreneurs. The suggestion is also made by the author that by providing education and training competency level of women can be enhanced. Dr. M. Sumahy and Mr. K. Nagendran (2007) In his article found that there is a vital role of women in economic development. The success of women entrepreneurs is attributed to many factors such as sharing of time, appreciation, knowledge and ideas, friendship, kindness and experience women manage the busy world today. The success of women also depend upon their ability to relax optimistically, listen deeply, feel empathetically, respond carefully, synchronise co-operatively act-automatically and acknowledge generously.

Kamalakannan (2005) Observed that entrepreneurship development among women is an imperative for economic development. The article gives a detailed analysis of financial institution, commercial banks and NGOs engaged in financing and promoting entrepreneurship among women.

Aruthati Cattopadhyay (2005): emphasised that economic empowerment is elevating the status of women in our society. One possible towards achieving this end could be through entrepreneurship development.

#### **Methodology of Research:**

The research is exploratory in nature and is based on primary data collection. Total 120 respondents have been surveyed. These 120 respondents have been subdivided into 8 groups where each group consisted of 15 respondents. The survey has been done with the help of a questionnaire using

5 point likert scale. The questionnaire comprise of two pair of question. Each pair consists of one positive and negative question. Thus there are only four questions. Each question has got five alternative ranging from strongly agree to strongly disagree. The marks assigned to these questions are given below:

Level of agreement	Value of positive Question	Value of Negative Question
Strongly Agree	5	1
Agree	4	2
Neutral	3	3
Disagree	2	4
Strongly Disagree	1	5

Thus

No. Of respondent =120

Range of data= 4-20

Total no of group=8

Respondent in each group =15

Total respondent have been classified into students from Government College and students from private college equally. It means 60 students from Government College and 60 from private institutions have been taken. The respondent are further divided on the ground on academic achievement. 50% of the sample size is students with high academic achievement and another 50% is from student with low academic achievement. These students are further divided on the ground of gender. Half of respondent is of male gender and other half is of female gender. Hence the sample is based on 2\*2\*2 factorial design.

The likert scale has been used for testing of hypothesis. A single respondent scoring more than  $(4+20)/2 = 12$  is approving the hypothesis. Following the same if a group average score is more than 12 the group is supporting the hypothesis.

To test the influence of groups and for intergroup comparison t test has been used.

#### **Scope of paper and limitations:**

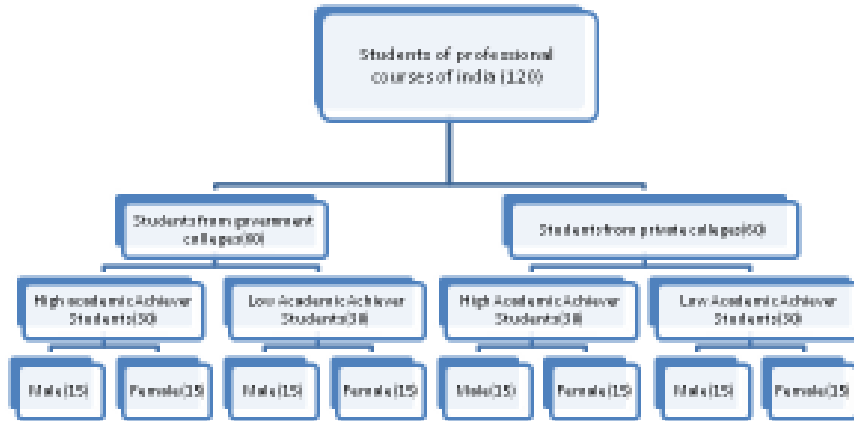
The scope of paper is wide enough. It is applicable in field of higher education and in different aspects of higher education. Gender equality and gender discrimination among professionally groomed students are in the purview of this paper. The choice and preference of gender and the influence of the same over the issue of selection of career option is also a major application area of this paper.

Like every paper this paper is also having lacuna. The major lacuna of this paper is that it is meant for students of professional courses in higher education only. Students other than the students of professional courses have not been taken into consideration. Apart from gender factor, other factors like

age, family background, economic condition, aim of the students etc has been not taken care of. Thus the paper has some limitations too.

**Analysis:** The data collected for study are classified as follow:

### Data Structure



### Group Wise Score/Value for the Questions of Individual Respondent

SGHM(p) Students from governmen t college high academic achiever males.	SGHF(q) Students from governmen t college high academic achiever females.	SGLM(r) Students from governmen t college low academic achiever males.	SGLF(s) Students from governmen t college low academic achiever females.	SPHM(t) ) Students from private college high academi c achiever males.	SPHF(u) Students from private college high academi c achiever females	SPLM(v) ) Students from private college low academi c achiever males	SPLF(w) ) Students from private college low academi c achiever females
13	13	17	13	10	15	12	12
12	9	14	14	12	15	9	13
13	13	11	12	10	17	12	15
14	15	17	11	12	14	11	14
16	14	14	12	12	17	12	12
8	10	18	14	16	15	14	14
13	8	14	12	14	13	13	15
15	10	12	14	12	14	14	14
15	8	15	16	10	14	11	12
9	15	13	16	10	14	9	9
11	12	14	12	14	18	6	15
11	16	11	14	9	15	7	15
7	14	15	14	12	14	9	12
7	6	19	13	8	17	11	13
13	15	10	15	10	13	9	14

\*High Academic Achiever: Students achieved  $\geq 50\%$  score or its equivalent

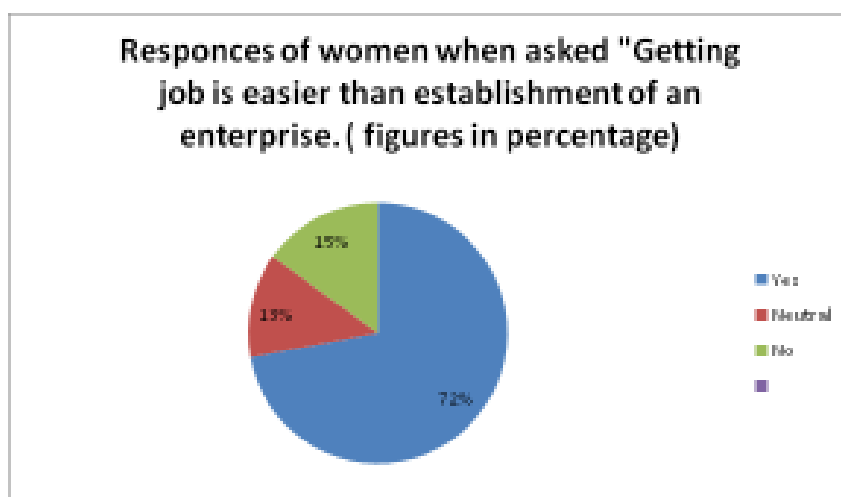
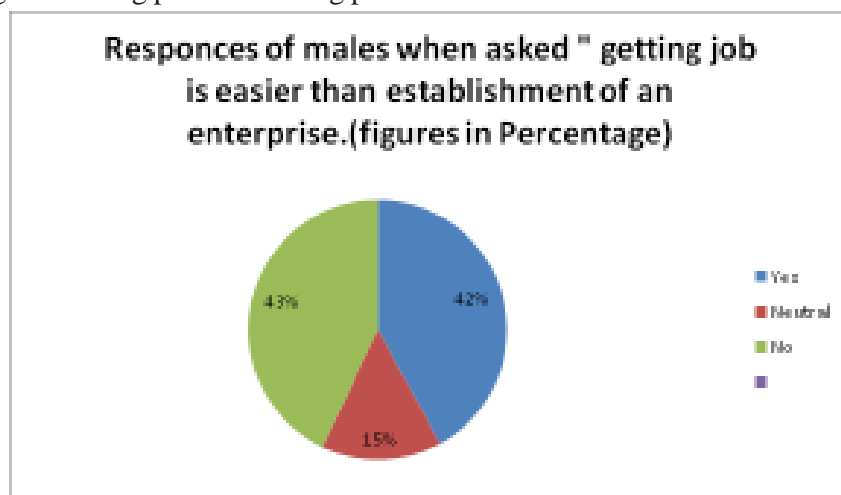
Low Academic Achiever: Students achieved  $< 50\%$  score or its equivalent

The obtained data has been analysed in two ways:

- (1) Element wise where individual scores of respondent is taken into consideration.
- (2) Group wise where group characteristics such as similarity and

dissimilarity within and between groups have been analysed.

1. Element wise analysis: Here individual scores of respondents collected through survey are summarised and categorised for the hypothesis getting job is easier than the establishment of an enterprise. 42% males are of the view that getting job is easier than the establishment of an enterprise whereas 43 % of men are of the opposite view. There are another 15% who are indifference between entrepreneurship and procurement of job. On the other hand females exhibits different trend. 72% women says that getting job is easier than the establishment of job where as only 13% women are of the view that entrepreneurship is comparatively easy. 15% of this gender is also indifference between entrepreneurship and procurement of job. The above figure is being presented using pie chart below:



To test the significance of survey, chi –square test is administered.

Chi-square test:

**Hypothesis:** There is no significance of observed data in comparison of expected data.

Data in absolute figure (fo)

Gender	Yes	Neutral	No	Row Total(rt)
Male	25	9	26	60
female	43	9	8	60
Column Total(ct)	68	18	34	Grand Total(gt)=120

The formula used for chi-square is  $\chi^2 = \sum (fo - fe)^2 / fe$ .

Where fo = observed frequency

Fe = expected frequency.

The calculation of expected frequency has been done using the formula  $(ct * rt) / gt$ .

Using the above we got followings

Chi-square  $\chi^2 = 14.04$

Degree of freedom (df) =  $(c-1) * (r-1) = (3-1) * (2-1) = 2 * 1 = 2$

Table value of chi-square at df 2 = 5.991 (at 0.05 level) and 9.210 (at 0.01 level)

Since, calculated  $\chi^2$  is greater than the table values of chi-square at both the level, so null hypothesis is being rejected with more than 99% of confidence. It means observed data is significant one. It is not just a guess or biased one.

2. Group wise where group characteristics such as similarity and dissimilarity within and between groups have been analysed:- Here the inter group comparison with focus on gender influence have been done. For this test between the following groups have been administered.

(1) T test between male students and female students.

**Ho:** There is no influence of gender between male students of professional courses and female students of professional courses upon the choice of career option between procuring a job and establishment of an enterprise.

Calculated  $t = 2.86$

Df =  $(60-1) + (60-1) = 59+59 = 118$

Table value of  $t = 1.98$  (at 0.95 level) and 2.62 (at 0.01 level)

Since, df 118 was not present in the table so we checked the next df that is 125. Here we that obtained  $t$  is greater than table value of  $t$  at both the level. So, Null hypothesis is being rejected with more than 99 % of confidence. It means gender has some influence upon the choice of career option between procurement of job and establishment of an enterprise.

(2) T test between males from government colleges females from Government College.

**Ho:** There is no influence of gender between male students of professional courses from government colleges and female students of professional courses from government colleges upon the choice of career option between procuring

a job and establishment of an enterprise.

Obtained  $t = 0.52$

$Df = (30-1)+(30-1) = 29+29 = 58$

Table value of  $t = 2.00$  (at 0.05 level) and 2.66 (at 0.01 level)

Since, calculated  $t$  is less than table value of  $t$  at both the level so null hypothesis will retain. It means that gender has no influence upon the choice of career option between procurement of a job and establishment of an enterprise to the students from government colleges. However, both the group say that getting job is easier than establishment of an enterprise.

(3) T test between male students from private colleges and female students from private colleges.

**Ho:** There is no influence of gender between male students of professional courses from private colleges and female students of professional courses from private colleges upon the choice of career option between procuring a job and establishment of an enterprise.

Obtained  $t = 6.13$

$Df = (30-1) + (30-1) = 29+29 = 58$

Table value of  $t = 2.00$  (at 0.05 level) and 2.66 (at 0.01 level)

Since, Calculated  $t$  exceed the table value of  $t$  at both the level so null hypothesis is rejected. It means there is no influence of gender is rejected. It means gender has some influence upon the choice of career option between entrepreneurship and procurement of job. Males from private college say that getting job is not easier but female of private college say that getting job is easier in comparison to establishment of an enterprise.

(4) T test between high academic achiever students of professional courses male and high academic achiever students of professional courses female.

**Ho:** There is no influence of gender between high academic achiever students of professional courses and high academic achiever students of professional courses female upon the choice of career option between procuring a job and establishment of an enterprise.

Obtained  $t = 2.94$

$Df = (30-1) + (30-1) = 29+29 = 58$

Table value of  $t = 2.00$  (at 0.05 level) and 2.66 (at 0.01 level)

Since, calculated  $t$  is more than the table value of  $t$  at both the level so null hypothesis is being rejected. It means gender has no influence upon the choice of career option is rejected. It means gender has some influence upon the choice of career option between entrepreneurship and procurement of job. High academic achiever male students of professional courses say that getting job is not easy but the high academic achiever female students of professional courses say that getting job is easy in comparison to entrepreneurship.

(5) T test between low academic achiever students of professional courses male and low academic achiever students of professional courses female.

**Ho:** There is no influence of gender between low academic achiever students of professional courses and low academic achiever students of professional courses female upon the choice of career option between procuring a job and establishment of an enterprise.

Obtained  $t = 2.65$

$Df = (30-1)+(30-1) = 29+29 = 58$

Table value of  $t = 2.00$  (at 0.05 level) and 2.66 (at 0.01 level)

Since, calculated  $t$  is greater than the table values of  $t$  at both the level so null hypothesis is being rejected. It means that there exists no gender influence upon the choice of career option between entrepreneurship and procurement of job. Low academic achiever males are hesitantly saying that getting job is easier but low academic achiever students female are quite confident that getting job is easier than establishment of an enterprise.

**Findings:** Students of professional courses of India have varying view regarding entrepreneurship in comparison to job. Gender has influence upon the choice of career option between entrepreneurship and procurement of job. 42% male students say that getting job is easier in comparison to establishing an enterprise whereas 43% of male students of professional courses assert that getting job is not easy. 15% students of this male group are indifferent. Women, on the other hand, exhibit different traits. 72% of female students of professional courses say that getting job is easier in comparison to establishing an enterprise whereas only 13% say that getting job is not easy task. 15% of this female group are also indifferent between entrepreneurship and procurement of job.

The sub group of students show different characteristic. It is found that gender has no influence upon the choice of career option between entrepreneurship and procurement of job to the students of professional courses from government colleges. On the other hand, students from private colleges show different trait. It is found that gender has some influence upon the choice of career option between entrepreneurship and procurement of job. Male students from private colleges say that getting job is not easy female students from private colleges say that getting job is easy. High academic achiever male students also say that getting job is not easy but high academic achiever female students say that getting job is easy. Another group of low academic achiever students of professional courses exhibits gender influence upon the choice of career option between entrepreneurship and procurement of job. Low academic achiever male students hesitantly say that getting job is easier but low academic achiever female students are quite confident while saying that getting job is easier in comparison to establishment of job. Overall it is found that gender has influence upon the choice of career option between entrepreneurship and procurement of job. Female students of professional courses assertively say that getting job is easier in comparison to establishment of an enterprise but male students say the same hesitantly.

**Conclusion:**

The analysis of data gives clue of conclusion. It can now be concluded that gender has some influence upon the choice of career option between entrepreneurship and procurement of job except the students of professional courses from government colleges. Female gender has distinct preference for job in comparison to entrepreneurship. Male gender also prefer job but they are not much confident in their preference. Some groups of student namely high academic achiever male from government college, high academic students male from private colleges and low academic male students from private colleges are seen to be inclined towards entrepreneurship in comparison to job.

**Recommendations:**

Professionally groomed students who have high potentiality of doing well in field of entrepreneurship must be given more focus in order to attract them more for entrepreneurial pursuits. They must be given more relevant training, area specific insight and exposure, special arrangement of funding, concession in availing of the same etc. To make entrepreneurship gender-neutral career choice, focus on promotion of female participation in entrepreneurship is required. There must be an emphasis on entrepreneurship in syllabus. In order to promote it more awards for achievement in field of entrepreneurial pursuit must be arranged. Apart from these other relevant measures should be taken.

