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Cover: Basudev Mondal. Title: Travelling Bright.

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- [1] Bhattacharyya, Nabarun, Herbert, Deys Publishing, Kolkata, ISBN 978-81-29-16-6, Pp 32-33, 1<sup>st</sup> ed., 2004.
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- [4] Socio-affective Neuroscience & Psychology 2013. 2013 Donald L. Hilton. This is an Open Access article distributed under the terms of the Creative Commons Attribution 3.0 License (<http://creativecommons.org/licenses/by/3.0/>).

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**COVER:**

**Basudev Mondal**



## PREFACE

This year 2019 is the eighth year of our journal which was started in the month of June, 2011. We are going to complete a decade after two years from now. We have been able to publish the volume of June, 2019 issue successfully as usual. This year also we have been encouraged from different parts of India and abroad. All the members of our journal society are working very hard for the journal apart from their scheduled duties to improve the quality of our journal. The standard of our journal that is prevailing today, which has been appreciated all over the world, is due to the hard working of all our society members.

As per our convention this year we have placed a painting of renowned artist Basudev Mondal. He is also an Associate Professor & H.O.D, Bengali, Dr. B. R. Ambedkar Satabarshiki Mahavidyalaya, Helencha, W.B. Moreover he is one of the members of the board of associate editors of our journal.

As per our motto we are motivated by huge support from each and every section of the society to present a good quality journal before you. I hope this will continue in future.

Thank you.

**Dr. Barin Kumar Roy,  
Editor-in-Chief, IJIRD.**



### EDITORIAL-1

Now days we are blindly driven by the Medical Culture rather than Medical Science that is prevailing around us. Doctors and Physicians are also not free from this. Culture is a habit or custom that is being followed for a long period of time. Medical layman follows this custom by doing self medication. For example, when someone suffers from fever or cold he or she takes Aspirin group of drugs, when somebody gets hurt or pain takes pain killer without consulting the doctor; there are lots of pain killers in the market; sometimes the medicine shop owners or the pharmacist guides him or her. Again in case of asthmatic tendency people take inhaler such as Asthalin so on and so forth. These are all Medical Culture that we all are being driven by.

Science is the knowledge which is the truth and universally accepted but the culture depends upon the custom or tradition surrounding us. As we know  $2 \times 2 = 4$ , it is same in France same in India, same in Germany or any other country; this symmetry or system applied in medicine is called as Medical Science. On the other hand, Medical Culture is a custom or tradition that varies from country to country. For example, if a person goes to a doctor with a condition of fatigue, in India doctor will suggest a blood sugar test, in US doctor will check the blood pressure, in Germany the doctor will suspect a heart disease, again in Finland the doctor will suspect cancer and refer an oncologist, while in France medical practitioner will ask the patient to take rest for a week and enjoy red wine. Under medical practice all the above approaches are correct and will relieve the person from his fatigue condition. But this is not Medical Science but Medical Culture.

One more instance may clarify more, say a person gets his leg pierced by a rusted nail fallen on the ground. The doctor will prescribe to take Tetanus Toxoid injection within 24 hours. We all know Tetanus is a vaccine. The philosophy or science of vaccine is to inject very little amount of germs or bacteria of the disease inside the body so that the body can form antibodies and can fight the bacteria of that particular disease when the body is infected by the bacteria of that disease. Now when the nail has been struck and let us assume that the nail was contaminated by Tetanus bacteria, then our body is infected by Tetanus bacteria. After that what is the use of intake of few more bacteria inside the body by taking Tetanus Toxoid injection. Since the body is already infected so there is no need to get infect the body once more. Again if the nail is not infected by Tetanus bacteria then obviously there is no need of taking Tetanus Toxoid vaccine. But in both of the cases the doctor will prescribe to take Tetanus Toxoid injection within a day or 24 hours. This is what we call Medical Culture. Obviously question arises what is the Medical Science then in this case? According to Medical Science we have to take Tetanus Toxoid vaccine prior to the infection. If we know that we may be hurt or cut by some rusted metal then prior to the incidence we should take Tetanus Toxoid injection. The doctor may suggest the industrial workers or the players those who are prone to infection before going to work or play may take Tetanus Toxoid injection and its effect remains till three months after taking the vaccine. This practice is said to be Medical Science.

Unfortunately most of the time we follow Medical Culture than Medical Science. The Medical Culture has been cultivated and followed amongst the medical society for a long period of time. This Medical Culture has been propagated by the giant multinational pharmaceutical companies. These pharmaceutical companies are most of the time backed by the administration of a country or administrative body formed by many countries along with the political parties in power. This





in other words may be termed as Medical Conspiracy. The conspiracy is established by circular reasoning or logical fallacy; both evidence against the conspiracy and the absence of evidence for it, are re-interpreted as evidence of its truth, and the conspiracy became a matter of faith rather than proof. This conspiracy emerged as a cultural phenomenon from late 20<sup>th</sup> century. The phenomenon is known as “*bandwagon effect*” which is the high rate of uptake of beliefs, ideas, fads and trends i.e. craze in any form of collective behavior that develops within a generation or social group that include diets, clothing, hairstyle, toys and obviously medication and so on..... more than that which is already adopted by others. The pharmaceutical companies bribed the doctors with lucrative gifts and hospitality and had gradually introduced the said Medical Culture in our society.

When a drug is launched by a pharmaceutical company it is required to be approved by the Food and Drug Administration (FDA) of America and after that the drug can be manufactured and marketed. For the approval by FDA a survey research has to be done by an expert group. The expert group then hires 10,000 people (as sample) from different countries throughout the world and apply the medicine on them and thereafter they consider the health parameters of the sample and after statistical analysis if the result is satisfactory the FDA approves the drug (all other countries accept the decision of the FDA as they are the followers of FDA) with a condition that the drug will be monitored for 15 years. If any complications or side effects arise by these 15 years then the approval may be reconsidered or rejected. Now this statistical survey has its own drawbacks. Firstly, the sample size is very small compared to the whole population. Secondly, the survey considers only the cross-country or cross-section data and does not consider the over the period or in other words the time-series data and most relevantly the panel (combination of cross-section and time-series) data which is a statistical fallacy. Thirdly, 15 years period is allowed for detecting complications and side effects but before that the approval is given. Now, for example, after 10 years the complications or side effects are noticed then by that time the company would have already made a huge amount of profit.

Pioglitazone an antidiabetic drug is banned in many countries including France and Germany since 2011 as it leads to bladder cancer. In India, government banned it on 12<sup>th</sup> June, 2013 but after that it took a U-turn under the pressure of drug companies and suspended the ban on 31<sup>st</sup> July, 2013. At present in India there are more than 30 lakh consumers of the same drug, many of them are looking toward its expected side effects, i.e. bladder cancer. Clearly the health care system is not for the benefit of the patient but for the profit of the pharmaceutical companies. In India one drug Metformin an antidiabetic drug marketed Rs.104 Crore in the month of May, 2014. This is the size of a single drug in a particular month for drug industry in India. So you can imagine about the profit of whole drug industry in India as India is a huge market for those companies.

Consider the case of Rosiglitazone which was also an antidiabetic drug that was first marketed in the year 1999 by GlaxoSmithKline (GSK). Since the launch of Rosiglitazone it was clear from the very beginning that it was causing much damage to the patient’s health but GSK bribed the doctors with gifts and hospitality. It paid doctors millions of dollars to attend meeting and to speak for them, in lavish resorts, it used, in the justice department’s own words, sales representatives, advisory boards and supposedly independent Continuing Medical Education



(CME) programs. Dr. John Bose from University of North Carolina reported about the increased risk of heart problems among the patients consuming Rosiglitazone. Knowing this GSK company made a direct contact and silenced Dr. John Bose. In 2003, Uppsala Drug Monitoring Group of WHO (World Health Organization) contacted GSK with a report of heart problems among the patients using Rosiglitazone. GSK carried misleading and false claims about the safety profile of its diabetes drug Rosiglitazone, even suggesting that there were cardiovascular benefits from the drug, whereas in reality even FDA label said there were cardiovascular risks. Between 2006 and 2007 GSK withheld the results of all the internal meta-analysis (which reconfirmed the cardiovascular risks for the patients) from FDA. In 2007, Professor Steve Nissan and colleagues published a landmark meta-analysis. This showed 43% increase in the risk of heart problems in the patients on Rosiglitazone. In the year 2010 after getting much adverse reports from all across the world the drug Rosiglitazone was banned by FDA. Finally, in 2012, GSK was held guilty and was fined \$3 billion. But GSK was still in profit out of the whole scam since the total sale of Rosiglitazone were \$10 billion.

In conclusion, I must say, being so-called intelligent being we should not blindly follow the Medical Culture that are now-a-days being highly dangerous for our health and wellbeing. We should rather think, educate ourselves and act in a scientific way to lead us towards a better life.

**Dr. Barin Kumar Roy,  
Editor-in-Chief, IJIRD.**



## EDITORIAL-2

Recently, it is a talked about subject that the research works done in India is merely repetition of the works done elsewhere.; nothing new or innovative ideas or products are coming up as an outcome of Indian research. Even government has started questioning on this and imposes restriction on the choice of research topics and research areas. Is it true in all the cases? We do not be so pessimistic. Indian space research, nuclear research, IT research, materials research are at par with the world standard. In some of the cases indigenously developed systems are even better than those possessed by other countries. But it is true that in some of the cases there is plagiarism and repetition of research. But that is not the overall scenario. We should not always question the integrity of the researcher or academicians; that put bad impacts on the researchers and degrades their morality. We need to find the cause behind lower grade research work in some of the cases.

When research, or better to say quantum of publication, becomes the criterion for promotion in the education sector, there is a mad rush in doing research and achieving the goal by hook or crook. In India, there is dearth of teaching faculties and non-teaching staff in almost all schools, colleges and universities. Beside formal teaching work teachers are often assigned with administrative and social activities. They are so much engaged throughout the day that there is little scope for innovative thinking and doing research. In my opinion, this is the major cause behind the low quality research publications in schools and colleges. In reputed universities and research institutes where the number of academic staff is sufficient the quality of research is good enough. Also, they get better research laboratories, modern equipments, good library, and access to national and international journals and opportunity of collaboration those lead to better research. But, in most of the colleges there are no laboratory facilities, access to books on advanced topics and journals are so limited, how we can expect innovation from them. Kudos to those who amongst these constraints are doing research and are publishing in reputed national and international journals.

Also, it is observed that government funding in basic research and higher education is going down over the years. It is not possible for the colleges to extend monetary help to teachers in attending conferences or organizing workshops or seminars or to go to advanced laboratories at the universities or research institutes for some period of time to do research. Owing to this lack of research environment and being over engaged with other activities their motivation and work ethics are draining out. So, government should think in a different way, should treat differently a teaching institute with a research institute. Promotion of teachers should not be linked with research. Let them do research on their choice of subject and the expertise they have in any field. Applied research people can do in a better research institute; these are not possible in all institutes or colleges. So, interdisciplinary and basic research should be encouraged in these institutes. Who knows some innovative ideas may crop up from this. I believe that, freedom of thinking must lead to innovation, let there be free exchange of thoughts and ideas. We all want to see India going to the top in all sectors. Not blaming each other, people from all walks of life, from all professions should join hands in the development of India.

**Dr. Biswajit Maiti,  
Managing Editor, IJIRD.**



### EDITORIAL-3

It is happy to announce that June volume of IJIRD, 2019 is ready to distribute among the authors and society members which includes a variety of papers. It covers all corners of the science and humanities though within a short period of time. Some members are unable to give papers in this volume due to running examinations under Semester system even evaluation of examination papers. Indeed it is true that some of our members were engaged in the election so that they were very busy in the schedule. Now all are free. So, hope that all of you are very happy but suffering from summer heat everywhere in West Bengal except in hills. Now in Darjeeling and Kalimpong they are facing another problem. Heavy cold temperature and rain and storms are the general phenomena in hill areas of West Bengal. We are in our environment and within the territory of various bio-resources.

Keeping these in mind, we are trying to develop knowledge, attitude and skills every day to fight harsh conditions. Research and innovation among them are outcome for all round development of our society. We are trying to make it complete in all ways. Researchers are doing research, society getting benefit from the result not from technology based research but research of any kind in anywhere. On that ground, I convey my best wishes to all researchers, scholars, readers and knowledgeable persons who helped us in various ways to make the research journal volume complete. Hope that our journey will reach at high level point to summarize a goal which is multidirectional and multiracial but journey towards infinitive that must be enriched through a large number of experts in various ways who are always with us. Thanks again for the contributors who have made effort shiny, morally and fruitfully in a common platform for enriching the text as per their effort.

With regards,

**Dr. Debabrata Das,  
Additional Editor, IJIRD.**





17. বাংলা ভাষা-সাহিত্য গবেষণা : প্রযুক্তিগত সীমাবদ্ধতা ও সম্ভাবনা দীপকচন্দ্র বর্মন  
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## DHŪMĀVATĪ: A DIVINE REPRESENTATION OF WIDOW PROBLEM OF HINDU SOCIETY

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### Abstract

*Hindu widows have long been treated as a social group. They have been bounded with several religious performances like worship, fasting etc. and have been restricted in each corner of life. In short, most of them have been tortured, even exploited by socio-religious system executed by familymen etc. This torturing turned many widows vindictive towards others, i.e. virgins and with-husbands, especially towards the later. Traditional mother-in-law versus daughter-in-law clash gets an evil dimension if either is widow. In other words, Indian society has witnessed the relay of torturing system in the widow class. Our literatures have also recorded this. Even today parents dare to get daughter married to someone, whose family includes widow. Of course there are exceptions and situation has been rectified to some extent in modern society but we must remember that i) exceptions are exceptions and ii) problems are still there.*

*One deity, Dhūmāvātī, the seventh member of Mahāvidyā series represents both tortured as well as torturer features of typical Hindu widow. She has been described as old, ugly, quarrelsome and crooked woman, suffering from hunger and thirst. Struggle and exploitation is exhibited at her total appearance. Her nature and behaviour might be a result of such struggle and exploitation. So she is stated terrific as to be decorated with bones as ornaments, chewing bones, swallowing the world etc. Unlike the icons of other Mahāvidyās Dhūmāvātī has a human look and the feature 'widow' is her distinguishing feature among female evil deities. This widow deity is not merely a myth, rather is seen in everywhere in Hindu society.*

**Keywords:** Tortured Hindu widows, socio-economic scenario, revenge on juniors, represented by deity Dhūmāvātī, relay system of torture.

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She is ugly. She is tall, thin old woman with faded, wrinkled skin and loosened breasts. She has a larger nose. Her teeth have fallen. Her oily hairs are tied. Her garment is dirty. She is suffering from hunger and thirst. She has a negative attitude towards the whole world. This woman is crooked in nature. She never looks straight. She is always angry and she loves to quarrel. Her appearance is terrific.

She is typical Hindu<sup>1</sup> widow. Parents would think twice to get their daughter married to someone, whose family includes more than one widow.

Unlike the widower widow has been crystallized as a class in the society. Of course the situation has been changed to a noticeable extent especially among urban and among educated people; now they are allowed to wear coloured garments, to take



non-vegetarian diet, they are exempted from periodic fasting as prescribed by religious tradition etc. They are even welcome to get remarried. Yet this is not generalized scenario throughout the country. They are widows till date. A common widow is helpless to see others' happy and successful conjugal life. Many widows were left aside by family, even by children. They had to lead single, lonely life, mostly distressed with poverty and hunger. We may note the threefold starvation- i) due to religious fasting at occasions, ii) due to poverty and iii) due to absence of sexual relation. On the contrary many widows were sexually abused behind the veil. Once public knew that-entire allegation of 'misleading' the adulterer were vested upon the widow. Consciously or unconsciously she has to suppress her agony. If not fully suppressed, it is often exposed through misbehaviour or quarrelling or at least politicizing her periphery. Unstable status sometimes led them to influence some financially strong male members of the families and to combat with their spouses. Traditional mother-in-law versus daughter-in-law clash gets an evil dimension if either is widow. The Hindu society has witnessed this conflict during generations. All these problems stated above are not always loud, rather played behind drop scene.

Traditionally Indian grooms are senior to respective brides so far age is concerned. Difference of age would reach fifteen years, twenty years and so on. The wife, therefore, would have been widowed at early or middle youth. Many of those miserable ladies had been alleged for killing i.e. 'eating up' husbands. Then they had to undergo the orthodox do's and do-not's, the suffocating puritan lifestyle, lack of which they would suddenly find in the younger girls. Many of them would turn vindictive, sometimes sadistic towards those youngers.

Hindu widows got tortured by contemporary socio-religious structure but ironically many of them returned that in several forms to the weaker members of their family. They put restriction on the young chaps from enjoying youth. Any silly matter could lead them to reach the high altitude of quarrelling. The phrase 'quarrelsome widow' (*'jhagrāte bidhabā'* in Bengali) is a big evidence of this manner. Many widows occupied the designation of 'almighty' within the household. Members of the family of notorious widow tried to keep her pleased like evil goddess.

Indeed she is a goddess. The physical and psychological features of an ugly, troublesome widow at the beginning our discussion are just paraphrased from the description of *Dhūmāvātī*, the seventh member of the *Mahāvidyā* series. Here is the well-known Puranic story. Lord *Śiva* objected his first wife *Satī* to attend the festive sacrifice organized by her father *Dakṣa*. Neither of them was invited there. *Satī* became furious and frightened *Śiva* with ten divine forms, namely, *Kālī*, *Tārā*, *Śoḍaṣī*, *Bhuvaneśvarī*, *Bhairavī*, *Chinnamastā*, *Dhūmāvātī*, *Vagalā*, *Mātāṅgī*, and *Kamalā*<sup>2</sup>. Five among these icons *Kālī*, *Tārā*, *Chinnamastā*, *Dhūmāvātī* and *Vagalā* are terrific so far appearance including posture is concerned.

Puranic description elevates an ugly, quarrelsome widow to a divine status, however terrific, by adding some other features, which may generate many contradictions also, to the icon of *Dhūmāvātī*. Let us study the combined image as presented in *Dhyānamantra* and *Stotra* attributed to *Dhūmāvātī*. These are found in many collective books of Sanskrit hymns and Mantras like *Stavakavacamālā*. One may also refer to the books, where the



method of worshipping *Dhūmāvātī* is compiled.

PHYSICAL FEATURES	ACTIONS
i) She is on a chariot, at the peak of which a crow is seen.	i) She is always dancing.
ii) She is holding a winnowing tray <sup>3</sup> .	ii) She is playing a large bell.
iii) She is ornamented with bones.	iii) She is holding a javelin.
iv) The Sun and the Moon are her right and left earrings.	iv) Her speech is slurred.
v) She has a necklace of stars.	v) She is uttering ' <i>ḍimḍim</i> '.
vi) There is an iron-ring at her one ankle.	vi) She is laughing ' <i>ṭakṭak</i> '
vii) She is showing her teeth, especially the canines.	vii) She is chewing piece of bone and demons named <i>Caṇḍa</i> and <i>Muṇḍa</i> making sounds ' <i>kaṭkaṭ</i> ' and ' <i>maṭmaṭ</i> '.
viii) Her pelvis is heavier.	viii) She has entered the burning ground.
ix) Her skirt is girdled of large snakes.	ix) She is excited with drinks and blood.
x) She is nude.	x) She is swallowing the world at pleasure.
xi) She has extended arms.	
xii) Her eyes are reddish.	
xiii) Her face is dangerous with crooked brows.	
xiv) She is carrying a rosary for muttered prayer, which is sounding ' <i>jhamjham</i> '.	
xv) She is carrying rosaries of heads of demons around her neck and around her matted, yellowish grey hair above her head.	
xvi) She is carrying bunch of skeletons along with many large snakes at her shoulders.	

It is noteworthy that these are not arranged in any certain order. Even same type of description is given more than once. Let us sort out the contradictions among the descriptions stated earlier and these extended features.

- i) She cannot be nude, if snakes are girdled her skirt.
- ii) She cannot show teeth, nor can chew bones if those are fallen.
- iii) She cannot have a heavier pelvis, if she is thin as well as hungry and thirsty.

- iv) Her hair could hardly be matted above the head and at the same time hanging single braided.
- v) She is not described as having more than two arms but she is holding winnowing tray, rosary, large bell and javelin.
- vi) It is difficult to imagine a person laughing '*ṭakṭak*', uttering '*ḍimḍim*' and chewing skeleton '*kaṭkaṭ*' and '*maṭmaṭ*' at the same time.
- vii) Widowhood is the salient feature of *Dhūmāvātī*. How could she get decorated with such luminaries as



ornaments? If so ornamented, how is she marked as widow?

Our initial description was based on the *Dhyānamantra*, i. e. verses of meditation for *Dhūmāvātī*. That was clearly conceivable. The hymn seems to be an extension of the idea of a terrific woman. Physical features of all the other *Mahāvīdyās* make notion of some divine or supernatural or at least, unnatural, whereas *Dhūmāvātī*'s appearance does not reach the status of deity. Rather adjectives like 'Kūṭilā' (crooked), 'Bhayadā' (terrific) or 'Kalahapriyā' (quarrelsome) indicate the nature of this character and not the feature of the idol. There are some similarities among *Kālī*, *Tārā* and *Dhūmāvātī* such as rosary of head, canine teeth, laughing or smiling etc. but these are minor features of *Dhūmāvātī*. Her salient feature is ugliness in appearance as well as in nature. We, therefore, may assume that the motive of the anonymous author of the hymn was to put terrific actions on *Dhūmāvātī*'s character one after another. *Dhūmāvātī* unlike other *Mahāvīdyās*, appears like a human being and reaches the status of deity, however harming. The second verse of meditation tells her as giving boon (*Varāṅvitā*). This could be a generalized comment. Here the chief motive of worshipping evil deities can be traced back: 'Please do not harm me'. They are giving boon means they are not harming! So *Dhūmāvātī* is also referred as 'Maraṇabhayaharā' (*Dhūmāvātīstotra* verse 8).

So far the mentioned Puranic story is concerned, widow form might have conveyed a message to *Śiva* - 'You are dead for me'. Kinsley (1987) says, 'It is difficult to escape the conclusion that the authors of these myths were trying, at least in part, to assert the superiority of the *Devī* over *Śiva* (and by implication other male gods as

well). Although the *Devī* plays the part of the gracious, submissive wife in her form as *Satī*, willingly submitting herself to her husband *Śiva*, she contains fearsome, independent aspects that easily overwhelm *Śiva* when they do appear.<sup>4</sup> Yet the iconographic features of *Ṣoḍaṣī*, *Bhuvaneśvarī*, *Bhairavī*, *Mātaṅgī*, and *Kamalā* do not create so much anxiety like other *Mahāvīdyās*, however they carry weapon or not. So, let it be assumed that these deities had being worshipped since earlier age and the concerned text might have been an attempt to connect them with the consort of *Śiva*.

There are other theories regarding the origin of *Dhūmāvātī*: i) *Satī* threw herself into the sacrificial fire at the house of *Dakṣa* and extensive smoke generated in the form of *Dhūmāvātī*. ii) Hungered goddess ate up *Śiva* and her body was smoked. *Śiva* appeared once again and called her widow and *Dhūmāvātī*. He instructed her to omit conch-bangle and vermilion<sup>5</sup>. Ramtoshan Vidyalamakar quotes these stories at *Pranatoshani Tantra* (1335 Bengali era) from *Nārada Pañcarātra*. Hansanarayan Bhattacharya (1986) says that the connection of smoke indicates the destructive feature of *Dhūmāvātī*<sup>6</sup>.

Many deities and instructions of worship to them include horrid elements in *Tantra*. The emergence and evolution of such performance is still being discovered and discussed by great scholars of both east and west. We must keep this trend of repulsiveness in mind while analyzing the feature of *Dhūmāvātī*. This could have made the author of the hymn dedicated to *Dhūmāvātī* make so much contradictions in the description. Any market-oriented book of Tantric worship will also illustrate this in detail.



Fear or terror is the primary source of deities like *Śani*, *Manasā* etc and many of the evolved as popular deities. So we have *Rudra* as *Śiva*, *Vighneśa* as *Gaṇeśa*<sup>7</sup> and so on. *Dhūmāvātī* is not the only evil female deity in Hindu religion. Some female deities deserve to be mentioned in this context.

- i) *Nirṛiti*- Vedic evil goddess. Causes death, dissolution, destruction, calamity<sup>8</sup>. Sometimes referred as the Earth full of sorrows<sup>9</sup>. Mentioned in connection of misfortune etc. in the *Purāṇas*<sup>10</sup>.
- ii) *Alakshmi*- Goddess of misfortune. Ugly complexion. Said to be emerged from the ocean before the emergence of *Lakshmi* and therefore, sometimes mentioned as *Jyeṣṭhā*<sup>11</sup>. Wife of *Duḥsaha* (*Liṅgapurāṇa* and *Mārkaṇḍeyapurāṇa*) or *Uddālaka* (*Padmapurāṇa*). Dwells in the residences, where everything is bad and ugly. *Liṅgapurāṇa* and *Padmapurāṇa* say that her husband had left her. There is a ritual to banish *Alakshmi* at the dawn of the occasion of *Lakshmi* or *Dīpavali*.<sup>12</sup> Negatively popular in society. People believe that *Alakshmi* seizes the wealth and prosperity of those people, who are unfair and dishonest. This is approved by the mentioned *Purāṇas* also.

*Dhūmāvātī* is distinct from other evil goddesses in one major respect of widowhood.

There are more evil goddesses in Brahmanical and also in *Mahāyāna* Buddhist sect. Scholars have revealed the similarities and dissimilarities among them

and also the possible influence of them on one another. Interested people will study 'Elements of Hindu Iconography' by T. A. Gopinath Rao, 'Hinduder debdebi Udbhab o Kramabikash' by Hansanarayan Bhattacharya, 'Buddhist Iconography' and 'Bouddhader debdebi' by Benaytosh Bhattacharya and such other works.

The discussion we have so far indicates that the socio-religious taboo regarding widow was emerged nearly the end of second millennium of Christian era. This may be a reason behind the silence of Sanskrit literature about widows. It is also true that if some practice is recorded in literature, it must have been emerged and spread earlier (Vide Note no. 2). Thus we may agree that widow problem should have been emerged since late ancient age and was spread as well as developed through early medieval age.

Our mission is to show that *Dhūmāvātī*, the non-aristocrat, evil deity represents the typically miserable, tortured and torturing widow class. Sanskrit literature did not keep any prominent account of the widow status. Either their situation was not so miserable or they were overlooked by the Sanskrit court-poets<sup>13</sup>. However later Indian literatures sufficiently depict the widow problem. Let us review the status of few well known widow characters from Bengali literature. Only those characters, in which widow problem is reflected, are chosen here and creations of only three of eminent Bengali authors are taken for this discussion. This journey is to reveal the widow problem represented by the icon *Dhūmāvātī* so extended examples are left for the later researchers.





AUTHOR	TIME	PIECE OF LITERATURE	CHARACTER	STATUS
Bankim Chandra Chattopadhyay	1838-1894	<i>Bishbriksha</i> (1873)*	<i>Kundanandini</i>	Tortured by socio-religious structure. Sexually starved. Unconsciously became problem in other's conjugal life.
		<i>Krishnakānter will</i> (1878)*	<i>Rohini</i>	Tortured by socio-religious structure. Sexually starved. Became problem in other's conjugal life. Unconsciously at first, later consciously.
Rabindra Nath Tagore	1861-1941	<i>Chokher bali</i> (1903)*	<i>Rajlakshmi</i>	Tortured by socio-religious structure. Vindictive towards daughter-in-law.
			<i>Binodini</i>	Tortured by socio-religious structure. Sexually starved. Jealous to others' happy marriage. Deliberately became problem in their conjugal life.
		<i>Jogajog</i> (1929-1930)*	<i>Shyamasundari</i>	Tortured by socio-religious structure. Sexually starved. Deliberately became problem in other's conjugal life.
Sharat Chandra Chattopadhyay	1876-1938	<i>Bardidi</i> (1907)*	<i>Madhabi</i>	Tortured by socio-religious structure. Sexually starved. Ultimately submissive to own status.
		<i>Charitrahin</i> (1917)*	<i>Sabitri</i>	Tortured by socio-religious structure. Sexually starved. Ultimately submissive to own status.
			<i>Aghormayi</i>	Tortured by socio-religious structure. Extreme vindictive towards daughter-in-law.
			<i>Kiranmayi</i>	Tortured by socio-religious structure. Sexually starved. Deliberately became problem in other's normal life.
		<i>Shesh prashna</i> (1931)*	<i>Kamal</i>	Critical character. Tortured by socio-religious structure. Exposes herself as progressive but submissive to own external status of widow, i. e. clothing and fooding. Consciously makes affair with other's proposed groom <sup>14</sup> .

(Year of first publication as a book is marked with asterisk)

So far financial dependence and sexual starvation are concerned, widow class have to struggle for acquisition of ruling position in the male-dominated society and when some widow gets a junior, whom she can treat as a subordinate, she could have enjoyed a chance to turn destructive. So *Rajlakshmi* and *Aghormayi* took revenge of their solitude on their daughters-in-law. *Binodini*, *Shyamasundari* and *Kiranmayi* intentionally disturbed others livelihood out of frustration. *Kundanandini* and *Rohini* unintentionally became problem in the happy conjugal life of others. Of course *Rohini* enjoyed the adulteration, but

*Kundanandini* did not. As a result of such relationship, life of *Nagendra-Suryamukhi* was stormed and that of *Gobindalal-Bhramar* was totally destroyed respectively. Only common feature among these widows is that the problems aroused in their peripheries are generated from their widowhood. That is the destructive form of Hindu widow<sup>15</sup>. We may here refer to another character created by Lila Mazumdar, much popular among children. She is 'Padipisi', who lost a box of jewelry due to Dementia and repeatedly alleged all the family-members for losing it, hence created a century-long mystery over it. Her son



wrote at his secret diary, 'Respected mother coming down from the bullock cart at the yard submitted the Burmese box at my hands and forgot everything and as usual she is heckling the whole family mates.'

It is often seen that the common feature of tortured or heckled people to take revenge on someone, who is a weaker personality and not on them, who tortured them. A working man vomits his suppressed anger on family after getting misbehaviour at workplace. Even today sometimes children are beaten or at least severely scolded almost without reason by father, who is heckled at his office and again they face the same action by mother, who has also experienced unreasonable misbehavior from father. Possibly the stronger image of the torturer protects him from being victim of revenge. For example, *Kiranmayi* was extremely tortured, even bitten frequently by her widow mother-in-law *Aghormayi* but she could hardly counteract, whereas she put a lifelong stigma on *Dibakar*, who never did any wrong to her.

Two of the characters mentioned above, namely *Rajlaksmi* and *Aghormayi*, who had children were much destructive in nature. They had the enjoyed the short-term accomplishment of conjugal life, the loss of which might lead them to turn tyrant. Again both of them had male child, as a result of which they had to see the married girls, who were not their biological daughter, rather appeared as enjoying their sole supports of their widowhood, their sons.

On the contrary we have *Madhabi* and *Sabitri*, who sacrificed own pleasure and rendered themselves to widow custom. They suppressed and sacrificed their passion as well as their pleasure but failed to extinguish the fire of widowhood. *Kamal* is of course a critical character, who regularly

argues for enjoying new pleasure and to withdraw oneself from the love of past in all respect. Ironically this lady continues the diet prescribed for widows even after having another relation. There are also characters like *Annapurna* in '*Chokher bali*' and *Shailabala* in '*Prajapatir nirbandha*', who took their widowhood sportingly, cooperated with members of the family and over all enjoyed life without expectation of personal pleasure. We can never forget *Indir Thakrun* in '*Pather Panchali*'<sup>16</sup>, who got emancipated from lifelong torture by her pathetic death. These are exceptions indeed. Almost every widow had to or better to say, have to pass through uncountable obstacles, which cause a radical change in their attitude. Exceptions are everywhere exceptions. Those cannot be taken as general. We all have witnessed more or less both distressed and troubling widows inside and outside our families. Summary of our discussion is as follows:-

- i) Most of the Hindu widows have been tortured by socio-religious structure, which was executed by members of the family, neighbours etc.
- ii) Such struggle caused many of them to turn vindictive or at least troublesome towards others' happy life.
- iii) The icon of *Dhūmāvati* represents this category of troublesome widows.

Unlike the other *Mahāvidyās* *Dhūmāvati* is embodied total human being. All the other icons of this series have appeared with more or less divine or supernatural syndromes such as more than two hands, cutting own head or beating some demon or excessive ornamentation, appearing on throne etc. In other words, these icons are seemingly idols but *Dhūmāvati* is seemingly human being.



*Dhūmāvātī* exposes herself in every corner of Indian society. She has lost youth and the right to decorate herself; she is suffering hunger and thirst. She is vindictive. She is

destructive. She is a living terror even towards innocent girls, who would likely to turn to *Dhūmāvātīs* of future.

### Notes and references:-

1. Widow problem is not so prominently seen in Muslim or other communities of India.
2. Vide *Braddharmapurāṇa*, *Madhya Khaṇḍa*, 6<sup>th</sup> *Adhyāya*.
3. Hansanarayan Bhattacharya indicates that this may be a link between *Dhūmāvātī* and *Śitalā* as the later is described to be '*Sūrpālaṃkṛtamastakā*'. He further says that the influence of the icon of *Cāmuṇḍā* on the icon of *Dhūmāvātī* is not ignorable. Vide H.B. 1986 and *Mārkaṇḍeyapurāṇa* ch. 84. There are some similarities like thin figure, chewing bones, rosary of heads etc. between the two deities. Vide *Mārkaṇḍeyapurāṇa* ch. 84. If so, we may conceive that the *Tantra* texts regarding *Dhūmāvātī* were composed after ninth century A.D. because scholars opine that composition and compilation of *Mārkaṇḍeya Purāṇa* was completed within the mentioned period. Vide Pushpendra Kumar. (2005). in introduction, *The Mārkaṇḍeya Mahāurāṇa*, pp. v-vi.
4. Vide D. K. (1987). *Hindu Goddesses*. p. 164.
5. Was this piece of text composed at eastern India or at Bengal? In Bengal wearing conch-bangle is a symbol of married Hindu woman, whose husband is alive.
6. For details vide H. B. (1986).
7. Vide G. R. (1914). Vol. II. Part I. p. 39-71.
8. *Ibid*. Vol. I. Part I. p. 35-67. See also D. K. (1987). *Hindu Goddesses*. p. 13.
9. Vide *Nirukta* 2/2 and *Ṛgveda* 1/164/32 and *Mārkaṇḍeyapurāṇa* ch. 47. *Sayaṇācārya* interprets *Nirṛiti* as '*nirramaṇā bhūmi*' (land, where pleasure is no more). Derivative meaning of the word is completed departure, which may also be interpreted as death.
10. Vide *Mārkaṇḍeyapurāṇa* ch. 47.
11. Vide *Limṅapurāṇa Uttarakhaṇḍa* ch. 6, *Mārkaṇḍeyapurāṇa* ch. 47, *Padmapurāṇa Uttarakhaṇḍa* ch. 116, *Paurāṇik Abhidhān*.
12. D. K. (1987). *Hindu Goddesses*. p. 34.
13. The topic is discussed in *Smṛtis* especially in connection with disputes regarding remarriage and inheritance of property. A word '*Avidhavā*' is used in some pieces of literature, as in 6<sup>th</sup> act of *Svapnavāsavadatta* drama to indicate a prosperous woman, whose husband is alive. Yet in this and other pieces of classical Sanskrit literature does not present widow problem as modern Indian literature did.
14. Sharatchandra somehow protected Kamal from such allegation by showing Manoramā, proposed bride of Ajit (who got attracted to Kamal), made a relation with Shibnāth, the second husband of Kamal. Cross multiplication!
15. Characters like '*Damini*' of '*Char Adhyay*', '*Rajlakshmi*' and '*Kamallata*' of '*Shrikanta*' are excluded in this list as they did not lead typical widow life. '*Hira*' of '*Bishbriksha*' is would have been a good example of destructive widow i. e. of *Dhūmāvātī* but this character is mentioned as not accustomed with typical widow life. She could have performed all destructive actions narrated throughout the novel even if she had been an unmarried lady. However her lust for conjugal relation, her attitude towards happy couples and the destruction she caused in their life resembles the destructive temperament and actions of



*Dhūmāvātī*. On the contrary the widow heroine of the short story 'Daini' by Tarashankar Bandyopadhyay is quite similar to *Dhūmāvātī* so far the physical feature and destructive imagery are concerned. It is only the readers, who can empathize to the loving nature of that poor lady, the victim of superstition, who never knew herself, rather strongly believed in the stigma rustic people put on her.

16. The novel depicts the horrible widow characters like 'Seja Thakun' and 'Sakhi Thakrun'.

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## The Level of Social Well-being of Slum Population with Special Reference to Satisfaction Index: A Study of Kalyani Town, West Bengal

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### Abstract

*The slum is the most critical challenges issues in urban premises during the 21<sup>st</sup> century. In modern civilization it is the matter of concern of misbalanced of urbanization. The slum is the cause of the changing of the urban landscape. The high of population density population with a less standard of housing, lack of basic facilities, street light, road conditions, and garbage disposal are most relevant features of slums in urban premise. Slum and informal settlement is the product of modern civilization. This paper analyzed the level of social well-being and relationship with economic prosperity. This paper focuses on the study in objective social well-being with satisfaction level in selected parameters like, health, education, drinking water, waste management, road conditions, social security, police security, drainage system, leisure and street light of slum population Ward No.1 and Ward No.17 in Kalyani Municipal Town. Finally, this paper has drawn some conclusions and suggestion to reduce the critical problems and to develop the well-being of the concern population.*

**Keywords:** Municipality, Slum, Social well-being, Index, Kalyani, West Bengal.

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### Introduction:

Social well-being is a general term to express for the condition of an individual or group. It includes the excellent relationship surrounding the neighbourhood and having a good support system from one's family. Social well-being is the degree to which a population's needs and wants are being met. A good society based on market exchange, for example, is one in which all People have sufficient income

to meet their basic needs, where all are treated with equal dignity and have equal rights, where they have reasonable access to their needed range of services and where their opinions are heard and respected. The quality of a society can be measured by its success on variables reflecting such desired data, as can variations within a society (Johnston). Social well-being is a significant issue in welfare and radical geography in Human geography, which emerged in the area of geography after



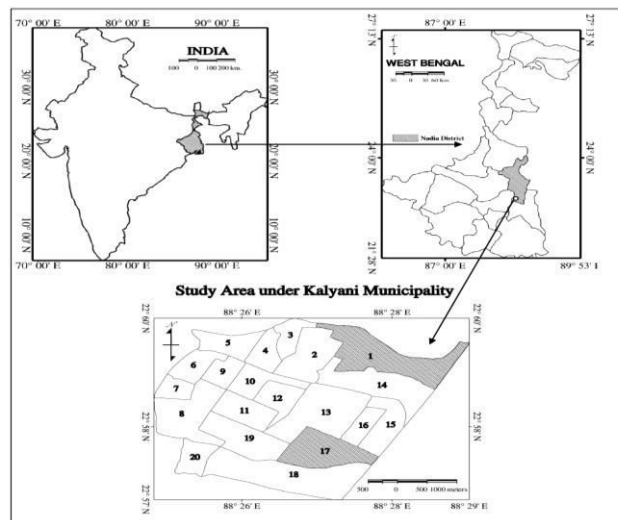


the quantitative revolution of the 1960s, based on the philosophy of positivism, failed to address the then pressing social problems adequately. The slum is a densely populated urban informal settlement characterized by substandard housing and squator. Also, it is part of a changing the landscape. For the cause of rural poverty, most of the unskilled village people migrate from rural to urban, and they settled their home in the vacant land, besides road and railways with unplanned.

88°28'38"E and 22° 59'36"N to 22°57'00"N. In surveyed Municipality, there are 20 wards in concern area. According to 2011 Census the total population of Kalyani Municipality is 100620. The total Municipal area covered 29.14 sq. Km. Two sample wards i.e. ward no.1 and ward no.17 have been selected to explore the present study, which is the highly concentrated in slum form within the Kalyani Municipality. (Figure 1)

**Study Area:**

Kalyani Municipal Town has been chosen as the study area. It is a new planned city which is located in Chakdah C.D. block in the Nadia district, West Bengal, India. The geographical extension of Kalyani Municipal area is 88°24'44"E to



**Figure 1 Location Map of the Study area**



### Objectives:

The fundamental aims and objectives of this study are to examine the conditions of social well-being of slum dwellers within Kalyani municipal area. These are kept as under:

To know the conditions of social well-being of slum population in Kalyani Municipal area.

To find out how the level of satisfaction of the respondents varies with income level in the slum area by creating the weighted satisfaction index.

To understand the pattern of social well-being of the slum population within the town. And

What measures could be taken to mitigate the permanent problems found in area.

### Data Base and Methodology:

The present research paper is basically prepared from primary data which has been collected with the questionnaire designing. For collection of household data, the random sampling has been taken with 5% significance. Secondary data is used also for showing the distribution of the slum population in the present study area. Some methods are utilised for data interpretation which is below now:

After field, for the present study, the spatial variation of concentration of slum population has been analyzed by the 'Location Quotient' formula.

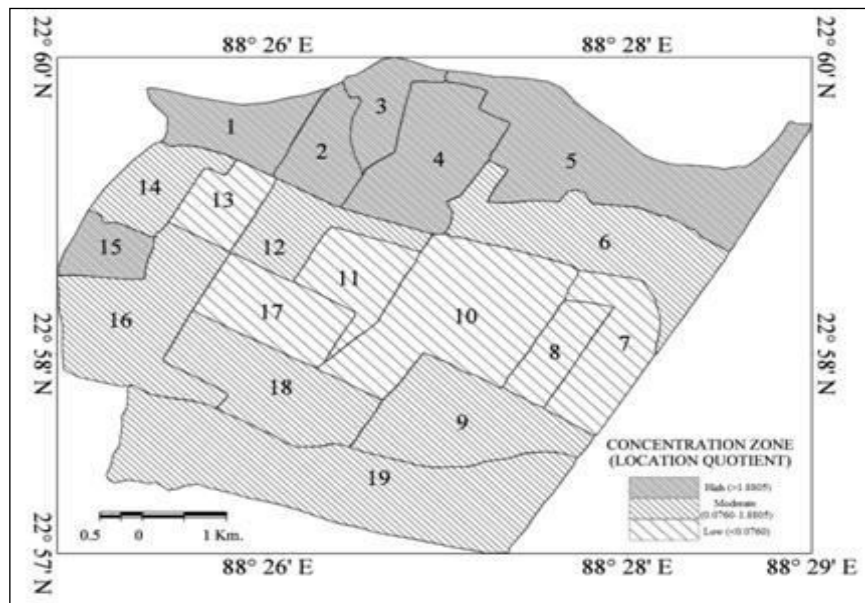
Location Quotient (L.Q) =  $(P_{ij}/p_i) / (P_j/p)$ , [ where,  $P_{ij}$  = slum population of a given ward,  $P_i$  = total population of that given ward,  $P_j$  = Total Slum population of entire Municipality,  $P$  = Total population of entire Municipality]

To determine the limit of satisfaction and dissatisfaction with the different environmental variables by the respondents, the following *Satisfaction Index* developed by Hall, Yen and Tan (1975) was selected.  $SI = (fs - fd) / N$  [where,  $SI$  = Satisfaction Index,  $fs$  = Number of Satisfied Respondents,  $fd$  = Number of Dissatisfied Respondents,  $N$  = Total Number of Respondents, The highest value of this index is +1 and the lowest value is -1]

### Results and Discussion:

Slum Population Concentration-ward wise under Kalyani Municipality:

On the basis of Census Data 2001, High Concentration is (with L.Q. range  $> 1.8805$ ) and Moderately Concentration (with L.Q. range  $0.0760$  to  $1.8805$ ). Low Concentration is (with L.Q. range  $< 0.0760$ ). By 2011 Municipality data, High Concentration (with L.Q. range  $> 1.2854$ ); Moderately Concentration (with L.Q. range  $0.5632$  to  $1.2854$ ) and Low Concentration zone ( $< 0.5632$ ). In 2001, there are 19 wards, among them six wards (v. z. ward no.1, 2, 3, 4, 5, and 15) are mostly concentrated of slums which are occupied in the most of the Northern part of the Municipality and one ward in Western part (Figure-2)

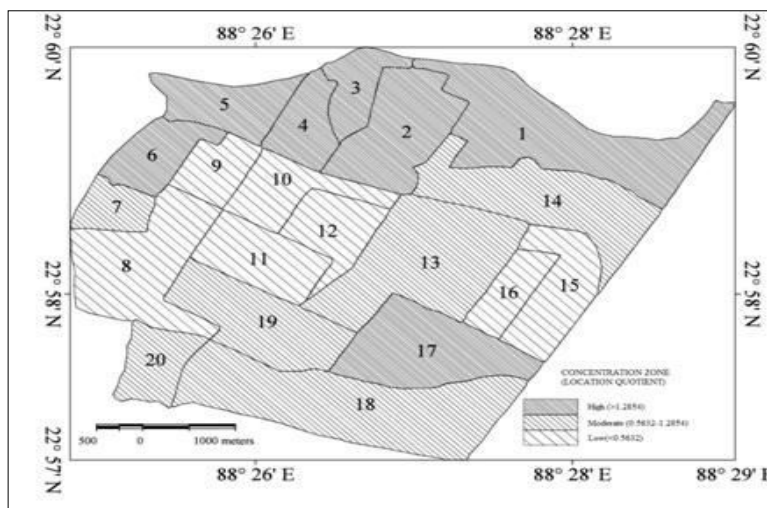


Source: Kalyani Municipality, W.B.

**Figure 2 Spatial Concentration of Slum Population in Kalyani Town, 2001**

Besides on the basis of 2011 Municipality data there are 20 wards, among them mostly 7 wards (v. z. ward no.1, 2, 3 ,4, 5 ,6 and 17) are very

much concentrated of slums which are occupied in the most of the Northern part of the Municipality and one ward in Southern part (Figure 3).



Source: Kalyani Municipality, W.B.

**Figure 3 Spatial Concentration of Slum Population in Kalyani Town, 2011**



### **An Analysis of Level of Satisfaction of Slum Population:** (*Construction of Satisfaction Index and Weighted Satisfaction Index*)

Before discussing the evaluation of weighted satisfaction index, the present research has been identified the objective wellbeing of the slum population. At this point, a study has been considered the subjective well-being of the slum population. Here, it will be evident that how the standard of well-being dramatically varies in slum area due to the varying nature of their economic attainment. So, for determining the degree of satisfaction, the weighted satisfaction index has been calculated. For this purpose, initially, the following simple satisfaction index developed by Hall, Yen and Tan (1975) has been selected, and then the researcher has given weightage to the individual variables chosen to measure Satisfaction Index. Simple satisfaction index, thus calculated, is multiplied by the weight. The total weight has been taken as a unity (1) which has been

distributed among the selected variables, according to the importance of the variables on the level of social well-being in that area. The weightage assigned to the variables are as follows: education (0.20), health (0.20), drinking water (0.15), social security (0.10), road condition (0.08), waste management (0.07), police security (0.06), waterlogging (0.05), leisure (0.05) and street light (.04).

### **Criteria for measurement of Social Well-being through analyzing the Level of Satisfaction:**

#### **i. Education:**

The level of satisfaction index in education has been calculated in the parameters of accessibility to reach school, school infrastructure especially availability to the classroom, student-teacher ratio, school performance in respect of result, school expenditure, availability of higher and technical education institutions etc (fig.4). In Ward no.1 in the lower income category (Rs. 1001-3000), people are satisfied (weighted satisfaction index 0.114), while in the upper-income class



(Rs.11001-13000), all of the surveyed respondents are moderately- Satisfied. It may be due to their variation in economic attainment. The overall level of weighed satisfaction index in this slum is 0.515 (Table 1), in Ward no.17 in the lower income category (Rs. 1001-

3000), people are satisfied, and in the upper-income category (Rs.11001-13000), people are moderately satisfied. The overall level of weighed satisfaction Index in this slum area is 0.0460 (Figure 4).

**Table 1 Simple and Weighted Satisfaction Index in Education of Slum Population**

Monthly Income(Rs.)	Education (Ward no.1)				Education( Ward no.17)			
	Satisfied	Dissatisfied	S.I	Weighted index	Satisfied	Dissatisfied	S.I	Weighted index
1001-3000	11	3	0.57	0.11428	9	3	0.5	0.1
3001-5000	17	2	0.78	0.15788	5	2	0.38	0.075
5001-7000	13	1	0.85	0.17142	2	1	0.33	0.0666
7001-9000	4	4	0	0	9	5	0.29	0.05714
9001-11000	3	4	0.14	-0.02856	1	5	0.67	0.13334
11001-13000	2	2	0	0	3	2	0.20	0.04
Total	50	16	0.51	0.103	29	18	0.23	0.046

Data Source: Field Survey, 2017

**ii. Health:** The level of satisfaction index in health has been computed from the parameters of accessibility to hospital/nursing home/health center and other health units like pathological laboratory diagnostic Centre, Govt. immunization schemes, hospital infrastructure notably the availability of a patient bed, adequacy of doctors and

nurses, etc. In Ward no.1 of Municipality the lower income category (Rs. 1001-3000), people are satisfied (weighted satisfaction index 0.10), in the upper-income category (Rs.11001-13000), people are not satisfied (weighted satisfaction index -0.075), the overall level of weighed satisfaction index in this ward is 0.0424 (Table.2).



Besides, in the ward no.17 in the lower income category (Rs. 1001-3000), people are satisfied (weighted satisfaction index 0.12) and in the upper-income category (Rs.11001-

13000), people are moderately satisfied (weighted satisfaction index 0.000). (Figure 4)

**Table 2 Simple and Weighted Satisfaction Index in Health of Slum Population**

Monthly Income(Rs.)	Health (Ward no.1)				Health (Ward no.17)			
	Satisfied	Dissatisfied	S.I	Weighted index	Satisfied	Dissatisfied	S.I	Weighted index
1001-3000	12	4	0.5	0.1	12	3	0.6	0.12
3001-5000	10	4	0.428	0.0856	7	4	0.2727	0.05454
5001-7000	9	6	0.2	0.04	5	3	0.25	0.05
7001-9000	4	3	0.1428	0.02856	4	2	0.3333	0.06666
9001-11000	3	4	-0.142	-0.02856	3	2	0.2	0.04
11001-13000	2	5	-0.375	-0.075	1	1	0	0
Total	40	26	0.212	0.0424	32	15	0.36	0.072

Data Source: Field Survey, 2017

**iii. Drinking Water:** The level of satisfaction in drinking water has been calculated (Table 3) from the parameters of the source of drinking water, duration of its service and the quality of water. In Ward no.1 of Municipality the lower income category (Rs. 1001-3000), people are satisfied (weighted satisfaction index 0.105), in the upper-income category (Rs.11001-13000), people are also satisfied (weighted satisfaction index 0.150). The

overall level of weighed satisfaction index in this ward is 0.096. Besides, in the ward no.17 in the lower income category (Rs. 1001-3000), people are satisfied (weighted satisfaction index 0.0375) and in the upper income category (Rs.11001-13000), people are dissatisfied (weighted satisfaction index -0.1000). The overall level of weighed satisfaction index in this slum area is -0.003(Figure 4).



**Table 3 Simple and Weighted Satisfaction Index in Drinking Water of Slum Population**

Monthly Income(Rs.)	Drinking Water (Ward no.1)				Drinking Water (Ward no.17)			
	Satisfied	Dissatisfied	S.I	Weighted index	Satisfied	Dissatisfied	S.I	Weighted index
1001-3000	17	3	0.7	0.105	5	3	0.25	0.0375
3001-5000	10	2	0.667	0.10005	7	5	0.167	0.02500
5001-7000	7	4	0.272	0.04090	6	1	0.714	0.10713
7001-9000	5	1	0.667	0.10005	2	4	-0.33	-0.0499
9001-11000	13	2	0.73	0.1095	2	6	-0.5	-0.075
11001-13000	2	0	1	0.15	1	5	-0.67	-0.1005
Total	54	12	0.645	0.09667	23	24	-0.02	-0.003

Data Source: Field Survey, 2017

**iv. Social Security:** The level of satisfaction in respect of social security has been calculated (Table 4) from the parameters of insurance in the bank, deposit in the post office, pension, and aid to the handicapped, monetary help from govt. To the aged people, the nearness of financial institution likes a bank, post office. In Ward no.1 of Municipality the lower income category (Rs. 1001-3000), people are dissatisfied (weighted satisfaction index -0.060), in the upper income category (Rs.11001-

13000), people are dissatisfied (weighted satisfaction index 0.000). The overall level of weighed satisfaction index in this ward is- 0.0454. Besides, in the ward no.17 in the lower income category (Rs. 1001-3000), people are dissatisfied (weighted satisfaction index -0.0571), and in the upper income category (Rs.11001-13000), people are dissatisfied (weighted satisfaction index 0.0000). The overall level of weighted satisfaction index in this slum area is - 0.0404 (Figure 4).





**Table 4 Simple and Weighted Satisfaction Index in Social Security of Slum Population**

Monthly Income(Rs.)	Social Security (Ward no.1)				Social Security (Ward no.17)			
	Satisfied	Dissatisfied	SI	Weighted index	Satisfied	Dissatisfied	SI	Weighted index
1001-3000	3	12	-0.6	-0.06	3	11	-0.57	-0.0571
3001-5000	2	14	-0.75	-0.075	4	6	-0.2	-0.02
5001-7000	3	8	-0.45	-0.0454	1	4	-0.6	-0.06
7001-9000	6	5	0.09	0.009	2	2	0	0
9001-11000	4	7	-0.27	-0.02727	1	3	0.5	0.05
11001-13000	0	2	0	0	3	7	0.4	0
Total	18	48	-0.45	-0.0454	14	33	-0.40	-0.0404

Data Source: Field Survey, 2017

**v. Road Conditions:** The level of satisfaction in respect of road condition has been calculated from the parameters of the surface material condition of the road, length and width of the road, and maintenance of the road. In Ward no.1 of Municipality the lower income category (Rs. 1001-3000), people are dissatisfied (weighted satisfaction index 0.000), in the upper income category (Rs.11001-13000), people are dissatisfied (weighted Satisfaction index-0.0571). The overall level of weighed satisfaction index in this ward is- 0.0288. Besides, in the ward no.17 in the lower income category (Rs. 1001-3000), people are satisfied (weighted satisfaction index 0.02) and in the upper

income category (Rs.11001-13000), people are dissatisfied (weighted satisfaction index -0.016). The overall level of weighed satisfaction index in this slum area is 0.0392 (Figure 4).

**vi. Waste Management:** The level of satisfaction in waste management has been calculated from the parameters of the place of day to day disposal, i.e. whether there is municipality-provided dustbin or waste disposed to here and there, regularity in placement and treatment of the wastes before final eliminate. In Ward no.1 of Municipality the lower income category (Rs.1001-3000), people are dissatisfied (weighted satisfaction index 0.000), in the upper

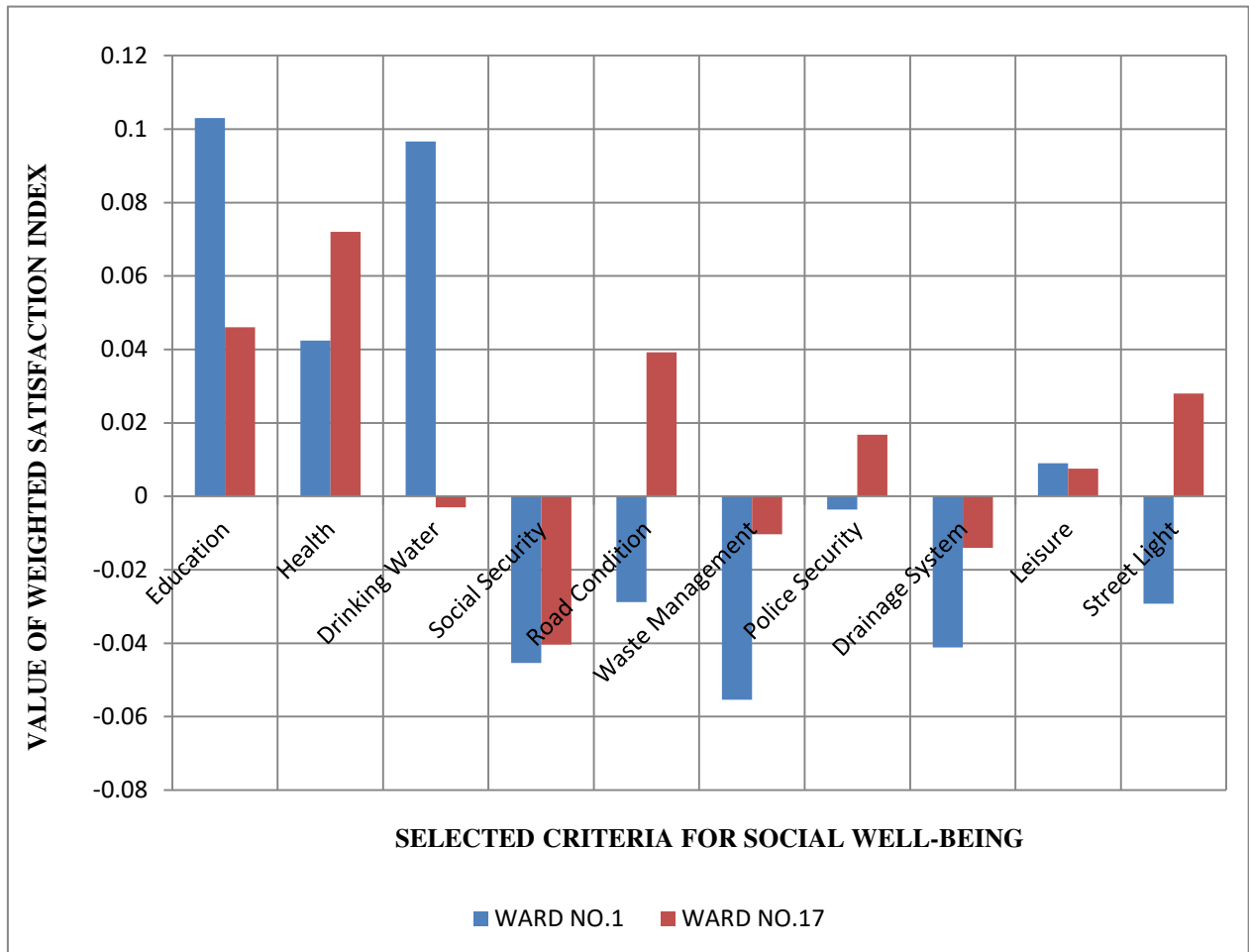


income category (Rs.11001-13000), people are dissatisfied (weighted satisfaction index-0.0466). The overall level of weighted satisfaction index in this ward is- 0.0553 (Fig 4). Besides, in the ward no.17 in the lower income category (Rs. 1001-3000), people are dissatisfied (weighted satisfaction index -0.0233). The overall level of weighed satisfaction index in this slum area is - 0.01036 (Figure 4).

**vii. Police Security:** The level of satisfaction in respect of police security has been calculated from the parameters of the adequacy of police security, night patrol, and the existence of local security system. The people of slum ward no.1 dissatisfied because they especially female members feel insecure due to lack night patrol of the police, especially in the non-lighted segments. The people of ward no.17 are satisfied to get the police security (Figure 4).

**viii. Drainage System:** The level of satisfaction in drainage problem has been calculated from the parameters of time and duration of existence of the problem, and management measures taken by the municipality. It may be due as per their words water can stay for one month in the monsoon period after heavy rainfall. The overall level of weighed satisfaction index in this parameter in the slum area ward no.1 is - 0.04111 and ward no.17 is -0.014 (Fig. 4), i.e. more of the surveyed respondents are dissatisfied.

**ix. Leisure:** The level of satisfaction in respect of recreation has been calculated from the parameters of access to leisure-related facilities like availability of Pleasure Park, cinema hall, theatre etc. In the ward no.1 slum from lower class to upper class, the family is satisfied. (The weighted satisfaction index 0.009). In the ward no.17 tenements from the lower level to the high level, the family is pleased (The weighted SI is 0.0075) (Figure 4).



Source: Field Survey, 2017

**Figure 4 Weighted Satisfaction Index of Slum Population in Kalyani Town**

**x. Street Light:** The level of satisfaction in respect of street light has

been calculated from the parameters of the adequacy of street light and



regularity in the maintenance of the light, if nonfunctional. In the ward no.1 slum from lower class to upper class, the family is dissatisfied (The weighted satisfaction index- 0.0292). In the ward no.17 slum from the lower level to high level, the family is satisfied (The weighted SI is 0.028) (Figure 4).

**Conclusion with recommendation:**

The social well-being depends on economic well-being which is correlated with each other. It is clear that more surveyed respondents in the slum are satisfied in education, health and road condition and drinking water facilities. While majority of respondents are not satisfied with the facilities like waste management, water logging, police security and social security which are the prime responsibility of the local administration. Slum population is comparatively satisfied with existing education system and leisure time activities. They mostly work for livelihood than cultural attainment. They are more interested in earning bread and butter than the cultural upgradation. Slum dwellers are

almost satisfied with the health facilities available in the area because they get

the basic minimum requirement from J.N.M. hospital. And they do not have higher expectation or more advanced health facilities due to the economic inability. It has been found that generally higher income groups in the slum areas have a lower level of satisfaction. After all it has been generalized that the level of social well-being of slum population in Kalyani Municipality is not standard one and it could be as moderately poor. Government and Local Authorities as well as NGO, should take the step to enhancing the quality of life of slum dwellers by providing them sufficient social infrastructural facilities in the town.

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## Gambhir Singh Mura: His life and Philosophy

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### Abstract

*Bankura, Puralia, PaschimMidnipur and Jhargramdistricts of state of West Bengal in India is commonly known as Jungle Mahal. Jungle Mahal is famous for folk art and culture. The outstanding Chhou artist of JungleMahal of Purulia, Gambhir Singh Mura achieved Padmashree Award for his contribution in folk art. Due to the influence of nature the artist is always identified as tolerant and truthful. The main theme of the paper is to bring out the life and philosophy of Gambir Singh Mura.*

**Keywords:** *Jungle Mahal,folk art, tolerance, cultural subaltern philosophy.*

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*Tushuvadhukaromgaan*

*Jhummuiraybo-haibaan*

*ChhounacheNachoiantorgho*

*Aouwadekhabhai*

*ManbhumKaisonSundargho*

How the chhou dance raises love and affection in the minds and hearts of the people of Jungle Mahal has very beautifully been captured in the Jhumur folk song of Sunil Mahata, a popular poet among the people of Purulia district in the Indian state of West Bengal. Padmashree Gambhir Singh Mura is among the first chhou dancer of JungleMahal. His father's name was Jipa Singh and Phulmoni Singh was his mother's name. He was born in Charida, a famous village of Ayodhya Hills in Purulia district in the Indian state of West Bengal but there are lots of confusion and rumors on his year of birth.

There are so many different years and times, like 1920,1925,1930,1931 etc. mentioned by the scholars.Gambhir Singh Mura did not show much interest in education as he could not





qualify class 2 while he was attaining primary school. Therefore no record of his birth was maintained by the school authority.<sup>1</sup>

During childhood Gambhir Singh Mura was called Babu Singh Mura and his parents used to call him by this name. It is even believed that name Gambhir might have been drawn from 'RarirbhetaGamdha'. There is a rumor in the Jungle Mahal that Jipa Singh, the father of Gambhir Singh Mura, was killed soon after the birth of Gambhir Singh Mura. Gambhir was grown up by his widow mother Phulmoni bearing all the hardship. He was the youngest among the children of Jipa Singh and Phulmoni Singh Mura. Kamal Singh was his eldest brother and his middle brother was Pramila Singh and Budhin Singh Mura his only sister.

Gambhir Singh Mura had married Chintamoni Singh Mura of Adhiniwas village Chardhara, post office and Bagmundi Police Station, district Puralia, state West Bengal, Country India. Chintamoni was the daughter of Jalan Singh Mura and mother Sunila Singh Mura. Gambhir Singh Mura was born in family that had been living in Jungle Mahal since long ago therefore they had rich cultural and traditional heritage. Self compliant is also evident on the side of Gambhir Singh's father as he was simple and very hardworking.

Gambhir Singh Mura, a popular chhou artist from the village of Jungle Mahal was born on the occasion of family folklore on tide. Gambhir Singh Mura is behind the fame and legend of hope in the enthralling industry. Patience passing and family heritage. Gambhir revolutionized dance in the Jungle Mahal in his life at the moment of his birth. The whole Jungle Mahal fame has become famous from the father of Gambhir Singh Mura.<sup>2</sup>

A ruler named Jagat Singh in the 18th century took away Bagmundi of Jungle Mahal. Madan Mohan Singh Dutta was the great king of this Dynasty. King Madan Mohan Singh was patron of culture. During the reign of King Madan Mohan Singh Dutta, the chhou dance had reached the Golden age in Jungle Mahal. Gambhir Singh Mura's father Jipa Singh Mura often visited Raja's palace, he found very hard to understand the ruler. The Chhou artist Jipa Singh Mura

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1. Roy, Dhayamoy, *Padmashree Gambhir Singh Murar Jiban o Silpo*, first vol, publisher, Roy, Jotshna, Amdiha, Purulia, first published, Purulia Bookfair, 2003, pg. 6
  2. *ibid* pg. 8



could not liberate himself from such dilemma that he was into. One day there was a Chhou dance performance in the village and Raja Madan Mohan Singh along with other people of the village had gathered to see the dance performance. Raja and the village people were eagerly waiting for Jipa Singh Mura who was the popular artist of the village to perform but that day due to some reason Jipa Singh could not arrive on time and was late for the performance. The Raja who had been there waiting for the dance performance felt deeply insulted when the artist did not arrive and had to wait for artist like the common people. By the time Jipa arrive Raja became very angry and at one asked Jipa Singh to leave the village and go away as far as possible and never to return to the village again. It was late in the evening and the darkness had surrounded Jungle Mahal and the artist was helpless, with heavy heart he had to leave the village at once as such was the order of the Raja Mohan Singh. Then he went to the Jungle amidst the darkness. Exile into the forest was a major setback in the life and career of Jipa Singh and the Raja's harsh decision spoiled the life of the artist. Again some years later there was the conspiracy against Jipa during chhou dance competition. In this incident the other competitors of the artist during the competition mixed poison in Jipa's alcohol and immediately after drinking that poison substance he continuously bled blood from his mouth and after a while he lost his life. The popular chhou artist of the Jungle Mahal came to a tragic end. The light that was glowing in the darkness of Jungle Mahal had now been put off. It was the most lamenting incident in the history of Jungle Mahal not only the people even the birds and animal felt sorrow upon his death.<sup>3</sup>

Babu Sing Mura's was helpless when he lost his father at the early age. He had no one by his side except his mother. Babu grew up in an extreme hardship. In order to make his ends meet he was left with no option other than to beg. He went around begging from place to place at a distance like a wanderer while holding his mother's hand. He had to struggle very hard in order to live his life. During this extreme poverty and hardship he was never offered help by anyone. It bird and animal, greenery and environment of the Jungle had influenced Babu Singh Mura's childhood. Babu grew on the lap of nature, nature was his mother and nature was his caretaker and he grew happily in it. When he grew a bit younger, he started rearing cattle. It is believed that the behaviour of animals, birds and trees of Jungle Mahal had transformed Babu Singh Mura into Gambhir Singh Mura.

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3. ibid pg. 10



Trees like *Sal, Mohul, Piyal, Palash*, sound of the He began his life as cattle rarer. He use toplay flute and sing in the forest while rearing goats and cows.

*RasikaRosaytayVasay*

*VramorKamaleBosay*

*NirmaloRasayDobijaay*

Listening to the flute and the Jhumur songs played by Babu, all the birds and animalgot mesmerized and came around him to listen his music. Animals like wild elephants, lion, bear, wild boar, deer, peacock, wild cock and different types of birds danced to it. The sound of Gambhir'sbamboo flute filled the silence of JungleMahal. His music complemented bird's songs and cheered up the environment. Even the most violent animals admired the music of Gambhir as it use to silence them.<sup>4</sup>

One day he had gone to forestand as usual he use to playing the flute, reared the animals and returned home. A cow named Kamdhanu did not return home that day. Gambhir began looking for it but could not trace the cow. While raring his cattle on the next day Gambhir found the cow. He saw that in theJungleKamdhanu had given birth to a calf,then he realized that due to this reason the cow had not return home leaving the calf alone. With extreme love and compassion Gambhir went to care the calf. At this moment the miracle happened. At this very moment Kamdhanu came charging upon Gambhir and when Gambhir wanted to defend itsattack, he himself fell androlled down.

After this wheneverGambhir wanted to go near the calf, Kamdhanu came charging on him and Gambhir in order to defend himself, sometime came forward and went backward. Then the conflict started between the man and animal. Scholars frequently refer to this as his first Chhou dance training. Everyone learns from the master butKamdhanu taught gave the first step "*ulphabaji*" to Gambhir. 'I have no teacher but my first teacher is cow, Kamdhanu'. Gambhir also tells no man hastrained me,I have learnt all from the nature. Before Kamdhanu, while rearing cattle I saw

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4. ibid pg. 12



tiger, I use to see it hiding, then slowly it use to jump, I saw peacock dancing, it use to take long step and walk, I have seen snake crawling by seeing all this I have began to feel and from them I have learnt the steps of Chhou dance.<sup>5</sup>

Then, without the help of master, Gambhir also used to perform in front of group of people. He fell in love and then married Chintamoni Singh Mura. Chintamoni Singh Mura's father Juradan Singh Mura did not agree to the marriage but in tribal community, women's preference is favoured due to which Juradan Singh could not stop it. Then Gambhir Singh Mura and Chintamoni Singh Mura's love brought them Bidhi Rani Singh Mura, Kartik Singh Mura, Ganesh Singh Mura, Paroram Singh Mura and Rani Singh Mura.

Then Gambhir Singh Mura was affected by tuberculosis, with the help of Gulam Muhammad and Kailash Roy he had a treatment and recovered. Gulam Muhammad was the one who helped him to meet Raja. And Gambhir himself sat in the Shiv temple and gained the knowledge. Then after, Calcutta University Bengali Department's Rabindra Professor Asutosh Bhattacharya and Dancer Milena Selvini help, America, France, Holland and other countries of the world were visited by him. Jungle Mahal Chhou dance, the art to its highest unit, Gambhir Singh Mura and his team, adhivasichhou dance group 'Charida' established it. In 1981 Government of India awarded Padmashree to the chhou artist Gambhir Singh Mura.

Then his relation with professor Asutosh began to widen. Artist no more went to foreign countries with professor Asutosh due to what reason there was a rift Gambhir Singh Mura never disclosed with anyone. It is also believed that there was some friction between milena and professor Asutosh, Milena wanted the distribution of money with regard to the artist to be solved in the foreign land itself. But professor Asutosh never agreed whatever may be the cause but Gambhir was someone who loved and wanted freedom. Gambhir Singh Mura personally never complained against professor Asutosh,

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5. Dey, Birinchi, *Padmashree Gambhir Singh Mura*, publisher, Basu Roy, Subodh Chatrak, Sahitya Sonkha, Chatrak, publisher, Bonami, Nodiha, Purulia, 1983, pg. 27



The landless folk artist of JungleMahal losing his on dignity never went against him only being aloof with Professor Asutosh Bhattacharya. Without most sorrow Gambhir only saw professor Asutosh insulting JungleMahal Chhou artist by saying ‘since they are black and ugly, therefore Purulia tribes uses mask’.<sup>6</sup>

Word once given it’s given forever, this is how artist live to it. This is how life is simple in JungleMahal. Without taking any debt from anyone by only performing chhou dance, with lot of hard work and struggle he live his life and maintained his family. Later on he brought some land but with that he could merely support his family. He began to lose the vision of both eyes. He had no work; it was very hard for him to support his family. He was even in the verse of selling the Padmashree award that he had received. The then District administrator of Purulia Deb Prashad Jana, moved by the situation of the artist in association with Red Cross Society gave Rs 10,000 to the artist so that it may be of some help to Gambhir. Struggle was the only motto of his life but also he had to take help from the other till the end. Thinking about the family and the health of himself, he welcomed the help given by the administrator. He thought within himself that ‘artist are never jobless, whatever might be his situation somewhere this may be the insult to the art’. Then also the artist had to take the help, in order to live and survive because if the artist dies, how will the art survive. Gambhir Singh believed, if the artist dies art will also die along with him. Presidential award Padmashree and the national and international awards that he received do not fill the stomach and dance cannot be performed in empty stomach.<sup>7</sup>

In the year 2000 the condition of artist eyes became even worst but he never wanted to have his eyes operated by the doctors. He had once said to Lambodhar Maji ‘if I cannot see, than there is no need to operate it, the eyes which is given my god is unable to see that what can human being do about it’ then also at the end of his life he was treated in eye hospital at Belgariha in Kolkata. Lens was installed in his left eye. His elder son Kartik was with him. At the same time there was declaration of ‘SangeetAcadamy Award’, the date was also announced as 18<sup>th</sup> December 2002. In 1<sup>st</sup> November after his eye was operation, he had to

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6. Mahato, Pashupati Prashad, *Jungle Mahal o Jharkhandi Lokdharsan*, publisher, Purbalokh Publication, 11B Manohar Pukur Road, Kolkata-700026, first publication 2004, second publication, July 2012, pg.116

7. Roy, Dhayamoy, *Padmashree Gambhir Singh Murar Jiban o Silpo*, first vol, publisher, Roy, Jotshna, Amdiha, Purulia, first publication, Puruliabookfair, 2003, pg. 49



stay in hospital for one week. The situation was such that everyone wanted his to come home with the SangeetAcademy Awarded.

The artist of the JungleMahal felt very uncomfortable to leave village and go outside it. The busyness of the town and crowd use to irritate him, artist wanted to return back to his soil, JungleMahal. On Saturday 315 Howrah up Chakrodhapurpassenger train, in reservation berth Gambhir Singh started his journey towards Puralia on 9<sup>th</sup> November 2002. Before entering Bakura Station artist was talking to his son and then after some after he slept. Who would know that this sleep would be the last sleep of the artist, all the parts of this body became senseless. During his last sleep, his eldest son Kartik covered his father with two blankets so that his father will fell worm. The train had crossed Bankura and was entering Puralia, the darkness was slowly fading, most of the passenger had woke up by this time, but one passenger was sleeping for the life time, his eyes did not open, he did not talk and nor did he respond. Every one by now knew that the Chhou artist of JungleMahal is no more. On 10<sup>th</sup> November 2002, Bengali: 23<sup>rd</sup> Kartik 1409, Sunday Padmashree Gambhir Singh Mura went on journey without address.

Death is the last result of life. This is the ultimate result of Mahakal. But the JungleMahal's Chhou artist Padmashree Gambhir Singh Mura use to believe that 'art never dies'.<sup>8</sup>

Artist has neither caste nor religion, has no honor or dishonor, does not belong to any country, has no religion, practicing the art is only his main religion. For his entire life he was the main hero, icon of JungleMahal amongst adhvasi and he himself had even performed the chhou dance in the form of Mahisasur. This is how he had saved the art.

*Koraydhoriosi*

*Samoyprobesi*

*Durjoysorir*

*KrodhaybirMahisasur*

*GarjoyGambhir*



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8. ibid pg. 45

We have described the life of Gambhir Singh Mura and now we will try to discuss his philosophy. The first thing that comes to our mind is his philosophy of learning. The person whose main master is nature Gambhir Singh Mura has experienced every bit of it. Gambhir has told the fact that ‘no one has taught him Chhou dance, whatever he have learnt he learnt it from nature’.

We should always remember that Kautaliya had always believed in the birds and animals as they live in nature and we have many lessons to learn from them. Even though donkey works hard it keeps on bearing the load, it does not have any excuse be it hot or cold. If we are to achieve success in our life we have to work very hard, this is the lesson we could learn from donkey. Again it is an aggressive animal, but we could still learn from it. No matter how big or small the work may be, it is always better to work harder day and night, we should work whenever we have the work, this is the lesson that we can learn from lion. Again we could also learn many lessons from dog. Like dog could eat a lot, but it is always satisfied with little, it can sleep early and can wake up early. It is ever ready to serve its master. Not only this it also very courageous. We could learn all this lessons from dog. Again crow which is cunning, is always alert and cautious. Crow never trusts anyone very easily. It very secretly accomplishes its task. It also gathers the food for future; we could also learn all these as lesson from crow. Crane is a bird with patience, while it catches its pray. it does the work with lot of patience and concentration. The lesson of patience learnt from the crane can be used to accomplish any of our tasks. We could also learn from Hen like getting up early in the morning, it is always ready for fight, it also distribute the grains equally between friends and attack its enemy as soon as it sees the danger. We can learn all these from Hen.<sup>9</sup>

Professor Arindham Chakraborty says that according to Indian tradition teacher is in 24 forms. From the worlds we can learnt to forgive. From wind we can learn to travel from one place to another, not to remain stagnant but to blow. From sky we can learnt to accept. From water we can learn to keep oneself and other clean and cool. From fire we learn to keep





9. Roy, JoyantakantiNath and Chakraborti, Sankar, editor, *BrihatChanakyaSlok*, publisher, Nath, Sajal, SajalPustakalay, 35, Darpanarayan Thakur street, Kolkata- 700006, first publication, 2008, pp. 46-48

others warm, from 6<sup>th</sup> master Chandrakala we learn about life and death as our soul does not get destroyed even after the death. Again from the sun in the summer it takes the water from the ocean and in rainy season it releases it without partiality without keeping even a singledrop for itself. The 8<sup>th</sup> guru talks about couple, it has been also described in Gita, as the husband lives happily with his wife and children. Once very cunning person kidnapped the child of this happily married couple, in order to save the child first the mother fell in trap and again the husband fell into it. The love for family may bring difficult situations; about all this important less one can learn from kapat guru. FromAagharsnake we can learn how to work hard in order to gather food, not to give up. From ocean we can learn about depth. Elephant, Deer, Insects and Fish this five guru make us aware about smell andattraction to foodand we can learn such qualities from them. Lastly we can say if any student is curious to learn them then he may learn such qualities from living and no-living animal, this is one of the important aspects of teachers oriented knowledge system of Indian philosophy.<sup>10</sup>

From the struggle that Gambhir Singh Mura had in his life we can observe and tell that, the resources that we get in our life should be used according to our need, about all its casualness it depicts different kind of life philosophy. One should be away from materialistic objects and artist should always be engrossed in practice and he should not calculate what he has gained from what he has been doing, how he has been doing, this should be the biggest prayer of human life all these lessons Gambhir Singh Mura has taught us from his life. In this present world, the fight has been due to humans personal problem or family problem, behind all these problems the real cause is materialistic resource and our desire to gain it and false ego, but all these are very miniature reasons and unnecessary. The cause of all this sorrow is because we have little knowledge about these subjects. Gambhir Singh Mura always thought that an artist should never be governed by his ego. An artist should always focus in his art and this is the only best thing to do. To gain few materialistic things and get carried by ego in our life should be the least priority and to ignore such things was something believed by Gambhir Singh Mura. Indian culture always respects different opinions and the matter of tolerances should be our first priority. Gambhir Singh Mura is the idol of tolerance. The popular Rabindra professor of Calcutta University, Asutosh Bhattacharya and Gambhir Singh



10. Chakrabarti, Arindam, Article, SadguruAsadguru, Book,*MononerMadhu*, Publisher, Biswas, Anima, Gathchil, 'Matir Bari', Oscar park, Gholabazar, Kolkata-700111, first publication 15th August 2008, second edition, February 2014, pp. 90-91

Mura had a conflict but he never told anything about it to any one nor he complained about it but he himself stayed aloof from this friendship.

The artistic value, and the reflection of the true Indian culture can be found in the life of Theadhivsi folk artist of the JungleMahalGambhir Singh Mura. It can also be said that at the end of his life Gambhir Singh Mura came to know that Professor AsutoshBhattacharya had insulted the Chhou artist of JungleMahal as when the professor had commented that the people of Puralia have dark skin and during the performance of chhou dance they use Chhou mask. Even after hearing such remarks Gambhir Singh Mura, respecting the honor of India's rich culture by kept himself keeping silent and restricted quarrel with Asutosh. To show tolerance towards others culture was the lesson that Gambhir wanted to propagate to other people. it is said and believe by many scholars that during the performance of Chhou dance the wearing of mask has some 'nandanikdarsan', that is the good philosophy. Professor AsutoshBhattacharjee had not given a thought on 'nandanikdarsan' with regarded to wearing of mark during the performance of chhou dance. I think prof. AsutoshBhattacharjee was aware of 'nandanthatha' a philosophy in Chhou dance but the thing that prof. Asutosh could not feel, I think was the mask art of chhou dance has its own philosophy which is not distinct that the philosophy of idol worship. For the people of JungleMahal nature is their mother and father, nature is theirs goddesses. Trees, mountain, river, canal, field depicts gods and goddesses. They worship and respect them. They believe that the man is the creation of nature and all has to vanish in it. Other than this belief of the world they don't consider the existence of others. They believe that Papa-punya. Dharma-adharma, heaven-hell, are all in the same world. And nature has no distinction between man and women. They believe the distinction between male and female is constructed by man. The mask that is worn in chhou dance is created on all such believe of nature. But within the nature itself there is difference between man and women? Like the clay is form the nature, does clay has any gender? But from the same clay we can make the idol of goddess Durga and we can also make the idol of Maishasur. This is how we can say that the gender is the construction of man. Modern and post modern feminist believe that no one is born as women but it is the society that constructs women. This is the relation of modern feminist philosophy in chhou art.



Some critics may criticize this essay and say that the essay is written on the basis of biography or the whole interpretation is full of the writer's personal opinion. They may also find lack of argument in the paper. From the philosophical perspective, the writing is meaningless and baseless. From the angle of folk literature this may have some importance. Considering such though in our mind with respect, it can be said that today writing with broad ink should not be categories under literature or philosophy. But the biography of a person could also be a text; it can also be considered as the part of Harmonistic philosophy. Further the application of Subaltern perspective for tribal study is the matter of investigation. My interpretation may or may not have any commonness with the interpretation of the whole world.

Therefore it can be said at last that from the Chhou artist of our Jungle Mahal, Padmashree Gambhir Singh Mura we have tried to study and understand his life and philosophy, then it can be said he was a man who constantly endeavors and works hard to overcome the hurdle, and found happiness within thousands of pains. Thus his philosophy of life had much influenced on the life of common people in Jungle Mahal.<sup>11</sup>

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11. In this article, I have referred to the thoughts of Lalan Fakir, M.N. Srinivas, Pashup

12. ati Prasad Mahato, Saktipada Mahato, Simone de Beauvoir and Amarthaya Sen for which I give credit of my work to them. I also thank all the Professors of Value Group, Department of Philosophy, Jadavpur University for their critics and comments. I sincerely thank and acknowledge Asst. Prof. Mr. Samip Sinchuri, Department of Sociology, Salesian College Sonada, Darjeeling, West Bengal for his help in the translation and drafting of this paper.

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## দহেহতয়ার নৈতিকতা

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### Abstract

সারসংক্ষেপে :- দৈনিক সংবাদপত্রে প্রায়ই আমরা দেখি কোন না কোন স্থানে ব্যক্তি নিজেকে নিজের জীবনদ্বীপের আবাসান ঘটায়। তখন আমাদের প্রশ্ন কবে সেই ব্যক্তিটি নিজেকে হত্যা করে। এই প্রশ্নের কিছুটা সহজ উত্তর উঠে আসে অন্যের প্ররোচনায়। যাকে Durkheim এর ভাষায় বলা হয় ‘পরকেন্দ্রিক আত্মহত্যা’ (Altruistic suicide)। ব্যক্তি যখন পরের দ্বারা অর্থাৎ পরিবার, গোষ্ঠী, সমাজ, পারিবারিক সম্মান, গোষ্ঠী মর্যাদা, সমাজ-সংস্কৃতি দ্বারা সম্পূর্ণভাবে নিয়ন্ত্রিত হয়, নিজ ইচ্ছা-অনিচ্ছাকে সর্ববৈ অবহেলা করে আত্মহত্যা করে, তখন তাকে বলা হয় পরকেন্দ্রিক আত্মহত্যা। ‘হত্যা’ করা বলতে আমরা সাধারণত ‘একজন কর্তৃক অন্যজনকে হত্যা করাকে বুঝি, যা আমাদের সাধারণ নীতিবিরুদ্ধ, অন্যায় ও অনুচিত কর্ম’। ‘আত্মহত্যা’ এমনই এক হত্যা যখন হত্যাকারী এবং নিহিত ব্যক্তি অভিন্ন। এখন ‘আত্মহত্যা’ বলতে বোঝায়, ‘আত্মকে হত্যা করা না ‘দহকে হত্যা করা? আত্মত্ববাদী মতে আত্মা অবিশ্বব, অমর, শাশ্বত। তাহলে কীসে হত্যা? আত্মহত্যা করার পর অনেকে ক্ষেত্রে দেখা যায় প্রাণহীন দহে পরে আছে। তাহলে দহের বিনাশ না হলেও কি আত্মহত্যা সম্ভব? আবশ্য নিজের দহে আগুন লাগিয়ে অথবা আগুন বাঁপ দিয়ে আত্মহত্যা করলে দহের বিনাশ সম্ভব। সক্ষেত্রে তাহলে কি প্রাণের বিনাশ বা ধ্বংস বলা যাবে? আমাদের আলোচ্য বিষয় হল ‘আত্মহত্যা’ কি নৈতিক? অর্থাৎ প্রশ্ন হল নৈতিকতার দিক থেকে আত্মহত্যা কি সমর্থনযোগ্য?

প্রতিটি মানুষই নিজেকে সবচেয়ে বেশী ভালবাসে। আর সেইজন্যই সে অসহনীয় দুঃখ কষ্ট থেকে মুক্তি পতে আত্মহত্যার পথ বেছে নেয়। জীবনের অর্থ খুঁজে পতে যায় জীবনের ধ্বংসের মধ্যমে। কান্ট মনে করেন, যে নিয়ম অনুসারে কোন ব্যক্তি আত্মহত্যা করে সেই নিয়মকে কখনোই সর্বজন প্রযোজ্য নিয়ম বলা দাবী করা যায় না। যে নিয়মটির আশ্রয় করে কোন ব্যক্তি আত্মহত্যা করে তা হল ‘আত্মপ্রমে’। অর্থাৎ নিজের জীবনকে রক্ষা করা। আত্মপ্রমে যদি জীবননাশের কারণ হয় তাহলে ঐ নিয়মকে কখনোই সর্বজন প্রযোজ্য হতে পারে না। সুতরাং আত্মহত্যা করা নৈতিক কাজ। আত্মহত্যাকে কখনোই নৈতিক ভাবে সমর্থন করা যায় না।

**Keywords:** নৈতিক, অনৈতিক, আত্মসচেতন, আত্মপ্রমে, সংগ্রাম, হতাশা।

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দৈনিক সংবাদপত্রে প্রায়ই আমরা দেখি কোন না কোন স্থানে ব্যক্তি নিজেকে নিজের জীবনদ্বীপের আবাসান ঘটায়। তখন আমাদের প্রশ্ন কবে সেই ব্যক্তিটি নিজেকে হত্যা করে। এই প্রশ্নের কিছুটা সহজ উত্তর উঠে আসে অন্যের প্ররোচনায়। যাকে Durkheim এর ভাষায় বলা হয় ‘পরকেন্দ্রিক আত্মহত্যা’ (Altruistic suicide)। ব্যক্তি যখন পরের দ্বারা অর্থাৎ পরিবার, গোষ্ঠী, সমাজ, পারিবারিক সম্মান, গোষ্ঠী মর্যাদা, সমাজ-সংস্কৃতি দ্বারা সম্পূর্ণভাবে নিয়ন্ত্রিত



হয়ে, নিজ ইচ্ছা-অনিচ্ছাকৈ সর্ববৈ অবহলো করে আত্মহত্যা করে, তখন তাকে বলা হয় পরকনেদ্রকি আত্মহত্যা। আত্মহত্যা যত্নবহি হোক না কেনে ‘আত্মহত্যা’ বলতে কী বোঝায় তা আমাদের পরিস্কার করে নেওয়া উচিত। অক্সফোর্ড অ্যাডভান্স লারনার্স ডিকসনারিতে ‘আত্মহত্যা’ শব্দটির একাধিক অর্থ পাওয়া যায়। তার মধ্যে গুরুত্বপূর্ণ ও গ্রহণযোগ্য অর্থটি হল ইচ্ছাকৃতভাবে নিজেকে হত্যা করা। ইম্যানুয়েলে কান্ট (১৭২৪-১৮০৪) আত্মহত্যার সংজ্ঞা দিতে গিয়ে বলেন, ‘কোন ব্যক্তি আত্মহত্যা করছেন তখনই বলা যাবে, কেবলমাত্র তখন যখন সে নিজেকে ধ্বংস করার অভিপ্রায়ে ক্রিয়া করছে।’

‘হত্যা’ করা বলতে আমরা সাধারণত ‘একজন কর্তৃক অন্যজনকে হত্যা করাকে বুঝি, যা আমাদের সাধারণ নীতিবিরুদ্ধ, অন্যায্য ও অনুচিত কর্ম’। ‘আত্মহত্যা’ এমনই এক হত্যা যখনে হত্যাকারী এবং নহিত ব্যক্তি অভিনী। এখন ‘আত্মহত্যা’ বলতে বোঝায়, ‘আত্মকে’ হত্যা করা না ‘দেহকে’ হত্যা করা? আধ্যাত্মবাদী মতে আত্মা অবনিশ্বর, অমর, শাশ্বত। তাহলে কীসরে হত্যা? আত্মহত্যা করার পর অনেকে ক্ষেত্রে দেখা যায় প্রাণহীন দেহ পরে আছে। তাহলে দেহের বিনাশ না হলেও কী আত্মহত্যা সম্ভব? আবশ্য নিজের দেহে আগুন লাগিয়ে অথবা আগুন বাঁপ দিয়ে আত্মহত্যা করলে দেহের বিনাশ সম্ভব। সক্ষেত্রে তাহলে কী প্রাণের বিনাশ বা ধ্বংস বলা যাবে? যাইহোক যে যে ক্রিয়া থাকা কালীন আমরা দেহটাকে ‘জীবন্তদেহ’ বলি স্বচেছায় নজি তার চূড়ান্ত বিনাস ঘটালেই তাকে আত্মহত্যা বলা যতে পারে। কোন কোন ক্ষেত্রে আত্মহত্যা লক্ষ্যরূপে ব্যবহৃত হয় আবার কোন কোন ক্ষেত্রে উদ্দেশ্য রূপে ব্যবহৃত হয়।

আমাদের আলোচ্য বিষয় হল ‘আত্মহত্যা’ কী নৈতিক? অর্থ্যাৎ প্রশ্ন হল নৈতিকতার দিক থেকে আত্মহত্যা কী সমর্থনযোগ্য? প্রাচীনকাল থেকেই মানব সমাজে আত্মহত্যার ঘটনা ঘটে চলছে। প্রাচীন গ্রীক ও রোমান যুগ থেকে পাশ্চাত্য দার্শনিকগণ আত্মহত্যা নিয়ে ভেবেছেন। প্রাচীন গ্রীক লোককাহনীতে আমরা পাই জোকাস্টার ছলে ইউপিাসরে সঙ্গে তাঁর অজানা ও আনিচ্ছাকৃত বয়িরে কথা, যার লজ্জাজনক আবিস্কার প্রসূত গভীর বিষণ্ণতার ফলে জোকাস্টার গলায় দড়ি দিয়ে আত্মহত্যা করে। হোমারের কবিতায় আমরা লক্ষ্য করি অর্থহীন জীবনযাপনের জন্য আত্মহত্যাকে শ্রয়ে মনে করা হয়েছে।

আবার আমরা দেখতে পাই, রোমান সাম্রাজ্যে আত্মহত্যার অনুমোদন ছিল। বিশেষ বিশেষ ক্ষেত্রে আত্মহত্যাকে ‘সম্মানীয়’ বা ‘বীরোচিত’ কাজ বলে গণ্য করা হত। স্টোয়িকি রোমান দার্শনিক সনেকো আত্মহত্যাকে ‘স্বাধীন মানুষের শেষে ক্রিয়া বলে প্রসংসা করছেন।’ জাপানি সমাজে ‘হারকিরি’ আত্মহননের অর্থাৎ সম্মানীয় রূপ হিসাবে স্বীকৃত। ভারতবর্ষে রাজপুত রমণীরা নিজদের সম্মান ও মর্যাদা রক্ষার জন্য জহর ব্রত পালন করতেন। এটা আত্মহত্যাই এবং প্রশংসনীয় কাজ বলে বিবেচিত হত। তাহলে দেখা যাচ্ছে অনেকে প্রাচীন কাল থেকে শুরু করে বর্তমান সময় পর্যন্ত আত্মহত্যা নামক একটি সামাজিক ব্যাধির প্রচলন আছে আমাদের সমাজে। আমি এই আত্মহত্যার পছিনে কী কারণ আছে তা নিয়ে বিস্তারিত আলোচনায় যাচ্ছি না। আমার লক্ষ্য এটা দেখান যে, নৈতিক দিক থেকে এই আত্মহত্যা সমর্থনযোগ্য কিনা?

আত্মহত্যা করতে চয়েে সংহরে ডরোয়, একজন মানুষেরে প্রাণ বাঁচাতে দুটি প্রাণেরে হত্যা (একটি প্রাণেরে পরবিরতে দুটি প্রাণ)। (আনন্দবাজার পত্রিকা, সোমবার, ২৩ মে ২০১৬)

প্রাচীনকালে মানুষেরে মধ্যে ভাল-মন্দ, উচতি-অনুচতি, ন্যায়-অন্যায়েরে ধারণা ছিল নতিন্তই অকপট ও অপরসিফুট। কনিত্তু, বর্তমানে জ্ঞান-বজ্ঞান ও সন্ত্যতা-সংস্কৃতির বকিশারেরে সঙ্গে নৈতিকিতার ধারণা অনেক বশৌ প্রকট হযছে। এরই ফলশ্রুতি হিসাবে যখনই কোন শাস্তমিলক ঘটনা ঘটে তখন আমরা তার উচতি-অনুচতি, ন্যায়-অন্যায়েরে বচির করতে এগয়িে আসি। আমার এই প্রবন্ধেরে আলচ্য বযিয় হল একটি মানুষ আত্মহত্যা করতে বাঁপয়িে পড়ল একটি সংহরে খাঁচায়, মানুষেরে প্রাণকরেক্ষা করার জন্য গুলি করা হল সংহরে খাঁচায়। একটি প্রাণেরে পরবিরতে দুটি প্রাণকরেক্ষা করা কতটা ন্যায়সঙ্গত তা বচির করা। বুদ্ধবিত্তি সম্পন্ন জীব মানুষ আত্মহত্যা করার তাগদিে বাঁপয়িে পড়ল বুদ্ধহীন সংহরে খাঁচায়। এখানে দুটি বচির্য বযিয় আছে। একটি হল মানুষটি নজিই নজিকে হত্যা করার জন্য বাঁপয়িে পড়ছে – এই আত্মহত্যা কতটা যুক্তসঙ্গত। অপর বচির্য বযিয় হল – একটি প্রাণেরে পরবিরতে দুটি প্রাণ হত্যা করা কি উচতি?

মানুষেরে সঙ্গে পশুর পার্থক্য হল মানুষ চনিতাশীল জীব, পশু তা নয়। মানুষেরে ব্যক্তত্ব আছে, অর্থাৎ মানুষ আত্মসচতেন ও বচির সামর্থ্য। একমাত্র মানুষই বচিরকম ও অন্যেরে সঙ্গে সম্পর্ক রচনায় সমর্থ। এইসব কারণে মানুষেরে জীবন মর্যাদা সম্পন্ন ও মূল্যবান মনে করা হয় এবং মানুষেরে হত্যা সম্পর্কে নৈতিকিতার প্রশ্ন তোলো হয়। কনিত্তু দেখে গেছে যে, পশুদেরে ভাষার ব্যবহার না থাকলেও তাদের চনিতাশক্তি বা বোধশক্তি আছে। মার্কনি বজ্ঞানী অ্যালান (১৯১২-১৯৫৪) এবং গার্ডনার শম্পাঞ্জীর উপর অনেক পরীক্ষা-নরীক্ষা করে বলেন , একটি মানব শিশুর সঙ্গে একটি শম্পাঞ্জীর শাবকেরে পার্থক্য হল কবেল বাক্যন্বরো। বাক্যন্বর না থাকার জন্য শম্পাঞ্জীর শাবক শাবদকি ভাষায় কোনকিছু বোঝাতে পারে না। মানুষেরে মত ভাষা প্রয়োগেরে সামর্থ্য না থাকলেই পশুরা চনিতাশক্তিহীন নয়। পশুদেরে মধ্যে এমন অনেকে প্রজাতি আছে, যারা আত্মসচতেন জীব যারা অতীতেরে ঘটনা স্মরণ করতে পারে, এমন কি কামনা সিদ্ধির জন্য ভবযিতেরে পরকল্পনা করতে পারে। আবার তমি, ডলফনি প্রভৃতি প্রাণীরা সুমধুর শব্দ করে এবং ঐ সুরেরে মাধ্যমে তাদেরে ভাবেরে আদান-প্রদান হয়। অর্থাৎ তমি চনিতাশীল আত্মসচতেন প্রাণী। তাহলে বলা যতে পারে আত্মসচতেন ব্যক্তিরূপে কিছু পশু হত্যা সমর্থনযোগ্য নয়। এই প্রসঙ্গে পটার সঙ্গারেরে অভিমতির উল্লেখ করা যতে পারে, ‘মানব জীবনেরে পবিত্রতার তত্ত্বেরে’ (doctrine of the sanctity of human life) একমাত্র সমর্থন যোগ্য ভাষ্য হল ‘ব্যক্তগিত জীবনেরে পবিত্রতার তত্ত্বেরে’ (doctrine of the sanctity of personal life), মানুষেরে জীবনেরে যদি বিশেষ মূল্য থাকে, মানুষেরে জীবনেরে সুরক্ষা যদি মূল্যবান হয়, তাহলে কিছু প্রাণী যদি ব্যক্তি হয়, সেইসব প্রাণীর জীবনও মূল্যবান। তাদেরে সুরক্ষারও মূল্য আছে।

নৈতিকিতার দকি থেকে মানুষেরে জীবন প্রাণীর জীবন থেকে বশৌ মূল্যবান নয়। তাই একজন মনুষ্যজাতির প্রাণ রক্ষা করতে গয়িে একটি মনুষ্যতের প্রাণীকরেক্ষা করা অনুচতি কর্ম।





প্রাণ, প্রাণই - যার মধ্যই থাকুক না কেন। একটি মানুষ মারা গেলে পঞ্চভূতে মশি যায়, একটি মনুষ্যের প্রাণী মারা গেলেও পঞ্চভূতে মশি যায়। মানুষ মারা গেলে এক গ্রহে যায়, আর মনুষ্যের প্রাণী মারা গেলে অন্য গ্রহে যায় তা কখনই হয় না। একটি মানুষ মারা গেলে তাকে যমেন আমরা প্রাণ দিতে পারি না, তমেনা একটি সৎই মারা গেলেও আমরা তার প্রাণ ফরিয়ে দিতে পারি না। তাই একজন মানুষের প্রাণের য়ে গুরুত্ব, একটি সৎইর প্রাণের তাই গুরুত্ব। মনে হতে পারে এই দৃষ্টিভিঙগতি মানুষকে ছোট করে দেখে হচ্ছে, যহেতে সমস্ত প্রাণীর মধ্য মানুষ হল শ্রেষ্ঠ প্রাণী।

অ-মানুষ প্রাণী হত্যা নৈতিক কনি বচার করতে গেলে প্রথমই দেখতে হবে প্রাণীকে ব্যক্তি হিসাবে গণ্য করা কতটা সমীচীন। আত্মসচতেন আর ভবষ্টি সম্পর্কে চিন্তাভাবনা – এই দুটি দিক থেকে যদি বচার করা তাহলে বলা যতে পারে কোন কোন প্রাণীদের দুটি ক্ষমতার কোনটিই নই। আবার কোন কোন প্রাণী যমেন বানর, শম্পাঞ্জী মানুষের সঙ্গে ভাবের আদান প্রদান করতে পারে। অ্যালান এবং গার্ডনার পরীক্ষা-নরীক্ষা করে সিদ্ধান্ত করছেন, মানুষের ভাষায় কথা না বলতে পারার কারণ হল তাদের বাক যন্ত্র, চিন্তাশক্তি বা আত্মসচতেনতা নয়। শম্পাঞ্জীর মত গরলিরাও নিজের ভাষা বিভিন্ন সংকতের মাধ্যমে ব্যক্ত করতে পারে। ফরানসি প্যাটারসন এমন এক গরলির কথা উল্লেখ করেন যার পাঁচ শতাব্দিক শব্দভাণ্ডার ছিল এবং ইংরেজি ভাষায় কথা বলতেন। এখন প্রশ্ন হল ভাষার মাধ্যমে আদান প্রদান না করতে পারলে হত্যা করা সমীচীন হয়, তাহলে বোবা মানুষ এবং কথা বলতে শক্তিতে না পারা শিশুকে হত্যা করা সমান ভাবেই সমীচীন। যাইহোক, হত্যা হত্যা তাই তাই প্রাণীই হোক বা কোন মানুষই হোক। দেখে যাচ্ছে বিভিন্ন উপায়ে মানুষ আত্মহত্যা করে। য়ে য়ে, উপায়েই নিজেকে হত্যা করুক না কেন তা কনি নৈতিক ভাবে সমর্থন যোগ্য।

মহাভারতের কাহিনীতেও আমরা আত্মহত্যা দৃষ্টান্ত পাই। মহাভারতকার কৃষ্ণদ্বৈপায়ন ব্যাসদেবের প্রপতিমহ বশষ্টি আত্মহত্যা করবনে বলা মেতাপাতা দিয়ে নিজের হাত-পা বধে বরষার জলে পূর্ণ এক খরস্রোতায় ঝাঁপ দলিনে। বশ্টিবষ্টির চক্রান্তে কলমাষপাদ রাক্ষস বশষ্টিতে শত পুত্রকে ভক্ষণ করেছে জনে মূর্না প্রবর আত্মহত্যার ইচ্ছা করলেন। এখন এই আত্মহত্যা বধে না অবধে তা নিয়ে মহাভারতে আলোচনা হয়েছে। স্মৃতিশাস্ত্র ও পুরাণে বধে ও অবধে এই দুই প্রকার আত্মহত্যার কথা বলা হয়েছে। নষ্টি মৃত্যুকে বধে আত্মহত্যার পরযায়ে ফলো হয়েছে। যদি কেউ ক্রোধবশত বা স্নেহবশত কংবা মান অভমানের কারণে আত্মহত্যা করে তাহলে তা অবধে আত্মহত্যা এবং আত্মঘাতী ব্যক্তি নরকে যাবে, ঈশোপনষ্টিতেও এমন কথা পাওয়া যায়। মহাভারতেও এমন আত্মহত্যাকে নিন্দা করেছে। এমন কং এই ধরনের আত্মঘাতীদের পারলোকিক কর্মে নষ্টিধোঞ্জ্ঞ জারি করা হয়েছে। যারা পারলোকিক কাজ করবনে, পরের জন্মে তারা ইতর যোনিতে জন্মগ্রহণ করবনে। ঐ শব্দহে শয়োল-কুকুরে ছড়ি খাবে, যাতে সেই দৃষ্টি দেখে জীবতি ব্যক্তরি আত্মহত্যা পরহারের শক্তি পান। তবে অনুশাসনপর্ব, শল্যপর্ব বধে আত্মহত্যার উল্লেখ পাওয়া যায়। সগোল কংনটি পাপজনতি কারণে, কোনটিতে বলা হয়েছে, য়ে ব্যক্তি বদোন্ত জ্ঞানের অধিকারী সংসারের অনতিযতাকে সংশয় ও বিপর্যয়হীন চিত্তে জেনেছেন তিনি যদি নিজের ইচ্ছায় জীবনের প্রতি বীরাগবশত কোন পবতির স্থানে অনশনের দ্বারা প্রাণ বসির্জন দেয়। তবে সেই স্ববধ হবে বধে।





আধুনিকি ভারতে এই আত্মহত্যার প্রত্যক্ষ বা পরোক্ষ স্বীকৃতি ছলি না। কনিতু তাতও আত্মহত্যা কমনৌ প্রতী ঘণ্টাই এই দশে ১৫ জন আত্মহত্যা করনৌ। পৃথিবীতে ৪০ সকেনেড অন্তর একজন আত্মহননরে পথ বছে নয়ে। জীবন যখন ভয়ঙ্কর বোঝা হয়ে দাঁড়ায়, জীবন যন্ত্রণা সহ্যরে বাহরিরে চলয়ে যায়, তখন মৃত্যুর মধ্যে মুক্ৰ্তি পাওয়ার চেষ্টা করয়ে। বাঁচার ইচ্ছাকে বসিরজন দয়ি়ে মুক্ৰ্তির স্বাধীনতা পতে চায়। জীবন যহেতে ব্যক্ৰ্তির তাই মৃত্যুর অধিকারও একান্তই ব্যক্ৰ্তগিত। মহাভারত ও অন্যান্য শাস্ত্ররে আত্মহত্যার প্রভদে টনে এই সমস্যার সমাধান করার চেষ্টা করা হযছে।

আত্মহত্যা বিভিন্ন অবস্থায়, বিভিন্ন উদ্দেশ্যে বিভিন্ন রকমরে হতে পারে। কখন কখনও আত্মহত্যা হল উদ্দেশ্যে সাধনরে উপায়মাত্র আবার কখন কখনও লক্ষ্যমাত্র। অভ্যপিরতে আত্মহত্যার ক্ষেত্রে উদ্দেশ্যটি হল ব্যক্ৰ্তি বিশেষরে (হত্যাকারীর) দুঃখ-কষ্ট, জ্বালা-যন্ত্রণা, হতাশা থেকে মুক্ৰ্তি লাভ, অনভ্যপিরতে আত্মহত্যার ক্ষেত্রে উদ্দেশ্যটি হল কোন সামাজিক অথবা রাজনৈতিক অথবা দলীয় স্বার্থসর্দিধি। ১৯১২ খ্রিঃ কুমরে অভ্যাত্রী গোস্ঠীর অন্তর্গত ক্যাপ্টনে ওয়টেসির মৃত্যুকে আত্মহত্যা বলা যতে পারে। স্কটরে দলিপি থেকে জানা যায় ওয়টেসি একসময় এত পীড়তি ও দুর্বল হয়ে পড়নে য়ে অভ্যাত্রী দলরে কাছে তিনি নিজেকে এক বোঝা স্বরূপ মনে করনে। মৃত্যুর ঠিক আগরে দনি তিনি অন্যান্য অভ্যাত্রীদের বলনে য়ে, তাঁরা যনে তাঁকে কম্বল জড়িয়ে রেখে গন্তব্যস্থল অভ্যমিখে যান। কনেনা তাঁদের সঙ্গে যাবার তাঁর সামর্থ্য নহে। পরদনি প্রত্যুষে বাহরিরে যখন প্রবল তুষার ঝররে তাণ্ডব চলছে, ওয়টেসি তার সঙ্গীদের বলনে, ‘তোমরা অপেক্ষা কর আমি বাহরিরে থেকে একটু ঘুরে আসছি’ ওয়টেসি কনিতু আর ফরি আসতে পারনৌ। আত্মহনন এখানে লক্ষ্য নয়, সহ্যাত্রীদের জীবন রক্ষা, তাঁদের বপিদমুক্ত করা হল লক্ষ্য। আত্মহত্যা এখানে লক্ষ্যলাভরে উপায়মাত্র।

India Saue 1,35,4456 suicide last year. Statics released by the National Crime Records Bureau (NCRB) show that excluding West Bengal, 79,773 men and 40,715 women had taken the extreme step. The rate of suicide last year stands at 11.2 cases for a population of 1 Lakh. 15 suicide an hour or 371 suicide a day had taken place. Tamil Nadu top the list with 16,927 West Bengal hold third position.

Family problem accounted for 84 suicides on an average. The NCRB figures show that social and economic causes have led most of the men to commit suicides where as emotional and personal causes have mainly driven women to end their lives. The percentage of suicide by married men was 71.6% and married women 67.9%. In this month Airhostes suicide case.

প্লটের ‘ফডিো’ এবং ‘লজ’ গ্রন্থে আমরা দেখতে পাই তিনি আত্মহত্যাকে সমর্থন করনেন। প্লটের স্বীকার করছেন য়ে, জীবন দুঃখে ভরে উঠতে পারে নানা কারণে। কনিতু এই যুক্তিতে জীবনরে পরিসমাপ্তি ঘটানো কখনই সমর্থনীয় নয়। তাঁর মতে, ‘আত্মহত্যা’ ঈশ্বররে সার্বভৌমত্বরে বিরোধী। অবশ্য প্লটের একথা বলছেন য়ে, আত্মহত্যা বধে করা যতে পারে এবং যুক্তিযুক্ত হতে পারে যদি রাষ্ট্র তা দাবী করয়ে। সক্রটেসি মনে করতনে মানুষ ঈশ্বররে সম্পত্তি এবং জীবনটা হল বন্দীশালা। তার থেকে পালানো অনুচিত। তা সত্তবেও তিনি হমেলক বধিপান করছিলেন

এই ভাবে য়ে, ংট্টা ঙ্গশ্বররে বধিান। অ্য়ারসিটটল আত্মহত্য়ার বরিেধতি করছেন মূলত সামাজিক ও নৈতিক কারণে। তাঁর মতানুসারে আত্মহত্য়া রাষ্ট্রবরিেধী কর্ম, ংর মাধ্যমে রাষ্ট্রর তার নাগরিককে হারাচ্ছে। অ্য়ারসিটটল আরও বলছেন, ‘দারদির, ক্য়ুধা, প্রমেে ব্য়র্থতা, দহৈকি ক্য়ট, মনস্তাপ ইত্য়াদি থেকে মুক্তি পতে যারা নজিদেের হত্য়া করে, আত্মধ্বংসে প্রবৃত্ত হয়, তারা ভীরু, সাহসী নয়...।’ Moral Problems: A Collection of Philosophical Essays. James Rachels. New York, Random House, 1989.

আবার আমরা দেখেছি পথিাগেীরীয় দার্শনিকগন আত্মহত্য়াকে আনুমোদন করেননি। তাঁরা আত্মহত্য়াকে নিন্দনীয় কর্ম বলে গণ্য করছেন ংবং বরিেধতি করছেন ংই যুক্ততি য়ে, “ঙ্গশ্বর আমাদের পূর্বতন পাপেরে জন্য আমাদের আত্মাকে দেহেরে মধ্যে বন্দী করে রেখেছেন। ংট্টা ংক ধরনেরে শাস্তি ংই শাস্তি থেকে পালিয়ে যাওয়ার জন্য আত্মহত্য়া পথ বছে। নলি়ে তা হব়ে ঙ্গশ্বররে বরিুদ্ধে বদিরোহ। ংকমাত্র ঙ্গশ্বররে অধিকার আছে। আত্মাকে তার বন্দীশালা থেকে মুক্তি দেবো। মানুষ ংই অধিকার কখনোই পতে পারে না.....” Encyclopedia of Religion and Ethics. Vol-12, James Hastings (Ed.)

খ্রিস্টিধর্মে আত্মহত্য়ার তীব্র নিন্দা করা হয়েছে ংবং ংক পাপ বলে চহ্নিতি করা হয়েছে। সেন্টে অগাস্টিনি (13 November 354-28, August 430) আত্মহত্য়াকে অপরাধ ও পাপ বলে চহ্নিতি করছেন। তাঁর মতে ংই পাপ ক্য়মার অ্যোগ্য়া ংটি নরহত্য়ার ংকটি রূপ যা ষষ্ট আদেশনামাকে (Six commandment) অমান্য করে। ‘নরহত্য়া করা উচিত নয়’ – ংই ষষ্ট আদেশনামাটিতে আত্মহত্য়াকে নিষিদ্ধ করা হয়েছে। টমাস অ্যাকুইনাস জীবন সংরক্ষণকে (Preservation of life) স্বাভাবিক ও সার্বিক প্রবৃত্তি বলে গণ্য করছেন। জীবন-সংরক্ষণ প্রকৃতির নিয়মেরে সঙ্গে সঙ্গতপূরণ সূতরাং আত্মহত্য়া করার অর্থ হল জীবন-সংরক্ষণেরে বরিুদ্ধে যাওয়া। তাই আত্মহত্য়া অনুচিত কর্ম বলে বরিচিতি হয়।

বৌদ্ধধর্মে বলা হয় প্রত্য়কে মানুষকে তার কৃতকর্মে ফল ভোগ করতে হব়ে। পূর্বজন্মেরে কর্মেরে জন্য ংই জীবনে দুঃখ ক্য়ট পতে হচ্ছে। ইচ্ছাকৃতভাবে ংই দুঃখেরে নিষ্পত্তি ঘটানোর অর্থ হল ‘কর্মনীতি’র বরিুদ্ধে যাওয়া। সূতরাং ংই প্রকার কর্মে কোন নৈতিক যৌক্তিকতা নেই।

ইসলাম ধর্মে দৃষ্টভিঙ্গীতেও আত্মহত্য়াকে চরমভাবে নিষিদ্ধ করা হয়েছে। য়ে ব্য়ক্টি নজিই নজিকে হত্য়া করবে শষে বচারেরে দিন আল্লাহ তাকে সমশাস্তি দেবে।

হিন্দুধর্মে ংতহি়ে প্রায় সর্বত্রই আত্মহত্য়ার নিন্দা করা হয়েছে। আত্মহননকারী পুরুষ বা নারীর আত্মা ষাট হাজার বছর ধরে নরকরে অন্ধকারে বাস করে।..... আত্মহননকারীর দেহে দাহ করার যোগ্য নয়। তারজন্য অশ্রু বসির্জন করা উচিত নয়। যারা তার শবদেে বহন করবে বা দাহ করবে তাদেরে ‘শুদ্ধ’ হতে হব়ে তপ্ত কৃচ্ছব্রত পালন করে। - Kautilyas 300 BC।

কোটি্লি়েরে অর্থশাস্ত্রেরেও আত্মহত্য়াকে জঘন্যতম অপরাধ বলে উল্লেখ করা হয়েছে। ‘যদি কোন পুরুষ বা নারী প্রমেরে ব্য়র্থতা, ক্রোধ বা অন্যকোন আবেগেরে বশবর্তী হয়ে বধি খয়ে বা

গলায় দড়ি দিয়ে আত্মহত্যা করে তারপর তার শবদহে দড়ি দিয়ে বঁধে চণ্ডাল রাস্তা দিয়ে প্রকাশ্যে টেনে নিয়ে যাবে। তার শবদহে দাহ করার এবং পারলৌকিক কাজ করার অধিকার তার আত্মীয়স্বজনদের নই,.....।”

আমরা যদি পাশ্চাত্য দর্শনের দিকে দৃষ্টিপাত করি, সেখানে দার্শনিক হিউম(১৭১১-১৭৭৬) বলেন যে, ‘কোন মানুষ যে জীবনে কলান্ত ও বীতশ্রদ্ধ, ব্যাথা ও বদেনায় যে জর্জরিত স্বাভাবিক মৃত্যু ভয়কে জয় করে ঐ দুর্বসিহ জীবনকে পরিত্যাগ করে তাহলে তা অন্যায় নয়। এই মহাজগতের মধ্যে মানুষের অস্বত্ব নতিন্তই তা পরযহীন-মহাসুমদ্রে এক কণা জলবিন্দুর মত। মহাশূন্যের মধ্যে একটি অতি ক্ষুদ্র ধূলিকণার মত। জগতের প্রেক্ষিতে জীবনের গুরুত্ব বানিকরে জীবনের অপেক্ষা বেশী নয়। আত্মহত্যার সমর্থনে যুক্তি দিবে, কোন ব্যক্তি যখন আত্মহত্যা করে তখন সে আর সমাজের কোন সর্বোত্তম করে না। সম্পূর্ণভাবে সমাজ থেকে নিজেকে সরিয়ে নেয়, সমাজের স্বার্থরক্ষার কোন দায়বদ্ধতা থাকে না। এমতাবস্থায় কোন ব্যক্তি যদি তার জীবনকে সমাজের বোঝা মনে করে দুর্দশাগ্রস্ত জীবনকে আরও দীর্ঘায়িত না করে আত্মহত্যা করে তাহলে তা আনুচিত কাজ হবে না। প্রত্যেকেই ব্যক্তিরই নিজের দহে ও জীবনের উপর পূর্ণ অধিকার ও কর্তৃত্ব আছে। তার এই জীবন নিয়ে সে কি করবে, সেই বিষয়ে একমাত্র সে নিজের চূড়ান্ত সিদ্ধান্ত নতি পাবে। স্বচ্ছন্দে যদি তার জীবনের বিনাশ ঘটায় তাহলে সেই কাজকে অনৈতিক বলা যাবে না। হিউমের কথা থেকে আমাদের মনে হতে পারে মৃত্যু তে আমাদের জীবনে আবশ্যিক। আগে আর পরে আনন্দে বাঁচবে থাকা যদি কোনভাবেই সম্ভব না হয়, অতিক্রমণে, লাঞ্ছনা, যন্ত্রণা থেকে মুক্তির জন্য আত্মহত্যা করাটা অনৈতিক নয়।

চার্বাক দার্শনিকদের কথাটা আমরা প্রয়োগ করতে পারি এক্ষেত্রে। ‘যতদিন বাঁচবে সুখে বাঁচবে দরকার হলে খাণ করণে ঘাি খাও’ এই মতটি সমর্থন করে বলতে পারি যে, যতদিন বাঁচবে সুখে বাঁচতে হবে, সুখে বাঁচতে না পারলে জীবনে ইতি টানা যতে পারে – এটা অন্যায় নয়।

অস্বত্ববাদী সাহিত্যিক দার্শনিক আলবয়োর কামু (১৯১৩-১৯৬০) তার ‘দ্য মথি অব সিসিফাস’ (Justin O Brien, 1955) গ্রন্থে আত্মহত্যাকে সমস্ত দর্শনের মৌল সমস্যা বলে উল্লেখ করেছেন। এই গ্রন্থটিতে তিনি জীবনের কিছু নতিবিচক দিকের উল্লেখ করেছেন যা মানুষকে এই সিদ্ধান্তে আসতে প্ররোচিত করে না, আত্মহত্যা করা অন্যায় নয়। কদাচিৎ মানুষ চিন্তাভাবনা করে আত্মহত্যা করে। চিন্তাশীল মনের কাছে জীবনের অর্থ খুঁজে না পাওয়া অর্থাৎ জীবন অর্থহীন, অসঙ্গত। মানুষ ও তার জীবনের মধ্যে রয়েছে ধরনের বিচ্ছেদে, যা তার অস্বত্বকে করে তেলে অর্থহীন, অসঙ্গত। আর তখনই সে অর্থহীন অস্বত্বের থেকে পলাতে চায়। জীবনের অসঙ্গতি এবং তার চরম অর্থহীনতার মুখে মুখি হয়। মানুষ বুঝতে পারে জীবনটা বাঁচবে থাকার উপযুক্ত নয়। আমাদের আশা-আকাঙ্ক্ষা ও প্রাপ্তির মধ্যে সবসময় একটা ফাঁক থেকে যায় যা কখনোই পূরণ করতে পারি না। আসলে আমাদের চাওয়াটা চতেনার জগতের ধর্ম। আর পাওয়াটা হল জড় জগতের। সুতরাং জড়জগত ও চতেনার জগতের মধ্যে যে ফাঁক তা কোনদিনই পূরণ হয় না। আর পূরণ করতে পারি না বলেই জীবন থেকে দুঃখ কষ্ট কোন দিন শেষ হয় না। আর আত্মহত্যার মাধ্যমেই এই সমস্ত দুঃখ কষ্টের



নষিপত্তি ঘটাতে চায়। জীবন ও জগতরে মধ্যে অসঙ্গতি থাকবহে। সেই অসঙ্গতির বরিদুধে লড়াই করতে হব। জীবন দয়িহে, মৃত্যু দয়ি নেয়। তাই আত্মহত্যা ক নতৈকি ভাবে সমরখন করা যায় না।

নীতি দারশনকি ইম্যানুয়লে কান্টরে (১৭২৪-১৮০৪) নতৈকিতার সর্বোচ্চ নতিটি হল ‘শরতহীন অনুজ্ঞা’ বা শরতহীন আদশে (categorical imperative) নামে পুরসদিধা। নীতিটি হল ‘এমন নয়িম বা নীতি অনুসারে কাজ করো যাকে তুমি একই সঙ্গে একটি সর্বজনীন নয়িম হিসাবে ইচ্ছা করতে পার। Metaphysics of Morals: Immanuel Kant.

পুতটি মানুষই নিজেকে সবচেয়ে বেশী ভালবাসে। আর সেইজন্যই সে অসহনীয় দুঃখ কষ্ট থেকে মুক্তি পতে আত্মহত্যার পথ বেছে নেয়। জীবনরে অর্থ খুঁজে পতে যায় জীবনরে ধ্বংসরে মধ্যে। কান্ট মনে করেন, যে নয়িম অনুসারে কোন ব্যক্তি আত্মহত্যা করে সেই নয়িমকে কখনোই সর্বজন পুয়োজ্য নয়িম বলে দাবী করা যায় না। যে নয়িমটির আশ্রয় করে কোন ব্যক্তি আত্মহত্যা করে তা হল ‘আত্মপুমে’। অর্থাৎ নিজের জীবনকে রক্ষা করা। আত্মপুমে যদি জীবননাশরে কারণ হয় তাহলে ঐ নয়িমকে কখনোই সর্বজন পুয়োজ্য হতে পারে না। সুতরাং আত্মহত্যা করা অনতৈকি কাজ। আত্মহত্যা ক কখনোই নতৈকি ভাবে সমরখন করা যায় না।

সমাজরে পটভূমিকায় আমাদের যে সব ক্রিয়া কর্ম অন্যকে কোন না কোন ভাবে পুভাবতি করে তাডরে নতৈকি বচার অর্থাৎ ভালমন্দ বচার হয়। সমাজে বসবাস করে আমার কোন ধর্ম যদি অপররে কুতসিধন করে তাহলে তা নীতিগিতভাবে মন্দ কর্ম, অনুচতি কর্ম। আত্মহননকারী ব্যক্তি আত্মহত্যা করে তার পরবিাররে, আত্মীয়পরজিনরে কুতসিধন করে। আমি আত্মহত্যা করলে আমার পরবিার, নকিট আত্মীয় ও বন্ধু-বান্ধবকে তার ফলভোগ করতে হয়। উপযোগবাদরে দকি থেকে বলা যায়, যে কাজ সুখরে তুলনায় দুঃখরে পরমািণ বৃদ্ধি করে সেই কাজ নীতিগিত ভাবে অনুচতি কাজ। জীবন চলার পথে দুঃখ, কষ্ট লাঞ্ছনা, যন্ত্রণা আসবহে। সেই দুঃখ কষ্টরে বরিদুধে লড়াই করাটাই জীবন। জীবনরে অর্থ খুঁজতে হব। জীবন দয়িহে, মৃত্যু দয়ি নেয়। মৃত্যুর শেষে পুান্তে দাঁড়িয়ে যখনে আর বাঁচার কোন সম্ভবনা নেই, সখনেও আমরা ব্যক্তিকে বলতে শুনি আমি বাঁচতে চায়। সংগ্রামরে মধ্য দয়ি বেঁচে থাকটাই হল Kevin Caruso আমাদের জীবনরে পুথম শরত হওয়া উচতি। Suicide is never the answer Getting help is the answer.

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## অদ্বৈত মতে বৃত্তি

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### Abstract

সারাংশ (অ্যাবস্ট্রাক্ট)- ‘বৃত্তি’ শব্দটি বিভিন্ন অর্থকে বুঝিয়ে থাকে, যমেন – ন্যায়মতে বৃত্তি মানে পদ ও পদার্থের মধ্যে এক সম্বন্ধ বিশেষ। এছাড়া বৃত্তি বলতে আশ্রয় হওয়া বা থাকাকেও বোঝানো হয়। যমেন – ভূতলঃ ঘটবৃত্তি। কিন্তু অদ্বৈতবাদিগণ বৃত্তি বলতে কী বঝেন তা উপর্যুক্ত মত হতে ভিন্ন। বৃত্তি বলতে তারা কী বঝেন তাই এই আলোচ্য নবিন্দে সংক্ষেপে আলোচনা করব। আমরা এই নবিন্দে কয়েকটি ভাগে বিভক্ত করছি, প্রথমত- জ্ঞান-এর বিভিন্ন স্বরূপ জ্ঞান-এর আলোচনা করছি, দ্বিতীয়ত বৃত্তিজ্ঞান-এর বিভিন্ন অর্থ বর্ণনা করছি এবং অন্তঃকরণবৃত্তি বিষয়ে সংক্ষেপে আলোচনা করছি, এবং তৃতীয়ত অবদ্যাবৃত্তি বিষয়ে সংক্ষেপে আলোচনা করছি।

মূল শব্দ (কী ওয়ার্ড)- ১। অন্তঃকরণ, ২। বৃত্তি, ৩। অন্তঃকরণ বৃত্তি, ৪। অবদ্যা বৃত্তি, ৫। চরম বৃত্তি, ৬। স্বরূপ জ্ঞান, ৭। সাক্ষী।

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অদ্বৈতবাদী, শূদ্রচৈতন্যকেই জ্ঞান স্বরূপ বলে থাকেন, এবং ব্রহ্ম জ্ঞান স্বরূপ হওয়ায় এবং ব্রহ্ম অতিরিক্ত সত্তা না থাকায়, তারা জ্ঞানকে স্বপ্রকাশ বঝেন। তবে ব্যাবহারিক দৃষ্টিতে জ্ঞানকে প্রধানত তারা দুটি ভাগে ভাগ করছেন, যথা –

১। স্বরূপ জ্ঞান এবং

২। বৃত্তি জ্ঞান

প্রশ্ন ওঠে বৃত্তি কাকে বলে? ‘বদান্তপরভাষা’য় পঞ্জানন শাস্ত্রী মহাশয় বঝিয়েছেন ‘তজৈসমন্তঃকরণমপি চক্ষুরাদিবিদ্বারা নরিগত্ব ঘটাদি-বিস্ম-দশেংগত্বা ঘটাদিবিষয়াকারণে পরনিমতে। স এব পরণিমাঃ বৃত্তিরিতিচ্যুতঃ’<sup>১</sup> অর্থাৎ তজৈস অন্তঃকরণ চক্ষুরাদি ইন্দ্রিয়ের দ্বারা নরিগত হয়। ঘটাদি বিষয়ের সাথে সম্বন্ধ হয়। ঘটাদি বিষয়াকারণে পরিণত হয় অন্তঃকরণ-এর এই বিষয়াকারণে পরিণাম হল বৃত্তি অর্থাৎ অন্তঃকরণ-এর

এই পরিণাম বিশেষ বা অবস্থা বিশেষই হল বৃত্তি।

বৃত্তিকে তারা দুটি ভাগে ভাগ করে থাকেন, যথা-

১। অন্তঃকরণ বৃত্তি

২। অবদ্যা বৃত্তি

এই অন্তঃকরণ বৃত্তি দ্বারা প্রমাতৃচৈতন্য বা প্রমাতার কোন বিষয়ে জ্ঞান লাভ করলে, এই জ্ঞান লাভের জন্য প্রয়োজন ঐ অজ্ঞাত বিষয়ে আবরণ নাশ এবং প্রমাতৃ চৈতন্যের সাথে বিষয় চৈতন্যের সম্বন্ধ স্থাপন। এই দুটি কাজ অন্তঃকরণ বৃত্তি দ্বারাই সম্পন্ন হয় বলে, অন্তঃকরণ বৃত্তিকে প্রমাণ চৈতন্যও বলা হয়। আবার এই অন্তঃকরণবৃত্তি প্রমাণ জন্য ও অজ্ঞাত বিষয়ের প্রকাশক বা জ্ঞাপক হওয়ায়, তাকে প্রমাণও বলা হয়। প্রসঙ্গত উল্লেখ্য অদ্বৈত মতে, ব্যাবহারিক প্রপঞ্চের ব্রহ্ম সত্তার অতিরিক্ত সত্তা না থাকলেও ব্রহ্ম





সাক্ষাৎকারে পূর্ব পর্যন্ত এই ব্যবহারিক জ্ঞান অবাধিতরূপে চলতে থাকে বলে, ব্যবহারিক জ্ঞান মথিয়া হলেও, তাকে প্রমাণ বলা হয়। অর্থাৎ আত্ম সাক্ষাৎকারে না হওয়া পর্যন্ত ব্যবহারিক বস্তু যথা ঘটপটাদি বিষয়ক জ্ঞানকে প্রমাণ বলা হয়ে থাকে। সুতরাং বলা যায় যে এই অন্তঃকরণবৃত্তিই হল অজ্ঞান বরিশোধী বা অজ্ঞানরে নাশক। অদ্বৈতে মতে, শুদ্ধ চৈতন্যকে অজ্ঞানরে আশ্রয় বলা হয়েছে, তাই শুদ্ধ চৈতন্যকে অজ্ঞানরে নাশক বলা সম্ভব নয়। কারণ, কোন বস্তু একই সাথে কোন বস্তুর ধারক ও নাশক হতে পারে না।

অদ্বৈতে মতে, অবদিয়া বৃত্তি হয় দোষ জন্য ,এই অবদিয়া বৃত্তি অজ্ঞাতসং বিষয়রে জ্ঞাপক নয়, তা জ্ঞাত সং বিষয়রে জ্ঞাপক হওয়ায়,তাকে অপ্ৰমাণ বলা হয়। আবার অবদিয়া বৃত্তি প্রকৃত অর্থে জ্ঞান না হওয়ায় তাকে জ্ঞানাভাসও বলা হয়ে থাকে। তবে জ্ঞাত সং বিষয় যমেন প্রাতভাসকি রজতাদি হতে পারে। তমেন সুখদুঃখাদিও হতে হতে পারে। এক্ষেতরে আশঙ্কা হতে পারে যে, সুখদুঃখাদি যদি অবদিয়া বৃত্তি দ্বারা প্রকাশিত হয় তবে ‘অহং সুখী’ এই প্রকার জ্ঞানকেও অপ্ৰমাণ বলতে হয়। কনিত্তু এই প্রকার জ্ঞান যথার্থ , কারণ ব্যবহারিকদশায় এই প্রকার জ্ঞানরে বাধ হয় না। ‘ইদং রজতম্’ এই প্রকার জ্ঞান অযথার্থ, কারণ ব্যবহারিকদশায় এই প্রকার জ্ঞানরে বাধ হয়। আশঙ্কা সমাধানরে গৌড়ব্রহ্মানন্দী লঘুচন্দ্রিকা গ্রন্থরে বলছেন ‘আগন্তুকদোষজন্যত্বনো-বদিয়াদোষজন্যস্বার্থা সুখাদিজ্ঞানস্য প্রমাত্বসম্ভবাচ্’২। অর্থাৎ সুখাদি জ্ঞান অপ্ৰমাণ নয়, কারণ সুখাদি জ্ঞান অবদিয়া বৃত্তি অবদিয়া দোষ জন্য হলেও আগন্তুক দোষ জন্য নয়। সুতরাং তাকে প্রমাণ বলা যায়।

অপরপক্ষে, শুক্তি রজতাদি প্রাকভাসকি বিষয়রে জ্ঞানরে পরেই ‘নদং রজতম্’ এইরূপ বপিরীত জ্ঞানরে উদয় হয় বলে , শুক্তি রজতাদির জ্ঞান বাধিত হয়। যায়।

সুতরাং তা অপ্ৰমাণ। এইভাবে অবদিয়া বৃত্তি জন্য হলেও সুখাদি জ্ঞান ও প্রাতভাসকি বিষয় বিষয়ক জ্ঞান পরস্পর থেকে পৃথক। অদ্বৈতে সিদ্ধান্তে, ব্রহ্মরে সাক্ষাৎ অপ্ৰমাণকষত্ব স্বীকার করা হয়েছে। অন্তঃকরণ বৃত্তি দ্বারা ব্রহ্ম সাক্ষাৎকার সম্ভব, অর্থাৎ অন্তঃকরণ বৃত্তি দ্বারা সকল অজ্ঞানরে নাশ ঘটে, ব্রহ্মরে স্বরূপরে আবির্ভাব সম্ভব হয়। সাধনচতুষ্টয়সম্পন্ন প্রমাতা যখন অন্তঃকরণ বৃত্তি দ্বারা সকল বিষয়রে অজ্ঞান দূরীভূত হয়ে ‘অহং ব্রাহ্মাস্মি’<sup>৩</sup> এই প্রকার শুদ্ধ চৈতন্য বিষয়ক অপ্ৰমাণকষ চিত্ত বৃত্তির উদয় হয়। তখন সেই প্রকার অন্তঃকরণ বৃত্তিকে অখণ্ডাকার অন্তঃকরণ বৃত্তি বা চরম বৃত্তি বলা হয়। আমরা উক্ত নবিন্দে এই তনি বৃত্তি বিষয়েই আলচনা করব।

### স্বরূপ জ্ঞান

ক। জ্ঞানরে নতিত্ব পরদর্শন- অদ্বৈতে মতে, আত্মা হল জ্ঞানস্বরূপ। এই আত্মা ভিন্ কণ কোন কিছু সত্তা না থাকায়, আত্মা এক, নতিত্ব, সং বা অসত্তিবশীল, চিৎ বা জ্ঞান স্বরূপ ও আনন্দ স্বরূপ। তবে যারা জ্ঞানকে নতিত্ব বলে স্বীকার করেন না যমেন ন্যায়িকগণ তারা আপত্তি তুলতে পারেন যে, আত্মা ও মনরে সংযোগ হলে তবেই জ্ঞান উপপন্ন হয়, সুতরাং জ্ঞান অনতিত্ব। আত্মা হল সেই অনতিত্ব জ্ঞানরে আধার। উত্তরে অদ্বৈতবাদীগণ বলেন, জ্ঞানকে অনতিত্ব ও খনকি বললে জ্ঞানরে ব্যক্তিতে স্বীকার করতে হয়, অর্থাৎ মানতে হয় যে জ্ঞান ব্যক্তিতে ভিন্ ভিন্ হয়। তাতে কল্পনা গৌরব হয়, এছাড়াও জ্ঞানরে উপপত্তি মানতে হবে ,তার উপপত্তির পূর্বে প্রাগভাব মানতে হবে , জ্ঞানরে বিনাশ মানতে হবে আবার তার ধ্বংসাব স্বীকার করতে হবে,এইভাবে চলতে থাকলেও কল্পনা গৌরব দোষ হবে। তারচেয়ে সর্বজ্ঞেয়বিষয়ক একজ্ঞানব্যক্তি স্বীকার করলে লাঘব হয়। কারণ প্রশ্ন থেকেই যায় যে, সর্ব বিষয়ে যদি





একই জ্ঞান স্বীকৃত হয়, তবে আমরা ঘটজ্ঞানকে, পটজ্ঞান থেকে ভিন্ন করব কীভাবে?

উত্তরে অদ্বৈতবাদীগণ বলেন, স্বরূপতঃ অভিনি, তাতে যে ভেদে পরলিক্ষতি হয়, তা আসলে উপাধি ভেদে। অর্থাৎ উপাধি ভেদে জ্ঞান পুরস্কারে জ্ঞানভেদে হয়ে থাকে। তারা একটি উদাহরণ সহযোগে বিষয়টি প্রকাশ করছেন যে, ঘট, পটাদি উপাধি ভেদে আকাশের ভেদে হলও যমেন আকাশ এক বা ভেদবহীন, তমেন, স্বরূপজ্ঞানরে ভেদে প্রতীয়মান হলও বাস্তবিকি পক্ষ্যে কোন ভেদে নহে।

আবার অনেকে বলে থাকেন পুরুষ ভেদেও জ্ঞান ভেদে হয়ে থাকে, যমেন ‘চৈত্রীয় জ্ঞান মতেরে নাই’ অর্থাৎ চৈত্রেরে জ্ঞান মতেরে নহে, এর উত্তরে অদ্বৈতবাদী বলেন ‘ঘটাকাশং পটে নাস্তি’, তদঘটকালে এতদঘটকালো ন ইত্যাদি স্থলে যে ভেদে তা আসলে দশে, কাল ইত্যাদি উপাধি বিশিষ্টরূপেই প্রতীয়মান হয়, স্বরূপত ভেদে হয় না। সুতরাং মানতে হবে যে জ্ঞান স্বরূপত নতিয়া।

খ। জ্ঞানরে স্বপ্রকাশত্ব নরিণয়- অদ্বৈতবাদীগণ আত্ম বা চৈতন্যকে স্বপ্রকাশ বলেছেন। তাদের মতে, ব্যবহারিক দশায় আত্মার স্বরূপ অজ্ঞান দ্বারা আবৃত থাকায় সে জ্ঞানস্বরূপ হলও তা প্রকাশিত হয় না। ঠিক যমেন, দিনেরে বলোয় সূর্যেরে রশ্মির দ্বারা চন্দ্র আচ্ছাদিত থাকার ফলে, চন্দ্র দিনেরে বলো বদ্যমান থাকলেও তা প্রকাশিত হতে পারে না। যখন বদ্য বা জ্ঞানরে দ্বারা এই অজ্ঞানরে নাশ হয়, তখন আত্ম স্বপ্রকাশ বলে স্বয়ং প্রকাশিত হন। উপন্যাসেও বিভিন্ন শ্রুতিতে আত্মকে স্বপ্রকাশ মানা হয়েছে। যমেন ‘বৃহদারণ্যকোপনিষৎ’ ৪।৩।১৪-এ বলে হয়েছে, ‘অত্রায়ং পুরুষঃ স্বয়ংজ্যোতিঃ’। এখানে ‘জ্যোতিঃ’ শব্দরে অর্থ প্রকাশ। অর্থাৎ পুরুষ বা আত্মা হলনে স্বপ্রকাশ। ‘বৃহদারণ্যকোপনিষৎ’-এ ‘বজ্ঞানমানন্দং ব্রহ্ম’<sup>৫</sup> শ্রুতিতেও বজ্ঞান শব্দরে অর্থ

স্বপ্রকাশ। অদ্বৈতবাদীগণ জ্ঞানকে স্বপ্রকাশ বলেছেন কারণ, জ্ঞান স্বপ্রকাশ না হলে তার দ্বারা দৃশ্যবস্তুর প্রকাশ ঘটানো সম্ভব হয় না। আর যদি জ্ঞান যমেন বিষয়কে প্রকাশ করে সেইভাবে জ্ঞানকে প্রকাশরে জন্য অপর একটি জ্ঞান স্বীকার করা হয়; তবে সেই জ্ঞানকে প্রকাশরে জন্য অপর আরো একটি জ্ঞান স্বীকার করতে হবে; এইভাবে অনবস্থা দোষ ঘটবে। তাই জ্ঞানকে স্বপ্রকাশ বলে হয়েছে।

শঙ্করাচার্য আত্মার স্বয়ংজ্যোতিঃ স্বভাবতা প্রতিপাদনের দ্বারা জ্ঞানরে স্বপ্রকাশত্বকে প্রতিষ্ঠা করেছেন। যাজ্ঞবল্ক্য জনককে জিজ্ঞাসা করেছিলেন, ‘কিং জ্যোতিরিয়ং পুরুষঃ?’<sup>৬</sup> অর্থাৎ এই পুরুষ কোন জ্যোতির দ্বারা ব্যবহার সম্পাদন করে? অর্থাৎ পুরুষ কি নিজ শরীরাবয়ব সংঘাতরে অন্তর্গত কোন জ্যোতির দ্বারা ব্যবহার সম্পাদন করে থাকে, নাকি বাহ্য কোন জ্যোতির দ্বারা ব্যবহার সম্পাদন করে?

উত্তরে বলেছেন আদিত্যরূপ জ্যোতির দ্বারা পুরুষ ব্যবহার সম্পাদন করে থাকে। যখন আদিত্যরূপ জ্যোতি থাকে না, তখন চন্দ্রমার জ্যোতির সাহায্যে পুরুষ কার্য সম্পাদন করে থাকে। যখন আদিত্য ও চন্দ্রমার জ্যোতি থাকে না, তখন বাক জ্যোতির দ্বারা ব্যবহার সম্পাদন করে থাকে। যমেন যখন ঘন অন্ধকার সেখানে সেখানে কোন কোন একটি কুকুরের ডাক শুনলে পুরুষ বুঝতে পারে সেখানে কুকুর প্রাণীটি আছে এবং সেই মত সে সাবধান হয়। এইভাবে সে বাক জ্যোতির দ্বারা কর্ম সম্পাদন করে। কিন্তু সকল জ্যোতি অস্ফুট হলে পুরুষ আত্মজ্যোতির দ্বারা কার্য নরিবাহ করে থাকে। সুতরাং আত্ম স্বয়ংজ্যোতি স্বরূপ।

শঙ্করাচার্য বলেন, জাগ্রতকালে সূর্যজ্যোতি ও ইন্দ্রিয়ের সাহায্যে বিষয়রে প্রত্যক্ষ হলও স্বপ্ন ও সুষুপ্তকালে সূর্যজ্যোতি না থাকায় বলেতে হয় বিষয়



প্রত্যক্ষ সম্ভব নয়। কনিতু আমরা স্বপ্ন দেখি। সুতরাং মানতে হবে, এই সময় আত্মজ্যোতির দ্বারা বিষয়রে প্রত্যক্ষ করে থাকেন। সুতরাং মানতে হবে আত্ম স্বয়ংজ্যোতি স্বরূপ।

‘বিবরণপ্রময়েসংগ্রহ’ গ্রন্থে বলা হয়েছে-‘প্রজ্ঞানং ব্রহ্ম’<sup>৯</sup> এখানে প্রজ্ঞান শব্দরে অর্থ জ্ঞানশ্রয়ত্ব। এখানে প্রজ্ঞান শব্দটির ভাবার্থ গ্রহণ করা হয়েছে। যদি প্রকৃষ্ট জ্ঞান আছে যার এরূপ বহুব্রীহী সমাস করা তবে প্রজ্ঞান শব্দরে অর্থ হবে জ্ঞাতা। কনিতু এরূপ অর্থ যুক্তি যুক্ত হবে না। কারণ তাহলে প্রতী মুহুর্তে আত্মকে জ্ঞানোপতী স্বীকার করতে হবে, তাতে কল্পনা গৌরব দোষ হবে, আবার যদি তা না করে বলা, কোন সময়ই আত্ম প্রকাশিত হন না, তাও বলা যাবে না, কারণ আত্ম সর্বদা প্রকাশমান। সুতরাং স্বপ্রকাশ চৈতন্য স্বরূপ আত্মার প্রকাশ সর্বদা অবাধেই হয়ে থাকে। একথাই মানতে হয়। আত্ম স্বপ্রকাশ শুদ্ধ চৈতন্য স্বরূপ, একে স্বরূপ জ্ঞান বলা। এই জ্ঞান নতি ও নবিষয়ক।

### অন্তঃকরন বৃত্তি

‘বদোন্তসার’ গ্রন্থে শ্রী সদানন্দ যোগীন্দ্র মহাশয় বলাছেন, ‘অস্যাজ্ঞানস্বাবরণবিক্ষেপেনামকং শক্তদিয়মসতি’<sup>১০</sup>। অর্থাৎ অজ্ঞানরে আবরণ ও বিক্ষেপে নামক দুটি শক্তি আছে। এই দুই প্রকার শক্তির ক্রিয়াশীলতা আমরা খুব সহজেই বুঝতে পারি যখন আমাদের রজ্জুতে সর্প ভ্রম হয়। অজ্ঞান প্রথমে মাটিতে পড়ে থাকা রজ্জুটির স্বরূপকে আবৃত করে, ফলে আমরা বুঝতে পারিনি যে সেটি রজ্জু, এবং ঐ আবৃত রজ্জুতে নতুন একটি পদার্থের বা সর্পরে সৃষ্টি করে। তাই আমরা রজ্জু স্থানে সর্পকে দেখি। অজ্ঞানরে এই শক্তিকে বলে বিক্ষেপে

শক্তি। বিক্ষেপে কথার অর্থ হল বা বা বিরুদ্ধ এবং ক্ষেপে বা ক্ষেপণ করা বা চাপিয়ে দেওয়া। অর্থাৎ কোন কছির ওপর বিরুদ্ধ পদার্থ চাপিয়ে দেওয়া। রজ্জুতে সর্প ভ্রমকালে সর্পটি বিরুদ্ধ পদার্থ কারণ রজ্জুটি হল রজ্জুত্ব ধর্ম বিশিষ্ট ও সর্পটি হল সর্পত্ব বিশিষ্ট। ফলে অজ্ঞান ঐ ভ্রম স্থলে বিরুদ্ধ ধর্ম বিশিষ্ট সর্পকে রজ্জুতে ক্ষেপণ করে বা চাপিয়ে দেয়। ‘বদোন্তসার’ এ এই আবরণ ও বিক্ষেপে শক্তিকে বঝাতে বলা হয়েছে; এক খণ্ড মঘে যমেন দ্রষ্টার দৃষ্টপিথকে আবৃত করে তখন বহুদুরে সূর্যকে যনে; ঐ মঘে আচ্ছাদন করে আছে বলে মনে হয়, তমেন অজ্ঞান জীবরে বুদ্ধিকে আবৃত করে বলে, জীব নিজেকে ব্রহ্ম থেকে পৃথক মনে করে। এটি হল অজ্ঞানরে আবরণ শক্তি।

অজ্ঞানরে বিক্ষেপে শক্তির দ্বারা রজ্জু আবরণ অজ্ঞান যমেন রজ্জুতে সর্পরে সৃষ্টি করে তমেন আত্মার আবরণ অজ্ঞান আত্মাতে আকাশাদি প্রপঞ্ছরে সৃষ্টি করে। এই বিক্ষেপে শক্তি দ্বারাই সুক্ষশরীর সৃষ্টি হয়। এই সুক্ষশরীরকে লিঙ্গ শরীরও বলা হয়; কারণ লিঙ্গ ধাতুর অর্থ হল গতি বা জ্ঞান, অর্থাৎ যার দ্বারা আত্মার স্বরূপ জানা যায় তাই হল লিঙ্গ শরীর। অনেকে মতে এই লিঙ্গ শরীর হল প্রধানত অন্তঃকরণ। কারণ শ্রুতিতে বলা হয়েছে যে, যার অবধানবশতঃ বিষয়রে উপলব্ধি হয় ও যার অবধানবশতঃ বিষয়রে উপলব্ধি হয় না, তাকে অন্তঃকরণ বলে<sup>১১</sup>। এই স্থলে জ্ঞান বলতে ব্যবহারিক জ্ঞানকে বঝানো হয়েছে। এই ব্যবহারিক জ্ঞান হতে গলে অন্তঃকরণরে উপস্থিতি আবশ্যিক। তাই অনেকে এই অন্তঃকরণকে ব্রহ্ম-এর স্বরূপরে উপলব্ধিও প্রধান কারণ বা লিঙ্গ শরীর বলেন।

এই অন্তঃকরণ চার প্রকার যথা- বুদ্ধি, মন, অহংকার, চিত্ত। এই চার প্রকার অন্তঃকরণরে ভিন্ন ভিন্ন ক্রিয়া বর্তমান। যথা-

বুদ্ধি হল- নিশ্চয়াত্মক অন্তঃকরণবৃত্তি



প্ৰসঙগত উল্লখে, অন্তঃকরণকে চার প্ৰকার বলা হলও, আসলে অন্তঃকরণ এক । আবার অন্তঃকরণে যে শুধু চারটিই বৃত্তি আছে, তা নয় , আরও বহু বৃত্তি আছে, কনিতু যত বৃত্তি থাকনা কনে , তাদরে সকলকে মন বলাইে বুরাত হবো। তাই অন্তঃকরণ এক।

ক। অন্তঃকরণে ইন্দ্রিয়ত্ব থাঙডন- বদোন্ত মতে অন্তঃকরণকে অন্তর ইন্দ্রিয়ি বলা হয় না। ‘বদোন্ত পরভিষা’ গ্ৰন্থে এমন সদিধান্ত করছেনে শ্ৰীমদ্ ধৰ্মরাজধবরীন্দ্র। সুখ,দুঃখ-কে তনি অন্তঃকরণে ধৰ্ম বলাছেনো। কঠোপনিষদ-এও মন কে ইন্দ্রিয়ি থকে। তনি বলা হয়ছে<sup>১৩</sup>। প্ৰশ্ন উঠতে পারে কনে অন্তঃকরণকে ইন্দ্রিয়ি বলা হয় নি? উত্তরে ‘বদোন্ত-পরভিষা’ গ্ৰন্থে দেখান হয়ছে। যে, ইন্দ্রিয়িজন্মত্ব প্ৰত্যক্ষরে প্ৰযোজক নয়। কারণ মনকে ইন্দ্রিয়ি বলালে এবং ইন্দ্রিয়িজন্মত্বকে প্ৰত্যক্ষরে কারণ বলালে অনুমতি প্ৰভৃতি স্হলেও মন বদিযমান থাকায় স্খোনও প্ৰত্যক্ষরে লক্ষণে অতবিষাপ্তি হবো। এছাড়াও ইন্দ্রিয়িজন্মত্বকে প্ৰত্যক্ষরে কারণ বলালে ঈশ্বর প্ৰত্যক্ষরে অব্যাপ্তি দোষ হবো। কারণ ঈশ্বর ইন্দ্রিয়িগ্ৰাহ্য নন। তাই বদোন্ত মতে মন ইন্দ্রিয়ি নয়। সুখদুঃখাদি কবেল সাক্ষবিদেয<sup>১৪</sup>।

খ। অন্তঃকরণে পরিমাণ- প্ৰশ্ন উঠতে পারে যে, অন্তঃকরণ কী পরিমাণ বিশিষ্ট? তা বডি নাকি অনু নাকি মধ্যম পরিমাণ বিশিষ্ট? ন্যায়িকগণ অন্তঃকরণকে অনু পরিমাণ বিশিষ্ট বলানো। কনিতু বদোন্তিকগণ তা বলানে না। কারণ অন্তঃকরণকে অনু পরিমাণ বিশিষ্ট বলালে, তা অতি দ্রুত গতি সম্পন্ন বলাে, তা জীবদহে থকে সম্পূর্ণ নরিগত হয়। গলে জীবদহে নরিজীব হয়। পরবে, এই আশঙ্কা থকে যায়। আবার যদি

অন্তঃকরণ অনু পরিমাণ বিশিষ্ট হয় তবে দহে বডি নিন অংশে একই সময় সুখ দুঃখ যে অনুভূত হয় , তা হত না।

অন্তঃকরণকে বডি পরিমাণও বলা যায় না, কারণ বডি পদার্থ ক্ৰিয়াশীল নয় , কনিতু অন্তঃকরণ ক্ৰিয়াশীল। তাকে মধ্যম পরিমাণও বলা যায় না কারণ তা দহে পরিমাণ বিশিষ্ট হলো; তা দহে মত মন্দগতি সম্পন্ন হয়। পরবে, তা মানা যায় না। তবে ‘বিবরণপ্ৰময়েসংগ্ৰহ’ গ্ৰন্থে<sup>১৫</sup> বলা হয়ছে, ‘মধ্যমপরিমাণতবে তু ন কোপি দোষঃ’। অর্থাৎ অন্তঃকরণকে মধ্যম পরিমাণ বা শরীর পরিমাণ বিশিষ্ট বলালে দোষ হবো না। এই অন্তঃকরণ অতি স্বচ্ছ ও অঘনীভূত তৈস পদার্থ বলাে সূর্যালোকরে মত তা দ্রুতগতি সম্পন্ন।

গ। অন্তঃকরণে কার্যকারিতা- অন্তঃকরণ ব্যতিরেকে জ্ঞান হওয়া সম্ভব নয়। তা পূর্বেই বলা হয়ছে। এই অন্তঃকরণ চক্ষুরাদি ইন্দ্রিয়িরে দ্বারা বিষয় দশে গমন করে; ঐ বিষয়াবরণকে বনিষ্ট করে এবং প্ৰমাতার সাথে বিষয়রে সাক্ষাৎ ঘটায়, ফলে প্ৰমাতার বিষয় জ্ঞান হয়। স্বপ্নকালে ঐ অন্তঃকরণ বৃত্তি না থাকায়, কারণ স্বপ্নকালে যে বস্তু প্ৰত্যক্ষ হয় তা প্ৰতিভাসিকি বস্তু, তা প্ৰকৃতপক্ষে অস্টিবশীল নয়। ফলে সেই বিষয় দশে গমন করে বিষয়াকার প্ৰাপ্ত সম্ভব নয়। তাই স্বপ্নকালে জীবকে প্ৰমাতা বলা হয় না। তনি সেই সময় কবেল বিষয়রে সাক্ষাৎ বা দর্শন করনে বলাে, তাকে সাক্ষী বলাে।

ঘ। অন্তঃকরণ বৃত্তি স্বীকাররে প্ৰয়োজনীয়তা- অদ্বৈতবদোন্ত মতে, অবদিয়া নবিত্তিরি কারণ রূপে অন্তঃকরণ বৃত্তিকি স্বীকার করা হয়ছে। অর্থাৎ কোন বিষয় সম্পর্কে যখন আমাদের অজ্ঞান থাকে, তখন সেই অজ্ঞানকে নরিশ করে বিষয়জ্ঞান ঘটানোর হতে অন্তঃকরণ বৃত্তি অবশ্য স্বীকার্য।



এই মতের বিরুদ্ধে ন্যায়োয়িকিগণ আপত্তি তুলতে পারেন যে, স্বয়ং প্রকাশ বদ্বিয়ার দ্বারা ই যদি অবদ্বিযা নবিারতি হয়, তবে ঐ অবদ্বিযা নবিারনরে জন্য অতিরিক্ত বৃত্তি স্বীকাররে কী প্রয়োজন? আবার এই বৃত্তি অবদ্বিয়ার বক্শপে শক্তরি দ্বারা সৃষ্টি হয়, তা পূর্বহে বলা হয়ছে, সুতরাং তা অজ্ঞানরে কার্য হওয়ায় তা স্বয়ং প্রকাশ নয়, তবে তা কভাবে অজ্ঞানরে নাশক হবে? কিংবা তা নজি অজ্ঞানরে কার্য হয় অজ্ঞানরে নাশক কভাবে হবে? ?

উত্তরে অদ্বৈতে বদোন্তীগণ বলনে, চক্সুরাদি ইন্দ্রিয়ি থাকলেও নতিয় অনুভব সাক্ষীতে ঘটপটরে জ্ঞান হতে গলে অন্তঃকরণ বৃত্তি স্বীকার করতে হবে। যে অন্তঃকরণ বৃত্তি দ্বারা বশিয়াবরণ বনিষ্টি হবার ফলে বশিয়জ্ঞান সম্ভব হয়। কারণ চক্সুরাদি ইন্দ্রিয়ি থাকলেও যদি বৃত্তি না থাকে তবে বশিয়জ্ঞান হয় না। সুতরাং অন্তঃকরণ বৃত্তি অবশ্য স্বীকার্য<sup>৩৭</sup>।

### অবদ্বিযা বৃত্তি

এতকষণ আমরা অন্তঃকরণবৃত্তি নিয়ে আলোচনা করছি এবং দেখেছি অন্তঃকরণ চক্সুরাদি ইন্দ্রিয়ি পথে নির্গত হয়ে বশিয় দশে গমন করে, সেই বশিয়রে আবরণরূপ অজ্ঞান নাশ করে বশিয়াকার ধারণ করে, ফলে প্রমাতৃ চৈতন্য এবং বশিয় চৈতন্যরে সমানাশ্রয়ত্ব ও সমানবশিয়কত্ব পরপ্তি হয়। ফলে প্রমাতার ব্যবহারিকি বশিয়জ্ঞান হয়। যদি অন্তঃকরণ বৃত্তি স্বীকার না করা হয় তবে বশিয়চৈতন্য ও প্রমাতৃচৈতন্যরে মধ্যে সমানাশ্রয়ত্ব সম্ভব হয় না, যদি সমানাশ্রয়ত্ব সম্ভব না হয় তাহলে অন্তঃকরণ তার ধর্ম যথা – জ্ঞান, ইচ্ছা ইত্যাদি আত্মাতে আরোপতি করতে পারে না। ফলে ঘটপটাদরি বশিয় জ্ঞান হবে না। যমেন- লোহপণ্ডি অগ্নি মলিতি হয়ে অবস্থান করলে

অগ্নরি দাহকর্তৃত্ব লোহপণ্ডি আরোপতি হয়, ফলে আমরা ‘অয়ো দহতি’ এইরূপ প্রতীতি হয়। এইভাবে আত্মা ও অন্তঃকরণ পরস্পরে ঐক্যাধ্যাসবশতঃ অন্তঃকরণরে জ্ঞানগুলি আত্মাতে আরোপতি হলে ‘অহং জানামি’, ‘অহং ইচ্ছামি’ এইরূপ প্রতীতি হয়। সুতরাং এই ঐক্যাধ্যাসরে জন্য অন্তঃকরণ বৃত্তি স্বীকার করা হয়েছে<sup>৩৮</sup>। কিন্তু ব্যবহারিকি বশিয় যথা ঘটপটাদি বশিয় জ্ঞান অন্তঃকরণ বৃত্তি দ্বারা সম্ভব হলেও; যে বশিয় কৈন অজ্ঞানরূপ আবরণ থাকে না সেই বশিয়কে জানা যাবে কীভাবে?