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## The Democratic Worldview of Indian Folktales

\* Shubha Tiwari

\*\* Jagjeet Kour

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**Abstract-** "Folk" the word signifies common people. Folktales are for common consumption of masses, rural, urban, rich, poor, young or old. Folktales of India have grown out of everyday experiences of the common man. Our folktales carry the smell of our soil. The spirit of our folktales is democratic where the otherwise marginalised section of the society finds a place of prominence. Our marginalised emotions like fear, sorrow, jealousy and violence also find expression in folktales as they describe sufferings and pain. The spectrum of folktales covers everyday joy to profound gratification to pain and misery. Women, children, disabled and Dalits find full expression in folktales. Not only marginalised human groups but all flora and fauna are well depicted in Indian folktales. Through personification, animals and trees, winds and plants also speak through folktales. Folktales portray a worldview which establishes the interdependence of all beings. Man, nature, animal kingdom and spirits-all form a fabric of life. In the present paper, we will study the worldview of Indian folktales which gives place to all, mainstream and marginalised alike.

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**Key Words-** Folk, world-view, marginalized, mainstream, personification, interdependence

History, traditionally speaks about regimes, kings, queens, rulers, and winners. Folktales record practices, behaviour, beliefs and traditions of common man. Study of mythology and folktales of a community helps us in understanding history and culture of a community. Myths and folktales help us in understanding how culture evolves. Folktales help us in understanding political, religious, philosophical and survival issues. The potter, the mechanic, the housewife, the labourer, artisans, children, spirits, trees, flora-fauna all find place in folktales. Anyone who wants to know the base of society must read and know about the common folks. Folktales tell us about the lives of common people. Folktales help to understand any society or community. Indian folktales give optimistic view of Indian society. Folktales give voices to animals, trees and nature all around. Indian folktales acts as a bridge between mainstream literature and common people, marginalised as well. There are tales about women, children and artisans. There are tales about spirits, sick

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people, handicapped people, frustrated men and women. In folktales trees and animals speak and act. In folktales trees and animals are personified. Generally women are not supposed to raise their voices at home or outside home. Folktales tell us about their sufferings. Marginalised people express themselves through folktales. These folktales give multilayered meanings. Folktales record events of social and moral importance. These events are related to weavers, farmers, fishers, hunters and herders. Thus folktales also tell us about the adventures with domestic and wild animals. Folktales tell us about marginalised feelings of human societies like greed, jealousy, trickery, cunningness and fear. Some of the folktales become voices of marginalised.



An investigation of Indian folktales would demonstrate to us that life in its totality, the psychological, spiritual and physical is communicated through the symbols of mythology. Aside from people and super humans, creatures, fowls, the elements and streams have a position of importance both emblematically and abstractly. The mythic tradition of India especially those associated with the cult of the Goddess have an immediate bearing on the status of ladies and the creation of social foundations in India. Establishments like marriage, family-joint and atomic, stations and class have been assuming a critical job in Indian life and writings from the plain ancient occasions. Social foundations as the shapers of mentalities in Indian life and the place of myth and folklore in that have been an issue of lasting interest. In an Indian family while the dad is preeminent expert, the mother is the focal point of domestic and emotional life. The impact of profound situated, maternal attachment on Indian culture is significant. In India the commonest sublimation is the serious mother-Goddess love of womanhood in the abstract. Indian social orders appear to encourage and create in lady a resilience even under a limited encircled life. Indian ladies regardless of unfriendly impacts of the Purdah and the patriarchal frameworks have today accomplished a place of solidarity. Once upon a time some girls were discussing about their marriage.

Each one of them gave account of the gifts they are supposed to get from their relatives. One of them Bopoluchi was an orphan. She was exceptionally beautiful. She had no one from whom she could expect something. But still she boasted that her uncle will bring jewels, silken dresses and valuables for her marriage. Girls were busy in talking. A robber over heard all this. He got attracted towards Bopoluchi. He made a plan to deceive Bopoluchi. The robber dressed himself nicely and collected jewels, silken dresses and valuables. Then he said to Bopoluchi "I am your uncle and I have arranged your marriage". Bopoluchi was very much pleased and believed the robber. She packed up few things she possessed in a bundle and set off with the robber in high spirits. As they proceeded through the woods creatures like crow, peacock and jackal tried to warn her but failed to help her. This story portrays Bopoluchi as a beautiful, brave but innocent girl. As she found herself in problem she bravely outwitted and fought against the troop of robbers (Steel, 1894). Bopoluchi was able to help herself and came out rich and victorious. This story is about an orphan girl and her adventure. Birds and animals are personified in this tale. It shows that creature around can smell the danger one should put an ear on the voices of the nature. The story indicates that things are difficult for an orphan. It is difficult for an individual to survive without family.

There is a wonderful story 'Tell it to the Walls' collected by A. K. Ramanujan that tells us about agony of women. Once upon a time there was a woman living in a village. She was a widow. She had four sons and daughters-in-law and grand children. But in spite of all this she was very lonely. She could not tell her woes and sufferings to anyone. She was becoming fat. One day she visited an abandoned house. There she faced one wall and started complaining about his elder son. As a result the wall fell down. Then she faced another wall and complained about her second son. Again the wall collapsed. Finally she poured all her grief. The house collapsed. But she became lighter. If she had expressed all this in her household may be her own house had collapsed (Shodhganga). This story tells us about power of expressed and unexpressed feelings. This story also tells us that it takes sacrifices to bind the family in one thread. It also tells that communication breaks walls. It is more important to build bridges between hearts than building houses.

'How Kava Deceived Kavi and Defeated Her' is a Bheel folktale. Kava and Kavi were first man and woman. They both were at ease with each other. Once upon a time Deva wants to check that who is better among the two. They thought to complicate their relation. They advise Kava that it is not easy to defeat her. If he could not win the competition she would dominate. There is a race between Kava and Kavi. Kavi symbolises *shakti* in this tale. She has all the potential to defeat Kava. Kava tries to distract Kavi by jewels as gifts. She refuses the gifts. But as the story proceeds Kava manages to distract

Kavi with jewellery. As Kavi wears all the jewellery like breastplate, jhanjhar(anklet), bangles, nose ring day by day she burdenes herself. Finally Kava defeats Kavi. This story tells us how male dominance started. There is a custom to pay bridal price in Bheel community. This tale tells us how women became secondary (Shodhganga). This is an important tale which tells women that richness of mind and soul is more important than gold and jewels.

There are folktales about poor artisans. Poor artisans are mocked by the society. They struggle everyday to maintain self esteem. Once upon a time there lived a little weaver. His name was Prince Victor, his head was big but his legs were thin. He was weak and small. People ridiculed him for his looks. One day he killed a mosquito with shuttle while he was weaving on the loom. He felt proud the way he smashed the mosquito. He shared this act of bravery with his neighbours as well. The neighbours mocked him. The weaver's wife was a beautiful young lady. She was tired of his foolishness. She told him to keep his mouth shut. But he became very proud of skill with which he smashed the mosquito. He seized her by the hair and beat her. 'I will go into the world' he said to himself. 'The man who can shoot a mosquito dead with a shuttle ought not to hide his light under a bushel.' He left home. His wife gave him some food to carry along. She had given him poisoned food. She added flavoured spices to the food to hide the smell of poison. She wanted to get rid of her husband. In spite of all his foolishness somehow one day he managed to get name and fame (Steel,1894).

This story tells us about poor weavers. Weavers do their work sitting on one place for hours. But what they get is not sufficient to fulfil their needs. All these things frustrate them. This frustration leads to unhappy family life. In lower strata of society domestic violence is common. Lack of education in unskilled labourers creates many problems in society.

Peasie and Beansie is a tale of two sisters. Peasie decides to meet her old father who lives in nearby village. Peasie takes care of plum tree, fire, water stream and Pipal tree while she passes through the woods. All these rewarded her with gifts. All non human characters like plum tree, pipal tree, fire and river are personified. They call Peasie for help while her journey through the woods. She frees fire from ashes. She clears thorns scattered around the plum tree. She soothes pipal tree by binding its broken branch. She clears sand and dead leaves from the water stream. Peasie is a sensible and caring girl. Her father receives her affectionately. Father gives her blessings and gifts. But her sister Beansie does not cares about anything. She denies help to water stream, plum tree, pipal tree and fire. She suffers a lot while her journey through the woods. Beansie just visits her father out of greed and in return she is treated badly by her brother and sister-in-law. She comes back to her home wounded and hungry (Steel,1894).

It tells us that nature blesses us when we take care of our surrounding flora and fauna. Mother Nature repays us the way we treat her. This story appreciates

the humanistic approach and environmental friendly behaviours in human beings.

In Indian folktales children are portrayed vividly. Orphan children are central characters of some of the stories. How miserable their life is portrayed in the story Little Anklebone. In this story the little boy wanders barefoot and takes care of flock of sheep of his aunt. The story tells us how mean and heartless a person may behave with an orphan poor child. His aunt suggests him to offer himself to the wolf instead of a sheep. The poor fellow asks a favour from the beast to hang his anklebone on a tree near the pond (Steel, 1894). In Indian folktales we see children struggle to survive after their mother is dead. What their father does for them only that he gets married again. Children are puzzled by their step mother. In Indian folktales we rarely see a step father. Because in Indian scenario we find remarriage of widow rare. But we find many stories of ill treatment of children by step mothers. It is quite amazing in a country like India where motherly instinct of woman is highly appreciated we see step mothers treat children badly. There are stories of couples longing for children. They have children by the blessings of faqirs, jogis and saints. These folktales approves that children are not bi products of marriage but they are bliss.

There is a story about the birth of Lord Rama and his brothers. The story tells us that Raja Dushrath brings blessed kheer for his three queens. After having that blessed kheer the queens have children. Similarly in Prince Half-A-Son the king is longing for children instead he has seven queens. Interestingly he is blessed by a faqir. He brings mangoes for his seven queens. After having mangoes six queens bore sons. The seventh queen gives birth to a son who has half of the body, one eye, one hand and one foot only. This is because her mango has been half nibbled by a mouse. She could have half of it only. The story tells us how he is able to surpass his normal brothers. His deformity becomes his strength. His mother worries about his future. She loses affection of her husband. She loves her son but at the same time she is depressed. The brothers of half-a-prince want to kill him. They push half-a-prince in a well. In the well a serpent, a demon and a parrot live together. Half-a-prince listens about their secrets. He takes its advantage. As the story advances he grows strong and become successful. He wins power and money. He cures and marries a beautiful princess (Steel, 1894). In this folktale we see a demon, a serpent and a parrot playing important role. We have exemplary love of Rama-Laxmana, Bharat-Shatrughna in our age old stories. At the same time we have folktales depicting hatred among siblings.

This folktale indicates that happiness of mother relies upon her children. Here we see envy/concern, hatred/love, depression/hope. This story clearly states that we must believe in our children. Prince-half-a son (Adhiya) is very much confident about himself. He is determined. Her mother does not want him to go with his brothers. But he insists to do so. He gains everything what

a prince must have. This folktale tells us that it is strength of mind that gives success and happiness. Any physical or bodily deformity could not stop a person to achieve success. In another version of this story there is a mangoose born to the seventh queen. He is a winner in the same fashion just because he adores his mother very much. The story establishes that one who respects his/her mother will be a winner always. We have folktales of sick people who are expelled out of village because of the infectious diseases or physical deformities. They get cured by the blessing of saints or selfless care of the spouse.

The simple joys and deep concerns of marginalised are registered through folktales of India. The problem of defining the margins and the centre of human society arises due to the strife of 'the self' and 'the identity'. In western countries concept of self and identity have different paradigms. In Indian context surrendering the self is highest ideal to achieve. Kavi is not defeated by Kava. She simply smiles when Kava wins the race. She knows that she can win anytime. Kavi does not struggle for supremacy. This is her strength but taken as her weakness by the society. Bopoluchi is an ordinary girl. She fights with all her strength when caught in danger. There are no supernatural agents to save her. She herself becomes saviour. Society may ridicule poor artisans and labourers but cannot ignore them. They form the base of society. Their voices and sighs will not vanish. Children, women, artisans, trees, flora-fauna have registered their voices through folktales. In Indian society we celebrate childhood. We have beautiful portrayal of childhood in stories of Bal Gopala and Little Rama. But we cannot ignore the poor orphan children and their sufferings. The worldview of folktales is all inclusive. One major problem of marginalised people is to get attention of the world. The folktales of India solve this problem up to some extent. Folktales are tales of tears and smiles. Canvas of folktales portrays bigger, secular and democratic picture of Indian society and culture.

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## Poverty in KamlaMarkandaya's "Nectar in a Sieve"

\* Alka Singh

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**Abstract-** *Women novelists have made a significant contribution to English fiction. They are like kamlamarkandaya, NayatanaSahgal, R.P.Fhabvala, Amita Desai, AttiaHussain, Kiran Desai and Arundhati Roy hane presented a womens world very poignantly they have developed their individual syles of writing.They voice the feministic concerns objectively and appealingly. Writers like anitaDesainNayantanaSehgal and kamlamarkandaya go beyond feministic concerns and portray in the wider context the them of alienation in modern, urban city, tradition and modernity, east-west encounter and social onfticts.*

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### Key Words- Poverty, Fiction, Women

Kamlamarkandaya is an insider-outsider, an expatriate. She lived in England for a number of years. She has enriched Indian fiction in English. Her chief contribution consists of her exploving the moral and psychic dilemmas and repercussions of their women characters along with their efforts to cope with the challenges and achived a new harmony of relationship. Kamlamarkandaya depicts the prelude of a fresh awaking in case of Indian women. Kamlamarkandaya stands at the head of all women novelists both chronologically and qualitatively.

Kamlamarkandaya was born in 1924. K.M. was an Indian novelists and journalist. This name was a pseudanyam which she used as a writer. She also published short stories in Indian news paper. She married Bertrand Taylor an English man and had one daughter. She got success with “Nector in sieve (1954) although she had wtitten two novels before it. K.M. is the best known and most protific Indian novelist writing in English who has seft consciously engaged with womens issues. These are “Nector in a sieve” (1954), A handful of rice (1966), Two virgins (1973) and the golden honey comb (1977). K.M. left for heaven on Sunday May 18, 2004 at her home the outskirts of London leaving her doughterkimoliver behind her.

K.M.’s novels are chiefly concerned with human relationship and womens predicament. She has given novel after novel and in each novel she has covered a new ground. Her novel is themalically wide ranging. The theme of ever present poverty and hunger, tradition versus modernity, east west encounter etc. K.M. is the finest exponent of the rural society. She tries to

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\* Rewa (M.P.)

awake the consciousness of Indian woman against the traditional oriented society and communicated the real existence of women she is the most outstanding modern novelist who concerns with "Jeminism".

K.M. creates the figure of lower and poor class and portraying poor women character markandaya's keen observation combined with critical acumen and the feminine sensibility brought her International fame with the very first novel, "Nectar in a sieve" (1954). The description of poverty and different types of women, their condition and how they are suffering from poverty, hunger, starvation creates women's world. They are natural characters. Today the victim of these women as described in the novel. Being traditional women like Rukmani, Tara and Kutti they denote the qualities of contemporary modernism and struggle for their real existence.

R.S. Singh praises Kamalamarkandaya's involvement in India's social life, her critical acumen and feminine sensibility all of which contribute to bring her International fame through her first novel "Nectar in a Sieve" (1).

#### **Nectar in a Sieve theme of poverty:**

Poverty is so dire in this novel that characters don't have the luxury to ruminate on it. Poverty is definitely always present, but one of the strengths of nectar in a sieve is that it need not always be the focus. Poverty is the everyday reality of the characters in the novel. Poverty is not an abstract concept that one can really think about, it's like a wolf at the door that must constantly be staved off. Poverty is how the novel gives us a rare glimpse into the complex lives and emotions people live (even when they are in poverty). Characters are driven by it, but it is not all that shapes them. They cannot financially transcend it, but they learn to define themselves spiritually beyond it.

#### **Some questions about poverty in "Nectar in A Sieve":**

- Does Rukmani ever feel guilty for bringing her children into a situation of poverty? Does she see herself as responsible for their suffering, or does she think it is something they should all bear through together?
- Does Rukmani take poverty for granted does she resent it or does she appreciate it in a weird way? Is Rukmani's view akin to a shtick from a Dickens novel where poverty becomes a gauge of moral goodness and personal humanity?
- Is the poverty in this novel realistic can we relate to the characters' relatable or is their experience with poverty, starvation and displacement too far from our own experiences for us to be empathic? If one does not relate or sympathize with the plight of the poverty stricken does the book still resonate?
- The Indian characters in the book don't seem to back each other up, though they all suffer from poverty.

#### **Chew on this:**

Poverty limits the characters financially but it is not ultimately a totally

conforming force and is perhaps even an elevating one. As the characters have no material goods. They are forced to seek greater meaning in philosophical and spiritual happiness.

Poverty is an utterly despicable force that is powerful in the book becomes it is dealt with so honestly. Rukmani never romanticizes her poverty, instead speaking openly of hunger, hurt pride, and suffering. Her tale takes the mystery out of the anonymous destitute we imagine in homeless shelters and refugee camps. This story is not one of hope, but a challenge to the reader to do something about the arbitrary cruelty of poverty.

### **Conclusion:**

To sum up the achievement of Kamla Markandaya, we assess the Indian sensibility through her novels. Kamla Markandaya is one of the most outstanding women novelists on the canvas of Indo-Anglian fiction. She is undoubtedly one of the major novelists on the commonwealth scene. A.V. Krishna Rao's summing up of her achievement is worth quoting in the context.

"Markandaya's contributions to the Indo-Anglian fiction lies essentially in her capacity to explore vital, formative areas of individual consciousness that project the images of cultural change, and in her uncanny gift of inhabiting the shifting landscapes of an outer reality with human being whose sensibility becomes a sensitive measure of the inner reality as it responds to the stimulus of change".

Kamla Markandaya is a famous Indian writer. Her entire creative work of art is devoted to India. Despite being settled in London and married to a British national, she is a pure Indian by heart, thought, spirit and imagination. Her novel "Nectar in a Sieve" has been translated into seventeen languages and brought her world-wide fame. Markandaya is such a novelist who portrays the different kinds of women in her novels. She depicts peasants, westernized women, spiritual women, prostitution, selfish and selfless women. Her picture gallery of females is wide. K.M. shows the all-feminine qualities in her novels. The maternal touch in Rukmani, Kunti, Tara, Sarogini, Nalini, Mohini shows the maternal instinct found in all women as common. They represent the realistic picture of a mother in society. The good mother and evil mother are generally found. Markandaya has succeeded in drawing attention towards the prevailing modernity during the contemporary days. Her modern characters like Mira, Lalitha, Saroja are seen today. They resemble us. She also traces the disadvantages and evils of extreme modernity. Markandaya has shown both the cultures of the east and west. She presents the picture of eastern and western values, its difficulties, problems, benefits and loss.

Markandaya's first novel "Nectar in a Sieve" has achieved a world-wide fame. It represents the sight of rural India, its tradition, its culture and its way of living among peasants. Its main female character Rukmani is just like the Indian peasant in real existence. By making Rukmani her mouthpiece, Markandaya shows her disapproval of the purdah system though it has not

been shown as widely prevalent in the village largely because she has been away from India for such a long time and also because the novel deals with the poor people among whom the purdah system is nearly non-existent since no middle class lady has been introduced in the novel, no purdah system would have been shown. Then purdah system can be seen in the towns and cities as well, even if confined largely to a few middle class families.

For Meena Shirwadkar Rukmani, "in her mute suffering .....resembles maurya in synge's *Riders to the sea*" Haydn Moore Williams also praises her "great stature". It would be a mistake to say that Markandaya errs in selecting Rukmani, a barely literate peasant woman, as the first person narrator of "Nectar In a Sieve" Rukmani's recounting of the spiritual and physical agonies she and her family endure as they away back and forth from mere subsistence to penniless poverty and degradation is both poignant and bittersweet, given Rukmani's rural backwardness, however, the reader finds it difficult to believe some of her articulate contemplation's of life's problems as well as her superhuman acceptance of her husband's adultery. Iron stands to finish, there is something too subtle and sophisticated about the English rendering of Rukmani's black history part of the problem lies in Markandaya's attempt to put graceful English prose into the mouth of an Indian village woman.

Though Markandaya admirably portrays Rukmani's special understanding a decidedly Indian point of view- she sometimes exceeds the bounds of belief and fails to limit Rukmani's powers of comprehension and observation. Markandaya has had to step out of her own personality rather drastically to adopt the persona of a rural woman and her great leap has its advantages such as intimacy, objectivity and disadvantages of sentimentality, inability to identify totally.

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## **Phosphate-Solubilizing Microorganisms in Sustainable Production of Rice: Jharkhand Perspective**

\* Ladly Rani

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**Abstract-** *Phosphate Solubilizing Bacteria (PSB) with their beneficial traits can be considered as potential bio fertilizer for sustainable rice cultivation. Phosphorous is the second key element after nitrogen as a mineral nutrient in terms of quantitative requirement for rice cultivation. Phosphorus accounts for about 0.2 - 0.8% of the plant dry weight. Phosphate is abundant in soil, both in organic and inorganic forms; its availability is restricted to the plants as it occurs mostly in insoluble forms. Rock phosphate is the only source of P but its availability is finite. Jharkhand has large deposit of rock phosphate but its grade is very inferior and is not available for crop utilisation. 70 % of the agricultural land is cropped with rice, of which 66% of land under rice cultivation is P-deficient. To fulfil crop nutritional requirements, P is usually added to soil as chemical fertilizer, however synthesis of chemical P fertilizer is highly energy intensive processes, and has long term negative impacts on the environment in terms of eutrophication, soil fertility depletion, carbon footprint etc. , as well as the economic terms. Moreover, plants can use only a small amount of this P, since 75-90% of added P is precipitated by metal-cation complexes, and rapidly becomes fixed in soils. Such environmental concerns have led to the search for sustainable way of Phosphate nutrition of crops. Jharkhand is a tribal land with rice as the main crop. Almost 86% of the cultivable land is cropped with rice in context of soil, 49% of the soil in Jharkhand comes under low fertility zone. About 66% area of the soil are low in available phosphorous content. This demands addition of inorganic phosphate abusing huge economic expenses of the government. In this regards phosphate-solubilizing microorganisms (PSM) can be seen as best eco-friendly means for availability of phosphate to rice crop. This review focuses on PSB, its diversity, mode of P-solubilisation and phosphate consumption status of Jharkhand, important measures to solve phosphate problem, the present and future scenario of PSB, use and application of this knowledge in managing a sustainable environmental for rice cultivation among the tribal of Jharkhand.*

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**Key Words-** PSM, in situ, eutrophication, metal ion complex, phosphate

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**Introduction:** Rice is the staple food in India, providing average 32% of total calorie uptake of common people. About 38% of the total agricultural land is under rice cultivation. To meet the second generation challenges of overpopulation, deteriorating environment and restricted cultivable agricultural land effective alternative way of rice production with low cost and eco-friendly techniques is the biggest challenge. Phosphate, though present 0.05% (w/w) in soil, only 0.1% of the total P is made available to plant. Rock phosphate is the only source of economic phosphate in India but its availability is finite and skewed. In recent years depletion of phosphate reserves will inversely affect the global food security, is a matter of current debate. (1-3) Jharkhand has very limited resources of Rock Phosphate which is mostly low to medium grade in quality. Because of poor solubility of RP in the soil and its fixation, it is mostly unavailable to the plants. Phosphorus present in the soil is made available to the plants in two sources, one as a native source from inherent phosphate and other through external application in the form of fertilizers. (i) Poor availability or deficiency of phosphorus (P) markedly reduces plant size and growth and thus affecting the overall yield. Phosphorus present in the soil enters the plant mainly through root hairs. (i)

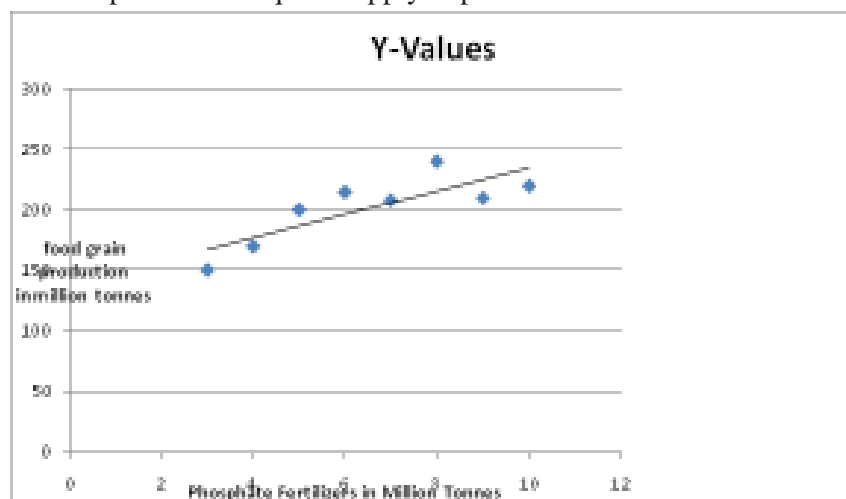
#### **Role of Phosphorus in rice cultivation:**

Rice cultivation in any medium (soil, sand, water) depends on the availability of sunlight, water, and various chemical fertilizers. Sixteen elements are recognized as essential in rice nutrition, of which three primary elements for rice nitrogen, phosphorus, and potassium, are the prime one. Phosphorus holds second position, standing just next to nitrogen in nutrient requirement for rice cultivation and production. In contrast to N, P is a non-renewable natural resource and there is growing concern that the natural reserves of rock phosphate, the source of P fertilizer, are limited. The life cycle of rice cannot be completed without the adequate supply of phosphorus. Carbon, hydrogen, and oxygen required for rice cultivation are absorbed directly from air and water; the rest are absorbed from soil. It plays an important role in virtually all major metabolic processes in plant including photosynthesis, energy transfer, signal transduction, macromolecular biosynthesis and respiration<sup>3</sup> (Khan et al. 2012) and nitrogen fixation in legumes<sup>4</sup> (Saber et al 2005). Like all cereal grains rice requires a considerable amount of phosphorus (P) for vigorous growth and high yield. In general response to phosphorus in irrigated rice, one crop consumes approximately 15 kg of phosphorus for every ton of rice yield. Phosphorus is particularly important to the rice seedling during the time it is recovering from transplanting shock. Phosphorus greatly stimulates root development in the young plant, thus increasing its ability to absorb nutrients from the soil. When absorbed during the vegetative phase, phosphorus: - increases the number of root hairs, thus facilitating the uptake of other nutrients (enables the seedling to recover rapidly from transplanting shock) stimulates extensive root growth, thus increasing the plant's resistance

to drought, promotes tillage by facilitating nitrogen absorption - promotes early flowering and ripening (can be exploited to offset the effects of late planting). During the reproductive phase, the phosphorus intake of rice decreases considerably. When absorbed during the ripening phase, phosphorus: increases the protein content of the grains thus improving the food value of the crop invigorates the germination power of the seed (as evidenced by an increase in the germination rate of the seed produced). In rice, P fertilizer-use efficiency is only  $< 25\%$ <sup>5</sup>, providing considerable scope for improvement.

#### **Present scenario of phosphate consumption in rice cultivation:**

Soil fertility is an aspect of the soil-plant relationship. Fertility status of the soils is primarily and importantly dependent upon both the macro and micronutrient reserve of that soil. Continued removal of nutrients by crops, with little or no replacement will increase the nutrient stress in plants and ultimately lowers the productivity. The fertility status of the soils mainly depends on the nature of vegetation, climate, topography, texture of soil and decomposition rate of organic matter. Optimum productivity of any cropping systems depends on adequate supply of plant nutrients. G



**Fig I relation between phosphate fertilizer addition and food grain yield in the 21<sup>st</sup> century**

A study of rice production and P Fertilizer addition reveals that variation in rice yield up to 60% and phosphate addition graph 1.

For areas with P-fixing soils, high fertilizer application is currently necessary in order to provide sufficient plant-available P. Soils with P-fixing properties are widespread in Jharkhand and occur on 35% of the total land area (Estimates suggest that  $< 50\%$  of agricultural soils are deficient in P) Lynch (2011) The two main reasons for this are (i) insufficient application of P in the form of P fertilizer or manure and (ii) P-fixing soil properties which render P unavailable to plants even if it is present in sometimes large amounts. Phosphorus imbalances in the world, with too much P in some

countries and too little or inaccessible (Pin others<sup>5</sup>). A recent study conducted by the International Fertilizer Development Centre concluded that currently known and easily accessible world rock phosphate reserves will last for approximately another 300–400 years.

#### **Constraints in using phosphate fertilizers:**

Although P is abundant in soils in both inorganic and organic forms, it is a major limiting factor for plant growth as it is in an unavailable form for root uptake. Inorganic P occurs in soil, mostly in insoluble mineral complexes, some of them appearing after frequent application of chemical fertilizers. These insoluble, precipitated forms cannot be absorbed by plants (Rengel and Marschner 2005). Organic matter is also an important reservoir of immobilized P that accounts for 20–80% of P in soils (Richardson 1994). Only 0.1% of the total P exists in a soluble form available for plant uptake (Zhou et al. 1992) because of its fixation into an unavailable form due to P fixation. Jharkhand is one of the most backward and poor states of India. Major effort of the state is to provide people with minimum basic requirements. The main aim of agriculture is more production of food grains, especially rice. For this more inorganic nitrogenous and phosphate fertilizers are required. Intensive cropping pattern during this green and white revolution has also resulted in widespread deficiency of phosphorus. The energy and costs involved in mining the rock phosphate and its transport from manufacturing sites to farm crop fields is very costly. Application of P fertilizers over the agricultural field is neither eco-friendly, economically feasible nor it is sustainable and it poses following constraints

- (i) Emission of the fluorine as the highly volatile and poisonous HF gas,
- (ii) Disposal of gypsum and
- (iii) Accumulation of Cd and other heavy metals in soil and possibly crops as a result of repetitive use of P fertilizers.

Although various amendments are available for management of P in different soil, all are costlier and practically difficult. Thus, even if the total soil P is high and also if P fertilizers are applied regularly, pH dependent chemical fixation determines the quantity of available P. The holistic P management involves a series of strategies involving manipulation of soil and rhizosphere processes, development of P efficient crops and improving P recycling efficiency. Microbial mediated P management is an ecofriendly and cost effective approach for sustainable development. Thus, increased P levels have been identified as a main factor for eutrophication of surface waters that may lead to algal blooms (Schindler et al. 2008). The repeated and injudicious applications of chemical P fertilizers, leads to the loss of soil fertility (Gyaneshwar et al. 2002) by disturbing microbial diversity, and consequently reducing yield of crops.

#### ***P Solubilizing Bacteria, their mechanism of action role in rice cultivation***

The conversion of low grade RP into plant utilisable form is the major solution

which would lead Jharkhand towards self-sustainable agriculture in terms of P consumption. In this concern phosphate solubilising bacteria will be of great importance. These organisms are ubiquitous but vary in density and mineral phosphate solubilizing (MPS) ability from soil to soil or from one production system to another. In soil P solubilizing bacteria constitute 1-50% and fungi 0.1-0.5% of the total respective population. Microorganisms are an integral component of the soil P cycle and are important for the transfer of P between different pools of soil. P-application of reactive Rock Phosphate to the green manure preceding arice based cropping system must be encouraged in Jharkhand. Phosphate Solubilizing Microorganisms (PSM) through various mechanisms of solubilization and mineralization are able to convert inorganic and organic soil P respectively (Khan et al. 2009a) into the bioavailable form facilitating uptake by plant roots. It is important to determine the actual mechanism of P solubilization by PSM for optimal utilization of these microorganisms in varied field conditions. Hence it is imperative to better understand the plant-soil-microbial P cycle with the aim of reducing reliance on chemical P fertilizers. This has led to increased interest in the harnessing of microorganisms to support P cycling in agroecosystems. Advantage of P solubilization microorganism, mycorrhizae of the seed produced). So, understanding of the process of uptake of phosphorous at and around plant roots and development of P solubilizing biofertiliser through rDNA technology can provide an effective measure for efficient utilization of P in RP. Here the PSB and its various aspects are discussed in details.