উত্তরে বদোন্তীগণ বলনে, জ্ঞান যথার্থ ও অযথার্থ ভেদে দু-প্রকার। যথার্থ জ্ঞানকে বলে প্রমা। পরমার লক্ষণে ‘বদোন্ত- পরভাষা’ গ্রন্থে বলে হয়েছে- অনধগিত, অবাধতি, অর্থবশিয়ক জ্ঞান। অর্থার্থ□ যা অনধগিত অর্থার্থ□ যা আগে থেকে জ্ঞাত নয়, অবাধতি অর্থার্থ□ যা বাধতি নয়, এবং অর্থবশিয়ক জ্ঞান; তাই প্রমা। সকল বস্তু জ্ঞাত ও অজ্ঞাতরূপে সাক্ষচিতৈন্যরে জ্ঞানরে বশিয় হয়ে থাকে। ঘটপটাদি বশিয় অজ্ঞাত, কারণ জানার পূর্বে তার সত্তা ছিল এবং ঘটপটাদি বশিয়, পারমার্থিকি জ্ঞান না হওয়া পর্যন্ত অবাধতি, এই ঘটপটাদি বশিয়ক জ্ঞান হল প্রমা। কিন্তু প্রাতভাসিকি বস্তু যথা- শুক্তি রজত, স্বাপ্নবস্তু ইত্যাদি ব্যবহারিকি জ্ঞানরে দ্বারা বাধতি হয়ে যায়, সুতরাং তা অপ্ৰমা। এই সকল বস্তু আন্তর পদার্থ বলে, তারা সাক্ষী-তে সাক্ষা□ভাবে অবস্থান করে, ফলে তাদের আবরণ নাশরে প্রয়োজন হয় না। অবদ্বিযাতে প্রতবিম্বিতি চৈতন্য হলে সাক্ষী। এই সকল সাক্ষবিদ্যে বস্তুকে যে বৃত্তরি সাহায্যে সাক্ষী জাননে তাকে বলে অবদ্বিযাবৃত্তি। এই বস্তুগুলি হল



জ্ঞানতসৎ, কারণ আমার দুঃখ হচ্ছে অথচ আমি  
সে বিষয়ে অবগত নই, এমন হতে পারে না।

নির্বিষাপারতয়া লীনস্মে বশ্বিবেণীপলীন  
ইত্বুচতে। তদা চ স্বপ্নাবস্থা”১৯

ক। অবদ্যিবাত্তরি লক্ষণ- প্রশ্ন ওঠে,  
অবদ্যিবাত্তরি কাকো বলো? উত্তরে  
অদ্বৈতবদোন্তগিণ বলনে, অবদ্যিয়ার যো  
বশ্বিয়ার পরগাম তাকোই অবদ্যিবাত্তরি বলো,  
যো সমস্ত বশ্বিয়ার সাক্ষবিদ্যে সোই সব বশ্বিয়ারে  
আবরণ না থাকায় তাদরে জানবার জন্ম অবদ্যিয়ার  
বাত্তরিকো স্বীকার করা হয়েছে।

জাগরদ্ ভোগজনক কর্মে কষয় হলো,  
স্বাপ্নভোগ জনক কর্মরে উদয় হলো  
নদীরানামক তামসী বাত্তরি দ্বারা স্থূল  
দহোভমিন দুরীকৃত হয়ে থাকে। সোই সময় বাহ্য  
ইন্দ্রিয় সমূহ তৎ তৎ দবেগগরে দ্বারা  
অনুগ্রহপ্রাপ্ত না হয়ে বরিত ব্যাপার হয়ে তৎ  
তৎ উপাদান কারণে বলীন হয়ে যায়। এটাই  
স্বপ্নাবস্থা। এবং অবদ্যিয়ার বাত্তরি দ্বারা ঐ  
অবস্থায় যো বশ্বিয়ারে গ্রহণ হয় তাকো বলো,  
স্বপ্ন। ঐ স্বপ্নকালে অবদ্যিয়ার বিভিন্ন  
বশ্বিয়ার ধারণ করে এবং অবদ্যিয়ার বাত্তরি  
দ্বারা ঐ বশ্বিয়ারে গ্রহণ হয়, তাই স্বপ্ন কালে  
বশ্বিয়ারে গ্রহণরে জন্ম অবদ্যিয়ার বাত্তরি স্বীকার  
অবশ্য প্রয়োজনীয়।

অবদ্যিয়ার সাক্ষবিদ্যে কনিতু শুদ্ধ চৈতন্য দ্বারা  
প্রকাশ্য নয়, ঐ অবদ্যিয়ার প্রকাশরে জন্ম  
তাই অবদ্যিয়ার অবদ্যিয়ার বাত্তরি স্বীকার করা  
হয়েছে। ঐ অবদ্যিবাত্তরি কখন কখন প্রতীতি  
হয় কখন কখন প্রতীতি হয় না বলো একো নতিয়  
বলা যাবে না।

উপসংহারে বলা যায়, ঐ বাত্তরি  
জ্ঞানকে প্রকৃত অর্থে জ্ঞান বলা যায় না,  
কারণ বাত্তরি নিজিও উপাধি যা পারমার্থিক সৎ  
তারই একমাত্র বাধ হয় না, সূতরাং ব্রহ্ম  
একমাত্র সৎ। ঐ ব্রহ্ম জ্ঞান হলো  
ব্যাবহারিক জগৎ বাধতি হয়ে যায় ফলে, তখন  
তা অধিকারীর কাছে মথিয়া বলো প্রতীতি হয়,  
কনিতু ব্রহ্ম জ্ঞান না হওয়া পর্যন্ত  
অধিকারীর কাছে জগৎ সত্য। ঐ জগৎ ও  
জাগতিক বিভিন্ন বশ্বিয়ার এবং প্রাতভাসিক বশ্বিয়ার  
জানার জন্ম তাই বাত্তরি জ্ঞানরে আবশ্যিকতা  
থাকোই যায়।

খ। অবদ্যিবাত্তরি কার্যকারতি- জাগরতকালে  
ইন্দ্রিয় ব্যাপার থাকে, ফলে সোই সময়  
অন্তঃকরণবাত্তরি দ্বারা বশ্বিয়ার জ্ঞান হয়। কনিতু  
স্বপ্ন ও সুষুপ্তিকালে ইন্দ্রিয় ব্যাপার না  
থাকয় অন্তঃকরণ দ্বারা জ্ঞান হওয়া সম্ভব  
নয়। প্রশ্ন ওঠে স্বপ্ন কাকো বলো?  
‘সদিধান্তবিন্দু’ গ্রন্থে স্বপ্নরে লক্ষণে বলা  
হয়েছে-

“জাগরদ্ ভোগজনক কর্মে কষয়  
স্বাপ্নভোগজনক কর্মে উদয়। চ সর্বা  
নদীরাখ্যায়াম তামস্য বাত্তরাস্থূলদহোভমিনে  
দুরীকৃতে সর্বনেদ্রিয়স্মে দবেতানুগ্রহাভাবাৎ

## তথ্যসূচী





১। ‘বদোন্তপরভাষা’, পৃ- ৩১

২। ‘লঘুচন্দ্রিকা’, পৃ-৫৪৫

৩। ‘বৃহদান্ধ্যকোপনষি□’, ১/৪/১০

৪। ‘সদ্ধিধান্তবিন্দু’, পৃ- ১৮১

‘জ্ঞানানতিযত্বপক্ষ্যে তত্তদ্ব্যক্তভিধেধ্বংস প্রাগভাবসমবায়জ্ঞানত্ববভ্যাত্যাদ্যভ্যুপগমে’

৫। ‘বৃহদান্ধ্যকোপনষি□’, ৪/৩/৭

৬। ‘বৃহদান্ধ্যকোপনষি□’, ৪/৩/৬

৭। তত্রবৈ

‘অসুতমতি আদতিয্যে যাজ্ঞবল্ক্য চন্দ্রমস্যসুতমতি শান্তে□গ্ননৌ শান্তায়াং বাচী কংজ্যোতিরিবোয়ং পুরুষ ইতি, আত্মবোস্য জ্যোতিরিভবতীত্যাত্মনবোয়ং জ্যোতিষাস্তে পল্লয়তঃ কর্ম্ম করুতে বপিল্যতৌতি’।।

৮। ‘বৃহদান্ধ্যকোপনষি□’, ৪/৩/১৪

‘আরামস্য পশ্যন্তী ন তং পশ্যতি কশ্চনতো। তন্নায়াতং বোধয়দেতিয়াহুঃ। দুর্ভষিজ্যংহাস্মৈ ভবতি, যমশ্চ ন প্রতপিত্যতঃ। অথো খল্বাহুরজাগরতিদশে এবাস্মশ্চ ইতি, যানি হ্যবে জাগ্র□ পশ্যতি, তানি সুপ্ত ইতি, অত্রায়ং পুরুষঃ স্বয়ংজ্যোতিরিভবতি, সো□হং ভগবতে সহস্রং দদাম্যতঃ উর্দ্ধং বমিক্ষায় ব্রহ্মীতি’।।

৯। ‘ববিরণপ্রময়েসংগ্রহ’, পৃ- ২৮

‘প্রজ্ঞানং ব্রহ্ম জ্যোতিষ্টিবং চাত্র চদ্রুপত্বমবে ববির্কষতিম্’।

১০। ‘বদোন্তসার’, পৃ- ৯৩

১১। ‘ব্রহ্মসূত্র’, ২।৩।৩২

‘যস্যাবধানানবধানাভ্যসুপলব্ধ্যনুপলব্ধী ভবতস্তন্মনঃ কামন্দয়শ্চাস্য বৃত্ত্যয়ঃ’।

১২। ‘বদোন্তসার’, পৃ- ১০৮

১৩। ‘ইন্দ্রিয়ভেষঃ পরা□র্থা অর্থভেষশ্চ পরং মনঃ’।

১৪। ‘বদোন্তপরভাষা’, পৃ- ২৫-২৭

‘ন চবৈং মনসো□নিদ্রয়িত্বঃ সুখাদপিরত্যক্ষস্য সাক্ষাত্বং ন



স্বাদনিদ্রিয়াজন্যত্বাদতি বাচ্যম্। ন ইন্দ্রিয়-জন্যত্বনে জ্ঞানস্য সাক্ষাত্ত্বম্, অনুমতিয়াদরেপি মনোজন্যতয়া সাক্ষাত্ত্বাপত্তেঃ ঈশ্বর জ্ঞানস্বাননিদ্রিয়জন্যতয়া সাক্ষাত্ত্বানাপত্ত্বশেচ'।

১৫। 'বিরণপ্রময়েসংগ্রহ', পৃ-২২৮

১৬। 'অদ্বৈতদীপিকা', পৃ-১২৩

“ননু চতৈন্যমবদিয়াং নবিত্তয়তু কমিনয়া বৃত্তয়া, তস্যাঃ প্রকাশনবিত্তয়ত্বা□ বৃত্তশেচাপ্রকাশত্বা□”।

১৭। তত্রবৈ

“ব্যাসাঙ্গদশায়াং সত্যপি চক্ষুষঃ সম্প্রয়োগে সতি চ নতিয়ানুভাবে সাক্ষনিয়ন্তঃকরণবৃত্তবিযাতরিকণে ঘতাদ্যজ্ঞাননবিত্তয়দর্শনা□ । তস্যাং চ সত্যং তত্রবৈ তদদর্শনা□”।

১৮। বদোন্ত পরভাষা, পৃ-২১

“উচ্যতে অয়ংপিণ্ডস্য দগ্ধত্বাভাবে□পি দগ্ধত্বাশ্রয়বহ্নিগিতাত্ম্যধ্যাসাদ্ যথা অয়ো দহতি ব্যবহরস্তথা সুখাদ্যকার পরনিম্মন্তঃকরণকৈযধ্যাস্বাদহং সুখী অহং দুঃখীত্বাদি ব্যবহারো জায়তে”।

১৯। 'সিদ্ধান্তবিন্দু', পৃ- ১০৭

### গ্ৰন্থপঞ্জী

১। মধুসূদন সরস্বতী, সিদ্ধান্তবিন্দু, ব্রহ্মানন্দ সরস্বতী, ন্যায়রত্নাবলী, নারায়ণতীর্থ, নারায়নী (লেখু ব্ৰাখ্যা), ত্রম্বকরাম শাস্ত্রী (সম্পাদক) সিদ্ধান্তবিন্দুঃ, চৌখাম্বা সংস্কৃত সংস্থান, কাশী, ২০০৭ খ্রীঃ।

২। দত্ত শর্মা, রামশেবর , অদ্বৈতসিদ্ধি, সরলা সহিত প্রথম ও দ্বিতীয় ভাগ, ১৮৪৬ শকাব্দ।

৩। আচার্য শঙ্করভাষ্য, বৃহদারণ্যকোপনিষ□, আনন্দগরি টীকা, দুর্গাচরণসাংখ্য বদোন্ততীর্থ (সম্পাদক), দবে সাহিত্য কুটীর, কলিকাতা, ২০০০ খ্রীঃ।

৪। বদ্যারণ্য, বিরণপ্রময়েসংগ্রহ, প্রমথনাথ তর্কভূষণ (সম্পাদক) , বিরণ-প্রময়ে-সংগ্রহঃ দ্বিতীয় ভাগ, বসুমতি সাহিত্য মন্দির, কলিকাতা, ১৯৬১ খ্রীঃ।

৫। ধর্মরাজাধ্বরীন্দ্র, বদোন্তপরভাষা, রামকৃষ্ণাধ্বরী, শখিমণি, অমরদাস, মণিপ্রভা, সুব্রহ্মণাশাস্ত্রী (সম্পাদক) , বদোন্তপরভাষাঃ, চৌখাম্বা অমরভারতী প্রকাশন, কাশী, ১৯৮৫ খ্রীঃ।





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# FREGE ON PROPER NAME AND SENTENCES

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## Abstract

*In this paper I wish to show how Frege's distinction between sense and reference is applied to both proper name and sentences. It is an admitted fact that proper name has reference but Frege claims that it has sense. We will see how, according to Frege, proper name acquires sense. In this connection a comparison is made with No-sense theorists like Mill, Russell, and Kripke, who advocate that proper name, has no sense. Besides, that sentences have sense is admitted by all but Frege claims that it has reference. We will see how, according to Frege, sentences have reference. In this connection, an attempt has been made to make a comparison with early Wittgenstein, who also speaks of the reference of a sentence but in a different way. Frege's sense and reference distinction as applied to proper name and sentences opens up a new direction in the field of analytic philosophy. It provides material to the post-Fregean philosophers for further research and development.*

**Keywords:** *sense, reference, proper name, sentences, analytic philosophy, thought, object.*

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## 1. Introduction

Frege's famous distinction between sense and reference was introduced in "Function and Concept" and developed in "On Sense and Reference". It is an original contribution of Frege. According to Frege, every linguistic expression has both sense and reference. That is, proper names, predicate expressions like "is a philosopher" and sentences have both sense and reference. In this paper I wish to show how Frege's distinction between sense and reference is applied to proper name and sentences. In this connection, a comparison is made between Frege and the 'No-sense theorist' like Mill, Russell and Kripke, in the context of proper name and with early Wittgenstein in the context of sentences. In

order to discuss the matter thoroughly, we must have a clear conception Frege's notion of sense and reference.

### 1.1. Fregean notion of sense and reference

According to Frege, sense is the mode of presentation of the referent. That is, the manner in which the referent is presented to us is the sense. In the example, "The morning star is the evening star", the names 'morning star' and 'evening star' designate the same planet Venus but they have different senses. That is to say, the way morning star is presented to us differs from the way the evening star is presented to us. Morning star is presented to us as the star



which is visible to us in the morning and the evening star is presented to us as the star which is visible to us in the evening. So, the senses of these two expressions are different.

The notion of sense is different from the notion of reference. Frege occasionally speaks (in his unpublished writings) of the 'realm of sense' and 'the realm of reference'. The realm of reference just is reality, that reality of which we speak and in virtue of which the thoughts which we express are true or false: it is the entire universe, for there is nothing in the universe of which we may not speak and which may not therefore constitute the referent of some expression which we use.

But the realm of sense is a very special region of reality: its denizens are, so to speak, things of a very special sort. The exact ontological status of senses Frege found it embarrassing to describe : there is nothing that can be done with a sense save to grasp it , express it, and thereby convey it to another, and ,in the case of thought, assert that it is true, or ask whether it is true or the like. More precisely, according to Frege, sense is not perceptible by the senses. But the way in which one grasps the referent may differ from the way in which another person grasps the referent. For instance, one may identify Aristotle, as the best student of Plato, but another person may identify him as the best logician. From this, it seems that sense varies. But Frege shows that, the same sense can be grasped by different persons. For instance, the thought expressed by the Pythagorean Theorem can be grasped by different persons at the same time or at different time. Again, the same sense can be transmitted from one generation to another generation. That, 'Aristotle is the best student of Plato' can be transmitted from one generation to the next, and, this shows

that sense is something objective, public and sharable. Again, thoughts and senses in general, were for Frege timeless entities that neither come into, nor pass out of existence. It's being does not consist in its being grasped. For if the existence of a thought depends upon its being grasped, then there would be nothing to be true at a time when there was no one to grasp it. But, thought remains true even if there is no one to grasp it. It needs no bearer. This characteristics differentiate it from an idea which is subjective –that is, needs a bearer. From this it is clear that sense is not the object of the outer world (referent) nor an object of the inner world (idea) and according to Frege , it belongs to the third realm.

The meaning of sense can be understood in various ways: In the first place, sense is the mode of presentation of the referent. That is, the manner or the mode in which the referent is presented to us is the sense. For example , though the word 'morning star' and the word 'evening star' both refers to the planet venus yet the way morning star is presented to us differs from the way evening star is presented to us . Morning star appears to us, as the planet which is visible in the morning and the evening star appears to us, as the planet which is visible in the evening. So, the senses of the two expressions are different. Secondly, Following Frege, we can say that sense is the route to the referent. Once we grasp the sense of the expression, we can find out the referent. For example 'Aristotle is the teacher of Alexander, the great'. If we grasp the sense of the expression, 'the teacher of Alexander, the great', then we can grasp the referent. So, sense is that which leads to the referent. Thirdly, sense is criterion for the identification of the referent. That means, the sense of the expression enables us to pick out the referent. For example, by the sense of the



expression ‘the teacher of Aristotle’, we can identify the referent, Plato.

Further, the same referent may be identified by using different senses attached to an expression. That means, an expression may have different senses but the object it refers is the same. For instance, ‘the teacher of Plato’ and ‘the greatest greek philosopher’ who ate hemlock’ –these two expressions refer to one and the same person, i.e., their referent is same, So, there is a many –one relation between sense and reference.

According to Frege, in ideal language, there must be one to one correspondence between sense and reference. That means, if there is sense, then there must be reference, and if there is reference, then there must be sense. Sense without reference is impossible and reference without sense is not possible.

But in ordinary language, there is no one to one correspondence between sense and reference. In ordinary language, sense without reference is possible. For instance, the expression ‘The present king of France’ has sense but lacks reference. In actual world, there is no one who rules in England. This is an imperfection of ordinary language. So, referenceless sense is possible in ordinary language. But reference without sense is not possible. That is, if the referent is there then there must be sense. For sense is the mode of presentation of the referent or the manner in which the referent is presented to us constitute its sense.

In ideal language, there should not be such deficiency. Apparently, the empty terms lack denotation. But according to Frege, in ideal language, these empty terms denote null class. Thus, they have both sense and reference. Frege applies this

distinction between sense and reference to all types of linguistic expression. That is, according to him, proper name, predicate expression, functional expression and even every indicative, declarative sentence has both sense and reference. Here, we will concentrate our discussion only to proper name and sentences. It is obvious that a proper name has reference and sentences have sense but Frege claims that, proper name has not only reference but also has sense and besides sense, a sentence has reference. So, we have to see, how a proper name has sense and a sentence has reference.

## 2. Frege’s view about proper name

Frege’s view about proper name can be best understood against the background of Mill’s, Russell’s and Kripke’s view about proper name. Let us begin with Mill’s view. Mill makes a distinction between denotation and connotation. The class of objects to which the term is applicable is its denotation. The common and essential properties of the class is called connotation. Mill also makes a distinction between singular term and general term. The proper name, according to Mill, is a singular term. General term like ‘man’ denotes a class and implies certain attributes. Proper name, according to Mill, is non-connotative. It merely denotes or refer an individual. He believes in ‘No-sense theory of proper name’. Mill’s distinction between connotation and denotation applies to general term and does not apply to singular term (proper name). Frege’s sense and reference distinction applies not only to proper name but also to general term.

Again, Russell in his ‘Theory of Descriptions’ distinguished between proper name and descriptions. The meaning of the proper name is its denotation. But



meaningfulness of the descriptions does not depend on the existence of the referent. In order to make it meaningful we have to analyse it. For example, 'The present king of France is bald' is analysed into three sentences: i) There exist at least one king in France, ii) There exist at most one king of France and iii) Whoever is a king of France is bald. As the first sentence is false the whole (original) sentence is false but meaningful. Further Russell makes a distinction between logically proper name and ordinary proper name. Logically proper name are demonstratives like, 'This', 'That', etc. They are purely denotative. They have no connotation. Ordinary proper name is disguised descriptions or trunked descriptions. For example, 'Ram'. Ram can be known by a series of descriptions like, 'The elder son of Dashratha' and the like. So, they are not denotative. As logically proper name is purely denotative so Russell also believes in 'No – sense theory of proper name'. This tradition is also followed by Kripke. Kripke speaks of rigid designator and non-rigid designator. The rigid designator denotes the same individual across various possible world is purely denotative. It does not imply any properties and so has no connotation. Proper name for example, 'Socrates', 'Plato' etc, according to Kripke are rigid designator. So, he is also a subscriber of the view that proper name has no sense.

But, Frege does not belong to this tradition. According to him, proper name has both sense and reference. The referent of the proper name is the object it denotes. And, the sense is the way in which the referent (object) is presented to us. For example, 'Morning star' and 'Evening star' has the same referent, the planet 'Venus', but they differ in their senses. That is, the way morning star is presented to us, differs from the way the evening star

is presented to us. Morning star is presented to us, as the star which is visible to us in the morning and the evening star is presented to us as the star which is visible to us in the evening. From this it is clear that, proper name has both sense and reference.

### 3. Frege's view about Sentences

Besides proper name even the whole sentence, according to Frege, has both sense and reference. The sense of a sentence is the 'thought' contained in it. Prima facie, it appears from Frege's remarks in "The Thought – a Logical Enquiry", that thought is the reference of a sentence. The line of argument, which is given there, runs as follows – sentence refers to fact just as proper name refers to an object. The fact is the thought which is true. That means, thought is the true fact. Therefore it follows, that thought is the reference of a sentence. But this is not Frege's view for, in that very essay he rejects correspondence theory, that the sentence refers to a fact, and he says that, every declarative sentence contains a thought and the thought it contains is the sense of a sentence.

In order to show that, the thought cannot be the reference of a sentence, Frege starts with a presupposition that – the thought is either the sense or the reference of a sentence. He advances some independent arguments to show that thought cannot be the referent. From this it follows by disjunctive syllogism (D.S), that thought is the sense of a sentence. Let us discuss an argument, given by Frege, to establish his claim that thought cannot be the reference of a sentence. It is crucial thesis of Frege that, if a component of a sentence is replaced by another expression having the same reference, then the reference of the original sentence remains unchanged. If thought is taken as the referent, then as a result of such substitution, it must remain the same. But



what actually happens is that, thought varies. For example, let us take the sentence – “The morning star is the body illuminated by the sun”. If in place of morning star, we write ‘the evening star’, whose reference is the same as morning star, then the reference of the whole sentence remains unchanged. If thought is the reference of the sentence, then in this reference preserving substitution, it would also remain the same. But what actually happens is that thought does not remain the same. That is to say, the thought contained in the sentence, ‘The morning star is the star which is illuminated by the sun’ differs from the thought contained in the sentence ‘The evening star is the star which is illuminated by the sun’. And, according to the criterion of identity of two thoughts, two thoughts are identical if it would be impossible to hold one of them to be true without also admitting that the other is true. That is to say, if the one is true then another cannot be false i.e., it must be true. But in the above case, a person who does not know that the morning star is the evening star, may hold, one to be true and the other false. Hence, thought cannot be the reference of a sentence.

There is another argument in favour of Frege’s claim. It runs as follows – ‘If the reference of a sentence is determined by the reference of its parts, then if the parts lacks reference, then the whole sentence also lacks a reference. For example, let us take the sentence, ‘Odysseus was set ashore at Ithaca while sound asleep’. In this example, as ‘Odysseus’ lacks reference, so the whole sentence also lacks reference. If thought is considered as the reference and as the sentence lacks reference, so, we have to say that the sentence lacks thought. But the sentence lacking the reference contains thought. Here the sentence though lacks a reference, does

express a thought. Therefore, thought cannot be the reference of a sentence.

Frege begins with a presupposition that, the thought is either the sense or the reference of a sentence. With these arguments, he proves that thought is not the reference of the sentence. Therefore, it follows that, thought is the sense of a sentence.

Besides sense a sentence has reference. The reference of a sentence, according to Frege, is the truth value. All true sentences have the same referent- “The true” and all false sentences have the same referent –“The false”. Frege construed sentence in the model of proper name. So, if sentence is a proper name and the reference of a proper name is object and the reference of a sentence is truth value, then from this follows another thesis that – truth values are objects. But the assimilation of the sentences to proper name is open to serious objections. It is said that Frege overlook the distinction between sentences and names. Later philosophers have offered their own proposals. So, question remains how far sentences can be assimilated to proper name?

In this connection, a question may arise that, what is the need for the passage from sense to the referent of a sentence? In answer to this question, Frege says:

It is the striving for truth that drives us always to advance from the sense to the referent.<sup>1</sup>

That is, our interest for the truth value of the sentence leads us to pass from sense to reference. However, Frege mentioned some exceptions regarding truth values as referents of a sentence. There are some cases like direct speech, indirect





speech etc., which do not have truth values as reference. In direct speech a sentence designates another sentence, and in indirect speech, a thought. In direct speech as, 'Smith said, "One's own words first designate words of the other speaker, and only the latter have their usual reference. And, if a sentence occurs in reported speech, as in 'Smith said that the world will end in the year 2000', then the reference of the sentence, according to Frege, is what would normally be its sense. This, he says, is indirect reference as opposed to customary reference; and we can say that the indirect

reference of a word is its customary sense. In this connection, a comparison can be made between Frege and early Wittgenstein. Early Wittgenstein also speaks of the reference of a sentence but, according to him, a sentence refers to a fact (states of affairs).

Nevertheless, Frege's distinction between sense and reference as applied to proper name and sentences opens up a new horizon, which gives post – Fregean philosophers the materials for thinking and thus helps to the further development of analytic philosophy.

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## A checklist of Euphorbiaceae in West Bengal with special reference to their ethno-medicinal uses

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### Abstract

*Euphorbiaceae* is one of the largest families in dicotyledons mainly distributed in tropical and temperate countries in the world. The members of the family ranging from herbs, shrubs, trees and twiner (climber). Investigation of *Euphorbiaceae* from different parts of West Bengal reveals 35 species under 18 genera of which 13 species are herbs, 15 species are shrubs, 6 species are trees and only 1 species is twiner (climber). Medicinally the members are also of very much potent to treat various kinds of diseases or problems in our daily life. Medicinal uses of the plants of the family *Euphorbiaceae* discussed here under 18 specific heads. Out of 35 recorded plants, it was found that 7 species are mainly used for treating skin diseases; 3 species each for treating asthma, jaundice and rheumatism; 2 species each for the treatments of diabetes, dysentery, gout, ulcers and urinary disorders; 1 species each to treat cough & cold, constipation, eye problem, hernia, leprosy, menstrual problems, scabies and venereal diseases. Only 1 species bears antibacterial property. Besides the above uses *Jatropha curcas* L. is used as the source of bio-diesel. The importance of conservation of these plants has been suggested.

**Keywords:** Checklist, *Euphorbiaceae*, West Bengal; Ethno- medicinal Uses.

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### INTRODUCTION

**Study Area:** The state of West Bengal is situated in between 21<sup>0</sup>45' and 27<sup>0</sup>16' N latitude and 85<sup>0</sup>55' and 89<sup>0</sup>56' E longitude. At present it is surrounded by Sikkim and Bhutan in North and East by Assam and Bangladesh. The Bay of Bengal forms the southern boundary and in the West it is bounded by Odisha (formerly Orissa), Bihar and Nepal. The rest is the hilly part of Purulia district (formerly Manbhum district of Bihar).

From physiographic point of view the state encompasses the coastal parts of Purba Medinipur and South 24 Paraganas while remains in the foothills of the Eastern Himalayas. In India the geographical position of the state of West Bengal is interesting and its geographical diversity has given rise to diversity in its floristic composition.

The soils of Bankura, Purulia and Paschim Medinipur districts are lateritic, while in Purba Medinipur it is of alluvial type and in 24 Paraganas the soil type varies from sandy to clay sandy. In Dooars the soil type is clay to sandy loams while in Terai and Darjeeling it is of sandy loam type.

Due to variations of physiography, soil formation, climatic set up there develops a good number of plant groups bearing individual characteristics (Das, 1995; Das *et al*, 2010; Samanta & Panda, 2011, 2016; Rai *et al*, 1982; Bennet, 1979; Guha Bakshi, 1984; Sanyal, 1994; Prain, 1903;



Sinhababu & Banerjee, 2013, 2016). Here mainly tropical, sub-tropical and temperate types of vegetations are noticed.

Euphorbiaceae is one of the largest families in angiosperms consisting of about 300 genera and 7500 species (Jones & Luchsinger, 1987). But the Flora of British India, recorded 3000 species under 200 genera which are mostly distributed throughout the tropical and rarely temperate countries in the world (Hooker, 2006). From their habit point of view, they mainly range from herbs, shrubs, trees and twiner (climber).

## MATERIALS AND METHOD

The present survey work on Euphorbiaceae was carried out during 2017-2018 in different parts of West Bengal in different seasons. Field and herbarium methods were followed according to Jain and Rao (1977). The specimens were identified with the help of literature and later confirmed in Central National Herbarium (CAL), Howrah, West Bengal. The enumeration of the recorded plant species are presented alphabetically along with their botanical features, local name (s), ecology, flowering and fruiting time, ethno-medicinal uses. The voucher specimens were deposited at the Department of Botany, Ramnagar College.

Information regarding medicinal uses of plants of Euphorbiaceae, the author searched relevant literatures in the concerned fields (Biswas and Ghosh, 1902; Chopra *et al*, 1980; Pant *et. al*. 1983; Pal & Jain 1989, 1998; Pakrashi *et al*. 2001; Caius, 2003; Paria, 2005; Chakraborty & Bhattacharjee, 2006; Samanta & Panda, 2012; Talukder, 2012 ; Bose *et al*, 2015; Debadin *et al*, 2015; Mitra & Mukherjee, 2011, 2013; Rahman *et al*, 2013; Mukherjee, 2018; Samanta, 2018). Questions were asked to the local people including tribal people regarding medicinal uses of plants.

## ENUMERATIONS

### 1. *Acalypha hispida* Burm.f.

**Local name:** Sibjatra

**Botanical features:** A short tomentose herb; lamina rhombic-ovate; flowers in spike; fruit silky, seeds smooth, brownish in colour.

**Ecology:** Common. Generally found in garden.

**Flowering and fruiting:** January to December.

**Medicinal uses:** Parts used-Whole plant, leaves & flowers: diseases/problems- used to treat cough and cold, skin diseases, diarrhoea, etc.

### 2. *Acalypha indica* L.

**Local name:** Muktajhuri

**Botanical features:** Erect herbaceous weed up to 75 cm tall; lamina ovate-rhomboidal; Bracteate, up to 1 cm in diam.; flowers in axillary spike; capsule small with hispid hair; seeds smooth, pale brown.

**Ecology:** Abundant. Commonly found in railway track and waste places.

**Flower and fruiting:** November to April.

**Medicinal uses:** Parts used-whole plants and leaves; diseases/problems-used in constipation, skin diseases, headache, ulcers, bronchitis, etc.



### 3. *Acalypha lanceolata* Willd.

**Botanical features:** Erect herbaceous weed up to 42 cm tall; lamina ovate or ovate-lanceolate; Bracteate, up to 2 cm in diam.; flowers in axillary spike; capsule small; seeds ovoid, smooth, brown.

**Ecology:** Less common. Commonly found in waste places.

**Flower and fruiting:** August to October.

**Medicinal uses:** Parts used-whole plants and leaves; diseases/problems-used in constipation, headache, ulcers etc.

### 4. *Chrozophora rottleri* (Geis.) Juss. *ex* Spr.

**Local name(s):** Khudi-okra

**Botanical features:** Annual erect herb up to 60 cm tall; lamina broadly ovate, trilobed or orbicular; flowers in axillary racemes; capsule sub-globose, stellate, woody; seeds globose with silvery appearance.

**Ecology:** Abundant. Generally found in the roadsides and waste places.

**Flower and fruiting:** January to July.

**Medicinal uses:** Parts used-whole plants, leaves, root barks and seeds; diseases/problems-used to treat cough and skin diseases.

### 5. *Croton bonplandianum* Baill.

**Local name(s):** Churchuri

**Botanical features:** A small branched undershrub with watery latex; lamina ovate-lanceolate, glabrous; flowers in racemes up to 8 cm high; male flowers in fascicle but female flowers solitary or racemes; capsules triangulate, stellate hairy; seeds carunculate, shiny.

**Ecology:** Abundant. Generally found in roadsides, gardens, waste lands and paddy fields, etc.

**Flower and fruiting:** January to December.

**Medicinal uses:** Parts used-whole plants, latex and seeds; diseases/problems-used to treat dyspepsia, scabies, and mouth diseases, etc.

### 6. *Euphorbia antiquorum* L.

**Local name (s):** Baj varan; Teshare Monsa

**Botanical features:** A small sized tree up to 5 m high; branches 4-5 angled, fleshy; lamina ovate-oblong or spatulate, subsessile; light yellow sessile flowers, with persistent stipules in compound cymes; stamens numerous; capsule small, cocci compressed, glabrous.

**Ecology:** Less Common. Mostly cultivated, found in village hedges.

**Flower and fruiting:** January to April.

**Medicinal uses:** Parts used-Root barks, stem and leaf juice; diseases/problems-used in to treat gout, dropsy, rheumatism, cough and cold, etc.

### 7. *Euphorbia dracunculoides* Lamk.

**Local name(s):** Chhagal puputi

**Botanical features:** An erect much branched herbs up to 40 cm tall; lamina linear, linear-oblong; involucre solitary, subsessile, campanulate, glabrous; fruit capsular; seeds ellipsoidal or tuberculate.

**Ecology:** Common. Mostly found in harvested dry paddy fields.

**Flower and fruiting:** December to March.

**Medicinal uses:** Parts used-Leaves, flowers ; diseases/problems-used in to treat cough and cold.



### 8. *Euphorbia hirta* L.

**Local name(s):** Duhia

**Botanical features:** Annual erect herb, hispid or villous; lamina elliptic-oblong or oblong-lanceolate; flowers in axillary cymes; involucre campanulate; capsule trigonous, matted hairy; seeds ovoid.

**Ecology:** Abundant. Mostly found in waste places except water logging condition.

**Flower and fruiting:** January to December.

**Medicinal uses:** Parts used-Whole plant, plant juice and milk; diseases/problems-used in to treat dysentery, colic worm, ringworms, etc.

### 9. *Euphorbia nivulia* Buch.-Ham.

**Local name(s):** Sij-Monsa

**Botanical features:** A small sized tree with spreading branches; lamina linear-oblong; flowers in cymes; involucre yellow, pollen purple; capsule tri-lobed, compressed.

**Ecology:** Common. Mostly found in village sedges.

**Flower and fruiting:** February to April.

**Medicinal uses:** Parts used-Leaves, root barks; diseases/problems-used in to treat rheumatism, dropsy, etc.

### 10. *Euphorbia hypericifolia* L.

**Local name(s):** Swet Kerui

**Botanical features:** Annual herbs with puberulous stem; lamina oblong-ovate or elliptic-oblong; flowers in axillary cymes; involucre campanulate with bracts; capsule subglobose, hairy; seeds ellipsoids, smooth, greyish purple.

**Ecology:** Common. Mostly found in waste places.

**Flower and fruiting:** October to February.

**Medicinal uses:** Parts used-Leaves, roots; diseases/problems-used to treat gastrointestinal disorder, asthma, toothache, fever, etc.

### 11. *Euphorbia prostrata* W. Ait.

**Botanical features:** A small size prostrate herb up to 25 cm high; stem terete, hispid hair, reddish brown; lamina ovate-oblong; inflorescence in short racemes; capsule sub-globose, trigonous, stalk short, pubescent; seeds 4-angled, pale-reddish.

**Ecology:** Less Common. Mostly found in roadside and waste places.

**Flower and fruiting:** February to April.

**Medicinal uses:** Parts used-Whole plant, latex; diseases/problems-used in to treat breathing disorder, asthma, bronchitis, fever, etc.

### 12. *Euphorbia pulcherrima* Willd. *ex* Koltz.

**Local name(s):** Lalpata

**Botanical features:** An erect diffuse unarmed shrub up to 2 m high; lamina elliptic or lanceolate, pubescent beneath; involucre in corymbose cyme with yellow gland.

**Ecology:** Common. Mostly found in gardens.

**Flower and fruiting:** December to April.

**Medicinal uses:** Parts used-Leaves, flowers and latex; diseases/problems-used in to treat skin diseases and to increase the secretion of breast milk, etc.



### 13. *Euphorbia thymifolia* L.

**Local name(s):** Swet kirui

**Botanical features:** Annual prostrate herb; stem branched, slender, terete, almost glabrous; lamina ovate or suborbicular, glabrous above, puberulous beneath; stipulate; involucre axillary, solitary; capsule puberulous to glabrous; seeds oblong, 4-angled, reddish in colour.

**Ecology:** Common. Mostly found in roadsides, gardens and waste places during rainy seasons.

**Flower and fruiting:** January to December.

**Medicinal uses:** Parts used-whole plant, roots and seeds; diseases/problems-used in to treat diarrhea, dysentery, ringworm, etc.

### 14. *Euphorbia tirucalli* L.

**Local name(s):** Lanka sij.

**Botanical features:** An erect unarmed shrubs up to 4 m tall; lamina linear, linear-oblong; involucre sessile or sub-sessile, gland 5; capsule obtuse, 3-lobed, puberulous; seeds ellipsoid, smooth, dark-brown; white carunculate margin.

**Ecology:** Less Common. Cultivated as hedge plant in gardens.

**Flower and fruiting:** July to October.

**Medicinal uses:** Parts used-Plant juice, fresh milk juice; diseases/problems-used in to treat leprosy, asthma, dyspepsia, colic pain, etc.

### 15. *Excoecaria agallocha* L.

**Local name(s):** Surrund.

**Botanical features:** Small tree 2-10 m tall, evergreen, glabrous; lamina linear ovate or ovate – elliptic or broadly elliptic or oblong-lanceolate; male flowers axillary, sessile; female flowers in axillary racemes; fruits depressed tricocous, smooth, glabrous.

**Ecology:** Less Common. Generally found in mangrove swamps.

**Flower and fruiting:** March to December

**Common uses:** All parts are poisonous to skin, eyes, etc.

**Medicinal uses:** Parts used-latex, resins, roots; diseases/problems-used in to treat ulcers, asthma, swellings, etc.

### 16. *Jatropha curcas* L.

**Local name(s):** Bagh verenda.

**Botanical features:** Large glabrous woody shrub up to 3.5 m tall; lamina sub-orbicular, 3-5 angled; inflorescence cymose, panicle mostly shorter than petiole; male lower ovate-elliptic; stamens 8-10, disc free; capsule ellipsoid, shallowly lobed; seeds ellipsoid- oblong, black.

**Ecology:** Less Common. Found along the roadside in bushy places.

**Flower and fruiting:** April to September.

**Common uses:** Used as hedge plant and are the source of bio-diesels.

**Medicinal uses:** Parts used-leaves, latex, fruit and seed; diseases/problems-used in to treat urinary discharge, ulcers, blood dysentery, etc.

### 17. *Jatropha gossypifolia* L.

**Local name(s):** Lal verenda.

**Botanical features:** Large shrub up to 2.5 m tall; lamina elliptic-ovate, 3-lobed glandular, hairy; inflorescence corymbose-cymes; flower purple red; stamens 10-12, gland minute; capsule



broadly oblong, slightly 3-lobed, glabrous; seeds grayish-brown in colour.

**Ecology:** Common. Found growing in roadside, waste places preferably in open areas.

**Flower and fruiting:** April to August.

**Medicinal uses:** Parts used-leaves, latex, roots and seed; diseases/problems-used to treat eczema, rheumatism, urinary disorders etc.

#### 18. *Jatropha multifida* L.

**Local name(s):** Tortora.

**Botanical features:** Showy garden shrub; lamina orbicular, 5-11 lobed; flowers in cymes, red; capsule large, 3-lobed, yellow; seeds oblong or ovoid.

**Ecology:** Less Common. Found in the garden.

**Flower and fruiting:** August to December.

**Medicinal uses:** Parts used-leaves, latex, roots, seeds and seed oils; diseases/problems-used in to treat scabies, skin diseases, piles, etc.

#### 19. *Jatropha podagrica* W.J.Hooker

**Local name(s):** Bottle verenda

**Botanical features:** Garden shrub; lamina orbicular-ovate, 3-5 lobed; flowers in terminal cymes, coral red.

**Ecology:** Less Common. Found in the garden.

**Flower and fruiting:** December to March.

**Medicinal uses:** Parts used- mainly stem; diseases/problems-used as an antibacterial agents.

#### 20. *Kirganea reticulata* (Poir.) Baill.

**Local name(s):** Panjuli (Hind.)

**Botanical features:** Profusely branched garden shrub; cataphylls triangular, dark-brown; lamina elliptic ; stamens 5, reniform; ovary 5-10 celled; berry subglobose, purple to black on ripening; seeds granulate.

**Ecology:** Less Common. Generally found in the hedges.

**Flower and fruiting:** March to June.

**Medicinal uses:** Parts used- whole plant, stem and leaves; diseases/problems-used to anaemia, conjunctivitis, blood purifier, etc.

#### 21. *Mallotus repandus* (Willd.) Mull.-Arg.

**Local name(s):** Akus

**Botanical features:** A large shrubs; young shoot tomentose, mature stem spiny; lamina ovate; flower in axillary paniculate raceme; capsule tomentose.

**Ecology:** Less Common. Generally found in shrubberies and hedges.

**Flower and fruiting:** December to April.

**Medicinal uses:** Parts used-bark leaves, etc; diseases/problems-used to cure skin diseases, ringworm and scabies..

#### 22. *Manihot esculenta* Crantz

**Local name(s):** Tapioca

**Botanical features:** A shrub or small sized tree ; lamina dissected, 3-7 segmented, up to 20.5 cm long; flowers monoecious; stamens 10 in whorls; ovary 3-celled; capsule ovoid-elliptic, wing-angled.





**Ecology:** Less Common. Cultivated in the gardens.

**Flower and fruiting:** - May to August

**Medicinal uses:** Parts used- Leaves; diseases/problems-used in arthritis, diabetes, headache, hypertension, etc.

23. ***Micrococca mercurialis* (L.) Benth.**

**Botanical features:** An annual glabrous herb up to 50 cm high; lamina ovate or ovate-lanceolate; flower solitary or in a long raceme; capsule pillose; seeds globose, dark brown.

**Flower and fruiting:** May to July.

**Ecology:** Less Common. Generally found in roadside and in waste places.

**Medicinal uses:** Parts used- Leaves; diseases/problems-used to treat arthritis, diabetes, headache, hypertension, etc.

24. ***Microstachys chamaelea* (L.) Mull. Arg.**

**Botanical features:** A annual herbs up to 80 cm high; stem slender, erect, glabrous; lamina linear or linear-lanceolate; male flowers axillary; female flowers usually solitary; capsules long lobed; seeds ellipsoid-oblong, yellow

**Ecology:** Common. Found to grow along roadside and jheels.

**Flower and fruiting:** July to November.

**Common uses:** Cultivated for its seeds, as source of oils.

**Medicinal uses:** Parts used-leaves, roots, bark and seeds; diseases/problems-used to treat venereal diseases.

25. ***Pedilanthus tithymaloides* (L.) Poit.**

**Local name :** Rangchita

**Botanical features:** A fleshy undershrub up to 1.5 m high; stem zigzag, glabrous; lamina ovate or elliptic-ovate, flowers in terminal cyathia; capsule subquadrate, deeply 3-lobed; seeds ovoid or sub-globose, grey to deep brown.

**Ecology:** Common. Cultivated at gardens, prefer to grow as hedge plants, often escapes in waste places.

**Flower and fruiting:** March to April.

**Medicinal uses:** Parts used- Leaves, roots, latex; diseases/problems-used to treat ear ache, ringworm, skin cancer, tooth ache, hernia, etc.

26. ***Phyllanthus acidus* (L.) Skeels**

**Local name(s):** Shirakul

**Botanical features:** A small sized tree ; lamina obliquely-ovate; flowers in slender racemes, white-purple; stamens 4 ; fruits globose, fleshy, 6-lobbed.

**Ecology:** Less Common. Cultivated in the gardens, sometimes escapes as wild.

**Flower and fruiting:** February to October.

**Medicinal uses:** Parts used- Roots, fruits and seeds-used to treat bronchitis, piles, constipation, etc.

27. ***Phyllanthus emblica* L.**

**Local name(s):** Amlaki

**Botanical features:** A medium sized tree up to 12 m high; stem thinly branched; lamina dissected, elliptic; flowers axillary; capsules; seeds small.



**Ecology:** Common. Generally found in roadsides and gardens.

**Flower and fruiting:** November to March.

**Medicinal uses:** Parts used- Leaves, fruits, roots and seeds; diseases/problems-used in to treat dyspepsia, leprosy, jaundice, diarrhoea, etc.

### 28. *Phyllanthus fraternus* Webster

**Local name(s):** Bhui amla

**Botanical features:** An erect annual herb, up to 30 cm high; branches sharply angled; lamina elliptic-oblong or obovate, glabrous; male flowers axillary, greenish-white; female one solitary; capsules globose, smooth; seeds trigonous, pale brown.

**Ecology:** Less Common. Generally found in garden as weeds and in waste places but mostly in shady areas.

**Flower and fruiting:** April to August.

**Medicinal uses:** Parts used- whole plant, roots and leaves; diseases/problems-used in dropsy, diarrhoea, dysentery, asthma, jaundice, etc.

### 29. *Phyllanthus urinaria* L.

**Local name(s):** Hazarmani

**Botanical features:** An annual herb 7-75 cm high; stem erect, branched, puberulous; lamina oblong or linear-oblong; flowers minute, axillary, solitary, sub-sessile, greenish-white; capsules globose; seeds trigonous.

**Ecology:** Common. Generally found in forests and in grassy places.

**Flower and fruiting:** July to December.

**Medicinal uses:** Parts used- whole plant and roots; diseases/problems-used to cure dropsy, urinary trouble, dysentery, asthma, anaemia etc.

### 30. *Phyllanthus virgatus* Frost.f.

**Local name(s):** Bhui amla

**Botanical features:** A perennial herb up to 60 cm high. cm high; stem erect, branched, terete, glabrous; lamina oblong-lanceolate or linear-oblong; flowers axillary, solitary on axillary slender pedicel; sub-sessile; drupe ellipsoid, rough; seeds trigonous, dark brown.

**Ecology:** Common. Generally found in forests and in grassy places.

**Flower and fruiting:** August to December.

**Medicinal uses:** Parts used- whole plant, leaves, flowers, fruits and roots; diseases/problems-used to treat eye troubles, jaundice, etc.

### 31. *Putranjiva roxburghii* Wall.

**Local name(s):** Putranjiva

**Botanical features:** An evergreen tall tree up to 12 m high; stem sparsely pubescent, branches dropping; lamina oblong or oblong-ovate; flowers small, dioecious, axillary; drupe ellipsoid or ovoid; seeds solitary, ovoid.

**Ecology:** Common. Generally cultivated and found in the roadside.

**Flower and fruiting:** March to August.

**Common uses:** Planted for avenue tree.

**Medicinal uses:** Parts used- bark, leaves, fruits and seeds; diseases/problems-used to treat rheumatism, blood dysentery, colds, fever, etc..



### 32. *Ricinus communis* L.

**Local name(s):** Rerhi

**Botanical features:** A shrub, up to 5 m high; young shoot glabrous; lamina oblong or lanceolate or linear, gland-dotted; flowers terminal, in a subpaniculate racemes; stamens numerous; capsule broadly oblong; seeds carunculate, smooth, shiny.

**Ecology:** Common. Generally found in gardens and roadside bush or in waste places.

**Flower and fruiting:** January to December.

**Common uses:** Cultivated for its seeds, as source of oils.

**Medicinal uses:** Parts used- bark, leaves, roots and seeds; diseases/problems-used to treat skin diseases, menstruation problems, constipation, etc.

### 33. *Suregada multiflora* (A.Juss.) Baill.

**Botanical features:** A small tree up to 6 m tall; stem branched, glabrous; lamina elliptic, oblong-lanceolate; flowers in dense cymes; fruits globose, orange coloured.

**Ecology:** Common. Generally found in the shady places of the forests.

**Flower and fruiting:** March to July.

**Medicinal uses:** Parts used; stem bark; diseases/problems-used to treat skin diseases.

### 34. *Tragia involucrata* L.

**Local name(s):** Bichhuti

**Botanical features:** A perennial hispid twiner; lamina ovate-oblong or ovate-lanceolate; flowers in axillary racemes; stamens 3; capsules broadly elliptic; seeds globose.

**Ecology:** Common. Generally found in waste places and hedges.

**Flower and fruiting:** January to April.

**Common uses:** A type of poisonous plant.

**Medicinal uses:** Parts used; roots and fruits; diseases/problems-used to treat asthma, cough, constipation, gout, spleen enlargement, etc.

### 35. *Trewia nudiflora* L.

**Local name(s):** Pitali

**Botanical features:** A deciduous tree up to 13 m high; lamina ovate or oblong-ovate, puberulous in young; flowers dioecious, in drooping racemes; stamens numerous; capsules globose; seeds dark brown.

**Ecology:** Common. Generally found in the river banks, village surrounding, roadsides, etc

**Flower and fruiting:** March to June.

**Medicinal uses:** Parts used; Whole plant, roots; diseases/problems-used to remove swellings and to treat gout, rheumatism, etc..

## RESULTS AND DISCUSSION

Recent investigation of Euphorbiaceae in different parts of West Bengal reveals 35 species under 18 genera of which 13 species of herbs (e.g. *Acalypha hispida* Burm.f., *Acalypha indica* L., *Acalypha lanceolata* Willd., *Croton bonplandianum* Baill., *Euphorbia dracunculoides* Lamk., *Euphorbia hirta* L., *Euphorbia hypericifolia* Sprengl., *Euphorbia nerifolia* L., *Euphorbia thymifolia* L., *Micrococca mercurialis* (L.) Benth., *Phyllanthus fraternus* Webster, *Phyllanthus urinaria* L., *Phyllanthus virgatus* G.Forstt.); 15 species of shrubs (e.g. *Chrozophora rottleri*



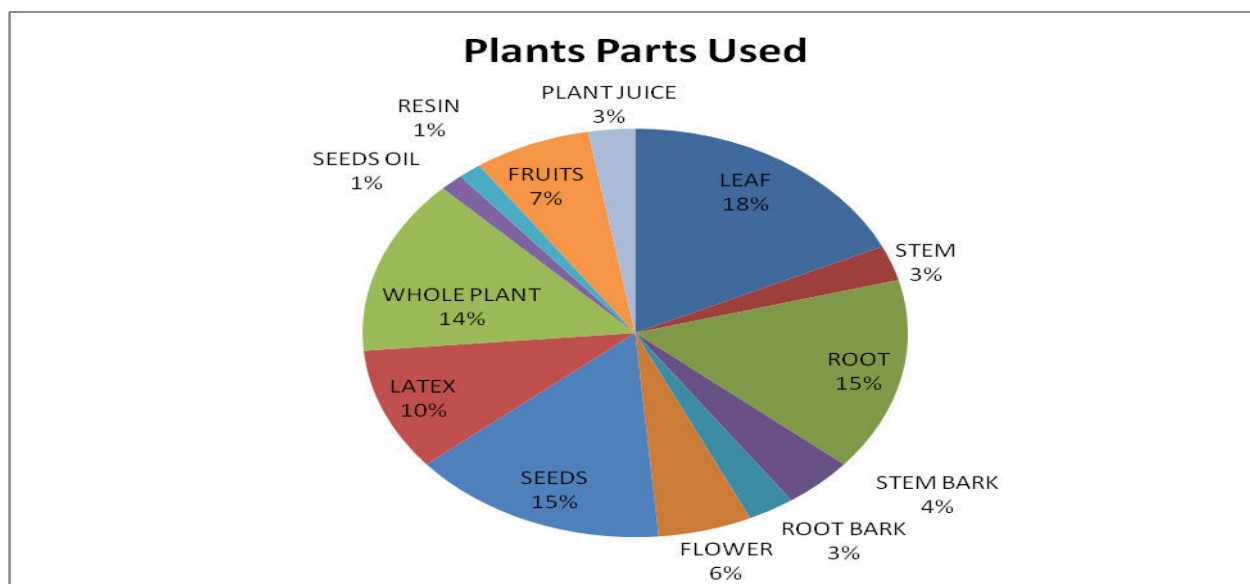
(Geis.) Juss. ex Spr., *Euphorbia antiquarum* L., *Euphorbia pulcherrima* Willd., *Euphorbia tirucalli* L., *Jatropha curcas* L., *Jatropha gossypifolia* L., *Jatropha multifida* L., *Jatropha podagrica* Hook., *Kirganelia reticulata* (Poir.) Baill., *Mallotus repandus* (Willd.) Mull.-Arg., *Manihot esculenta* Crantz, *Pedilanthus tithymaloides* (L.) Poit., *Ricinus communis* L., *Microstachys chamaelea* (L.) Mull. Arg. and *Suregada multiflora* (Juss.) Baillon ); 6 species of trees ( e.g. *Phyllanthus emblica* L., *Euphorbia nivulia* Buch.-Ham., *Excoecaria agallocha* L., *Phyllanthus acidus* (L.) Skeels, *Putranjiva roxburghii* Wall. and *Trewa nudiflora* L.) and only 1 species is twiner (e.g. *Tragia involucrata* L.) [Table- 1].

**Table 1.**

List of plants collected from different parts of West Bengal showing local name(s), habit, frequency, flowering and fruiting time and medicinal uses against respective diseases. Symbols used: Months: 1-12=January to December; Fl. & Frt.= Flowering & Fruiting ; “-“=Not recorded.

Name of the plants	Local name	Habit	Frequency	Fl. & Frt.	Medicinal uses to treat-
<i>Acalypha hispida</i> Burm.f.	Sibjatra	Herb	Common	1-12	Skin diseases
<i>Acalypha indica</i> L.	Muktajhuri	Herb	Abundant	11-4	Skin diseases
<i>Acalypha lanceolata</i> Willd.	-	Herb	Common	8-10	Ulcers
<i>Chrozophora rotterli</i> (Geis.) Juss. ex Spr.	Kshuda okra	Shrub	Abundant	3-10	Skin diseases
<i>Croton bonplandianum</i> Baill.	Churchuri	Herb	Abundant	1-12	Scabies
<i>Euphorbia antiquarum</i> L.	Bajbaran	Shrub	Less Common	1-4	Rheumatism
<i>Euphorbia dracunculoides</i> Lamk.	Chhagal puputi	Herb	Less Common	12-3	Cough & Cold
<i>Euphorbia hirta</i> L.	Duhia	Herbs	Abundant	1-12	Dysentery
<i>Euphorbia hypericifolia</i> L.	Swet Kerui	Herb	Common	10-2	Asthma
<i>Euphorbia nivulia</i> Buch.-Ham.	Sij-Monsa	Small tree	Less Common	2-4	Rheumatism
<i>Euphorbia prostrata</i> W. Ait.	-	Herb	Less Common	2-4	Asthma
<i>Euphorbia pulcherrima</i> Willd.	Lalpatta	Shrub	Common	12-4	Skin diseases
<i>Euphorbia thymifolia</i> L.	Rakta kherui	Herb	Less Common	1-12	Dysentery
<i>Euphorbia tirucalli</i> L.	Lanka sij	Shrub	Common	7-10	Leprosy
<i>Excoecaria agallocha</i> L.	Surrund	Tree	Less Common	3-12	Asthma
<i>Jatropha curcas</i> L.	Bag verenda	Shrub	Less Common	4-9	Ulcers
<i>Jatropha gossypifolia</i> L.	La verenda	Shrub	Common	4-8	Urinary disorders
<i>Jatropha multifida</i> L.	Tortora	Shrub	Less Common	8-12	Skin diseases
<i>Jatropha podagrica</i> Hook.	Bottle verenda	Shrub	Less Common	12-3	Antibacterial
<i>Kirganelia reticulata</i> (Poir) Baill.	Panjuli	Shrub	Less Common	3-6	Eye pproblems
<i>Mallotus repandus</i> (Willd.) Mull.-Arg.	Akus	Shrub	Less Common	12-4	Skin diseases

<i>Manihot esculenta</i> Crantz	Simal alu/Tapioca	Shrub	Less Common	-	Diabetes
<i>Micrococca mercurialis</i> (L.) Benth.	-	Herb	Less Common	5-7	Diabetes
<i>Microstachys chamaelea</i> (L.) Mull.Arg.	-	Herb	Common	7-11	Veneral diseases
<i>Pedilanthus tithymaloides</i> (L.) Poit.	Rangchita	Shrub	Common	3-4	Hernia
<i>Phyllanthus acidus</i> (L.) Skeels	Noari/Loda	Tree	Less Common	2-10	Constipation
<i>Phyllanthus emblica</i> L.	Amlaki	Tree	Common	11-3	Jaundice
<i>Phyllanthus fraternus</i> Webster	Bhuiamla	Herb	Less Common	4-8	Jaundice
<i>Phyllanthus urinaria</i> L.	Hazamani	Herb	Common	7-12	Urinary disorders
<i>Phyllanthus virgatus</i> G.Forst.	Bhuiamla	Herb	Common	8-12	Jaundice
<i>Putranjiva roxburghii</i> Wall.	Jiyaputa	Tree	Common	6-3	Rheumatism
<i>Ricinus communis</i> L.	Rerhi	Shrub	Common	1-12	Menstruation problems
<i>Suregada multiflora</i> (Juss.) Baill.	Chakramanii	Shrub	Common	3-7	Skin diseases
<i>Tragia involucrata</i> L.	Bichuti	Twiner	Common	1-4	Gout
<i>Trewa nudiflora</i> L.	Pitali	Tree	Common	3-6	Gout



**Fig.1:** Ethno-medicinal plant parts used

Medicinal uses of the plants of the family Euphorbiaceae have been discussed under 18 specific heads. Out of 35 recorded plants, it was found that 7 species are mainly for treating skin diseases; 3 species each for treating asthma, jaundice and rheumatism; 2 species each for the treatments of diabetes, dysentery, ulcers, gout and urinary disorders; 1 species each to treat constipation, cough & cold, eye problem, hernia, leprosy, menstrual problems, scabies, and veneral diseases. Only 1 species bears antibacterial property [Table-2] & [Fig.: 1 & 2].

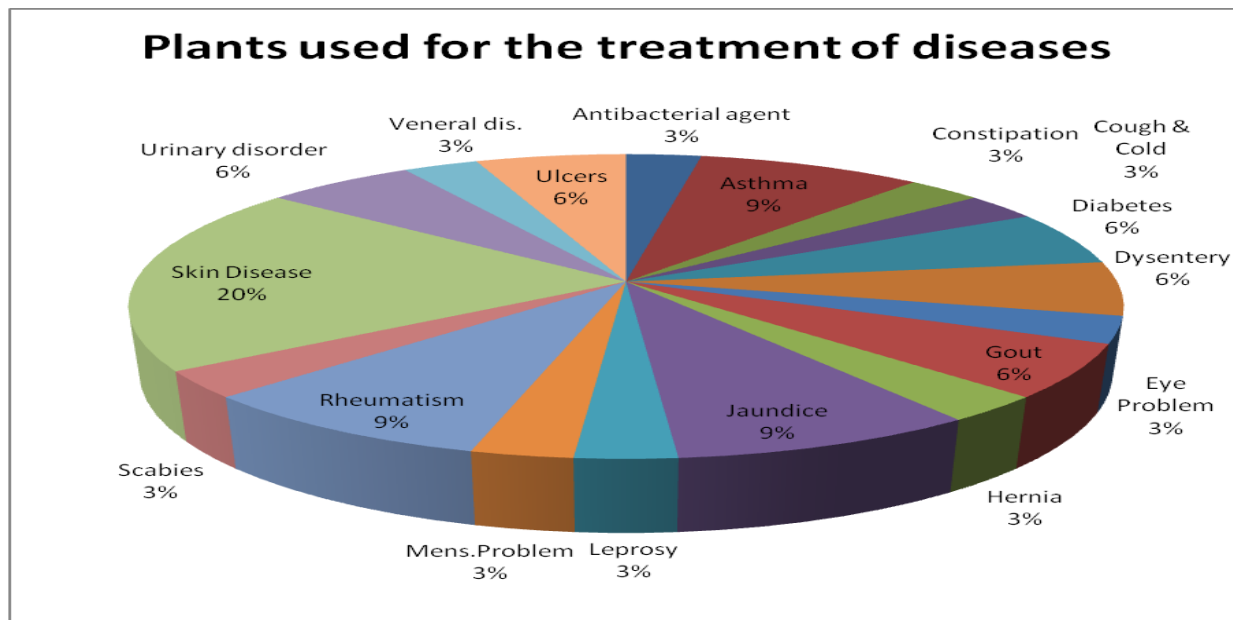


Fig.2: Number of plants used for the treatment of diseases

Besides the above uses, *Jatropha curcas* L. is used as the source of bio-diesel.

The species like *Acalypha hispida* Burm.f., *Euphorbia pulcherrima* Willd., *Euphorbia tirucalii* L., *Jatropha multifida* L., *Jatropha podagrica* Hook., *Pedilanthus tithymaloides* (L.) Poit., and *Ricinus communis* L., are potential exotic weeds, they become gradually naturalized and are recognized by the local people for their medicinal uses (Samanta & Panda, 2012; Maiti, 2002; Maiti *et al.* 1981; Sur *et al.*, 2008).

**Table 2.**  
List of plants and their parts used for the treatments of following diseases/ problems

To treat the diseases/ problems	Name of the plants	Plant parts used
Antibacterial agent	<i>Jatropha podagrica</i> Hook.	Mainly stem
Asthma	<i>Euphorbia hypericifolia</i> Sprengl., <i>Euphorbia prostrata</i> W. Ait. and <i>Excoecaria agallocha</i> L.	Whole plant, Leaves, roots, latex, resin, etc.
Constipation	<i>Phyllanthus acidus</i> (L.) Skeels	Roots, fruits, seeds, etc.
Cough & Cold	<i>Euphorbia dracunculoides</i> Lamk.	Leaves, flowers, etc.
Diabetes	<i>Manihot esculenta</i> Crantz and <i>Micrococca mercurialis</i> (L.) Benth.	Leaves
Dysentery	<i>Euphorbia hirta</i> L. and <i>Euphorbia thymifolia</i> L.	Whole plants, roots, seeds, plant juice etc.
Eye problems	<i>Kirganelia reticulata</i> (Poir) Baill.	Whole plant, stem leaves, etc.
Gout	<i>Tragia involucrata</i> L. and <i>Trewa nudiflora</i> L.	Whole plants, roots, fruits, etc.
Hernia	<i>Pedilanthus tithymaloides</i> (L.) Poit.	Leaves, roots, latex, etc.





Jaundice	<i>Phyllanthus emblica</i> L., <i>Phyllanthus fraternus</i> Webster and <i>Phyllanthus virgatus</i> G.Forst.	Whole plants, leaves, roots, flower, fruits and seeds, etc.
Leprosy	<i>Euphorbia tirucalli</i> L.	Plant juice
Menstrual problems	<i>Ricinus communis</i> L.	Leaves, roots, stem bark, seeds, etc.
Rheumatism	<i>Euphorbia antiquarum</i> L., <i>Euphorbia nivulia</i> Buch.-Ham. and <i>Putranjiva roxburghii</i> Wall.	Leaves, roots, stem barks, root barks, fruits and seeds, etc.
Scabies	<i>Croton bonplandianum</i> Baill.,	Whole plant, latex, seeds, etc.
Skin diseases	<i>Acalypha hispida</i> Burm.f., <i>Acalypha indica</i> L., <i>Chrozophora rotleri</i> (Geis) Juss ex Spr., <i>Euphorbia pulcherrima</i> Willd., <i>Jatropha multifida</i> L., <i>Mallotus repandus</i> (Willd) Muell.-Arg., and <i>Suregada multiflora</i> (Juss.) Baillon	Whole plants, leaves, root barks seeds, flowers, latex, seed oils, etc.
Ulcers	<i>Acalypha lanceolata</i> Willd. and <i>Jatropha curcas</i> L.	Whole plant, leaves, latex, fruits seeds, etc.
Urinary disorders	<i>Jatropha gossypifolia</i> L. and <i>Phyllanthus urinaria</i> L.	Whole plant, leaves, roots, latex, seeds, etc.
Veneral disease	<i>Microstachys chamaelea</i> (L.) Mull.-Arg.	Leaves, roots, stem bark, seeds, etc.

## CONCLUSION

Habitat loss, urbanization, rapid entry of invasive species, pollution, population explosion, global climate change and unsustainable uses of these species creates concern about their future existence. For the fullest utilization of these bio-resources from nature it is worthwhile to conserve them by implementing conservational strategies with top most priority, otherwise these plants will be extinct from their natural habitat in near future.

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## Concept of Righteousness: Some Glimpses from Sister Nivedita's Perspective

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### Abstract

*What is righteousness or Dharma? Why is it relevant to us, in the modern world, too? Why did the sages of old, of every civilization, insist the Dharma is the only true path to fulfilment? In India, morality is never considered as separated from human existence and life. Moral type of an individual depends on his or her basic intrinsic nature. Each individual according to his own capacity is supposed to sustain a society, and that is value, that is his or her 'dharma'.*

*In the present paper, my endeavour is to highlight the traditional as well as contemporary concept of dharma keeping in mind some interpretations of dharma from the perspective of Sister Nivedita's writings.*

*In the first section of this paper, some investigations have been made regarding the exact meaning of the word 'dharma' and the traditional concept of dharma. The uniqueness of the interpretations of Dharma in Sister Nivedita's philosophy has been elucidated in the second section. In the concluding section, I have tried to find out the answer of the question: how far her interpretation of Dharma is relevant in modern Indian sociological scenario?*

**Keywords:** *Dharma, Puruṣārtha, National Consciousness, Ṛta, svadharma.*

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The word '*Dharma*' in Indian ethical philosophy is a key word with many senses. This term actually covers the entire range of a man's life. *Dharma*, as a human value or *puruṣārtha*, can be said to be the value which consists in, or is constituted by, living a morally good life, a life which is in accordance with the requirements of morality appropriate to a man's just being a human being in his society or to his being a participant in interpersonal transactions.

The etymological elaboration of the word '*dharma*' explicates that so far as the word is derived from the root '*dhri*' which means to uphold, to maintain, subsequently it can be mentioned that *dharma* is considered to be the sustainer of the world. In its philosophical sense, the word '*dharma*' may refer to the harmonious order of the cosmos, i.e. '*Ṛta*'. The concept of '*Ṛta*' may be introduced to understand the social harmony. *Ṛta* is the principle of the cosmic order, which generates that there is no arbitrariness in the moral world. It may be said that a life of righteousness is a life in accordance with the principle of *Ṛta*.



In this connection, it can be said that it is the very idea of *Ṛta* which lay behind the governing ideas that determined the organization of the varied aspects of life in India. Fundamentally, it gave rise to the predominant tendency to place the law of the truth as the sole law to which the individual and the collective are called upon to give their ultimate allegiance. Thus there came about in India an organisation of human life in which each individual was given the freedom to develop in accordance with the law of the truth, even the state authorities could legislate, but the legislation itself had to be in accordance with and in subservience to the law of the truth. This is what is meant by the law of *dharma* and this is the significance of the superiority that was ascribed to *dharma* in determining the individual and the collective life.

It is true that, according to the Vedic rishis, *Ṛta* had to be discovered by each individual and that *Ṛta* could not be formulated in the form of rigid law. It is from this formulation that the later idea of *dharma* grew and developed. As the original idea of *Ṛta* could never be rigidly fixed, even so, there could not be in India any one fixed and uniform formulation of *dharma*. Indeed, there have been several formulations and in many respects these formulations themselves have been in conflict with each other, and there are several attempts even to reconcile this conflict resulting in some new flexible and synthetic formulation of law. From this complexity of the situation, there has arisen in India some universal and general idea of *dharma* and certain recognized variations of the formulations of *dharma*.

However, the concept of *dharma* has been developed through the characterization of the concepts of general duties (*sāmānya dharma*), special duties (*varnāśrama dharma*) and one's own duties (*swadharmā*). The great *Smritis* of *Yajñavalkya* and *Manu* had made attempts to codify this *dharma*, and although these two are themselves to conflict with each other in many respects, they have provided a general background of a common formulation of the basic idea of *dharma*.

From the time of *Manu*, the five fundamental duties have been accepted in the classical Indian tradition and these duties are obligatory for man as man, irrespective of any particular social class. These duties are: *satya* (truth), *ahiṃsā* (non-violence), *brahmacarya* (celibacy), *asteya* (non-stealing), and *aparigraha* (non-attachment).<sup>1</sup> In the *Yajñavalkya's Smṛti*, nine types of virtues has been mentioned and these are non-injury, truthfulness, honesty, cleanliness, control of the senses, charity, self-restraint, love and forbearance.<sup>2</sup> Further, *Manu*, in his *Smṛti*, has arranged a string, ten common duties which he calls the ten components or constituents of *dharma*, which everyone has to honor and practice in his own life. The ten constituents of social morality, according to him, are, steadfastness (*dhṛi*), forgiveness (*kṣamā*), self-control, i.e., controlmental propensities (*dama*), cleanliness (*sauca*), control over the senses (*indriyanigraha*), avoidance of theft (*cauryābhava*), wisdom (*dhī*), scholarship or knowledge (*vidyā*), truthfulness (*satya*), and restraint of anger

<sup>1</sup> *AhiṃsāsatyamasteyamśaucamIndriyani-grahah/ etamśamāsikamdharmamcaturvarṇe, varavīnmanuh//* Manu X.63.Patrick Olivelle(2005), *Manu's Code of Law*, Oxford University Press

<sup>2</sup> *IiyaAcāraDamaAhiṃsāDānaSvādhyāyaKarmanam, AyamtuParamo Dharma YadYogenaĀtmanDarshanam* ' Y.S . 1.8, Dutta, Nath , Manmatha(2005), *Yajñavalkyasṁṛti*, Sanskrit Text, English translation, Notes, Introduction and Index of verses, New Delhi, Parimal Publications



(*akrodha*).<sup>3</sup> *Asāmanya dharma* or virtue, being a trait of character, obviously is, a component of an individual's character, or rather, of good character. Thus, *dharma* is a law or guideline to prevent human beings from falling into crooked ways of the ordinary and unrestrained demands of impulses, desires ambitions and egoisms. The individual is asked to grow out of passions and impulses and his or her selfish and egoistic interests to reach the life of ideal law of *karma*.

But even *Dharma* is not, according to Indian culture, the highest stage of human life. For *Dharma* it is not something fixed or rigid. And even if the initial stages of the pursuit of *Dharma* are guided by some fixed and acceptable code of conduct and action and behaviour, the individual has to discover *svadharma*, one's own specific law of the right rhythm of self-development. Every individual has his own specific *dharma*, the peculiar and individual law of the rhythm of his growth appropriate to his own individual functions and special combinations of his qualities and capacities. Thus the life of *dharma* has to be a life of inner – search, a life of self-knowledge, and when one begins to deal with himself, he discovers series of ascending lines of *dharma*. The individual is asked to follow his or her own *svadharma* to its own extreme limit, and at the height of this pursuit the individual discovers the real truth of himself or herself, and the true spiritual way of action, which cannot be bounded by any previously formulated law of *karma*.

It is worthy to mention that *Gita's* theory of *Dharma* that recognized two types thereof- *svadharma* and *sādhāraṇa dharma*- both of which, constitute a very fundamental normative structure of our value system. The duties like truth-telling, non-stealing, non-killing, promise-keeping, which come under *sādhāraṇa dharma*, are not and cannot be, rather should not be, absolute and unexceptionable, but are defensible obligations that should not be obeyed with suitable exceptions under demanding situations. Prof. Rajendra Prasad comments, 'Normally, general virtues, in the Indian ethos, are such traits of character which are supposed to make a man's character good in an organismic sense.'<sup>4</sup> However, in the next section, my concern is to re- interpret the concept of *dharma* from Sister Nivedita's perspective. How far sister Nivedita has dealt with this age-old concept? Did she accept the traditional concept of *dharma* or she has some uniqueness to formulate this idea?

## II

Throughout her different writings regarding *dharma*, Nivedita has identified herself with India and its spirit, by her constant use of 'we' and 'ours'. According to Nivedita, *Dharma*, however, is a word that has a larger and more complex significance than that of a religion as commonly used among us. It includes the whole social conception of law and conduct and worship. *Dharma* is the force or principle that binds together, the union of

<sup>3</sup> *Dhṛtiḥkṣmādāmo 'steyaṁśaucamindriyanigrahah Dhṛtividyaśatyamakrodhodaśakamdharmalakṣaṇam*. *Manu* VI.92, vide also I.122 Patrick Olivelle (2005), *Manu's Code of Law*, Oxford University Press

<sup>4</sup> Prasad, Rajendra, *A Conceptual – Analytic Study of Classical Indian Philosophy of Morals*, Jointly Published by Prof. Bhuvan Chandal and Concept Publishing company, New Delhi, 2008, Vol XII, Part-I, p-301-304





traditional thought and faith of common custom, loyalty, and understanding, that makes of society an organic unity. 'This patience, this steadfastness, this sincerity,' Sister Nivedita wrote, 'Dharma is the substance, the self-ness of things and of men'. She preferred to translate the word as the *National Consciousness*, and on the whole perhaps that is as close to an equivalent term in English as we may hope to achieve. Sister Nivedita has opined the fact that the German word 'Sittlichkeit' is the system of habitual customary conduct and it is quite equivalent to the term 'Dharma'. This German word conveys the system of morality which involves a happy blend of social morality and religious ideal.<sup>5</sup>

However, *Dharma*, as Nivedita interprets it, is the essential quality, the unchanging core of substance. It stands for the man-ness of man, life –ness of life. *Dharma* refers to the duties attached to one's station in life and in that sense that is one's own *swadharma*. An artist, a scientist, a soldier, a sovereign –everyone has some duties to perform, some mission to fulfil, some *dharma* to realise. Similarly, there is *dharma* in the collective sense. A nation as a whole has certain ideologies and ideals, certain course to follow. So, there is a sense of national righteousness and this is also covered by the term 'dharma'. *Dharma*, thus, 'applies to that whole system of complex action and interaction, on planes moral, intellectual, economic, industrial, political, and domestic- which we know as India or the national habit'. In its ethico-social sense whatever is imperative for moral and civic life is *dharma*.<sup>6</sup>

It is through *Dharma* that an individual becomes free. Nivedita conveys that the real thirst of the soul is for freedom, i.e., freedom from ignorance, freedom from desire, and freedom from slavish obedience to unjustifiable customs. According to her, 'The man who is free, is the only man who is himself.'<sup>7</sup> Nivedita also upholds that love and service to mankind bring out the fundamental characteristic of *Dharma*. Freedom can be attained through the struggle with the society and with oneself. The aspirant should encounter with freedom by fighting against the social ills and evils, social tyranny and oppression. At the same time, he or she also fight against himself or herself i.e., with his or her own passions, impulses, desires and emotions. It is by fighting from the both side that an individual attains self-mastery as well as attains his or her own *svadharma*. If an individual will be free from any kind of vanity, selfishness and narrowness of mind, then he or she may become fit for the service of mankind. Following the traditional concept of *dharma*, Nivedita further accepts that religion is not the equivalent of *Dharma*, rather it is an integral part of *dharma*. Religion has two aspects and these are individual as well as social. In its individual aspect, religion is a culture of the soul, it lifts the soul to the Supreme Being, and in this sense, religion has a great social cohesive force.

However, being a social reformer of the Indian society, she insists that Hinduism should be made aggressive. Aggressive not in the sense of tyrannical and oppressive, but in the sense of active, energetic and dedicated to the service of mankind. According to Nivedita, the man of real *dharma* must not simply be engaged in meditation in a secret corner, but must

<sup>5</sup> The writers of *Dharma Sastra* meant by *dharma* not a creed or religion, but a mode of life or a conduct, which regulated a man's work and activities as a member of a society and as an individual and was intended to bring about the gradual development of a man and to enable him to reach what was deemed to be the goal of human existence. *History of Dharmasastra, Vol-II, p-2*

<sup>6</sup> Sister Nivedita, *The Web of Indian Life*, p-156

<sup>7</sup> Sister Nivedita, *Religion and Dharma*, p-6



come out in the open and must take up actively and energetically the task of mankind through the way to morality. All the great preachers of religion- Lord Buddha, Jesus Christ, Sri Ramakrishna dedicated themselves wholeheartedly to the service of mankind. Hence, Nivedita asserts that *dharma* is not confined to *sādhanas*, *Tapasyā* is not a matter of the worship alone. The original *sādhaka* himself rises to the height of the character and helps others in reforming and remoulding his character. Since a virtuous person is inspired by the ideal of robust activism, work should be the type of religious *sādhana*. In this way, Nivedita's concept of *dharma* reconciles the traditional concept of *dharma* and it has been observed that both of the concepts highlights on the concept of *svadharmā* as well as on the concept of *sādharana dharmā*. Recapitulating the ideal of *Gīta*, Nivedita says that we should always be actuated by the ideal of work for its own sake, the ideal of duty for duty's sake. Our work should be of the type of *niskāma karma* or disinterested action. Nivedita opined that while performing our duties, we should swear by the gospel of fearlessness, of courage, of self-conquest. She further said that there should be a proper training of the mind and it is through the proper education of the mind, the body of that individual becomes fit to realise the ideals of life.

Now the question is: what then should be the duty of every Indian in the present scenario? According to Nivedita, the duty or *dharma* of every Indian should be to remain steadfast to the spirit of Indian culture, i.e., the ideal of synthetic unity. As Nivedita explains, "Indian thought stands revealed in its entirety- no sect, but a synthesis; no church, but a university of spiritual culture."<sup>8</sup>

So, every Indian should aim at a synthesis of the diverse ideals, standpoints and ideologies and in this way, he or she can minimise individual as well as social conflicts. Toleration and understanding should be the guiding principle of every person's philosophy of life. Every person should perform the duties of life with all his or her energy and in a spirit of renunciation. But mere outward show of renunciation is not adequate. It is not enough to be a *sannyasī* by appearance, rather it is necessary to be *sannyasī* – hearted in its true sense. So, reformation must come from one's within. Consequently, it reveals the true self and gives true knowledge. The world gives every person the opportunity to build himself or herself up and to discover and to know his or her true self. New ideas and ideals will be evolved and they will have to be, as far as practicable synthesised with the old. To quote the practical advice of Sister Nivedita: "Accept the exigencies of thy time, the needs of thy place, as the material out of which the soul is to build its own boat for the great journey. Think not that it can copy exactly any that has gone before. To them look only for the promise that where they have succeeded thou shalt not utterly fail. Then build and launch. Set out to find-Thy –self."<sup>9</sup>

### III

In Sister Nivedita's view, the real meaning of the renaissance of *Dharma* is the re-interpretation of the term in modern terms of the faith and practice of the past, a fresh conception of worship and a sacrifice to the ideal, the monastic ideal expressed in social service, the recovery of the civic sense, and its re-establishment in a fuller understanding of the Indian social order; the exaltation of work, the positive character, and of knowledge, in which alone could lie the mastery of the future. Throughout her different writings, regarding

<sup>8</sup> Sister Nivedita, *The Web of Indian Life*, p-186

<sup>9</sup> Sister Nivedita, *Aggressive Hinduism*, p-38





*dharma*, Nivedita has identified herself with India and her spirit. According to Nivedita, the meaning of the word '*dharma*' is close to the meaning of the German word, '*Sittlichkeit*' rather than the English word '*Religion*'. This German word implies custom and a habit of mind and action, i.e., the blend of social morality and social sanction embodying the ideal of the people towards each other and towards the community to which they belong. It is this instinctive sense of what to do and what not to do in daily life and behaviour that is the source of liberty and ease. And it is this instinctive sense of obligation that is the chief foundation of society. Its reality takes objective shape and displays itself in family life and in our civic and social institutions. It is not limited to any one form, and it is capable of manifesting itself, in new forms and of developing and changing old forms. Sister Nivedita would have accepted every word of this exposition as covering a great part of the life of citizenship. And she would have added, with truth, that *dharma* is finer and more satisfying word for the living principle of conduct and society- finer and more satisfying in the measure of the infinitely more rich and profound conception which the Indian has of the religion. Thus, to Nivedita, *Dharma* stands for the duties attached to one's station in life. It is through *dharma* that an individual becomes free. In the collective sense, it is not only but the sense of national righteousness. BatukNath Bhattacharya interpreted that the distinctive spirituality of the modern world was its ability to think of things as a whole. It was becoming clearer as time passed that the Hindu religious hypothesis was perfectly compatible with the highest scientific activity. Viewed from this standpoint life for its uniqueness had to acquire an overall meaning and purpose.<sup>10</sup> Nivedita emphasised on the concept of *dharma* in its true sense which unites the people of the world in an organismic sense and in that sense she has rightly reinterpreted the correct meaning of *Rta* (cosmic order). She played a great role in awakening the awareness of nationality among the Indian people by her inherent elucidation of *dharma* as national righteousness.

To wind up, it is also observed that today's crisis of India is a 'crisis of values'. Our problems on economic, social, political levels can all be traced to this one cause. A nation reflects its philosophy in its various aspects of life. But what is our philosophy today? Social values are in a melting pot, while there is a spiritual vacuum everywhere. What should be our guidelines for steering our course across these troubled waters? We can answer this question to a great extent by observing and following Nivedita's approach to India's problems. And we also have to keep in mind the fact that Nivedita's ideas are very much relevant in today's world. So, it is the duty of every Indian citizen to commemorate herself not by only paying homage on her birth anniversary, but also to revive and culminate her ideas and thoughts in our daily lives. It is very necessary not only to rediscover the *Rta* but also to explore some new ideas which still remain untraced in the past. Some such effort seems to be an answer to the suffocating crisis of the values in today's India.

<sup>10</sup>BatukNathBhattachayacharya, *The Interpreter of the Indian Spirit*, Nivedita Commemoration Volume, edited by Amiya Kumar Majumder, Vivekananda Janmo-tsava Samiti, Calcutta, 1968, pp-73-74



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## Indian Society and Third Gender: From Page to Stage

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### Abstract

*Presence of Third Gender in society cannot be ignored, even though their numerical strength is poor compared to Man and Woman. Third genders are kept 'invisible' both by the society and by themselves as they face atrocities and exploitations in every junctures of their lives. Literature, being a platform of expression and Theatre, being a means to stage life as it is, have portrayed Third Gender. They have never shied away from talking about taboo topics. In Indian society the presence of Third Gender in society and in literature can be traced back to the days of Ancient Hindu epic Ramayana. However, Indian society has witnessed many changes. Ancient Indian culture accepted the presence of third gender and homosexuality. But under the British rule, situation and lives of the third gender changed for worse. Homosexuality then on was regarded as a criminal offence and not just a mere social taboo. India was burdened with this colonial legacy for more than 72 years even after independence. It is only in 6<sup>th</sup> September, 2018 Indian Supreme Court decriminalised homosexuality. The objective of this paper is to trace how Indian literature have worked as agencies in breaking the third gender taboo and attempted to make the third gender 'visible'. My intention is to locate the constant efforts made by the Indian writers in making the 'majority' accept and understand new concepts like the third gender issue or the theme of homosexuality and change with the changing times*

**Keywords:** *Third gender, Homosexuality, Gender-issues, Stage/ Theatre, Gay-Lesbian.*

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### Introduction: The term 'Third Gender'

First let me clarify the term 'third gender'. In Indian subcontinent hijras/ eunuchs are officially recognised as third gender. They do not have reproduction capacities as either guys or ladies. They are such due to genetical and physiological reasons from birth or by forced castration in adulthood. But by 'third gender' or 'other', I intend to include 'transgender' also. A 'transgender' explicitly identify oneself as 'male', or 'female'-but not the identity or gender expression to which they had been assigned by birth. A female born individual who identify and live as male is

known as 'transman' or 'FTM' [lady-to-male]. Similarly the case where a male born individual closely resemble a woman by behaviour, dress and wishes scientific intervention to resemble a woman is a 'transwoman' or 'MTF' [male-to-woman]. But mere wearing dress or apparel traditionally assigned to another gender or as Akash Kori puts it that "move-dressing is not indicative of sexual orientation".<sup>1</sup> Sexual orientation and gender identity are not same. Kori clarifies the terms in the same article: "Sexual orientation refers to an individual's enduring physical, romantic and/or emotional appeal to any



other man or woman, whereas gender identity refers to one's inner experience of being male, female, or something else."<sup>2</sup> The sexual orientation of a transgender and a non-transgender can be multiple- they can be straight (hetero-sexual), lesbian, gay, bisexual or asexual. My work will incorporate not only 'Hijras', but also the Lesbian, Gay, Bisexual and Transgender, commonly known as LGBT community, since all of them are identified as 'others' or 'deviants' by the majority.

### Social Problems Faced by the Third Gender

The social difficulties faced by the third gender (hijras and LGBT) have a long history. From the time an individual identifies oneself as lesbian or gay or bisexual or wishes to be a transgender- the struggle begins. It aggravates when society also labels the individual as either 'lesbian', 'gay', 'bisexual', 'transgender' or 'hijras'. Such individuals are out casted and marginalised by the society and labelled as 'others' or viewed as 'not – normal'. Suffering begins within the family itself, as being or behaving such is a matter of shame and stains the family pride. The sexual identity of any LGBT is initially suppressed by the family and sometimes even by the individual for the fear of being socially outcast. They remain closet under the threat of being beaten, tortured, attacked and even murdered in the name of 'honour killing' by family inmates, legal authorities (police), by curious 'normal' folks. Incidents of forceful marriage happens which leads to unhappy married life and other complications. Suicidal attempts by such gender non-conforming people are quite

common and often appear in the news. Societal and psychological pressures force them to leave their family or camouflage their sexual preference. However a person born as a hijra, or forced to be such usually leave their family much earlier. They are forced to live on the fringes of the society. Since education and employment are not assured to them, they live mostly in poverty, leading their life through singing, dancing, begging and even by means of prostitution. They are not allowed to have family and are incapable to give birth. However the irony is that their presence in wedding and child-birth are accepted by mainstream society.

Prior to the Supreme Court's verdict of 6<sup>th</sup> September, 2018, the legal situation for the LGBT community was not the same in India due to the existence of Section 377 of the Indian Penal Code, 1860. Akshat Amitesh cited portions of Section 377 in his article "*LGBT Rights Recognised in India: A Landmark and Historical Judgement*" and pointed out that the "provision of Section 377 was modelled on a 16<sup>th</sup> century British law called Buggery Act, which was the first such civil law that criminalised certain kinds of sexual intercourse."<sup>3</sup> From Section 377, he cites: "Whoever voluntarily has carnal intercourse against the order of nature with any man, woman or animal shall be punished with imprisonment for life or with imprisonment of either description for a term which may extend to ten years, and shall also be liable to fine."<sup>4</sup> Several incidents are there where transgenders are arrested and prosecuted under section 377. Even further tortures in name of legal pressures happened in the prison, where



torture, including raping the transgenders took place. The new verdict not only gave the LGBT community the right to choose their sexual partner openly, but also the opportunity to enjoy the fundamental rights guaranteed by Articles 14,15,19 and 21. Most importantly, after the new law they are free to disclose their identity and sexual preference without the fear of being ostracized. The court declared “...the identity is pivotal to one’s being.... hence emphasis is laid on the identity of an individual which is conceived under the constitution.”<sup>5</sup>

### Position of Third Gender in Pre-Colonial Indian Art and Culture

The suffering and deprivation faced by the third gender in India due to imposition of Section 377 was not the scenario in the pre-colonial era. Ancient Indian culture accepted and even celebrated homosexuality and transgender through paintings, sculptures and literary texts. Same sex relations were not depicted as immoral and sinful. The Hindu God Lord Shiva is worshipped as ‘*Ardhanārīśvara*’ (half female and half male deity). Ancient Hindu mythology/epic, *Mahabharata*<sup>6</sup> has a scene, where *Arjuna*, one of the Pandavas and leading protagonists, dresses up as a woman and teaches dance (*Nṛtya-kalā*, commonly assigned to women) to other women in the guise of *Brhannalā* (*vide Viratparvan*). The look of *Arjuna* presented by the author resembles that of a ‘Hijra’. *Bhīṣma* refers *Śikhaṇḍin* as a woman born transformed to male and refuses to fight with a woman (*vide Udyogaparvan* and *Bhīṣmaparvan*). *Śikhaṇḍin* is an instance of modern ‘FTM’. Though not even hinted about any sexual

relation between *Arjuna* and *Śrī Kṛṣṇa*, but they shared a strong bond between them and are referred as ‘*Sakhā*’. Sculptures in ancient temples of Khajuraho and paintings of Ajanta also have figures that show two men engaged in sexual activities. The ancient Indian text on sexual behaviours, *Kamasutra*<sup>7</sup>, too refers to the ‘third’ type of sexual activity (*vide* Chapter 6, Subchapter 9). The book not only describes in detail the love postures of a man and woman, but also of two men (gay) or two women (lesbian). Ancient strictures on ‘*Dharma*’ (religion) and ‘*Suśruta*’ (medicine) accepted the presence of homosexuality and advised them to retain their sexual preference. They have warned homosexuals about forceful marriage to the opposite. There are references to Hijras and homosexuals in the Mughal rule of medieval India. Devotees of Sri Krishna are acquainted with the ‘*Rādhā-bhāb*’ of *Nimai-Gouranga* (*Sri Chaityanya Mahaprabhu*). Like *Rādhā*, *Nimai* felt the same urge to meet and longing to be united with Lord Krishna. Though *Manusmṛti*<sup>8</sup> has referred ‘third gender’ as outcaste community (*vide* 7/81), it was British Government who introduced and enforced in India the enactment of Section 377 and labelled homosexuality as crime. This led to further marginalization of the community and harassment caused due to discrimination. It took India almost 72 years to overrule the law which was the cause of inequality and discrimination resulting to sufferings of all sort faced by a specific Indian community.

### Theme of Lesbian/ Gay in World (English) Literature

The theme of homosexuality and references to lesbian relationship are





abundant in British Literature. Shakespeare's relationship with his male friend Mr. W.H and the love for him expressed in most of his sonnets dealt with the homosexual issues. The erotic love for the mysterious 'Dark Lady' (who also has real life counterpart, though her identity is not confirmed) along with the emotion for the male friend hint a bisexual sexual orientation of the author or the poet-persona.<sup>9</sup> In the Victorian era Oscar Wilde was labelled as 'the sexual deviant' and his homoerotic texts have challenged the Victorian 'genteel' world. Wilde's own homosexual expression can be reflected in the characters of Basil, Lord Henry and Dorian of *The Picture of Dorian Gray*<sup>10</sup>. D. H. Lawrence makes his heroine of his novel *The Rainbow*<sup>11</sup>, Ursula Brangwen, challenge the conventional norms of man-woman relationship and get involved in a lesbian relationship with Winifred, her high school mistress. Though the relationship brings moments of ecstasy and passion in Ursula's life, but to Lawrence the deviation from normalcy is the reason of 'shame' and he names the chapter dealing with the relationship as 'Shame'. Such same sex relation was made legal in England not before 1967. 'Shame' would not remain same if the novel *The Rainbow* (1915) would have written after the legal rights gained by gays and bisexuals in England. The trials and ordeals faced by Wilde or the confusion and pain sustained by his fictional characters would have been in a different light after legalization of homosexuality.

Theatre too presented the issue of lesbianism. *The Captive*<sup>12</sup> (1926) by Edouard Bourdet was a melodrama dealing with Lesbianism. Mae West's *The Drag*<sup>13</sup> (1927) deals with a cross-dressed

character. It was Robert Anderson who exposed the society's prejudices against homosexuality in his *Tea and Sympathy*<sup>14</sup> (1953), even after the US law has accepted and approved homosexuality in 1950. However, after legalization, numerous plays are written and performed dealing with same sex love. Theatre became a means to educate and make people aware of the issue and make a mind set to accept a gay or a lesbian in mainstream society. American playwright Tony Kushner's *Angels in America*<sup>15</sup> (1985), dealing with a AIDS affected gay man being visited by an angel won the Pulitzer Prize (1993).

### **Presentation of Transgender in World (English) Literature**

Fictions dealing with transgender issues are also abundant in English Literature. Virginia Woolf's *Orlando: A biography*<sup>16</sup> deals with biological born male who mysteriously transforms his sex during the period of Elizabeth I. American novelist Eugene Luther Gore Vidal presents a transgender character in his novel *Myra Breckinridge*<sup>17</sup> (1968). This novel is the first one to show clinical sex change. T.E. Wilson in his novel *Wild Dogs of Mexico*<sup>18</sup> (2018) makes a transgender his protagonist. Ernesto Sanchez, being a detective is very much part of the legal system and not oppressed by law. However, the black transwoman of Emmy Morgan's novel *The Ice Princess*<sup>19</sup> (2011), struggles because of her past identity before finally achieving her goal of becoming a TV star.

### **Portrayal of Third Gender ( Hijras) in Indian Literature**

In pre-colonial India, as mentioned earlier, homosexuality and hijras were referred in



ancient Hindu mythologies and texts, where the issue was not regarded as unlawful. Treating homosexuals as criminals is one of the British legacies which the sub continent consciously burdened itself. Indian English Literature in the colonised period and also after independence depicted and portrayed the background and sufferings of Hijras, gays, lesbians, bisexuals, homosexuals from sociological angle. Society along with literature/ movies made fun of the transgenders and presented or looked down upon them in a derogatory manner, often to bring a comic effect in the text or movie. In Indian language, Su.Samuthiram's *Vaadamalli*<sup>20</sup> (1994) is the first novel about the local hijra community in Tamil Nadu. However A. Revathi's work *UnarvumUruvamum*<sup>21</sup> (Feelings of the Entire Body, 2010) is the first novel to be written in English about hijra community by a hijra herself. Arundhati Roy in her latest novel *The Ministry of Utmost Happiness*(2017) makes the 'marginalised' speak. She takes us to an alternate 'duniya' where Anjum, nee Aftab, a hijra resides with other hijras.<sup>22</sup> As the story unfolds we see the best place for Anjum to reside is an old graveyard where she builds a guest house for other outcasts. In the course of the novel, Anjum and other hijras are made to realise that hijras were once members of Royal Palace of the Mughals by making them watch the light and sound programme of the Red Fort, where "fleeting but distinct coquettish giggle of a court eunuch" can be heard.<sup>23</sup> Presentation of various gender non-conforming individuals and their stories are narrated through the voice of Aniket in the Bengali

novel *Holde Golap* by Swapnomoy Chakraborty.<sup>24</sup>

Hijras and transgenders aim to educate the masses about their community to make them aware about the social legal oppressions by opening up their experiences and lives. The first transgender autobiography in India is Living Smile Vidya's *I Am Vidya*<sup>25</sup>. *A Gift of Goddess Lakshmi*<sup>26</sup> is the biography of transgender Principal ManabiBandopadhyay.. Transgender activist A Revathi's non-fictional work *The Truth about Me: A Hijra's Life Story*<sup>27</sup> is the story of her and the third gender community as a whole. In these types of memoirs we find a true account of the suffering and distress faced by the hijras from personal experiences.

### **Presentation of Lesbian and Gay Issues in Indian Literature**

"Same-sex relationship and love has been part of Indian society since centuries."<sup>28</sup> Joseph in her article has short listed works, mainly novels and stories by Indian writers dealing with the lesbian/gay issues. Starting from IsmatChughtai's *Lihaaf*<sup>29</sup> published in an Urdu Journal, she refers to Kamala Das's *My Story*<sup>30</sup>(1973), Suniti Namjoshi's *Feminist Fables*<sup>31</sup>, *Strange Obsessions*<sup>32</sup> by Shobhaa De, Manju Kapoor's *A Married Woman*<sup>33</sup> and Rita Garg's *Precursor of Love*<sup>34</sup>. Tillottoma Mazumdar shows lesbian relationship between Debrupa, Sruti and Sreya in her novel *Chander Gaye Chand*.

Authors are trying to break the inhibition of dealing with such themes in Indian scenario as many are uncomfortable in reading such themes and criticised them for obscenity. Moreover because of the





law against homosexuality might be the reason for many controversies and legal cases against the writers. The threat of banning or censoring the books or portions of those sections dealing with the issue is always there. Portraying Hijras or viewing their lives are comparatively much easier than dealing with lesbian/gay relationship in texts. Hijras can be identified easily through their gestures and looks and already been viewed as ‘others’ by society. But a lesbian, gay or a bisexual very much belong to the mainstream, where their identities and sexual preferences mostly are kept hidden or revealed within a restricted circle. In their edited work *Same-sex Love in India: Readings in Indian Literature*<sup>35</sup>, Saleem Kidvai and Ruth Vanita (referred by Joseph) have pointed out that Indian works on homosexuality since 19<sup>th</sup> century express a gradual and increasing homophobia as homosexuality is treated as a taboo and unlawful by Indian legal system.

### Theatre on Third Gender with special focus on Mahesh Dattani

From the scarcity of dramas dealing with the third gender and homosexuality theme, it seems Indian theatre has not much widely and openly accepted the issues of third gender and the concept of homosexuality. Staging homosexuality might lead to further controversies and complications both for the writers/directors as well as the actors essaying those roles. Theatre has a direct and open access with its audience, which novels or non-fictions do not have. The threat of being attacked is always there in case of stage performances as homosexuality has not been accepted by the Indian law prior

to 6<sup>th</sup> September, 2018. Vijay Tendulkar’s Marathi play *Ek Mitrachi Gostha*<sup>36</sup> (1981) deals with homosexuality, when homosexuality was not only a taboo but also a crime. The drama as well as the actress playing the lesbian lead faced controversies, but the drama successfully made an impact on the audience. The Bangalore born English writer Mahesh Dattani has written a handful of plays dealing with the lives of hijras and the traumas faced by them and members of LGBT community in India. He started writing plays from early 1980s and formed his own theatre group Playpen in 1984. Dattani’s plays thrive on patterns of human relationship- be it parent child relationship as noticeable between Patel and Bharati with their son Chandan and daughter Tara in the play *Tara*<sup>37</sup>; sibling bonds between Tara and Chandan from the same play and between Kamlesh and Kiran of *On a Muggy Night in Mumbai*<sup>38</sup>, a sort of confidante between Alpesh and Lata in *Do the Needful*<sup>39</sup>, where both promise to honour their mutual secrets “teribhichup, meribhichup”; a sisterly bond between the hijra Anarkali and Uma, which leads Uma to give money to release Anarkali from jail in *Seven Steps Around the Fire*<sup>40</sup>, the strained conjugal relationship between Uma and Suresh in *Seven Steps Around the Fire* and between Dolly-Jiten and Alka-Nitin in *Bravely Fought the Queen*<sup>41</sup> or the ‘unusual’ but deep love between same sex as in the case of Kamlesh and Prakash (Ed. Edwin Prakash Matthew) in *On a Muggy Night in Mumbai*; or the passion felt by Subbu for the transgender Kamala in *Seven Steps Around the Fire*, everywhere Dattani’s mastery in dealing with human passion and relation can be seen. But Dattani is at his best in dealing



with the love –compassion-passion of the ‘third-gender’, which was not so much ventured by other playwrights as India has not legalised or approved relationship of lesbian, gay or transgenders, apart from regarding those issues as social taboos. He made the marginalised speak their opinions and feelings through the characters he created in his plays. He deals with middleclass people and shows their narrow mentalities and taboos in regard to the acceptance of the love between two people of same sex. Dattani has showed how such love affairs are not accepted by the society, even by the families of the person involved in such. Suppressing the real sexual experience/ identity of their wards, parents intend to marry them off to opposite partners to show that the children are on “the right path” (Mr Sharma to Uma on *Seven steps Around the Fire*). Mr Sharma even goes to the extent of killing his son Subbu’s transgender lover from hijra community, Kamala. He even shows how a hijra, Anarkali is kept in the male prison, where she is being tortured by other male prisoners. The policeman refuses to use the pronoun ‘she’ or even ‘he’ and refers Anarkali as ‘it’. Based on a detective thriller the play shows how hijras and transgender’s emotions and relations are not accepted, and how law acts unlawfully to end their relation, emotion as well as life. Dattani also shows how the gay people are feeling repulsive towards the heterosexuals and the institution of marriage: “I hate weddings” (Subbu, *Seven Steps Around the Fire*), “the whole heterosexual world is run by rituals”(Sharad, *On a Muggy Night in Mumbai*). But he main suffering the gay/lesbian community faces is due to the legal system that is not allowing them to

marry or maintain a relationship or be part of the mainstream. Cries of deprivation and oppression can be heard: “So many a times we have to pay for ...being a gay” ( Sharad, *On a Muggy Night in Mumbai*), “ ...in Bangalore we have been through the pain of separation...as gay men and women...”( Kamlesh, *On a Muggy Night in Mumbai*). But such is not the situation outside India, especially where homosexuality is legally accepted. Ranjit of *On a Muggy Night in Mumbai* states the point clearly in his utterances: “I am sometimes regretful of being an Indian; because I can’t seem to be both Indian and gay”, “My English lover and I have been together for twelve years now. You lot will never be able to find a lover in this wretched country!”, “Why do you think I left this country?. England has approved homosexuality since 1967, hence for UK based Ranjit it is much easier to be gay and maintain a long time relation with his male partner, which is not the same for Kamlesh and his other comrades. In India, they have to keep matters secret in fear of social ostracism. The guard of the same play fears that “Society waaloko sab kal complaint karne wale hain!...Abhiaap logon kakyahoga?”(People will go and place complaint to the society of the apartment about their gay activities. Now what ordeals they might face is the great question). They might be harassed by the society of the apartment and then by the police. They are outraged with the idea that only heterosexual man is accepted as “a real man”. Prior to the Supreme Court’s verdict on 6.9.18, third genders in society, literary works feared social ostracism and harassment even from the keepers of law.

In England Gay people formed a professional Gay Theatre Company in



1974. By 1979 more than 150 professional Gay theatre companies were formed, staging plays to educate mass to accept LGBTQ in the mainstream life. In India, even before homosexuality has been legally accepted, a Theatre Group, named Panmai Theatre Group comprising only transgenders had been formed in Tamil Nadu. Inspired by them and with the help of Sreejith Sundaram from Tamil Nadu, Kerala's Sangeetha Nataka Academy, part of International Theatre Festival of Kerala has organised a week long workshop (January, 2018) to train 16 transgenders to the notions of theatre. They are being prepared to "tell stories of mental and physical angst with honesty, passion and wit".<sup>42</sup> Transgender activist Sheethal Shyam reports to The Times of India about the incident: "We have been making our walks of life from fashion to make-up. Now we are trying our luck in Theatre."<sup>43</sup> Renju Renjiman, another transgender activist is thrilled to find "an opportunity to speak for the voiceless and marginalised people in the society. We are doing

everything that we couldn't do when we were young and when we were facing identity crisis".<sup>44</sup>

### Conclusion

This paper on "Indian Society and Third Gender: From Page to Stage" is a part of Transgender Studies that came into vogue from early 1990s. With the aid of Gay Lesbian and Queer Theories, Transgender studies and interpretations lay emphasis on social background, political movements, cultural presentations and memoirs (memories and experiences) of the gender non-conforming people. The representation of the third gender issue in literature and in performances has definitely drawn attention of the masses. Such representations will hopefully make people conscious and get rid of the burdens of social taboos. Despite the challenges faced by directors and actors during the performance of a play based on homosexuality, authors, playwrights and directors are dealing with this theme and have voiced for the third gender.

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# fĒjQŁe ij-l-a NŁZLj hĒhŪŪj Eáh J fĒp-l fłoajŁŁ»L pjS J l-j-ŌĒl cŁŁuaŁŁ

## Evfm LjŁ

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### Abstract

fĒjQŁe ij-l-a NŁZLj-cl AhŪŪj ŁRm Ll'Zz H-cl-L OŁeĒ J AŌf«nĒ Łqpj-h Łh-hQej Ll j qaz kŁŁJ fłoajŁŁ»L pjS J l-j-ŌĒl Ljje-j-hipej J mŁmpj-L QŁlajbŅ Ll j SeĒC HC hĒhŪŪj pŁŁŁ q-uŁRmz fło aj EáŁš AbŅ j-ej'-el SeĒ H-cl ŁfR-e hĒu L-l-Rz ljSj-jqjlljSj j NŁZLj-cl k-bŁRij-h -ijN L-l-R Hhw ayj AŁaŁb-clj-ij-Nl hĒhŪŪj L-l-Rz cŁxŪŪ Łfaj ŁLwhj ūjjŁlj aj-cl -j-u J Ū»Ł-cl NŁZLj-m-u fjŁW-u Łca SŁhe dj-l-el SeĒz ŁLŁ'Ł aj-cl HC AŁeŁal Lj-Sl cju fłoajŁŁ»L pjS J l-j-ŌĒ -euŁez -ij-Nl fl NŁZLj-cl EŁmR-Ōl ja BŪ'jLŁ-s RŁ-s -g-m Łc-u Łe-Slj jŁŁŁ qhjl -QŌj L-l-Rz

pŁQL nĒ (Keywords): NŁZLj, AŌf«nĒ, Ljje-j-hipej, -ijN, fłoajŁŁ»L pjS, EŁmRŌz

(Paper received on 13/04/2019; Paper accepted on 15/05/2019; Paper published on 1<sup>st</sup> June, 2019.)

fĒjQŁe ij-l-a Łfa«ajŁŁ»L pjS j ŁŁqmj-cl AhŪŪj ŁRm Ll'e, Bl NŁZLj-cl AhŪŪj ŁRm AŁalŁez kŁŁJ Łfa«ajŁŁ»L pjS J l-j-ŌĒ aj-cl Łe-S-cl fĒ-ujs-e LMej fĒaĒr J LMej f-ljrij-h HC NŁZLj hĒhŪŪj Eáh J fĒp-l pŁqjKĒ L-l-R, k-bŁRij-h -ijN L-l-R, Bhjl -ij-Nl fl EŁmR-Ōlja BhSŅeju RyŁ-s -g-mj Łc-u-Rz CŁaqj-pl fŁlqjp HC -k, NŁZLj-cl hjdŅ-LĒ pjS HŁN-u B-pŁe hj cŁŁuaŁŁ fime L-lŁez ajlj

hĒjaĒ, OŁeĒ J AŌf«nĒC l-u ŁN-uŁRmz

fĒjQŁe ij-l-a NŁZLj-cl pŁŁ-LŅ Sjelj Efjcl-el Aijh -eCz H-r-Ōe pWú«a pŁŁqaĒ...Łm Bl NĒŁŪ q-mj aj HljjŌe euz ij-l-al fĒjQŁeaj pŁŁqaĒ GL-h-cNŁZLj-cl E-ŌM B-Rz HRjsj flhaŅŁ Lj-ml AbhŅ-hc, Łheu ŁfVL, Sjaj, jqljĒhĒ, fłlje, hlvpu-el LjppŁe fĒi«Ła -b-L NŁZLj-cl pŁŁ-LŅ Sjelj kjuj Bhjl ŁhŁiĒ NĒ-ŁŪ, ŁhŁiĒ AŁidj-e NŁZLj-cl pŁŁ-LŅ ŁhŁiĒ





dl-el fĚčanĚ fġJuj kġuz GL-h-c NĉZLġlġ EĉĉMa q-u-R qU»ġ, ANĚ J pġdġleĒ eġ-jz Sjā-L NĉZLġlġ EĉĉMa q-u-R lĉfcġpĒ, -hnĒġ, NġĉjeĒ eġ-jz Bhġl ġqġLġhĒ, fġġe-...ĉm-a Hġ EĉĉMa q-u-R LġmVġ, °üĉleĒ, hġġ%œġ, hġlhĉeaġ, hġlU»ĒĒ ĉqġi-hz hġvpġu-el LġjpĒ-œ NĉZLġ, lĉfġSĒhġ eġġ...ĉm fġJuj kġuz HC ġi-h pġ-ul ĉhhaĒ-e NĉZLġlġ fĚčanĚ...ĉml Eáh q-u-R Hhw ÛÛġe-Lġm-fġœ -i-c HC eġġ...ĉml pªĉĉ q-u-R J pġġ-S ĉhlġS L-l-Rz

ġġ-a NĉZLġhªĉġl Cĉaqġp Aĉa fĚġQĒez qġġ pġĒāġu Hl AĉÛªaĒ pĉĉ-LĒ -Sġġ-mġ fĚġġe fġJuj eġ -N-mġ GLªhĉcL kª-N Hl AĉÛªaĒ pĉĉ-LĒ fĚġġe fġJuj kġuz a-h L-h J ĉLġġ-h ġġ-mĒl ĉhĉġeġ-u eġĒ-cq -ġ-Nl hÛª-a fĉlea q-a öġl L-l, āġ Cĉaqġp Aeapªġe Llġ MªhC cāġqz fĉlhġ-ll ĉeĉcĒØ pĒġġl hġC-l -Lġe eġĒ kMe AeĒ fġġo-L hÛª hġ AbĒfĚġĉĉ ĉhĉġeġ-u -cqcġe L-l, aMeC -p NĉZLġ ĉqġi-h ĉQĉqªa quz LġĒ, hĒhpġ-hġġeSĒ pĒ-œ ĉLRª ġġeª-ol qġ-a Eªª p'ü qu, kġ -p SĒhe dġl-Zl fĚ-uġSe -ġVġhġl fl ĉhmġp-p-ġġ-N hĒu Ll-a bġ-Lz¹

fĚġQĒe ġġ-a, ĉh-no L-l MĒĒx fĒx ou naL J āġfl -b-L hġĉZSĒ f-bl dġ-l N-s E-WĉRm pġªÛ Sefc J eNlz pĉªa q-u-R Eªª AbĒ ĉhġhġe hĉZ-Ll qġ-az ĉh-noa hġġeSĒ J

kª-Ûl ĉġ-u -k fġġo-L cĒONLġm fĉlhġl -b-L ĉhĉġRæ q-u fĒhġ-p bġL-a qu; -p āġġ Eªª LyġQġ VġLġl ĉhĉġeġ-u -kġe ĉh-c-n MġĉĒhÛªª œªu L-l, -āĉġe -ġġNE eġĒJ œªu L-lz āġC Beġ-Nġeġl f-bl cāġġ-l pġªÛ ġSdġeĒ J eN-l fĒĉaĉWa qu ĉhmġ-pl ĉe-Lae NĉZLġmu; -pMġ-e dĉeL H-p Ahpl ĉh-eġce L-l NĉZLġlġ pġqQ-kĒ, āġ-L eġġ -cu ġªqªĉaĒLġ, reLġ-ml pĉªœĒ² AbĒġv fġġo-cl qġ-a Aĉaĉlġ² Eªª AbĒ āġ-cl Lġġeġ hġġeġ-L hġĉs-u ĉc-uĉRm; āġ-cl ĉhf-b Qġĉma L-lĉRm, pªĉĉ L-lĉRm NĉZLġhªĉġz

Aĉnrġ J dġĒġāāġl Lġl-Z fĚġQĒe ġġ-a eġĒ ĉRm flġdĒez āġC Evp-h, kªÛS-u, k', ĉġ-e, cĉrZġu ġġmĒhġe Amªġ-ll ġā eġĒ-Lġ ĉġe Llġ qaz H-cl ġ-dĒ Hġeġ cāġĒġĉNeĒ B-Re, kyġ-cl -c-ql ĉhĉġeġu ġġ-mĒ AeĒ HLSe fĒeĒ ASĒe Ll-Rz³ -Lhm ġSġġ-ġqġlġSġġC eu, pġdġlZ fġġolġJ NĉZLġ pªĉĉl SeĒ ĉġuĒz ĉġĉā hġ Arġ üġĒġl ĚĒĒ-L NĉZLġm-u fġĉW-u ĉca Hhw ÛĒĒL EfġSĒ-e ĉĉefġā Ll-āġz -Lhmġġœ üġĒ eu; cªÛÛ, qāġġNE hġ AbĒ-mġġe ĉeüªġ ĉfāġ LeĒġ-cl NĉZLġhªĉġ-a fġĉW-u ĉcaz⁴ HCġġ-h fġġoāġĉġ»L pġġS NĉZLġ pªĉĉl fb fĒhÛª¹ Ll-āġz

fĚġQĒe ġġ-a Evp-h, kªÛkġœġu, ĉhSu Evp-h, ġSġġ ĉhhġq hġ fªœ-SeĒ, k' hġ AeĒ Efm-r ph pġ-uC NĉZLġlġ c-m c-m pġ-ha





Açaçb-cl çh-ejc-e çekãš² bjl-ajz pãã³⁄₄cl£ al'e£-L k-', -kãã¥-L, nËj-Ü, kãÜS-u, çj-e, ççrZju -cJuil ApwMÉ E-õM ljjju-e B-Rz kãçdçùl kMe AnÄ-jd k'LI-Re, aMe AeÉjeÉ há¥ ljsilj k-'l ejeiçhd EfLI-ZI p-%o hý eil£ fjWj-aez kãçdçùl çe-SJ -pC k-', çj-e-ççrZju hý eil£-L çc-µRe Açaçb ljsi-cl BfÉju-eJz ljsi nnçh³⁄₄c¥ ayil AnÄ-jd k-' qjsil qjsil eil£ çje LI-Rez iN£lbJ pããpç(a pãã³⁄₄cl£ eil£ ççrej çc-uçR-me qjsi-l qjsi-lz⁵ hËjpZ fã-ljçqa-clJ ejeilLj Ef-Y±L-el p-%o hý eil£ -cJu j qaz H-cl çLR¥-L -ijN Ll j qaz Bl hjl£lj œ²£acip h j NçZLj-a fçlea qaz çhljV ljsi ASÑ¥-el -n±-kÑ J S-u fË£a q-u fjçl-ajçol çc-uçR-me hý pãã³⁄₄cl£ aljZ£-Lz⁶ kãÜ-r-œ LZÑ -Oioej L-lçR-me -k, -k ASÑ¥e-L çQçe-u -c-h aj-L 100 na pãã³⁄₄cl£ çje LI-hez⁷ AnÄ-jd k-'l fl kãçdçùl AeÉjeÉ -ijNÉ hÜ¹¥l p-%o ApwMÉ pãã³⁄₄cl£ al'e£ pjNa Açaçb-cl j-dÉ çhale L-lez HVj qm ayil Açaçb BfÉju-el HLVj A%oz çQç¹j LI-mC -hjTj kju, GçãÆEL fã-ljçqa-cl pidÉ çRm ej Ha...-mj eil£l ile-fjo-el çjçuaÆ -eJuil, Lj-SC çLR¥çce f-IC Hlj œ²£acip£ h j NçZLju fçlea qaz⁸

kã-Ü fjjuj hç³⁄₄ce£ eil£ AeijçLjm -b-LC pLm pj-SC

NçZLjm-ul pwMÉj hªçÜ L-l-Rz AhnÉ Hlj A-eL pj-uC A-eLVj Oãlf-b H-p -fy±RjazfËb-j -pejçã h j ljsil Aç¹xfã-l AeÉjeÉ hýeij£l p-%o HLjç¹ HLçV fãlj-ol -ijNÉ hÜ¹¥ q-u çce LjVja; f-l Nªqujj£l AeÉjeÉ fãlj-o BaË£u-cl Hhw ph-n-o NçZLjm-u H-p -fy±Rja Hljz kãÜ RjsjJ -c-nl cãçcÑ-e, cãçiÑ-r h j ljoËçhfÔ-h cãxÜÜ çfaj-jja; ile--fjo-e Arj q-u LM-ej LM-ej LeÉj çhœ²u LI-ae; qu aij de£Nª-q ljsaç¹fã-l, jç³⁄₄c-l fËb-j ÜÜje -fa Hhw lçf-k±he MjçeLVj Çmje q-m NçZLjm-u Bp-aj, eC-m pljçl NçZLjm-uJ LeÉj çhœ²u Ll j hÉhÜÜj çRmz⁹

-k pjjs eil£l pa£ãÆ pwlr-e Ha avfl, -pC pjjsC Hlj-h AçehjkÑ L-l a¥-mçRm eil£l NçZLjaÆ ü£Llj Ll jz ljsil AçdLj çRm NËj-ij h j nq-ll pãã³⁄₄cl£ al'e£-L k-bµR -ijN Ll jz çhc-iÑ ljsilj L-uLçc-el SeÉ pãã³⁄₄cl£ al'e£-L k-bµR -ijN L-l fjçW-u çcaz hvp...mÈ ljs-SÉ jç»£ faÀ£-cl ljsi fËjpi-c -X-L fjWj-mC -k-a qaz Hlj çg-l H-m d-l -eJu j kju -k, LM-ej LM-ej ljsil AeãNa -LE -LE H-cl çh-u LI-aj; çLç¹¥ hjl£ AçdLjw-nl fçleçã çL qa aj pq-SC Aeãjje Ll j kjuz¹⁰

ljøË ük-aÀ NçZLj pªçø L-l-R Hhw mjme-fjm-e fãø L-l-Rz NçZLj çnrj qa lj-øËl hÉ-u Hhw -p çnrj jjeJ çRm k-bø Eæaz



NçZLj-cl 64 Lmjil çnril SeÉ IjòÊ çeS hÉ-u çhçiaæ çnrL çekæš<sup>2</sup> Ll-ajz AbÑjv Ij-øÊl E-ÿnÉC çRm jjiçSÑa IjçQ Hhw çnril AçdLilÉ fæliolij -ke çnçraj NçZLil Lj-R jjeçpL pijQkÑ fju, hdšl Lj-R euz<sup>11</sup>

pjçq-aÉ -k NçZLj-cl Lbj fijC ajli çRm pææ¼clÉ, pææçnçraj Hhw deÉz<sup>12</sup> Içf--k±h-e fçlfšeÑ NçZLj-cl Bu çRm E-öM-kjNÉ J DoÑeÉuz -h±Ü pijçq-aÉ -cMj kij,NçZLijpimjhafl SeÉ ayil jji çpçluj Hllj-a 1000 Lijqife (üZÑjæâij) çeaz NçZLj BjÉfjmÉl ççrej çe-u IjSN<sup>a</sup>q J °hnmÉl j-dÉ lÉçaja LmqC q-u çN-uçRmz j<sup>a</sup>µRLçV-LI hpç<sup>1</sup>-pej-L HLhij çe-u kihij SeÉ 10 qjSij VjLij Nqej p-ja Nijçs fijçW-uçR-me IjSnÉjml nLilz jbælij hijphçšij fijçlnÉçjLJ çRm AaÉç<sup>1</sup> EµQz

HC NçZLj hÉhpi -b-L IjòÊJ fEQ¥l IjSüÆ Bciju Ll-ajz àjcn na-LI NÉçÛ ‘jæÈu pææ¼clÉ Lbj’ -b-L Sjeij kij,NçZLij B-ul naLij 25-30 ijN çRm Ij-øÊl fÉifÉz ajC IjòÊ ük-aÀ NçZLjh<sup>a</sup>çš-L mjme-fjme L-l -N-Rez

NçZLij ödæjæ IjòÊ-LC LI çca ej, çhçiaæ pjS-LmÉiejšmL LjSJ Ll-aezH-cl -LE hæÜ J ayil HL pqpË çnoÉ-L Bqij-l Bjç»Z L-l-Re Hhw fçla«ç Açaçb-cl fË-u;Se

-jVj-a AbÑ çc-u-Rez -LEhij BjhijNje cje L-l-Rez -LEhij jW, -LE çhqil, -LE Ljee, °QaÉ, Û<sup>1</sup>f, -pa¥, L<sup>1</sup>f fËi«çá Lj-S cje L-l-Rez pjjSJ çàdijçæ çQ-š aj NÉqZ L-l-Rez IjòÊ ajl fËnijpçel fË-u;S-eJ NçZLj-cl Lj-S mjNij-ajz NçZLij Q-ll LjSJ Ll-ajz çnrj ççrij IjçQl EvL-oÑ Içf -k±h-el jicLaju noæ¥frÉu EµQfcÛÛ hÉçš<sup>2</sup>-L BL«ø L-l ...ç pwhijç -S-e NçZLjdÉr jilgv Ij-øÊl jç»Él Lj-R fijçW-u -cJuj, fË-u;Se ja noæ¥-L dçl-u -cJuj H-cl LIZÉ-ul Aç<sup>1</sup>NÑa çRmz<sup>13</sup> -jNijçÛÛçepJ h-m-Re, ...çQ-llij aj-cl -hnÉlijN LjS pjjdij Lla hijljwNej-cl pijqj-kÉz HCij-h NçZLj Hhw NçZLijmu Ij-øÊl üjbÑC çpÜ Llaz

NçZLj J IçfjSÉçhij -kje IjòÊ-L BuLI çca, -ajeC çhçej-u pijjeÉ çelijšij hÉhÛÛij -faz -L±çV-mÉl AbÑnij-Û» -cMj kij, NçZLj-L fËLj-nÉ Afjje Lijl c<sup>TM</sup> 24 fe, nijçllÉL AaÉjQij Lijl c<sup>TM</sup> 48 fe, Lje -L-V çe-m -f±-e 52 c<sup>TM</sup> J Lijhijpz kij‘hóÉ Øj«çá h-m NçZLj-L CµRijl çhij-Û doÑZ Lijl c<sup>TM</sup> 50 fe Hhw hýSe flfl lij-h doÑZ Ll-m aj-L fË-aÉ-L 24 fe c<sup>TM</sup> çcaz NçZLjLeÉj-LJ doÑZ Ll-m 54 fe J ayil jji-ul B-ul 16 ...e AbÑ c<sup>TM</sup> çc-a qaz H RijSij I -j-uçVI çh-ul pju fijç-L çLR¥ rçafšIZ AbÑ çc-a qaz



a-h NçZLj ljsil -fËçla -Lje fËjbÑ£-L çhjªM Ll-m aíl c™ 500 fe Hhw 1000 -hœjOjaz<sup>14</sup> -L±çVmÉ hjdÑ-LÉ NçZLj-cl çLR¥ hªçš -cJuil LbjJ h-m-Rez

NçZLj çRm eNI S£h-el HLçV pjdilZ °hçnøÉz<sup>15</sup> ljsi J pj-Sl pLm -nËe£l -mjl NçZLj-cl pjicl Ll-aez<sup>16</sup>NçZLjil pjqQkÑ -Lhmjioe -k±e pwp-NÑl Lil-Z CçØfa eu; çaçe çhçhd Lmju fjlçnÑajl Lil-e lçQhje jjeª-ol jjeçpL J piwú«çal pjqQkÑ çc-aez<sup>17</sup> EmQ -nËZ£l Ù»£-cl S£he -ki-h çeuçz»a qa, NçZLj-cl aíl qa eiz fËju fËçaçce çhLj-m -Lje NçZLjil hjs£-a híl -Lje eilNI-Ll Na-q híl -Lje pijNa-q eilNI-Ll pj-ha q-aez -pMj-e aíl Lçhaj IQe, Bhªçš fjW, çQœj^e, L~ J kç» pwN£-a Awn NËqe Ll-aez Bp-l jcÉfje Qm-aj, pªª¾cl£ NçZLjil -pMj-e jc fçl-hne Ll-aez NçZLjilJ jc -M-aez Bhil eilNI-Ll pªªpçª q-u -Ojsil çf-W Q-s NçZLj J cip-cip£-cl p-% çe-u EcÉje Açijª-M kijœj Ll-aez<sup>18</sup> HCij-h eilNI-Ll çe-S-cl B-jic-fË-jj-cl SeÉ NçZLj-cl p-% çeaz NçZLj-cl jidÉ-j ayilj ayi-cl Bpl lçPe Ll-ajz fªljoaíçç»L pj-Sl Lijej-hipej J Qijçqç NçZLj hÉhÙÙjil fËpil-L aÆlçeÄa L-lçRmz

fËjQ£e ijl-a fªljoaíçç»L pj-Sl çeuç çRm hsC HL-f-n J frfja

cªøz BCe lçQa q-uçRm EmQhZÑ J fªljo-cl AeªL"-mz eil£-cl jkÑjçil Bp-e Açdçùa Ll qu çez Bl NçZLj-cl AhÙÙj çRm Blj Lljez jjeªo çqpi-h pj-Sl Lil-R ayil fijej çRm AçhçjnË Ah'j, OªZj J aílçµRmÉz -kje jªµRLçV-Ll eilçulj hpç¹-pej lç-f, -k±h-e -p Aa¥me£uj; çnrj-c£rju, lçQ-a Qçl-œ jqjeªihaçu -p AeÉjz çLç¹¥ ayil çe-Sl AeªQl çhVC híl híl aíl-L ØjilZ Lçl-u çc-u-R -k, -p nËnj-el S¥CNj-RI g¥-ml jaC, -Lje öi Lil-S mj-N; -p -hnÉj, phÑSe-ijNÉj, feÉâ-hÉl jaC, ayil fR¾c-AfR¾c, ij-mjmjNj-j¾cmjNj bil-a fil eiz HC aílçµRmÉ kçc NçZLj-nËùj hpç¹-pej fËjfé qu, a-h AeÉ-cl Lbj ej hmjC ijnz<sup>19</sup> çho-¥njÑj h-m-Re, nËnj-el f-Vl ja NçZLj-cl fçlqil Ll EçQv, jeª h-m-Re, ph NçZLjC -Qil J fËajlej filuez n£âl h-m-Re, NçZLjil qj-p J Lyj-c VjLil SeÉ ... EmQ hwnSja Hhw pvQçlœ jjeªo-cl EçQv nËnj-el g¥-ml ja NçZLj-cl fçlqil Lilz Bl, djÑp§œLil -N±aj h-m-Re, -hnÉj-L qaÉj Lil c™e£u AfljçC euz

fËjQ£e ijl-a NçZLj-cl AhÙÙj çRm hsC Aª¥az<sup>20</sup> Bp-m fªljoaíçç»L pjS NçZLj-cl fËçaççuaÆ fim-el fçlh-aÑ çe-uçRm çªjªM£ e£çaz<sup>21</sup> HLçc-L, pjS NçZLj-cl fíf£, el-Ll àil J AØf«nÉ



çqpi-h NZÉ L-l-R; AeÉ çc-L,  
 çLç<sup>1</sup>¥ NçZLj-cl cje çe-a hi  
 SeçqaLI Lj-SI gm -ijN LI-a pjj-SI  
 -Lje çàdj -eCz -Lje eilÉC NçZLj  
 q-u SeÉju ei, AhÛÛil fçl-fËçr-a -p  
 NçZLju fçlea quz -pVjC aj-cl  
 Afljdz AbQ HC h<sup>a</sup>çšl p<sup>a</sup>çø q-u-R  
 fçl'o-cl Lijej J mijmpj-L QçlaibÑ  
 LI-az fçl'-olj çeçhÑQj-l NçZLj p%o  
 L-l-Rz H-a fçl'o-cl -Lje -cjo qu eiz  
 LjZ ayilj fçl'oz -fçl'-ol h-m ayilj  
 NçZLj-cl Efl -cjo Qjçf-u çe-S-cl  
 -cjo ØMm-el -Qøj L-lz çe-S-cl  
 çeljfc cšl-aÆ pçl-u lj-Mz

Efpwqj-l hmj kju -k, pjj-S  
 NçZLjij çRm Afjw-auz aj-cl fËça  
 hçoÑa q-u-R fç"Éi" a O<sup>a</sup>Zj, Ah'j J  
 Afjjez AbQ HC h<sup>a</sup>çšl p<sup>a</sup>çø q-u-R  
 fçl'-ol Lijej J mijmpj-L QçlaibÑ  
 LI-az Qjçqcj ei bjL-m NçZLjh<sup>a</sup>çš  
 p<sup>a</sup>çø qa eiz Qjçqcj H-p-R  
 fçl'oaçç»L pjjS J ljøÊ -b-Lz ajC  
 NçZLj hÉhÛÛil SeÉ NçZLjij kaVj  
 cjuÉ; fçl'oaçç»L pjjS J ljøÊ ajl  
 -b-LJ Lj cjuÉ çRm eiz

abÉpšœ:-

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4. fš-hÑjš<sup>2</sup>z
5. fš-hÑjš<sup>2</sup>, f<sup>a</sup> 64z
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## Russell-এর বর্ণনাতত্ত্ব-একটি সংক্ষিপ্ত উপস্থাপনা

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### Abstract

**সারাংশ:** আমাদের সাধারণ কথা-পকথনে আমরা এমন কিছু বিষয় (যেমন, বন্ধুত্বপূত্র, আকাশ কুসুম, সোনার পাহাড় প্রভৃতি) নিয়ে কথা বলি যাদের বাস্তব জগতে কোন অস্তিত্ব নেই, অথচ তাদের সম্বন্ধে উল্লেখিত বাক্যগুলি অর্থপূর্ণ হয়। প্রশ্ন হয় যাদের বাস্তব কোন অস্তিত্ব নেই তাদের সম্পর্কে প্রযুক্ত যেকোন বাক্য (সদর্থক বা অর্থহীন) অর্থপূর্ণ হয় কীভাবে? কেননা, যা কখনোই কখনোই তার সম্বন্ধে কোন অর্থপূর্ণ উক্তি করা যাবে কীভাবে? এই প্রশ্নের সমাধানকল্পে বিংশ শতাব্দীতে বহু মতামতের উদ্ভাবন ঘটে। যাদের মধ্যে কেউ কেউ (যেমন, Meinong) মনে করেন ওইসব বাস্তব অস্তিত্বহীন বস্তুর কোন একরকম সত্তা (বিদ্যমানতা) স্বীকার, আবার কেউ মনে করেন (যেমন, Frege) এইসব বাস্তব অস্তিত্বহীন বস্তুর দ্বারা গঠিত বাক্যের তাৎপর্য (Sense) থাকে কিন্তু বাচ্য (Reference) নাও থাকতে পারে। কিন্তু উক্ত সমাধানগুলি মানলে বহু সমস্যার সৃষ্টি হয়, যার সমাধান পরবর্তীকালে Russell-এর (Bertrand Russell, 1872-1970) বর্ণনাতত্ত্বের (Theory of description) দ্বারা সম্ভব হয়েছিল। ১৯০৫ সালে প্রকাশিত 'On Denoting' প্রবন্ধে Russell প্রথম বর্ণনাতত্ত্ব উপস্থাপন করেন এবং আরো পরে তিনি *Introduction to Mathematical Philosophy* (Russell, B., 1919) গ্রন্থের 'Descriptions' অধ্যায়ে বর্ণনাতত্ত্বকে আরো সরলভাবে উপস্থাপন করেন যখন তিনি দেখান কীভাবে বাস্তব অস্তিত্বহীন বস্তুর কোন রকম সত্তা স্বীকার না করলেও কেবল বর্ণনার সাহায্যে ওইসব বস্তু দ্বারা গঠিত বাক্যের (যেমন, ফরেন্সের বর্তমান রাজা কশেহীন বা সোনার পাহাড় সুউচ্চ প্রভৃতি) অর্থপূর্ণতা ব্যাখ্যা করা যায়, তাই এখানেই Russell-এর বর্ণনাতত্ত্ব নিয়ে আলোচনার গুরুত্ব আছে।

এই প্রবন্ধের প্রথম অংশে বাস্তব অস্তিত্বহীন বস্তু নিয়ে গঠিত বাক্যের অর্থপূর্ণতা ব্যাখ্যার সমস্যার সমাধানকল্পে তথাকথিত মতবাদ সম্পর্কে সংক্ষেপে আলোচনা করা হবে। প্রবন্ধের দ্বিতীয় অংশে আলোচিত হবে এইসব তথাকথিত মতবাদ মানলে যাদের সমস্যা হয় তার সম্বন্ধে এবং এই প্রসঙ্গে আলোচিত হবে Russell তাঁর 'On Denoting' প্রবন্ধে কতকগুলি যৌক্তিক হুঁয়ালির উল্লেখ করেন সে সম্বন্ধে। তৃতীয় অংশে Russell-র বর্ণনাতত্ত্বের উল্লেখ করা হবে এবং চতুর্থ অধ্যায়ে দেখানো হবে Russell-র বর্ণনাতত্ত্ব দ্বারা কীভাবে ওইসব হুঁয়ালিগুলির (বা সমস্যার) সমাধান সম্ভব সেই বিষয়ে এবং শেষে সে সম্বন্ধে নিজের দু-এক কথা।

**Keywords:** - 'অস্তিত্ব', 'সত্তা', 'বাচ্য', 'তাৎপর্য', 'নির্দিষ্ট বর্ণনা', 'অনির্দিষ্ট বর্ণনা', 'বাচনিক অপেক্ষক', 'মানক'।

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আমাদের প্রচলিত ভাষায় উল্লেখিত বাক্য-  
'মতস্যকন্যা নেই', 'সোনার পাহাড় সুউচ্চ' বা





'হোমস্ অসত্তিবশীল' প্রভৃতির অর্থপূর্ণতা কীভাবে ব্যাখ্যা করা যাবে সেই বিষয়ে বংশিতাব্দতিে বিভিন্ন দার্শনিক সমাধান পাওয়া যায়,যার মধ্যে অস্ট্রিয়ান দার্শনিক Meinong (Alexius Meinong,1853-1921)-এর মতবাদ উল্লেখ করা যায়। কারণ,Meinong-তঁর বস্তুতত্ত্বে (Theory of Objects)১ বলেন, যাকে আমরা চিন্তা করতে পারি বা যা কোনভাবে আমার চিন্তার বিষয় হতে পারে তারই কোন না কোন সত্তা স্বীকার্য।Meinong বস্তুর ধর্ম বা চরিত্রকে (So-sein) বস্তুর 'অসত্তিব' বা 'সত্তা' (Sein) থেকে পৃথক করেছেন।আর এই অর্থে 'সোনার পাহাড়' বা 'ম□স্বকন্যা' রূপ কাল্পনিক বস্তুর বাস্তব অসত্তিব না থাকলেও তাদের কোন এক সত্তা অর্থা□, বদ্যমানতা আছে বলে তিনি মনে করেছেন,কারণ তাদের আমরা চরিত্রের দ্বারা বিশ্লেষণ করতে পারি, এমনকি 'গোলাকার বর্গকষতের'-এর মতো অসম্ভব বস্তুর সত্তাও স্বীকার করেছেন তিনি যেহেতু আমরা এরূপ ভাবে পারি যে, যেকোন একটি বস্তু আছে যা একইসাথে গোলাকার ও বর্গাকারও বটে।ফলে, কাল্পনিক বা বম্মিত বস্তু নই বলে এদের দ্বারা গঠিত বাক্য অর্থপূর্ণ নয় - এরকম কথা আর বলা যায় না।অর্থা□, Meinong-এর বস্তুতত্ত্বে মূল কথা হলো- অসত্তিবশীল বস্তুর পাশাপাশি এমন বস্তু আছে যার কোন দৈর্ঘ্য-কালিক সত্তা নই, এবং এই অনসত্তিবশীল বস্তুগুলি কোন না কোন ভাবে গঠিত ফলে সেগুলি অর্থপূর্ণ বাক্যের উদ্দেশ্য হিসাবে ব্যবহৃত হতে পারে।

অপরদিকে, দার্শনিক Frege (Gottlob Frege,1845-1925)২ অনসত্তিবশীল বস্তু

দ্বারা গঠিত বাক্যের অর্থপূর্ণতা ব্যাখ্যা করতে গিয়ে বাচ্য (reference)ও তা□পর্যবে(sense) মধ্যে পার্থক্য করেছেন।Frege-এর মতে বাচ্য হলো বাক্যের সত্যমূল্য (the True/the False),যার দ্বারা নির্ধারণিত হয় কোন বাক্য সত্য না মিথ্যা এবং যার জন্য বাক্য নির্দেশিত বস্তুর বাস্তব অসত্তিব থাকা প্রয়োজনীয় কিন্তু বাক্যের তা□পর্যবে হলো কথাবস্তু বা বচন (thought) আর,'thought' বা 'কথাবস্তু' বলতে Frege বুঝিয়েছেন বাক্যের অর্থ বা মানে যা একাধিক ব্যক্তির দ্বারা একসঙ্গে উপলব্ধ হতে পারে,যা বস্তুগত(objective),যার জন্য বস্তুর বাস্তব অসত্তিব থাকার দরকার নই।যেমন,'ম□স্বকন্যা নই'- এই অসত্তিব-নির্ধেয় বাক্যটি অর্থপূর্ণ কারণ, এর একটি মানে (thought) আছে যা সর্বজন স্বীকৃত যা বাক্যটির তা□পর্যবে কিন্তু বাক্যটির সত্যমূল্য যাচাই করতে হলে তার বাচ্য থাকা আবশ্যিক হয়,উক্ত বাক্যটির নির্দেশিত বস্তু যেহেতু নই তাই বাক্যটি (বা বচনটি) সত্যও নয় আবার মিথ্যাও নয়।Frege তাই বলেন, সব অর্থপূর্ণ বাক্যের বাচ্য না থাকলেও তা□পর্যবে অবশ্যই থাকবে।

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দার্শনিক Russell-ও তাঁর দর্শনের প্রথম পরবে (Russell,B.,1903)দার্শনিক Meinong-এর মতোই যা কিছু নিয়ে আমরা চিন্তা করতে পারি তারই অসত্তিব স্বীকার করেছিলেন।আবার, তিনি সাক্ষা□ নির্দেশনাতত্ত্বে সমর্থক হওয়ায় মনে করেন যে, কোন উদ্দেশ্য-বধি়ে আকারের বচনের উদ্দেশ্য স্থানে প্রযুক্ত নামপদ কোন না



কোন বস্তুকে নির্দেশে করোঁকিন্তু, 'On Denoting' তত্ত্বের প্রথম বর্ণনাতত্ত্ব উপস্থাপন করার পর Russell, *Principles*-পর্যায়ে তাঁর নিজের মত, Meinong-র মত এবং Frege-র মতের সমালোচনা করেন এবং সেই বিষয়ে কতকগুলি হ্যাঁলাগি (বা সমস্যার) উল্লেখ করেছেন।

*Principles*-এ নিজের মত এবং Meinong-এর মতের সমালোচনা করে Russell বলেন, Meinong-এর মত Aristotle-র বিরোধবাদক ন্যূনতম লঙ্ঘন করেছে। কারণ, পদ তাকেই নির্দেশে করে যা আছে, তাই অসম্ভবতমক সাত্তকি বাক্য, যমেন, 'পগেসোস নহে', 'গোলাকার বর্গকক্ষত্রটি নহে' ইত্যাদি বাক্যে যা বলা হচ্ছে তা হলো 'স□ পগেসোস নহে', 'স□ সোনার পাহাড় নহে' ইত্যাদি। সুতরাং, একটি বস্তু আছে যা একইসঙ্গে গোলাকার এবং বর্গাকার বশিষ্টি এবং যা নহে স্পষ্টতই এটি স্ববিরোধী কথা।

Russell, এ সম্বন্ধে তিনটি যৌক্তিক হ্যাঁলাগির কথা বলেন যথা-

### ১. অভিন্নতা বা তাদাত্ম্য ন্যূনতম সংক্রান্ত হ্যাঁলাগি (Puzzle about Law of Identity)-

অভিন্নতার ন্যূনতম অনুসারে, যদি ক ও খ অভিন্ন হয় তাহলে ক-এর সম্পর্কে যা কিছু সত্য হবে, খ-এর সম্পর্কেও সেই সব কিছু সত্য হবে এবং কোন বাক্যে এদের একটির পরিবর্তে অন্যটি প্রতিস্থাপন করলে বাক্যটির সত্যমূল্যের কোন পরিবর্তন হবে না। উদাহরণস্বরূপ, 'চতুর্থ জর্জ জানতে চয়েছিলেন Scott, Waverley-এর রচয়িতা কনি'- এই বাক্যটি সত্য, কেননা, প্রকৃতই Scott, Waverley-এর রচয়িতা। এখন

অভিন্নতার ন্যূনতম অনুসারে, যদি 'Waverley-এর রচয়িতা'-এর স্থানে 'Scott' নবিশেষণ করা তাহলে বাক্যটি হবে 'Scott, Scott কনি'; কিন্তু, চতুর্থ জর্জ তা জানতে চায় না। সুতরাং, অভিন্নতার ন্যূনতম অনুসরণ করে, 'চতুর্থ জর্জ জানতে চয়েছিলেন Scott, Waverley-এর রচয়িতা কনি'-এই বাক্যটি থেকে 'Scott, Scott কনি'-এই বাক্যটি নিঃসরণ করা যায় না।

### ২. ন্যূনতম নীতি সংক্রান্ত হ্যাঁলাগি (Puzzle about Law of excluded middle)-

নীতি অনুসারে যেকোন দুটি বিরুদ্ধ বাক্যের যেকোন একটি সত্য হবে দুটাই একই সাথে মিথ্যা হতে পারে না। এখন 'The present king of France is bald' এবং 'The present king of France is not bald'-এই দুটি বিরুদ্ধ বচনের যেকোন একটি অবশ্যই সত্য হবে, দুটাই একই সাথে মিথ্যা হতে পারবে না। কিন্তু আমরা যদি দুটি শ্রুণী গঠন করি যথা 'ক' ও 'অ-ক' এবং 'ক' শ্রুণীর সদস্য হিসাবে সমস্ত কশেহীন ব্যক্তিকে নহি এবং 'অ-ক' শ্রুণীর সদস্য হিসাবে সমস্ত ব্যক্তিকে নহি যারা কশেহীন নয় তাহলে দেখা যাবে ফ্রান্সের বর্তমান রাজা (the present king of France) 'ক' এবং 'অ-ক' কোন শ্রুণীর সদস্য নয় কেননা, ফ্রান্সের বর্তমান রাজা' বর্তমানটি বাস্তব কাউকেই নির্দেশে করে না। ফলে উক্ত দুটি বচনের দুটাই একসাথে মিথ্যা হয়ে যাওয়ায় ন্যূনতম নীতি লঙ্ঘিত হয়।

৩. অসত্ত্ব-নষিধে বা অভাব বাচক সাত্তকি বাক্য সংক্রান্ত হ্যাঁলাগি (Puzzle about negative existential statement)- 'সোনার পাহাড় নহে'-এটি একটি অসত্ত্ব-নষিধেক বাক্য এবং এই বাক্যটি যদি সত্য হয় তাহলে বস্তুত:ই এটা সত্য, সোনার পাহাড় বলে কিছু



নহে, আবার উদ্দেশ্য স্থানে স্থতি হওয়ায় সোনার পাহাড়ের সত্তা স্বীকার্য কনোনা, Russell-র(Principles-এ Russell-র কাছে) যা উদ্দেশ্য হতে পারে তাই সত্তাবানাফলে, প্রশ্ন হয় যদি সোনার পাহাড়ের সত্তা থাকেই তাহলে তাকে নহে বলা যাবে কীভাবে? অথচ 'সোনার পাহাড় নহে' বাক্যটি অর্থপূর্ণ। সুতরাং, সমস্যা হলো যে বাক্যে কোন কছির অসত্তিব নষিধে করা হয় সেই বাক্যের অসত্তিব দাবী করা যাবে কীভাবে?

### গ

Russell মনে করেন তাঁর বর্ণনাতত্ত্ব দ্বারা উক্ত সমস্যাগুল্লির সমাধান সম্ভব, তাই সমাধান নিয়ে আলোচনা করার পূর্বে Russell-এর বর্ণনাতত্ত্ব সম্বন্ধে জানা প্রয়োজন। Russell-এর মতে, বাচ্যার্থক শব্দবন্ধ যথা, 'any', 'every', 'all', 'some', 'the' – এর সবগুলিই হলো বর্ণনা। বর্ণনায়ুক্ত কোন বাক্য নরিপক্ষে বচন নয় অর্থাৎ, তা উদ্দেশ্য-বধিয়ে আকারের বচন প্রকাশ করে না, বর্ণনায়ুক্ত যেকোন বাক্যই সাত্তকি বচন প্রকাশক। Russell বলেন বর্ণনা দুইকমের- অনর্দিষ্ট বর্ণনা (Definite description) এবং নর্দিষ্ট বর্ণনা (Indefinite description)। অনর্দিষ্ট বর্ণনা হলো 'a so-and-so' আকারের এবং নর্দিষ্ট বর্ণনা 'the so-and-so' আকারের। এই প্রসঙ্গে Russell বর্ণনার সাথে নামের (names) পার্থক্য করছেন, কারণ Russell-র মতে, অনর্দিষ্ট বর্ণনা বা নর্দিষ্ট বর্ণনা কোনটিই নাম নয়।

নাম ও বর্ণনার পার্থক্য করে Russell বলেন, নাম হলো সরল প্রতীক (simple symbol), যা কেবল কোন বচনের উদ্দেশ্য হতে পারে। সরল

প্রতীক হলো এমন প্রতীক যার অন্তর্ভুক্ত অংশগুলি স্বয়ং প্রতীক নয়, কারণ, যা নর্দিষ্ট প্রতীক তার স্বতন্ত্র অর্থ থাকে, যথা, 'Scott' নামটি সরল প্রতীক, কারণ 'Scott'-এর অন্তর্গত বিভিন্ন অংশগুলি (অর্থাৎ স্বতন্ত্র বর্ণগুলি) স্বয়ং প্রতীক নয় এবং ওই অক্ষরগুলি কোন স্বতন্ত্র অর্থ বহন করে না। অপরদিকে, বর্ণনা হলো জটিল প্রতীক (Complex symbol), যার অংশগুলি এক একটা প্রতীক, যমেন, 'the author of Waverley' বর্ণনাটির অংশগুলি (অর্থাৎ শব্দগুলি নিয়ে বর্ণনাটি গঠিত হয়েছে) নর্দিষ্ট প্রতীক এবং বর্ণনাটির অন্তর্গত শব্দগুলি প্রত্যেকেই নিজস্ব অর্থ বহন করে।

দ্বিতীয়ত, নাম হলো সম্পূর্ণ প্রতীক (complete symbol) কারণ, নাম সরাসরি বস্তুকে নির্দেশ করে তাই নামের স্বতন্ত্র অর্থ আছে। পক্ষান্তরে, বর্ণনা হলো অসম্পূর্ণ প্রতীক (incomplete symbol), বর্ণনার নিজস্ব কোন অর্থ নহে যে শব্দগুচ্ছ দিয়ে কোন বর্ণনা গঠিত হয় সেই শব্দগুচ্ছের অর্থের উপরই বর্ণনার অর্থ নির্ভর করে।

Russell-র মতে নর্দিষ্ট বা অনর্দিষ্ট কোন বর্ণনাই নাম নয়। 'I met a man' – এটি একটি অনর্দিষ্ট বর্ণনা, কারণ 'a man' – বর্ণনাক শব্দবন্ধের বাচ্য হিসাবে কোন নর্দিষ্ট মানুষকে পাওয়া যায় না, এমনকি আমি যদি প্রকৃতই Jones নামক ব্যক্তির সাথে সাক্ষাৎ করো থাকি তাহলেও 'I met Jones' আমার এই উক্তটি 'I met a man' – এই উক্তির সাথে এক হতো না, কারণ, সক্ষেত্রে 'I met a man but he was not Jones' – উক্তটি মিথ্যা হলেও স্ববিরোধী হতো না। কনিত্ত, আমার উক্তটি



স্ববিরোধী হতো যদি 'a man' বলতে Jones-কে বোঝাতাম। Russell আরো বলেন কউে যদি আমি যাে ভাষায় কথা বলছি সেই ভাষাটি জানে তাহলে সে 'I met a man'-আমার এই উক্তির অর্থ বুঝতে পারবে কনিতু সে 'I met Jones' আমার এই উক্তির অর্থ বুঝতে পারবে না যদি না সে Jones-কে চেনে। Russell-র মতে, 'I met a man'-এর ক্ষেত্রে রয়েছে একটি বাচনিক অপেক্ষক (Propositional functions) যেথা, 'I met x and x is human'- এই বাচনিক অপেক্ষকটি x-এর অন্তত: একটি মানেরে জন্ম সত্য হয়।

নির্দিষ্ট বর্ণনা যহেতু একটিই নির্দিষ্ট বস্তুর ক্ষেত্রে প্রযোজ্য হয় তাই মনে হতে পারে নির্দিষ্ট বর্ণনা ও নাম একই, কনিতু Russell বলেন, নির্দিষ্ট বর্ণনাও, নাম নয়। কেননা, একটি নির্দিষ্ট বর্ণনা ও একটি নাম একই বস্তুর পরিচয় দিতে পারে, কনিতু নাম সহযোগে গঠিত বচন ও নির্দিষ্ট বর্ণনা সহযোগে গঠিত বচন একই বচন নয়, তারা ভিন্ন বচন। উদাহরণের সাহায্যে বিষয়টি বোঝা যাক, 'Scott is Scott' এবং 'Scott is the author of Waverley'-এই দুটি বচন পৃথক, কারণ 'Scott is Scott' হলো একটি তুচ্ছ স্বতঃসিদ্ধ উক্তি (trivial truism) এবং 'Scott is the author of Waverley' হলো সাহিত্যের ইতিহাসের তথ্যজ্ঞাপক আপতকি সত্য, যা হলো একটি বর্ণনা, কোন নাম নয়। কেননা 'the author of Waverley' -এর স্থানে যেকোন নাম বসালে যে বচন পাওয়া যাবে তা মূল বচনের সাথে এক হয় না। ধরা যাক, 'the author of Waverley' জায়গায় 'Sir Walter' নামটি নিবেশন করা হলো, তাহলে মূল বাক্যটি হবে 'Scott is Sir Walter' যা মথিয়া স্পষ্টত:ই সত্য বচন 'Scott is the author of

Waverley'-এর সমতুল্য নয়। আবার যদি 'the author of Waverley' এর স্থানে 'Scott' নামটি বসানো হয় তাহলে 'Scott is Scott' - যা একটি তুচ্ছ স্বতঃসিদ্ধ উক্তি, ফলে তা 'Scott is the author of Waverley' এর সাথে এক হয় না (কারণ এটি আপতকি সত্য)। Russell তাই বলেন, নাম ও নির্দিষ্ট বর্ণনাও এক নয়।

নামের অর্থ জানা মানে নামের নির্দেশিত বস্তুকে জানা, কনিতু প্রসঙ্গ নির্পক্ষেভাবে বর্ণনার কোন স্বতন্ত্র অর্থ নহে। 'Scott is the author of Waverley'- এর মতো কোনো বচন সত্য হতে পারতো না যদি কখনো Waverley লেখা না হতো বা একাধিক ব্যক্তি Waverley লিখিতো, অর্থাৎ 'the author of Waverley' -এর অর্থ x-এর সেই মান (value) যার জন্ম 'x wrote Waverley' সত্য হয়। Russell বলেন, 'Scott is the author of Waverley'-এই নির্দিষ্ট বর্ণনাটির মধ্যে প্রকৃতপক্ষে আছে তিনটি পৃথক বাক্যের একটি সংযোগিক বাক্য যথা -

(১) অন্তত: একজন ব্যক্তি (at least) Waverley লিখিতেনি;

(২) অনধিক (at most) একজন ব্যক্তি Waverley লিখিতেনি;

(৩) যনিই Waverley লিখিতেনি তিনি হলেন Scott।

এর সাংকেতিক আকার হলো-

$$(\exists x)[Wx \cdot (Y)(Wy \supset x = y) \cdot x = s]$$

$$[Wx: x \text{ wrote Waverley, } s: \text{ Scott}]$$



Russell-এর মতে উক্ত তিনটি সংযোগিক বাক্যের প্রত্যেকেটি সংযোগী সত্য, কারণ Scott প্রকৃতই *Waverley* লিখেছিলেন ফলে, 'Scott is the author of *Waverley*'- এই নির্দিষ্ট বর্ণনাটি সত্য হয়েছে। কিন্তু বর্ণনাটি মথিয়া হতো যদি সংযোগিক বাক্যগুলির কোন একটি সংযোগী মথিয়া হতো, এবং তখনও বর্ণনাটি অর্থপূর্ণ হতো।

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Russell-এর বর্ণনাতত্ত্ব দ্বারা পূর্ববোক্ত যৌক্তিক হুয়ালিগুলির সমাধান-

**প্রথম হুয়ালির সমাধান :** Russell বলেন, 'চতুর্থ জর্জ জানতে চেয়েছিলেন Scott, *Waverley*-এর রচয়িতা কনি'- এই বাক্যটির স্বাভাবিক অর্থ হলো - 'একজন এবং একজন ব্যক্তিই *Waverley* গ্রন্থটি লিখেছিলেন এবং চতুর্থ জর্জ জানতে চেয়েছিলেন Scott সেই ব্যক্তি কনি'-এই সত্য বাক্যটির কোথাও *Waverley*-এর রচয়িতা বর্ণনাটি নেই ফলে, এই সত্য বাক্যটিকে 'চতুর্থ জর্জ জানতে চেয়েছিলেন Scott, Scott কনি'-য় পর্যবসতি করা যায় না, এবং তাই, *Waverley*-এর রচয়িতা- এই বর্ণনাটির পরবর্ত্তে Scott নামটি বসানোর প্রশ্নই ওঠেনা।

**দ্বিতীয় হুয়ালির সমাধান :** Russell দ্বিতীয় সমস্যার সমাধানকল্পে বর্ণনার মুখ্য প্রয়োগ (primary occurrence) ও গণ্য প্রয়োগ (secondary occurrence) মধ্যে পার্থক্য করছেন। 'The present king of France is bald'- এই ক্ষেত্রে বর্ণনার মুখ্য প্রয়োগ ঘটছে, কারণ 'x is bald'-এর 'x'-এর স্থানে যদি 'The present king of France' বর্ণনাটি

বসানো হয় তাহলে সম্পূর্ণ বচনটি ('The present king of France is bald') পাওয়া যাবে এবং 'The present king of France' বর্ণনাটি যহেতু অনর্দশেক তাই বচনটি মথিয়া কননা, যে বচনে বর্ণনার মুখ্য প্রয়োগ ঘটে সেই বর্ণনাটি যদি অনর্দশেক হয় তাহলে বর্ণনা প্রকাশক বচন মথিয়া হয়।

এখন উক্ত দৃষ্টান্তের দ্বিতীয় বচন অর্থাৎ, 'The present king of France is not bald'-এই বচনটি বিশ্লেষণ করা যাক। Russell-এর মতে, 'The present king of France is not bald' বচনটি দ্ব্যর্থবোধক, দুভাবে এর ব্যাখ্যা দেওয়া যায় যথা-

২.১ একব্যক্তি এবং কবেলমাত্র একজন ব্যক্তিই ফ্রান্সের বর্তমান রাজা এবং যিনিই ফ্রান্সের বর্তমান রাজা তিনিই কশেহীন নয়।

এর সাংকেতিক আকার হলো-

$$(\exists x)[Kx \cdot (Y)(Kx \supset y = x) \cdot \sim Bx]$$

[Kx = x is the present king of France,  
Bx = x is bald]

Russell বলেন উক্ত ক্ষেত্রে বর্ণনার মুখ্য প্রয়োগ ঘটছে, কননা আমরা যদি 'x is not bald'- এই বাচনিক অপেক্ষকটি নই এবং 'x'-এর স্থানে 'The present king of France' বর্ণনাটি বসাই তাহলে 'The present king of France is not bald'- এই সম্পূর্ণ বচনটি পাওয়া যাবে এবং স্পষ্টতই বর্ণনাটি অনর্দশেক হওয়ায় তা মথিয়া হয়। আবার,

২.২ এমন নয় যে : একজন ব্যক্তি এবং কবেলমাত্র একজন ব্যক্তিই বর্তমানে





ফ্রান্সের রাজা এবং যবে ব্যক্তি  
ফ্রান্সের বর্তমান রাজা তনিকশেহীনা

এর সাংকতেরি আকার হলো:-

$$\sim(\exists x)[Kx \cdot (Y)(Kx \supset y = x) \cdot Bx]$$

Russell বলেন, এক্ষত্রে বর্ণনার গণে  
প্রয়োগ ঘটছে, কননা আমরা যদি 'x is bald'-  
এই বাচনকি অপেক্ষকটি নহি এবং 'x'-এর  
স্থানে 'The present king of France' বর্ণনাটি  
বসাই তাহলে যবে বচন পাবে যথা, 'The present  
king of France is bald'- এই বচনটি মূল বচন  
'The present king of France is not bald'-এর  
অংশমাত্র। আর, যহেতু ফ্রান্সে বর্তমান  
কোন রাজা নহি তাই '~' এর পরিধি অন্তর্গত  
বচনটি মিথ্যা হয় ফলে নিষেধক বচনটি (২.২)  
সত্য হয়। সুতরাং, দেখা গলে, 'The present  
king of France is not bald' –এই বচনটিকে  
বর্ণনার গণে প্রয়োগ অর্থে নলে বচনটি  
সত্য হয় আর, 'The present king of France is  
bald'- এইক্ষেত্রে বর্ণনার মুখ্য প্রয়োগ  
হয়ছে এবং বর্ণনাটি অনর্দশেক হওয়ায়  
বচনটি মিথ্যা হয়ছে। ফলে আলোচ্য বর্নিত  
বচন দুটির একটি সত্য হওয়ায় আর নর্নিত  
নীর্নিত হই না।

**তৃতীয় হ্যালোরি সমাধান :** Russell-এর মতে  
একইভাবে তাঁর বর্ণনাতত্ত্ব দ্বারা অসত্ত্ব-  
নিষেধক বাক্যের ব্যাখ্যার যবে সমস্যা হয় তার  
সমাধান সম্ভব। তনিক বলেন, 'সোনার পাহাড়  
নহি'- এই নর্নিতক সাত্তকি বাক্যটির  
অর্থবত্তা ব্যাখ্যা করার জন্য় সোনার  
পাহাড়ের কোন রূপ অসত্ত্ব স্বীকার করার  
প্রয়োজন নহি। 'সোনার পাহাড় নহি' ('The  
golden mountain does not exist')-বাক্যটিকে

বর্ণনার গণে প্রয়োগের সাহায্যে বিশ্লেষণ  
করা যায় এইভাবে-

'এমন নয় যবে: অন্তত: একটি বস্তু এবং অনধকি  
একটি বস্তু আছে যবে সোনা দিয়ে তরী এবং যবে  
পাহাড়ও বটে।

এর সাংকতেরি রূপ –

$$\sim(\exists x)\{(Gx \cdot Mx)(Y)[(Gy \cdot My) \supset y = x]\}$$

[Gx: x is golden, Mx: x is mountain]

উক্তক্ষেত্রে সোনার পাহাড় নামক কোন  
বস্তু না থাকায় '~' –এর পরিধি অন্তর্গত  
বাক্যটি মিথ্যা হয় ফলে সম্পূর্ণ অসত্ত্ব-  
নিষেধক বাক্যটি সত্য হয়। Russell বলেন,  
আপাতদৃষ্টিতে 'সোনার পাহাড়'-কে উদ্দেশ্য  
পদ বলে মনে হলেও একে বিশ্লেষণ করলে  
পাওয়া যায় দুটি বধিয়ে পদ যথা, 'পাহাড়' ও  
'সোনা দিয়ে তরী' এবং সাংকতেরি বাক্যে  
বধিয়ে পদের পরিবর্তে আনা হয়ছে সাত্তকি  
মানক '∃x' এবং নিষেধে প্রতীক '~'। Russell-এর  
মতে এইভাবে সমস্ত অসত্ত্ব-নিষেধক  
বাক্যকে অর্থপূর্ণভাবে ব্যাখ্যা করা যায় যার  
জন্য় বাক্য নর্নিত বস্তুর কোনরকমভাবে  
সত্ত্ব হওয়া আবশ্যক নয়।

Russell-এর মতে, একটি তত্ত্বের  
গ্রহণযোগ্যতা নর্নিত করে তার দ্বারা  
বিত্তিন সমস্যার (বা হ্যালোরি) সমাধানের  
সাফল্যের মধ্যে, আর Russell-এর  
বর্ণনাতত্ত্ব সেই সাফল্যতা অর্জন করতে  
পরেছে বলে মনে হয়। কারণ, Russell এমনভাবে





একবাচক বাক্যে যৌক্তিক স্বরূপ বিশ্লেষণ করলে যাত মূল বাক্যে উপস্থিতি একবাচক পদটি যৌক্তিক বিশ্লেষণে পর পরবিরতি বাক্যে আর থাকেই না, ফলে ঐ একবাচক পদটি সত্যায়ুক্ত না সত্যহীন স্যে প্রশ্নই আর বচিার্ষ হয় না।Russell-এর বর্ণনাতত্ত্বের

অসাধারণত্ব এখানই য়ে এই মতবাদে একবাচক পদে বাচ্যাতরিক্ত কোন বম্মির্ত কিছু স্বীকার না করেও য়েকোন একবাচক পদ ব্যবহার করে গঠিত বাক্যে অর্থপূর্ণতা ব্যাখ্যা করা সম্ভব।

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## The importance of *vipassanā* in holistic way of life and living

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### Abstract

Today's world is very competitive and mechanical. In this world everywhere we found irritation, agitation, disharmony, anger, tension etc. So if we remove this thing from our society we can easily lead a holistic life. Holistic means overall development of a human being. Overall development means physical, emotional, mental and spiritual all these kind of development. Mental development is a very important aspect of human life. Mind is a storehouse of the product of emotion, instinct and intuition. But in today's world mental peace is missing from human life. **Gautama Buddha** the saviour of mankind teach a different types of techniques to rescue our society and lead us a holistic life. He prescribes the technique of meditation which control our mental strain and to lead us a peaceful mental life. Mind is everything. We found in Dhammapada that ..... "**Manopubbangamā dhammā manosesthā manomayā**". so to develop our mental condition we must practice meditation. In this technique of meditation one of the most important meditation is *vipassanā*. In this paper there is a humble attempt to show the importance of *vipassanā* in holistic way of life and living. *Vipassanā* is derived from '**passa**' (to look, to observe) and '**vi**' (in a special way). It means 'observing oneself in a special way'. It is a technique that purifies our mind. Therefore *vipassanā* is a process of self purification through self observation and introspection. This continuous practice of *vipassanā* develops our inner qualities like tolerance, humility, mental calmness, kindness etc. It also helps us to develop our ethical, psychological, moral and spiritual aspects. In this way this paper is try to show the importance of *vipassanā* in holistic way of life and living.