#### *Diversity of phosphate solubilizing bacteria*

#### **Biodiversity of P solubilizers:**

A substantial number of microbial species exhibit P solubilization capacity; these include bacteria, fungi, actinomycetes and even algae. In addition to *Pseudomonas* and *Bacillus*, other bacteria reported as P-solubilizers include *Rhodococcus*, *Arthrobacter*, *Serratia*, *Chryseobacterium*, *Gordonia*, *Phyllobacterium*, *Delftia* sp. (Wani et al. 2005; Chen et al. 2006), *Azotobacter* (Kumar et al. 2001), *Xanthomonas* (De Freitas et al. 1997), *Enterobacter*, *Pantoea*, and *Klebsiella* (Chung et al. 2007), *Vibrio proteolyticus*, *Xanthobacter agilis* (Vazquez et al. 2000). Furthermore, symbiotic nitrogenous *rhizobia*, which fix atmospheric nitrogen into ammonia and export the fixed nitrogen to the host plants, have also shown PS activity (Zaidi et al. 2009). For instance, *Rhizobium leguminosarum* bv. *Trifolii* (Abril et al. 2007), and *Rhizobium* species nodulating *Crotalaria* species (Sridevi et al. 2007) improved plant P-nutrition by mobilizing inorganic and organic P. Various PS bacteria have also been isolated from stressed environments for example the halophilic bacteria *Kushneria sinocarni* isolated from the sediment of Daqiaosalt marsh on the eastern coast of China, which may be useful in salt affected agricultural soils (Zhu et al. 2011).

<b>Bacteria</b>	<i>Alcaligenes</i> sp., <i>Aerobacteraerogenes</i> , <i>Achromobacter</i> sp., <i>Actinomaduraoligospora</i> , <i>Agrobacterium</i> sp., <i>Times New Roman</i> <i>Azospirillumbrasilense</i> , <i>Bacillus</i> sp., <i>Bacillus circulans</i> , <i>B.cereus</i> , <i>B.fusiformis</i> , <i>B. pumils</i> , <i>B. megaterium</i> , <i>B. mycoides</i> , <i>B. polymyxa</i> , <i>B. coagulans</i> , <i>B. chitinolyticus</i> , <i>B. subtilis</i> , <i>Bradyrhizobium</i> sp., <i>Brevibacterium</i> sp., <i>Citrobacter</i> sp., <i>Pseudomonas</i> sp., <i>P. putida</i> , <i>P. striata</i> , <i>P. fluorescens</i> , <i>P. calcis</i> , <i>Flavobacterium</i> sp., <i>Nitrosomonas</i> sp., <i>Erwinia</i> sp., <i>Micrococcus</i> sp., <i>Escherichia intermedia</i> , <i>Enterobacter asburiae</i> , <i>Serratia phosphaticum</i> , <i>Nitrobacter</i> sp., <i>Thiobacillusferrooxidans</i> , <i>T. thiooxidans</i> , <i>Rhizobium meliloti</i> , <i>Xanthomon</i>
<b>Fungi</b>	<i>. Aspergillus awamori</i> , <i>A. niger</i> , <i>A. terreus</i> , <i>A. flavus</i> , <i>A. nidulans</i> , <i>A. foetidus</i> , <i>A. wentii</i> , <i>Fusarium oxysporum</i> , <i>Alternaria tenuis</i> , <i>Achrothcium</i> sp., <i>Penicillium digitatum</i> , <i>P. lilacinum</i> , <i>P. balaji</i> , <i>P. funiculosum</i> , <i>Cephalosporium</i> sp., <i>Cladosporium</i> sp., <i>Curvularialunata</i> , <i>Cunninghamella</i> , <i>Candida</i> sp., <i>Chaetomium globosum</i> , <i>Humicolainiensis</i> , <i>Humicolalanuginosa</i> , <i>Helminthosporium</i> sp., <i>Paecilomyces fusisporus</i> , <i>Pythium</i> sp., <i>Phoma</i> sp., <i>Populosporemytilina</i> , <i>Myrothecium roridum</i> , <i>Mortierella</i> sp., <i>Micromonospora</i> sp., <i>Oideodendron</i> sp., <i>Rhizoctonia solani</i> , <i>Rhizopus</i> sp., <i>Mucor</i> sp., <i>Trichoderma viridae</i> , <i>Torulathermophila</i> , <i>Schwanniomyces occidentalis</i> , <i>Sclerotium rolfsii</i> .
<b>Actinomycetes</b>	<i>Actinomyces</i> , <i>Streptomyces</i> .
<b>Cyanobacteria</b>	<i>Anabena</i> sp., <i>Calothrix braunii</i> , <i>Nostoc</i> sp., <i>Scytonema</i> sp.,
<b>VAM</b>	<i>Glomus fasciculatum</i> .

Table-1

Hence the studies have shown that the diversity of the PSM's is highly varied in different ecological niches and there is ample scope to identify many new potent isolates from varied environments in coming times.

#### **Mechanism of P-solubilization by PSM:**

The phosphate solubilizing bacteria can solubilize both organic as well as inorganic phosphate through different mechanism.

#### **Inorganic phosphate solubilisation:**

+In a review of P chemistry in soils, Sims and Pierzynski (2005) identified the major processes of the soil P cycle that affect soil solution P concentrations as

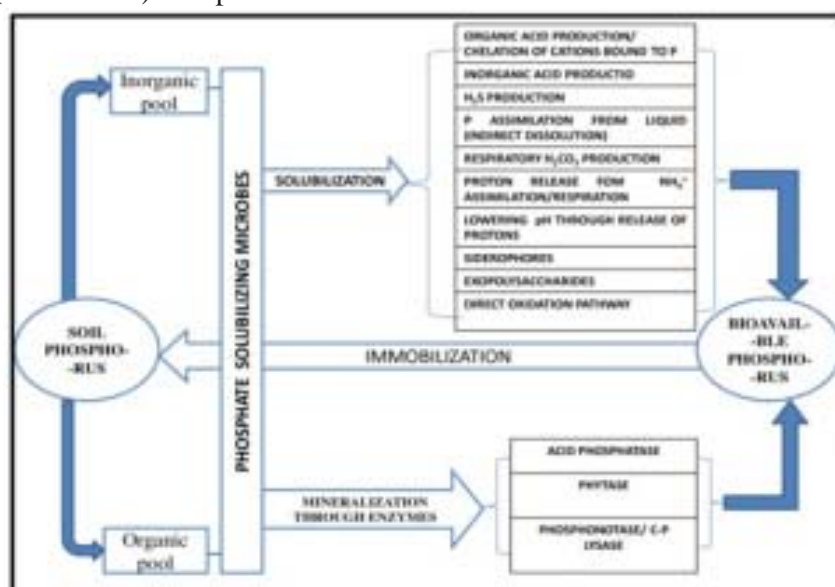
1. dissolution–precipitation (mineral equilibria),
2. sorption–desorption (interactions between P in solution and soil solid surfaces), and
3. Mineralization–immobilization (biologically mediated conversions of P between inorganic and organic forms).

The main P solubilization mechanisms employed by soil microorganisms include:

1. release of complexing or mineral dissolving compounds e.g. organic acid anions, siderophores, protons, hydroxyl ions, CO<sub>2</sub>,
2. liberation of extracellular enzymes (biochemical P mineralization) and
3. The release of P during substrate degradation (biological P mineralization) (McGill and Cole 1981).

#### **Organic P solubilization:**

**Organic P solubilization** is also called mineralization of organic phosphorus. Mineralization of soil organic P (Po) plays an imperative role in phosphorus cycling of a farming system. Organic P may constitute 4–90% of the total soil P (Khan et al. 2009b). Such P can be released from organic compounds in soil by enzymes: P-solubilizing microorganisms occurs mainly by organic acid production (Table 2), either by: (i) lowering the pH, or (ii) by enhancing chelation of the cations bound to P (iii) by competing with P for adsorption sites on the soil (iv) by forming soluble complexes with metal ions associated with insoluble P (Ca, Al, Fe) and thus P is released. The lowering in pH of the medium suggests the **release of organic acids** by the P-solubilizing microorganisms (Whitelaw 2000; Maliha et al. 2004) via the direct oxidation pathway that occurs on the outer face of the cytoplasmic membrane (Zaidi et al. 2009). These acids are the product of the microbial metabolism, mostly by oxidative respiration or by fermentation of organic carbon sources (e.g., glucose) (Atlas and Bartha 1997; Trolove et al. 2003) or such organic acids can either directly dissolve the mineral P as a result of anion exchange of phosphate by acid anion or can chelate Fe, Al and Ca ions associated with P (Omar 1998). Fuiopi



*Schematic representation of mechanism of soil P solubilization/mineralization and immobilization by PSM.*

## **IMPORTANCE OF PBS IN RICE CULTIVATION AGRICULTURE**

### **1. Effect of PSB on total microbial count:**

For sustainable agriculture, the role of pSB on soil health and yield of rice has always been a promising part. Global cycling of insoluble organic and inorganic soil phosphate is done by microbial P solubilization mechanisms. But the long term effects of chemical P fertilizers alter the quality and quantity

of microbial activity in soil adversely (Gyaneshwar et al. 2002). Total microbial count, population of PSB and available P in rice rhizosphere as influenced by PSB inoculation. The treatments receiving rock phosphate possessed significantly higher population of microbes than non rock phosphate treatment soils.

## **2. Psolubilizing microorganisms in rice rhizosphere:**

Soil P is an indicator of the amount of available P for plant uptake. A significant difference in available P content of soil between treatments was noticed at all stages of plant growth (Table 1) and the effect was more prominent in soil supplemented with RP and PSB. PSB application has been reported to show an increase in the amount of available P in the rhizosphere soil in the findings of Taalab and Badr (2007). The presence or absence of available soil P is directly linked to pH of the soil. A basic mechanism in phosphate solubilization includes production of inorganic and organic acid by PSB. PSB dissolve the soil P through the synthesis of gluconic acid and ketogluconic acid (Nahas 1996). Acid production will lower the rhizosphere pH and it sets for efficient P solubilization. Because, at low pH,  $\text{H}_2\text{PO}_4^-$ , the major soluble form of inorganic P exists in higher amounts (Goldstein 1994). Synthesis of gluconic acids produces hydroxyl and carboxyl groups. These OH and COOH- groups will function as chelating cations  $\text{Fe}^{2+}$ ,  $\text{Al}^{3+}$  and  $\text{Ca}^{2+}$  associated with insoluble P again leads to lowering of pH. Production of gluconic acid by the introduced isolates used in this study has been reported in our previous studies (Stephen and Jisha 2011).

## **4. Effect of PSB on nutrient uptake of rice plants:**

The inoculation with PSB positively increased the phosphorus content and uptake of plants. The data pertaining to the effect of phosphate solubilizing bacteria on nutrient uptake of rice crop are presented in Table 3. These observations strongly confirmed the high P solubilization capacity of the isolates which might have released P from native inorganic phosphorus due to the action of organic acids and enzymes. Observations on the increased P uptake in different crops due to inoculation with P solubilizers have been made by several workers (Jisha and Alagawadi 1996; Taalab and Badr 2007; Sandeep et al. 2008; Panhwar et al. 2012; Kaur and Reddy 2014).

## **Nutrient uptake (mg/plant) by rice crop as influenced by PSB inoculation:**

Soil inoculation augmented the nitrogen uptake by the plant and the trend of nitrogen uptake was similar to that of P uptake. It reported the increased nitrogen uptake of rice due to inoculation with phosphate solubilizing bacteria has been reported (Sharma and Prasad 2003; Duarah et al. 2011). Effect of PSB on yield parameters of rice plants. Several study reports that PSB along with the inorganic phosphate effect the production of rice to a great extent. The work of b details that Rock phosphate in combination with phosphate solubilizing organisms had a greater impact on all the growth and yield

parameters of rice viz., dry matter yield, and average grain weight per panicle, number of panicle, number of seeds/panicle, panicle length and number of tillers/plant (Table 4). The results are in agreement with previous studies (Sharma and Prasad 2003; Nico et al. Duarah et al. 2011; Lavakush et al. 2014). The ability of PSB influencing enhanced growth parameters and plant yield of other crops have been studied. Singh et al. (2014) reported the significant uptake of total P in chickpea plants with increased plant growth promotion in terms of seed number and seed weight. Similar reports are published by Gupta et al. (2012) that use of PSB consortium in *Aloe vera* gave higher P uptake and also greatly influences the aloin-A production due to higher plant biomass. Jisha and Alagawadi (1996) reported the nutrient uptake and yield of sorghum (*Sorghum bicolor* L. Moench) was improved by inoculating with phosphate solubilising bacteria. All these reports from diverse crops highlights the crucial factor that growth promotion directly related to the ability of isolates to release P from insoluble RP

#### **5. Effect of PSB inoculation on plant yield parameters of rice:**

The mean values with a common letter in the superscript within each column does not differ significantly at 5 % level of significance.

Changes in phosphatase activity and dehydrogenase activity in rice rhizosphere as influenced by PSB inoculation The measurement of hydrolases provide an early indication of changes in soil fertility since they are related to the mineralization of important nutrient elements required for both plant and microbial growth (Kohler et al. 2007).

#### **Phosphate scenario in Jharkhand:**

#### **RICE CULTIVATION IN JHARKHAND:**

Jharkhand is the land of indigenous people. More than 30 different native tribal groups reside in the state. Each indigenous group grows particular variety of rice. Rice cultivation is not only their source of livelihood rather holds a very scared place in their lives. These varieties have many nutritional and medicinal values. The traditional knowledge says that there are more than 600 varieties of endemic rice which are grown in this region but in very restricted areas. These rice varieties have stabilized congenial edaphic-climatic condition of the state.

These varieties, apart from the medicinal properties, have many important and valuable properties such as disease resistance, early maturity, drought resistance, and most important they grow and thrive easily without much input of fertilizers and pesticides. These varieties because of its low yield and coarse grain are now losing importance among the traditional farmers and are being replaced by the modern high yielding fine grain rice. So it becomes imperative to conserve the landraces which constitutes staple food of the ethnic communities.

#### **SOIL IN JHARKHAND AND P REQUIREMENT BALANCE:**

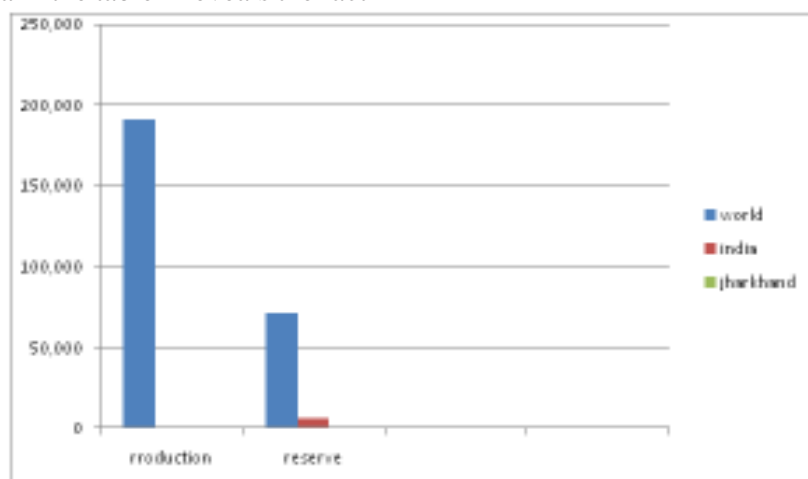
Soil is one of the most important non-renewable basic resources on the

earth surface. Therefore greater attention has been paid through out the world to study the soils, their distribution and extent, behavior, potentials and problems and their suitability for sustained use for different purposes.