**Keywords:** Holistic, Mind or mental control, *Vipassanā*, Gautama Buddha, Self purification, Self observation.

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**Introduction :** The world today is war torn and anxiety lorn. The reason behind the state of affair is not far to seek. Thanks to the ever expanding capitalism escalating blessings of technology human mind is drawn to consumerism and there is rat – race among us. Men for graving more comfort and more luxury goods. These competition has hold upon the human society and every man is against every

other man emplaced by greed a things continuous like this. A great disaster of mankind is sure to take place in times to come could we not pre –empts this disaster. Perhaps to the end every individual in the society must be up with arms against his own mental inclination. Such as greed, if ones greed is not satisfied it is apt that he should be angry or desponded. In order to achieve that each



one of us had introspect or observe once mind properly. So this implies vipassanā technique of meditation.

The term ‘meditation’ has played a very important role in Indian tradition .It has also carried a several meanings .Such words as dhyana, japa , *vipassanā* (vidar shanaa) etc. So *vipassanā* is attached with mind training meditation. ‘passana’ implies seeing the prefix ‘vi’ means in a special way. So actually *vipassanā* means seeing in a special manner .Mind is full of anger ,pain,hatred etc. It is very difficult to control these inner qualities(like anger,pain ,hatred etc).<sup>1</sup>

Vipassanā is a technique that control our mind and washes our anger,hatred ,greed ,selfishness etc. The practise of Vipassanā meditation have removal lobha(greed),dosa(hatred),and moha(delusion)from our mind. And also all the mist of avijja. It is helps to observe all mental and physical phenomena as they really are.

Meditation is mainly divided into two divisions - one is samatha bhavana and another is *vipassanā bhavana*(Bhavana means ---meditation).Samatha bhavana indicates tranquillity ,concentration Mind is chief .Mind is the store house of the product of emotion, instinct and intuition.

So mind is very important aspect of our life .

If we go through by the book kathopanishad ( One of the chief Upanishad )then we find that Naciketa wanted lord Yama to relieve his father of his mental tension and suffering .Which was caused by their separation. So in this way we see everywhere that mind is a

,calmness,peace etc . When the mind is fully concentrated on the object of meditation it becomes free from all kinds of impurities. where *vipassanā* indicates -- ---self observation ancient technique .Lord Buddha gave a fillip to introspection during his reconsidered and several original sutta and nikāya were the proof of it. satipatthana (means mindfulness),sutta No.10 in the majjhima nikāya and also in the mahasatipatthana sutta no 22 of the Digha Nikaya were briefly discuss about vipassanā meditation or mind training process. Buddha said in satipatthanasutta that : **“There is the one way monks for the overcoming of sorrows and griefs ,for the going down of suffering and miseries ,for winning the right path for realising nibbana that is to say the four application of mindfulness .What are the four? Contemplating the body in the body ,ardent, clearly conscious (of it),mindful (of it) so as to control the covetousness and dejection of it .”**<sup>2</sup> This is the reflection of *vipassanā* . But in India it vanished into oblivion till the advent of Mr.S.N.Goenka .He has revived the technique of *vipassanā*.*Vipassanā* meditation emphasizes on mind .Mind is everything .<sup>3</sup>

very important factor for common man to became holy man.

Buddhist meditation is nothing but the art of training to control our mind. Vipassanā is this kind of meditation.We all know that yogācara is one of the schools of Buddhism believes that mind is everything. Whatever we see as an object is unreal. It is only our mode of consciousness.where mind plays a important role.Here mind indicates alayavijñana. Which is translated in



English as store consciousness .Another two consciousness are thought consciousness (mano vijñāna) and active consciousness(pravṛttivijñāna).

livelihood. 6.Right effort .7.Right mindfulness.8.Right concentration.

Alayavijñāna consists both the past samskara and the present one together. So actually mind is a continuous flow of everything. On this ground we can say- **‘It is continuously changing ,expanding and creating and it is the common universal ground of everything .Such original pure, absolute consciousness is called alayavijñāna and is therefore a form of consciousness itself.’**<sup>4</sup>

*Vipassanā* technique helps us to go through by this path .This will help us to reach the destination of liberation .Here we discuss how *vipassanā* helps us to going by the eight noble path:-

So everything that happens in our mind is a continuous flow of consciousness. All the things in this world is momentary.All the things in this world is a constant state of flux and they are combination of anicca ,dukkha and anatta ,which means all compounds are impermanent ,all compounds are suffering all states are non self. The only way out from this kind of suffering is continuous flow of *vipassanā*.

*Vipassanā* means the way to truth .Truth means perfect .To see the object of this world as they really are and it also helps to bring the clear idea of real life .Actually *Vipassanā* generates our SammaDristi. Samma carries right. It is the higher level of purification of mind .

Lord Buddha taught us the four noble truths. These are ----

Insight observation or practice of *vipassanā* helps us to grow in our mind the concept of right thought. Right thought means absence of ill will and the absence of cruelty.

1. Life is full of suffering.
2. There is a cause of suffering.
3. There is an end of suffering.
4. There is way to the end of suffering.

A *Vipassanā* technique helps us to restrain from us unwholesome deeds and unwholesome speech. Which reflects two of the important noble truths one is right action and another is right speech. The Buddha mentioned three components of right action abstaining from taking life , abstaining from taking what is not given (Stealing robbery ,snatching etc.) abstaining from sexual misconduct . This will also helps us to grow the concept of sila( abstain from harming living beings, stealing sexual misconduct ,lying and intoxication ). Sila means mode of ethical conduct .practice of *vipassanā* technique must begin with this sila. The practice of sila not only helps the man to be good inside but it also helps the man became a good one .Sila has played a very important role in Buddha dharma. By practicing of sila the mental anxiety ,mental tension and mental trauma can be removed from our

The way to the end of suffering is also known to us Noble eightfold path (ariya atṭaṅgika magga). It’s a very heart of the Buddha’s teaching.

The noble eight fold paths are ----

- 1.Right view. 2.Right understanding.
- 3.Right speech. 4.Right conduct . 5.Right



mind .Mind becomes peaceful .Right speech indicates the speech that does not lie and does not cause harm others . Buddha sometimes remained silent in the face of to crucial questions. So right speech also indicates from restrain of very unwanted talking and to practice silence. It happens only when our minds become clam and quite.

*Vipassanā* helps to live the life in a righteous way. Buddha prescribed his disciple to acquire wealth in a legal way. Wealth must not be acquired by in an illegal way. Isa Upanishad (which is the oldest and best of the Upanishad ) also speaks in the self same way.

*Īśāvāsyamidam sarvaṁ yatkiñca jagatyām jagat*

*Tena tyaktena bhujñthā mā grdhaḥ kasya sviddhanam.*

**“In this changing world everything is subject to change, yet everything is covered by the lord . Practice renunciation and be strong in the consciousness of the self. Do not run after anyone’s wealth.”<sup>5</sup>**

Actually Vedanta believes in self theory. But Buddhism does not believe this kind of theory. They believe in the theory of non –self. But here we found certain similarities between the two systems that no one should be greedy and enjoy only the earned money in a righteous way not in an illegal way.

*Vipassanā* is a kind of effort and this kind of effort is known as sammak vayam. This effort can control our mind and aggression,violence,ambition all these kind

of mental illness can be remove through right effort. Its helps to teach our self discipline, kindness in this kind of mental state .Right effort is a mental exercise for the fitness of mind.

*Vipassanā* is a mirror of self image which encourages the power of observation ,right thinking and understanding . It also helps to check all evil thoughts and develop the mental condition of man in a higher level. This indicates the right mindfulness also which helps to man to control his mind on his own way and set the picture of good memories.

Lastly *vipassanā* helps to grow our mental power and this mental power helps to drawn right concentration . Right concentration is developing the mind and it prepare the mind for the stage of concentration.

In this way *vipassanā* techniques which follows the noble paths to overcomes our suffering .It also focused on several principles like purity of mind, purity of views, purity of moral etc. This will also help to washout our suffering.

Today we see that the modern world is very advanced technologically and mechanically .Mental peace is missing from peoples mind .So mental development is very important for today’s world .Actually *vipassanā* is a key for remove all kinds of mental disease. The world is full of suffering .Once Buddha said in his first sermon that ----

**“Birth is suffering , old age is suffering ,disease is suffering, death is suffering ,association is suffering, separation from what is pleasant is suffering not obtaining what one desires is suffering.”**

6





This end of suffering is happens only when man can attain *Nirvāṇa*. To attain the stage of *Nirvāṇa*. Man an can go through by the process of minds inclination. This is possible by the practise of *vipassanā* .So *vipassanā* is very important effort for inner purification .

### CONCLUSION:

Man is a rational being. Education has played an important part in man's life. Education should be taken in a proper way. It should be holistic one. Holistic means total development .Which is include in physical, emotional, intellectual and spiritual. Holistic education should be combine with all these things like physical education should help us to keep the body fit, emotional education should be emphasizes to develop the positive human emotion of universal love, compassion. Intellectual education should require for not only the development of the ability to think but also the ability to act independently.

Similarly spiritual education should nourish and purify our mind.

UNESCO also emphasizes on this kind of education which actually means ----

'Learning to be' .Education is nothing but a system which develops our humanity. This humanity is developing only when our physical , mental, intellectual and also spiritual development will happen.

Holistic education should be attached with all these kind of development.

So , Modern educational system is mixed up with physical as well as spiritual. To develop our spiritual condition one must practice *vipassanā* .*Vipassanā* is a technique that can develop our human qualities like universal goodwill ,kindness ,sympathy,tolerance ,humility ,equanimity etc. In this way we develop our equality principle. Which is also the inner essence of Vedanta .We found in Isa Upanishad verse 3 that-

*Yastu sarvani , bhūtani ātmanyevā nupas'yati ; sarvabhutesu cātmānaṁ tato na vijugupsate*<sup>7</sup>.

He who sees everything in himself and himself in everything never hates anything .That is what is called sama-dars'itā same – sightedness. It is possible only when a perfect man making education takes place. Swami Vivekananda, a great monk of India was emphasizes on this kind of man making education. This perfect man making education should be possible through Holistic education by the practice of *vipassanā*.

*Vipassanā* is a technique of meditation which is a ten –day's course. The first three days are mainly the practice of breathing control. And to observe the breath as it is. (suppose breathing in a long breath ,he knows,i am breathing in a long breath.) It's called anapana. On the fourth day the *vipassanā* technique starts. This is the doorstep of liberation. These courses are held in different parts of India and abroad .Anyone to learn the technique should join this course. There is no barrier of any cast and creed. By practice of this technique one must be attain self-



actualization, self observation, self – restrain, and also the mental state level can be higher by through the practice of *vipassanā* . It works on all the people for the society. On this aspect we can say:-

**“The influence of thought on human life and society is great .All that we are is**

**the result of what we have thought .In one sense it is true that we live in a world of thoughts .By changing our thoughts we change our life and indirectly we change the character of the world.”<sup>8</sup>**

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- 1.[phandanam capalam cittam durakkham dunnivaryam] Dhammapada verse 33
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- 3.“Manopubban gammā dhammā manosesthā manomaya ‘’.(Dhammapada verse no.2)
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## Issues Related with Acquisition to English Language

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### Abstract

*English is being treated as a world language because of its vast presence all over the world. English in India is a symbol of people's aspiration for quality in education and a fuller participation in national and international life. English as language has been in India for more than a century. But even now very few can speak in English. Majority of Indian students particularly from rural place consider this seven letter word as a magical and mystical word. Today it is not a foreign language to us. It is a second language. Besides being a link and library language in India, it is a major window of the modern world. This article gives focus on the issues related with acquisition to English Language. In this respect it discusses the historical context of English language in India. It also explains some external factors like teacher environment, first generation learner as well as internal factors like student's motivation, anxiety, attitude and so on which play a significant role in acquisition to English Language.*

**Keywords:** Issues, acquisition, English Language.

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### Introduction

India is a multilingual country with numerous languages and dialects. There are 1,652 Languages/dialects belonging to five different language families in this country. There are 22 scheduled languages mentioned in the 8th schedule of the constitution. Over 87 languages are used in the print media and 71 languages are used in the audio media. However, only 47 languages are used as the media of instruction in schools and English is one of them. English has been accorded the status of official language at the national level. According to National Commission Framework 2005, "English in India is a global language in a multilingual country. The aim of English teaching is the creation of multilinguals who can enrich all our languages. English needs to find its place along with other Indian languages in different states...." In spite of English not being spoken by many people, it has become a major link language at national and international levels and is a commonly used language in offices, industry, business, preparation of professionals like doctors and engineers and in research particularly in the fields of science and technology and so teaching of English in schools has acquired importance in the education system of our country. English was the primary language for barely 2.3 lakh Indians at the time of the Census - 2001 and about 86 millions listed as their second language and another 39 million as their third language taking the total number of English speakers in India to over 125 million.

This article gives focus on the issues related with acquisition to English Language. Acquisition to English Language is the product of many factors pertaining to the learner (internal factor) on the one hand and learning situation (external factor) on the other.



## Organization of Content

### 1. Historical Context of English Language in India

If we look at the history of English in the country, English Language gained entry in India with the entry of East India Company. Christian Schools (through their missionaries) started functioning in the early 1800S. Macaulay's Minutes of Indian Education (1835) advocated the use of English as it was felt that Indians cannot be educated by means of their mother tongue. He also envisaged that English would be the language of commerce, politics and judiciary.

Macaulay's minutes on education dated 2nd February, 1835 approved by the governor general of India. William Bentinck on March 7, 1835 became the cornerstone of British India education policy. <sup>[1]</sup>

English became a language of the affluent in the Indian sub-continent as a result of this policy. The bureaucracy opened opportunities for those knowing English. It established itself as the language of the elite intelligentsia, and educated middle class.

Before independence the Education Act of 1835 saw many changes. William Adam's survey (1835) suggested English medium of education. <sup>[2]</sup> During World war-I the child's mother tongue gained attention with Mahatma Gandhi and Gopal Krishna Gokhale advocating its importance. The Sadler Commission was appointed to look into problem of education called for a policy of coordination between English and Indian Vernacular Language.

### 2. What is Language acquisition

Language acquisition refers to developing competence in a language by using it in natural, communicative situation as available.

Krashen states that "..... Language acquisition (is) a process similar, if not identical, to the way children develop ability in their first language. Language acquisition is a sub-conscious process; language acquirers are not usually aware of the fact that they are acquiring language, but are only aware of the fact that they are using the language for communication .... (in this process) we are generally not consciously aware of the rules of the languages we have acquired. Instead, we have a "Feel" for correctness. Grammatical sentences "sound" right or "feel" right and errors feel wrong, even if we do not consciously know what rule was violated. Other ways of describing of acquisition include implicit learning, informal learning and natural learning In non-technical language acquisition is picking up a language..." <sup>[3]</sup> The process can be in a natural or tutored setting. It covers the development of phonology, lexis, grammar and pragmatic knowledge. It has been limited to morphosyntax.

#### 2.1 Some basic issues in acquisition to English Language

Different students can have different difficulties and problems in acquisition to English Language. They can make different mistakes in English pronunciation, grammar, orthography and vocabulary usage.



**Each learner has his own issues, but most common are the following :**

### **2.1.1 Correct pronunciation :-**

Pronunciation or the inability to understand or comprehend new words.

One of the main causes of this problem is the difficulty that teachers have translated from their native language. For instance, the word 'pup' is pronounced by different teachers as either [pap], [pop], or with a vowel sound that does not exist in English.

### **2.1.2 Grammar**

Students face problems in understanding the grammar structure of the new language.

### **2.1.3 Translation Method**

Most of the students use translation method to understand the second language, in this case English. They think of the reply in their mother tongue first and then form a reply by translating. The most common cause of the problems faced by learner of English Language as second language is existence of the inherent structure of their first language or mother tongue that they are exposed to since from their birth.

### **2.1.4 Vocabulary**

Vocabulary is important in learning a language. Any language of course including English has thousands of words. Vocabulary becomes a huge problem. When English is spoken in India some words will be used differently. In the so-called native varieties of English such as British, American etc, the words 'uncle' and 'aunt' are used only to refer to familiar relationships like mama, masi, bua, fuufaa etc, but when Indians use the words they also use them to refer to elders, neighbours, shopkeepers, friends of parents, bus drivers etc. Indian English also contains various phrases which are not found in any native variety of English like 'pin-drop silence', 'each and every', 'do the needful' etc.

### **2.1.5 Phonology**

English spoken in different parts of the world does not sound the same. A British speaking English sounds very different from an American speaking English. An Australian sounds different from both the American and the British and an Indian sounds different from all three.

The phonology is an area where we can actually see an interference of the first language. One thing that affects the learner's ability to grapple with the sounds of a language is her/his age. With time our jaws get fixed and it becomes difficult for us to produce certain sounds. The capacities of our brain to comprehend a new sound diminish after a certain age. Children pick up sounds of the second language like English up to the age of puberty i.e. by the time language gets specialized in the left hemisphere of the brain. In fact, if an Indian child of about 3-4 years in an English speaking nation like America or Britain and if opportunity is provided him to interact with English speaking children, the child would sound like an American or British child in a matter of few months.





### 3. Role of teacher

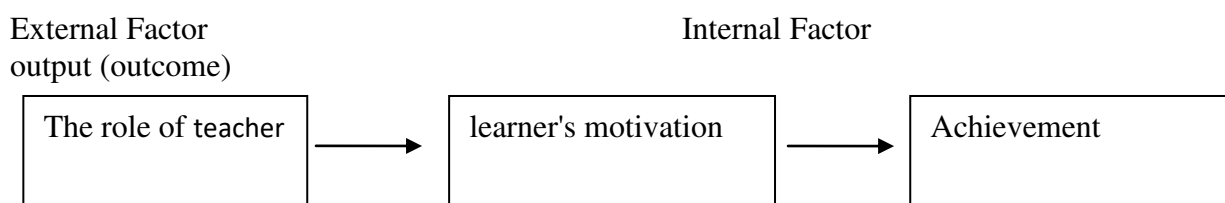
External factor that can influence learner’s acquisition to English as a second language in formal instruction is the role of teacher. Teacher as transmitter and facilitator can influence learner’s motivation. Motivation correlates with achievement. It is assumed that learner with high motivation will acquire the target language better than learner with low motivation. Brophy (1987) cited in Brewer and Burgess (2005) suggested that teachers viewed themselves as active socialization agents who were capable of stimulating students' motivation to learn. Small (1997) cited in Brewer and Burgess (2005) that the instructors were perceived by students as having the prime responsibility for learner's interest or boredom.<sup>[4]</sup>

Gardner and MacIntyre (1993) cited in Mitchell and Myles (1998) states that the motivated individual is one who wants to achieve a particular goal, devotes considerable effort to achieve this goal, and experiences satisfaction in the activities associated with achieving this goal. The learner’s motivation can be high, can be low so when the learner’s motivation seen low in teaching and learning process in the classroom, the teacher needs to create a teaching and learning environment that will help students relate the success back to their original motivation for being in school and re-energize them to learn the material.

#### 3.1 Chan (2004) suggests that teachers can motivate students by

- communicating clearly.
- setting tasks that encourage active engagement with the material.
- creating situations that allow students to make and correct mistakes without undue penalty.
- displaying enthusiasm for the subject matter.<sup>[5]</sup>

Therefore, external factor, the role of teacher is an important issue which needs to be considered in acquisition to English Language.



The role of teacher influences learner's motivation and motivation influences learner's achievement (successful) in acquisition to English Language.

### 4. The Role of the Environment

One of the most important External factors of learners mainly refers to the environment that influences the acquisition to English Language. It includes the social environment, home environment, school environment, class environment and so on. Children are born with a universal grammar, they have psychological readiness about language acquisition and this readiness gets completed with the environmental exposure which are all natural untutored. The journey of language acquisition continues with a tutored set up as he goes to school. For example we can see this clearly in the example of children who leave their home countries with their families to settle in foreign countries. For example, Hindi



speaking children who leave India to settle in America acquire English at school where they hear and interact with their class mates and teachers in the language and also in various other places like TV, market etc. Thus the richer exposure to the language, the greater is the possibility that we will acquire it.

A normal child in any society in any part of the world becomes a linguistic adult by the age of 4. She acquires the basic vocabulary and structure of her languages and uses them accurately. The crucial requirement to acquire language also appears to be an opportunity to interact with others using the language.

#### **4.1 Siegel generalizes five kinds of social environment of second language learning**

- a) two language dominance (such as Turkish learn German in Germany);
- b) foreign language (such as Japanese learn English in Japan);
- c) Multi language existence (such as German learn French in Switzerland);
- d) institution (such as use of use of English in India),
- e) minority language (such as English speakers learn well).

### **5. First generation learner**

First generation learner is an important issue with acquisition to English Language. Teaching English to first generation learners needs a more fundamental understanding of the exact nature of the problems and its complexity of dimensions like course designers teachers, learners and concerned educational institution. A first generation student is one whose parents or guardians have not attended a post secondary institution. If your sibling has attended a college or University, but your parent(s) or guardian(s) have not, you are still considered a first generation student.

#### **5.1 Cultural Differences**

Learner's culture can be a barrier to second or foreign language learning. Cultural differences may cause confusion and cultural misunderstanding. Learners cannot reach a high level of proficiency unless they are able to use the target language. It is observed that language is used in a cultural phenomenon to exchange ideas and opinions or share experiences. It is so much interrelated that without understanding properly the cultural setting and social behavior of a language use, it leads to misinterpretation and breakdown in the language communication, or it may result into errors and misunderstanding because language is not simply sending or receiving information but it functions as a social behaviours in certain cultural context. There are difficulties which are very complex to understand for foreign or second language learners according to required context to interpret and communicate.

Research in the field of English Language Teaching (ELT) indicates problems faced by the learners in communicating language in context. A number of language instructed programmes focus on the development of skills, i.e. listening, speaking, reading and writing but the teaching of cultural context has not been introduced in any of the language learning programmes. However, the understanding of target culture not only develops competence in communication but raises awareness regarding the use of language in intercultural communication.



According to koester and Lustig (2010) communication and culture are closely interrelated in terms of attaching similar meanings and values to the objects of life. Intercultural communication involves individuals of different cultures who have dissimilar orientation and interpretation to the values of life. Insights from research studies indicate efficient intercultural communication reflecting the competence needs to go beyond the mere transmission of facts about culture in order to enlighten the participants with information how and why perform certain behaviours and have certain attitudes during cross cultural encounter. <sup>[6]</sup> Therefore, the language programmes should be introduced to familiarize the students with the major differences in the fundamental cultural patterns of attitude and behaviours (schmidt 2000). <sup>[7]</sup>

Similarly there are many cultural actions and responses in English Language context which vary from American society to British, and from Australia to other English speaking countries like India and Pakistan, where English is spoken in their own political and cultural context and requires cultural understanding in intercultural communication.

## 5.2 The role of input

The role of input plays a vital role with acquisition to English language. Ellis (1998) writes, 'it is self evident that second language acquisition can take place only when the learner has access to second language input. The input may be in the form of exposure in natural setting or formal instruction. It may be spoken or written. A central issue in second language acquisition is what role the input plays'. <sup>[8]</sup>

Krashen proposes that second language acquisition is based on comprehensible input. Krashen (1985) cited in Mitchell and Myles (1998) defines comprehensible input as second language input just beyond the learner's correct second language competence in terms of its syntactic complexity. It is known as Acquisition takes place if the learner receives comprehensible input and comprehensible input is claimed to have been provided if acquisition takes place. <sup>[9]</sup>

## 5.3 Learner Differences

Second language acquisition research generally refers to learners who start to learn another language or the additional language, at least some years after they have started to acquire their first language formally and systematically in a classroom setting; and the learner may learn the additional language through informal social contact, through migration, through their daily work on other social forces. They are likely to learn the target language in schooling; they are likely to pick it up in the playground or in the workplace. In the meanwhile, learning a highly localized language can help them to become insider in a local community and give them access to economic and public life. As a matter of fact, in the first part of the 21<sup>st</sup> century. English becomes the most important target language. It is commonly believed that there are about seventy five million individuals who regard English as their first language. On the other, there are billion or so people who use English as a second language.

## 5.4 Motivation and Needs

Learners who have high motivation and needs in learning target language, will be successful than learners who have low motivation and needs in target language.



The learner has a socioaffective filter which governs how much of input gets through to the language processing mechanisms. As a result of conscious or unconscious motives or needs, attitudes or emotional state, the learner is 'open' or 'close' to the second language like English. Thus once learners have obtained sufficient second language knowledge to meet their communicative and emotional needs, they may stop learning. It is called fossilization. Aptitude and motivation correlate positively with achievement (out come); it means the higher the aptitude and motivation, the higher achievement (out come).

## 5.5 Aptitude

It refers to the special ability involved in language learning. It is a major factor determining the level of success of classroom language learning. It is one of the strongest predictors of success in language learning.

## 5.6 Attitude

Attitude can be an obstacle with acquisition to English Language. This can refer to learner's general attitude towards English when they come from cultural backgrounds with hard feelings towards speakers of English from certain countries or if they do not want to sound American or British for their own personal reasons. In some societies learning new languages can be negatively perceived specially for males. Moreover there is the embarrassment barrier where the learners are afraid to commit mistakes in order to avoid shame. This is specially apparent with Japanese learners (Hasan Darwish).

Non-native speakers have an "Operating System" (OS) programmed in their mother tongue when asked a question in English, their OS first translates it into their mother tongue after they understand the question their OS makes a question in their mother tongue, then translates it into English and they reply thereafter. Students should need a very good process or change of OS and start thinking in English.

## 5.7 Anxiety

Anxiety is one of the most important factors with acquisition to English language. Anxiety plays an important role in foreign language student's classroom performance. Elkhafaifi (2005) quoting Horwitz, Horwitz and cope (1986) <sup>[10]</sup> determines that anxiety plays an important role in determining student's success or failure in foreign language classes. <sup>[11]</sup>

Anxiety is a part of learner differences. In case of English non-native speaker students have difficulties to master that particular language. One factor that plays a vital role in the success and failure in learning and teaching English is anxiety.

Worde (2003) writes that research had consistently revealed that anxiety could impede foreign language production and achievement. <sup>[12]</sup> Language anxiety is experienced of both foreign and second language and poses potential problems "because it can interfere with the acquisition retention and production of new language" (MacIntyre and Gardner 1991 P. 86) <sup>[13]</sup>

There is negative correlation between students' anxiety and students' achievement in a foreign language. Students with high anxiety will gain low achievement, on the contrary students with low anxiety will gain high achievement.



## 6. Vygotsky's Sociocultural Theory

At present another tendency of second language like English learning is research on socio-cultural theory which is a theory about human cultural psychology and proposed by psychologist named Vygotsky of the former Soviet Union.

### a) Meditation

The core concept of Vygotsky's sociocultural theory is that human's advanced cognitive function mediates the relationship between individuals and social material world by symbols which are products of social culture. The symbols include figures, computing system, music, artistic achievements as well as literary works, specially language. Through social interactions, the language symbols begin to play a role as mental tools in behaviours. Therefore, sociocultural theory believes that the biological function that constitutes the basis of human thinking cannot explain our ability about regulating of mental activities consciously. The gaining of this kind of ability is a product of cultural construction, specially a result of language internatization.

### b) Internalization

Another core concept of sociocultural theory is internalization. Internalization refers to a process that social members transform the symbol products into psychological activities. Therefore, the language symbols have double functions, which can be regarded as co communication unit as well as thinking unit. On this point human's communication and thinking round completeness through language symbols. Vygotsky believes that the form of internalization is through imitation mechanism. Vygotsky points out that the key point of internalization is to possess the ability of imitating intentional activities. However, the imitation here is not the same as the concept in behaviouristic psychology of methodology. It emphasizes the reasoning process of transforming from outside psychological platform to inside psychological platform actively and creatively on the initial basis.

### c) Object - regulation, other - regulation and self - regulation

Regulation is a form of meditation. When the children learn a language the function of words is not just to isolate the concrete objects and actions, but to blend the feelings of creatures into cultural feelings and concepts. The development of thinking and actions in early childhood depend on the language of adults. Children can learn their language to mediate their behaviours through taking part in 'adults' or elder children's communication activities. This kind of development has three stages : object - regulation, other - regulation and self regulation. Object - regulation means that the individuals are in the direct control and influence the surroundings. Other regulation means that children's thinking and behaviours rely on adult's language. Self-regulation means that children's thinking and behaviours rely on their own language. The social culture believes that children's development of cognition goes through 3 stages : Object - regulation, other-regulation and self - regulation. In these three stages the function of language goes



through social language, self-centred language, individual utterance and intrinsic spoken language.

#### **d) The Zone of Proximal Development and Scaffolding**

The zone of proximal Development plays an important role in the development of psychology, pedagogy, applied linguistic and second language learning. It refers to the gap between the ability of solving problems independently and the potential ability of solving problems with the instruction of adults or the cooperation with a good companion.

The school of Vygotsky, such as Jerome Bruner develops the concept of scaffolding. It refers to the cooperation with any adults and children, experts and new hands : Donato also proposed furtherly that scaffolding can also be found between companions, such as learners. It shares the same with scaffolding between experts and new hands (Lantolf & Throne, 2006). According to socio-cultural theory, we study on how the language internalizes in the social instructions such as scaffolding. Though the conversation of scaffolding among native speakers, experts and companions, people can have a master of new content which will expose the subtle variations of two language systems of the learners.<sup>[14]</sup>

### **Conclusion**

Acquisition to English Language has the prospect of multidisciplinary, which will deeply widen its cooperation with other areas. The visual angle of English language acquisition will further expand the scope of its research. This thesis explains the above mentioned external factors as well as internal factors and Vygotsky's sociocultural theory which play a significant role with acquisition to English Language.

Recent developments of acquisition to English Language in India is praiseworthy. India has one of the largest primary education networks in the world. Educational facilities have witnessed spectacular growth, with rapid increase in the number of schools. The Sarva Shiksha Abhiyan (SSA) Launched in 2001 is Government of India's flagship programme for providing free and compulsory education to children of 6-14 years age. One of the goals is to 'focus on elementary education of satisfactory quality with emphasis on education for life skills to be imparted to children for being successful'. Teaching and learning of English is to be given due attention in the programme of improving quality of education.<sup>[15]</sup>

The National knowledge commission (2007) felt that the time has come to teach English as a language in school. Early action in this sphere would help us build an inclusive society and transform India once again into a 'knowledge society' which it was a few decades ago. This feature of India had disappeared in the last few decades. It has recommended that English teaching should start from class I so that after 12 years of schooling the learners will have access to higher education and equal access to employment opportunities. This commission has also laid emphasis on the significance of language not only as a medium of instruction or a means of communication but also as a determinant of success towards greener pastures. It was stressed that understanding or the command over the English language is the most important determinant of access to higher education, employment, possibilities and social opportunities.<sup>[16]</sup>

It has been widely acknowledged that many children who complete schooling are not adequately proficient in English as a language and always suffer in the world of higher education because most of the books and journals are available only in English. Such students find it exceedingly difficult to complete for a place in our premier educational institutions this





phenomenon is imminent in the sphere of jobs also where proficiency in English is an essential and desirable qualification.

The Right to Education Act 2009 marks a historical moment for elementary education in India. It is meant to ensure that every child has the right to guaranteed quality elementary education. This would also include learning of multiple languages in which English occupies an important place along with the mother tongue. The target of educating all children at least upto primary level by 2015 is one of the Millennium Development Goals. It will be in the fitness of things if all the children who complete primary education also have a minimum level of proficiency in English. <sup>[17]</sup>

David Graddol in his book 'English Next India : The future of English in India' (2009) mentions that in India English is changing its status from a bureaucratic and elite language to one which plays an increasing role in the lives of all citizens. <sup>[18]</sup>

A state of the National Poll Carried out by the Indian TV channel CNN, in August 2009 found that 87% feel that knowledge of English is important to succeed.

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## GENESIS OF KNOWLEDGE IN SĀM̄KHYA-YOGA PHILOSOPHY

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### Abstract

*There are three sources of Cognition according to Sāmkhya system. These are perception, inference and valid testimony. Perception, in the opinion of Īśvarakṛṣṇa, is the determinate Cognition produced through the sense-organs in contact with the objects. He defines it as "Prativiṣāyadhyaṅvāsayadrṣṭam" (Kārikā.5). There are the gross and the subtle matters. The gross matters are the objects of our Cognition while the subtle matters fall within the province of perception of the yogins. The Sāmkhyas substantiate the fact that inference is the source of inferential knowledge which is obtained through hetu that connects the Pakṣa with the Sādhyā. The inferential knowledge is effected through the knowledge of a universal relation (Vyāpti) between the Hetu and the Sādhyā. After inference comes Śabda or Valid testimony. Sāmkhya regards Śabda as an independent source of valid knowledge.*

**Keywords:** Cognitions, Hetu, Pakṣa, Sādhyā, inferential knowledge.

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Knowledge, according to *Sāmkhya-Yoga* system means function of *Buddhi* or *Citta* (*buddhivṛtti*) *Sāmkhya* believes that the factors involved in knowledge are (i) the intelligised *buddhi* (ii) the *Vṛtti* of the object which amounts to knowledge when consciousness is reflected through it and (iii) the object in *Sāmkhya* system consciousness is not directly related to the object in the form of *Viśayāvacchinnacaitanya*. The system also agrees in holding that knowledge is the revelation of the object through *Vṛtti*.

According to *Sāmkhya*, there are only three sources of valid knowledge whereas the *Advaita Vedānta* believes in the six sources of valid knowledge. The process of genesis of knowledge in the form of the object is offered to *Buddhi* which is considered its nature. This ascertainment by *Buddhi* is the knowledge. So the knowledge is modification of *Buddhi* and is located in *Buddhi* itself. *Buddhi* requires the role of the *Puruṣa* without which knowledge cannot arise. *Sāmkhya-Yoga* denies the fact that the soul knows the objects directly. It is different from objective knowledge, but the same time without its involvement *Buddhi* does not have knowledge. *Puruṣa* is inactive in nature. This role is merely through association with *Prakṛti*. The present paper is an attempt to examine the exposition offered by *Sāmkhya-Yoga* in this direction.

The process of the genesis of knowledge is as follows:

In the theory of perception, the *Sāmkhya* has not admitted any classification of consciousness such as *Viśayacaitanya*, *Pramāṇa-caitanya*, *Pramāṭṛ-caitanya* etc. This is because the *Sāmkhya* does not believe in the illusory nature of the object. There is no super-imposition of any false object on the *Puruṣa*. In the opinion of the *Advaita Vedānta* Consciousness becomes



the substratum of the super-imposed *Pramātā*, of the super-imposed *Vṛtti* and also of the super-imposed *Viśaya*.

No such *adhiṣṭhāna-adhyasta* (substratum and superimposed) relation between consciousness and unconscious material objects is admissible in the realistic *Sāṃkhya*. In respect of the fundamental perceptual process, however, there is little difference between the views of these two schools. The *sāṃkhya* also holds that as soon as an external sense-organ comes in contact with its specific object, the *Buddhi*, permeated with consciousness, gets changed at once, in the form of the object. This modification of *buddhi* in the form of the object is called *Vṛtti*. This *vṛtti* is the *pramāna* (instrument of knowledge) and the reflection of consciousness in the *Vṛtti* is the *pratyakṣapramā* (valid perceptual knowledge). In respect of *pramā*, the *advaitavedānta* also holds that *pramā* truly refers to knowledge limited by the *Vṛtti*. *Vṛtti* is called knowledge only figuratively, since knowledge is limited by it

The *sāṃkhya* believes that although consciousness is all pervading, still a *jivapuruṣa* cannot perceive all the objects at all time. This is because all *jivapurusas* are individualised by their individual *Buddhis*. Since *Buddhis* are different, experiences too, are different. The *Buddhi* (intellect) of each *jivapuruṣa* is constituted of the three *guṇas* and it is the nature of consciousness to get reflected only in the *sattvaguna* of the *Buddhi*. As soon as the *Buddhi* of a particular *jiva* is modified into the form of an object by reaching the object through the sense organ, the consciousness of the *Jiva* is reflected in the *sattvaguna* of the *Vṛtti* and increases in quantity with the result that *tamoguna* is at once overpowered. Then there is the revelation of the object. That *Vṛtti* is *sattvatmaka* is admitted by both the *Sāṃkhya* and the *Advaitavedānta*; both the systems also agree in holding that *tamoguna* is overpowered by the *sattvaguna* and that there is also reflection of consciousness in the latter. Self-luminosity of consciousness is also admitted in both the systems. There is always a direct revelation of consciousness. In the *Sāṃkhya* however the *viśayagatapratyakṣa* of the *Vedānta* type has not been admitted. This is because the *Sāṃkhya* does not believe that *puruṣacaitanya* becomes the substratum of the object. Consciousness is related to the object only through reflection. According to the *Advaitavedānta*, the *sattva* of the object is non-different from the *sattva* of the *pramātrcāitanya* and so there is a direct relation (though *adhyāsikā*) between the subject and the object.

The *Sāṃkhya* agrees in holding that inference is the source of inferential knowledge which is obtained through the mediation of the *hetu* (middle term) that connects the *pakṣa* (minor term) with the *sādhya* (the major term). This inferential knowledge is effected through the knowledge of a universal relation (*vyāpti*) between the *hetu* and the *sādhya*. Let us take the stock example to illustrate the nature of inferential knowledge:—

"The hill has fire, because it has smoke and where there is smoke, there is fire as in the kitchen."

Here, fire is the thing to be inferred (*sādhya*), hill is the thing in which fire is to be inferred and smoke is the *hetu* or the middle term. We also know from previous experience that where there is smoke, there is fire. In fact, smoke is always perceived to exist where fire is in existence (*vyaptijñana*). That *paksadharmata* and *vyaptijñana* are necessary for inference, is admitted by the *Sāṃkhya*.



The *Sāṃkhya* seems to hold that the inferential knowledge, is, generally, *paroksāparokṣajñāna* (Mediate-immediate knowledge). In the case of the inferential knowledge of the form "There is fire in the hill", the *vṛtti* of the hill with smoke is immediate whereas the *vṛtti* of fire is mediate. The same consciousness is reflected through both the *vṛttis* and so there is a single cognition of "fire in the hill".

According to *Sāṃkhya* also, where the pakṣa or the minor term is '*aparokṣa*' or non-perceptible object, inferential knowledge is wholly mediate. Of course all these points have not been explained very clearly in the available *Sāṃkhya* texts.

According to *Sāṃkhya*, however, it is the *vṛtti* or mode which is to be treated as the *karāṇa* of the inferential knowledge; because it is through *vṛtti* that object knowledge arises. Of course, there is no harm if *vyāptijñāna* is regarded as the *karāṇa* or instrument of the inferential knowledge. If the mode of the intellect through which consciousness is reflected (*caitanyapratibimbītabuddhivṛtti*) is to be regarded as *pramā*, then it is logical to admit *vṛtti* as the instrument of valid knowledge. Nevertheless *vyāptijñāna* too, can be regarded as the *karāṇa* since *vṛtti* is due to *vyāptijñāna*. It is because *vṛtti* caused by *vyāptijñāna* is regarded as *karāṇa*, that there is justification also for holding that *vyāptijñāna* is the instrument of inferential knowledge.

*Sāṃkhya*, on the other hand, holds that the knowledge of *vyāpti* can be obtained by three methods.

- (i) By perceiving mainly such instances in which there is co-presence of the middleterm and the major term (*anvayadr̥ṣṭānta*).
- (ii) By perceiving both *anvayī* instances and *vyatirekī* instances.
- (iii) *Kevalavyatirekī* method by means of which the *vyāpti*, which forms the basis of *Advaita* form of inference, is obtained.

In the opinion of *Vācaspati Miśra*, *vyāpti* is to be established by removing all suspected and accidental upadhis. *Upadhinirāsa* (removal of upadhis) is the most essential requirement that is to be specially fulfilled when one proceeds to establish the *vyāpya-vyāpaka* relation.

*Śabda*: *Śabda* comes after inference. Both the *Sāṃkhya* and the *Advaitavedānta* regard *śabda* as an independent source of valid knowledge.

The *Sāṃkhya* also believes that the *Veda* is the only infallible scripture and that this scripture was not composed by any person. The *Veda* is *apauruṣeya*, because there was no *puruṣa* who could be regarded as the composer of the Vedic literature (*Na pauruṣeyatvaṃ tat kartā puruṣa svabhāvāt*: S-P-S-5-46). Being *apauruṣeya*, the *Veda* is free from all defects which are noticeable in the composition made by human beings. Knowledge, derived from the *Smṛti* texts, Puranas etc., are valid only when they are in agreement with the Vedic teachings. The *Sāṃkhya*, therefore, agrees with the *Advaitavedānta* in believing that the *Veda* is intrinsically valid. The validity of the *Smṛti*, Puranas etc., on the other hand is *parataḥ* (i.e. dependent on their agreement with the *Veda*).



It is because by *āptavacana*, *Vācaspati* has understood Vedic teachings only, that he has said that *Kapila* did not give us any new doctrine. He simply remembered the scriptural teachings that he had learnt in his past lives. Since, the utterances of *Kapila* were only a repetition of his Vedic learning of the previous birth, what he taught was really *apauruṣeya* and not *apauruṣeya* like the teachings of Buddha and the Tirtharmkaras.

Further, the *Sāṃkhya* holds that the *Veda* is not eternal. The *Śruti* speaks of the origination of the *Veda* (*Na nityaṃ vedanam, kāryatvaśruteḥ*: S-P-S, 5-45). Where the *Veda* has been spoken of as '*nitya*', there the word '*nitya*' is to be understood in the sense of '*Pravāhanityatva*'. If a thing undergoes changes but does not alter its patterns, the thing is said to have '*Pravāhanityatva*'. The *Sāṃkhya* has admitted such eternality of the *Veda* (*vedanityatavākyaṇi ca sajjātiyānupurvīpravāhānucchedaparāṇi*: S-P-B, 5-45). *Śaṅkara* too, seems to have admitted the eternity of the *Veda* in the sense of *Pravāhanityatva*, because he has said that although all the worlds and creatures are constantly undergoing changes, still they preserve the same pattern. (*Samānanāmarūpatvaditi, Śaṅkara Bhāṣya* : 1.3.30).

The *Sāṃkhya* does not seem to hold that words refer to the universals. Words, by themselves, mean individuals. If the words do not mean individuals, we cannot explain their reference to individual objects by any process of transference of meaning. In this respect, therefore, there is some difference between the *Sāṃkhya* view and the view of the *Advaitavedānta*.

According to *Sāṃkhya upamana* or comparison is not an independent source of knowledge. When *Gavaya* is perceived, its likeness to cow is also perceived; as soon as this is perceived, the cow is remembered and the cow's likeness to *Gavaya* is also a sort of perceptual knowledge. Truly speaking, the likeness to cow which exists in the *Gavaya*, is not something different from the likeness to *Gavaya* which exists in the cow. (*TattvaKaumudī*). Hence according to the *Sāṃkhya*, the *Advaitavedānta* cannot prove logically the independent status of upamana as a source of knowledge.

*The Sāṃkhya view:*

The *Sāṃkhya*, on the other hand, has reduced *arthāpatti* to inference. According to the view of this school, inference, in this case, is as under:

If a living being is present at home, he is not elsewhere.

*Caitra* is absent from home.

*Caitra* is elsewhere.

Here, *vyāpti* is of the form "Where there is no absence from home in the case of living beings, there is no presence elsewhere", for which instances can be gathered from living persons who are not absent from home and for that reason are not present elsewhere.

In the opinion of the *Sāṃkhya* School, living *Caitra*'s non-existence in the house is not contradictory to his existence elsewhere. Non-existence of living *Caitra* in his house does not





wipe out his existence. Existence and non-existence are contradictory terms but non-existence in the house and existence in general are not to be regarded as contradictory to each other.

Generally, if any school of Philosophy admits *vyatirekī anumāna* as valid, then it can very well reduce *arthāpatti* to a form of inference.

The *Sāṃkhya* has not accepted *anupalabdhi* as a source of knowledge. In the opinion of this school, 'negation' can be known through perception. The negation of the jar on the ground (*bhūtale ghatābhavāh*) is a modification of the ground only and not a separate category. So, we can perceive negation through *saṃyuktatādātmyasannikarṣa*. There will be *saṃyoga* (contact) between the eye and the ground. There is non-difference between the ground and its modification. So, the negation of the jar on the ground will be cognized *saṃyuktatādātmyasannikarṣa*.

*Īśvarakṛṣṇa* considers knowledge as a form or function of *Buddhi* when *Sattva* dominates in it.<sup>1</sup> He also recognizes both of the above states of *Puruṣa*. While discussing the essential nature of *Puruṣa* he had in mind the transcendental state. That is why, he states that *Puruṣa* is a mere witness of the world show without taking active part in it. He is a passive observer of *Buddhi*'s activities.<sup>2</sup> *Vijñānabhikṣu* distinguishes between observing and witnessing. The former is with reference to the *Buddhi*'s activities which are closely related and consequently near to it. The latter is with reference to the worldly objects which are not so closely related to *Puruṣa*.<sup>3</sup> *Puruṣa* is neutral and, hence, has no interest or favour and prejudice towards worldly objects.<sup>4</sup> He is the witness and, hence does not act or restrain others from action. He is devoid of all kinds of activities.<sup>5</sup> However, *Īśvarakṛṣṇa* takes into consideration the empirical state of *Puruṣa* when he describes *Puruṣa* as a cogniser and the experiencer.<sup>6</sup> *Īśvarakṛṣṇa* attributes the knowledge leading to liberation to *Puruṣa* itself.<sup>7</sup>

Knowledge, according to *Vācaspatimiśra*, is the function of *Buddhi* which means to take the form of the object. It arises when *Sattva* in *Buddhi* becomes dominant over *Tamas* which is suppressed therewith when the form of the object is given to *Buddhi*.<sup>8</sup> The *Buddhi*, of course, is insentient in nature but *Puruṣa* is reflected into it and the *Buddhi* becomes as if intelligised. Thus results as if identity of the two. The *Buddhi* becomes possessed of knowledge and pleasure, etc.<sup>9</sup> The knowledge is thus getting the form of an object through this as if intelligised *Buddhi*. *Vācaspati* elaborately explains how *Puruṣa* comes to be erroneously associated with knowledge. He lays stress on retaining the transcendental pure nature of *Puruṣa*. He maintains that knowledge, of course, arises in *Buddhi* but is erroneously attributed to *Puruṣa*. *Vācaspati* holds that the erroneous exchange of qualities is due to the proximity of *Buddhi* and *Puruṣa*. However, he explains that the contact is not spatial or temporal. It is in the form of capability. The *Puruṣa* has got the particular capability of being an enjoyer and *Buddhi* has that of being an object of enjoyment.<sup>10</sup> In other words, it is the capability of *Puruṣa* to be reflected and that of *Buddhi* to receive the reflection. Due to this kind of capability *Puruṣa* takes the function of the *Buddhi* as his own just as there is redness in crystal due to the proximity with the *jabā* (China rose) flower.<sup>11</sup> The notion is neither natural nor caused, but is conditional. It is just like a man considering his face dirty when seeing a dirty mirror. This does not bring any change in the *Puruṣa* which always remains in its essential nature. *Vācaspati* further makes it clear that this kind of notion of attribution of qualities also belongs to *Buddhi* itself as is the case with the





further functions of *Buddhi* with reference to the objects like word, etc., since the notion is experienced as non-sentient. But still it erroneously appears to be belonging to *Puruṣa* when the latter is erroneously taken as identical with *Buddhi*. Thus, after attaining the discriminative knowledge it is experienced that *Puruṣa* appeared as having the perverted knowledge though it is essentially devoid of it.<sup>12</sup>

*Vācaspati* elucidates the process of apparent exchange of qualities through his theory of 'single reflection.' *Puruṣa* is reflected into *Buddhi*. *Buddhi* becomes as if intelligised and starts knowing the objects submitted through the organs. The qualities of *Buddhi* are attributed to this reflection of *Puruṣa*. *Vācaspati* explains it with the example of moon reflected into water. The unshining water becomes shining with the reflection of the moon in it. This water reflected with the shining of the moon acts like a shining object. Similarly, the *Buddhi*, starts acting like an intelligent agent of knowing with the intelligence of *Puruṣa* reflected in it. Similarly, the acts of moving, etc., really belonging to the water, are superimposed upon the moon. In the same way, *Puruṣa* is erroneously understood to be the locus of functions of *Buddhi*. The transcendental *Puruṣa* is, therefore, merely indirectly related to the process as an 'onlooker' since it does not experience or know directly.<sup>13</sup>

*Vijñānabhikṣu* also holds that the knowledge in *Sāṃkhya-Yoga* arises through the reflection of objects into *Buddhi*. He further holds that the knowledge is related to *Buddhi*. Thus, he tries to retain the *Puruṣa*'s transcendental nature of being immutable, all-pervasive and of the form of the pure consciousness. He holds that *Puruṣa* knows the objects through reflection only. About the process in genesis of knowledge he holds that the object to be known is reflected into *Buddhi* which receives the reflection of *Puruṣa* as well. This *Buddhi* having the reflection of both the *Puruṣa* and object is again reflected into *Puruṣa*. It is through this reflection that the knowledge appears as located in *Puruṣa*.<sup>14</sup> He clarifies the position with the following examples. *Puruṣa* is reflected into the *Buddhi* just like the moon into water and *Buddhi* having the form of objects is reflected back into *Puruṣa* just like the *jabā* (China rose) flower into a crystal. Thus, *Puruṣa* is not really tinged by the reflection of *Buddhi* but has got only a notion of being tinged. This theory of *Vijñānabhikṣu* is called 'double reflection theory' in opposition to *Vācaspatimiśra*'s 'single reflection theory'.

The other systems, however, do not approve the theory of the; *Sāṃkhya-Yoga* and criticize it on many grounds. Here, we proceed to consider briefly the main arguments of the opponents of the theory, which will be helpful in clarifying the theory still more.

The other systems, however, do not approve the theory of the *Sāṃkhya-Yoga* and criticize it on many grounds.

The Naiyayikas reject the view that the knowledge belongs to *Buddhi* which is intrinsically non-sentient. Otherwise, *Buddhi* would become sentient. Consequently, it would lead the *Sāṃkhyas* to the absurdity of admitting the two sentient entities in one and the same body.<sup>15</sup> Moreover in that case it will be difficult to explain the nature, specific character and role of *Puruṣa* which is intrinsically sentient. If it is argue that it is the *Puruṣa* which becomes conscious of objects and it is the *Buddhi* that knows, it will not improve the case because the basic idea contained in roots such as 'to know', 'to be aware', 'to see' and 'to apprehend' is the



same. If the Samkhyas maintain that the *Buddhi* makes the things known and *Puruṣa* knows, it will contradict their position that *Buddhi* knows the objects.<sup>16</sup>

*Uddyotakara* argues that *Buddhi* is an instrument in the process of knowing and the instrument cannot be a substratum of action. *Vācaspati* explains the argument thus. An instrument is invariably connected with activity. *Uddyotakara* means to say that the instrument cannot be the substratum of the prime action though the secondary action is located in it. For example, the prime action of cutting belongs to the agent while secondary action of rising and falling upon wood belong to the axe. Thus, the act of knowing being principal, belongs to the self and not to *Buddhi*, the instrument of cognition.<sup>17</sup>

The Buddhists also criticize the *Sāṃkhya* theory of attributing knowledge to *Buddhi* and considering *Puruṣa* as unrelated to the process of knowing. *Śāntarakṣita* reiterates the *Sāṃkhya* position that the soul is the nature of consciousness and is different from *Buddhi*. The soul is merely a passive spectator and not an acting agent.

The theory, he objects, implies that the consciousness as the nature of *Puruṣa* is immutable and not different from *Puruṣa*. It cannot account for the different kinds of knowledge of objects experienced to be different in our common behavior. *Śāntarakṣita* considers the theory by putting the following alternatives. If *Puruṣa* does not undergo any change at the time of experience, it would be an experiencer. The non-modifiable objects are not observed to be experiencer.

Consequently, *Prakṛti* cannot be supposed to be act for *Puruṣa*. If *Puruṣa* undergoes modifications, it would not be eternal.<sup>18</sup>

The *Jaina* philosophers object to the *Sāṃkhya-Yoga* view of admitting knowledge as insentient in nature. Knowledge is a function of *Buddhi*. On the one hand it receives the reflection of *Puruṣa*. *Puruṣa*, while reflected into *Buddhi*, makes the objects known to *Buddhi*. *Buddhi* becomes identical with *Puruṣa* due to the contact with *Puruṣa*. Thus, *Buddhi* which is essentially non-sentient appears to be sentient.<sup>19</sup>

The critics further disprove the *Sāṃkhya-Yoga* explanation for the process of genesis of knowledge. Knowledge cannot arise without the combined activity of *Buddhi* and *Puruṣa*. *Puruṣa* is, however, immutable and inactive in comparison with *Buddhi* which is modifiable and active. The *Sāṃkhya* philosophers cannot explain the relation between the two in one and the same locus.

*Vācaspati* states that the Samikhyas hold that *Buddhi* acts like sentient entity when *Puruṣa* is reflected into it.

He argues that *Buddhi* cannot reflect the Consciousness of *Puruṣa* in the way the moon reflects the light of the sun, for the *Puruṣa* being non-modifiable, cannot be reflected into *Buddhi*.<sup>20</sup> In



the supposition of reflection the act of reflecting may either belong to *Buddhi* or to *Puruṣa*. It is, however, not possible in the case of either of the two. *Puruṣa*, being non-modifiable and having no power of entering into others, cannot be reflected into *Buddhi*. If *Puruṣa* is supposed to be reflected into *Puruṣa*, it will be difficult to explain the nature and function of *Puruṣa*. Moreover, it will contradict the position of the Sāṃkhya that *Puruṣa* is seen by its very nature because in that case there is no need of its reflection into *Buddhi*. Jayanta Bhaṭṭa argues that *Mahat* which knows cannot be aware of the object and *Puruṣa* which can be aware of the object cannot be a knower since it cannot undergo change. Thus, it implies two substrate of knowledge. Knowledge belongs partly to *Puruṣa*, partly to *Buddhi* and completely to none.

*Prabhācandra* further argues that the statement that due to the contact of *Buddhi* and *Puruṣa* one gets confused to discriminate between the two, carries no sense. Even two distinguishable things like fire and iron ball appear as one without a tinge of confusion. Moreover, the example is not applicable to the example. The hot iron ball is experienced to be born fresh with new qualities like touch. *Buddhi*, however, cannot be taken as born afresh.

*Vātsyāyana* rejects the *Sāṃkhya-Yoga* theory because of its implying the existence of two conscious entities *Vācaspati* states that the Samkhyas hold that *Buddhi* acts like sentient entity when *Puruṣa* is reflected into it. He argues that *Buddhi* cannot reflect the Consciousness of *Puruṣa* in the way the moon reflects the light of the sun, for the *Puruṣa* being non-modifiable, cannot be reflected into *Buddhi*.<sup>20</sup> In the supposition of reflection the act of reflecting may either belong to *Buddhi* or to *Puruṣa*. It is, however, not possible in the case of either of the two. *Puruṣa*, being non-modifiable and having no power of entering into others, cannot be reflected into *Buddhi*. If *Buddhi* is supposed to be reflected into *Puruṣa*, it will be difficult to explain the nature and function of *Puruṣa*. Moreover, it will contradict the position of the Samkhyas that *Puruṣa* is seen by its very nature because in that case there is no need of its reflection into *Buddhi*. Jayanta Bhatta argues that *Mahat* which knows cannot be aware of the object and *Puruṣa* which can be aware of the object cannot be a knower since it cannot undergo change. Thus, it implies two substrate of knowledge. Knowledge belongs partly to *Puruṣa*, partly to *Buddhi* and completely to none.

*Vātsyāyana* rejects the *Sāṃkhya theory* in the single body. However, such a case does not arise in *Sāṃkhya-Yoga*. The consciousness does not remain different but becomes inseparable from *Buddhi* nor does the objection that *Buddhi* being an instrument cannot be invested with main operation stands to reason. *Buddhi* as such is not only an instrument but an agent as well. Fire as an instrument of burning, for example, does not desist from burning. Śāntarākṣita feels that a single homogeneous consciousness cannot lead to different kinds of knowledge. The objection, however, is not applicable to the *Sāṃkhya-Yoga* theory. The difference in types of knowledge is caused by the knowable objects. Śāntarākṣita's further argument if *Puruṣa* is an experience, it would undergo change also can easily be alleviated by the followers of *Sāṃkhya-Yoga*, firstly, because experience in *Sāṃkhya-Yoga* is secondarily spoken with reference to *Puruṣa*, and secondly, the incorporeal object need not undergo change. Śāntarākṣita further finds it strange



that *Buddhi* knows the agent and not the experience. It is, however, not a serious objection. The *Buddhi* considers itself enjoyer and thus does not know the other real enjoyer.

*Prabhācandra* has further agreed that the confusion of identity cannot take place through the contact of *Buddhi* and *Puruṣa*. This argument, however, loses the ground, when the possibility of such a confusion of identity is established through common experience. It is observed that the incorporeal object in contact with the corporeal object becomes fully identical with the latter. The light falling upon some object is not distinctly observed as also the sky in contact with the corporeal object seems to be identified with the latter itself. Nor are the Samkhyas compelled to admit the fresh production of *Buddhi* invested with consciousness. The change is in the state of *Buddhi* and not in the essence of *Buddhi* just as falling of light does not bring the essential difference in the object. In this way, the Samkhyas can explain the meaning of the statement ‘ the *Buddhi* becomes as if sentient’. *Buddhi* is invested with incorporeal consciousness and acts like sentient object though without changing essentially. Thus, the statement is neither is purely metaphorical sense nor does it imply the sentience in *Buddhi* as the essence of *Buddhi* itself. It is like the moon looking like a shining object with the light of the sun. Here, the light like consciousness should not be misunderstood as different from *Puruṣa*, but it forms the very nature of *Puruṣa*. Knowledge is to take the form of the object by the non-sentient *Buddhi* which is modified into the form of the object just as mirror attains the form of the object. *Prabhācandra* argues here that the knowledge being formless cannot receive the reflection. Here, he ignores the fact that the object is reflected into the *Buddhi* and the *Buddhi* is not formless. Hence, the objection is not applicable to *Sāmkhya-Yoga*.

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## AN OVERVIEW OF ENORMOUS POTENTIAL OF NATUROPATHY: TO MANAGE VARIOUS DISEASE CONDITIONS.

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### Abstract

*Naturopathy is gaining importance & momentum in India. It is an old science based on philosophy founded on natural principles of healing. Naturopathy practices have health promotive, disease preventive, curative and rehabilitative values. Recognizing and realizing the need for developing naturopathy system on the basis of its own principles, the Government of India established Central Council for Research in Yoga & Naturopathy (CCRYN), New Delhi and National Institute of Naturopathy (NIN), Pune, Maharashtra. Approximately 500 Naturopathy hospitals are currently functioning in the country having indoor and outdoor treatment facilities. These hospitals are engaged in the propagation of positive health, treatment and management of various life style and psychosomatic disease conditions and are serving the suffering masses. In this paper the author giving the brief history and present status of naturopathy in India.It's present status,future challenges for to make its maximal utilization in the national health care.*

**Keywords:** *Naturopathy, Life style disorders, Psychosomatic diseases, Evidence-Based medicine.*

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### Introduction

Naturopathy is one among the various systems of traditional health care available in India. This is also called as the science of healthy living. The naturopathy system of healing is based on philosophy of natural healing with its own concepts of health, disease and their management. Naturopathy lays equal importance on both preventive and curative aspect of health care. Moreover, naturopathic practices are easy to follow and can be integrated well in the daily routine of people as may be required. This is one of the reasons that Naturopathy is becoming popular globally

### History of Naturopathy

The evolution of Naturopathy may be traced as old as the history of mankind and the history of eruption of diseases. In a bid to find remedies to their day to day sufferings, early civilizations took the respite of nature. These health care practices gradually enriched with continuous observations evolved as natural methods of healings. Panchmahabhutas or the five eternal components of universe could have been the easiest resource to mitigate the sufferings for their ready availability. It is easy to comprehend that the present form of Naturopathy is the outcome of a continuous evolution based upon the observation of natural process healing methods and ways of healthy living(1).





Naturopathy is a traditional system of healing based on time-tested principles which govern life and health. These principles of healthy living, prevention and healing are firmly integrated in the customs and culture of people living in India since antiquity. Many of these fundamentals are well documented in the ancient Indian scriptures like Vedas, Upanishads and Epics like Ramayana and Mahabharata.

The sages of the Vedic period had clear concept about the therapeutic values of earth, water, air and sun. A good description is available in Atharvaveda and Yajurveda narrating the qualities and therapeutic potentials of these elements. Earth is narrated as 'Mother, Water is considered as Amrita (Panacea) and Sun was equated to Brahma (Creator). There is extensive mention of Vayu (air) in Rigveda and it is considered to be the divine force of all activities, sensations and peace. Perhaps these considerations have lead to different cults which worship trees, rivers, sun, and which culminated into personification of natural resources as deity like Gods of rain (Indra), god of air (varuna) etc.

In Rigveda fasting is considered as supreme medicine having a capacity to eliminate the accumulated toxins from the body. The Manu Smriti prescribes rules and regulations about personal hygiene. The Bhagavat Gita has elucidated in detail regarding the three varieties of food vs. Sattwik, Tamasik and Rajasik and its effect on human body and mind. Ganges, throughout ancient Sanskrit literature, finds mentioned as a Holy river and water of Ganges is considered to have property of healing the diseases and detoxifying the body and mind. Thus, it can be concluded that use of water, air, sun (heat), earth etc. was widely prevalent in ancient India since

Vedic period for their healing as well as health promotion potential.

### **Modern Development of Naturopathy**

The modern development of Naturopathy was started simultaneously in America, Germany and other Western countries with the development of Water Cure (Hydrotherapy). In 1820s, Dr. Isaac Jennings of America codified the principles of Naturopathy and an Austrian farmer Vincent Priessnitz (1799-1851) developed a Hydrotherapy Centre in Gräfenberg. Thereafter, Louis Kuhne of Leipzig, Germany propagated the 'Principle of Unity of Disease and Unity of Cure' and provided a theoretical base to Nature Cure. His book "New Science of Healing" became so popular throughout the globe that it was translated into more than 100 languages including Indian languages like Hindi, Urdu, Malayalam and Telugu.

### **Current Status of Naturopathy in India**

Approximately 500 Naturopathy Hospitals (big and medium) spread throughout the country are providing outdoor/ indoor health care services to common public of rural as well as urban areas in an effective manner with or without Government support. The Government of India also recognized the need of systematic research for the development of Naturopathy and formed two autonomous organizations under Ministry of Health & Family Welfare, Department of AYUSH to look after its development.

(i) The Central Council for Research in Yoga & Naturopathy (CCRYN), New Delhi is founded in 1978 with an objective to conduct scientific research in the field of Yoga & Naturopathy and to establish the efficacy of Yoga & Naturopathy in various



disease conditions. The Council runs its activities with the help of various schemes i.e. clinical research scheme, literary research scheme, running OPDs and conducting keep fit yoga classes for public. The Council provides financial assistance to premier Medical as well Yoga and Naturopathy Institutions in the country for undertaking research studies on these systems (2).

(ii) National Institute of Naturopathy (NIN), Pune is founded in 1986 with the objective to conduct, facilitate & encourage research activities in all aspects concerning human health and to develop naturopathy as a system of medicine and as a way of life is it's another objective (1).

As presently there is no Central Regulatory Body for Registration of Practitioners of Yoga & Naturopathy, Standardization of courses and Accreditation of Naturopathy Hospitals, the progress of naturopathy is not reaching up to the expected level. However, some of the States have provision of Registration of these practitioners as under

- a. Board of Indian Medicine, Secunderabad, Govt. of A.P. and Andhra Board of Ayurveda, Secunderabad, Govt. of A.P.
- b. Karnataka Ayurveda, Unani & Naturopathy Practitioners Board, Bangalore, Govt. of Karnataka
- c. Tamil Nadu Board of Indian Medicine, Chennai, Govt. of Tamil Nadu
- d. M.P. Ayurveda evam Prakritik Chikitsa Board, Bhopal
- e. Chhatisgarh Ayurvedic, Unani tatha Prakritik Chikitsa Board, Raipur Some more

States are actively considering for introducing regulation on the practice of Naturopathy. Some have also made Naturopathy Development Boards for the furtherance of the system of Naturopathy in their States.

### Education

A number of colleges of naturopathy affiliated to respective Medical or State Universities/ Deemed Universities are imparting degree level education of 5 or 5½ years duration leading to the degree of Bachelor of Naturopathy & Yogic Sciences. Three colleges are run by State Governments one each by Government of Andhra Pradesh, Karnataka and Tamilnadu respectively. Some universities also offer Diploma/ PG Diploma level education in the field of Naturopathy. Some Open Universities have also started courses in Naturopathy, however, there is no uniformity in the curricula.

### Naturopathy Hospital

Setup Hundreds of naturopathy hospitals having more than 50 beds facility are functioning in rural and urban areas in different parts of the country on private initiative. Some of them are quite big and having more than 150-200 beds strength with all requisite treatment facilities. In Kerala two Government Naturopathy Hospitals are working since long. Similarly hundreds of naturopathy clinics are working on outdoor basis and providing naturopathy health care facilities to the patients.

### Research Infrastructure

In view of increasing role of Naturopathy as a therapeutic intervention in various psychosomatic and lifestyle disorders, the scope of research to establish the efficacy of Naturopathy is also increasing(14). Efforts are being made to explore the potentials of Naturopathy at



various research institutions of Naturopathy and also Modern Medicine. The findings are indicative that Naturopathy is quite useful and can play a substantial role in the management of various diseases/disease conditions including psychosomatic disorders. The research infrastructure in respect of Naturopathy in the country is gradually taking a shape. Naturopathy Hospitals are showing interest in research activities. Hopefully research activities of Naturopathy will gain a momentum in future with or without support from Government. Research publications are also brought out for dissemination of the information.

### Therapeutic Approach

Naturopathy is having its specific therapeutic approach which is different from other systems of medicine. It treats the body as a whole. The fundamental difference of Naturopathy with other systems is that its theory and practice are based on holistic view point where as the later approach is reductive. Naturopathy does not believe in the specific cause of disease and its specific treatment but takes into account the totality of factors responsible for disease such as one's unnatural habits of living, thinking, working, sleeping, relaxing, sexual indulgence etc.(15) and also considers the environmental factors which disturb the normal functioning of the body on the whole which leads to a morbid, weak and toxic state(12). For treatment, it primarily stresses to correct all the factors involved and allows the body to recover itself. Hence, the Naturopath helps in nature's effort to overcome disease by removing the obstacles in the way of self correcting efforts of the body by applying correct natural modalities and controlling the natural forces to work within the safe limits(13). This specific therapeutic approach is the actual strength of naturopathy.

### Future Challenges

Naturopathy system is having enormous potential with reference to management of various disease conditions but not fully utilized due to various reasons. Naturopathy system can prove its metal if full scope is given for its development as per its principles. It is found effective in the treatment and management of many of the life style related disease conditions i.e. Coronary Artery Disease (CAD), Diabetes Mellitus, Bronchial Asthma, Arthritis, Hypertension and Anxiety etc.(16). where other systems have almost no relief. The metropolitan life is becoming more hectic and mechanical every day. Hence, the importance of naturopathy is increasingly realized by the people to adopt it as a part of their daily routine and life style to make them healthy (6). Rastogi (2008) has shown an inclination of patients towards non-pharmacological and non-invasive therapies of naturopathy (8). WHO estimates that India will have the highest no. of CAD patients in the world and India is ill equipped to manage this increasing demand for care (4).

Naturopathy is an experienced science having its definite role and importance in the treatment and management of various disease conditions(10). A new trend of integrating the practices of naturopathy in ameliorating suffering of patients by leading practitioners of other systems is developing which indicates the importance of naturopathy today and its possible role in future(9).

Some of the future challenges for naturopathy fraternity, policy makers and health planners are given below:

1. To standardize the treatment procedures of naturopathy to make them more effective and result oriented.



2. To develop a research oriented attitude among the naturopathy physicians to make them more focused towards evidenced based research.

3. To develop common protocols of naturopathy for the treatment and management of various disease conditions i.e. Coronary Artery Disease (CAD), Diabetes Mellitus, Bronchial Asthma, Arthritis, Hypertension and Anxiety etc. so that these could be adopted/followed by the researchers to see its impact and effectiveness as an effective mode of treatment(17).

4. To prepare standard text books on various subjects of naturopathy for students based on up to date information, knowledge and evidences.

5. To improve the quality of treatment in naturopathy hospitals by fixing the minimum standards.

6. To adopt better documentation techniques for preparation of case histories and maintenance of treatment and follow up records etc.

7. To establish naturopathy as an evidence based medicine (EBM) and make it a globally accepted mode of treatment.

8. To prepare data bank of naturopathy hospitals, clinics, books, photos of treatment procedures and practitioners functioning in the country.

9. To take steps to cut down the increasing expenses in health care delivery and to reduce the burden of treatment from the common people by disseminating the message of naturopathy for prevention of diseases.

10. To develop naturopathy hospitals as research centers for treatment of specific disease conditions.

11. To take necessary measures to realize the dream of health for all in comparatively shorter period of time by adopting naturopathy.

12. To integrate naturopathy as add on therapy in research studies and also in the treatment and management of life style related disease conditions.

13. To highlight the preventive aspects of naturopathy.

14. To promote the traditional Indian life style/positive life style and its benefits among the people.

15. To enhance the level of awareness among the people regarding the health care benefits of naturopathy.

16. To study the perception of patients visiting naturopathy hospitals for improving the quality and facilities of treatment.

17. To set up naturopathy information and documentation centre (NIDC).

18. To encourage pilot studies/ research studies on various modalities of naturopathy like mud therapy (10), fasting therapy etc. and their possible impact on various disease conditions.

### Limitations

While discussing the future challenges, attention should also be paid that naturopathy system of treatment with a lot of merits also have certain limitations in



terms of taking more time in showing the results. One of the reasons behind this may be that the patient considers taking naturopathy treatment as a last resort. Moreover, naturopathy needs patience from the patients. In accidents and surgical cases naturopathy has a limited role to play(7). However, in post operative cases it can be used effectively (4).

### Conclusions

Based on the information presented, it may be concluded that naturopathy has

enormous potential and can become an effective mode of treatment in various disease conditions, however, a research oriented scientific approach is required to be adopted to meet the future challenges and to establish the system of naturopathy as evidence base medicine (EBM) and a globally accepted mode of treatment (5). This task requires collective efforts of stake holders in a phase wise/time bound manner with a focused vision (3).

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## People centric use of Medicinal plants at Dadanpatrabar of Coastal Purba Medinipur in West Bengal, India

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### Abstract

*Dadanpatrabar is a site nearer to coastal Purba Medinipur harbor many valuable medicinal plants but some of them used by local people for various purposes. The use of medicinal plants and their parts are diverse. People use allopathic medicine, homoeopathy as well as medicinal plants directly to cure different ailments. They use no medicine under ayurvedic system. Common diseases associated with the community people of Dadanpatrabar are fever, common cold, cough, dysentery, bowel problems, gastrointestinal problems and indigestion. Insomnia and urinary problems are also observed with low intension of pox like disease. Leaves, whole plants, seeds, fruits, stem and root parts of medicinal plants are used for various purposes. The present paper reflects 19 medicinal plants and their conservation in the home garden of local people have been presented. This may lead to attract more people to use various medicinal plants which have no side effects as the use is indigenous practice based found among the people in the same community at Coastal Purba Medinipur.*

**Keywords:** Medicinal plants, home gardens, use pattern and conservation.

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### INTRODUCTION

Coastal belt in erstwhile Midnapore, the historically famous site is now fall under Purba Medinipur District in West Bengal State of India (Das and Ghosh, 2018). Coastal Purba Medinipur District is famous in West Bengal from the ancient age. Purba Medinipur is one of the 23 administrative districts of West Bengal with the head quarters at Tamluk (Tamralipta) which was previously called

‘Tamralipta’ (Bandyopadhyay, 2009). It was formed on 1<sup>st</sup> January 2002 after partition of Medinipur into Purba Medinipur and Paschim Medinipur though later on Paschim Medinipur is divided into Jhargram and Paschim Medinipur district since 2017. The state of Odisha is at the southwest border; the Bay of Bengal lies in the south; the Hoogly river and South 24 Paraganas district to the east; and Howrah district to the north east. The district has four sub-divisions namely Tamluk, Contai, Egra and Haldia



(Wikipedia, 2017). Total area of the district is 430140 lakh hac. The Purba Medinipur district is geographically located between 21° 36' 35"N to 22°57' 10" N latitude and 86° 33' E to 88° 12' 40" E longitude (Das and Das, 2014). Topographically the district can be divided into two parts i.e. a) almost entirely plane lands on the East, west and north and b) the coastal plain land on the south. The coastal belt of Purba Medinipur district is 27% of West Bengal. This district has a long coastal tract of 65.5 km extending from West Bank of Hooghly estuary from New Digha and then Junput, Dadanpatrabar, Khejuri and Haldia on the east to the further north east up to the Tamruk or bank of Rupnarayan (Mondal *et al.* 2013). It has five administrative Community Development Blocks, namely Khejuri II, Contai II (Desapran), Contai I, Ramnagar I and Ramnagar II. The elevation of the district is about 10 meters above mean sea level. This belt is often occasionally affected by the cascades of cyclones and strong storms. 'Fani' a strong storm attacked recently in the year 2019 though no serious dame recorded till date except Puri and Bhubaneswar in Odisha..

The environment is characterized by strong winds, erosion, high evaporation, salinity and scarcity of nutrients in the soil. The soil of coastal belt is mainly alluvial, sandy and saline. Alluvial soil is found in inland which is very fertile and different types of crops and vegetable are grown. Sandy soil is found in sand dunes and generally least of or devoid of organic matter. Saline soil is found in coastal tidal area and in salt pan (Das, 2014). Major rivers of Purba Medinipur are Haldi,

Rupnarayan, Rasulpur, Bagui and Keleghai. River water is an important source of irrigation. Majority of plant species available are wild natural kind but a few of them are agricultural type. Some plants are introduced type used time to time for various purposes. Coastal areas and tidal areas are covered with halophytes and halophytic associates. There are some exotic species like *Eupatorium*, *Lantana*, *Parthenium* etc. Local people cultivate land with different economic plant species like Rice, Khesari (*Lathyrus* sp.) etc. They sell those items in different places along with local wild and cultivated economic plants in local market. But, all plants species are influence in their habitat and extensively used by local people for different purposes. Man made influence posed as a threat on those plants. These are mainly anthropogenic activities which are fishery, tourism, setting of industries which cause a great loss of vegetation as well as natural ecosystem fragile. People destroy flora knowingly or unknowingly here and there.

Coastal areas of Purba Medinipur have fragile ecosystem and havoc vegetation which are very much important due to its patterns and types. But now a day the area is thickly populated and filled with huge number of tribal people including fishermen. They occupy the belt for their occupation. Thus a category of people destroy natural vegetation too. Natural causes like strong wind, cyclone, high tide etc. cause serious damage on ecosystem and vegetation simultaneously. The halophytic association and sand binders available near the coast are also being damaged equally. In this regard, a general overview of land pattern changes



time to time and make vulnerable habitats that ruins composite diversity of ecosystem. This change may affects on the economic condition of local people as the natural resources are facing threat. Remembering these it is very important to study and monitor the vegetation, to make strategy to restore ecosystem. It is urged that coastal zone management authority, state government, Central Government and local people would take possible measures to make it pristine. By and large from our corner it is important to study natural resource for strategy development. Not only that the whole we can make an action plan to study and research on natural and planted medicinal and economically important plants that have potential valued. Vegetation of such belt may be protected in coastal belt areas to save the natural ecosystem as the situation create a challenge to the plants and people as well as humanity to make a safeguard for near future. The present study records some medicinal plants and the use value in Dadanpatrabar area of Coastal Purba Medinipur. It will help to create to revive the habitual from degradation as well as to re-vegetate the land with economic and important plants for economic development of local people.

### STUDY AREA

Dadanpatrabar is located in Ramnagar II Block of Purba Medinipur, West Benagl. Mandarmoni which is well popular tourist spot is very close to Dadanpatrabar. It is about 180 Km from Kolkata and 14 Km from Chaulkhola ( spot on Mecheda Digha metallic road.). Mandarmoni is 5.5 Km. away from Dadanpatrabar. People here use

Bengali and mixed Oriya language. Hindu, Muslim and other religion people live here. General caste, SC, ST and OBC are found here. Soil type is mainly alluvial.-sandy and saline. Summer temperature ranges from 32°-39/40° C. Winter ranges from 9°-21° C. People depends on mainly fishing work. Dadanpatrabar is a major fish landing centre by local fishing community. These communities establish fish land centre is called 'Khati/khoti'. A large proportion of fish is dried and sold from these khoties. These dried fishes are called *Shuntki*. Innumerable fisheries are made by the local fishermen. Beach is used for fish drying. A few years ago there were huge sand dunes but now all are vanished. But now a day due to construction of tourist spot and resorts, this beach is captured. Sand mining is done continuously, so naturally there is no sand dune along with important medicinal plants. This area is full of phytodiversity conserved by people in their own home gardens. Drumstick, *Pandanas*, *Acanthus*, *Pedaliium*, *Vitex*, *Bamboo*, *Borassus*, *Phoenix*, *Cocos*, *Terminalia* species and and other species of mixed vegetation present here. But due to anthropogenic activity vegetation is affected day by day. Towards beach area, an important plant *Glorissa superba* (A threatened species) was recorded but now the density is low. The habitat is sand dune is vanishing abolished due to sand mining. Sand binders are also affected. Tourists and local people drive vehicles through beach. Thus top sand is destroyed and lower blackish mud is awakened.

### MATERILS AND METHODS

People centric use of Medicinal plants at Dadanpatrabar of Coastal Purba Medinipur in West Bengal, India/Manika Das and Debabrata Das



Several ecological surveys were done in the coastal areas of Purba Medinipur during last 4 years. In this year some surveys on market field have been conducted. Survey was conducted in four ways. Field study was done at village boundary, coastal roads, canal boundary, road sides, and rice field boundary, edges near wet lands, wastelands, and open field and in the public garden of the coastal Medinipur. Study was made with quadrat method seasonally. In domestic purpose people use medicinal plants. Data sheet was made earlier and house survey was done. In each site 5 members were selected randomly and in such a way 5% sampling was done successfully to know the present status of use value of medicinal plants along with other medicine used by them for their treatment upon ailments. Camera, pen pencil, data sheet, GPS was used along with earlier references. Dry parts of fruits, seeds, barks, roots etc were preserved with naphthalene balls. Plant identification was done with the help of standard literature ( Duthie, 1960; Hooker 1892-1897, Haines, 1921-1925; Prain, 1963; Das 2007, Anonymous, 1997, 2005, 2010, 2012, 2017) The names of plants were crossed checked following Bennet, 1987. Publications consulted for last few years were Chakraborty *et al.* 2012; Das and Das, 2014; Das, 2013; Das, 2015. Wetland plant species were indentified with the help of fresh water vegetation of Rimer, 1984. The specimens of medicinal plants were indentified with the help of museum specimens and herbarium specimens of CAL. Herbarium specimens were prepared as per the methodology of Jain and Rao, 1977. To study use pattern of medicinal

plants, different books of Government sections have been consulted. But for general consideration the common book used was Kirtikar and Basu, 1918. Herbarium specimens were collected as per the manual published by Rao and Sharma, 1990. Halophytic species have been identified with the help of manual on mangroves in India (Banerjee *et al.* 1986). Other literature used were Blasco (1975), Banerjee (1987), Dwivedi *et al.* (1974), Mukherjee (1978), Naskar *et al.* (1978), Rao *et al.* (1972), Sanyal *et al.* (1984), Sidhu (1960), Thothatri (1981), Wahead Khan (1959), Walson (1928), Gul and Khan (1995), Subhanian *et al.* (2010), Jha *et al.* (2011) and Ahmed *et al.* (2011), Das and Ghosh (2017, 2018).

## RESULT AND DISCUSSION

Medicinal Plants used by the people of Dadanpatrabar is very interesting. People use allopathy, Homoeopathy and Ayurvedic medicine though apply medicinal plants directly or indirectly along with other ingredients. The use pattern and % use of various systems of treatment at Dadanpatrabar is unique. Fifty % of the total people surveyed use direct medicinal plants whether other systems used by the people are allopathy (20%), homoeopathy (30%). Most of the people under survey community not used Ayurvedic medicine (Fig. 1). They use medicinal plants for various purposes like in cough, dysentery, bowel complaints, in fever, pox, asthma, common fever, gastrointestinal disorder, common cold, diarrhea, digestion problem, leucorrhoea,



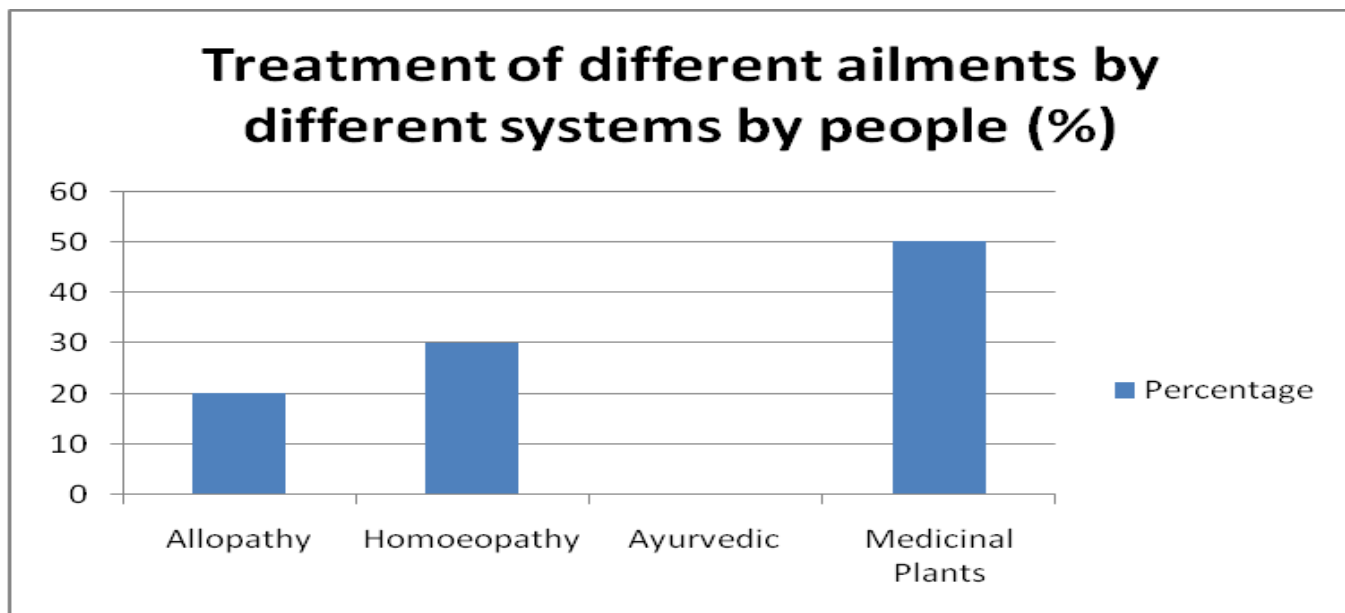
burning sensation of urination, earache, blood pressure, sore teeth and in constipation. They use the plants from their home gardens. They use the plants to propagate all the plants in their home gardens through seeds, stem cuttings, from rooted stem, shoot of mother plants available nearby. People take care and use all the plants round the year. All types of

medicinal plants and their parts used by the people of age group 4-65 years in the said community in Coastal Purba Medinipur. Result revealed that a total 19 species of medicinal plants used by the people of Dadnpatrabar for ready use to treat different ailments (Table 1). So, there is a huge scope to study use value and potential dose of medicinal plants in near future.

**Table 1. Medicinal plants used by villagers at Dadanpatrabar of Purba Medinipur, West Bengal**

Sl. No.	Scientific name	Parts used	Medicinal use or Purpose of use as medicine
1.	<i>Acalypha indica</i>	Whole plant	Used in gastrointestinal problems.
2.	<i>Achyranthes aspera</i>	Whole plant	Dried plant infusion cures burning sensation of urination.
3.	<i>Ayapana triplinervis</i>	Whole	Juice used to lower the blood pressure.
4.	<i>Centella asiatica</i>	Leaves	Leaf juice cures dysentery.
5.	<i>Clitoria ternatea</i>	Root	Paste and black peppers cures leucorrhoea.
6.	<i>Cynodon dactylon</i>	Leaves	Stop bleeding from piles, decoction treat blood dysentery.
7.	<i>Enhydra fluctuens</i>	Leaves	Leaf juice cures dysentery.
8.	<i>Foeniculum vulgare</i>	Seeds	Soaked and used early morning to cure liver problems.
9.	<i>Grangea maderaspatana</i>	Leaf	Earache treatment
10.	<i>Marselia quadrifolia</i>	Leaves	Improves memory loss, cures insomnia.
11.	<i>Moringa oleifera</i>	Leaves	Cooked leaves controls blood pressure
12.	<i>Ocimum basilicum</i>		Treat cough and cold
13.	<i>Ocimum sanctum</i>	Leaves	Used for cough and fever
14.	<i>Ocimum sanctum</i>	Leaf	Fever and in cough, juice with honey cures cough.
15.	<i>Phylla nodiflora</i>	Leaves	Decoction used to cure indigestion of children.
16.	<i>Polygonum plebeium</i>	Whole plant Seeds	Used in constipation and bowel complications.
17.	<i>Ruellia tuberosa</i>	Leaves	Leaf decoction used to cure chronic bronchitis
18.	<i>Solanum nigrum</i>	Fruits	Used in Leucorrhoea
19.	<i>Spondias pinnata</i>	Fruits	Used to cure sore teeth and in dysentery.

**Note:** Data Collected from field on the basis of requirements using data format.



**Fig. 1 Various use pattern including medicinal plants at Dadanpatrabar to cure different ailments of villagers at Dadanpatrabar, Contai, Purba Medinipur.**

### CONCLUSION

Ecosystem damage and soil erosion is going on which causing threats to community due to anthropogenic and natural causes. As a result, species are destroying from habitats and one microclimate is converting in to a new habitat. In some places, new halophytic plantations are uprooted and destroying by grazing. Renovation of canal system has created damage to associated flora. Coastal bank has been broken by tidal flow day by day. As a result natural vegetation and medicinal plants are vanishing locally. Therefore, due to non availability of species of medicinal plants or their population size is so limited that exact amount of medicinal plant biomass was un available. So, it is highly recommended that each and every people

should create home medicinal plant garden or kitchen garden to easy access the valuable medicinal plants.

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## বাংলা ভাষা-সাহিত্য গবেষণা : প্রযুক্তিগত সীমাবদ্ধতা ও সম্ভাবনা

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### প্রবন্ধসার (Abstract)

একশতকরে আধুনিক সভ্যতার যুগে গবেষণার ক্ষেত্রে তথ্য প্রযুক্তি আধুনিকতম আয়ুধ। ডিজিটাল যুগে এই বস্তুগত সহায়ক মাধ্যম ছাড়া গবেষণা কর্ম সম্পন্ন করা অসম্ভব। শৈবে দূরদর্শনের পরদায় মহাভারতে লোক শ্রীকৃষ্ণের ব্রহ্মাণ্ড দর্শন করে আশ্চর্যান্বিত হয়ে পড়েন। আর এখন একটি মুঠোফোনে গোটা ব্রহ্মাণ্ড পকেটে বসে নিয়ে বড়োছাড়া পশ্চিমবঙ্গ-আসাম-ত্রিপুরার সহ প্রত্যেকেরই পক্ষেই সম্ভব। রাষ্ট্রের বাংলাদেশের রাষ্ট্রীয়-মর্যাদার স্বীকৃতি বহন বাংলা ভাষা-সাহিত্য গবেষণার ক্ষেত্রে তথ্য প্রযুক্তির একশতাংশ সফল নেওয়ার ক্ষেত্রে পৃথিবীর সপ্তম বৃহত্তম ভাষীক গোষ্ঠী প্রতিনিয়ত বহুবিধ সমস্যার সম্মুখীন।

২০১০ সালে পশ্চিমবঙ্গ সরকারের তথ্য প্রযুক্তি এবং বৈদ্যুতনিক বিভাগ প্রত্যাশিত ভাষা প্রযুক্তি ও গবেষণা পরিষদ ভাষা গবেষণার লক্ষ্যে বাংলা সাহিত্য সম্ভার অনলাইন পাঠ ও ব্যবহারের জন্য ইউনিকোড সম্মত উপায় উপস্থাপন করে। এক পথ নির্মাণের উদ্দেশ্যে বিভিন্ন পক্ষেই কঠোর চেষ্টা চালিয়ে যাওয়া হয়েছে। হিমশৈলে ভাসমান চূড়ার কণামাত্র। বর্তমান প্রবন্ধে বাংলা ভাষা-সাহিত্য গবেষণার ক্ষেত্রে প্রযুক্তিগত সুবিধার নানা দিক আলোচনার পাশাপাশি নানামাত্রিক সীমাবদ্ধতার প্রতিদৃষ্টি আকর্ষণের চেষ্টা রয়েছে। বিজ্ঞানের দ্রুত অগ্রগমনে সবে বাধা অতিক্রমণের পথ প্রশস্তকরণে নিশ্চয়ই কঠোর বা কঠোর কঠোর এগিয়ে আসবে। সতী নিশ্চয়ই প্রযুক্তির পূর্ণ সহযোগিতায় বাংলা ভাষা-সাহিত্য গবেষণা আরও ভূবন প্রসারী হয়ে উঠবে। কালদর্শী রবীন্দ্রনাথ হয়তো সেরকমই এক প্রত্যাশা নিয়ে গিয়ে উঠেছিলেন—

“বিশ্ব-জোড়া ফাঁদ পতেছে, কমনে দই ফাঁকি!  
আধকে ধরা পড়েছে গো, আধকে আছে বাকি।”

**সূত্রশব্দ (Keywords):** বাংলা ভাষা-সাহিত্য গবেষণা, তথ্য প্রযুক্তি, আধুনিকতম আয়ুধ, অনলাইন পাঠ, হিমশৈলে ভাসমান চূড়া।

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□□□□□ :

এই গবেষণা প্রবন্ধে প্রযুক্তিগত সীমাবদ্ধতা ও সম্ভাবনা নিয়ে আলোচনা করা হয়েছে। প্রযুক্তিগত সীমাবদ্ধতা এবং সম্ভাবনা নিয়ে আলোচনা করা হয়েছে। প্রযুক্তিগত সীমাবদ্ধতা এবং সম্ভাবনা নিয়ে আলোচনা করা হয়েছে। প্রযুক্তিগত সীমাবদ্ধতা এবং সম্ভাবনা নিয়ে আলোচনা করা হয়েছে। প্রযুক্তিগত সীমাবদ্ধতা এবং সম্ভাবনা নিয়ে আলোচনা করা হয়েছে।



একজন  
সব  
শশৈবে দূরদর্শনরে পর্দায়  
মহাভারতে  
আর এখন একটি মুঠোফোনে গোটা ব্রহ্মাণ্ড পকেটে বয়ে নিয়ে বড়াচ্ছা  
পশ্চিমবঙ্গ-আসাম-ত্রিপুরার  
প্রতিবিশী রাষ্ট্র বাংলাদেশে রাষ্ট্রীয়  
সাহিত্য গবেষণার ক্ষেত্রে তথ্য প্রযুক্তির একশো শতাংশ সফল নেওয়ার ক্ষেত্রে পৃথিবীর সপ্তম  
বৃহত্তম ভাষীকগোষ্ঠী প্রতিনিয়িত নানাবধি সীমাবদ্ধতার শিকার।

২০১০ সালে পশ্চিমবঙ্গ সরকারের তথ্য প্রযুক্তি এবং বদ্যুতনি বিভাগ প্রতিষ্ঠিত ভাষা  
প্রযুক্তি ও গবেষণা পরিষদ ভাষা গবেষণার লক্ষ্যে বাংলা সাহিত্য সম্ভার অনলাইন পাঠ ও  
ব্যবহারের জন্য ইউনিকোডসম্মত উপায়ে উপস্থাপিত  
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- ক. [www.google.co.in / www.google.com](http://www.google.co.in / www.google.com)
- খ. [www.shodhganga.inflibnet.ac.in](http://www.shodhganga.inflibnet.ac.in)
- গ. [www.archive.org](http://www.archive.org)
- ঘ. [www.wbpublibnet.gov.in](http://www.wbpublibnet.gov.in)
- ঙ. [www.departmental-library.blogspot.com](http://www.departmental-library.blogspot.com)
- চ. [www.rabindra-rachanabali.nltr.org](http://www.rabindra-rachanabali.nltr.org)
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- জ. [www.kolkata-online.com](http://www.kolkata-online.com)

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 -এর এমন আরও  
 থাক-

- ক. [www.google.co.in / www.google.com](http://www.google.co.in / www.google.com)
- খ. [www.boiparaonline.com](http://www.boiparaonline.com)
- গ. [www.banglabooks.in](http://www.banglabooks.in)
- ঘ. [www.quora.com](http://www.quora.com)
- ঙ. [www.boighar.in](http://www.boighar.in)
- চ. [www.rakamari.com](http://www.rakamari.com)
- ছ. [www.boibazar.com](http://www.boibazar.com)
- জ. [www.boiyerhut.com](http://www.boiyerhut.com)
- ঝ. [www.amarbooks.com](http://www.amarbooks.com)
- ঞ. [www.boipoka.com](http://www.boipoka.com)
- ট. Savifa or [www.ub.uni-heidelberg.de](http://www.ub.uni-heidelberg.de)

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অপারেটিং সিস্টেমে (Operating System)-এ  
 (inbuilt)



ফন্ট সাজুজ্য ‘Microsoft Windows’, ডস (DOS), লিনাক্স (Linux), (Apple), (Google’s Android)— (Amar Bangla), (Avro), (STM), (Perfect Typist) মত ফন্ট সাজুজ্য ফন্ট সাজুজ্য— এই ক্রয় করতে। মূল্য এক ত্র এক পাওয়ার পয়েন্ট (power point) উপস্থাপনের ক্ষেত্রেও এক কম্পিউটার থেকে অন্য কম্পিউটারে স্থানান্তর করে দেখা দেয়। এক্ষেত্রে অডিও-ভিডিও সাপোর্টিং-এ অসুবিধে থাকলেও স্লাইডগুলিকে পডিগ্রাফ বা স্থির চিত্রে পরিবর্তিত করে নেওয়া ছাড়া উপায় থাকে না। এমনকি কোনো কোনো কম্পিউটারে বাংলার পাওয়ার পয়েন্ট তৈরি করার ক্ষেত্রে সমস্যা দেখা দেয়। নর্নিস্ট স্লাইডে টাইপ করার সঙ্গে সঙ্গে লাইনগুলি স্বয়ংক্রিয়ভাবে ভেঙে যায়।

পর বই মত বই, এর টি



সবচেয়ে প্রচলিত কীবোর্ড সিস্টেমগুলির মধ্যে একটি হল

কীবোর্ড (letter button) সিস্টেম। এই সিস্টেমটিতে

সবচেয়ে প্রচলিত কীবোর্ড সিস্টেমগুলির মধ্যে একটি হল

কীবোর্ড (letter button) সিস্টেম। এই সিস্টেমটিতে সবচেয়ে প্রচলিত কীবোর্ড সিস্টেমগুলির মধ্যে একটি হল

অন্য কীবোর্ড সিস্টেমগুলির মধ্যে একটি হল

কীবোর্ড (letter button) সিস্টেম। এই সিস্টেমটিতে সবচেয়ে প্রচলিত কীবোর্ড সিস্টেমগুলির মধ্যে একটি হল







২. পাল, ড. পি. কে., সহকারী অধ্যাপক, সিআই এস বিভাগ, রায়গঞ্জ বিশ্ববিদ্যালয়।

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## বর্তমান সমাজের সমস্যা সমাধানের সূত্র হিসাবে জৈন নৈতিকতার ভূমিকা

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### সারসংক্ষেপে (Abstract)

বর্তমান সমাজের বিভিন্নরকম হিংসাত্মক ক্রিয়া দেখে আমরা অনেকে সময় হতাশ হয়ে পড়া পুরতদিনি কোন না কোন হিংসাত্মককে শিকার হতে হচ্ছে কোন না কোন মানুষকে। যে সমাজে আমরা বাস করি সেই সমাজের নানাবিধ নৈতিক প্রশ্ন ও সমস্যা আমাদের সামনে প্রতিনিয়ত দেখা দেয়। যমেন, পশুদরে হত্যা করে তাদের মাংস ভক্ষণ করা উচিত কিনা? প্রাণী হয়ে অপর প্রাণীকে হত্যা করা উচিত কিনা? রাজনৈতিক উৎপীড়ন সমর্থন যোগ্য কিনা? নজি ভোগ-তৃষ্ণা মটোবার জন্য অন্য প্রাণীর উপর ঝাঁপিয়ে পরা উচিত কিনা? ইত্যাদি নানা সমস্যার সম্মুখীন হতে হয়। এইসব সমস্যা সমাধানের সূত্র হিসাবে আমরা জৈন নীতিতত্ত্বের উপর নরিভর করতে পারি।

জৈন নীতিদর্শনে অহিংসাই পরম ধর্ম। এই অহিংসা নছিক সমবদেনা নয়। যেকোন প্রকার হিংসাই বর্জনীয়। যেকোন প্রাণীর প্রতি হিংসা অনৈতিক এবং মোকষরে পথে বাধা সৃষ্টি করে। অহিংসা ও সত্যকে জৈনরা এত ব্যাপক অর্থ্যে গ্রহণ করছেন যে, কোন মানুষের পক্ষেই যথার্থ অহিংস আচরণ করা সম্ভব বলে মনে হয় না। জৈন নীতিশাস্ত্রে শ্রমণদের জন্য কঠোর ব্রতের উল্লেখ থাকলেও সাধারণ মানুষের জন্য যে ব্রত পালনে নরিদশে দেওয়া আছে তা অনেকেই সরল। সন্ন্যাসীদের পালনীয় ব্রতকে বলা হয় মহাব্রত। আর সাধারণ মানুষের পালনীয় ব্রতের নাম অনুব্রত। পঞ্চমহাব্রতের মধ্যে অহিংসাই প্রধান এবং সর্বাধিক মূল্যবান। অহিংসার অর্থ সর্বকম হিংসা থেকে বরিত, কায়িক, বাচকি ও মানসিক – এই ত্রিবিধি হিংসা থেকে বরিত থাকাই অহিংসা শব্দে অর্থ্য।

অজ্ঞতা বশত জীব অনেকে হিংসাত্মক আচরণ করে যার ফলস্বরূপ মানুষের প্রাণনাশ হয়, জনসম্পদ, ধনসম্পদ বনিষ্ট হয়। এই সকল হিংসাত্মক আচরণের জন্য দায়ী আমাদের ভোগ বাসনা। আর ভোগ বাসনার কারণ হল ইন্দ্রিয় সমূহ। ইন্দ্রিয় দমনের জন্য প্রয়োজন চিত্তশুদ্ধি। জৈন মতে সম্যক্ দর্শন, সম্যক্ জ্ঞান এবং সম্যক্ চারিত্র – এই ত্রিরিত্তন মানব জীবনের বহুমূল্যবান রত্নস্বরূপ। এই ত্রিরিত্তন পালনের মাধ্যমেই জীবনের মুক্তির স্বাদ উপলব্ধি করতে পারবে এবং যার ফলস্বরূপ হিংসাত্মক আচরণ করা থেকে মানুষ বরিত থাকার চেষ্টা করবে।

**Keywords:** অহিংসা, ত্রিরিত্তন, মহাব্রত, অনুব্রত, অনন্ত আনন্দ

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বর্তমান সমাজের বিভিন্নরকম হিংসাত্মক ক্রিয়া দেখে আমরা অনেকে সময় হতাশ হয়ে পড়া পুরতদিনি কোন না কোন হিংসাত্মককে শিকার হতে হচ্ছে কোন না কোন মানুষকে। যে সমাজে আমরা বাস করি সেই সমাজের নানাবিধ নৈতিক প্রশ্ন ও সমস্যা আমাদের সামনে প্রতিনিয়ত দেখা দেয়। যমেন, পশুদরে হত্যা করে তাদের মাংস ভক্ষণ করা উচিত কিনা? প্রাণী হয়ে অপর প্রাণীকে হত্যা করা উচিত কিনা? রাজনৈতিক উৎপীড়ন সমর্থন যোগ্য কিনা? নজি ভোগ-তৃষ্ণা মটোবার জন্য অন্য প্রাণীর উপর ঝাঁপিয়ে পরা উচিত কিনা? ইত্যাদি নানা সমস্যার সম্মুখীন হতে হয়।



এইসব সমস্যা সমাধানেরে সূত্র হিসাবে আমরা জৈন নীতিতত্ত্বেরে উপর নর্ভর করতে পারাি।

জৈন মতে আত্মাই জীবা। চতৈন্য আত্মার স্বরূপ। জৈনদেরে আত্মা সম্পর্কতি মতবাদকে অনেকে জীবন্ত জড়বাদ (Hylozoism), আবার অনেকে সর্বাত্মবাদ (Animism) বলছেন। জৈন মতে জড়কণারও আত্মা আছে। মাটি, জল, বাতাস ও আগুনরে কণাতওে জীব বা আত্মা আছে। জৈনরা যা বলেন তা হল, আত্মা স্বরূপত চতেনধর্মী এবং পুদগল স্বরূপত জড়ধর্মী। পুদগল বশুিদ্ধ জড় হলওে জীব তাঁর কর্ম অনুসারে জড়দহে ধারণ করে এবং জড়কণা, মাটি পাহাড়-পর্বত বৃক্ষ-লতা প্রভৃতি জীবন্ত হয়। স্বরূপত জীব বা আত্মা নতি্য, শুদ্ধ, বুদ্ধ ও মুক্ত – অনন্তজ্ঞান, অনন্ত দৃষ্টি অনন্ত শক্তি ও অপার আনন্দরে অধিকারী। প্রতবিন্দকতার জীবরে স্বরূপ আবৃত থাকে। অনন্ত সম্ভাবনাময় জীব বা আত্মা প্রতবিন্দকতার আবরণ উন্মোচন করতে পারলে স্ব-স্বরূপ উপলব্ধি করতে পারে। জীবরে স্ব-স্বরূপে অবস্থানই মুক্তি। মখে ও কুয়াশার আবরণ উন্মোচতি হল সূর্য যমেন নজি প্রভায় সমগ্র জগৎকে আলোকতি করে তমেনি প্রতবিন্দকতার আবরণ উন্মোচতি হল জীবও তাঁর স্ব-স্বরূপ সর্বজ্ঞতা উপলব্ধি করে।

পাশ্চাত্য দৃষ্টিভিঙগীতে কেবলমাত্র ঐচ্ছকি কর্মরেই নৈতিকি মূল্যায়ান করা হয়। কনিতু জৈন নীতিবিদ্যায় কর্মরে মূল্যায়নরে ক্ষত্রে তার পরণাম বা ফলই একমাত্র বিবেচ্যা। অনৈচ্ছকি কর্মও যদি হিংসাত্মক হয় তাহলে তাও নৈতিকি মূল্যায়নরে যোগ্য হব। কর্মরে চরিত্র ও ফলাফল দেখেই কর্মরে মূল্যায়ান করা, তা ইচ্ছাকৃত হোক বা অনিচ্ছাকৃত হোক।

জৈন নীতিদর্শনে অহিংসাই পরম ধর্ম। এই অহিংসা নছিক সমবদেনা নয়। যকোন প্রকার হিংসাই বর্জনীয়। যকোন প্রাণীর প্রতি হিংসা অনৈতিকি এবং মোক্ষরে পথে বাধা সৃষ্টি করে। অহিংসা ও সত্যকে জৈনরা এত ব্যাপক অর্থে গ্রহণ করছেন যে, কোন মানুষরে পক্ষই যথার্থ অহিংস আচরণ করা সম্ভব বলে মনে হয় না। জৈন নীতি শাস্ত্রে শ্রমণদেরে জন্ম কঠোর ব্রতরে উল্লেখ থাকলেও সাধারণ মানুষরে জন্ম যে ব্রত পালনরে নর্দশে দেওয়া আছে তা অনেকেটাই সরলা সন্ধ্যাসীদরে পালনীয় ব্রতকে বলে হয় মহাব্রত। আর সাধারণ মানুষরে পালনীয় ব্রতরে নাম অনুব্রত। পঞ্চমহাব্রতরে মধ্যে অহিংসাই প্রধান এবং সর্বাধিকি মূল্যবান। অহিংসার অর্থ সর্বকম হিংসা থেকে বর্জিত, কায়িক, বাচকি ও মানসকি – এই ত্রবিধি হিংসা থেকে বর্জিত থাকাই অহিংসা শব্দরে অর্থ।

জৈন দর্শনে জ্ঞান-বিদ্যা ও তত্ত্ব-বিশ্লষণরে চয়ে নীতিতত্ত্ব অধিকি প্রাধান্য পেয়েছে। কারণ জৈন দর্শন তাঁর দার্শনিকি তত্ত্বরে মধ্যে দিয়েই নৈতিকি



তত্ত্বকে প্রকাশ করছে। সুতরাং জৈন নীতিতত্ত্ব আলোচনা করতে গেলে – আত্মার বন্ধন থেকে মুক্তি কিভাবে সম্ভব সেই আলোচনাই প্রাধান্য পায়। মুক্তি বা মোক্ষ যহেতু জৈন মতে পরম পুরুষার্থ। তাই মোক্ষ মার্গ নির্দেশে করাই জৈন নীতি শাস্ত্রের মুখ্য উদ্দেশ্য।

জৈন মতে তত্ত্ব দুটি – জীব ও অজীব। জৈন দর্শনে বলা হয়েছে – “আস্রবো ভবহতেঃ স্যাৎ সংবরো মোক্ষ কারণম্”<sup>১</sup> অর্থাৎ আস্রব সংসার বা বন্ধনের কারণ এবং সংবর মোক্ষের কারণ। জৈন মতে জলস্রোতের মত কর্মস্রোত আত্মা বা জীবের দিকে প্রবাহিত হয়। এরূপ কর্মের গতিকে আস্রব বলা হয়। যে বস্তু জলে সিক্ত তা যখন বায়ু প্রবাহিত ধূলিকণাকে গ্রহণ করে, সরূপে কষায়রূপে জলে সিক্ত জীব আস্রবের দ্বারা আনীত কর্মকে গ্রহণ করে। ‘কষায়’ শব্দে অর্থ কষতি হিনিস্তি, অর্থাৎ যা আত্মাকে পাপ পথে নিয়ে গিয়ে বনিষ্ট করে, তাই কষায়। ক্রোধ, মান, মায়্যা লোভকে কষায় বলা হয়েছে। মথিযাদর্শন (অববিকে), অবরিত্তি (অসৎ কর্মে প্রবৃত্তি), প্রমাদ (ভ্রান্তি), কষায় এবং আস্রব বন্ধনের হতে। কষায় ও কর্মের সম্বন্ধ অনাদি এই কর্ম আট প্রকার – ১। জ্ঞানাবরণীয় কর্ম ২। দর্শনাবরণীয় কর্ম ৩। বদেগীয় কর্ম ৪। মোহনীয় কর্ম ৫। আয়ুঃ কর্ম ৬। নাম কর্ম ৭। গোট্র কর্ম ৮। অন্তরায় কর্ম। এইসকল কর্মের জন্মই কষায় উপপন্ন হয়, কষায় গ্রহণকেই সকল বন্ধনের কারণ বলা হয়েছে। কষায়ের জন্ম পুঙ্গল আকর্ষণ, পুঙ্গল আকর্ষণের জন্ম দহে প্রাপ্তি এবং দহে প্রাপ্তির জন্ম বন্ধন। অন্যভাবে বলা যায়, আত্মায় যখন কর্মের প্রবশে ঘটে তখন কর্মের সঙ্গে মিশ্রণে আত্মা কলুষিত হয়। আত্মার এই অবস্থায় জীবের বদ্ধাবস্থা। জৈন দর্শনে কর্মকে এক প্রকার পুঙ্গল বলা হয়েছে।

জৈন মতে, আত্মা থেকে পুঙ্গলের বা কর্ম পুঙ্গলের সম্পূর্ণ বহিক্তি ঘটলে জীবের মুক্তি লাভ হয়। জীবের এই মুক্তি সম্ভব হয় সংবর ও নির্জরা এই দুটি প্রক্রিয়ার দ্বারা। আত্মার মধ্যে নতুন পুঙ্গলের অনুপ্রবশে বন্ধন করাকে বলাে সংবর, কর্মের গতি বা আস্রবের প্রতিরোধ যাতে হয় তাই সংবর। তপস্যার দ্বারা জীবের সঙ্গে পূর্ব থেকে সংযুক্ত পুঙ্গলের নিঃশেষে কষয় সাধন হল নির্জরা। এই নির্জরা দুই প্রকার - ভাব নির্জরা ও দ্রব্য নির্জরা। আত্মার যে অবস্থা আত্মা ও কর্ম পুঙ্গলের বহিক্তির পক্ষে উপযোগী তাকে ভাব নির্জরা বলাে আর আত্মা ও কর্মের বাস্তব বর্চিৎসকে দ্রব্য নির্জরা বলাে।

জৈন দর্শনে মোক্ষ লাভের উপায় নির্দেশে করতে গিয়ে জৈন দার্শনিক উমাস্বামী তাঁর ‘তত্ত্বার্থাধিগিমসূত্রে’ বলােছেন - “সম্যকদর্শনজ্ঞান চারিত্রাণি মোক্ষ মার্গাঃ”<sup>২</sup> অর্থাৎ সম্যক দর্শন, সম্যক জ্ঞান ও সম্যক চারিত্র মোক্ষ লাভের উপায়। সম্যক দর্শন, সম্যক জ্ঞান ও সম্যক চারিত্রকে ‘ত্রিত্ব’ বলাে



হয়ছে। এই তনিত্ৰি মলিত্ৰি ভাবই মংক্শরে কারণ হয়, প্ৰত্যকে প্ৰথক ভাবে মংক্শরে কারণ নয়। এই ত্ৰবিধি মার্গরে সমন্বয়রে গুরুত্ব প্ৰতিপাদনরে জন্ব জনৈরা রংগ চকিঁসার দৃষ্টান্ত দয়িছনো। কংনং একজন রংগী যদি রংগ মুক্ত হতে চায়, তবে সে নশ্চয় চকিঁসককে বশ্বিবাস করবে, চকিঁসকরে নরিদশেতি ঔষধরে প্ৰক্ৰতি জানবে। এবং সর্বপরি ঔষধ সবেন করবে; তমেরি মুক্তকিমী ব্যক্ৰি পক্শে উপলব্ধ সত্যরে প্ৰতি শ্ৰদ্ধা, সত্য সম্বন্ধে যথার্থ জ্ঞান এবং সত্যরে আলংকং সঁ আচরণরে অনুশীলন প্ৰয়ংজন। এখন আমরা এই ত্ৰিত্ন সম্পর্কে আলংচনা করব।

**সম্বক্ দর্শন** - জনৈ দর্শন এবং তার ভিত্তি স্বরূপ তীর্থঙ্করদরে উপদশে শ্ৰদ্ধাপূরণ বশ্বিবাসই সম্বক্ দর্শন। জনৈ দার্শনকিরা বলছনো যে, এই শ্ৰদ্ধাবংধ কংনং মানুযরে সহজাত হতে পারে, আবার উপযুক্ত শক্শি প্ৰসূতও হতে পারে। কনিত্তু শ্ৰদ্ধা ব্যতীত যে জ্ঞান হয় না এই বিষয়ে সমস্ত জনৈ সম্প্ৰদায় একমত। তবে “জনৈরা শ্ৰদ্ধা বলতে অন্ধ ভক্তকি বংবানে না, যুক্তি-তর্ক-বচিার-বশ্বিলষণেজাত শ্ৰদ্ধাই জনৈদরে আদর্শ”<sup>১৩</sup> জনৈরা বলেনে বচিাররে সঙ্গে শ্ৰদ্ধার কংনং বরিংধ নই, বরং যা বচিার সিদ্ধি তাই আমাদের শ্ৰদ্ধাকে আকর্ষণ করে।

**সম্বক্ জ্ঞান** - আত্মজ্ঞানকেই সম্বক্ জ্ঞান বলে। জনৈ শাস্ত্ৰ - ‘দ্রব্য সংগ্রহে’ সংশয়, ভ্ৰম ও অনশ্চয়তা থাকে মুক্ত হয়ে জীব ও অজীব প্ৰভৃতি সাতটি তত্ত্বরে যথার্থ স্বরূপ সম্পর্কে বশ্বিদ ও অভ্ৰান্ত জ্ঞানকে ‘সম্বক্ জ্ঞান’ বলে হয়ছে। জীব যখন কর্ম পুঙ্গলকে আকর্ষণ করে তখন জ্ঞান অপ্ৰকট হয়। সম্বর ও নরিজরা যখন জীবকে পুঙ্গল মুক্ত করে তখনই আত্ম বিষয়ে সম্বক্ জ্ঞান হয়। সম্বক্ জ্ঞানকে ‘কবেল জ্ঞানও’ বলে হয়।

**সম্বক্ চারিত্ৰ** - জনৈ মতে, যে সব কর্ম আত্মার বন্ধনরে কারণ এরূপ কর্মরে উচ্ছদে যত্নবান, শ্ৰদ্ধাবান ও জ্ঞানবান পুরুষ পাপ কর্মরে নবিত্তরি জন্ব যরূপ কর্মরে অনুশীলন করনে তাকে সম্বক্ চারিত্ৰ বলে হয়ছে। সর্বপ্ৰকার গ্ৰহতি কর্ম প্ৰতিযাগ করায় সম্বক্ চারিত্ৰ, অর্থাঁ মংক্শ লাভরে সহায়ক কর্ম পালনকেই সম্বক্ চারিত্ৰ বলে। সাধক যাকে সত্য বলে জাননে ও সত্য বলে বশ্বিবাস করনে তাকে জীবনে প্ৰয়ংগ করাই সম্বক্ চারিত্ৰ। মংক্শ লাভরে উপায় রূপে এটি সবচেয়ে গুরুত্বপূরণ। কনংনা সম্বক্ আচরণরে দ্বারা জীব সম্পূরণরূপে কর্মরে প্ৰভাব থাকে মুক্ত হয়ে জীবনে লক্শে উপনীত হতে সমর্থ হয়। এই সম্বক্ চারিত্ৰ লাভরে জন্ব জনৈরা পঞ্চব্ৰত পালনরে নরিদশে দয়িছনো। এই পঞ্চব্ৰত হল - অহিংসা, সত্য, অসত্যে, ব্ৰহ্মচর্য অপরিগ্ৰহ। এখন আমরা এই ব্ৰতগুলকি সংক্শপে আলংচনা করব।



অহিংসা - পঞ্চমহাব্রতের সর্বশ্রেষ্ঠ ব্রত হ'ল অহিংসা। অন্য চারটি ব্রত অহিংসা ব্রতেরই অঙ্গস্বরূপ। অহিংসা বলতে বোঝায় গতিমান ও গতিহীন সমস্ত প্রকার জীবের প্রতি হিংসা থেকে বরিত থাকা। এর তাৎপর্য হল - কায়িক হিংসা (যমেন, কোনো প্রাণী হত্যাকরা), বাচকি হিংসা (যমেন, রুচ বাক্য প্রয়োগ করে অন্যের অনুভূতিকে আঘাত করা), মানসকি হিংসা (যমেন, অন্যের কৃতি বা অমঙ্গল চিন্তা করা) বর্জনীয়। অর্থাৎ অন্যকে বিন্দুমাত্র হিংসা না করে জীবন যাপন করা কর্তব্য। জনৈ দর্শনে অহিংসা বলতে কেবলমাত্র 'হিংসা না করা' এই নগ্নর্থক আদেশকে বোঝানো হয়নি। অহিংসা বলতে অন্যদের প্রতি সক্রিয় সর্বোচ্চ বোঝানো হয়েছে। যমেন - কোনো ব্যক্তিকে সাহায্য করার সামর্থ্য থাকলেও কটে যদি তা না করে, তাহলে বস্তুত তাকে হিংসা করা হয়। জনৈগণ তাঁদের জীবনে অহিংসা নীতিকে খুব নিষ্ঠার সঙ্গে পালন করেন। সর্বজীবের প্রমে, সকলের প্রতি হিতকর কর্মের অনুষ্ঠানই 'অহিংসা ব্রতের' সারকথা।

সত্য - জনৈ মতে, সত্য হ'ল সুনীত। 'সুনীত' বলতে বোঝায় 'উপাদয়ে ও উপকারী'। যা উপাদয়ে ও উপকারী তাই সত্য। জনৈগণ সত্যচার বলতে শুধুমাত্র সত্য কথনকে বোঝান না, যা মিথ্যা নয় এবং হিতকর ও মনোহর সেইরূপ কথাবলাকেও বুঝিয়েছেন। শুধু বাক্যে নয়, চিন্তা ও কর্মেও সত্যব্রতগ্রহণ করতে হবে। হিতকর প্রিয় চিন্তা, বাক্য ও কর্মে যুক্ত থাকাই হ'ল সত্যব্রত পালন। একজন গৃহী নজি মিথ্যা কথা বলবে না তাই নয়, অন্যকে মিথ্যা বলায় প্ররোচিত করবে না বা অন্যের মিথ্যাচারকে সমর্থন করবে না। এমনকি যি সত্য কথন অন্যকে আঘাত করে তা থেকে বরিত থাকাই উচিত। এ থেকে বোঝা যায় যে সত্যব্রতের প্রধান নীতি অহিংসা ব্রতের অধীন।

অসত্যে - ছলে, বলে বা কৌশলে অপরকে সম্পদ গ্রহণ বা অধিকার করা হ'ল 'অসত্যে'। দান ছাড়া অন্য ভাবে পর দ্রব্য গ্রহণ না করাই অসত্যে। কোনো ব্যক্তির ফলে যাওয়া বা ভুলে যাওয়া দ্রব্য ও কোনো দ্রব্য চুরি করা জনেও তা নজি ভোগ করা, অন্যকে চুরি করতে প্ররোচিত করা, কোনো দ্রব্য কনোবচার কৃতির কমে ওজন ব্যবহার করা ইত্যাদি চৌর্যবৃত্তিরই নানারূপ। তাই কারও সম্পত্তি হরণ করলে তা মানুষের জীবন হরণেরই সমতুল্য। সেই জন্য অসত্যেব্রত অহিংসা ব্রতের সঙ্গে ঘনিষ্ঠ ভাবে জড়িত।

ব্রহ্মচর্য - জনৈ নীতিশাস্ত্রে জনৈগণ 'ব্রহ্মচর্য' শব্দটিকে ব্যাপক অর্থে প্রয়োগ করেছেন। সাধারণত ব্রহ্মচর্য বলতে সংযমকে বোঝায়। তবে এই সংযম শুধু বাহ্য সংযম নয়, সর্বকমরে ইন্দ্রিয় সম্ভোগ থেকে বরিত থাকাই হল ব্রহ্মচর্য। অর্থাৎ কায়িক, বাচকি ও মানসকি ভাবে সর্ববধি যৌন ব্যাপারে





কঠোর সংযমই ব্রহ্মচর্য। সন্ন্যাসদিরে ক্ষেত্রে এই ব্রত কঠোরভাবে পালনীয় হলেও, সমাজ ও পরিবার রক্ষার জন্য গৃহীদরে ক্ষেত্রে তা সংযমের সহিত পালনীয়। পরিপূর্ণ ভাবে ব্রহ্মচর্য আচরণের জন্য আন্তর-বাহ্য, সুক্ক্ষ্ম-স্থূল, ঐহিক-পারত্রিক, সাক্ষা□-অসাক্ষা□ সমস্ত রকমের অসংযম দূর করতে হবে।

অপরগিরহ - সকল প্রকার মোহ ও বিষয়াসক্তি ত্যাগ হল অপরগিরহ। প্রয়োজনের অতিরিক্ত সম্পদ সঞ্চেয় না করাই হল অপরগিরহ, অর্থা□ বিষয় বাসনা থেকে নিজেকে মুক্ত রাখতে না পারলে মোক্ষ লাভ সম্ভব নয়। বিষয়ের প্রতি আসক্তি থেকেই জীবেরে দহে ধারণ ও বন্ধন হয়। গৃহীর ক্ষেত্রে ‘অপরগিরহ’ পরমিতি। পারিবারিক, সামাজিক ও ব্যক্তিগত জীবনধারণের জন্য যাহা প্রয়োজনীয় তাহা গৃহী সঙ্গত উপায়ে অর্জন করবে। অন্যায় ভাবে অন্যেরে বস্তু অধিকারেরে প্রয়াস হিংসার নামান্তর। সুতরাং মোক্ষ কামীকে সকল প্রকার আসক্তি ত্যাগ করতে হবে।

সম্যক চারিত্র লাভেরে জন্য এই পাঁচটি ব্রত গৃহী ও সন্ন্যাসী উভয়েরে ক্ষেত্রে অবশ্য পালনীয়। তবে একজন সন্ন্যাসীর পক্ষে এই পঞ্চেব্রত যত কঠোর ও পরিপূর্ণ ভাবে পালন করা সম্ভব, একজন গৃহীর পক্ষে ততটা সম্ভব নয়। এই সত্য উপলব্ধি করে জনৈগণ গৃহীর জন্য এই পঞ্চেব্রতেরে একটি সহজ ও শথিলি রূপ নির্দেশে করছেন। পঞ্চেব্রতেরে এই সহজ ও শথিলি রূপ পঞ্চেঅনুব্রত নামে পরিচিতি। কিন্তু জনৈগণ এই পাঁচটি ব্রত পালনেরে ক্ষেত্রে শ্রমণ বা সন্ন্যাসীদেরে ক্ষেত্রে কঠোর মানসিকতার কথা বলছেন, অর্থা□ সন্ন্যাসীরা যখন ঐ ব্রতগুলিকে যথাযথ এবং কঠোর ভাবে পালন করবেন তখন সগেলেই হল পঞ্চেমহাব্রত অর্থা□ একজন সন্ন্যাসী অহিংসা, সত্য, অস্তয়ে, ব্রহ্মচর্য ও অপরগিরহ এই পাঁচটি ব্রত কঠোর ভাবে মহাব্রত রূপে পালন করবে। যমেন - তিনি কোনো অবস্থাতেই এমনকি নিজেরে প্রাণ রক্ষার জন্যও কায়িক, বাচিক, মানসিক, হিংসায় লিপ্ত হবেন না। তাই সন্ন্যাসীদেরে পালনীয় ব্রত গুলিকে বলা হয় পঞ্চেমহাব্রত।

মানুষেরে মধ্য দুটি প্রবৃত্তি আছে – জীব প্রবৃত্তি ও বুদ্ধি প্রবৃত্তি। জীব প্রবৃত্তি বশত মানুষ ইন্দ্রিয় সুখেরে পছিনে ছুটে বেড়ায়। ভোগ বাসনার বশবর্তী হয়ে মানুষ হিংসাত্মক আচরণ করে। জীব হত্যা, নির্যাতন নতিষ নমৈতিকি ঘটনা। নৈতিকতা ও মূল্যবোধেরে অভাবেরে জন্য একটি বরািট সামাজিক বিপর্যয় ঘটছে। এই বিপর্যয় থেকে উত্তরণেরে উপায় হিসাবে আমরা জনৈ নৈতিকতার উপর নিরভর করতে পারি। জনৈ নীতিতত্ত্বেরে মূল্যবান কথা হল ত্ররিত্ন। সম্যক জ্ঞাণ, সম্যক দর্শন ও সম্যক চারিত্র – এই ত্ররিত্নকে যদি আমরা অনুসরণ করে চলি তাহলে আমাদেরে মধ্যেরে নিজেকে সংযম করার ক্ষমতা তরৈ হবে। ভোগেরে পছিনে না ছুটে আধ্যাত্মিক





চিন্তায় মনোনিবেশে করতে পারবে, তাহলে পশুসুলভ নর্ষ্যাতন, হিংসাত্মক আচরণ করা থেকে বরিত থাকবে, ফলস্বরূপ সামাজিক শৃঙ্খলা প্রতিষ্ঠিত হবে।

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2. সনে, দেবব্রতা (জুলাই, ২০১৪/বা) ভারতীয় দর্শন, পশ্চিমবঙ্গ রাজ্য পুস্তক পরষদ।
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6. গুপ্ত, ডঃ দীক্ষিত। (পরমার্জন, ২০০৬)। নীতিবিদ্যা ও মনোবিদ্যা। শরৎ বুক ডিস্ট্রিবিউটার্স।
7. ভট্টাচার্য, ডঃ সমরেন্দ্র। (২০১১) সাম্মানিক নীতিবিদ্যা, বুক সন্ডকটে প্রাইভেটে লিমিটেড।
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## **Impact of Socio-Economic and Technological factors on India's Economic Growth during post liberalization periods**

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### **Abstract**

*This study is based on secondary data and basically empirical in nature. This study consider one country i.e. India a developing one and time period is considered here is post liberalization period i.e. from 1995 to 2017. The aim of this study is to measure various socio-economic and technological variables on GDP and PCGDP separately. We have used linear regression method for measuring the impact of explanatory variables. In this study we have considered economic freedom index and rule of law index as an explanatory factors but we see that their effects are not significant. We, in our study have found that the variable total factor productivity (TFP) and mean years of schooling (MYS) have positive and significant effect on GDP whereas globalization index (GI) has negative and significant effect on GDP. Life expectancy at birth (LE) has also positive effect on GDP but at moderately significant level. We also find that the LE, PCDC and EMPR have positive and significant effect on the PCGDP whereas GI has negative and significant effect on PCGDP*

**Keywords:** *India, GDP, PCGDP, Total factor Productivity, Mean Years of Schooling, Life expectancy.*

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**I. Introduction:** It is known to all that the growth of any country as measured in terms of GDP depends on several factors like levels of education, technological progress, globalization, rule of law so on and so forth. Interestingly, it has been found that in developing countries since technological attainment is low they try to imitate or purchase modern technology from developed countries and thus spend a significant portion of GDP to acquire it. It is basically owing to the fact of lower level of educational attainment compared to developed countries. Majority of the developing countries have taken the liberalization process in the decades of 90's since they believe that globalization can affect their economy to large extent. There is a number of studies that reflect the fact that globalization has an adverse effect on the income of developing or less developed countries but a number of studies are there that reflect globalization has positive and significant levels on income and employment in case of developing countries. Globalization has many dimensions: (i) economic globalization; (ii) technological globalization and (iii) social and



cultural globalization. Diffusion of technology certainly improves the quality of the products and services of the developing countries as those country have lower levels of spending on research and development. It goes without saying that adoption of modern technology and knowledge certainly improve the status of human capital of the developing and less developed countries. However, in this study we have considered our country i.e. India for measuring the several socio-economic variables on GDP measured at constant US\$ 2010 over the period from 1995 to 2017 as India took the liberalization process from 1991. In this paper we have considered two new index relevant for society one is rule of law index (ROL henceforth) which is a quantitative tool that measures the rule of law in practice and the other one is economic freedom index (EFI henceforth) that measures the economic freedom. The inclusion of these two variables for measuring their impact on GDP and PCGDP makes this study unique. It is believed that if people abide by the rules and regulations of their respective country then the development process gets pace since more of GDP can be saved as there is lesser need of domestic protection of the citizens. On the other hand, EFI represents one's economic freedom. We in our study include life expectancy as proxy of health and mean years of schooling as proxy of level of educational attainment. India is a country that have second largest population and characterized by high population density. Her economy is still based on the agriculture and agriculture is still largely dependent on the vagarious of monsoon. After taking the process of liberalization it is observed that the contribution from agriculture decreases and contribution from service sector increases. Moreover, the secondary sector gets a negative growth. India imports more from the developed countries and her exports is smaller than its imports that typically affect the BOP position. India's exports are basically service related and have a greater risk of cut in the volume of exports of services in feature because of the anticipation of the larger use of artificial intelligence in near feature. So, the tendency should be towards upliftment of the secondary sector. As we mentioned earlier that globalization has many wings so in our study we have considered KFO globalization index.

On the basis of above this study has made a modest attempt to shoe the effect of socio-economic and technology related components on the GDP and per-capita GDP separately. This study is structured as follows: section II deals with review of past studies; section III represents data and



methodology: section IV represents the analysis of data and finally section V deals with concluding observations

## II. Review of literature

Literature in this area is plenty, some of them have focused on the effect of globalization on GDP by taking into account single country while other have done cross country level analysis by using panel regression method. Few of the studies throw light on the effect of economic variables on the country's growth measured in terms of GDP. However, we mention few of them as below.

A study made by Baskaran.S.A and Charlas.L.J (2011) has explored that a major deficiency of India's growth process was the failure from the part of the conventional industry to pull workers out of agriculture and to engage them into income generating activities. Further, Kira.A.R (2013) made a study entitled 'The factors affecting GDP in developing countries: the case of Tanzania', have found that the developing countries GDP is primarily influenced by consumption and exports. The developing countries must undertake development projects for increasing countries investment, including creation of conducive environment to attract FDI and investment for the purpose of industrialization. On the other hand,, Rani.A (2013) in her paper entitled 'Growth and Employment: Paradox of Services Sector in the Indian Economy' has shown that though economic reforms have given a boost to industrial productivity and brought foreign investment in capital investment areas, but the boom has not created jobs as per expectations and needs. Economic opportunities in terms of employment elasticity has decreased. The tertiary sector i.e. Service sector of India has revealed a growth in share in GDP after the reform period but it could not meet the expectation of growing unemployment of the country. Surprisingly,,Elshehawy et al (2014) in their study on Egypt have explored that GDP of importing countries and population of the importing countries had a positive significant influence on Egypt's export. Again, Singh.M and Kaur.K (2014) in their study have found that the domestic investment and openness effect positively to the share of service sector in GDP. On the other hand, Upreti.P (2015), by using ordinary least squares regression model for identifying the factors that responsible for economic growth in developing countries have explored that the volume of exports has positive impact on economic growth. This study also explore that the higher life expectancy and increase in investment have a positive impact on economic growth. A study done by Kilic.Cuneyt (2015) on measuring the effect of globalization on economic growth for developing countries using panel



regression method have shown that the co-efficient of economic globalization index has significant and positive effect on growth and the political globalization is also positively and significantly influence the economic growth. Another study done by Ibrahim (2013) for exploring the impact of globalization on Africa have found that majority of the African states are not prepared for getting the fruits of globalization because for achieving the benefits of globalization they should reach at certain levels of capacity so that all rich and poor countries can effectively participate in the process of economic growth. On the other hand Ch. Muhammad et. al. (2011) in their study for measuring the impact of globalization on the world economic development have found that globalization increases the level of inequalities about the job. Globalization creates new arena for expanding trade and investment which ultimately leads to reduce the level of poverty. Finally, a study done by Moghaddam (2012), aiming at to reveal the relation between globalization and economic growth by taking into account few developing countries over the period from 1980 to 2010, have found that there exists a strong aggregative relationship of FDI , export and import with countries economic growth measured in terms of GDP. Interestingly, this study also explores that impacts of FDI on economic growth end up in enhancement of economic efficiency and more development in the field of export and import.

It is found from the above that none of the above studies have considered the effect of technological progress, globalization, per-capita availability of debt, health, education etc. together on the GDP and PCGDP of India over the period from 1995 to 2017. This motivates us to undertake this study.

### **III. Data and Methodology:**

This study is basically an empirical study based on secondary data. Data are collected from various data sources. Data of GDP, PCGDP, life-expectancy are collected from various issues of world development indicator, data of globalization is KFO globalization index, per-capita availability of credit is prepared from the data published on world development indicators. Data on mean years of schooling are collected from HDR of UNDP and data of rule of law index as well as economic freedom index are collected from the WGI data base. So far as methodology is





concerned we have used to measure the effect of independent variables on GDP and PCGDP separately.

### **Econometric specification:**

Our econometric model is as follows :

$$GDP = \alpha + \beta_1 EMPR + \beta_2 TFP + \beta_3 ROL + \beta_4 LE + \beta_5 MYS + \beta_6 GI + \epsilon$$

$$PCGDP = \alpha + \beta_1 TFP + \beta_2 GI + \beta_3 ROL + \beta_4 MYS + \beta_5 LE + \beta_6 PCDC + \beta_7 EMPR + \epsilon$$

Where, EMPR = employment as percentage of population.

TFP = total factor productivity; ROL= rule of law index, LE= life expectancy at birth; MYS= mean years of schooling; PCDC = per-capita availability of credit.  $\alpha$  represents the intercept term and  $\epsilon$  represents error term that are normally distributed.

### **IV. Analysis and Findings**

At the very beginning of our analysis we have shown summary statistics of the variables that are considered for the purpose of our study ( see table-1) . It is evident from table-1 that there exists a large gap between the maximum and the minimum values of GDP measured at constant price and the similar picture is identified in case of PCGDP of India measured at constant price indicating the growth in the economy of India over the period of our study. However, the distribution of GDP does not reveal the true fact that growth effects are confiscated by a small section of the people of India over the period of our study. On the other hand, the economic freedom index has shown a marginal increase and there is a greater difference exists between the max and mean value in case of rule of law index. Globalization index shows a significant difference between maximum and minimum value with comparatively lower dispersion over the period of our study. Astonishingly, share of employment amongst population shows a moderate difference between maximum and minimum values. Further, educational attainment measured in terms of mean years of schooling has shown a significant difference between maximum and minimum values. Debt availability per capita has also shown a significant difference between maximum and minimum values over the period of our study. TFP in this respect shows a



marginal difference between maximum and minimum values. Status of health measured in terms of life expectancy at birth has shown a significant difference between minimum and maximum values with mean value of 65 years almost. Inflation in this respect has also registered a larger difference between maximum and minimum values over the period of our study.

**Table-1 : Summary Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
-----+-----					
gdp	23	1.34e+12	5.94e+11	5.98e+11	2.46e+12
economicfr~x	23	52.15667	2.994507	45.1	55.7
ruleofiaw	23	.1118681	.1609717	-.0906937	.3539906
gi	23	54.59922	7.548705	39.69611	61.84639
empr	23	55.23478	2.46993	51.8	58.1
-----+-----					
mys	23	5.082609	.9359741	3.5	6.8
inflation	23	5.619937	2.253869	1.78579	9.062702
tfp	23	.9017161	.095588	.7901409	1.046597
dcf	23	726.7309	361.107	269.8794	1250
pcgdp	23	1104.348	372.0691	622.3037	1758.043
-----+-----					
le	23	64.79478	2.48973	60.44437	68.34856

**Source: Computed from the secondary database**

Now for measuring the effects of socio-economic and technological factors we have done regression by taking GDP and PCGDP as dependent variable separately ( see appendix table I and II respectively). From the appendix table-I it is evident that model specification is statistically significant and about 98.32% variation in the dependent can be explained by the independent variables taken for the purpose of this study. Appendix table-I also reveal that the variable total



factor productivity ( TFP) and mean years of schooling (MYS) have positive and significant effect on GDP whereas globalization index (GI) has negative and significant effect on GDP Life expectancy at birth (LE) has also positive effect on GDP but at moderately significant level. Similarly, when we consider per-capita GDP (PCGDP) as dependent variable and several socio-economic and TFP as explanatory variables we find that our model specification is statistically significant (see-appendix table-II) and about 99.75% in the variation of dependent variables can be explained. We also find that the LE, PCDC and EMPR have positive and significant effect on the PCGDP whereas GI has negative and significant effect on PCGDP.

#### **IV. Concluding Observations:**

Following conclusions have emerged from the above study:

First, the GDP and the PCGDP have shown substantial increase over the period of our study. Life expectancy at birth and mean years of schooling have also substantial difference between their maximum and minimum values over the period of our study. On the other hand, productivity registered a moderate gap in this respect. Interestingly, larger gap of per-capita availability of debt represents financial sector improvements. Employment rate has registered a moderate differences between the maximum and minimum values over the period of our study.

Second, our regression analysis has revealed that TFP and MYS have positive and highly significant impact on GDP. It is undeniable as the productivity level increases a country enjoys the fruits of greater production. On the other hand, as educational attainment level is high it is expected that supply of skilled labour can increase and thus a country enjoys the benefit of technological improvement as well as efficient labour can raise the level of output. Astonishingly, globalization index has negative and significant effect on GDP. GI is formed by taking into account globalization in different aspects. India may fail to achieve some of them.

Finally, life expectancy, per-capita availability of debt and employment to total population have highly positive and significant impact on PCGDP.. It is undeniable that status of good health will surely have positive effect on per-capita income. At the same time debt availability empowers a person to generate more income. Debt availability is essential for flourishing corporate sector and through this employment opportunity increases. In this case also globalization has negative impact on PCGDP.



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### Appendix table-I : Results of Regression Analysis

Dependent Variable: GDP  
 Method: Least Squares  
 Date: 05/07/19 Time: 13:05  
 Sample: 1995 2017  
 Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EMPR	1.30E+10	3.29E+10	0.393997	0.6988
TFP	2.65E+12	1.03E+12	2.570977	0.0205
ROL	-1.48E+11	2.86E+11	-0.515559	0.6132
LE	1.57E+11	9.21E+10	1.702812	0.1079
MYS	2.77E+11	1.08E+11	2.555888	0.0211
GI	-4.22E+10	1.67E+10	-2.525411	0.0225
C	-1.10E+13	5.73E+12	-1.926114	0.0720
R-squared	0.983163	Mean dependent var	1.34E+12	
Adjusted R-squared	0.976850	S.D. dependent var	5.93E+11	
S.E. of regression	9.03E+10	Akaike info criterion	53.53562	
Sum squared resid	1.30E+23	Schwarz criterion	53.88121	
Log likelihood	-608.6596	Hannan-Quinn criter.	53.62254	
F-statistic	155.7191	Durbin-Watson stat	2.005178	
Prob(F-statistic)	0.000000			



## Appendix table-II : Results of Regression Analysis

Dependent Variable: PCGDP

Method: Least Squares

Date: 05/07/19 Time: 13:06

Sample: 1995 2017

Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TFP	608.4193	441.3214	1.378631	0.1882
GI	-21.64308	5.230843	-4.137590	0.0009
ROL	86.34157	97.44817	0.886026	0.3896
MYS	-24.72652	29.45354	-0.839509	0.4144
LE	123.0678	29.87218	4.119812	0.0009
PCDC	0.724823	0.250336	2.895400	0.0111
EMPR	27.52575	9.748541	2.823577	0.0128
C	-8167.842	1726.991	-4.729522	0.0003
R-squared	0.997477	Mean dependent var	1104.348	
Adjusted R-squared	0.996299	S.D. dependent var	372.0692	
S.E. of regression	22.63548	Akaike info criterion	9.345123	
Sum squared resid	7685.478	Schwarz criterion	9.740077	
Log likelihood	-99.46891	Hannan-Quinn criter.	9.444453	
F-statistic	847.0227	Durbin-Watson stat	2.090009	
Prob(F-statistic)	0.000000			





## SHGs and Socio-Economic empowerment- A study of Burdwan district of West Bengal

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### Abstract

*This study is a micro level study based on primary data collected from four blocks delineated across the four blocks across the district of Burdwan. This study is focus on the progress of the SHGs formed by different administrative body. We use binary logistic regression as an econometric tool for measuring impact of variables on capital formation and employment generation. We find Income generation (INC) has positive and significant effect on capital formation and gender has negative and significant effect on capital formation. We also see that both the capital formation and income generation have positive and highly significant effect on efficiency in terms of employment generation Moreover, Years of functioning has moderately positive impact on employment generation.*

**Keywords:** SHGs, Burdwan, Logistic Regression, Capital Formation, Employment Generation.

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### I. INTRODUCTION

This study actually focus on an intensive analysis of the role of the self-help groups (SHGs henceforth) towards the amelioration of the economic conditions of the people specially the economically and socially backward classes of people in West Bengal. Infact, while analyzing the performance of the self-help groups we tried to examine its contribution towards the improvement of socio-economic status of the people in terms of generation of capital formation, employment. It is well known that with the failure of trickle down hypothesis which was implicit within the growth-led development strategies that we have followed up to mid

70's towards the alleviation of poverty of both the rural and urban people of our country there has been a lot of policy evolutions. Infact, the failure of trickledown theory induced us to switch over to the public action-led development strategies for direct attack on poverty of the people for their socio-economic improvement.. This type of policy was followed since mid 70's and it was later complemented by the policy of growth led development both in the 80's and also during the post-reform period. However, the outcome of these policies has not reached at desired level such that still a vast majority of people of our country suffer from abject poverty and they are left behind



the dynamics of development process. Therefore, there has been further transformation of the policies towards participatory development process and later towards the inclusive growth process. The strategy of inclusive growth which was adopted in 11<sup>th</sup> five year plan has actually been carried forward as a major objective of 12<sup>th</sup> five year plan in its robust form of further sustainable inclusive growth. The formation of self-help groups in the early 1990's was actually an outcome of this policy evolution such that the prime aim of which has been the socio-economic empowerment of the poverty stricken backward (both socially and economically) classes of our country. However, in West Bengal the SHGs have had its inception in 1995 which was followed by a rapid spread since 2003-2004. In our study we have actually made a micro level analysis of the performance of SHGs towards the fructification of its basic objectives. So in this respect our study is basically a micro level study concentrating on Hooghly district of West Bengal.. It is well known that the economy of West Bengal is overwhelmingly an agro-based economy such that about 67% of our total population of West Bengal still depends on agricultural operations as source of their livelihood. Parallely, in this state around 72% of the total population live in a rural area, of which the majority proportion depends on agricultural and the minor proportion depends on nonagricultural informal economic activities as source of employment viz-a-viz livelihood. Like other states of our economy the rural sector of West Bengal has also undergone a

tremendous transformation with the fall in the relative contribution of agricultural sector to the state domestic product which has been accompanied by rapid deterioration of the contribution of secondary sector that is the manufacturing sector to her state domestic product. Interestingly, keeping pace with the nature of transformation of the national level, the economy of West Bengal has also experienced the expansion of the service sector such that the contribution of which has also shown an increasing trend, especially since economic reforms. Along with the structural transformation, it is quite likely that the occupational structure of the state has also undergone rapid transformation with gradually increasing domination of the informal service sector in employment. So far agricultural sector is concerned it has been found that, after the tremendous breakthrough in agricultural production during the 80's and early 90's which was essentially the outcome of the technological transformation in agricultural activities, the agrarian economy of Bengal has experienced tremendous sluggishness in the agricultural production with a very low rate of growth of output (Ghosal, 2007). Surprisingly, like other states of Indian economy agricultural operation has gradually become non-profitable such that a vast majority of farm around 44% in Bengal is unwilling to stay at cultivation as source of their employment (Situation Assessment Survey of Farmers, NSSO, 2003-04). Moreover, the land holding structure in rural Bengal reveals the tremendous domination of the marginal farmers (92% of total number of farmers) such that the land operated by the small and marginal farmers



is not only highly fragmented and dispersed but also the unit of cultivable land has become non-viable for enjoying the scale effect of cultivation. Parallely, it has been found that with the tremendous decline in the relative contribution of agricultural sectors to the SDP( state domestic product) of state the proportion of population depends on agricultural has revealed a very slow rate of declination from 78% to 67% so that the productivity of per unit of labours in agricultural sectors has also declined tremendously gives rise this there has been a tremendous shifting of agricultural workers as well as the marginal farmers from agricultural to non-agricultural of non-farm activities centered both within rural and outside the rural areas for supplementing their livelihood (Ghosal, 2005,2007, C.P.Chandrasekhar,2003)/

Against this backdrop this study is undertaken to measure the socio-economic improvement of rural area of undivided Burdwan district via the formation of SHGs. This paper is structured as follows: Section II represents review of literature; Section III represents data and methodology; in section IV we represent our econometric analysis and finally section V represents our concluding observations.

## II. REVIEW OF LITERATURE

The literature in this area is of recent origin and a number of research work is there. In fact very few studies have been made on it, which directly focuses on Self-Help groups and microcredit.

One can safely classify the literature according to nature and focus.

First there are studies, which have concentrated on lending structure of SHGs (Rahman, 1999; Pretes, 2002; Hermes and Lensink, 2007; Swaminathan, 2007etc.)

Rahman(1999) concentrated on the lending structure of small loans among poor women and have illustrated the implications of such lending to achieve equitable and sustainable development. It is found that despite the success of the Grameen Bank in delivering loans to poor woman and bringing socio-economic changes in many of these women's lives, the women face humiliation when they fail to repay back these loans because of these loans were being utilized by their male guardian for other purposes. But the study does not focus on how these groups work effectively and how employment could have been generated. Pretes (2002) also concentrated on the financial aspect of micro enterprises, and found that such enterprises in developing countries need both grants and loans. However, in this study no reflection on how technical ability of these enterprises could be improved alongside the improvement of other qualitative factors such as marketing skills etc. Hermes and Lensink (2007) on the other hand highlighted the fact that recovery rate in case of group-based microfinance is much higher compare to the individual-based microfinance. That's why the profitability group- based microfinance institutions are far ahead from individual based microfinance institutions. However, this study does not shed any light on the important issues like employment generation, income generation etc. Another study made by Swaminathan (2007) reveals that the benefit of microcredit scheme,



which is not only helpful to the 'poorest of poor', but it also helps to plug in the gap between the existing formal and informal sectors. However, this study is not based on any quantitative support and also does not shed any light on the issues like income generation, employment generation and gender empowerment etc. On the other hand there exists a few studies on the effect of micro-credit through self-help groups ( Das,2005; Das,2005; Dasgupta,2001; Pulla,2005 etc.) Das (2005), Das(2005) and Dasgupta(2001) found satisfactory progress of SHGs with the help of NGOs and SHG promotional institutions. They found that several benefits of micro financing have accrued through informal groups, namely a) fall in transaction costs for both lender and borrower, b) easy access to the required amount of appropriate credit by the poor, c) proper mobilization of savings by the poor. All of the above studies do not however tell us how employment could be generated and also how poverty can be eliminated through productive utilization of credit. Pulla(2005) on the other hand in his region specific study on A.P. focused on the fact that due to lower transaction cost Commercial banks, RRBs and even Co-operatives are showing greater interest to provide loan to SHGs. At the same time recovery of loans from the groups is much higher. But this study has not taken into account the important aspects like employment generation, income generation and poverty alleviation etc. On the other hand There are few studies on the role of SHGs in rural development (Qazi,2005 ; Binayak,2005; Baij et.al.,2007; A. Kumari & N. Malathi.2007 etc.) In a region-specific study on role of SHGs in the rural

development of Maharashtra made by Qazi(2005) it has been found that the self-help groups have become significant institutions for rural development in recent years. It is found that apart from income benefits women have derived considerable benefits in terms of improvement in their social status. However, this study also does not throw any light on employment generation in rural non-farm sector. There is another study made by Biyanak (2005) on the four districts from three states (viz. A.P.,U.P. and Bihar) regarding the impact of SHGs in rural development which focuses on the fact of employment generation it is found that while the SHGs have generated additional employment, improved the standard of living of people, women empowerment, and also provided women with a lot of social mobility so that they have become proud contributors to the income of their family. Further, it is found that women in SHGs have become capable of exercising benign influence as on their husbands so as to adhere to prudent consumption habits. However, this study has not undertaken any quantitative analysis to highlight employment generation, women empowerment etc. There is another study made by A. Kumari & N. Malathi (2007) on Union Territory of Pondicherry which shows that the Government officials, Banking sector and NGOs played a crucial role in bringing up the groups to a state of excellence. This study emphasizes that In case of graded SHGs, the upliftment of their economic status depends on whether they are connected with the medium and small industries in small towns. However, there is no sufficient quantitative insight in this



respect and this study also remains silent on the issues like income generation, gender empowerment etc. There is as such a very few studies on West Bengal regarding SHGs ( Motin & Banerjee,2008; Sau,2008; Das &Sau,2008; Sen & Sircar ,2006; Banerjee,2009; Bera,2011; De and Sarkar,2011; Kundu,2011;Kundu and Mitra, 2009).Motin & Banerjee (2008) in their region specific study on Ghatal Subdivision in the district Paschim Medinipur had shown that SHGs have served as a pivotal force in empowering their member by bringing in opportunities of gainful employment and by increasing the level of literacy and consciousness though peer learning among the group members. However, this study also remain silent on issues like capital formation, gender empowerment etc. Sau (2008) in his region specific study on Purba and Pschim Medinipur districts had shown that in the era of privatisation and globalization the Microfinance-SHG approach to development cannot succeed until and unless human capital is properly formed among individuals which in turn gives emphasis on social development being its primary goals. Sau in his study has shown the viability of SHG-Microfinance approach in an age of economic reforms. But unfortunately he has only glossed over the issues related to the development of SHGs. Sau and Das(2008) on their region specific study on Purba and Pschim Medinipur districts had shown that the variables market, year of education , training facilities and number of workers per households have positive and significant

effect on the participation of households in investment project. But the variable, distance from a local town has negative and significant effect. But they do not consider the effect of capital, employment in terms of man days etc. Also this study remains silent on issues like gender empowerment, income generation etc. There is no study at all on West Bengal or on the particular district that consider and explain the reasons behind capital formation and employment generation together. This motivates us to undertake this study.

### III.DATA and METHODOLOGY

This study is a micro level analysis and based on primary data. For the purpose of our analysis we have selected four blocks of the Burdwan district of West Bengal namely Galsi-I, Galsi-II , Ausgram-II and Raina-I on the basis of concentration of groups and years of functioning.. We also have selected 316 SHGs for the purpose of our analysis. Groups are selected from different administrative authorities i.e. groups formed under SGSY, groups formed by PACs and groups formed by NGOs. So far as methodology is concerned we have used binary logit model for the purpose of our analysis.

### IV. ECONOMETRIC ANALYSIS

While analyzing the efficiency of the Self Help Groups (SHG's) of Burdwan District in terms of capital formation, we assume that for a particular SHG difference between closing capital and opening capital per head represents the capital formation. Here we assume that



$$P_{inc} = \frac{e^{\beta_i X_i}}{1 + e^{\beta_i X_i}} \tag{1}$$

Where,  $P_{inc}$  = Probability of being efficient in terms of capital formation.

$X_i$  = Explanatory factors which influence the efficiency of the SHG of the Burdwan District in terms of capital formation.

If  $P_{inc}$ , i.e. the probability of being efficient in terms of capital formation can be written as equation (6), the probability of being inefficient can be written as

$$1 - P_{inc} = \frac{1}{1 + e^{\beta_i X_i}} \tag{2}$$

Therefore, from (1) and (2) we can write

$$\frac{P_{inc}}{1 - P_{inc}} = e^{\beta_i X_i} \tag{3}$$

i.e.,

$$L_i = \ln\left(\frac{P_{inc}}{1 - P_{inc}}\right) = \beta_i X_i \tag{4}$$

Following equation (5) we can write the efficiency in the capital formation equation of our analysis as

$$L_i = \beta_1 + \beta_2 \text{ INC} + \beta_3 \text{ GEND} + \beta_4 \text{ CAST} + \beta_5 \text{ YEAR}$$

$$+ \beta_6 \text{ EDU} + \beta_7 \text{ TRN} + \beta_8 \text{ NGOHLP} + \beta_9 \text{ INT} + \beta_{10} \text{ EMPL} + \mu \tag{5}$$

Where,

INC = Income per head

GEND = Dummy variable of gender dominance in a SHG

= 1 if at least 50% members are female

= 0 otherwise

CAST = Dummy variable of dominance caste in a SHG

= 1 if at least 50% are SC, ST, OBC and minority.

YEAR = Years of functioning of the SHG.

EDU = Dummy variable of educational qualification of the member of a SHG.

= 1 if at least one member is educated up to a secondary level

= 0 otherwise.

TRN = Dummy variable for training of the member of a SHG

= 1 if members are trained

= 0 otherwise

NGOHLP = Dummy variable for help from NGO.

= 1 if the SHG got help from NGO

= 0 otherwise.

INT = rate of interest charged by group to its members per month





EMPL= Number of labour-days of engagement in income generating group activities per month.

### Analysis of results of the econometric model:

Results of our econometric analysis are shown in Table-1. It is obvious from table-1 that the variable income generation (INC) has positive and significant effect on capital formation. Gender has negative and

significant effect on capital formation, thus we can say that male dominated groups are doing well in the formation of capital. Further, the variable training has positive and highly significant effect on the capital formation. Thus, it is evident from following table that well trained group have achieved higher capital and higher level of income is essential for capital formation. The value of chi-squared reflects that our model specification is statistically significant.

**Table-I: Summary results of Econometric analysis**

Year	2009-10
Dependent variable	Capital Formation
Method of Estimation	Logistic Regression
Independent Variables	Coefficient (p-value)
Constant	-3.63
INC	0.842121 (.0009)
GEND	-1.06748 (0.039)
CAST	0.2311 (0.7176)
YEAR	0.1566 (0.574)
EDU	0.3085 (0.3189)



TRN	1.9537 (0.0000)
NGOHLP	-7316 (0.82)
INT	-2.00 (0.99)
EMPL	0.3199 (0.24)
Chi-squared(09)	109.57(0.0000)
Log likelihood function	-162.41

While studying the efficiency of the Self Help Groups (SHG’s) of Burdwan District in terms of employment generation, we assume that for a particular SHG employment generation means number of labour-days of engagement in income generating group activities per month.

Once again, we assume that

$$P_{empl} = \frac{e^{\beta_i X_i}}{1 + e^{\beta_i X_i}}$$

(6)

Where,  $P_{empl}$  =Probability of being efficient in terms of employment generation.

$X_i$  = Explanatory factors which influence the efficiency of the SHG of the Burdwan District in terms of employment generation.

If  $P_{empl}$  , i.e. the probability of being efficient in terms of employment generation can be written as equation (6), the probability of being inefficient can be written as

$$1 - P_{empl} = \frac{1}{1 + e^{\beta_i X_i}}$$

(7)

Therefore, from (6) and (7) we can write

$$\frac{P_{empl}}{1 - P_{empl}} = e^{\beta_i X_i}$$

(8)

i.e.,

$$L_i = \ln\left(\frac{P_{empl}}{1 - P_{empl}}\right) = \beta_i X_i$$

(9)

Following equation (9) we can write the efficiency in the capital formation equation of our analysis as

$$L_i = \beta_0 + \beta_1 \text{CAPFORM} + \beta_2 \text{INC} + \beta_3 \text{GEND} + \beta_4 \text{CAST} + \beta_5 \text{YEAR}$$



$$\begin{aligned}
 & +\beta_6\text{EDU}+\beta_7\text{TRN}+\beta_8\text{NGOHL}+\beta_9\text{INT} \\
 & +\beta_{10}\text{OUTTD}+ \beta_{11} \text{ OTHRACT}+ \\
 & \beta_{12}\text{OTHEXP}+ \beta_{13}\text{ACT}+\mu
 \end{aligned}$$

(10)

Where,

Probability of being efficient in terms of employment generation

Pi = 1 if a particular member has labour days per month > 20 days.

Probability of being inefficient in terms of employment generation

Pi = 0 if a particular member has labour days per month is < 20 days.

Where, all the variables are same as in the analyses of efficiency in terms of capital formation and income generation and

OUTSTD= Outstanding loan of a SHG; OTHRACT represents other engagement of some group members and ACT represents the nature of activity i.e. whether it is perennial or seasonal.

ACT is a dummy it is equal to 1 whether the group activity is perennial.

### Analysis of results of the econometric model:

Results of our econometric analysis are shown in Table-2. It is found that the capital formation and income generation have positive and highly significant effect on efficiency in terms of employment generation. As the higher level of capital is available group can enlarge their activity. Again, as income rises it can lead to generation of capital partly and can be used other portion for consumption. This motivates to work more and there by employment in terms of man-days increase. Years of functioning has moderately positive impact on employment generation. As number of years of functioning increases it helps to increase experience and from savings more capital can be generated. Help from NGO has negative and significant effect on employment because in this particular district NGOs activity has restricted to form and link the group with bank only. Outstanding loan on the other hand has negative and significant effect on employment generation as because more outstanding loan represents groups are unable to carry on their present activity efficiently and this leads to underutilization of funds. Again, from our econometric analysis we found that engagement perennial activity creates more employment generation.

**Table-2: Summary results of Econometric analysis**

Year	2009-10
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Dependent variable	EMPL
Method of Estimation	Logistic Regression
Independent Variables	Coefficient (p-value)
Constant	-2.96
CAPFORM	0.7222(0.0163)
INC	0.2194 (0.0000)
GEND	-0.8495 (0.1739)
CAST	0.4546 (0.5066)
YEAR	0.155 (0.091)
EDU	0.520 (0.2161)
TRN	0.389 (0.3051)
NGOHELP	-0.7522 (0.0522)
INT	-0,11 (7505)
OUTSTD	-0.900023 (0.0056)
OTHREACT	-0.166 (6031)
OTHEXP	0,0310 (5915)
ACT	0.934 (0,0047)
Log likelihood	-141.1721
Chi-squared (13)	105.7339

### Concluding Observations:

As mentioned earlier that this study is micro-level analysis and we collect primary data from

the undivided Burdwan district. From our study the following conclusions have emerged:

Income generation (INC) has positive and significant effect on capital formation.



While gender has negative and significant effect on capital formation clearly reveal that male dominated groups are doing well in the formation of capital. Again, the variable training has positive and highly significant effect on the capital formation as it increases the level of efficiency amongst the group members.

On the other hand, we found that both the capital formation and income generation have positive and highly significant effect on efficiency in terms of employment generation. Moreover, Years of functioning

has moderately positive impact on employment generation. Help from NGO has negative and significant effect on employment because in this particular district NGOs activity has restricted to form and link the group with bank only as a result due to lack of guidance many of them remain idle for a long time and thus employment in terms of man-days decreases. Outstanding loan on the other hand has negative and significant effect on employment generation. Finally, we found that engagement perennial activity creates more employment generation.