In context of soil, 49% of the soil in Jharkhand is highly acidic with pH ranging from 4.5 to 5.5. Neutral soil accounts for only 8%. In terms of nitrogen availability 60 % of the soil is medium in N-availability, 20% of the soil in Jharkhand are low in nitrogen content. The major area of the state covered with sandy loam to loam with acidic soils (pH 4.5–6.5) and having low fertility. About 66% area of soils are low in available phosphorous content, 18% soils low in K content, 38% soils low in S, 7% soils are deficient in available Zn, 4 % in available while 45% soils are deficient in available Boron in the state. More than 70% of soils are deficit in organic carbon and micro nutrients. Majority of soils of the state have medium status of available Nitrogen (280-560 kg/ha) and about 19.6% area have low available Nitrogen content. About 49% area of soils are extremely acidic to strongly acidic (pH <5.5) and 36% area suffering from moderate to slightly acidic soil (pH 5.6-6.5) while neutral soils (pH 6.6-7.3) accounts for only 8% in the State.our soil do not have enough phosphorous to meet the demands of P of today's high yielding hybrid varieties. About 60% of soil in falls in Jharkhand is medium or low p fertility categories which bounds the need external fertilizers.

#### **Phosphorous Demand of Jharkhand agriculture:**

According to the report of ICAR food grain production and P fertilizer addition shows about 55-60% variation in the yield of rice in the last decade (fig 1), Jharkhand agricultural data of various phosphate consumption ,yield result and its consumption pattern showed that most of the phosphate fertilizers consumed are the imported ones which puts Jharkhand in precarious situation. Data in the table 4 reveals the fact



#### **Comparative study of rock phosphate production and reserve**

#### **Phosphorous sources available in Jharkhand and their quality:**

Jharkhand according to UNFC system I.s among one of the important

Preservoirs of India. The current reserve of rock phosphate in Jharkhand is 107.3mt as compared to the total 296.3 Mt present in India. table(2) the problem of Jharkhand is ,all the RP resources in Jharkhand belongs to inferred category only(a/c geological evidence).so, the RP that can be used in fertilizer productionconsump'tion(tonnes)of various fertilizers in 2014-15 in india and jharkhand

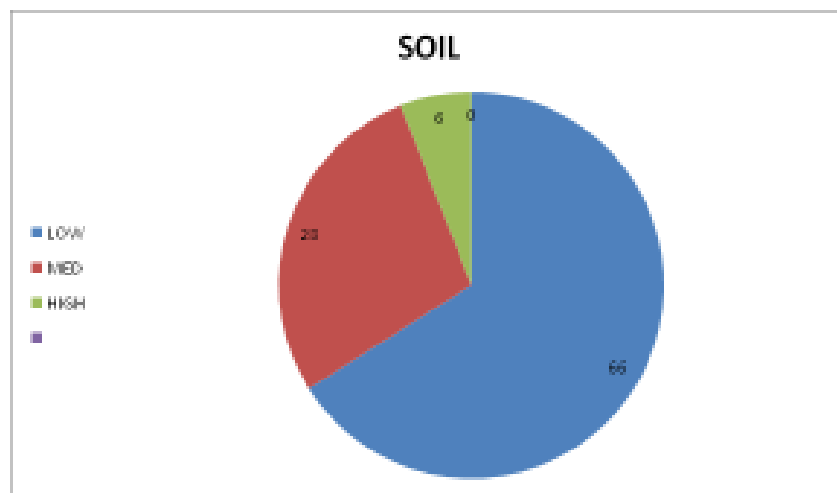


Figure 3

#### Soil nutrient status:

Jharkhand soil in general, are low to very low in available phosphorus and sulphur, medium in available nitrogen & potassium status and deficient in available boron. Available macro and micronutrients in different categories of soil fertility have been presented in Table•

Soils of about 66 per cent area are low (<10 kg/ha) in available phosphorous content while about 28 per cent area are found to be medium (10 – 25 kg/ha) in available P content.

#### Rock phosphate resources in Jharkhand

Place	Rock phosphate	
	Reserve(million tonnes)	Remaining
India	6100(as against 71000,000, world reserve)	283.10
Jharkhand	103.7	39.3

Constraints of using inorganic phosphate fertilizer in Jharkhand Although P is abundant in soils in both inorganic and organic forms, it is a major limiting factor for plant growth as it is in an unavailable form for root uptake. Inorganic P occurs in soil, mostly in insoluble mineral complexes, some of them appearing after frequent application of chemical fertilizers. These insoluble, precipitated forms cannot be absorbed by plants (Rengel and Marschner 2005).

Organic matter is also an important reservoir of immobilized P that accounts for 20–80% of P in soils (Richardson 1994). Only 0.1% of the total P exists in a soluble form available for plant uptake (Zhou et al. 1992) because of its fixation into an unavailable form due to P fixation. Jharkhand is one of the most backward and poor states of India. Major effort of the state is to provide people with minimum basic requirements. The main aim of agriculture is more production of food grains, especially rice. For this more inorganic nitrogenous and phosphate fertilizers are required. Intensive cropping pattern during this green and white revolution has also resulted in widespread deficiency of phosphorus. The energy and costs involved in mining the rock phosphate and its transport from manufacturing sites to farm crop fields is very costly. Application of P fertilizers over the agricultural field is neither eco-friendly, economically feasible nor it is sustainable and it poses following constraints

- (iv) Emission of the fluorine as the highly volatile and poisonous HF gas,
- (v) ii) Disposal of gypsum and  
iii) Accumulation of Cd and other heavy metals in soil and possibly crops as a result of repetitive use of P fertilizers.

Although various amendments are available for management of P in different soil, all are costlier and practically difficult. Thus, even if the total soil P is high and also if P fertilizers are applied regularly, pH dependent chemical fixation determines the quantity of available P. The holistic P management involves a series of strategies involving manipulation of soil and rhizosphere processes, development of P efficient crops and improving P recycling efficiency. Microbial mediated P management is an ecofriendly and cost effective approach for sustainable development. Thus, increased P levels have been identified as a main factor for eutrophication of surface waters that may lead to algal blooms (Schindler et al. 2008). The repeated and injudicious applications of chemical P fertilizers, leads to the loss of soil fertility (Gyaneshwar et al. 2002) by disturbing microbial diversity, and consequently reducing yield of crops.

#### **IMPORTANT MEASURES TO SOLVE PHOSPHATE PROBLEM IN JHARKHAND AGRICULTURE**

Rice production has to be increased in Jharkhand to meet the demand of a growing population. In light of the high energy costs and increasingly scarce resources, future agricultural systems in Jharkhand have to be more productive and more efficient in terms of inputs such as fertilizer and water. The development of rice varieties and conservation of traditional varieties with high yield under low-nutrient conditions has to be given priority. The rapid progress made in sequencing and molecular-marker technology is now beginning to change the way breeding is done, providing new opportunities. Jharkhand is a bio diverse rich rice region the phosphate problem in the state agriculture is a very major issue.

Following eco -friendly approaches can be of considerable potential way to solve the above problem

- **Use Of Microorganisms To Enhance Utilization Efficiency Of Phosphorous**

Isolation and identification of efficient P solubilising bacteria from various varieties of rice (both rhizospheric and endophytic) with other growth promoting factors Endophytic bacteria have been found to promote growth of several plants including tomato, lettuce, potato, corn, cucumber, rice, and cotton (Hallmann *et al.*, 1997). It is presumed that plant growth promotion might be caused by enhanced plant mineral uptake and improved plant water relationship associated with the colonization of endophytic bacteria (Hurek and Reinhold-Hurek, 2003). In addition to the nitrogen fixation, endophytic diazotrophic bacteria may contribute to plant growth in several ways. These plant growth promoting characteristics include production of phytohormones, phosphate solubilizing activity, siderophore production and biological control through conferring resistance to certain pathogen (Goldstein, 1993; Forlaniet *al.*, 1995; Bottiniet *al.* 2001

### **1. Improving soil management:**

From the study made in the past it becomes evident that soil acidity together with the low range P & S values, moderate N & K status as well as deficient zones of zinc and boron indicate in general the low fertility status of the state and therefore requires attention regarding soil management practices for optimum agricultural production viz.  $\frac{3}{4}$  Liming and Farm Yard Manure (FYM) addition to neutralize soil acidity and enriching soil organic matter.  $\frac{3}{4}$  Adequate phosphorus and sulphur fertilization depending upon crop and cropping sequence.  $\frac{3}{4}$  Micronutrient application particularly Boron and Zinc in areas deficient in these nutrients.

### **Improving crop and fertilizer management:**

For soils naturally low in or depleted of P due to continuous cropping without repletion of P (and other nutrients), fertilizer or manure application is inevitable to maintain productivity and prevent soil degradation. However, continuous cropping of poor soil is often related to poverty, and breeding of efficient crops, therefore, has to be complemented by policy measures providing poor farmers with agricultural inputs. With regard to breeding for poor soils, crops with high P uptake and high internal P-use efficiency need to be developed to maximize yield in such low-input systems (Rose and Wissuwa 2012). In addition, a combination of both, uptake and internal-nutrient efficiency, is equally desirable for high-input systems since it would facilitate reduction of fertilizer doses without yield penalty. In rice, P fertilizer-use efficiency is only <“25 % (Dobermann and Fairhurst 2000), providing considerable scope for improvement.**Fertilizer management including balanced phosphate fertilization with improved fertilizer application techniques.** Management of soil fertility is one of the major factors limiting

sustainable production of Jharkhand. A survey based approach to identify farmers' soil fertility management methods and its impact on soil properties, introduction of soil testing programme and a low cost soil fertility management method using a traditionally cultivated variety can be brought in common practice for

### **Blending traditional knowledge with modern technology :**

Jharkhand is a land of tremendous environmental biodiversity where the diversity lies in the repository of information among the tribal people and their rich nature woven culture. The traditional knowledge of the tribal regarding the use of varieties of seed with minimum requirement of phosphorous is the best solution's to combat the P problem in Jharkhand. The traditional and indigenous varieties in course of time are highly adapted to the edapho climatic condition of the area and the traditional knowledge prevalent among the tribal regarding the selection of varieties to soil type is highly developed. But this practice is shifting towards horizon with the introduction of high yielding varieties of rice. These varieties requires lots of P fertilizer. So, the solution is the blending of TK with modern technology. Engineering of nutrient efficient HY indigenous varieties utilizing molecular biology and biotechnological tools is required to develop P efficient genotypes from the already existing P efficient cultivars. Availability of phosphate to the crops can be improved by improving the availability of native phosphate by adjusting soil properties and reducing P fixation.

### **3. Improving crop management**

This may involve the selection of plant species with root system to rent to low P status soil, better utilization of microorganism and better root development. Food production has to increase to meet the demand of a growing population. In light of the high energy costs and increasingly scarce resources, future agricultural systems have to be more productive and more efficient in terms of inputs such as fertilizer and water. The development of rice varieties with high yield under low-nutrient conditions has therefore become a breeding priority. The rapid progress made in sequencing and molecular-marker technology is now beginning to change the way breeding is done, providing new opportunities.

The development of crops that can access P reserves in these soils and that are highly efficient in P fertilizer uptake should therefore be a global breeding priority. In addition, it is critically important to develop crops with tolerance of multiple stresses because P deficiency is often a secondary effect in soils with high concentrations of iron and aluminium, and with low pH, which restrict root growth even if P is available. For areas with P-fixing soils, high fertilizer application is currently necessary in order to provide sufficient plant-available P. P-fixing soils cover 9–15 % of the total land area. These numbers are even higher in Laos (24 %) and Myanmar (16 %). In Africa, P-fixing soils are especially widespread in Burundi, Congo, Liberia, Swaziland

and Rwanda (16–29 %). Similar numbers are reported from South America, where P fixation occurs on 14–25 % of the total land area in e.g. Brazil, Colombia, Venezuela, Peru and Ecuador. In French Guyana, 79 % of the total land area has P-fixing properties (Bot *et al.* 2000). The development of crops that can access P reserves in these soils and that are highly efficient in P fertilizer uptake. In addition, it is critically important to develop crops with tolerance of multiple stresses because P deficiency is often a secondary effect in soils with high concentrations of iron and aluminium, and with low pH, which restrict root growth even if P is available (Ismail *et al.* 2007).

#### **Future prospects of use of PSB in Jharkhand and conclusion:**

From the above discussion it is clear that in Jharkhand adequate supply of phosphate fertilizer is required to sustain high production of rice and other crops. Negative impact of inorganic P fertilizers, on soil health and ecology, reduction in resources of Phosphate rocks and high cost of production have compelled us to find a sustainable approach for efficient P availability in rice production especially in economically backward state like Jharkhand where about 50% of the farmers are poor tribal groups. Soil microorganisms are involved in a range of processes that affect P transformation and thus influence the subsequent availability of P (as phosphate) to plant roots. From the above facts it is clear that Phosphorus is a vital element in rice nutrition. Soil microorganisms play an important role in the P mobilization of soil. The plant growth promotion of PSM have been reported to be a combination of several other factors, such as nitrogen fixation, production of plant growth promoting substances, siderophores, HCN, lytic enzymes, competition, control of plant pathogens and by inducing systemic resistance. The understanding of contribution of PSB to the cycling of P in soil-plant systems is required for the development of sustainable agriculture and our movement from a green revolution to an evergreen revolution can be accomplished. The higher available P content in soil, in turn results in increased nutrient uptake of plants and reflected on the growth and yield of rice crops. The rice cultivating traditional farmers have the natural acceptance for biofertilizers.

The use of efficient PSM (phosphate-solubilizing microorganisms), will open up a new horizon for better crop productivity besides sustaining soil health in Jharkhand agriculture. However, the viability and sustainability of PSM technology largely depends on the development and distribution of good quality inoculants to tribal farming communities, better management of soil microbial communities, by development of more effective microbial inoculants. Therefore, there is a need for extensive and consistent research to identify and characterize more PSM with greater efficiency for their ultimate application under field conditions. Soil Scientists and Microbiologists have a great responsibility to the society to find ways and means as to how soil P could be improved without applying the chemical P fertilizers under different agro-climatic regions of the world. Emphasis should also be given on priority, to

develop technology to recover P from all sources of waste materials especially the mine spoils and dumps which are the major waste disposal problem of the state.

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## **Status of Butterfly in Garampani Wildlife Sanctuary with special reference to anthropogenic threats**

\* Nabanita Das  
\*\* Imdadur Rahman

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**Abstract-** A study of butterfly diversity was carried out over three years during April, 2014 to March 2017, where a total 148 species of butterfly belonging to 5 families and 87 genera of order Lepidoptera were recorded during the study period in the Garampani Wildlife Sanctuary, Assam. Nymphalidae was found to be most dominant family with 45.21%, while Hesperidae with 8.22% was found to be least dominant. The Simpson's and Shannon diversity indices revealed that riparian vegetation and closed canopy are the two microhabitat zones preferred by most of the butterfly species throughout the studied period, while hot spring area was the least preferred, testify to the anthropogenic pressure in this microhabitat. The people's perception on anthropogenic disturbance divulges that the area near the hot spring as the most disturbed habitat, which is perceptibly because of the visit paid by the commuters and tourists as major attraction within the sanctuary and also because of its proximity to the national highway passing through it.

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**Key Words-** Butterfly, diversity, anthropogenic threats, Garampani wildlife sanctuary

**Introduction:** Northeastern India is a transitional zone between the India, Indo-Burman-Malaysian and Indo-Chinese Regions and represents one of the few hot spots of biodiversity of the World. Though this region occupies 8% of the country's total area, it supports nearly 56% of its faunal diversity. North-east India accounts for nearly a two third (962 Species) of the India's total butterfly species (1500 Species)<sup>[1, 2]</sup>. Insects remain mostly undiscovered and are frequently omitted from conservation assessments<sup>[3, 4]</sup>. Several species of butterflies are thought to be extinct, while rediscovery of Yellow-crested Spangle (*Papilio elephenor*) and Moore's Cupid (*Shijimiamorei*) from Ripu-Chirang Wildlife Sanctuary reveals the importance the region where data are still lacking on the distribution of Lepidopteran<sup>[5]</sup>.