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## Impact of Environmental Degradation on Economic Growth in India: An Empirical Analysis

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### Abstract

*The earth's average temperature has been increasing since the industrial revolution and it was 60% higher in 2014 than 1990, therefore, there is a common consensus all over the globe about the GHG emissions particularly, carbon dioxide (CO<sub>2</sub>) methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). Several factors like increasing population, accelerated urbanisation, reckless deforestation, land degradation (from the HYV seeds, fertilizers, pesticides etc.), air pollution (from fossil fuel burning) accelerate the GHG emission. Moreover it is well known to all that the economic growth of any country is measured by the growth rate of real GDP. Again, the production of One unit of goods or services will also produce wastes, various gases etc. However, for the purpose of our short run gain, we ignore this. Now, both production and consumption of these goods are responsible for environmental degradation. The production of agricultural goods produces Methane (CH<sub>4</sub>). Again, Nitrous Oxide (N<sub>2</sub>O) is produced from fertilizer, industrial processes etc. Moreover, the energy intensive industries, transport sector produces tremendous emission of CO<sub>2</sub>. Moreover, the Consumption of various durable goods like refrigerator, air conditioner, etc. emits chlorofluorocarbons (CFCs), and hydro fluorocarbons (HFCs) to the atmosphere. Further, as population increases more of the lands now used for agricultural purpose it reduces forest area and increases GHGs emission. Against this backdrop, this study attempts to identify the impact of several GHGs i.e. carbon-dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>) and available forest area (FA) on per capita Gross domestic product (PCGDP) of India.*

**Keywords:** Environmental Degradation, Economic Growth, CO<sub>2</sub>, Per capita GDP, India.

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### I. Introduction:

There is no doubt that mankind and environment are interrelated to each other. More specifically the environment influences the life of human beings as a result we see different cultures and customs exists all over the world based on physical environment, on the other hand the human being also have bearing in their hand to modify the environment as per their needs during several stages of human civilisation and with the pace of industrial development, globalisation and

economic development the environmental quality have become least important to the mankind. As a result, the risk of large scale climate change triggering the problems like environmental degradation, pollution, ecological imbalances, forest depletion, drought, tsunami, flood, Aila, Foni and global warming from the emission of greenhouse gases (GHG). The earth's average temperature has been increasing since the industrial revolution and it was 60% higher in 2014 than 1990, therefore, there is a common consensus



all over the globe about the GHG emissions particularly, carbon dioxide (CO<sub>2</sub>) methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). Several factors like increasing population, accelerated urbanisation, reckless deforestation, land degradation (from the HYV seeds, fertilizers, pesticides etc.), air pollution (from fossil fuel burning) accelerate the GHG emission. It is assumed that the growth of a country triggers more GHG emission if there exist loose environmental laws. Moreover, it is well known to all that the economic growth of any country is measured by the growth rate of real GDP. Again, the production of output depends on the manufactured capital, natural capital, human capital, minerals, oil, coal and natural gas, water, technology etc. So, it is obvious that growth of GDP is indicative of the increased use of physical, natural and human resources. Again, the production of One unit of goods or services will also produce wastes, various gases etc. However, for the purpose of our short run gain, we ignore this. We all know that GDP of any country is the sum total of the value of the production of industrial goods, agricultural goods and services produced by the domestically owned resources. Now, both production and consumption of these goods are responsible for environmental degradation. The production of agricultural goods produces Methane (CH<sub>4</sub>) and it has a global warming potential (GWP) of 21. Again, Nitrous Oxide (N<sub>2</sub>O) has GWP of 296 over 100 year time span. It is produced

from fertilizer, industrial processes etc. Moreover, the energy intensive industries, transport sector produces tremendous emission of CO<sub>2</sub>. Moreover, the Consumption of various durable goods like refrigerator, air conditioner, etc. emits chlorofluorocarbons (CFCs), and hydro fluorocarbons (HFCs) to the atmosphere. Further, as population increases more of the lands now used for agricultural purpose it reduces forest area and increases GHGs emission. Further, urbanisation brings more emission of GHGs and responsible for forest area depletion.

But as per Environmental Kuznets Curve (EKC) propounded by Kuznets (1955), during the initial period of economic development where per capita income is low deterioration of environmental quality is caused by rapid industrialisation and urbanisation, further, with the increase in per capita income the trade-off between income growth and environmental quality cease to exist. Thus the EKC hypothesis shows an inverted U-shaped curve depicting the adverse relation between per capita income and environmental deterioration. But in reality, several studies depicted that EKC is a near myth as an increase in per capita income does not bring desirable levels of improvement to the environment.

Against this backdrop, this study attempts to identify the impact of several GHGs i.e. carbon-dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>) and available forest area (FA)



on per capita Gross domestic product (PCGDP) of India. Our study is structured as follows: section-II depicts the Review of available literatures, section-III constitutes Data and Methodology, section-IV incorporates the Analysis and Findings and section-V shows the Concluding observations of the study.

## II. Review of Literature:

The literature in this area is plenty, some of important studies are mentioned below.

**Fodha et al. (2015)** in their study, entitled 'Economic growth and Environmental Degradation in Tunisia: An Empirical Analysis of Environmental Kuznets Curve', investigates the relationship between economic growth and environmental degradation based on EKC hypothesis for the country Tunisia over the period from 1961-2004 applying time series data and co-integration analysis explored that there exist robust long run relationship between per capita emissions of two pollutants (namely CO<sub>2</sub> and SO<sub>2</sub>) and per capita GDP. More specifically the study reveals that the long run association between per capita CO<sub>2</sub> emission and per capita GDP are found to be monotonically increasing over the period. On the other hand, another environmental indicator SO<sub>2</sub> and per capita GDP follows an inverse U-shaped association indicating EKC hypothesis.

**Asici (2011)** while analysing the causal relationship between economic growth and environmental sustainability taking 213 countries all over the world over the period from 1970 to 2008 using panel data analysis has explored that as the countries grows richer it makes pressures on nature though the relationship is not linear across the different income groups, the positive relationship is much stronger in case of lower income countries than the middle and higher income groups. Moreover, the regression results shed light on the fact that particularly middle and lower income countries can succeed the higher growth rates at the expense of environmental degradation. In this perspective FDI plays a crucial role in determining the pressure on environment which is evident from the study that to attract more FDI there is a tendency of countries to lower their environmental standards. Finally, the study also found that there is a significant negative relationship between the degree of enforceability of rule of law and pressure on nature.

**Alvarado and Toledo (2017)** in their country specific study on Ecuador over the period from 1971 to 2010 estimating the relation between environmental degradation and economic growth using Johansen co-integration test and ECM model revealed that there exist an inverse relationship between real GDP and vegetation cover (proxy for environmental degradation). From the Johansen co-integration test the study found a long term association among the





variables and the ECM also showed a short term relationship among the variables like real GDP, vegetation cover and urbanisation. Moreover, the study did not found any evidence of Granger Causality among the variables.

**Panayotou (2003)** in the study entitled 'Economic growth and the environment considering ECE region has opined that despite significant progress towards sustainable development the developed nations still have unsustainable consumption patterns of continued municipal waste and CO<sub>2</sub> emissions. Moreover, in case of transition economies there is direct association between growth and emission. On the other hand, their energy intensity of GDP, although declining, continues to be several time that of developed countries in spite of the consumption patterns which follows the path of developed countries. Further, the study calls for action on many fronts by both the groups of countries as well as cooperation between them particularly in the area of technology transfer.

**Zheng et.al. (2015)** in their country specific study, entitled 'Relationship between Pollution and Economic growth in China : Empirical evidence from 111 cities, classified the 111 cities among 5 clusters, revealed that in the first cluster pollution is monotonically negative related with GDP per capita indicating industrial pollution continues to drop with economic growth. On the other hand, the second cluster follows EKC findings and in

case of the third cluster the pollution monotonically increases with the increase in GDP per capita. Further, the pollution of fourth cluster is not significantly related with GDP per capita and in the fifth cluster the study found a sharp decrease the pollution with growing GDP and then it maintains a low level. Finally, the study suggested that city features, scale effect and composition effect is important in the distribution of cities' development.

**Rambabu (2018)** in his descriptive study entitled 'Environmental Degradation in India: Causes and Effects' have depicted the causes of environmental degradation of India and also the effects of environmental degradation in India. The study pointed out the causes of environmental degradation into several categories like social factors, economic factors, institutional factors, land degradation and air pollution. Moreover, the study also revealed different adverse effects of environmental degradation which includes negative long term impact on human health, loss in bio-diversity and ozone layer depletion. Finally, the study concludes that with the rapid growth of population in combination of economic development and over use of natural resources are the fundamental reasons behind environmental degradation and the study suggested that India should take protective measures to reach environmental quality.

**Hu Yunxi (2017)** in the study, entitled 'Economic Growth and Environmental Degradation: An empirical Study on pollution



in Sichuan Province', while analysing the relationship between economic growth and pollution (taking industrial waste water, industrial solid wastes and industrial gas waste), using Johansen co-integration test and Granger Causality test, has revealed that the increase in industrial solid waste and industrial waste water have a negative impact on economic development. On the other hand, gas waste has a positive impact on economic growth.

**Audi and Ali (2018)** in their study entitled 'Determinants of Environmental Degradation under the perspective of Globalisation : A Panel analysis of selected MENA Nations', using panel ADRL approach for analysing the panel co-integration approach among the variables and Granger causality to check the causality among the variables explored that consumption of energy, economic growth, globalisation and density of population have significant and positive relation with quality of environment in case of MENA nations. Moreover, the study revealed that most of the independent variables have causal relation with environmental degradation over the period of the study in MENA nations.

There is no study as such on India that measures the effect of emission of GHGs on economic growth over the period from 1980 to 2017. This motivates us to undertake this study.

### III. Data and Methodology:

This study is empirical in nature based on secondary data available from various issues of World Development Indicators over the period from 1980 to 2017. For the purpose of our study we have considered only one developing country i.e. India. In this study we try to find out whether there is any impact of the environmental quality on the economic growth of India. The variables like carbon-dioxide (CO<sub>2</sub>), nitrous oxide (N<sub>2</sub>O), methane (CH<sub>4</sub>) and available forest area (FA) are considered as the representatives of environmental quality. For instance, if the level of CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> increases in the atmosphere it will be a sign of environmental degradation, on the other hand, in case of available forest area(FA) if it decreases then that will also be the evidence of environmental degradation. Further, per capita GDP (PCGDP) constant 2010US\$ is considered for indicating the economic growth in India. In the arena of methodology, we have used various diagrams for presenting the trends of annual growth of variables taken for the purpose of this study. We also used various statistical tools like mean, co-efficient of variations (C.V) for measuring the average value and variability of the growth component of variables taken for this study and finally, this study has also incorporate linear regression method for measuring impact of emission of several GHGs on PCGDP over the period of our study.

### Econometric Analysis:



In this part we have made a regression analysis to capture the effect of several explanatory factors on PCGDP of Indian economy over the period from 1980 to 2017. For this purpose, we have taken the log value of all the variables i.e. CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, FA and PCGDP.

**Econometric Model specification:**

$$\text{LnPCGDP} = \alpha + \beta_1 \text{LnCO}_2 + \beta_2 \text{LnN}_2\text{O} + \beta_3 \text{LnCH}_4 + \beta_4 \text{LnFA} + \epsilon$$

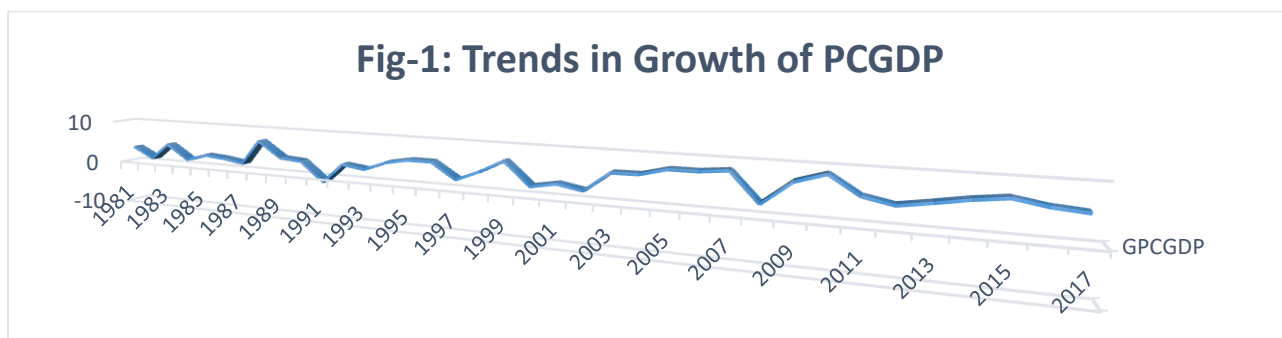
Where, LnPCGDP is the Dependent variable,

LnCO<sub>2</sub>, LnN<sub>2</sub>O, LnCH<sub>4</sub> and LnFA are the explanatory factors,

€ is the error term which is normally distributed.

**IV. Analysis and Findings:**

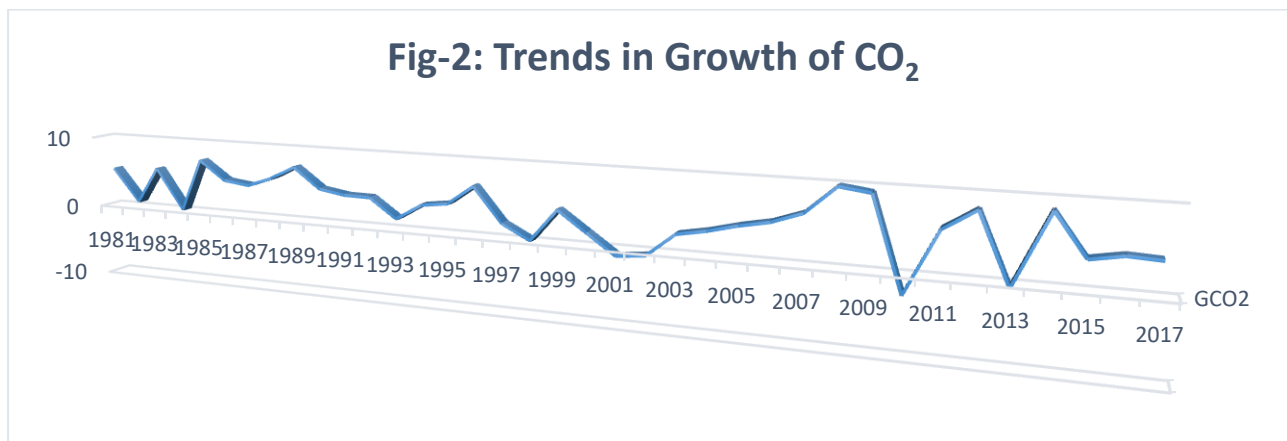
Our study is both descriptive and econometric one. At the very beginning of our analysis we show the trends in the growth components of variables taken for the purpose of our study. The per capita GDP of any country represents per capita gross value added to the country.



Source: Author’s own computation

The trends of growth of PCGDP represents that the growth rate of PCGDP (see Fig-1) hovers around -0.98255% (year 1991) to 8.7631% (2010) over the period of our study with a mean growth of 4.490% with variability of 50.72% (see appendix table-1)

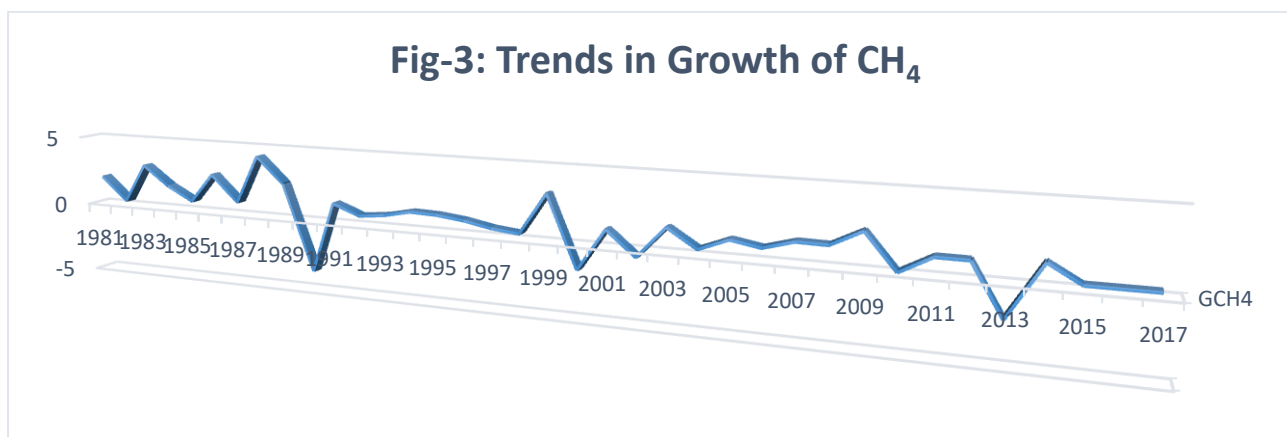
Further, in Fig-2 we have presented the trends in growth of CO<sub>2</sub> emission. The burning of fossil fuel, the energy intensive industries, transport sector are the main producers of CO<sub>2</sub>.



Source: Author’s own computation

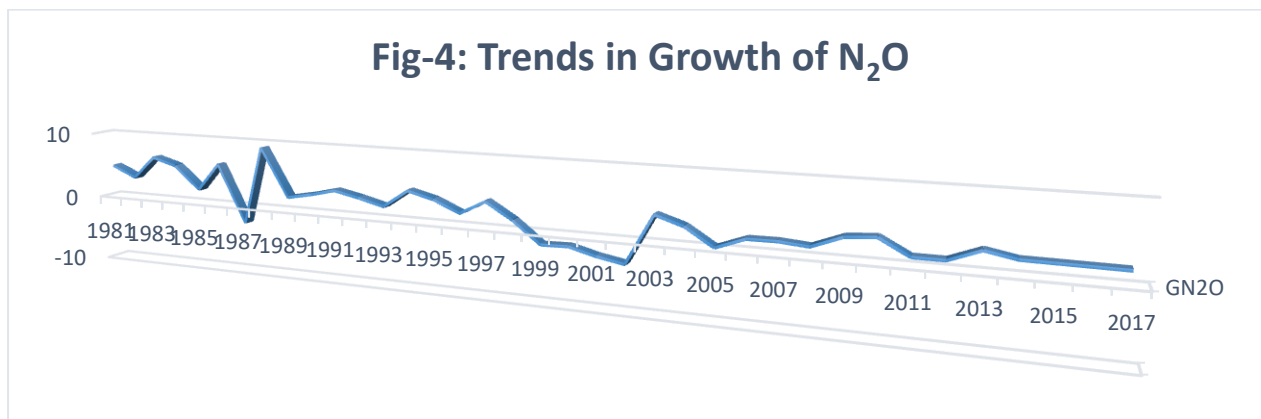
From Fig-2 we found that growth of CO<sub>2</sub> reaches the highest growth in the year 2008 (9.796%) with the minimum growth in the year 2001 (-0.83%). On the other hand, the mean value of the growth of Co2 is found to be 4.077% with the variability of 72.36% (see appendix table-1).

Now, another environmental degrading element i.e. methane (CH<sub>4</sub>), the trends in growth of CH<sub>4</sub> is depicted in Fig-3. Different agricultural activities are the main drivers for CH<sub>4</sub> emission.



Source: Author’s own computation

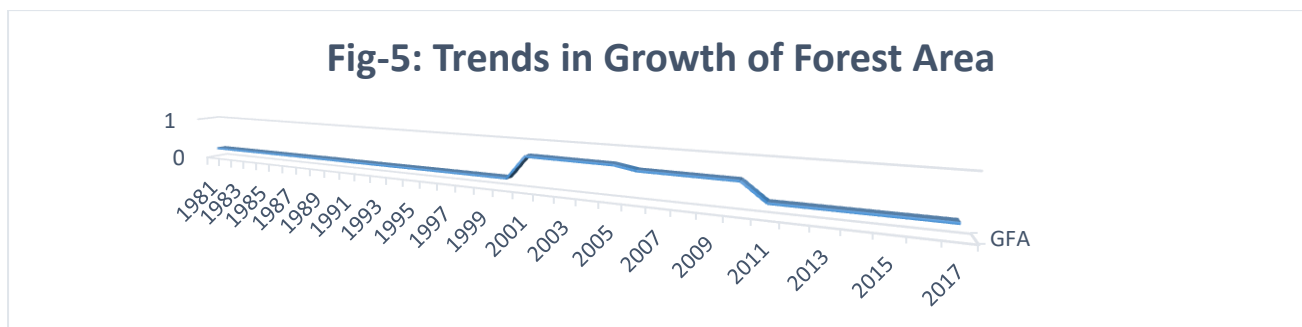
Trends in growth of CH<sub>4</sub> hovers around -3.60% (year 1990) to 4.31% (Year 1988) over the period of our study. Interestingly, the study shows that the emission of methane is found to be in a decreasing trend indicating the decreasing rate of agriculture. Moreover, the mean growth rate of CH<sub>4</sub> is 0.998% with highest variability of 145.75% (see appendix table-1).



Source: Author’s own computation

The trend of growth rate of N<sub>2</sub>O, presented in Fig-4, represents that it reaches highest growth rate in 1988(9.25%) with the lowest growth rate in 2002 (-3.192%), with mean growth rate of 2.33% with higher variability of 108.58% (see appendix table-1).

In Fig-5 we present the trend in growth of available forest area (FA) which represents the environmental quality. Therefore, if the forest area decreases over the time it represents environmental degradation.



Source: Author’s own computation

The FA growth rate hovers around 0.22% to 0.71% over the study period. Interestingly, in this case we found a sharp increase in available forest area from the year 2001 and it sustains till 2010 but after that there was a drastic fall in 2011 and that’s to continue till the end of our study period. We found an average growth around 35% with 54.8% variability (see appendix table-1).

Further, we have made an econometric analysis to show the effect of GHGs on LnPCGDP, the results of our regression analysis is presented below in table-1.

**Table-1: Results of Regression Analysis**

Dependent Variable: LNPCGDP  
 Method: Least Squares



Date: 04/20/19 Time: 13:35  
 Sample: 1980 2017  
 Included observations: 38

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNCO <sub>2</sub>	0.637865	0.147290	4.330683	0.0001
LNCH <sub>4</sub>	-0.752154	0.376654	-1.996937	0.0541
LNN <sub>2</sub> O	-0.027640	0.198451	-0.139281	0.8901
LNFA	7.297969	0.958629	7.612925	0.0000
C	-5.653541	4.366303	-1.294812	0.2044
R-squared	0.996186	Mean dependent var		6.652532
Adjusted R-squared	0.995724	S.D. dependent var		0.493145
S.E. of regression	0.032248	Akaike info criterion		-3.908667
Sum squared resid	0.034317	Schwarz criterion		-3.693195
Log likelihood	79.26466	Hannan-Quinn criter.		-3.832003
F-statistic	2154.950	Durbin-Watson stat		0.686856
Prob(F-statistic)	0.000000			

Source: Author’s own computation

It is evident from table-1 that the value of R<sup>2</sup> is found to be 99.61% i.e. about 99.61% of the variations in dependent variable can be explained by the explanatory factors. Moreover, as F-value is highly significant so our model specification is also statistically significant. Our analysis revealed that the variables CO<sub>2</sub>, FA and CH<sub>4</sub> have statistically significant impact on PCGDP. The co-efficient of CO<sub>2</sub> and FA is found to be positive implying that increase in carbon-dioxide emission and available forest area have positive bearing on Per capita GDP but in case of CH<sub>4</sub> theco-efficient is found to be negative implying that if there is increase in methane emission that will lead to decrease in PCGDP. Further, the variable N<sub>2</sub>O has shown insignificant impact on PCGDP.From the above results one can plausibly conclude that due to industrialisation or owing to expansion of the use of sub-standard technology may lead to enhancement in GDP but at the cost of

more emission of CO<sub>2</sub> into the environment. Again, expansion of forest area indicates more availability of natural resource in the hands of the country and thus country can enjoy the benefit of such resources.

Moreover, from our regression analysis we find no such convincing evidence of EKC hypothesis implying that either India still being a developing nation has not reached the equilibrium income level to satisfy the EKC hypothesis or that hypothesis is far from reality for a developing nation like India.

### V. Concluding Observations:

From our study the following conclusions have emerged:

**First**,from our descriptive analysis it is evident that the trends of growth of PCGDP hovers around -0.98255% (year 1991) to 8.7631% (2010) over the period of our study with a mean growth of 4.490% with variability of 50.72%. On the other hand,the





growth of carbon-dioxide (CO<sub>2</sub>) reaches the highest growth in the year 2008 (9.796%) with the minimum growth in the year 2001 (-0.83%) along with the mean value of the growth of Co<sub>2</sub> is found to be 4.077% with the variability of 72.36%.

**Second**, the trends in growth of methane (CH<sub>4</sub>) hovers around -3.60% (year 1990) to 4.31% (Year 1988) over the period of our study. Interestingly, the study shows that the emission of methane is found to be in a decreasing trend indicating the decreasing rate of agriculture. Moreover, the mean growth rate of CH<sub>4</sub> is 0.998% with highest variability of 145.75%. Again, the trend of growth rate of nitrous oxide (N<sub>2</sub>O), represents that it reaches highest growth rate in 1988 (9.25%) with the lowest growth rate in 2002 (-3.192%), with mean growth rate of 2.33% along with quite higher variability of 108.58%.

**Third**, the available Forest Area growth rate hovers around 0.22% to 0.71% over the study period. Interestingly, in this case we found a sharp increase in available forest area from the

year 2001 and it sustains till 2010 but after that there was a drastic fall in 2011 and that's to continue till the end of our study period. We found an average growth around 35% with 54.8% variability.

**Fourth**, our regression analysis reveals that the variables CO<sub>2</sub>, FA and CH<sub>4</sub> have statistically significant impact on PCGDP. The co-efficient of CO<sub>2</sub> and FA is found to be positive implying that increase in carbon-dioxide emission and available forest area have positive bearing on Per capita GDP but in case of CH<sub>4</sub> the co-efficient is found to be negative implying that if there is increase in methane emission that will lead to decrease in PCGDP. Further, the variable N<sub>2</sub>O has shown insignificant impact on PCGDP.

**Finally**, from our regression analysis we find no such convincing evidence of EKC hypothesis implying that either India still being a developing nation has not reached the equilibrium income level to satisfy the EKC hypothesis or that hypothesis is far from reality for a developing nation like India.

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**Appendix Table-1: Annual Growth, Mean and C.V of all the GHG variables and PCGDP**

<b>Year</b>	<b>Growth in PCGDP</b>	<b>Growth in CO<sub>2</sub></b>	<b>Growth in FA</b>	<b>Growth in CH<sub>4</sub></b>	<b>Growth in N<sub>2</sub>O</b>
1981	3.57805	5.433024	0.23053	2.034518	4.848352
1982	1.101035	0.819084	0.23053	0.324535	3.219783
1983	4.835436	5.8267	0.23053	3.088273	6.595989
1984	1.471103	0.175901	0.23053	1.698156	5.55211
1985	2.908434	7.483609	0.23053	0.707454	2.136846
1986	2.480293	4.891336	0.23053	2.77247	6.255143
1987	1.723703	4.453232	0.23053	0.914618	-2.45448
1988	7.302964	5.710582	0.23053	4.317705	9.250302
1989	3.736988	7.461584	0.23053	2.528916	2.067347
1990	3.366901	4.738335	0.23053	-3.60815	2.775023
1991	-0.98255	4.159319	0.226937	1.412292	3.667756
1992	3.3907	4.107518	0.226418	0.683739	2.869042
1993	2.706143	1.499579	0.225912	0.876228	1.907684
1994	4.604721	3.634857	0.225397	1.26834	4.502826
1995	5.527287	4.104288	0.224896	1.202251	3.542229
1996	5.526797	6.674522	0.224391	0.979217	1.86775
1997	2.118629	2.077287	0.223883	0.613426	3.857745
1998	4.243708	0.155345	0.223389	0.417651	1.511962
1999	6.89248	4.451441	0.222885	3.240004	-1.58193
2000	2.015559	1.802419	0.222395	-1.65136	-1.47059
2001	3.021236	-0.83402	0.709278	1.200392	-2.48284
2002	2.058116	-0.44427	0.704295	-0.44628	-3.19255
2003	6.086694	2.585388	0.699357	1.651768	3.917591
2004	6.187575	3.288613	0.694512	0.422224	2.673117
2005	7.56712	4.247262	0.68971	1.204744	0.182854
2006	7.58463	4.999076	0.614694	0.860135	1.699776
2007	8.153567	6.348443	0.610927	1.418336	1.741613
2008	2.375249	9.796095	0.607229	1.386964	1.421187
2009	6.950039	9.292926	0.603552	2.400208	3.008747
2010	8.763184	-2.4329	0.599943	0.090511	3.34298
2011	5.248537	5.703431	0.255622	1.200049	1.2
2012	4.134718	8.221941	0.25497	1.185771	1.185771
2013	5.096692	-0.41679	0.254333	-2.13339	2.800754
2014	6.140334	8.706754	0.253676	1.430034	2.028849
2015	6.899036	3.633893	0.253035	0.296297	1.988505
2016	5.889836	4.354671	0.252396	0.295422	1.949734
2017	5.429243	4.172953	0.251765	0.294551	1.912447
<b>Mean</b>	<b>4.490113</b>	<b>4.07793</b>	<b>0.347597</b>	<b>0.988595</b>	<b>2.332417</b>
<b>SD</b>	<b>2.277657</b>	<b>2.950825</b>	<b>0.190499</b>	<b>1.44097</b>	<b>2.532683</b>
<b>CV</b>	<b>50.72606</b>	<b>72.36086</b>	<b>54.80441</b>	<b>145.7594</b>	<b>108.5862</b>

Source: Author's own computation



## THE BASIC PRINCIPLES OF NATUROPATHY: IS THE SCIENCE OF HEALTH AND HEALTHY LIVING.

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### Abstract

*Naturopathy is a system of health care comprises a traditional system of healing based on philosophical principles vogue to ancient India. It has its own concepts of health and disease and also principles of treatment. Ancient scriptures like Vedas give a comprehensive detail about these practices. This system laid more importance on the preventive health rather than curative one. This is one of the reasons that Naturopathy system is gaining popularity day by day. Naturopathy is a science of health and healthy living. It teaches us how to live healthy? What to eat? And how our daily routine should be? And help a person in attaining freedom from disease and with the help of their regular use, positive and vigorous health can be acquired. The main objectives of Naturopathy are to change the unhealthy living habits of people and to teach them the healthy and positive lifestyle in accordance to the laws of Nature with the effective help of different Naturopathy modalities. Naturopathy system is found very effective in the management of various disorders where there is no cure. The present paper states the current approaches of research in Naturopathy highlighting its basic principles. It also throws light on the reasons behind and explores new areas of research indicating the need of evidence base.*

**Keywords:** *Naturopathy; Naturopathy research; Evidence base.*

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### Introduction

Naturopathy comprises a traditional system of healing based on philosophical principles vogue to ancient India. Many techniques of Naturopathy system like ushapanam and upvas (fasting) were part of routine living practices peculiar to early days. Ancient scriptures like Vedas give us a comprehensive detail about these practices [3]. Naturopathy is a system of health care. It is called as science of healthy living. It is a drugless system of healing based on well

founded philosophy. Naturopathy has its own concepts of health and disease and also principles of treatment. It lays more importance on the preventive aspect of health care rather than curative one. This is one of the reasons that Naturopathy system is gaining popularity day by day. It has great health promotive, diseases preventive and curative as well as restorative potential [4] Naturopathy is basically a preventive system of treatment. It believes that man is a complete health unit and treat the body



physically, mentally, socially (morally) and spiritually for all round health [1]. If one follows the laws of nature he may prevent himself from various diseases. According to Naturopathy as defined by Lindlahr [2], “The primary cause of disease, barring accidental or surgical injury to the human organism and surroundings hostile to human life, is violation of Nature’s laws. The effects of violation of Nature’s laws on the physical human organism are:

- Lowered Vitality
- Abnormal composition of blood and lymph.
- Accumulation of waste matter, morbid materials and poisons” To prevent the diseases one has to obey the universal laws of nature in life by adopting the natural methods of living and of treatment. These methods which are applicable in the prevention and management of most of the disorders have been described by Lindlahr [2], as under:

- **Return to Nature** by the regulation of eating, drinking breathing, bathing, dressing, working, resting, thinking, the moral life, sexual and social activities, etc. establishing them on a normal and natural basis.

- **Elementary remedies**, such as water, air, light, earth cures, magnetism, electricity, etc.

- **Chemical remedies**, such as scientific food selection and combination, homeopathic medicines, simple herb extracts and the vito chemical remedies.

- **Mechanical remedies**, such as corrective gymnastics, massage, magnetic treatment, structural adjustment and in cases of accident, surgery.

- **Natural and spiritual remedies**, such as scientific relaxation, normal suggestion, constructive thought, the prayer of faith etc.

The difference between Naturopathy and other systems of medicine is that in Naturopathy the methods and treatments used to encourage the inherent curative reaction within each cell are based upon the five fundamental laws which govern health[5]. The cure is obtained, not by reactions to the medicines introduced but because the very vitality and the health of diseased cells improve with the help of the methods and treatments used. According to Naturopathy for sound health tranquility of mind, balanced food, regular exercise and proper rest are essential[6].

### **The main principles of Naturopathy are as under [2]:**

1. All disease, their cause and their treatment are one.
2. The primary cause of disease is not bacteria. Bacteria develop only after the accumulation of morbid matter when a favorable atmosphere for their growth develops in the body. Hence, the primary cause of disease is morbid matter not the bacteria.
3. Acute diseases are self healing efforts of the body. Hence they are our friends, not the enemy. Chronic diseases are the outcome of wrong treatment and suppression of the acute diseases.
4. Nature is the greatest healer. Body has a capacity to prevent itself from disease and regain health, if unhealthy.
5. Patient is treated not the disease.
6. Treats physical, mental, social (moral) and spiritual all the four aspects together.
7. Treats body as a whole instead of giving treatment to each organ separately.
8. Naturopathy does not use medicines. According to Naturopathy, ‘Food is Medicine.’

Naturopathy is a science of health and healthy living. It teaches us how to live healthy? What to eat? And how our daily



routine should be? The methods of Naturopathy helps a person in attaining freedom from disease and with the help of their regular use, positive and vigorous health can be acquired. Hence, Naturopathy is also called as Natural life[7]. Its main objective is to change the unhealthy living habits of people and to teach them the healthy lifestyle in accordance with the laws of Nature. Different modalities of Naturopathy are very effective in the fulfillment of this pursuit[8].

It believes that the human body has remarkable recuperative power. It is composed of five great elements i.e. Panchamahabhootas, imbalance of these creates disease. Treatment of the diseases by these elements i.e. Air, Water, Earth, Fire and Ether is known as Naturopathy.

### Modalities of Naturopathy

The main modalities of Naturopathy are comprised of:

#### Diet therapy

It is the main modality under Naturopathy which stresses that the food must be taken in natural or maximum natural form only. Fresh seasonal fruits, fresh green leafy vegetables and sprouts are excellent form of natural foods.

- **Eliminative Diet:** Liquids- Lemon water, Citric juices, Tender Coconut water, Vegetable soups, Butter milk, Wheat grass juice etc.

- **Soothing Diet:** Fruits, Salads, Boiled or Steamed Vegetables, Sprouts, and Vegetables etc.

- **Constructive Diet:** Wholesome flour, Unpolished rice, little pulses, Sprouts, Curd etc. These diets are alkaline in nature and purify the body, improve health and render it immune to disease. Naturopathy believes

that for preserving health the diet should consist of at least 20% acidic (cooked) and 80% alkaline (uncooked) food. Considering the importance of food in Naturopathy it is regarded as Basic Medicine [5]. Stange R [6] stated that when applied to functional disorders, dietary treatment- the most important measure in natural medicine - has its greatest effect when these disorders affect the gastrointestinal tract, in particular epigastric dyspepsia and irritable bowel syndrome. On the basis of a comprehensive dietary anamnesis, it is often possible to identify foodstuffs and eating behavior capable of aggravating the patient's symptoms[15]. The underlying basic principle of treatment is that the gastrointestinal tract first undergoes a temporary period of rest before being gradually re-accustomed to a biologically high-quality diet. A central approach includes various forms of fasting therapy, in particular in the case of severe conditions, which can usefully be supported by additional relaxation techniques, psychotherapy, hydrotherapy, massage and special manual techniques[16].

#### Fasting therapy

It is an important modality comes under Naturopathy. Mental preparedness is essential to yield effective results in fasting. According to Naturopathy there is only one cause of disease i.e. accumulation of morbid matter and only one cure i.e. elimination of morbid (toxic) matter from the body. Fasting is an effective treatment for removing the disorders of mind and body and is a process of providing rest to digestive system. The vital energy which digests the food is wholly engaged in the process of elimination during fasting.

#### Mud therapy

It is one of the important modality, which is very simple but highly effective. The mud





used for therapeutic purpose is neat and clean and free from contamination of stone pieces or chemicals, manure etc., and is taken from 5 to 6 ft. depth from the surface of the ground.

Mud therapy gives coolness to the body. It dilutes and absorbs the toxic substances of body and ultimately eliminates them from body. Mud packs and Mud baths are the main forms of treatment. Mud is used effectively in constipation, headache due to tension, high blood pressure and skin diseases etc. Mud pack is applied on forehead also in headache and high blood pressure. A study was conducted to evaluate the short-term effects of mudpack therapy on pain relief and functional improvement in knee osteoarthritis in comparison with intra-articular hyaluronic acid injections[17]. The study included 23 patients who were diagnosed as having knee osteoarthritis according to the ACR (American College of Rheumatology) criteria, and had complaints lasting for more than three months. All the patients had stage 2 or 3 osteoarthritis radiographically according to the Kellgren-Lawrence criteria. Twelve patients (3 males, 9 females; mean age  $54 \pm 6$  years; range 46 to 67 years) received mud therapy bilaterally. Mud packs were heated to  $45^\circ\text{C}$  and applied on both knees for 30 minutes daily for a total of 12 weekdays. Eleven patients (2 males, 9 females; mean age  $53 \pm 9$  years; range 40 to 66 years) received a total of three bilateral intra-articular hyaluronic acid injections, each interspersed by weekly intervals. The study revealed that Mud-pack therapy is a noninvasive, complication-free, and cost-effective alternative modality for the conservative treatment of knee osteoarthritis [9].

### Hydrotherapy

Water is a main component of Naturopathy. It is an ancient method of treatment used mainly for preserving health, relieving the

inner congestion [10] and curing different types of diseases. Taking bath in clean and fresh water is very effective as it opens up the pores of skin, imparts lightness and alertness to the body, all systems and muscles of body are activated and the blood circulation improves[18]. It is believed that the old tradition of taking bath in rivers, ponds or water falls on specific occasions in India is virtually a form of Hydrotherapy only. Hip bath, Enema, Hot and Cold fomentation, Hot foot bath, Spinal bath, Steam bath, Immersion bath, Hot and Cold packs on Abdomen, Chest and other parts of the body are the recent developments in Hydrotherapy. In naturopathy, application of a cold chest pack for 30 min daily over a period of time is believed to improve lung functions in bronchial asthmatics. For scientific evaluation of this treatment, a study was carried out on 15 medication-free bronchial asthma patients (2 males) with ages from 19 to 42 years. The peak expiratory flow rate (PEFR, in l/min) was recorded before, during and after a 30 min application of a cold chest pack. This treatment was carried on for 21 days, during which the patients received other naturopathy treatments such as fasting, diet changes, hydro therapy, massage, magneto therapy, color therapy and application of mud packs, along with yoga therapy. The results suggest that (i) an application of a cold chest pack increase the PEFR as an immediate effect and (ii) this effect is augmented following 21 days of other naturopathy treatments along with yoga [11].

### Massage therapy

It plays an important role in Naturopathy treatment procedure. It is a scientific and systemic manipulation of the tissues and organs of the body, aims at improving the blood circulation and also at strengthening muscles and bodily organs. Taking Sun bath





after massaging the whole body is a well known health practice in India during winters. It bestows combined benefits of massage and Sun rays therapy[20]. To overcome different disease symptoms, specific techniques of massage are used and necessary therapeutic effects are obtained through it. Mustard oil, sesame oil and coconut oil are generally used in massage for lubrication as well as for creating therapeutic effects. A randomized controlled trial including 60 participants was conducted in Sweden between 2005 and 2007 to evaluate change in health-related quality of life for people with constipation receiving abdominal massage. The control group continued using laxatives as before and the intervention group received additional abdominal massage. Health-related quality of life was assessed using the EQ-5D and analyzed with linear regression. The study revealed that abdominal massage may be cost-effective in the long-term and it is relevant to consider it when managing constipation [12].

### **Chromo therapy**

The seven colours of spectrum i.e. Violet, Indigo, Blue, Green, Yellow, Orange and Red are used in Naturopathy as therapy which have different therapeutic properties and effects. Chromo therapy is applied by coloured bottles filled with water or oil and exposed to Sun rays for specified hours. This colour charged water is used as an external application for skin disorders and is also ingested as a tonic for digestive disorders[19]. Specific colours are applied on specific parts with the help of lamps with the specific coloured glasses. These devices of Chromo therapy are used effectively in prevention and treatment of different diseases. These colours are also applied in daily life in various ways like coloured light in the room, coloured clothing, colours in dining form, foods charged by specific colours, wall paints, colour of furniture etc.

### **Air therapy**

Fresh air, an important part of Naturopathy is most essential for good health. The advantage of air therapy is achieved by taking air bath daily for at least 20 minutes. Walking in fresh air is a best form of air bath. It is more advantageous when combined with morning cold rub and exercises. Air bath has soothing and tonic effect upon the millions of nerve endings all over the surface of the body and enhances the elimination process. It has shown good results in nervousness, neurasthenia, rheumatism, skin, mental and various other chronic disorders. As Lindlahr [4] says, 'Walking is a splendid form of exercise, provided it is made vigorous enough to set in motion all the muscles of the body and to produce perspiration. There is no better form of elimination than natural perspiration' [13]. Naturopathy provides a systemic schedule to all its patients consisting of a diet prescription followed by certain Naturopathy treatments and do's and don'ts with a view to change their life style in a positive manner [15].

### **Research in Naturopathy**

In view of increasing role of Naturopathy to intervene in various psychosomatic and lifestyle disorders, the scope of research to establish the efficacy of Naturopathy is also increasing. Currently, an exploration of potential of this system is approached at various premier Indian research institutions of modern medicine and also by some Naturopathy Hospitals. Research is a determined and disciplined activity aiming at answering a particular question [21]. It is a challenging work requiring a great sum of efforts and dedication. The priority of research in naturopathy system is required to be decided as per the needs in reference to



its limitations and expectations [14]. Bhole has categorized a few potential areas where research in the field of yoga can be undertaken. These areas are - Philosophical-literary research, Educational research, Experimental research, Clinical and applied research and experiential research [21].

### Conclusion

A research oriented scientific approach to establish the system of naturopathy is

therefore, required urgently. Though various trials to study the efficacy of naturopathy have been made, a lot of work is still required to explore the potentials of this system for bringing an ultimate and dependable cure from their ambit. Rigorous clinical trials are required to affirm the possible role of naturopathy in management of various disorders in natural ways. Thus naturopathy depicts rightly the science of health and healthy living.

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## Impact of Cyclonic Storm Aila on the Traditional Fishing Communities of Sundarban Areas: A Case Study

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### Abstract

*The traditional fishermen of West Bengal coast are such communities those who are normally facing several natural hazards day by day when they are living in the coastal areas either permanently or temporarily. Most of these hazards are marine hazards which have a very devastating effect on their daily life. Aila was such a devastating cyclonic storm which has a long term effect especially on the coastal areas fishermen of South 24 Parganas District. In the present paper an attempt has been made to study the impact of this cyclonic storm on the traditional fishing communities of South 24 Parganas coast. At the same time an effort has been taken to evaluate the post Aila rehabilitative measures in the area. During the study and analyzing data different anthropological techniques have been used with due importance.*

**Keywords:** Cyclonic Storm Aila, Tadtional fishing communities, Sundarban Areas, Impact, Rehabilitative measures, South 24 Parganas coast.

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The old view of disasters as temporary interruptions on the path of social and economic progress to be dealt with through humanitarian relief and aid has undergone a paradigm shift. As nations are making continuous efforts to reduce the damage and face such occurrences far more prepared, a substantive change has come both in methods and process of approaching disasters (Samanta et al., 2013: 101-111). Apart from reassessing and remodeling their relief and rescue strategies as they do during the disaster time, the affected countries are increasingly treating disasters more holistically. Now, disaster management encompasses such strategies as disaster preparedness, recovery, mitigation and a

host of other activities that the world was ever familiar too (Sahoo, 2005). The unique geo-climatic conditions of the Indian sub-continent make this region the most vulnerable to natural disasters in the world. Obviously in the coastal areas of West Bengal it is a common phenomenon. So, it can be said that in a time when natural disasters are striking in the region with increased frequencies causing death and devastations, it would be pertinent to think about their long term remedies (Samanta et al., 2013: 101-111). Undoubtedly it can be said that the fishermen are mostly residing near to the embankment so always they are adversely affected due to several natural calamities.



### 1.1 Cyclones or Super Cyclones hit West Bengal coast

The east coast of India is prone to incidences of cyclones. Records of incidence of cyclonic storms and severe cyclonic storms in Orissa section of the Bay of Bengal of India Meteorological Department (1877 to 1980) give the average month-wise numbers as follows:

January 0 (0)	July 36(7)
April-May 8(7)	
February 0 (0)	August 29(4)
June-September 118(22)	
March 0(0)	September 29(8)
October-December 29(14)	
April 0(0)	October 20(9)
Annual 155(43)	
May 8(7)	November 9(5)
June 24(3)	December 0(0)

The probable maximum storm surge in metres is as follows:

Contai – 12.5	Sagar – 11.5
Moore Island - 8.5	

Source: (ICZMP, 2010).

In recent years there are some severe devastating cyclones and super cyclones on the South 24 Parganas coast. Although these have no direct effects on the Purba Medinipur coast, but sometimes it had a tremendous impact on the South 24 Parganas specially during the time of *Aila*. Most of the time, these cyclonic disasters had a very severe effect on the Orissa and Bangladesh and even on this state also. There are four cyclonic disasters *Sidar*, *Nargis*, *Bijli* and *Aila* generally originated from Bay of Bengal and attacked on the West Bengal coast (Roy, 2010: 169-181). Since 2006, primarily four cyclones seriously hampered the normalcy in life and activities of the people of South 24 Parganas District. When the casualty is concerned the traditional fishermen were the most affected section of the area. In the year 2004 very

strong super cyclonic storm *Tsunami* had very devastating effect on the coastal areas of India. Although the coastal areas of Purba Medinipur did not suffer from such devastation as it happened in most of the areas of south east coast of India. Not only that the cyclone *Aila* which hit West Bengal specially to South and North 24 Parganas Districts on May 25 and 26<sup>th</sup>, 2009, devastated the lives and livelihoods of lacks of people. Rescue, rehabilitation and reform activities are the most important matter of concern after the occurrence of any natural calamities (Samanta et al., 2013: 101-124).

### 1.2 Methodological considerations

#### 1.2.1 Study areas

Very large areas of southern West Bengal were affected by the cyclone *Aila* in May 2009. It had a very devastating effect on all rounds in the life and activities of the coastal areas people southern West Bengal and Bangladesh. On the basis of textual documents and personal observations of the researchers it became clear that most of the coastal areas of Southern West Bengal are either dominated by the fishing communities or there have a very significant number of population, who are depending on various types of fishing related activities. These fishing related activities are generally treated as one of their most prominent sources of income. Due to some specific reasons like as the most badly affected areas, extremely sea side reason, absolutely fishing communities dominated areas, year round fishing activities, very frequent occurrence of devastating natural hazards, traditional attachment with fishing activities and like that Gadadharpur and adjoining villages of Pathar Pratima Block have been selected for the study.

#### 1.2.2 Methods used

To smoothly conduct the research work several precautionary measures have been



adopted by the researchers specially to collect data and other related information. In the total process of study, the research problems has been identified based on literature review, time series interpretation of satellite images, disaster reports consultation and fieldwork, open discussion with local key informants as well as householders interviews. Researcher's long personal experience and close observation as due to the long contact with the areas have also helped enormously to fix up the problem as well as to study the problem. The infrastructural facilities viz. flood shelter; storages etc have been traced out personally. A direct fieldwork has been conducted in the selected villages (on the sampled households) beyond that several other information has been collected from other affected areas and secondary data sources. Anthropological and few simple geographical methods have been used to conduct the study. Special importance have been given on the case study and interview based information at the same time observation has also treated as another important method in the data collection process.

### 1.3 Natural hazards in the coastal areas of West Bengal

The state of West Bengal is situated between latitudes.21°38' N and 27°10' N and longitudes 85°38' E and 89°58' E. It is the northernmost Indian state bordering the Bay of Bengal and has to its south with Orissa, while Bangladesh is to its east. Throughout West Bengal there are more than 11000 fisherman village and approximately 24,74,337 fishermen are living in these villages. There are huge marine and inland fishing resources. West Bengal has a short coastline - only about 64 km, spread along the southern edge of its three maritime districts, North 24 Parganas, South 24 Parganas and Purba Medinipur. The marine

fisheries sector has developed gradually, only during the late '50s (BOBP, 2011).

### 1.4 *Aila* and its devastating effects in the coastal areas of West Bengal

The cyclone *Aila* devastated the lives and livelihoods of lacks of people who lived in the harmful way in the West Bengal coast. According to the Government of West Bengal statistics, over 6.77 million people were affected and 137 were killed in both North 24 Parganas and South 24 Parganas, the two worst hit districts of West Bengal. The cyclone *Aila* collapsed more than 500 kilometers of embankments and 9,26,000 semi permanent houses. As on 7<sup>th</sup> June, 2009 there are approximately 3,61,000 internally displaced people who were living in 569 make shift government relief camps (Sphere India, 2009).

In view of emerging needs and expected early monsoon forecast, there is a high demand of safe drinking water, sanitation facilities, good hygiene practices, access to healthy food, temporary shelters and critical medical facilities, mostly in those affected cut off villages of Sundarbans (Sphere India, 2009). As per the official damage report by Government of West Bengal, 2.89 million hector agricultural lands were inundated with 100% loss of standing crops and stored grains specially in South 24 Parganas & North 24 Parganas Districts (Sphere India, 2009).

Due to the attack of the cyclonic storm *Aila* along with the loss of lives a large amount of food materials, live stocks, households, courtyards; cow sheds, straw tags etc. were destroyed in the said areas. It is observed that the worst hit areas are mostly situated in the different islands of Sundarbans region of costal borders of West Bengal. During the time of *Aila* in some areas there were four meter or higher tidal surge and flooded low lay regions overflowing the embankments,





washing the thousands of households completely. Due to this attack the coastal belt and river side villages were severely affected and mud houses, cow sheds, straws tags, school buildings, health centers, roads, vehicles etc. were destroyed due to this devastating natural hazard.

### 1.5 Most badly affected areas

Mainly several areas of southern West Bengal were most badly affected by the *Aila*. Among the 12 affected districts of West Bengal, the damage in North & South 24 Parganas were maximum. Out of the total crop affected area of 2,56,750 ha in all the 12 districts, the share of North 24 Parganas was 55,600 ha and that of South 24 Parganas was 69,150 ha. The most severely affected areas of South 24 Parganas were Namkhana, Patharpratima, Sagar, Kakdwip, Kultali, Gosaba and Basanti whereas in the North 24 Parganas the most badly affected areas were Sandeshkhali, Hingalganj, Minkha, Hasnabad, Bashirhat I & II, Haroa, Baduriya, Swarupnagar, Gaighata, Bangoan and Bagda. At the same time some of the coastal areas of Purba Medinipur District were also affected to some extent (Samanta et al., 2013).

### 1.6 *Aila* and the loss of fishing-related livelihoods in the coastal areas of West Bengal

On the basis of present research work it can be said that most of the areas under study, fishing was one of the prominent sources of income but it was affected tremendously. The main livelihood in the affected areas is fishing, with significant number of people directly or indirectly involved in fishing sectors in any way for maintaining their daily livelihoods. There is a large number of

shrimp ponds (fish pond), as well as large areas of sweet fish ponds which were damaged by cyclone *Aila*. The estimated loss was several millions. *Aila* hit when fishermen were preparing to harvest the season's first output, meaning that all products ready to export (shrimps) were washed away. Most of the fish enclosures and ponds that were damaged by *Aila* are still inundated due to broken embankments and income losses continue for a large number of people.

Day laborers (mostly female) and small traders involved in collecting shrimp from farm and selling to mainland whole sellers were seriously affected. Many people lost their boats, many crafts were damaged and needed to be repaired, and many people reported that they had to sell their boats to pay for day to day family expenses. In the fishing sector, many people especially women were engaged in catching shrimp and crab in the forest, but prices were decreased as compared to before *Aila*. In this changing scenario, however, there are other fishing opportunities available in open water bodies such as rivers, canals, and inside the forest, but people do not have the necessary capital or equipment such as boats, nets and tools. Women also have opportunities for fishing inside the embankments due to continued inundation with sea water.

#### 1.6.1 Role of *Aila* on the study areas

The size of the G-Plot Island is gradually sinking due to erosion. The Gobardhanpur, Sitarampur and Buraburir Tat mouzas are worst affected in terms of land area loss. It is observed during fieldwork that the embankment erosion is aggravated due to *Aila*-2009.

**Table 1: Area loss of G-Plot Island**

Year	Area in Sq. Km	Span (Years)	Area of loss in Sq. Km
1968	55.48	-	-



1986	50.78	18	4.70
2009	42.00	23	8.78

Source: (Bhunia, 2011)

The entire G-Plot Island is encircled by the embankment. The most parts of the embankment are made of earthen except few portions that are made of bricks. The average height of embankment is to be found as 3-4 m. The embankment is maintained by Irrigation Department. The local Panchayat also looks after the embankment to some extent under NREGA programme. The embankment breaching is a frequent phenomenon during monsoon months. Due to *Aila*, the entire island was inundated due to breach of embankment and overtopping of waves of 4-5m height (Bhunia, 2011; Samanta et al., 2013).

## 1.6.2 Adverse effects of *Aila* on the daily livelihood condition of the study area

### 1.6.2.1 Coastal erosion

The time series study has been carried to assess coastal erosion of G-Plot Island, in general, and Gobardhanpur and other neighbouring villages in particular. The Bengal Settlement Survey Map (1942), SOI Topo-map (1968-69), Satellite imageries (1986, 2009, 2011) are also considered to assess the erosion (Bhunia, 2011).

### 1.6.2.2 Cyclonic disturbances

The tracts of cyclonic disturbances published best tract records of IMD, Kolkata that is originated from the Bay of Bengal

and strike on the island has been consulted. The impact of cyclone has also been surveyed at family level with the structured questionnaire.

### 1.6.2.3 Devastating effects of *Aila* on the study area

The fieldwork has been conducted in the Gobardhanpur and other neighbouring mouzas for assessing the perception of people about local disasters. According to householders the cyclone, storm surge, coastal erosion/embankment breaching and flooding are the main disasters in the island. The low intensity cyclonic disturbances originated in Bay of Bengal hit the island in almost every year and severe cyclonic storms like Sidr-2007, *Aila*-2009 also hit the island. Most of the flood situations are created due to the effect of embankment breaching and storm surges.

The inhabitants are losing their land gradually due to coastal erosion. The island area has been reduced 8.78 Sq. Km. during 23 years. It may mention that the island area was 55.48 Sq. Km. in 1968, 50.78 Sq. Km. in 1986 and it became only 42 Sq. Km. in 2009. The agricultural crops were usually affected during *Aila*-2009 and 109 peasant families reported that their agricultural land of 48 hectares were affected by saline water damaged by the saline water incursion.

**Table No. 2: Damages due to *Aila* -2009 at Gobardhanpur and adjoining study villages**

Houses damages (Based on survey of 195 families)		Amount of loss (In Indian Rupees)
Affected families =186	131 Families= house fully damaged	Average loss incurred
	55 Families = houses partially damaged	Rs 20000-25000/-
Fishing ponds (Based on survey of 195 families)		



Affected families = 152	93 Families =1 fishing pond affected 38 Families =2 fishing ponds affected 11 Families= 3fishing ponds affected 10 Families = more than 3 fishing ponds affected	Average loss incurred Rs 30000-50000/-
<b>Agricultural land</b> (Based on survey of 195 families)		
Peasant Affected 109	47.32 hectares land	Average loss incurred Rs 15000-25000/-
<b>Others (livestock's)</b> (Based on survey of 195 families)		
Farmer Affected 63	Average loss incurred Rs 4000-5000/-	

(Source: Field data)

### 1.7 Role of the local Government in the rescue work of the study area

West Bengal is prone to floods, cyclones and drought suffered heavy loss of life, loss of property, destruction of communication and various infrastructural systems, and other important materials. Most of these hampered the stability and normality of life of the people. *Aila* was such a natural hazards which hit the coastal areas of West Bengal and that have a very devastating effect on the local people. Taking clues from the experiences of other neighboring countries, the Government of West Bengal, the UNDP and several local Non Governmental Organizations (NGOs) undertook a series of programmes that gave a firsthand help and co-operation to local self-institutions and the affected people. Under a scheme popularly known as community based disaster preparedness hundreds of local volunteers, Panchayat representatives, officials and professionals from NGOs were trained to carry relief and rescue operations, techniques to administer first aid, assist aid agencies in relief operations and so on ( Sahoo, 2005).

Beyond the above all efforts the most important efforts had been taken by the local Government officials of the said areas. The local Panchayat, Panchayat Samities and the

Zilla Parishad authorities have been providing a very important role during that critical period. As per the situation is concerned the primary and most essential requirements had been fulfilled by the local Panchayat. Besides these, in most of the cases the post *Aila* rehabilitation works was started by the Government authorities specially in the construction of embankment, repairing of roads, construction and repairing of houses and other reform activities. Beyond that most of the local people have expressed that help or effort which is not sufficient as per the need concern. Sometimes they also claimed that the effort of the office bearers was not hearty and time bound.

### 1.8 Role of the Government in implementing development programs in the post *Aila* situation of the study area

There are a few shelters that were being used during disasters by the islanders of G-Plot GP. The Sitarampur Milan Vidya Niketan, G-Plot Bibekananda Vidya Mandir (Uttar Surendragang), Indrapur Primary School etc. were main disaster shelters in the G-Plot Island. The people were forced to take shelter on nearby embankment as the shelters were either far location to access by every family with their belongings.

**Table 3: Relief assistances during *Aila* 2009 for the affected villagers**

Relief assistances	Families (%)	Amount	Remarks
Tarpaulin	134	1-4 pcs (Total 338pcs.)	Insufficient
Dry food (Chira and Gur)	43	1-10 Kg. Chira, 1-3 Kg. Gur	Insufficient
Clothings	49	-	Insufficient



Drinking water	152	-	Insufficient
Cooked food in relief centre	112	5 days	Insufficient
Kerosene	178		Quite good
Food grains	8	5-10 Kg. Rice 500 gram-2 Kg. Dal	Insufficient
Halazone tablet	182		Sufficient
Baby food	23	-	Insufficient
Medicines	146	-	Insufficient
Bleaching powder	182		Sufficient

(Source: Field data)

Apart from this constraint, accommodation capacity and facilities are to be found insufficient. There was no designated flood shelter in Gobardhanpur village where 236 families were living and constituting a Gramsansad (I). A few families took shelter at Gobardhanpur Primary School but rest families used to take shelter at nearby Sitarampur Milan Vidya Niketan situated in Sitarampur village.

It was observed during *Aila* that a large number of families had taken shelter in makeshift arrangement on embankment. The question was asked to householders of Gobardhanpur and other neighboring villages about disaster responses. It is revealed that the NGOs played the important role first towards rescue and relief. Later local administration helped in relief operations. The householders give an account how relief were distributed during *Aila-2009*. The cooked foods were distributed 5 days at relief shelter by NGO and Government. The essential relief-assistances tarpaulins, dry-foods, clothes, drinking water, medicines, halazone tablets, etc. were distributed to victim's families. But the relief-assistances were insufficient most of the householders said.

## 1.9 Conclusion

The effectiveness of local institutions specially the Local Govt. institutions like as the Gram Panchayat, Panchayat Samities and Zillaparishads have been provided their very important role in disaster management are contingent upon the kind of training imparted to them, level of awareness, regular flow of information, requisite skills and knowledge to make use of technologies and a host of other activities that are necessary to make them fully prepared for a different job. Now it is an established truth that there were heavy loss of life and property due to the sudden occurrence of *Aila* in the coastal areas of southern West Bengal. The equilibrium condition in their life and activities has been disturbed tremendously. Sometimes the affected people have claimed that the Panchayat personnel sometimes made some distinction due to political biasness not only that black marketing of supplied goods and below quality of supplied goods. Last but not the least, a lasting solution to the disaster related problems can come only when we have a policy commitment that take into account the role and improved efficiency of Local Governments.

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## PARTITION AND REFUGEES' INFILTRATION: A Socio-Economic Change in Falakata - an important Mufassal Town of Jalpaiguri District in the Post Colonial Period (1947 - 2011)

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### Abstract

*The role of the Partition of India or the Second Partition of Bengal in 1947 is the most remarkable and diversified event in India. The Partition had broadly changed the demography and administrative structure in India specially West Bengal and precisely Jalpaiguri district and Dooars region. Falakata became an important Tehasil (centre of collection of land tax) in Dooars. The Partition was followed by a massive influx of refugees from East Pakistan which was actually started with the Noakhali Riot (1946). Thereafter numerous refugees intruded into West Bengal - Jalpaiguri district and in Falakata in Dooars region in different waves.*

*After independence and Partition (1947) huge number of people specially Bengali speaking class migrated to India from East Pakistan (now Bangladesh) as refugees for safer shelter of their families. They suffered from insecurity in East Pakistan due to frequent ethnic riots and inhuman torture. Thereafter the second refugee's onslaught had come in the district after the Bangladesh War in 1971. After this war due to political instability and communal riots thousands of Bengali Hindus crossed the boundary and took shelter in Jalpaiguri district. Shortly they settled in different parts of this vast region and started working in agro-fields ignoring the options of profession. On the basis of these prime requirements the rural market Falakata has upgraded to the status of town now all with the background of village or Mufassal.*

*So, it can easily be concluded that the rapid positive changes in the socio-economic fields of Falakata came through the arrival and involvement of the migrated refugees of East Bengal after Partition (1947).*

**Keywords:** *Tehasil, Hatkhola, Ghat, Jotdar, Choupati, Durgabari.*

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Through the age of Bhutanese dominance in Dooars Falakata became an important Tahasil (centre of collection of Law Tax) among the other three Tahasil (Maynaguri, Alipurduar & Bhulka) in the Dooars region<sup>1</sup>. In the colonial age Falakata came up an important centre of administration in Jalpaiguri district.

### **Administrative Changes of Falakata:**

After the annexation (196) by the British India Govt. the Dooars area formed a new district called Western Dooars which was divided in to three Sub-division namely – 1) The Sadar of Principal Sub-division (Headquarter – Maynaguri), 2) The Buxa Sub-division (Headquarter – Alipurduar)





and 3) the Dalingkot Sub-division<sup>2</sup>. But within short time on 1<sup>st</sup> Jan 1869, the new district Jalpaiguri was formed. At the same time Buxa Sub-division was shifted to Falakata and the Headquarter also removed to Falakata which was 24 miles west to Alipurduar and 35 miles east to Jalpaiguri. An extra Assistant Commissioner was stationed at the Sub-divisional town of Falakata. According to a Govt. notification (8<sup>th</sup> December, 1968) W.M. Clay was appointed an Assistant Commissioner of Falakata Sub-division on 1<sup>st</sup> April the area comprising Patgram police station was included in to the Falakata Sub-division of the district<sup>3</sup>. The concrete signboard of the office of the Assistant Engineer PWD, Falakata Sub-division bears the evidence of the Falakata Sub-divisional administration which is still laying on the eastern part of the Falakata Block Hospital.

But on 18<sup>th</sup> April, 1974 Sub-divisional head quarter was shifted from Falakata to Buxa and the name changed to Buxa or Bhulka Sub-division<sup>4</sup>. So it is unfortunate to say the the Sub-divisional status of Falakata had lost its administrative importance with the end of the British rule and after Partition (1947) Falakata has become a block town only.

To maintain law and order Falakata Police Outpost (under Salbari Police Station) was setup on 1<sup>st</sup> September, 1883 by a Govt. notification. But in 1895 (11<sup>th</sup> April) this Police Outpost was abolished (the Govt. notification no.-2158) and entire Falakata area went under Salbani Thana<sup>5</sup>. Finally in 1976 (12<sup>th</sup> June) by a Govt. notification no.-7649 Falakata had got a new I.C. Police Station or Thana<sup>6</sup>. The 100 years old wooden building at the Falakata Police Station is still present at Falakata town and it demands to be declaring as heritage building of Falakata.

However, Falakata became an important Mufassal town in Jalpaiguri district. The town is situated on the east bank of the River Mujnai. Falakata is surrounded by Mathabhanga-I Block towards South, Madarihat Block towards North, Dhupghuri Block towards West and Mathabhanga-II Block towards East and South. A small river 'Saptana' is flowing from North-East to West dividing heart of the town into two halves and meets the Mujnai River. The Saptana River divides Falakata town specially Falakata hat into two pieces of lands. Thus the name Falakata owes its origin to the cutting of land (locally called - Fala-Kata)<sup>7</sup>.



On the one eve of Partition (1947) though Falakata had an administrative importance but the population was not more than 1000. But after Partition due to huge influx of refugees from East Pakistan (now in Bangladesh) and Assam by 'Bangali Khedao Andolon' (1960 – 62) population of Falakata rapidly increased. Parally the development of

communication, hat bazaars and establishment of various offices, schools and other institutions made Falakata a bigger locality in the district. Thus according to the Census reports the population of Falakata in 1961 was 6,413<sup>8</sup> but in 2011 it raised 19,716 where male – 10,022 and female 9,694. As shown in table – 7.4.

Table – 7.4

## Demographic Changes in Falakata Town

YEAR	AREA	TOTAL POPULATION	MALE	FEMALE
1961	4.9 sq.km	6413	3532	2881
1971	4.9 sq.km	7194	3851	3343
1991	4.9 sq.km	15536	7981	7555
2001	4.9 sq.km	19379	10095	9284
2011	4.9 sq.km	19716	10022	9694

Source: Census reports of the relevant years

The River Mujnai is flowing along the western part of Falakata. During the colonial period Mujnai was full water by which numerous ships, steamers and ferries launched at Falakata Bandor (small river–ports). Through the Mujnai River transport coconut, dry fishes, clothes, clay pots etc. were imported from Dhacca, Barishal and Khulna. In the same way raw

jute, beetle nut, tobacco, Bhutanese woolen–cloths, blankets etc. were exported to Dhacca – Barishal via Mathabhanga of Coochbehar. During the time of Bhutanese rule was an important *Tehashil* (center of collection of land tax). Bhutanese Tahashilder would come to collect the taxes and revenues and stay at village on the western bank of Mujnai called Bhutnir



Ghat (Bhutanese Ghat). Apart from this ghat there were Panjabir Ghat, Dashamir Ghat, Hat Kholar Masjid Ghat, Singijanir Ghat etc<sup>9</sup>. An old masjid called Falakata Jami Masjid is still in the Hatkhola area. An interview with Ekramul Haque Chisti (now the Moulana of Falakata Jami Masjid) reports that the Falakata Jami Masjid is nearly 200 years old. In the Masjid campus an old cenotaph is still there where Moulabi Sajjad Ali, born – 1182 and death – 1303 were inscribed. So, he alived 125 years and according to Moulana Ekramul Haque – he (Md. Sajjad Ali) was a famous Tahashilder – Jotdar of this area.

In the early days the Falakata area was covered with forest of sal, teak and reed jungles' where wild animals like tiger, elephant, bison, cheetah etc. used live. Matherihat jungles are too nearby Falakata (four miles). People used to live Falakata Hatkhola, Choupati and Jadav Pally area in a scattered way. Falakata Hat is the oldest and renounced hat in the whole plain land in Dooars area. The hat–days were Tuesday and Friday. In this hat all type of food grains, agri–crops and products including cattle are soled widely till the date.

Every winter there occurred a big agro–fair on different crops in a big field where now Subhas Pally, Lions club ground and SSB camp exist. In this agro–fair the businessman of Assam, Bhutan, Coochbehar, Rangpur and a vast area of Dooars joined. Huge number of Bhutanese had come riding horses with endi, woollen blankets, and oranges with the tales of chumri cows (having a tuft of hair). In exchange they took rice, cotton dress, tobacco, utensils, mustered oil etc. a big number of cows, and buffalo's, horses, elephants, camels etc. were sold in this fair. But in the post independence period this fair disappeared solely slowly.

Before Partition (1947) some local tribes – Meches, Ravas, Rajbanshi Hindus and Muslims scatteredly lived here. After the introduction of tea–gardens in Falakata surroundings' some Santal tribes came from Ranchi, Hazaribag of Chhotonagpur area. Yadav Pally was created by Yadvas community who came here in response to the call of them the Koch King for making milk and card. The village Kunjanagar situated 2 km. north–east from Falakata Choupati. This vast land was sold by to a Mech jotder to Kunja Behari Mukhuti. Thus this area came to known as 'Kunjanagar'<sup>10</sup>.



After Partition refugee's influx had struck Falakata bandor area. The refugees cut the jungles and made their houses for which various colonies and para's. Early days of 50's – 60's of the 20<sup>th</sup> century Subhas Pally, Mukti Para, Babu Para, Subhas Colony, Desbondhu Para etc. were set up. Afterwards Ramkrishna Colony, Netajee Para, Aobindo Pally, Babu Para, Mahakal Para, Asutosh Pally, Vivekananda Pally, Masala Pally, Master Para, Rabindra Nagar, Ashram Para, Motheri Road, College Para etc. were established.

Before Partition the communication is not so well. Only one road was before the Falakata Thana. This road is known as District Board Road. In 70's of the last century it was renamed Manindralal Bosu Road. This road meets at the Falakata Choupati. In the time of 2<sup>nd</sup> World War (1941 – 1945) NH-31 was made up which came from Siliguri via Sevok – Malbazar – Mainaguri – Dhupguri – Birpara – Jateswar – Falakata – Sonapur to Coochbehar and Gowhati. Aftermath two important road were linked with Falakata. One is Falakata – Motherihat – Joygaon Road another is Dhupguri – Falakata State Highway. The true development of Falakata started when the Dhupguri – Falakata State Highway

connect with the district town Jalpaiguri reducing the distance between Falakata and Jalpaiguri.

After coming the refugees for their food & shelter major portion were engaged in agriculture. The East Bengal refugees cut the jungles and made the barren land fertile by their hard work at and around Falakata. As a result Falakata and the adjacent areas became highly rich in cultivation. Producing on huge quantative of paddy, wheats speacially numerous vegetables and potatos. As like as Dhupguri Falakata also became an agro-based commercial place. Some people were engaged business shop-keeping also. To strengthen their economy they had a need a healthy society and culture. Therefore, numerous schools, college, various cultural institutions and social organizations etc. were built up. In this way due to development of communication, agriculture and business within short time Falakata became a well populated Mufassal town in the Jalpaiguri district.

### **Educational Institutions:**

The educational sector of Falakata was started at the very early age. In 1893 first a Middle English School (MES) was established at Falakata (where now



Falakata high school). This was the first M.E. School in the Jalpaiguri district<sup>11</sup>. It is initially first primary school which was established in 1880. But the actual educational sector of Falakata flourished after Partition (1947) when Falakata High School came into existence in 1949 on the southern part of NH-31 and the eastern part of Falakata Choupoti<sup>12</sup>. Falakata high school is the first Bengali medium and most important high school in Falakata and adjacent area where most of the students were came from refugee families. Famous social and political worker Sri Ramani Ranjan Das first took an initiative to form an organising committee for the proposed school. The others member was Sri khagen Das, Sri Tarini Roy Patowary, Sri Durgamohon Gope, Sri Sachindra Bose, Sri Banshidhar Dube, Sri Bidyasundar Gupta, Sri Prafulla Banerjee, Sri Damodar Roy etc. Sri Ramani Ranjan Das became the president of this organising committee who was the former president of the governing body of M.E.School. Sri Prafulla Kr. Bhattacharya was the first Head Master of the school<sup>13</sup>.

Due to rise of population and increasing demand Falakata Girls High School was established in 1967<sup>14</sup>. At that time Sri Nirad Baran Roy took the charge of Head Master of Falakata high school.

He was a great enthusiastic person and social worker. By his initiative the educational sector of Falakata truly flourished. Thus within 1975 Falakata had got Yadav Pally High School, Falakata Girls High Shool, Subhas Girls High School and Bhutnirghat High School. Finally Parongerper High School was established in 2000 at Dhupguri More.

Due to increasing demand of English medium in modern education sector numerous English medium schools specially nursery schools were established in Falakata town. Among them South Nursery Nivedita Academy, Ananda Mela, Vivekananda Nursery, Happy Child, Morning Star etc. are important. But the most important and noticeable English medium school in Falakata is 'Raymond Memorial High School' which was established in 1949<sup>15</sup> having the facilities of boarding and day-scholar. The campus of this school is very big and nearly 900 acres of land (though 300 acres land was taken to made Falakata Railway Station) and boundary was covered by beautiful trees and flowers. Nearly 2500 students of this school are studding here now. The students come from Falakata town, adjacent localities of Falakata and the different corner of North Bengal.



To promote higher education in the locality Falakata College is playing an important role. Due to rising population and demand of higher education of the town and surrounding areas a college would be setup from 1978 (after the Left Front Govt. set on the power). An organising committee was set up under the Presidentship of Sri Debaditya Chakraborty (SDO–Alipurduar Sub-division). Other members were Sri Nirad Baran Roy, Sri Ranen Chakraborty, Sri Prithwis Sarkar, Sri Nripen Mitra Sri Felan Chandra, Sri Mrinal Kanti Sarkar, Smt. Maya Bose and others. After getting Govt. notification (19<sup>th</sup> September, 1981) the first class started on 9<sup>th</sup> November, 1981 in Falakata old hostel which was in Falakata high school campus<sup>16</sup>. Finally the college building was established in 1986 at nearly 3 km. north–west from Falakata Choupati. Local 5 – 6 land holders generously donated the land of 7 acres to build up the college. The boundary of the college covered by numerous trees specially sale, teak and other greeneries. The college introduced the subjects of Bengali, English, History, Philosophy, political Science and Economics. Aftermath Education, Sanskrit, Geography and Physical Education were included subsequently<sup>17</sup>. According Dr.

Hirendranath Bhattacharya (Principal of the college) the first batch of the college started with 58 students only. But now the number of the students rose to 5000 and above. It is a big trouble to accommodate all the students in this short premise of the total infrastructure of the college. Due to gradual demand and interest Falakata Polytechnique College and a self–financing B.Ed College established (2005) in Falakata. However the educational sector of Falakata becomes very important to build an enriched and healthy culture and society at Falakata town and adjacent areas.

### **Drama Cultural:**

Due to healthy education and society the cultural activities of Falakata get highly improved after the partition (1947). Dramatic culture and Yatrपाल were introduced here with the hands of middleclass educated enthusiastic refugees. The dramatic culture of Falakata was found by the establishment of ‘Falakata Dramatic Hall’ (now in Gouri Cenema Hall) in 1926<sup>18</sup>. Then the organisers of Falakata Dramatic Hall were Sri Banshidhar Dube, Harak Chand Malchand Bhadani, Sirish Bose,





Durgamohon Gope, Abdul Sovan Miah, Kunjabehari Mukhuti, Dhaniram Karjee, Dhaneśwar Barman, Dbendranath Nandi, Kaji Nawab Ali, Amiruddin Miah, Moni Bose, Ramani Nag, Tarapada Roy, Swachandra Ghosh, Suren Bhowmik, Anadi Sarkar (Tahashilder) and some British Civilians<sup>19</sup>.

First drama in Falakata is *Debola Debi* which played in 1924 at Barowari Durgabari Chattar near Dramatic Hall<sup>20</sup>. Aftermath in every Durga puja festival numerous famous historical drama such as – *Alibaba, Billyamongal, Kripaner Dhan, Mewar Patan, Shahjahan, Bange Bargi, Harish Chandra, Sindhu Gourab, Pandav Vijoy, Sirajdualla, Tipusultan* etc. were played in Dramatic Hall. Kartik Mukhuti, Manik Bose, Dr. Prafulla Banarjee, Subal Das, Nani Roy, Adhir Gupta Sudhir Bose, Haripada Sajjan, Kalipada Sajjan, Dr. Ramani Ranjan Das, Anup Das, Mantu Bhowmik, Ajit Guha Neogi, Sailen Dey, Moti Sen, Mojambal Haque, Shibdas Ganguly, Gedu Miah, Barin Bose, Paritosh Ghosh, Deben Nandi (second master) etc. were the famous dramatic personalities at this time<sup>21</sup>.

After Partition (1947) ‘*drama played drama*’ not for puja festival – by this slogan Sri Pakhi Ghosh, Kanu

Chanda, Sadhan Nandi, Satya Ranjan Nandi, Binayek Deb, Indu Deb, Amarendra Nath Choudhury, Paritosh Chakraborty etc. were involved in drama culture in Falakata<sup>22</sup>. Govt. Workers Samity, Friends Union Club, Unmad Sangha, Tarun Dal, Hill Stations Club, Subhas Pathagar etc. were the organisations where these drama was played.

In 1960 a great changed in drama culture of Falakata where first lady actor Smt. Pakhi Ghosh played a drama ‘Chirokumar Sobha’<sup>23</sup>. Aftermath a large number of actresses – Smt. Parul Das, Anjali Guha Majumder, Popy Roy, Gouri Dutta, Mira Bose, Doli Roy, Hena Deb, Shibani Ghosh, Dipali Dey and some others were flourished the dramatic culture of Falakata from 1960 – 1990. First dramatic club in Falakata was Betal Sangha. Thereafter the Unmad Sangha, Sakher Theatre, and Netajee Natya Sanstha flourished in 60’s – 70’s in 19<sup>th</sup> century<sup>24</sup>.

From 1970 – 90 it was called that the golden period of drama culture in Falakata. One by one famous dramatist club such as – Renaissance, Yubo Shilpi, Rannar, Bidrohi, Kheyali, Koras, Uddyog, Amorshi etc. were established. In 1980



‘Falakata Muktamancha’ was established by Rannar and Renaissance group theatres jointly. Jalpaiguri District Drama–Workers Union (Jalpaiguri Jela Natya Karmi Sangathan) was established in 1994 where presided by Sri Binayok Deb – famous director–actor of Renaissance of Falakata<sup>25</sup>.

‘Renaissance’ became the first group theatre in Falakata which established in November, 1969. The prime member and actors of Renaissance is Sri Binayek Deb, Hena Deb, Dilip Mukhuti, Nitish Das, Panna Hussain, Dilip Banarjee, Pradip Chakraborty, Priyotosh Chakraborty, Pakhi Ghose, Sadhan Nandi, Arun Dasgupta etc. they performed not only at Falakata and North Bengal but also far away from Falakata such as – Bangaigaon, Guwahati, Noagaon, Silchor, Meghaloy, Lakhnow etc. ‘Falakata Ganonatya Sastha’ was established in 1999 under the Presidentship of Sri Dilip Banik. The famous actors of this organisation were Sri Sujit Chakraborty, Radhagobindo Modak, Alok Das, Tushar Das, Kanika Chakraborty, Kumkum Banarjee, Chaitali Modak, Moumita Dutta, Bithika Kundu, Chandrima Roy, Keka das, Sefali Bhowmik, Biplab Bhadra, and Krishna Das Roy and many others. However, it is truly say that the drama culture of Falakata

lost their glorious age due to immense introduction of corporate culture through use of mobile–Internet (facebook, whatsapp etc.).

Writing culture of Falakata was also enriched and this writing culture started from Subhas Pathager (library) earlier name was ‘Edward Library’ established in 1926 near Gouri Cinema Hall<sup>123</sup>. After Partition (1947) this library renamed ‘Netaji Subhas Pathager’ which is now become as the Town Library. Numerous writers, poets, dramatists though are basically assembled here in different programmes. A large number of novels and magazines were published from this library in several times. But unfortunately all these are not published periodically. First hand written magazine – ‘*Bhaboghurer Diary*’ was published in 1952 under the editorship of Sri Debdas Choudhury<sup>26</sup>. But it was very short lived. At the same time another hand written magazine ‘*Jonaki*’ was published as the mirror of Subhas Pathagar. For publication in first volume took the necessary initiatives were taken by Sri Pradip Neogi (Librariyan of Subhas Pathagar), Sri Bibhuti Bandopadhaya (editor) and Sri Binayak Deb (hand–scripter). After some years the *Jonaki* published in block alphabets and Sri Dilip Mukhuti, Ashim



Roy, Khitish and Ghose were engaged with this magazine. Another hand-written magazine 'Mujnai' published by Sri Madhumay Roy (editor) was also short lived.