Butterflies interact with plants both as larval herbivores and adult pollinators, potentially influencing plant population dynamics in both

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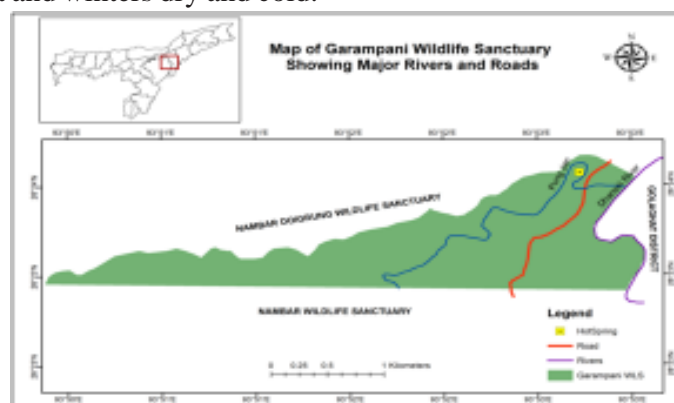
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interactions<sup>[6]</sup>. As they are highly sensitive to changes in temperature, humidity & light factors which are certainly affected by the anthropogenic activities or habitat disturbances, hence they are widely recognised as valuable ecological indicators or indicators of environmental variation and quality<sup>[7, 8, 9, 10, 11]</sup>. Moreover, the forest fragmentations and canopy openness of the forest habitat change the microclimatic condition of forest resulting in changes of butterfly community and native butterflies have disappeared from artificially modified habitat of tropical forest<sup>[12, 13]</sup>. It is important to understand the response of the butterfly species in different habitat types, including disturbed areas, within a landscape in order to adopt a better conservation and management strategy for lessening the habitat change because of anthropogenic factors<sup>[14]</sup>.

Garampani wildlife sanctuary is a well-protected zone surrounded by other protected areas and it satisfies the characteristics of Semi-evergreen moist deciduous forest system harbouring a rich diversity of wild fauna which including butterflies. As a flagship species, butterflies cater the need of ecosystem functioning by their roles as one of the important pollinators. Therefore, in the present study, an effort was made to document the butterfly diversity in different habitats within the Garampani WS and anthropogenic pressure on these different habitats.

#### Materials and Methods:

**Study area:** The Garampani Wildlife Sanctuary was notified during 1952 vide notification No. FR. 199/52 dated 10/07/52 with an area of 6 sq. Km. and the entire sanctuary is situated within the Karbi Anglong Autonomous Council area, Assam and is rich with rare and endangered flora and fauna<sup>[15]</sup>. This wildlife sanctuary located between latitude 26°24'0" North and longitude 93°52'0" East at an Elevation of 117 M above MSL. It is in the civil jurisdiction of Karbi Anglong District, falls under Bokajan subdivision and the National Highway 39 (Numaligarh to Dimapur) passes through the eastern side of this protected area. The climate is moist tropical, summers being hot and winters dry and cold.



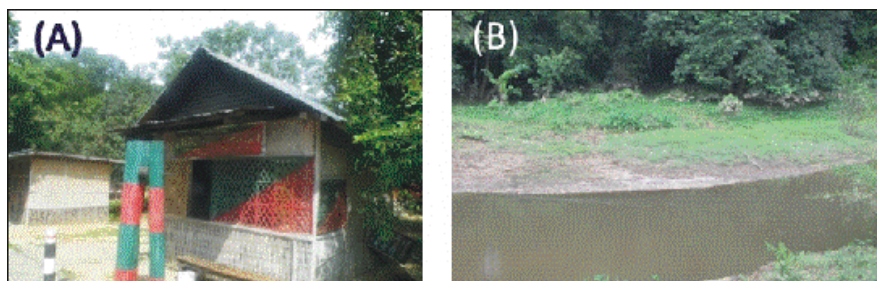
**Figure 1:** Location Map of the study area, Garampani Wildlife Sanctuary, Assam, India

The vegetation of the sanctuary consists of Himalayan Moist Mixed Deciduous Forests of Semi-evergreen type, tropical moist bamboo brakes and the marshy wetlands. Forests of Garampani Wildlife Sanctuary harbors more than 52 species of wild animals like Elephants, Leopard, Tigers, Deer, Golden langurs, Hoolock gibbon, Wild boar, Dhole/wild dog etc. and a large variety of birds and reptiles as well as vast floral diversity having more than 50 species of rare orchids<sup>[15, 16]</sup>.

**Survey and Documentation of Butterfly:** A survey of butterfly diversity was carried out over three years during April, 2014 to March 2017. Samplings of the butterfly species was conducted by “*Line transects sampling*” method described by Pollard<sup>[17]</sup>, with minor modification as and when required. Surveys was conducted in two nos. of line transects (100 m each) within a 100 m x 100 m of grid for covering each zone. Survey was conducted in 20 Grids (5 grids in each) in all four habitat type/ zones for documentation. Transect was slowly traversed at a uniform pace for 30 min from 8.30 am to 11.30 am (butterfly foraging activity is maximum) during good weather period (no heavy rain or strong winds), as butterfly activity is suppressed on windy or cloudy days<sup>[18]</sup>.

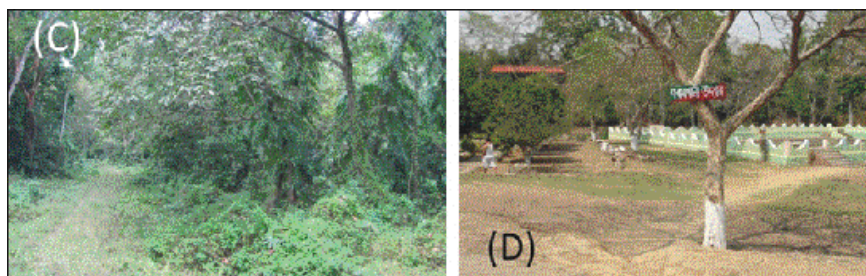
Butterflies observed in each grid were either caught with aerial net, with the help of modified technique of capture-recapture method<sup>[19]</sup> or photographed for documentation and identification. For these, butterflies were observed, captured, identified and released immediately at the spot of capture and most of the species were photographed in the wild. Collection of live specimens was avoided during the study, as the study area is a protected area. Modified technique of Capture-recapture methods for studying Lepidoptera was used for collection of data on species<sup>[19]</sup>. Identification of the butterfly was done using the available literature<sup>[20, 21, 22, 23, 24]</sup>. For further identification and confirmation of the butterfly, taxonomists and eminent field biologists were also consulted.

**Sampling Regime:** In order to document the species diversity, seasonal abundance and anthropogenic pressure, the habitats were divided into four different zones, based on the microhabitat conditions and human interventions in the Garampani wildlife sanctuary (Table 1).



**Picture A:** Zone-I, Open Forest & Roadside **Picture B:** Zone-II, Riparian

vegetation area



**Picture C:** Zone-III, Closed Canopy habitat      **Picture D:** Zone-IV, Hot water spring area

<b>Table 1:</b> Microhabitat zonation for sampling in Garampani Wildlife Sanctuary during study period	
Zone I : Open Forest	The men made build-up areas, roadside along with open forests/ edge of the forests inside the sanctuary (Picture-A).
Zone II: Riparian vegetation	Mostly the area of the forest-stream terrains flowing by the Garampani Wildlife Sanctuary(Picture-B).
Zone III : Closed Canopy	Closed canopy and undisturbed habitat in the north western part of the Wildlife Sanctuary(Picture-C).
Zone IV: Hot water spring	The area nearby the hot water spring and the road approach to the spring along with the newly build recreational areas (Picture-D).

### Seasonal Variation and Population Dynamics:

Seasonal variation of species were documented over four season each year from April, 2014 to March, 2017 viz. (i) Pre-monsoon season (March, April & May); (ii) Monsoon season (June, July & August); (iii) Post-monsoon season (September, October & November); (iv) Winter (December, January & February). For documentation of seasonal variation, 24 visits each season were made during the entire three years of study in the four habitat zones as stratified above. Population dynamics of butterfly species was estimated to determine species richness, composition, abundance and distribution pattern of butterflies among different seasons in different demarcated microhabitat zones. Collected data were analysed to calculate Shannon Wiener Diversity index (H), Simpson Diversity Index (D or  $\bar{d}$ ), Pielou's Evenness Index ( $J'$ ). Descriptive statistics were calculated at Microsoft office excel 2007 and SPSS 16.0 version. In order to document the anthropogenic pressure, secondary information was collected from the forest employees, other dept. staffs and common public visiting the sanctuary and were analyzed.

### People's perception on anthropogenic disturbance ranking:

In order to get people's perception on anthropogenic disturbances, a sample survey was conducted with the help of pre-designed questionnaire to rank the various identified zones. The Scale of the ranking was kept from 0-

5, where 5 means no or negligible disturbance and 0 means maximum disturbances. Total 120 personnel were randomly sampled over 3 years (keeping fixed sample size 40 personnel in each year). Sampling was done in such a way so that it represents local people living near the wildlife sanctuary particularly tea garden labour from nearby tea estate, Forest department officials and staffs; check-post staffs (under KarbiAnglong Autonomous council), local visitors and tourists who are familiar with Garampani Wildlife Sanctuary.

### Results and Discussion:

**Abundance, Family and Genera wise composition:** A total of 39,181 nos. of individual of butterflies belonging to 148 species 87 genera and 5 different families were recorded during the study period i.e. from April, 2014 to March, 2017. Out of these 20,527 individuals from Nymphalidae (52.39%), 6,562 individuals from Pieridae (16.75%), 6,388 individuals from Lycaenidae family (16.30%), 3,926 individuals from Papilionidae family (10.02%) and about 1,778 individuals from Hesperidae (4.54%) family were recorded. Out of these total documented 148 species of butterfly, maximum number of species i.e. 66 species belongs to the family Nymphalidae (with 35 genera), 28 belongs to the family Lycaenidae (with 25 genera), 22 belongs to the family Pieridae (with 9 genera), 20 belongs to the family Papilionidae (with 7 genera) and 12 belongs to the family Hesperidae (with 11 genera).

Family wise percentage contribution of relative number of species and individuals of different families of butterflies observed during the study period from Garampani WS are presented in the Table 2.

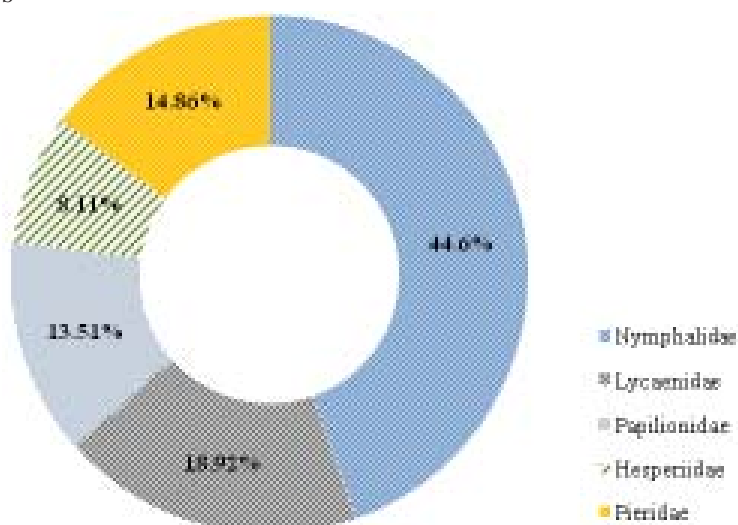
**Table 2:** Percentage contribution of relative nos. of species and individuals of the five families of butterflies recorded in Garampani Wildlife Sanctuary

Family	Total No. of Genera	Total no. of species	% of Species	Total no. of individuals	% of individuals
Papilionidae	7	20	13.51	3926	10.02
Nymphalidae	35	66	44.60	20527	52.39
Pieridae	9	22	14.86	6562	16.75
Lycaenidae	25	28	18.92	6388	16.30
Hesperidae	11	12	08.11	1778	4.54

While, on the basis of species composition, during the entire study, Nymphalidae was found to be the most dominant family (44.6%), followed by Lycaenidae (18.92%), Papilionidae (13.51%), Pieridae (14.86%) and Hesperidae family (8.11%) was found to be the least (Figure 2). Therefore, the Nymphalidae was the most dominant family in terms of species composition and abundance as well.



**Picture E:** Capture and release method used for identifying the butterfly species



**Figure 2:** Family-wise species composition of butterflies in Garampani Wildlife Sanctuary

#### Response to various microhabitats:

During the present study, butterfly were observed in the four different microhabitat zones in four different seasons viz. pre-monsoon, monsoon, post-monsoon and winter. Shannon Wiener Diversity index ( $H'$ ), Simpson Diversity index ( $H'$ ), Simpson Diversity Index ( $D$  or  $\bar{d}$ ), Pielou's Evenness Index ( $J'$ ) were calculated every year in different season for these microhabitats which reveals that the riparian vegetation and closed canopy were the most visited habitat for the butterfly species having most species abundance and species richness (Table 3)

throughout the entire study period. The area near the hot spring was found to be the most concerned in terms of the species richness and abundance compared to other three microhabitats. This also postulates on the difference in the efficiency of different butterfly species to capably use these microhabitats. Various biotic and abiotic environmental factors are influential in determining the abundance of individuals of butterfly species at any given point on a temporal scale <sup>[11]</sup>. Few studies in human arbitrated landscape showed that, species richness and abundance/density of forest-dependent taxa generally declined in disturbed compared to mature forests<sup>[25]</sup>. Subsequently, it is also important to understand the habitat disturbances factors because of human interference in different microhabitats of the sanctuary.

Table 3:Season wise diversity indices of butterfly during the study period in different habitat types of Garampani Wildlife Sanctuary												
Habitats	Pre Monsoon			Monsoon			Post Monsoon			Winter		
	H´	D	J´	H´	D	J´	H´	D	J´	H´	D	J´
First Year												
Zone-1	4.501	0.012	0.969	4.534	0.012	0.961	4.490	0.012	0.971	4.009	0.019	0.971
Zone-2	4.861	0.008	0.980	4.851	0.008	0.982	4.836	0.008	0.980	4.266	0.015	0.971
Zone-3	4.854	0.008	0.984	4.845	0.008	0.979	4.828	0.008	0.981	4.290	0.015	0.966
Zone-4	2.912	0.057	0.989	2.967	0.056	0.974	3.033	0.051	0.981	2.079	0.125	1.000
Second Year												
Zone-1	4.391	0.014	0.971	4.474	0.013	0.950	4.400	0.014	0.964	3.985	0.020	0.973
Zone-2	4.737	0.009	0.978	4.763	0.009	0.976	4.748	0.009	0.974	4.217	0.016	0.968
Zone-3	4.784	0.009	0.975	4.772	0.009	0.976	4.756	0.009	0.976	4.210	0.016	0.969
Zone-4	2.079	0.125	1.000	1.906	0.156	0.980	2.197	0.111	1.000	0.000	1.000	0.000
Third Year												
Zone-1	4.388	0.014	0.966	4.380	0.014	0.969	4.338	0.014	0.966	3.940	0.021	0.970
Zone-2	4.748	0.009	0.979	4.743	0.009	0.979	4.731	0.009	0.978	4.139	0.017	0.984
Zone-3	4.758	0.009	0.979	4.742	0.009	0.974	4.724	0.010	0.975	4.140	0.016	0.981
Zone-4	2.303	0.100	1.000	1.792	0.167	1.000	1.386	0.250	1.000	0.000	1.000	0.000
H´= Shannon diversity index; D=Simpsons Index; J´= Pielou's Evenness Index												

**People's perception on anthropogenic disturbance ranking:** People's perception on magnitude of anthropogenic disturbances in different seasons in different habitats of Garampani Wildlife Sanctuary is presented in the table 4 and figure 3.

**Table 4:** People's perception on anthropogenic disturbance in various zones of Garampani Wildlife Sanctuary

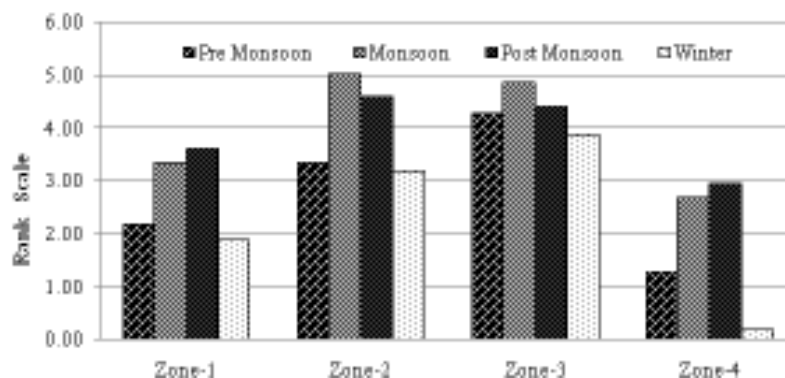
<b>Zones Season</b>	<b>Zone-1 (Mean ± SD)</b>	<b>Zone-2 (Mean ± SD)</b>	<b>Zone-3 (Mean ± SD)</b>	<b>Zone-4 (Mean ± SD)</b>
Pre-Monsoon	2.17±0.29	3.33±0.29	4.27±0.40	1.27±0.46
Monsoon	3.33±0.29	5.00±0.00	4.83±0.29	2.67±1.04
Post Monsoon	3.60±1.01	4.57±0.40	4.40±0.35	2.93±1.68
Winter	1.87±0.12	3.17±0.29	3.87±0.12	0.17±0.29

A major portion of the Garampani Wildlife Sanctuary concentrates around the famous 'hot spring' and there is good amount of tourist inflow in various seasons. Moreover as it is situated on the NH-39 connecting Golaghat-Dimapur influx of tourist visiting the Hot water spring is eminent. A new recreational area has been set up near the hot spring and the area is the most disturbed in terms of human intervention. These were gradually built up once the influx of tourist increased.

When a wildlife sanctuary or a protected area is opened up for tourism, lot of infrastructure is created in that place; same for the smallest protected area like GWS. Visitors also uses Garampani as stopover while moving through the national highway also adds on to the Tourism and this also seems to be an unregulated one, since the sanctuary area is very marginal; tourist over exposure is worrisome. Moreover, as shown in the pictures below, tourists leave behind such nuisances e.g. disposal of solid waste and waste materials, which impact the overall health of the sanctuary particularly in the microhabitat near the hot spring.



**Picture F:** Disturbances created by the tourists and visitors near the hot spring in Garampani Wildlife Sanctuary



**Figure 3:** People's perception on magnitude of anthropogenic disturbances

in different seasons in different habitats of Garampani Wildlife Sanctuary

### Conclusion:

From our result and analysis it was evident that the Garampani Wildlife Sanctuary is a good habitat in terms of butterfly richness and abundance. The closed canopy zone and the vegetation near riparian zone are the most suitable habitat for the butterfly in Garampani Wildlife Sanctuary. There are strong anthropogenic pressure in the other two zones, especially in vegetation nearby the hot spring area because of the visitors and local tourists, which need immediate attention from the sanctuary authority to impose certain baggy regulations. It can be achieved through actions like plantation of high canopy cover species particularly in the newly developed recreational area, regulated tourist inflow during winter season etc. As the hot spring is popular tourist attraction particularly for the nearby local tourists, therefore care needs to be taken for protecting the surrounding areas from any other contaminants and disturbances made by the tourists. Lastly, mainstreaming of the butterfly conservation can be achieved through declaring the marginal 6.00 sq. km. area as the butterfly park/sanctuary, in line with that of few designated bird sanctuaries in the country.

### Acknowledgement:

The authors would like to express their profound appreciation to the Head of the Department of Life Science, Dibrugarh University and the other esteemed faculties and supporting colleague Research scholars. We would also like to sincerely acknowledge the help and support received from Dr. Abhijit Rabha, PCCF (Karbi Anglong), Department of Forest, Govt. of Assam for the permission to work in the study area during the study period and his encouragement.

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## Construction and Standardisation of an Achievement test in science (Chemistry)

\* Kanika Handa Jamwal

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**Abstract-** Achievement test is an instrument designed to measure the accomplishment of the students, in a specified area of learning, after a period of instruction. Tests which provide information about the relative performance of members of a specific group of students are called "Norm Referenced Tests"(NRT) and are usually standardized which are constructed for large group of students. The main purpose of achievement tests is to determine one's knowledge in a particular subject. The present test was constructed and standardized in Chemistry units of Science text book of X class prescribed by the Himachal Pradesh Board Of School Education (HPBOSE).After doing rigorous item analyses,62 items were retained in the final version of test .The co-efficient of reliability calculated by Kuder-Richardson formula 20 (KR-20) came out to be 0.84 which makes the test fairly reliable.

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### Key Words- Achievement, NRT

**Objective of the Study:** To construct and standardize an achievement test of Chemistry units of Science textbook of X class prescribed by the Himachal Pradesh Board of School Education (HPBOSE).

**Population and Sample:** In this work all the students who are studying in Xstandard of Himachal Pradesh (H.P.) comprise the population of the study.After delimitation, sample was collected from the government schools of district Mandi of Himachal Pradesh .For first tryout, purposive sampling was adopted and 100 students were taken. For final tryout, 370 students were taken.

**Methodology Adopted:** The following steps were taken by the investigator during construction and standardization of the achievement test in Science:

- Planning the test
- Preparation of the test
- Tryout of the test
- Preparing final form of test
- Standardization of test : Establishing Reliability And Validity

### I. Planning the test :

Planning of a test is a first and very important step in the construction of an achievement test. A standardized achievement test needs very careful

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planning. For proper planning of the test, the investigator kept following aspects in mind such as: to whom, what, when and how to measure. It includes designing the test and preparation of the blue print. Keeping in view the above mentioned facts following decisions were taken by the investigator such as:

Designing of the test includes important aspects such as objectives of the test, content of the test, nature of the test, scoring schemes, number of items, type of items, length of test, weight age to objectives, weight age to content, weight age to questions, allotment of time and marking scheme. Investigator opted Science (Chemistry) subject of X standard under Himachal Pradesh Board of School Education (HPBOSE) for the preparation of the test. In this achievement test, investigator had decided to prepare multiple choice questions (MCQs), completion type(CT), matching type(MT), short answer type(SA) and long answer type (LA) questions. After this a blueprint was prepared keeping in view the content area, objectives and type of test items of learning as per revised Blooms taxonomy of educational objectives.

**a) Objectives of the Test:**

Objectives in this achievement test were defined in behavioural terms focusing on knowledge, understanding, application and skill, from all the chemistry units of science textbook of X class prescribed by the HPBOSE.

**b) Content of the Test:**

The achievement test covered the content from all the units of chemistry of Science textbook prescribed by HPBOSE of standard X.

**c) Preparation of Blue Print:**

After designing preparation of blueprint is the last stage of the planning of test. Here test constructor put various type of question in blueprint and allots them marks depending on the time. The tester writes down his decisions in the form of a blueprint.

**Table 1: Weightage To Objectives**

S. No.	Objectives	Weightage	Percentage
1	Knowledge	40	31
2	Understanding	53	41
3	Application	28	22
4	Skill	07	06
<b>Total</b>		<b>128</b>	<b>100</b>

**Table 2: Weightage To Content**

S. No.	Content	Weightage	Percentage
1	Chemical Reactions and Equations	24	19
2	Acids Bases and Salts	25	20
3	Metals and Non Metals	20	16
4	Carbon and its compounds	30	23
5	Periodic Classification of Elements	29	22
<b>Total</b>		<b>128</b>	<b>100</b>

**Table 3: Distribution of Weightage to Type of Test Items**

TYPE	MARKS	PERCENTAGE
Multiple Choice Questions	69	54
Completion Type	05	04
Matching Type	09	07
Small Answer	20	16
Long Answer	25	19
<b>Total</b>	<b>128</b>	<b>100</b>

**Table 4: Blueprint of the Achievement Test**

OBJECTIVES	QUESTION TYPE	CONTENT					TOTAL MARKS
		1.CHEMICAL REACTIONS AND EQUATIONS	2.ACIDS BASES AND SALTS	3.METALS AND NON METALS	4.CARBON AND ITS COMPOUNDS	5.PERIODIC CLASSIFICATION OF ELEMENTS	
Knowledge	MCQ	1(4)	1(6)	1(5)	1(9)	1(12)	36(36)
	CT	-	-	-	-	-	-
	MT	-	-	-	-	-	-
	SA	-	-	-	2(1)	2(1)	4(2)
	LA	-	-	-	-	-	-
Understanding	MCQ	1(4)	1(2)	1(3)	1(8)	1(1)	18(18)
	CT	1(1)	1(1)	1(1)	1(1)	1(1)	5(5)
	MT	-	-	-	-	-	-
	SA	2(2)	2(1)	2(1)	2(1)	-	10(5)
	LA	5(1)	5(1)	-	5(1)	5(1)	20(4)
Application	MCQ	1(2)	1(2)	1(2)	1(3)	1(6)	15(15)
	CT	-	-	-	-	-	-
	MT	1(4)	1(5)	-	-	-	9(9)
	SA	-	-	2(1)	-	2(1)	4(2)
	LA	-	-	-	-	-	-
Skill	MCQ	-	-	-	-	-	-
	CT	-	-	-	-	-	-
	MT	-	-	-	-	-	-
	SA	-	2(1)	-	-	-	2(1)
	LA	-	-	5(1)	-	-	5(1)
<b>Total Marks</b>		<b>24(18)</b>	<b>25(19)</b>	<b>20(14)</b>	<b>30(24)</b>	<b>29(23)</b>	<b>128(98)</b>

NOTE: Figures within the brackets indicate the number of questions and figures outside the brackets indicate marks. \*MCQ-Multiple Choice Question, CT-Completion Type, MT- Matching Type, SA-Short Answer, LA –Long Answer

## II. Preparation of Test:

After careful preparation of the blue print, items were written by the investigator for achievement test. The test item includes multiple choice questions (MCQs), completion type (CT), matching type(MT),short answer type(SA)and long answer type (LA)questions . The first version of the achievement test was prepared and it included 98 items from the units of chemistry of subject Science of X standard based on the text-book prescribed by Himachal Pradesh Board of School Education. This version of the test was reviewed by the subject experts, science teachers, language experts and specialists. Proposed items were edited, revised and rewritten to refine them as per directions of the experts. In this way, the first version of the achievement

test was prepared and it included 98 items. In MCQs every statement has four alternatives, the students were asked to tick the right answer from four alternatives. In completion type questions students were supposed to supply a word or short phrase to answer or complete a statement. In matching type items students were asked to match the response associated with a given stimulus. However in subjective type (SA and LA) permitted the students to organize and present an original answer. Clear and precise directions were prepared for the administration of the test and scoring key was prepared in advance for the achievement test.

Preparation of preliminary draft of a standardized test includes two stages;

- Item-Writing
- Item-Editing

**Item-Writing:** The achievement test prepared by the researcher included a total of 91 items in its preliminary draft and item wise classification is given as follows:

**Table 5: Item Classification**

S. No.	Type of item	Range	Total number of items	Scores
1	Multiple Choice Questions	1-69	69	$1 \times 69 = 69$
2	Completion Type	70-74	05	$1 \times 5 = 05$
3	Matching Type	75 -83	09	$1 \times 9 = 09$
4	Small Answer	84-93	10	$2 \times 10 = 20$
5	Long Answer	94-98	05	$5 \times 5 = 25$
<b>Total</b>	<b>5</b>	<b>1-98</b>	<b>98</b>	<b>128</b>

1) **Item Editing:** After writing all the items according to the blueprint prepared in previous test the test items were edited by the researcher herself. Then these items were edited by three experts mainly subject expert, language expert and experienced test constructor.

2) **Preparation of Preliminary Draft of the Test:** On the basis of recommendations and corrections suggested by various experts, the researcher prepared a preliminary draft of the test.

3) **Preparation of Scoring Key of the Preliminary Draft of the Test:**

Item wise marks of each item is clear from table 5 and the scoring key was prepared accordingly. For Multiple Choice Questions, Completion type and Matching type each correctly marked response was given mark 1, for Short answer questions mark 2 and for Long answer questions mark 5. However for every wrong attempted response score in each item was given 0.

## II. Tryout of The Test:

After preparing the blue print of test items, the tryout of test with 98 items was administered on 100 students studying in class 10<sup>th</sup> in the H.P. Board of School Education of district Mandi. Nearby schools namely

Government Senior Secondary School, Mandi, Government Senior Secondary School, Sunder Nagar and Government Senior Secondary School, Bhangrotu were selected for the test try out.

#### **Item Analysis:**

- **Calculation of Difficulty Level of Each Item:**

After scoring all the papers, item analyses were done and difficulty values were calculated for each item. The desirable difficulty value set for the selection of the item was between 20% to 80%. The discriminating power of 79 items which were retained on the basis difficulty value was calculated. Items with negative differences less than 0.2 were rejected. Thus, 63 items were retained for the final test.

#### **Difficulty Value:**

The ratio of students' group that solves a question correctly or knows it actually is called its difficulty index. The percentage of correct responses was calculated. Item difficulty of a particular item, to be more correct, item difficulty for each item is calculated of each item. The difficulty index (D.I.) of items is calculated by following formulae:

$$D.I. = (N_i/N_t) 100$$

$N_i$  = Number of students who gave correct responses.

$N_t$  = Total number of students appeared in test.

#### **Selection of the Items on the Basis of Difficulty Value:**

After preparing the table of difficulty value, the items with D.I. range 20% to 80% were retained in the test. It has been generally found out that items passed by less than 20% pupils is considered to be too difficult and is rejected. Similarly, an item which is passed by more than 80% pupils is considered to be too easy and hence, is not included in the final test. The most reasonable range of difficulty value of the item is to be between 20% to 80%.

#### **Rejection of Items:**

Out of 98 items, 19 were rejected which are found to be either too easy or too difficult. The difficulty value of 79 items were retained for finding out their discriminating value as a further step in item analysis. Number of the discarded items were as item no. 5, 7, 16, 17, 22, 30, 37, 42, 44, 47, 50, 57, 63, 64, 68, 87, 89, 92 and 97.

- **Calculation of Discriminating Power**

Discriminating power of the test item refers to the degree to which success or failure on the item indicated the possession of the ability being measured. Item discrimination power was calculated of 79 items which were retained on the basis of difficulty value. The procedure in detail is as follow:

1. The answer sheets of all the 100 students were arranged in descending order.
2. The top 27% i.e. 27 students formed upper group.
3. The bottom 27% i.e. 27 students formed lower group.
4. The students in between this range are left out.

5. Correct responses in the upper group for each item was calculated.
  6. Correct responses in the lower group for each item was calculated.
- Discriminating power of each item was found out by formula:

$$D.P. = (R_H - R_L) / T/2$$

Where,

D.P. – Discriminating Power.

$R_H$  – Correct responses in the higher group.

$R_L$  - Correct responses in the lower group.

T–Total Number of students of both groups.

### **Selection of Items on the Basis of Discrimination Power:**

Item showing negative difference and Discrimination Power less than 0.2 were rejected and remaining items were retained for the final form of the test. The items rejected are item number: 6, 10, 13, 34, 40, 46, 51, 53, 55, 62, 65, 67, 68, 84, 88 and 92.

There were 17 items, in which the students of upper group were scoring less than the students of lower group. It means there was something wrong in these items which could not distinguish between good and poor students. So these total 17 items were rejected.

### **III. Preparing final form of test:**

To fix the time limit of the final test, final form of the test was given to 10 students. Time taken by the each student was noted. The average time taken to complete the test came out to be two hours. Clear and précised directions for scoring and administration of the achievement test prepared were as follows:

- (i) This question paper is divided into three parts: A, B, and C .All questions of each part are compulsory.
- (ii) Part A contains three sub parts of objective nature (Q.1 to Q.54) carry 1 mark each.
- (iii) Part B contains short answer questions (Q.55 to Q.59) carry 2 marks each.
- (iv) Part Contains long answer questions (Q.60 to Q.62) carry 5 marks each.

### **IV. Standardization of achievement test:**

Final form of the test consisting of 62 items was administered to another 370 students drawn purposively from schools of Mandi district Himachal Pradesh.

- **Reliability**

The co-efficient of reliability calculated by Kuder-Richardson formula 20(KR-20) came out to be **0.84** which makes the test fairly reliable.

- **Validity**

The content validity was concerned with the relevance of the contents of the items, individually and as a whole. In which expert judgment was taken into consideration. To estimate content validity of an achievement test,

test was given to eight science teachers and six experts to compare test items with the content and objectives of content. Out of the eight experts, four experts have solved the test so the scoring key could be verified. The experts agreed with the investigator with the distribution of content and objective of the content as well as with the scoring scheme. In this way content validity of the achievement test was established.

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## **Societal Processes and Interactive Dynamics Between Human and Non-human Stakeholders Shaping Conflicting Nature Related With Urban Geography**

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**Abstract-** *This paper reveals the evolution of nature conceptions in the last two decades as a response to the global ecological crisis and the parallel redefinition of landscape and society-environment relations it implied. Skandrani then further proceeds to explain current conservation disputes based on these conceptual refashioning and illustrate how social conflicts develop out of the diversity of nowadays co-existing nature understandings. Skandrani discusses how scientific research could help resolve potential social-ecological conflicts and better inform environmental governance through the critical analysis of the societal processes and interactive dynamics between human and non-human stakeholders shaping conflicting nature conceptions.*

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**Key Words-** Environment-society relations; Governance; Nature conceptions; Social-ecological systems; Inter-species agency

**Introduction:** The human relationship with nature, as it has been culturally mediated in the Western dominant social paradigm has predominantly been defined based on conceptions of a firm boundary between humanity and the environment. Latour<sup>1</sup> argues that the essence of the “modern constitution” lies in the fiction of an ontological separation between humans and society on one side and nature and non-humans on the other side. This dualism has been explained to be deeply rooted in Western tradition and inherited from Greek philosophy and Judeo-Christian theology. Since the seventeenth century, rationalists such as Descartes and Bacon, as well as Enlightenment thinkers such as Newton, Kant, Adam Smith, and Montesquieu further contributed to anchoring the externality of nature and the disjuncture of nature and human society. In nineteenth century materialist evolutionism, ‘man’ sought to transcend nature and separate himself from it as a means to controlling the ‘external’ world.

Seeing nature as distinct from humans has disseminated into a myriad of further conceptual categorizations and framed the treatment of the

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environment and the spatial ordering of its biodiversity components. For example, the externalization of “nature” from human beings has made it easier to consider “nature” as a resource to be overexploited and refined for social and economic growth in western societies. Further, the conceptual ‘othering’ of non-humans such as animals has often led to a geographical ‘othering’, thus designating them in spaces different from those designated for human habitation<sup>2</sup>. Anthropization of landscapes meant the active displacement and re-placement of local species that should properly be proximate to people<sup>3</sup> pets and companion animals under human dominion are envisaged in zones of human settlements; wild species in the wilderness beyond human civilization or in zoos where their lack of adaptation to humans is compensated by their confinement behind bars. Between these two extremes, domesticated animals that are useful to humans as food and other products are allocated to specialized locations such as agricultural landscapes (‘the countryside’)<sup>3</sup>. In parallel, the modern city as a typical human habitat has been perceived as a deviation from a presupposed ‘natural’ environment. The concepts of ‘urban’ and ‘city’ have been contrasted with their inverses of ‘rural’ and ‘country’ as an effect of the society-nature antinomy<sup>4</sup>.

#### **Contrasts in Nature Conceptions and Conflict Potential:**

Conceptions about nature and society-environment relations have been increasingly debated and reformed in the last decades through developments in epistemology and scientific research as well as in political circumstances (e.g., Millennium Ecosystem Assessment) and at the concrete level of urban nature management. From a theoretical perspective, the traditional representation of the ‘civilized’ city has evolved into a more holistic conceptualization of nature as embedded within the urban concept.

Classical ecology and traditional earth science-based approaches of ecosystem dynamics that treated humans as external to the system have been judged as obsolete<sup>5</sup> and challenged by novel frameworks. Contemporary scholars emphasize that natural conditions are not separate from social processes. Generally, the term “social-ecological system”<sup>6</sup> is used to highlight the integrated concept of humans within nature and to address the delineation between social and ecological systems as artificial and arbitrary.

These conceptual developments are driven by the dramatic and recognized consequences of human population growth and drastic urbanization on environmental degradation, biodiversity loss and the potential extinction of thousands of additional species. In parallel, natural reserves, an effect of the ‘humans out’ vision, are recognized as insufficient for environmental conservation<sup>7</sup>. Thinking of nature and human-environment interdependencies in these novel terms involved a fundamental reconsideration and reorganization of the physical and imagined landscapes, as well as a redefinition of the proper relations between nature and its human and non-human components<sup>8</sup>. Human spaces are hence increasingly considered and advocated as complexes of

nature restoration and ecological diversity.

Yet, institutional and conservation efforts of bringing nature back 'in' presuppose the existence of a 'place', which is not only a material place but also a conceptual space where nature is welcome<sup>9</sup>. The definition of this place strongly depends on the main coexisting conceptions about nature, their corollary values and spatial ordering while a mismatch between these lies at the heart of social conflicts about biodiversity<sup>10</sup>.

Today, the shift in mental models toward humans-in-the environment or nature-within-human spaces perspectives and the resulting changes in urban landscape description and meaning are not necessarily embraced uniformly. Indeed, as a consequence of transformations in the way people represent and value nature in the last decades, there is presently an increased and overlapping diversity in nature conceptions and society-nature relations. The resulting contrasted spheres of meaning may unknowingly generate understanding gaps and reluctance on environmental issues, particularly when changing nature representations entail landscape redefinitions, resulting in new human-biodiversity-environment relations and spatial ascriptions.

First, urban residents are less familiar with biodiversity than are their counterparts of 25–30 years ago and sometimes hold low tolerance for nature due to the loss of everyday interactions with nature<sup>11</sup>. Untamed nature and especially animals are thus still experienced by many people as 'out of place', social disorder and transgressive in human places<sup>12</sup>. Such remnant perspectives inevitably collide with institutional efforts of urban nature restoration, which results in increased human-biodiversity encounters<sup>13</sup>. For example, in rural areas, social conflicts with wolves have been reported not to be based on antagonistic attitudes about the species itself but on conceptions of the wolf as a fundamentally wild animal acceptable in wilderness areas but not in rural areas<sup>14</sup>.

Thus, beyond the modification of external circumstances, emphasis is placed on the necessity of Western societies to lift people's estrangement from nature and to enhance individual connections with their environment by encouraging direct experiences with urban nature. As an adaptive response to the ongoing global ecological crisis, the recognition of the continuum between nature and society and the change in conceptualizing human-environment relations thus entails a progressive revision of values and an adjustment in societies' lifestyles<sup>15</sup>.

Yet, in the context of environmental conservation also, divergent conceptions lead to complex interactions between various stakeholders<sup>16</sup>. Indeed, despite a shared ultimate goal (of conserving biodiversity), individual representations proceed from a utilitarian valorization of nature, a tribute of the former human-nature dichotomy, to a more holistic perspective including the noninstrumental, intrinsic value of species, ecosystems, or ecological processes themselves that should not be reduced to a mere means to satisfy

human ends. In the first perspective, there may be an economic valuation of plant genetic diversity because of its pharmaceutical value. By contrast, the latter perspective may further diverge into ecocentric and biocentric values that focus on holistic concepts such as habitats or species and on the individual well-being of plants and animals, respectively. People are not necessarily consciously aware of their nature representations; however these undergird position and attitude toward conservation issues. Thus, although the protection of nature, landscapes, and biodiversity is an important issue in public opinion, there can be fierce local resistance to the implementation of environmental policies, as coexisting discourses about nature may yield conflicting protection actions for different types of biodiversity.

A major scientific challenge today is thus to provide insights for handling such conceptual contradictions and related socio-ecological conflicts. The main thesis here is that for understanding and mitigating social conflicts on biodiversity it is first crucial to identify the manifold interaction dynamics between socio-economic, political and ecological factors and processes, through which the involved conflicting conceptions about biodiversity and the environment are actively produced and spread. The proposed analytic framework could be used for the development of **governance** models that secure a systems' capacity to support appeased social-ecological relationships into the future.

#### **Mitigation on Socio-environmental Conflicts:**

While frameworks of social-ecological system analysis have previously recommended the identification of dynamics between social and ecological variables at multiple levels, nature representations are rarely questioned in these approaches, although their centrality has been repeatedly recognized <sup>21</sup>.

Here, Skandrani argues that highlighting the content of environmental conceptions involved in conflicts is however only one step. When dealing with contradictions and oppositions on environmental issues, research priorities must not only clarify the underlying **nature conceptions**, but also pay attention to how these come about, and to critically analyze the discourses shaping their articulation. Indeed, uncovering the processes of nature conceptions production and the ways they are conveyed is central to anticipate the generation of potential conflicting nature understandings and obstacles to environmental conservation in the future.

These representations, as well as of the appropriate societyenvironment relations, are the contextual and socially developed interpretations of the environment, which are relative to a certain place and time. They are developed through communication in many different social practices and are related to knowledge, education, and the social groups in which people participate. Exploring these processes involves all society members and concerned stakeholders as well as the interdisciplinary consideration of their interactive dynamics and reciprocal influences, through which meaning is assigned to

the environment. In a comparative study between two European cities, Skandrani et al. showed for instance that urban green management strategies, relying on top-down cognitive awareness raising measures while keeping people in retreat from and controlling their access to urban nature, contribute to build control visions about nature in public opinion. Yet, such visions may hold conflict potential regarding current ecological strategies in cities favoring spontaneous and uncontrolled nature. Thus, cities reintroducing urban nature while implementing exclusive management provide competing explicit and implicit discourses about nature that might be counterproductive.

Further, when focusing only on how nature and biodiversity are represented, it may seem that they are merely passive surfaces onto which human groups project meanings. This is why it should also be considered how nature and other non-human species may themselves figure dialectically in these practices and the extent to which they constrain human orderings and the social meanings they are attributed. Following actor network theory both human and non-humans are enrolled and hold agency in this meaning production: lay people, institutions, but also nature and biodiversity. Indeed, biodiversity representations are contingent on institutions and their codifying power. These institutions are themselves constantly redefined and reinvented to coevolve with a dynamic environment, as shown by the transition from 'government' to 'governance' taking place in many countries. Most importantly, plant and animal species are not only a product but essential actors, or 'actants' of the social ecological system, by impacting behaviors and forcing adaptations or adjustments not only at the level of individuals but also at the level of whole municipal economies.

### **Conclusion:**

This paper concludes that the scientific efforts aimed at supporting socio-ecological conflicts mitigation and informing resilient governance models should thus concentrate on improving our knowledge on the joint construction of nature/biodiversity/animal conceptions and nature-society relations. This could constitute a powerful tool to build shared visions and mitigate resistance on environmental and conservation issues. Further, governance models, relying on the type of interdisciplinary framework advocated here, may be more likely to overcome impediments to the acknowledgement of all actors as co-inhabitants and companion species in the hybrid ecological metropolis.

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## Effect of Dipel on Fecundity and Fertility of *Diacrisia obliqua*

\* Lalit Gupta

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**Abstract-** *Diacrisia obliqua* Walker (Lepidoptera: Arctiidae) is a known Pest of various economic crops. It causes a huge loss to farmers. In order to control this pest, dipel (a bacterial preparation) was administered and tested by Leaf Dip Method (LDM) and Topical Method (TM). It was found that dipel causes a drastic reduction in fecundity and fertility from lowest concentration (0.05%) to highest concentration (1.0%). It was also noticed that dipel gives better results under LDM.

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**Key Words-** *Diacrisia*, Dipel, Leaf Dip Method, Topical Method, Pest

*Diacrisia obliqua* is a harmful polyphagous pest causing remarkable damage to several crops. Farmers have been using chemical pesticides to control *Diacrisia*. But Chemical pesticides are injurious to human & pet animals. They also cause development of resistance. They cause environmental pollution. So microorganisms like bacteria, virus & fungi are being used as biopesticides & have been tested against various pests. (Gupta L<sup>1</sup>, 2016). *Bacillus thuringiensis* (B.t.) is a gram positive bacteria. It has been reported to be pathogenic to over 500 insect species. It secretes a number of toxins during spore formation. Endotoxin is one of the most important toxins. It is proteinaceous in nature. (Bulla et. al.<sup>2</sup> 1977). It works on the cells of midgut epithelium upon ingestion.

### Material & Method:

Male & female moths were captured to carry out the experiment. They were kept carefully. These insects ensured the regular availability of insects by reproduction. Adults were kept in glass chimneys but the larva were kept in large petridishes. When the larvae were full grown, they were transferred to pneumatic trough. 10-15 cm thick soil was kept in troughs on their bottom, for larvae to pupate.

Larvae for the experiment were obtained from eggs of females already treated with dipel. The number of eggs laid, hatching and incubation period were recorded.

Dipel is a commercial preparation of *B.t.*. It is a wettable powder. It contains 25x10<sup>9</sup> viable spores of *B.t.* per gram of final product.

To increase the stickyness of dipel, we added 2% skimmed milk powder

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to it and we used two methods to test the effect of dipel on insects.

**1. Leaf Dip method (LDM)** - In this method, leaves that were to be given to larvae to feed on were treated with different concentration of dipel.

**2. Topical Method (TM)** - In this method, a thin film of residue of dipel was prepared and the adults were exposed to it.

Various statistical analysis have been applied to study the nature and relationship between variables, to know the reliability and precision in the results obtained, to test the significant difference between observed and expected values. These statistical methods include- Standard Error, Test of Significance (Chi square Test) and Regression Equation.

**Observation:** The results obtained in different experiments are presented in following table-

**Table – 1**

Effect of different concentrations of “Dipel” on fecundity and fertility in *D. obliqua*.

(Values are mean  $\pm$  S.E.)

Mode of treatment	Concentration(%)	No. of eggs laid	No. of eggs hatched	Hatching(%)	Incubation period (days)
L.D.M.	0.05	120.6 $\pm$ 3.42	69.8 $\pm$ 3.62	50.4	3.24 $\pm$ 0.64
	0.10	126.4 $\pm$ 3.58	63.5 $\pm$ 4.24	50.3	3.56 $\pm$ 0.42
	0.50	110.3 $\pm$ 2.69	44.3 $\pm$ 2.78	40.2	3.92 $\pm$ 0.12
	0.75	81.2 $\pm$ 3.76	23.2 $\pm$ 4.32	28.6	3.94 $\pm$ 0.22
	1.00	40.4 $\pm$ 2.22	4.3 $\pm$ 1.44	8.3	5.42 $\pm$ 0.13
T.M.	0.05	130.4 $\pm$ 2.42	74.5 $\pm$ 2.24	54.6	3.26 $\pm$ 0.52
	0.10	122.5 $\pm$ 3.30	65.4 $\pm$ 2.32	53.4	3.44 $\pm$ 0.31
	0.50	111.2 $\pm$ 2.45	48.3 $\pm$ 2.35	43.5	3.87 $\pm$ 0.23
	0.75	89.4 $\pm$ 3.28	19.1 $\pm$ 3.42	21.4	3.97 $\pm$ 0.13
	1.00	50.3 $\pm$ 2.46	7.7 $\pm$ 1.72	14.6	5.02 $\pm$ 0.12
	Control	346.2 $\pm$ 4.24	310.3 $\pm$ 2.14	89.6	2.78 $\pm$ 0.24

### Result & Discussion:

Under LDM fecundity decreased from 120.6 eggs to 40.4 eggs as compared to 346.2 eggs of control experiment with the increasing concentration of bacterial preparation. Hatching was reduced from 50.4% to 8.3% as compared to 89.6% of control experiment.

Under TM fecundity decreased from 130.4 eggs to 50.3 eggs as compared to 346.2 eggs of control experiment with the increasing concentration of bacterial preparation. Hatching was reduced from 54.6% to 14.6% as compared to 89.6% of control experiment

The treatment of insects with the test preparation also revealed the prolongation of incubation period.

The results show that Dipel has potential to reduce the fecundity and fertility of insect even at a very low concentration (0.05), when administered by LDM or TM. However LDM is more effective than TM.

**Jaques and Fox(1960)<sup>3</sup>, Chandra<sup>4</sup> et. al.(1999), Chaturvedi(2002)<sup>5</sup>**

**and Bajpai(2003)<sup>6</sup>** also worked on microbial preparations against development of different insects. The present findings are in correlation with the results of earlier workers.

However **Cantwell *et. al.*(1986)<sup>7</sup>** did not favour the findings of this investigation.

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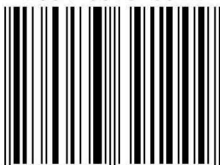


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ISSN 0973-3914



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