From 1970's numerous famous magazines were published in Falakata town. 'Renaissance' was the most important one which edited by famous writer-drama-director Binayak Deb<sup>27</sup>. The other magazines were – *Natun Surya*, *Patatra*, *Kakoli*, *Arghya*, *Prashun Bharati*, *Koras*, *Sabuj Sanket* etc. but all these magazines were diminished within short period. After 90's the reputed magazines of the Falakata town were 'Uttar Mallar' edited by Sri Kartik Das and Parimal Kr. Das, 'Sarater Haowa' edited by Sri Bijoy Kr. Roy, 'Annyabak' – Sri Mihir Ranjan Dutta, 'Spandan' – Sri Narayan Dutta, 'Shilabhumi' – Sri Subhas Sengupta, Madhusudan Dutta, Narayan Dutta, Radhagobinda Modak, Sabyasachi Ghose was periodically. Besides these, the magazines – *Sarater Haowa*, *Abesh*, *Pallabi*, *Nabik*, *Srijaner Alinde*, *Mujnai*, *Purnima* and *Ekfali Raddur* etc. were very important. Among these magazines 'Purnima' is the pioneer is being published periodically for last 26 years under the editorship of Sri Nirad Baran Roy (famous writer and social worker)<sup>28</sup>.

*Sarater Haowa* (editor–Bijoy Kr. Roy) and *Ekfali Raddur* (editor–Syamal Roy) published every year. But the writing culture of Falakata decreased day by day in present days as like as others Mufassal towns in Jalpaiguri district.

### Soulmari Ashram:

The history and culture would not be enriched without discuss of famous Soulmari Ashram which established in 1959 by Srimat Saradanandaji Maharaj<sup>29</sup>. The location of this Ashram is at Soulmari village in Mathabhanga Sub-division, dist – Coochbehar and only 1.5 km. south to Falakata town. Srimat Saradanandaji resembled like a true sannyasi. He attained the degree of DSC from Oxford University (Great Britain) and Ph.D. from Harboured University (USA). He is looking tall and appearance and personality were very much impressive. He meditated on the Himalayan Mountain and way to Assam in 1959 he met Dr. Ramani Ranjan Das (famous cultural personality) at Falakata Choupati<sup>30</sup>.

After some days Srimat Saradanandaji met again with Dr. Ramani Ranjan Das when he backed from Assam. Within short time it was spread out in whole town that a sannyasi had reached in Falakata who looked like Netaji Subhas



Chandra Bose. However, numerous honourable citizens are gathered in front of Saradanandaji. Among them some people of Soulmari village requested Maharaj to visit their village. Then Maharaja went to the village and rested under a big tree. Then he (Maharaja) proposed would they (villagers) build a kutir (hut) for his meditation. The villagers accepted his proposal gladly and made an Ashram within short time.

Srimat Saradanandaji underwent meditation for 7 days *upabas* (fasting). According to Haripada Mitra (a member of ashram committee and also member of Zila Parishad, Coochbehar) there was a great excitement attained around Falakata and Soulmari Village. Every day thousands of people came to see the Maharaja and many devotees left their all resources and earning to join the Ashram for whole life. They are called *Team Member*. The Ashram was made in around 4 acres of land and it was donated by Sri Dinabondhu Dutta, Haribandhu Dutta, Harekrishna Mitra, Rasbehari Mitra, Ranendra Nath Bhowmik and many others.

A residential school was setup in 1960 where nearly 60 - 70 students used to stay. Except Ashram building and in front a

field another 2 acres were used for cultivation of food grains and vegetables. In 1960 high breed vegetables produced in this Ashram which is first used in this area. Nearly more than 500 devotees used to stay in the Ashram every day. Naturally heavy expenditure of Ashram had need huge money which was collected from the donation of various people of Falakata and the outside. A committee was formed under the Secretariatship of Dr. Ramani Ranjan Das<sup>31</sup>.

In Ashram every *Team Member* had gone by a tight schedule. Every day they had leave from bed in early morning. After bath and freshness they used to go prayer and exercise and then they took breakfast. After breakfast they would do their daily work. Here religion into came from realization and the realization is to do tour work. So “*work is worship*” this is the main theme here. To achieve this we have need *Self-development and Self-determination which are persuading by Self-correction, Self-purification and Realization of truth*. According to Srimat Saradanandaji – “*Constantly and persistently without any reserve without hiding behind any subterfuge, expose what you are, your physical, ritual and mental nature to the Devine Light and force descending without your knowing from*



above and disclosing likewise from within”. He also knew to world citizen that “A new era has come slowly but surely dawning up on the humanity, the era of spirituality”<sup>32</sup>.

However due to propoganda that Saradanandaji himself is Netaji – every day several thousands of people from different corners of the country came to visit him and gathered in Soulhari Ashram. Major Satya Gupta (General, Ajad Hind Fouj), Sirish Mukherjee (CBI Officer), Uttam Chand Malhotra of Afganistan (where Netaji took shelter when he disappeared in Disguise) and some members of ‘Mukharjee Commission’ reached in this Ashram to clarified rumour. But Saradanandaji always told that he was not Netaji. But rumour did not stop there. Finally in 1964 a large open meeting was held in Town Club Maidan of Falakata where Saradanandaji he was not Netaji and he had no connection with the family of Netaji Subhas Chandra Bose<sup>33</sup>. It was a miss-conception – simply propoganda. But till then the propoganda continued. Aftermath in 1967 Saradanandaji had gone Amarkontak and on 8<sup>th</sup> April, 1977 he had gone to heaven<sup>34</sup>. After leaving of Saradanandaji the Soulhari Ashram lost its glory day by day.

### Puja Festivals:

Puja culture of Falakata also flourished after the refugee penetration in this area. Before Partition (1947) Falakata had only ‘Falakata Barowari Durga Puja’, Bose Bari Puja and Kunjanagarer Mukuti Bari Puja. Among them Falakata Barowari pujais the oldest one, started nearly in 1910 which is still now. Sri Bisweswar Das, Sisir Bose, Manik Bose, Moti Ghose and others were the pioneer of this Puja Comittee. Founder of the house of Mukutti Bari Puja in Kunjanagar started in 1936 by Sri Kartik Mukutti<sup>35</sup>. But after 1990’ this puja was abolished. According to Sri Nirad Baran Roy (former head master & social worker) Durga puja of Bose Bari started in early age (1940) and founder of this puja was Sri Manik Bose. This puja also is discontinuing.

But after Partition (1947) due to heavy influx and rising population the puja culture of Falakata flourished. Thus numerous Durga Puja were seen in Falakata. Among them the famous are – Puja of Shitalabari Babosay Samiti (1965), Durga puja of Mill Road (1966), Masala Putty Durga Puja (1971), Desbondhu Para (1950), Arabindo Para Barowari Puja (1982), College Para Club (1976), Subhas Pally Unit, Mukti Para Club etc<sup>36</sup>.



Kali Puja of Falakata also flourished from the Partition (1947). It is known that Mahakalbari Kali Puja in Hatkhola was started before the Partition (1947). But in Falakata numerous gorgeous Kali Puja were arranged such as – Tarun Dal at Dackbanglow, Venous Club in Dhupguri More, Subhas Pally Club, and Desbandhu Para Club etc.

On the day of Dashami'r Durga Puja a great fair locally called 'Dashami'r Mela' (fair) is arranged every year at Mahakalbari Ghat which is locally called Dashmi'r Ghat. Once upon a time the river Mujnai would flow through this ghat. But aftermath Mujnai had turned nearly 2 km. far from here. Now this ghat became like horse-foot Lake. However, this Mela now become the largest Dashami'r Mela in the entire district. Now nearly 140 – 150 Durga Murti (idols) in Falakata and the adjacent areas are immersed in this ghat. In this fair all types of stationary and wooden furniture are sold. The people of entire Dooars including the lower Assam had come in the fair. Numerous tabloos make nice processions in disciplined way. Adivasi's also joined with their traditional dance bringing Dhamasa–Madal<sup>37</sup>.

It is well known to us that the Post Colonial period (1947 – 2011) in the

Jalpaiguri district ushered a phase of commercialization of crops. The amazing growth of tea – timber and tobacco (now tourism) industry in the Jalpaiguri district could suggest a quantum jump in the economic growth of the region. But in Falakata as like as Dhupguri with the growth of vegetables especially potatoes and the establishment of well communication such as railway and different high way had played an important role for initial economic growth of the region. Basically, after the Partition of India (1947) coming of huge East Bengal refugees and their immense contribution had multiplied the most important factor to the process of the development of urbanization in Falakata.

So, by this project it had explored and investigated a new meaningful insight into the urban pattern of Jalpaiguri district as well as West Bengal. The Partition (1947) unleashed series of socio-economic tension in India and Jalpaiguri district. Naturally this area witnessed the close effects of partition. It is clear to us that how demographic changes made close impact on socio-cultural and economic transformations in the district which leads political tension, now-a-days in Falakata.





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## Interaction of Eminent Personalities of Falakata:

1. Sri Nirad Baran Roy: Former Head Teacher – Falakata High School, First President of Governing Body of Falakata College and cultural Activitist, Falakata, Jalpaiguri, Age – 85 (22 – 04 – 2017).
2. Sri Subhas Sengupta: Former Head Teacher – Falakata High School and cultural Activitist, Falakata, Jalpaiguri, Age – 69 (22 – 04 – 2017).
3. Sri Nirendra Kr. Chanda: Former Teacher – Falakata High School and cultural Activitist, Falakata, Jalpaiguri, Age – 70 (22 – 04 – 2017).
4. Sri Haripada Mitra: Former Teacher, Kunjanagar Special Cader High School. Falakata, Jalpaiguri, Age – 68 (28 – 04 – 2017).
5. Md. Moulana Ecrumul Bari: Moulana – Falakata Jami Masjid, Falakata, Jalpaiguri, Age – 52 (28 - 04 – 2017).
6. Md. Altab Hussain: Head Teacher – Fulbari High School and Social Activist of Falakata, Jalpaiguri, Age – 52 (28 – 04 – 2017).
7. Dr. Hirendra Nath Bhattarya: Principal – Falakata College and Social Activist, Falakata, Jalpaiguri, Age – 56 (28 – 04 – 2017).
8. Sri Satya Nandi: Former teacher of Falakata High School and Cultural Activist of Falakata, Jalpaiguri, Age – 72 (28 – 06 – 2014).
9. Sri Manoranjan Das: Former Businessman and senior citizen of Falakata, Jalpaiguri, Age – 72 (12 – 06 – 2017)
10. Sri Tapan Dutta: Noted Businessma of Falakata, Jalpaiguri, Age – 5 (12–06–2017)

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# AYURVEDIC USE OF MEDICINAL PLANTS FOR THE TREATMENT OF DIABETES AND MENSTRUAL DISORDER AT NARAJOLE GRAM PANCHAYAT

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## Abstract

*Narajole Gram Panchayat (G.P), which lies between 22°34'1.2" north latitude and 87°36'54" east longitude, at Daspur I Block in Ghatal subdivision of north east region of Paschim Medinipur district in the state of West Bengal. Surrounded by four rivers namely Silaboti, Kongsaboti, Parang and Kanki in the North, South, West and East respectively, the land of Narajole G.P consist of flat alluvial plain. Due to ignorance and habitat loss over decades the various enriched medicinal plants are unidentified, destroying and ultimately in vulnerable condition. After conducting a field work a sum total of 27 medicinal plants were identified and this particular work is limited to the use of plants specifically to cure the menstrual problems of women and lowering the blood sugar level in the case of diabetes. The different parts of the plants used, their dosages and the intake methodology are the main sites of attraction of this work. The entire raw data is collected from the tribal and rural communities and also the ancient Ayurveda knowledge practiced by the village people over centuries.*

**Keywords:** Ancient Ayurveda knowledge, diabetes, medicinal plants, menstrual problem, Narajole GP.

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## INTRODUCTION

Narajole Gram Panchayat, lies between 20° 34'1.2" North Latitude and 87° 36'54" East Longitude, in Daspur-1 Block in Ghatal Sub –Division of North- East region of Paschim Medinipur District in the state of West Bengal.

The present documentation is based on the study of medicinal plants used by the rural people residing in the villages of this gram panchayat for the treatment of two most common diseases namely Menstrual Disorder and Diabetes. Menstrual problems are problems related to a woman's normal menstrual cycle. There

are many types of menstrual disorders, including-

I) Excessive or prolonged menstrual bleeding.

II) Amenorrhea: Absence of menstrual bleeding.

III) Oligomenorrhea: Light or infrequent menstruation.

The symptoms may include- abnormal menstrual bleeding pain or cramping, depression, headache, emotion distress, bloating or fullness in the abdomen.

Diabetes is a disease in which the body's ability to produce or respond to the hormone insulin is impaired, resulting in



abnormal metabolism of carbohydrates and elevated level of glucose in the blood.

The two types of Diabetes are-

I) Type-1 Diabetes: Pancreas don't produce insulin.

II) Type-2 Diabetes: Body's mechanism don't respond to insulin.

The symptoms include excessive thirst or urination, fatigue, weight loss or blurred vision.

The various secondary metabolites obtained from plants are used to cure these diseases from time immemorial.

#### MATERIAL AND METHODS

The material and methods primarily includes the field survey of the medicinal

#### TABLE NO- 1 (Plants used for the treatment of Diabetes)

Sl.no.	Scientific Name	Family	Common Name	Extract of the parts used	Dosage
1.	<i>Catharanthus roseus</i>	Apocynaceae	Nayantara	Leaf juice	½-1table spoon (t.s) twice per day for one week
2.	<i>Ficus racemosa</i>	Moraceae	Yagyadumur	Fruit juice	25ml per day for 10 days
3.	<i>Gymnema sylvestris</i>	Apocynaceae	Gurmar	Leaf decoction	1 t.s per day in empty stomach for
4.	<i>Trigonella foenum-graecum</i>	Fabaceae	Methi	Seed extract	1 t.s per day in empty stomach
5.	<i>Stevia rebaudiana</i>	Asteraceae	Sugar free	Leaf juice	1.5 t.s twice a day
6.	<i>Aerva aspera</i>	Amaranthaceae	Apang	Roots crushed	1 gm with cold water twice a day
7.	<i>Asparagus racemosus</i>	Asparagaceae	Satamul	Roots crushed	1 gm with cold water twice a day
8.	<i>Cajanas cajan</i>	Fabaceae	Arhar	Leaf and root juice	8-10 gm. Root or leaf boiled in water to

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					concentrate.
9.	<i>Pterocarpus marsupium</i>	Fabaceae	Piyashal	Bark	15 gm boiled in watertwice a day.
10.	<i>Coccinia grandis</i>	Cucurbitaceae	Telakucha	Leaf and root juice	3 t.s per day by boiling in water.
11.	<i>Musa paradisiaca</i>	Musaceae	Kala	Flower juice	2-3 t.s twice a day with 10 drops of honey.
12.	<i>Bryophyllum pinnatum</i>	Crassulaceae	Patharkuchi	Leaf juice	1 t.s twice a day for a week.
13.	<i>Sesbania sesban</i>	Fabaceae	Jayanti	Leaf juice	3 t.s in warm water dissolved in 5 ml of milk per day.

**TABLE NO- 2 (Plants used for the treatment of menstrual disorder.)**

Sl.no.	Scientific name	Family	Common name	Extract of the used part	Dosage
<b>IRREGULAR BLEEDING</b>					
1.	<i>Saraca asoka</i>	Fabaceae	Ashok	Bark juice	Boil 25 gm with milk in 1:4 ratio. Intake in evening per day
2.	<i>Terminalia chebula</i>	Combretaceae	Haritaki	Fruit	1 piece(pc) paste and



					drunk as juice once per day for 8-10 days.
3.	<i>Terminalia bellerica</i>	Combretaceae	Bahera	Fruit	1 piece(pc) paste and drunk as juice once per day for 8-10 days
4.	<i>Curcuma longa</i>	Zingiberaceae	Halud	Rhizome	1 inch paste and drunk as juice once per day for 8-10 days.
5.	<i>Emblica officinalis</i>	Euphorbiaceae	Amlaki	Fruit	2 pc paste and drunk as juice once per day for 8-10 days.
6.	<i>Astragalus brachycalyx</i>	Fabaceae	Katila	Fruit	2gm soaked overnight and drunk.
7.	<i>Trigonella foenum-graecum</i>	Fabaceae	Methi	Fruit	2gm soaked overnight and drunk
8.	<i>Piper nigrum (Planted)</i>	Piperaceae	Golmorich	fruit	2 pc paste and drunk as juice. After 10 minutes, raw milk is taken for 7 days.
9.	<i>Aerva aspera</i>	Amaranthaceae	Apang	Root	1 gm paste and drunk as juice. After 10 minutes, raw milk is taken for 7 days.
10.	<i>Hibiscus rosa-sinensis</i>	Malvaceae	Jaba	Leaf and flower	1 pc. Paste and drunk as juice in empty stomach per



					day.
11.	<i>Limonia acidissima</i>	Rutaceae	Koyetbel	Fruit	5 gm. Paste and drunk as juice in empty stomach per day.
12.	<i>Bombax ceiba</i>	Bombacaceae	Simul	Root bark powder	1.5 gm juice twice a day.
13.	<i>Ficus racemosa</i>	Moraceae	Yagyadumur	Stem bark juice	1 t.s twice a day.
14.	<i>Ficus benghalensis</i>	Moraceae	Bot	Stem bark	5 gm. boil with milk and water.
15.	<i>Zizipus mauritiana</i>	Rhamnaceae	Kul	Fruit	5 gm without seeds, powdered and licked.
16.	<i>Saccharum spontaneum</i>	Poaceae	Kasful	Root	10 gm boiled in water twice a day.
17.	<i>Areca catechu</i>	Arecaceae	Khejur	Fruit	20 gm per day.
18.	<i>Borassus flabellifer</i>	Arecaceae	Taal	Fruit juice	10 ml per day.
19.	<i>Butea monosperma</i>	Fabaceae	Palash	Leaf juice	1 t.s with water once per day.
20.	<i>Nymphaea nouchali</i>	Nymphaeaceae	Shaluk	Juice of flower	2 t.s per day.
21.	<i>Calotropis gigantea</i>	Asclepiadaceae	Akandi	Leaf juice	5 pc added with sugar per day.
EXCESS BLEEDING					
22.	<i>Ocimum sanctum</i>	Lamiaceae	Tulsi	Root extract	1 t.s juice once per day for one month.
23.	<i>Piper betel</i>	Piperaceae	Pan	Leaf extract	0.5 t.s juice once per day for one month.

## DISCUSSION

A total of 36 medicinal plants were explored in the Narajole Gram Panchayat



which are potent to treat the two most common diseases namely menstrual disorder and diabetes in humans.

The plants, used for the treatment of Diabetes belong to 7 families. Among them 2 families are monocots and 5 families are dicots, of which Fabaceae comprises of 4 species, Apocynaceae comprises of 2 species, Asteraceae, Amaranthaceae, Asparagaceae,

Cucurbitaceae, Moraceae, Musaceae, Crassulaceae comprises of 1 species each.

23 plants among the 36 medicinal plants were found potent to cure menstrual disorder in women. Out of the 16 families reported 13 belongs to dicots and 3 belongs to monocots.

Hence there is a wide diversity of plants used for the treatment of these two disorders.

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## Media Ethics: - “An Overview”

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### Abstract:

*The term ‘Media’ initiates from the great Epic Mahabharata, where Sanjoy narrated the ongoing war of Kurukshetra to King Dhritarastra. The term has its basis in Vedic culture and ancient Greek history. Presently, media and media persons are judged through ethical norms. Apparently, ‘Media’ and ‘Ethics’ are contradictory terms in which we try to establish compatibility. In this process, we analyze pragmatic view of language when we mediate or interpret the language of the media person. This paper reflects our attempt to construct a modal reason or decision making procedure in a controversial circumstance as well as in generalized daily news coverage. In the course of this investigation, we concluded that there are some specific cases where violation of moral rules are justified through case-based reasoning.*

**Key words:** *Media, Ethics, Pragmatic view, Deductive model, Inductive model, Justified violation*

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The Concept of media or mediator who mediates or narrates some incident or event to others has its origin from the period of the Ramayana and the Mahabharata, Bhagwad Gita. In the great epic of Mahabharata, we find the concept of media or mediator was introduced . Sanjay was narrating the Mahasangram of Kurukshetra to king Dhitorashtra . The idea of reporting of an incident begun from that period. In Vedic period students were accumulating knowledge from Guru’s utterance of words. In ancient Greece mediators was addressed as “rhetor” which means a public speaker. At that time, human voice was the main source of communication or knowledge or

information. In medieval age, samrat Ashoka has sent messengers to foreign countries in order spread Buddhist culture. In past colonial period media, specially print media have taken a prime role to form public opinion against British dynasty. We know the prime role of Jugaantor and Amritabazar Patrika. This historical background of media or mediator emphasizes ethical responsibilities or conventional practice of journalists. At present media is conceived globally through internet, e-message, television and other electronic devices.

Now the question is what media ethics is, what does it refer a does the term



“media ethics” refer to ethical behavior of media practitioner or press regulation Act or journalistic codes and guidelines? In spite of these codes, acts and regulations, investigation or research works are going on to clarify the term of philosophical investigation. The term may be clarified from classical Indian ethical theories (sadhara dharma and swadharma) or from the philosophy of language (pragmatist view of communication ethics) or from existentialist perspective or from the fact value stringency of professional ethics.

Apparently the term ‘media ethics’ seems to be an oxymoron. Just as the two terms ‘media’ and ‘ethics’ are incompatible with each other. Normative or ethical perspectives bear no significance to them. This is the eloquent of my paper to establish the consistent relation between the two term ‘media’ and ‘ethics’. Media ethics is a manifestation of ethical theories and Meta ethical analysis of the specific context.

Media or mass communication is the expression of language. Hence we have to examine the pragmatic view of communicative languages. Pragmatic concept of communication begun with ancient Greek. Philosopher Cicero. By analyzing the art of rhetoric Cicero develops a comprehensive theory of communication. Charles S. Peirce, the American mathematician, philosopher, has formed the theory of Pragmatics. He emphasized three aspect of communication – sign, object and interpretant. He enhanced the concept of interpretation with the involvement of communities. According to his opinion, the experimental observation and its outcome enhanced the meaning of any concept. He thought the “signs” are most powerful tools to unfold the meaning of a sentence signs also highlights different perspective of a word, which is used to indicate a controversial event Pragmatic also emphasized upon meaningless word. Peirce said that “every

thought must be interpreted in another or that all thoughts in signs.”

Interpretants and communities are the other two pillars of communicative language. Signs are always interpreted in communities. Signs are interpreted both in macro – level and in micro level. Peirce highlighted three degrees of interpretants. According to him, the most important stage of interpretant is “the total unanalyzed effect that the sign is calculated to produce or naturally, might be expected to produce.” The second stage of interpretant factually affected audience who directly interact with mass media. (“Consists in direct effect actually produced by a sign upon an interpreter of it.”)

He also considered the subjective pillar of communicative language, which is community. He addressed it as man sign.” “Man-sign” is collective opinion, which is varied aspect of analyzing a particular event and a cumulative opinion. Hence communicative language or mass communication reflects the reality by interpreting his own mind.

Communication generates through language the Greek word ‘dialektos’, stands for conversation. The term “dialectic” means the art of reasoning or disputation by question and answer. Ancient Greek rationalist Socrates defines dialectic, which implies a conversational procedure of acquiring knowledge and apprehension of truth by refuting other’s opinion. Plato schematized ‘dialectic’ as theory of ideas. Aristotle’s “Rhetoric” emphasizes the practical value of rhetor. Conversation and dialogues are essential features of journalism.

John Dewey viewed that communication is a medium through which external world reflects to human beings. Through communication, objects and events of real world are re interpreting and combined through meaning or conversation. According to him, “Language, thus, “expresses” thought as pipe conducts water, and with less transforming function



than is exhibited when a wine “expresses” the juice of grapes.” Conversational sentences have two aspect, speaker meaning and sentence meaning. Pragmatic philosophers intended to elaborate speakers meaning rather than the literal meaning of the sentence. In this regard, we can mention H. Paul Grice’s recommendations for effective communication. J. L. Austin’s speech act theory is a milestone in the field of communication. Austin classified speech act into three categories; locutionary, pre locutionary and illocutionary. He emphasizes locutionary act that indicates speaker’s intention when uttering a sentence. Jurgen Hebermas presented a comprehensive theory of communication. He said that “what raises us out of nature is the only thing whose nature we can know: language. Through its structure, autonomy and responsibility are posited for us”. His universal pragmatic speech act contained three fundamental features: representation, expression and establishment of a legitimate interpersonal relation. He construed three aspect of linguistic model of communication; “the external world”, “our social world” and “a particular inner world” of the communicator. Hebermas’s linguistic analysis of communication provides an important role in contemporary mass communication. In a communication process, there exist a content which is interpreted and forms an interpersonal relationship between a communicator and audience, which gives a special status than the literal meaning of a sentence.

After highlighting the linguistic aspect of communication theory, I want to discuss the challenges or paradoxes of media ethics. Media ethics confronts the challengers of fact value distinction problem. Real life concrete examples of ethical dilemmas are fact describing propositions. How could we addressed those propositions as ‘right’ or ‘wrong’, which are very much related with value determine signs. Moreover fact describing

propositions are called as ‘true’ or ‘false’. Value-based statements are either subjective or objective. Truth is described as logical term or empirical term. Empirical truth is corresponds with fact. On the contrary, knowledge is not an ethical term. We could define knowledge as ‘Justified true belief’ (according to Plato). “Justification” coincides with the reality or fact. Another term “information” is very much correlates with fact. Truth, knowledge and information are the three pillars of media ethics. Among these three pillars “Truth” is a vague word. As because in Encyclopedia of Philosophy, “Truth” refers over 100 meanings According to Sissela Bok “The whole truth is out of reach.” In this context F.P. Ramsey has said that, the proposition ‘it is true that Casar was murdered could not be equalized with the statement’. He is always right.’ We could not deduce logically ‘true’ from the term ‘right’. He meant to say that a proposition is judged by its meaning. Pilate said that ‘truth’ itself is an abstract noun, a camel, that is, of a logical construction, which cannot get past the eye even of a grammarian. “Apart from philosophical opinion, the term ‘truth’ is very much associated with media. Right now, the question is how truth is connected with ‘media ethics.’

The way by which we connected truth with the media person who represent the truth to the nation, is the construction of the structure of moral reasoning. The moral reasoning can be focused from two perspectives – Deductive and inductive model. Deductive model of moral reasoning is associated with Justification with normative theorizing procedure and inductive model justify factual statements on the basis of sound ethical reflection. These two perspectives of theorizing model of media ethics are not radically different from each other. As because inductive model is incomplete without well – grounded ethical theories or principles. Media is the reflection of a socio – economic and cultural dimension



of a society through this inductive model of media ethics normative ethical theories are redefined and schematized for appropriate applications. Deductive model of moral reasoning emphasized upon some specific universal ethical standards which are applicable to global journalism ethics.

The question is, what the role of media ethicists in journalism ethics is, they can suggest justified moral decision making procedure over and above the profession codes. This will help professionals like media practitioner, medical persons to overcome professional conflict and to cognize the difference between profession and professionalism, which provide any profession a new dimension. As because, nowadays, each and every age group of the society is affected by the news coverage of the media through media society is now converted in to 'e-society'. Hence the aim of this paper is to formulate schemata of ethical decision making procedure of media practitioners as well as for other professionals. In fact, this decision making procedure is a contextual or circumstantial condition – based investigation, which is deeply rooted in Aristotelian prudence [Phronesis], which is connected with particulars and context – depend, Kantian deontology, consequentialism approach, Rawlsian ethics etc.

The challengers or problems faced by “Media Ethicist” – Media practitioner represent the news that is expected to be objective, true, transparent (the real knowledge which have similarity with the scenario) information. Those statements are factual descriptive statements. Values or moral justified statements are either subjective (empirical) or objective (rational). For example, ‘this type or mode of advertisement is not righteous’ – This is the value – based statement. Factual judgment which is very much based upon context or circumstance is radically different from value – judgment proposition. Actually, this is ground –

level challenge faced by media persons. Apart from professional codes and guidelines, media people have to consider some specific, fundamental principles. Every media person faces ethical dilemma when he or she is going to cover a news report. They have to maintain transparency, avoiding harm, intrusion of privacy ( exception in broader public interest.) Those imperatives are absolute for global media ethics. Apart from exceptional cases, the action of media practitioners is justified by those normative principles. But in exceptional cases, those norms could not be followed properly. It must be admitted that media persons are obligated to their news channels which is nothing but a corporate house. For an example, which photograph or headlines cover the front page of the newspaper is not always decided by the individual journalist, it is determined by higher authority for the sake of highest circulation of the newspaper. Hence the business perspective of a news channel or print media is not always determined in micro level; rather it is decided at macro level or the higher authority of the specific channel.

Each and every ethical dilemma of a media person should be judged contextually or in micro level. Conceptualists argued that concrete ethical conflicts faced by journalists in daily news coverage could be justified providing argument for their opinions against the rivals and opponents’ views. This process of moral justification is called case-based reason. This is an interdisciplinary investigation procedure because each and every individual case should be judged by the socio-political, economical, legal and circumstantial evidences. After considering realistic circumstances, we could provide justified descision. According to them, normative principles are applicable to generalized ethical problems like truth telling, not to kill others, avoiding harm etc. On the contrary, actual ground level

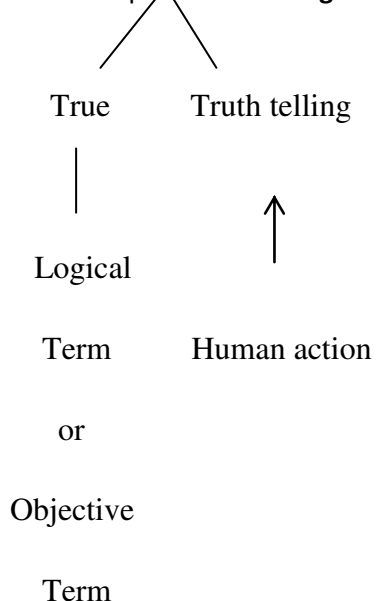


circumstances are more complicated where direct application of normative ethical principles is not possible. Philosophical ethicists help them to apprehend the moral perspectives of that particular circumstance and to schematize the structure of moral decision procedure. In this process, ethical theories are also redefined and critically judged.

Probable solution: - “The house is white” – This is a factual statement. Extensive

enquiry of military operation or espouse the relatives of an accident victim are controversial factual statements. The epistemological dimension of two types of factual statement is different. The better statement is more factual statement. The media person needs to analyze the specific contexts or circumstances which are involved in those cases before telecasting any controversial issue, it should be justified thoroughly.

Let us consider an example **“Truth telling is righteous.”**



In this above example human action is judged by an objective term. That type of particular example is judged by inductive model of moral reasoning or case – based reasoning. This type of moral justification is called micro level moral reasoning.

Justified moral violation: - When a media practitioner violated the law of a country or a norm or custom which is made by society, then that action should be punished or not that is the pertinent question right now. Apparently legal and moral aspect could not be differentiated. When exclusively moral norms are

violated, we could observe the difference between moral and legal aspect of a profession according to Elliot D. Cohen Journalists should ‘report the fact not to erect’ them . In this context we refer Sissela Bok’s conception of “lying in crisis”. Lying or deception is not the real path of journalism. Journalists should provide reason and justify their violation of moral norms, otherwise, they would mislead public and indulge corruption . From Indian classical ethical perspective sadharma is over and above the sadharana dharma . In telecasting a news which Margaret riot , that is the case when lying



or deception is morally and legally justified, in order to avoid harm to the nation or to the society. Do not disclose the name and identity of a rape victim or

the accused Juvenile criminal these are the cases where Journalists do not maintain transparency. Violation of moral norms in those cases are quite justified.

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## দ্বি-শত জন্মবর্ষে অনুবাদক বদ্যাসাগর : ফরিদে দেখো ‘সীতার বনবাস’

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### Abstract

উনবিংশ শতাব্দীর গোড়ার দিকে যাঁর আবিষ্কার, একবিংশ শতাব্দীর গোড়ায় যাঁর জন্মের দু-শত বছর উদযাপন পর্ব চলছে সেই পুরোধা পুরুষ সামান্য নন। এই অসামান্য ব্যক্তিত্বের অধিকারী বদ্যাসাগরকে অবদান অনস্বীকার্য। বিবিধি ভাষার জ্ঞানধারী বদ্যাসাগরকে অনুবাদ প্রশংসনীয়। বদ্যাসাগর অনুদতি গ্রন্থে সদ্ধিস্ত তা যে কোনও সহৃদয় রসিক পাঠক মাত্রই বুঝবেন। নারীদের সামগ্রিক উন্নতি ও অগ্রসর হওয়ার জন্য বদ্যাসাগরকে কর্মকাণ্ড নমস্ক ও প্রশংসা। হিন্দি, ইংরেজি ও সংস্কৃত ভাষা থেকে অনুবাদে বদ্যাসাগর নজর গড়েছেন তা বলাই বাহুল্য। ‘সীতার বনবাস’ গ্রন্থের কয়দংশ আয়োজন করার যথাসাধ্য চেষ্টা করছি, যে গ্রন্থ অনুদতি হলও কীভাবে তা মৌলিকভাবে দাবী রাখতে তা পাঠ করে সত্যই বিস্ময় জাগে।

**Keywords:** :কব্জরসোধোধক, অগ্নিপিশুধিকিণ্ড, মঙ্গলানুষ্ঠান, হরধনু, অম্ভায়মান, চরিত্রমাহাত্ম্য

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‘সীতার বনবাস’ গ্রন্থের প্রথম ও দ্বিতীয় পরিচ্ছেদের অনুবাদ করছে ভবভূতির ‘উত্তররামচরিত’ নাটকের প্রথম অঙ্ক অবলম্বনে। ‘সীতার বনবাস’ গ্রন্থের বাকি ছয়টি পরিচ্ছেদে ‘বাল্মীকি-রামায়ণের’ অন্তিম কাণ্ড ‘উত্তরকাণ্ড’ অবলম্বনে রচিত। আমরা লক্ষ্য করবো ‘সীতার বনবাস’ গ্রন্থটি কতখানি অন্য দুই গ্রন্থ থেকে নেওয়া, সম্পূর্ণ হুবহু অনুবাদ নাকি গ্রন্থ দুটির কাহিনি অবলম্বনে রচিত একটি মৌলিক গ্রন্থ। বদ্যাসাগর ‘সীতার বনবাস’ গ্রন্থে শুরুর প্রথমই বিজ্ঞাপন অংশে বলেছেন “ঐদৃশ কব্জরসোধোধক বিষয় যে রূপে সঙ্কলিত হওয়া উচিত, এই পুস্তকে সরূপ হওয়া সম্ভাবনীয় নহে; সুতরাং সহৃদয় লোকের পাঠ করিয়া সন্তোষ লাভ করবিনে, এরূপ প্রত্যাশা করিতে পারি না। যদি, সীতার বনবাস, কত্রিচি অংশেও পাঠকবর্গেরে প্রীতিপ্রদ হয়, তাহা হইলেই, আমি চরিতার্থ হইব।”<sup>১</sup> ভবভূতির উত্তররামচরিত নাটকের প্রথমে নান্দী শ্লোক আছে সংস্কৃত নাটকের নিয়মানুসারেই। সুত্রধার ও নটের সংলাপ আছে। প্রস্তাবনার আগাই এই সংলাপ উল্লেখ্য।

“নট – বলা উচতি – অত্য়ন্ত দুর্জনা কারণ, দবৌ বদৈহৌ সম্পর্কও লোকরো নন্দিয় মুখরা। রাক্ষসগ্হে অবস্থানই এর মূল। অগ্নিশিদ্ধতিও সন্দহে উপস্থতি হযছে।

সূত্রধার – এই জনশ্রুতি যদি আবার মহারাজ শোননে তবে তা হবে কষ্টরো।”<sup>২</sup> এই অংশে অর্থাৎ নট ও সূত্রধারের সংলাপ বদ্যাসাগর উল্লেখ করেনি, কিন্তু মূল অনুবাদে যাবার আগে একটি সংক্ষিপ্ত প্রক্শাপট রচনা করছেন। বদ্যাসাগর ‘শকুন্তলা’ গ্রন্থের প্রথম পরিচ্ছেদেই মূল কাহিনির বা গ্রন্থের বিষয়বস্তুর মূল পরবে প্রবশের আগে বলা যায় মুখকথা বা গৌরচন্দ্রিকা করছেন। সেখানে মূল ‘উত্তররামচরতি’ গ্রন্থ থেকে বদ্যাসাগর অনুবাদ করেনি। সম্পূর্ণ অংশটি মৌলিক রচনা।

নাটকের আঙুগিক অর্থাৎ সংলাপ ভঙুগতি ভবভূতি ‘উত্তররামচরতি’ নাটকটি লিখছেন। বদ্যাসাগর সংলাপ বাদ দিয়ে আখ্যান তথা কাহিনিমূলক গ্রন্থ হিসেবে রচনা করলেন ‘সীতার বনবাস’। আমরা লক্ষ করবো দুই গ্রন্থের মধ্যে আনুবাদিক তারতম্য। মূল গ্রন্থ থেকে বদ্যাসাগর কতখানি গ্রহণ করছেন এবং কতখানি পরিবর্তন করছেন সটেই আমাদের আলোচ্য বিষয়। মূলগ্রন্থ প্রথম অঙ্কে প্রথম দৃশ্যে লক্ষ করবো রাম-সীতার কথোপকথন। প্রথম অঙ্কে প্রস্তুতাবনা অংশে উল্লেখ –

“রাম – দবৌ বদৈহৌ, তুমি আশ্বস্ত হও। এই গুরুজনরো আমাদের ত্যাগ করতে পারো না। অনুষ্ঠানে নতিযত্বে স্বাধীনতা থাকে না। সাগ্নিকদের গার্হস্থ্য ধর্ম প্রত্যবায়হতে কলুষতি হতে পারে।

সীতা – জানি আর্যপুত্র, জানি। কিন্তু বন্ধুজনের বিচ্ছেদে সন্তাপের কারণ হয়ে থাকে।

রাম – তা ঠিক। সংসারের এই সকল বিষয়ই মর্মভদৌ, যার প্রতি বিরূপ হয়ে মনীষীরা সমস্ত কামনা বসির্জন দিয়ে অরণ্যে (এসে) বশিরাম করেন।”<sup>৩</sup>

বদ্যাসাগর তাঁর ‘সীতার বনবাস’ গ্রন্থের প্রথম পরিচ্ছেদে শুরু করছেন অর্থাৎ অনুবাদ আক্ষরিক অর্থে শুরু করছেন দ্বিতীয় অনুচ্ছেদ থেকে। “কালক্রমে জানকীর গর্ভলক্ষণ আবির্ভূত হইল। তদর্শনে রামের ও রাজজননী কৌশল্যার আহ্লাদের সীমা রহিল না; সমস্ত রাজভবন উৎসবে পূর্ণ হইল; পুরবাসগিণ, অচিরে রাজকুমার দেখি, এই মনের উল্লাসে স্ব স্ব আবাসে অশেষবাধি উৎসবক্রিয়া করিতে লাগিল।”<sup>৪</sup>

বদ্যাসাগর প্রথমই রাম-সীতার কথোপকথন দিয়ে পরিচ্ছেদে শুরু করেনি, সীতার গর্ভলক্ষণ, কৌশল্যার খুশির বহিঃপ্রকাশ দিয়ে পরিচ্ছেদের আরম্ভ দিয়ে শুরু করছেন। ঊনবিংশ শতাব্দীর তৎকালীন সমাজ তথা পাঠক সমাজের দিকে লক্ষ রেখেই

বদ্যাসাগররে অনুবাদে এই পরবর্তন। ভবভূতি সংলাপরে আকারে নাটক শুরু করছেন, বদ্যাসাগর রাম সীতার সংলাপ বাদ দিয়ে ব্যাখ্যা ও বর্ণনামূলক কাহিনি দিয়ে অনুবাদ করছেন।

ভবভূতির গ্রন্থরে প্রথম অঙ্করে প্রস্তাবনায় কঞ্চুকী, রাম, সীতা ও অষ্টাবক্ররে একটি সংলাপ লক্ষ করবো।

“কঞ্চুকী – রামভদ্র..... (অর্ধকে বলসে সতয়ে) মহারাজ !

রাম – (স্মৃতিহাস্যে) আর্য ! কন্তু আমার পতির পরজিনরে পক্ষ্যে ‘রামভদ্র’ এই সম্বোধনই শোভন। ঠকি আছে, আপন্যি যভোবে অভ্যস্ত সভোবেই বলুন।

কঞ্চুকী – ঋষ্যশৃঙ্গরে আশ্রম থেকে অষ্টাবক্র মুনি এসছেন।

সীতা – আর্য ! তাহলে বলিম্ব করছেন কনে ?

রাম – শীঘ্র প্রবশে করান। (কঞ্চুকীর প্রস্থান)”<sup>৫</sup>

বদ্যাসাগর রামচন্দ্রকে কখনোই কঞ্চুকীর মুখে রামভদ্র বলে সম্বোধন করানো হয়নি। লক্ষ করবো ভবভূতির রামচন্দ্র কঞ্চুকীকে আশ্বস্ত করছেন য়ে কঞ্চুকীর অভ্যাস বদলানোর দরকার নহে। আমরা লক্ষ করবো বদ্যাসাগর তাঁর ‘সীতার বনবাস’ গ্রন্থে কঞ্চুকী রামচন্দ্রকে রামভদ্র বলে সম্বোধন করেনি এবং তাই রামচন্দ্ররে আশ্বাসবাণীও লক্ষ করি না।

আমরা ভবভূতির ‘উত্তররামচরতি’ গ্রন্থরে প্রথম অঙ্ক লক্ষ্য করবো রাম, সীতা, লক্ষণরে একটি সংলাপ বিশেষে অংশ।

“রাম – মতিরাবরুগরে পুত্র ভগবান বশষ্টিরে যা আদশে। প্রজাদরে মনোরঞ্জনরে জন্ম স্নহে, দয়া, সৌখ্য – এমনকি সীতাকে ত্যাগ করতয়ে আমার দুঃখ হবো না।

সীতা – এজন্যই আর্যপুত্র রঘুকুলশ্রেষ্ট। .....

লক্ষণ – আর্যার অগ্নপিরীক্ষা শুদ্ধি পর্যন্ত।

রাম – থাক, বন্ধ কর। (মধুর বাক্যে) যনি জন্ম থেকে পবতির, অন্য কছির দ্বারা তাঁর পবতিরতার কি প্রয়োজন ? তীরথরে জল এবং অগ্নির বিশুদ্ধতার জন্ম অন্য কছির প্রয়োজন হয় না।”<sup>৬</sup> আমরা ভবভূতির নাটকরে সংলাপ লক্ষ্য করলাম। এখানে রাম তাঁর পত্নীকে গুরু বশষ্টিরে আদশে ত্যাগ পর্যন্ত করতে পারেন। নারীর বদেনা তথা সম্মান নিয়ে ভবভূতির রাম এখানে চিন্তিতি নন। এখানে রামরে গুরুবাক্য শরোধার্য লক্ষ্য করা যাচ্ছে।

আমরা বদ্যাসাগররে ‘সীতার বনবাস’ লক্ষ করবো। এখানে রাম, লক্ষণ ও সীতার কথোপকথনরে দকি দৃষ্টি দবো। “লক্ষণ বললিনে, আর্যা জানকীর

অগ্নিপিরিশুদ্ধিকাণ্ড পর্যন্ত। রাম শুনিয়া সাতশিয় ক্ষুব্ধ হইয়া বললিনে, ব□স ! তুমি আমার সমক্ষে আর ও কথা মুখে আনিও না; ও কথা শুনলি অথবা মনে হইলে আমি সাতশিয় কুন্ঠতি ও লজ্জতি হই; কি আক্ষপেরে বিষয় ! যনি জন্মপরগিরহ করাত জগ□ পবতির হইয়াছে, তাঁহাকেও আবার অন্য পাবন দ্বারা পূত করতি হইয়াছিলি। হায়, লোকেরঞ্জন কি দুরূহ ব্রত ! সীতা বললিনে, নাথ ! সে সকল কথা মনে করিয়া আপনা অকারণে ক্ষুব্ধ হইতছেন কেনে ? আপনা ত□কালে সদ্বিচিনার কর্মই করিয়াছিলিনে ; সরূপ না করলি চরিনর্মল রঘুকুলে কলঙ্কস্পর্শ হইত, এবং আমারও অপবাদ বমিচন হইত না।”<sup>৭</sup>

বদ্যাসাগরের রচনায় রামচন্দ্র ও সীতাদেবী যনে ঊনবংশ শতাব্দীর ত□কালীন সমাজেই কোনো সাধারণ দম্পতি লক্ষণেরে কথায় রাম ক্ষুব্ধ হয়ছেন। সীতার অগ্নিপিরীক্ষা সংক্রান্ত কথার তীব্র প্রতিবাদ করনে শ্রীরামচন্দ্র। নারীজাতির অপমান তথা নারীর নারীত্ব বা সতীর সতীত্ব প্রমাণেরে প্রয়োজন নহে তা দৃঢ়কন্ঠে শুনতে পাই রামচন্দ্রেরে বক্তব্যে। বদ্যাসাগর নজি নারীর যন্ত্রণা-বদেনা বুঝতনে, কতটা লেখক নজি নারী সম্পর্কে সচতেন হল। রামের বক্তব্যে এই ধরণেরে কথা শোনা যায়। বদ্যাসাগর ঊনশি শতকেরে ত□কালীন সমাজেরে পাঠকেরে দিকে লক্ষ রাখেই অনুবাদে এই পরিবর্তন করছেন। ভবভূতির রচনা ও বদ্যাসাগরের রচনার মধ্যে বিষয়বস্তুগত পরিবর্তন না থাকলেও, রচনার উপস্থাপনাগত অনুবাদে পরিবর্তন লক্ষণীয়।

ভবভূতির ‘উত্তররামচরতি’র প্রথম অঙ্কেরে একটা সংলাপ অত্যন্ত গুরুত্বপূর্ণ। আলংখ্যদর্শনেরে দৃশ্য দেখোর সময়ে রাম, সীতা ও লক্ষণেরে মধ্যে একটা কথোপকথন উল্লেখ্য।

“সীতা – এখানে গোদান মণ্ডলানুষ্টান সমাপ্তির পর বিবাহকর্মে দীক্ষতি তোমরা চার ভাই। আমার মনে হচ্ছে – আমি যনে সেই সময়ই বর্তমান।

রাম – হে সুন্দরী ! আমিও যনে সেই সময়ই উপস্থতি হয়েছি যখন তোমার কঙ্কন শোভতি এই সুন্দর হাত (পুরোহতি) গৌতম আমার হাতে অর্পণ করছেলিনে, যো হাত মূর্তমিন মহো□সবেরে মত আমাকে আনন্দ দিয়েছিলি।

লক্ষণ – ইনি আর্যা (সীতা), ইনিও আর্যা মাণ্ডবী, আর ইনি বধু শ্রুতকীর্তী।

সীতা – ব□স, এই অন্যটিকে ?

লক্ষণ – (সলজ্জ হাস্যে স্বগত) ও ! আর্যা উর্মলিার কথা বলছেন। ঠিক আছে, অন্যদিকে যাই। (প্রকাশ্যে) আর্যে ! এই দর্শনীয় বিষয় দেখুন। ইনি ভগবান ভার্গবা।”<sup>৮</sup>

বদ্বিযাসাগর তাঁর ‘সীতার বনবাস’ গ্রন্থে রাম, লক্ষণ, সীতার কথোপকথনটি ছুবছু অনুবাদ করেননি। আমরা তাঁর অনুবাদটি দেখে। ‘সীতার বনবাস’ গ্রন্থে প্রথম পরচ্ছদে উল্লেখ “সীতা দেখিয়া ষৎপরোনাস্তি আহ্লাদতি হইয়া বলিলে, তাই ত ঠকি যনে আর্যপুত্র হরধনু উত্তোলতি করিয়া ভাঙগতি উদ্যত হইয়াছেন, আর পতি আমার, বস্মিয়াপন্ন হইয়া অনমিষি নয়নে নরীক্ষণ করতিছেন। আ মরি মরি, কঁ চমকার চিত্র করিয়াছে। আমার, এদকিে ববিহকালীন সভা ; সেই সভায় তোমরা চারি ভাই, তঁকালোচতি বশেভূষায় অলঙ্কৃত হইয়া, কমেণ শোভা পাইতছে। চিত্র দেখিয়া বোঁধ হইতছে, যনে সেই প্রদশে ও সেই সময়ে বদ্বিযমান রহিয়াছি।”৯

বদ্বিযাসাগর সীতার মনে উঁফুল্লতাকে প্রকাশ করছেন রামের হরধনু ভাঙার দৃশ্য মনে করিয়ে দিয়ে। সীতার মনে আনন্দ প্রকাশ করছেন বদ্বিযাসাগরের ‘আহা ! মরি মরি’ শব্দবন্ধ প্রয়োগে মাধ্যমে।

বদ্বিযাসাগর অনুবাদে একটু কৌশল করছেন এই অংশে। “চিত্রপটে স্থলান্তরে অঙুলনির্দশে করিয়া লক্ষণ বলিলে, এই আর্যা, এই মান্ডবী, এই বধু শ্রুতকীর্তি ; কনিত্তু তনি লজ্জাবশতঃ উর্মলিার উল্লেখ করিলে না। সীতা বুঝতিে পারিয়া, কৌতুক করবার নিমিত্ত, হাস্যমুখে উর্মলিার দকিে অঙুলপ্রয়োগ করিয়া লক্ষণকে জিজ্ঞাসিলে, বঁস ! এদকিে এ কে চিত্রতি রহিয়াছে।”১০ বদ্বিযাসাগর রাম, সীতা, লক্ষণের সম্পর্কে সাধারণ ঘরে দাদা-ভাই, দেওর-বৌদির সম্পর্কে মধ্য সীমাবদ্ধ রেখেছেন। সীতা যনে ঘরে বৌদি যনি দেওর লক্ষণকে জিজ্ঞাসা করছেন কৌতুকবশত লক্ষণের বৌ-এর কথা। সে কথা শূনে লক্ষণের লজ্জা ধরা পড়ছে। বদ্বিযাসাগরের অনুবাদে এই অভিব্যক্ত লক্ষণীয়।

ভবভূতির উত্তররামচরিত গ্রন্থে প্রথম অঙ্কে সীতা ও লক্ষণের সংলাপটি উল্লেখ।

“সীতা – (সারুনেত্রে, স্বগত) হায়, সূর্যবংশে আনন্দস্বরূপ আপনি আমার জন্ম এত কলশে ভোগ করছিলেন।

লক্ষণ – (রামকে দেখে কাতর কন্থে) আর্য ! কঁ হল ? আপনার এই অশ্রুবিন্দুগুলি স্থলতি মুক্তাহারের মত মাটিতে পড়ে বিভিন্ন ধারায় প্রবাহতি হচ্ছ। আবগে নরিদ্ব হলও আপনার অধর ও নাসকিার কম্পনের দ্বারা অপরে অনুমান করতে পারে য়ে আপনার হৃদয় আবগে-স্মৃতি।”১১

বদ্বিযাসাগর অনুবাদে ক্ষত্রে ব্যাখ্যা বা ববিত্তি-বরণনার দকিে বিশিষে ঝোঁক দেননি। বরং মূলগ্রন্থে কঁ অংশ নিয়ে প্রয়োগ মতো পরিবর্তন করছেন, অবশ্যই

তা তৎকালীন পাঠককুলরে দকিে নজর রাখেই। ‘সীতার বনবাস’ গ্রন্থরে অংশটি উল্লেখ্য “সীতা, লক্ষণরে মুখে এই সকল কথা শুনয়া, অশ্রুপূর্ণ নয়নে মনে মনে বলতিে লাগলিনে, হয় ? এ অভাগিনীর জন্যে আর্যপুত্রকে কতই ক্লেশভোগ করতিে হইয়াছিল। সেই সময়ে, রামরেও নয়নযুগল হইতে বাষ্পবারি বিগলতি হইতে লাগলি।”<sup>১২</sup> আমরা দখেব বিদ্যাসাগর ভবভূতির বর্ণনার উপমাও ব্যাখ্যা কোনে কছই গ্রহণ করনেনি, তিনি নারী হৃদয়ের স্বাভাবিক বদেনার অনুভূতিকে সরলভাবে বর্ণনা করছেন।

ভবভূতির ‘উত্তররামচরতি’ গ্রন্থরে প্রথম অঙ্ক থেকে বিদ্যাসাগর ‘সীতার বনবাস’ গ্রন্থরে দ্বিতীয় পরিচ্ছেদেটিও রচনা করছেন। বলা যায় দ্বিতীয় পরিচ্ছেদেটি বিদ্যাসাগর হুবহু অনুবাদ প্রায় কোন অংশেই করনেনি। দ্বিতীয় পরিচ্ছেদের প্রথম অনুচ্ছেদেটি এইরকম “.... প্রিয়ে ! তেঁমার বাহুলতার স্পর্শে, আমার সর্ব শরীরে যনে অমৃতধারার বর্ষণ হইতেছে; ইন্দ্রিয়ি সকল অভূতপূর্ব রসাবেশে অবশ হইয়া আসতিছে, চতেনা বলিপ্তপ্রায় হইতেছে; অকস্মাৎ আমার নদ্রিাবেশে, কি মৌহাবেশে উপস্থতি হইল, কছই বুঝতিে পারতিছে না। সীতা, রামমুখবিনিসৃত অমৃতায়মান বচনপরস্পরা শ্রবণগোচর করিয়া হাস্যমুখে বললিনে, নাথ ! আপনি চরিনুকুল ও স্থরিপ্রসাদ। যাহা শুনলাম, ইহা অপেক্ষা স্ত্রীলোকরে পক্ষ্যে আর কি সৌভাগ্যরে বিষয় হইতে পারে। প্রার্থনা এই যনে চরিদিন এইরূপ স্নহে ও অনুগ্রহ থাকে।”<sup>১৩</sup> বিদ্যাসাগর রাম ও সীতার এই কথাপকথনটি অতিরিক্ত সংযোজন করছেন। রামরে কোমল বক্তব্যে তথা সীতার প্রতি রামরে প্রেমমূলক সংলাপরে ফলে সীতার মনে আনন্দরে আভাষ লক্ষণীয়। ঊনশি শতকরে সমাজে নারী-পুরুষ তথা স্বামী-স্ত্রীর সম্পর্ককে উন্মুক্ত করার জন্যই হয়তো রামচন্দ্র ও সীতার প্রেমমূলক কথাপকথনটির অভিনব সংযোজন ঘটতিয়েছেন।

আমরা লক্ষ্য করবো ভবভূতির ‘উত্তররামচরতি’ গ্রন্থরে প্রথম অঙ্করে রামচন্দ্ররে সংলাপ ও সীতার অনুভূতির প্রকাশ।

“রাম – হে কমললোচনে, তেঁমার মধুর কথাগুলি আমার ম্লান জীবনকুসুমকে বিকশতি করে তুলছে, আমাকে আনন্দতি করছে, সকল ইন্দ্রিয়িকে মুগ্ধ করছে। কথাগুলি আমার কর্ণরে অমৃততুল্য এবং মনরে রসায়নস্বরূপ।

সীতা – ওগো প্রিয়েবদ, আসুন শয়ন করি।

রাম – কছই খুঁজছ কি ? বিবাহরে পর থেকে গৃহে বা অরণ্যে, শৈবে বা যৌবনে রামরে এই বাহু তেঁমার ঘুমানোর সময় উপাধান হয়ছে, অন্য কোনে কছির আশ্রয় নতিে হয়নি।”<sup>১৪</sup>

এই অংশটি বিদ্যাসাগর ‘সীতার বনবাস’ গ্রন্থে অনুবাদ করছেন “সীতার মৃদু মধুর মোহন বাক্য কর্ণগোচর করিয়া রাম বললিনে, প্রিয়ে ! তেঁমার কথা শুনলিে,





শরীর শীতল হয়, কর্ণকুহর অমৃতসরে অভষিক্ত হয়, ইন্দ্রিয় সকল বমিহতি হয়, অন্তঃকরণে সজীবতা সম্পাদতি হয়। সীতা লজ্জতি হইয়া বললিনে, নাথ ! এই নমিত্তই সকলে আপনাকে প্রয়িংবদা বলো যাহা হউক, অবশেষে এ অভাগিনীর য়ে এত সৌভাগ্য ঘটবিকে, যাহা স্বপ্নেরে অগোচর।”<sup>১৫</sup> বদ্যাসাগর তাঁর গ্রন্থে অনুবাদে এই অংশটিকে কিছুটা পরিবর্তন করছেন। নারীর সৌভাগ্য য়ে পুরুষেরে ভালোবাসায় বদ্যাসাগর অনুভব করছেন। নারীর বদেনা ও আভ্যন্তরীণ মনোকষ্ট বোঝার সুক্ষ অভাগিনী প্রতাপিন করছেন এবং বদ্যাসাগর উনিশ শতকেরে তৎকালীন সমাজে নারীর অবস্থার কথা খোলা রেখেই অনুবাদে পরিবর্তন করছেন।

ভবভূতির ‘উত্তররামচরতি’ গ্রন্থেরে প্রথম অঙ্কে রামচন্দ্রেরে একটি সংলাপ উল্লেখ্য।

“রাম – একি, মধুরবচনা (সীতা) আমার বুকই ঘুমিয়ে পড়ল ! (ভালো করে দেখে) ইনি আমার গৃহলক্ষ্মী, আমার চোখেরে কাজলবর্তিকা, ঐর এই স্পর্শ আমার দহে চন্দনরসতুল্য, আমার কন্ঠে ঐর বাহু মুক্তামালার মত শীতল ও মসৃণ। তাঁর সম্পর্কে কোন্ বস্তুই বা প্রয়ি নয় ? কন্ঠে তাঁর বরিহ অসহ্য।”<sup>১৬</sup> বদ্যাসাগর রাম-সীতার এই কথাপকথনটি একটু পরিবর্তন করছেন। পরিবর্তনটি লক্ষ্যণীয়।

“.....রাম বললিনে, প্রয়ি ! এখানে অন্তর্বিধি শয্যার সঙ্গতি নাই ; অতএব, য়ে অন্তর্বিধি সাধারণ রামবাহু বিবাহসময় অবধি, কি গৃহে, কি বলো, কি শিশেবে, কি যৌবনে, উপাধানস্থানীয় হইয়া আসিয়াছে, আজও সেই তোমার উপাধানকার্য সম্পন্ন করুক। এই বলিয়া, রাম বাহু প্রসারতি করলিনে; সীতা তদুপরিস্তক বন্যস্ত করিয়া তৎক্ষণাৎ নদ্রাগত হইলেন।”<sup>১৭</sup> রাম-সীতার এই সম্পর্ক বদ্যাসাগর একটি নদ্রা যাবার অবস্থাকে তুলে ধরছেন। ভবভূতি উপমা দিয়ে বিস্তারতি ব্যাখ্যা করছেন, কন্ঠে বদ্যাসাগর রামেরে বাহুকে সীতার শয়ন-শয্যার বালি করছেন এবং তা ঐ সময়েরে নরিখি তা সত্যই প্রশংসনীয়।

বদ্যাসাগর ‘সীতার বনবাস’ গ্রন্থেরে দ্বিতীয় পরিচ্ছেদে একটি অতিরিক্ত অনুচ্ছেদে সংযোজন করছেন, তথা রামচন্দ্রেরে প্রমে-প্রণয় সম্পর্কে একটি অন্তর্বিধি সংলাপ য়েটো মূল গ্রন্থে প্রায় নাই এমন একটি অংশ উল্লেখ করবা। “..... রাম প্রমেভরে প্রফুল্ল কলবের হইয়া বলতি লাগলিনে, আহা ! অকৃত্রমি প্রমে কি পরম পদার্থ। কি সুখ, কি দুঃখ, কি সম্পর্ক, কি বিপিত্তি, কি যৌবন, কি বার্ধক্য, সকল অবস্থাতেই একরূপ ও অবিক্ত। ঐদৃশ প্রণয়সুখেরে অধিকারী হওয়া অল্প সৌভাগ্যেরে কথা নহে। কন্ঠে আক্ষপেরে বিষয় এই, এরূপ প্রণয় জগতে নতিন্ত বরিল ও একান্ত

দুর্লভ; যদি এত বরিল ও এত দুর্লভ না হইত, সংসারে সুখের সীমা থাকতি না।”<sup>১৮</sup> বদ্বিষাসাগর রামচন্দ্রের মনরে কামনা, প্রমে প্রণয় সম্পর্কে মনোভাব এবং স্বামী হিসেবে একজন নারীর প্রতি কীরূপ অনুভূতি থাকা প্রয়োজন তা বদ্বিষাসাগর ঊনবিংশ শতাব্দীর সমাজের পাঠকদের দিকে লক্ষ্য রেখেই অনুবাদে এই পরিবর্তন করছেন।

ভবভূতির ‘উত্তররামচরিত’ গ্রন্থে রামচন্দ্র ও দুর্মুখের কথোপকথনের একটি অংশ লক্ষ্য করবো। রামচন্দ্রের কানে কানে দুর্মুখ রাজা দশরথ ও অন্য বসিয়ক একটি কথা বললে যটো সীতার কলঙ্ক সম্পর্কে। যা শূনে রামচন্দ্র মূর্চ্ছা যান। তারপর দুর্মুখের মুখে আশ্বস্ততার কথা শূনে রামচন্দ্র বললে যে উক্ত তা নমিনরূপ।

“রাম – (জ্ঞানলাভ করে) হায়, সীতার পরগৃহবাসেরে কলঙ্ককে ধকি, যা অদ্ভুত উপায়ে প্রশমতি হয়ছিলি। কনিতু দবৈদুর্বপিককে সটোই আবার উন্মত্ত কুকুরেরে বসিরে মত চতুর্দকি ছড়িয়ে পড়ছে।

মন্দভাগ্য আমি এখন কি করি? (চিন্তা করে, করুণ স্বরে) অথবা কহি বা করি! যে কোন উপায়ে লোকেরে আরাধনাই সজ্জনদেরে ব্রত, আমাকে এবং প্রাণকে ত্যাগ করে পতি তা পালন করে গিয়েছেন।

সম্প্রতি ভগবান বশিষ্টও এই আদর্শে পাঠিয়েছেন। তাছাড়া সূর্য বংশেরে লোকমান্য রাজারা যে চরিত্রমাহাত্ম্য উজ্জ্বল করে গিয়েছেন তা যদি মদ্বিষয়ক লোকপবাদে কলঙ্কতি হয়, তবে ভাগ্যহীন আমাকে ধকি।”<sup>১৯</sup>

বদ্বিষাসাগর ‘সীতার বনবাস’ গ্রন্থে এই অংশটির অনুবাদ রামচন্দ্র ও দুর্মুখের সংলাপের ব্যাখ্যার মাধ্যমে করছেন। গ্রন্থে উল্লিখিত অংশ “রামেরে নরিবন্ধাতিশয় দর্শন সাতশিয় শঙ্কতি হইয়া দুর্মুখ মনে মনে বিচিনা করতি। লাগলি, আমি কি বিষম সঙ্কটে পড়লাম? কি রূপ রাজমহীষীসংক্রান্ত জনাপবাদ মহারাজেরে গোচর করবি? আমি অতি হতভাগ্য; নতুবা এরূপ কার্যেরে ভার গ্রহণ করিয়াছি, তখন প্রভুর নিকটে অকপটে প্রকৃত কথাই বলা উচিত।”<sup>২০</sup> বদ্বিষাসাগর অনুবাদ পরিবর্তন করছেন। রামেরে বক্তব্যকে দুর্মুখের মুখে দিয়ে বলায়ছেন এবং যৌথভাবে সংলাপটিকে শেষে করছেন। দুর্মুখ এখানে নিজেকে হতভাগ্য বলে মনে করছেন। রামচন্দ্রেরে কাছে অকপটে স্বীকারোক্তির কথা বলা হয়েছে। প্রভুর প্রতি ভৃত্যেরে এই আনুগত্য বদ্বিষাসাগর দেখিয়েছেন, অবশ্য সমসাময়িকতাকে খয়োল রেখেই হয়তো এইভাবে উপস্থাপন করছেন।

ভবভূতি ‘উত্তররামচরিত’ গ্রন্থেরে প্রথম অঙ্কে রামচন্দ্রেরে একটি সংলাপ উল্লিখে।



“রাম – হায় কি কষ্ট ! অতঃপূর্বে বীভৎস কাজ করে আমাকে নৃশংস হতে হচ্ছিলো যবে  
প্রিয়াকে আমি শিশৈব থেকে পালন করছি, প্রমেরে বশে যবে আমাকে ছড়ে অন্য কোথাও  
থাকেনি, তাকেই আমি গৃহপালিত পাখির প্রতি কসাই এর মত কৌশলে মৃত্যুর হাতে তুলে  
দিচ্ছি। ....

হায় ! সমস্ত জীবলোক বিপর্যস্ত। আজ রামের জীবনের প্রয়োজন নিঃশেষিত। জগৎ  
এখন জীর্ণ অরণ্যেরে ন্যায়, সংসার অসার, শরীর কাষ্টতুল্য। আমি নিরাশ্রয়। আমি কি  
করব ? কোথায় যাব ? অথবা – দুঃখভোগ করার জন্যই রামের মধ্যে চৈতন্য সঞ্চারিত  
হয়ছিল। বজ্রনির্মিত কীলকের মত আমার প্রাণ মর্মভেদে করছে।”<sup>২০</sup> বদ্বিষাসাগর  
রামচন্দ্রের এই বক্তব্যটির অনুবাদ করছেন, সেই অনুবাদে মূলগ্রন্থের ছাপ দেখতে  
পাবো না। বদ্বিষাসাগর ঊনবিংশ শতাব্দীর তৎকালীন সমাজ ও পাঠকদের  
মনোগ্রাহীতার দিকে খেয়াল রেখেই তাঁর অনুবাদে পরিবর্তন ঘটিয়েছেন তা বলাই  
বাহুল্য।

বদ্বিষাসাগর ‘সীতার বনবাস’ গ্রন্থের দ্বিতীয় পরিচ্ছেদের শষোংশে অংশটির  
অনুবাদ করছেন। “.... হায় কি হইল বলিয়া, নিরতিশয় কাতর বাক্যে বলিতে লাগিলেন, হা  
মাতঃ ! হাঁ তাত জনক ! হা দেবি বিসুন্দর। হা ভগবতী অরুন্ধতী ! হা কুলগুরো বশষ্টি ! হা  
ভগবন্ বশ্বামতির ! হা প্রিয়বন্ধো বিভীষণ ! হা পরমোকারনি সখে সুগরীব ! হা বৎস  
অজ্ঞানহৃদয়নন্দন ! তোমরা কোথায় রহিয়াছ, কিছুই জানিতে পারিছি না; এখানে  
দুরাত্মা রাম তোমাদের সর্বনাশে উদ্যত হইয়াছে। অথবা, আর আমি তাদৃশ  
মহাত্মাদিগেরে নামগ্রহণে অধিকারী নহি; আমার ন্যায় মহাপাতক নামগ্রহণ করিলে,  
নিঃসন্দেহে তাঁহাদের পাপস্পর্শ হইবেকো।”<sup>২২</sup> আমরা লক্ষ্য করবো বদ্বিষাসাগর রামের  
বক্তব্যকে অনুবাদ করতে গিয়ে কিছুটা পরিবর্তন করছেন। বদ্বিষাসাগরের রাম বশো  
হতাশাগ্রস্ত ও বলা যায় নারীর প্রতি শ্রদ্ধাবান। রাম নিজের এখানে অপরাধবোধে  
বদ্বিধ।

ঊনবিংশ শতাব্দীর সমাজ ও তৎকালীন পাঠককুলের প্রতি খেয়াল রেখে এবং  
বদ্বিষাসাগর নিজের প্রয়োজনানুযায়ী ভবভূতির ‘উত্তররামচরিত’ মূলগ্রন্থের  
‘চত্রদর্শন’ নামক প্রথম অঙ্ক থেকে ‘সীতার বনবাস’ এর প্রথম ও দ্বিতীয়  
পরিচ্ছেদের রচনা করছেন তথা অনুবাদ করছেন। ভবভূতির ‘উত্তররামচরিত’ গ্রন্থের  
প্রথম পরিচ্ছেদের শষোংশ সীতা ও দুরমুখেরে কথোপকথন দিয়ে সমাপ্ত হয়েছে।  
ভবভূতির ‘উত্তররামচরিত’ গ্রন্থের প্রথম অঙ্কটি ‘চত্রদর্শন’ নামাঙ্কিত।  
বদ্বিষাসাগর এই অঙ্ক থেকে ‘সীতার বনবাস’ গ্রন্থের প্রথম ও দ্বিতীয় পরিচ্ছেদ



অনুবাদ করছেন নয়, বরং বলা ভালো রচনা করছেন। কারণ সেই রচনায় মূলগ্রন্থ থেকে ছুবছু বঙ্গানুবাদ নহে, বদিয়াসাগর অধিকাংশ জায়গায় ছুবছু অনুবাদ করবেনা কোথাও অতিরিক্ত সংযোজন অথবা কোথাও মূলগ্রন্থ থেকে বয়োজন করছেন। আমরা দখেব 'সীতার বনবাস' গ্রন্থরে প্রথম ও দ্বিতীয় পরচ্ছদে দুটি মৌলিক পরচ্ছদে দাবী রাখে, তা য়ে কোনে সহৃদয় রসকি পাঠক মাত্রই বুঝবনে তা বলাই বাহুল্য।

#### ❖ উৎস পরচিয় ও অনুষঙ্গ –

১. সম্পাদক – গোপাল হালদার ও সত্যেন্দ্রনাথ সনে, বদিয়াসাগর রচনা সংগ্রহ, পশ্চিমবঙ্গ নরিক্ষরতা দুরীকরণ সমতি, কলকাতা, ১৩৭৯, পৃ – ২৩৮।
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৩. তদবে, পৃ – ২
৪. সম্পাদক – গোপাল হালদার ও সত্যেন্দ্রনাথ সনে, বদিয়াসাগর রচনা সংগ্রহ, পশ্চিমবঙ্গ নরিক্ষরতা দুরীকরণ সমতি, কলকাতা, ১৩৭৯, পৃ – ২৩৯।
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৬. তদবে, পৃ – ৩ – ৪।
৭. সম্পাদক – গোপাল হালদার ও সত্যেন্দ্রনাথ সনে, বদিয়াসাগর রচনা সংগ্রহ, পশ্চিমবঙ্গ নরিক্ষরতা দুরীকরণ সমতি, কলকাতা, ১৩৭৯, পৃ – ২৪০ - ২৪১।
৮. সীতানাথ আচার্য শাস্ত্রী ও ড. দবেকুমার দাস (সম্পাদতি), 'উত্তররামচরতি' ; সংস্কৃত পুস্তক ভাণ্ডার, প্রথম সংস্করণ, এপ্রিলি – ১৯৯৮, কলকাতা, পৃ – ৫।

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১৩. তদবে, পৃ – ২৪৪।
১৪. সীতানাথ আচার্য শাস্ত্রী ও ড. দবেকুমার দাস (সম্পাদতি), ‘উত্তররামচরতি’ ; সংস্কৃত পুস্তক ভাণ্ডার, প্রথম সংস্করণ, এপ্রিলি – ১৯৯৮, কলকাতা, পৃ – ৯।
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১৮. তদবে, পৃ – ২৪৫।
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## Locating culture and ethics in Education: Connecting the idea with the concept of Formal Education as a means of social control

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### Abstract

*Durkheim defined education as the action exercised by the older generations upon those who are not yet ready for social life. Its 'object is to awaken and develop in the child those physical, intellectual and moral state which are required of him both by his society as a whole and by the milieu for which he is specially destined'.*

*Thus, the function of education in preparing a child for a particular milieu (after Durkheim) in society has traditionally meant preparing him for a membership of a particular group in social hierarchy. In this endeavour, education has been looked upon as an identity.*

*The emergence of new nation states and the increasing growth of nationalism in the 19<sup>th</sup> Europe were concurrent with the spread of literacy and in most societies resulted in an increasing emphasis upon indoctrination in the educational process. The diffusion and acceptance of the ideal of the underlying unity of mankind despite international conflict have brought greater tolerance of cultural diversity and genuine efforts to conceive and present each specific cultural tradition as a single element in a larger and richer whole. At the same time, while educational differentiation within societies has remained, increasing social mobility through education system has tended to break up the dominant national culture and to create diversity. In India too, the British system of education had besides its disadvantages one extremely good effect in establishing for the first time, opportunities of education for members of the lower castes.*

*Through this writing, it is seen how a balance between firm traditions and standards of behaviour, tolerance, adaptability to change and the spirit of free enquiry can be attained in its prime function of socialization.*

*It is also a way to find out how can formal education in modern societies contribute communicating independently values, norms and ideas which play a vital part in regulating behaviour.*

*To establish education in a broad sense from infancy to adulthood as a prime means of social control is a basic aim of this understanding and this will hopefully be applicable everywhere; for education as a specialised social activity, crosses all barriers and 2 to universal values.*

**Keywords:** Culture, ethics, formal education, social mobility, social control, social activity.

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French sociologist Durkheim defined education as the action exercised by the older generations upon those who are not yet ready for social life. Its 'object is to awaken and develop in the child those physical, intellectual and moral state which are required of him both by his society as a whole and by the milieu for which he is specially destined'. Thus, the function of education in preparing a child for a particular milieu (after Durkheim) in society has traditionally meant preparing him for a membership of a particular group in social hierarchy. In this endeavour, education has been looked upon as an identity, a part of life –as a basic culture.

The Universal Declaration of Human Rights proclaims the Right to Education to the extent that it glorifies this right as it calls for the creation of free and compulsory elementary education(from ages 3 to 12) ,of general and technical secondary education on the broadest possible scale and of higher education equally accessible to all on the basis of merit. Therefore this basic necessity of life has a universal appeal too.

In the developing countries, education has been long recognised as the essential characteristic of true independence, as the 'icing on the cake' of political unity, as a means of creating political realisation, thereby playing an integrating role. Thus it is beyond doubt that education when seen through the prism of culture, acquires a different meaning. At this juncture it is significant to know what actually is being referred to by the word 'culture'. Culture is the capacity to acquire increased knowledge and understanding, it is but a well organised mind itself, which presupposes a certain amount of knowledge, deeply ingrained and constantly available. From this point of view, memory becomes a vital instrument of culture, for it is one of the greatest strengths of mind. Culture from this angle is just not the accumulation of an all-encompassing knowledge ready for every occasion but is rather the organisation of knowledge and the capacity of just action. When education prepares the ground work for this accumulation, it necessarily gets intimately connected to this ethos-the culture.

In Europe upto the middle of the contemporary century, only national literatures and the classics were recognised as having a cultural asset. Through them the young individuals discovered time and his limitless destiny. With the passage of time, more they belonged to a profession, a social body, a nation, to a world -subjects such as Science, History, Geography, Modern languages allowed them to discover, to know and to understand the Science and the techniques that it brings along with, bearing a common heritage. But this universality depends upon a general spread of knowledge and more on the scientific approach. Each one of the individual must understand that in the processes of scientific thought, their own search for the universal is lying within. This brings with it the recognition of a new universal right for all –the right to education, the right to science which is so much an obligatory one that it should receive considerable importance in the establishment of curricula in institutions of learning.

Culture thereby is no longer merely the possession of wide knowledge, dazzling sophistication, the art of shining in the public, it helps men throughout the course of his many experiences, to acquire the sense of his destiny. Culture not only looks at the past but also focusses on the future. It acts as an inspiration in those who can acquire it, for it breathes the desire and ability to understand, to love and to master life itself. Culture has a virtue and



essence of its own which when adorned with education, adds to vigour. Again education being the weapon of culture is no longer merely the passing down of traditions, it customises men and women who becomes the active agents of advancement and prosperity, ready to face what they has never faced before. In this way culture aptly forms a close link between the concepts of education for individuals and their future.

The next leap is from culture to ethics. The young need an ideal but they are themselves at a tender age and are placed in a world where the tendency is to contest the traditional norms. Lessons from ethics fail to stimulate them. Instead by skilful comment as the occasion arises, lessons are drawn from the treasure of material provided by literature, historic events, the stories of success and failures of mankind, the opulence and the beauties of nature and of art. Therefore amid all complications of the world, the young pupil with the help of good educators gradually expounds through his own efforts and for his own use, an ideal rule of life-the moral code. Besides this, the training of the young minds in ideals of citizenship becomes a leading concern for the educator, thus making training an essential requisite for education. In all, education produces opportunities whereby men and women today gets prepared to make use of the increased possibilities of freedom in human, in more diligent manner and by doing so they recognise their close dependence upon the community at large. In this way dependence on our fellow citizens and upon the state becomes a reality, the same being true for mutual dependence among nations within the international community. While on one hand people cling to freedom and independence ,on the other, the extensive message of ethical principles train them to grasp the meaning of their times. Therefore more the people are able to discover their inner and outer worlds with the support of education, the more they are able to develop social consciousness by joining teams, leagues or squads. In this way education unfolds the connecting factor, that of combining personal character training and the trend towards cooperation and socialisation with others.

This action of socialisation of new generation takes place in all societies but it adopts different forms in respect of the social groups involved and also in respect of its own diversities and intricacies.

From this aspect education is considered as a specialised social activity. Education began in prehistory, as adults trained the young in the knowledge and skills deemed necessary in their society. In pre-literate societies, this was achieved orally and through imitation. Knowledge, values, and skills were transmitted from one generation to the next. As cultures began to extend their knowledge beyond skills that could be readily learned through imitation, formal education developed. This sort of formal education occurs in a structured environment whose explicit purpose is teaching students.

In the simplest societies where there is little specialisation of function, education is not organised as a separate activity but is provided by family, the peer group and the society as a whole through participation in daily activities. In more developed societies, formal education acquires greater significance. As the period of systematic instruction within a structured field increases, a specialised group of educators is formed, for instance, in ancient India, formal instruction was provided by the Brahmins who were considered as repositories of learning.

With the fall of the Mughal power in India, the British rule was established which though made possible educational progress also created new problems .In 1835 the decision was taken that the Government should aim at the promotion of European literature and science in India and that the medium of instruction should be in English. It was further



reiterated in the Education Dispatch of 1854 that the object of education was to extend European knowledge throughout all classes of the people. Undoubtedly this trend in education system tended to maintain and even increase the gulf between the upper classes and mass of the population as it was visible that in most literate societies, literacy has been restricted amongst the upper social strata. Thus Durkheim was proved right as he pronounced that the function of education in preparing a child for a particular milieu in society has traditionally meant preparing him for a membership of a particular group in social grading. Durkheim's elongated observations as to education prepares the children for life in the society as a whole by transmitting values, morals and customs of the society, further reemphasises the relationship between culture and education.

With the emergence of new nation states and the growth of national sentiments in the nineteenth and twentieth century, Europe witnessed the spread of literacy and in most societies resulted in an increasing stress on indoctrination in the educational process. The diffusion and acceptance of the ideal of the underlying unity of mankind despite international conflict have brought greater tolerance of cultural diversity and genuine efforts to conceive and present each specific cultural tradition as a single element in a larger and richer whole. At the same time, while educational differentiation within societies has remained, increasing social mobility through education system has tended to break up the dominant national culture and to create diversity. In India too, the British system of education had besides its disadvantages one striking effect in establishing for the first time, opportunities of education for members of the lower castes. The development of science and the rapidity of social change have also affected the codes of behaviour imparted in educational institutions which sometimes resulted into juvenile problems. These problems encountered, thus raise a question about the efficacy of formal education as a means of social control.

In earlier societies when education was highly regarded as a basis of prestige and power, the educators were held in high esteem as in most of the cases they themselves belonged to high status families. Instruction were imparted to them who were destined to administer society. With the achievement of mass literacy in modern industrial societies, the social prestige of the instructors tended to fall. The values professed by the teachers were no longer authoritative as now they had to compete with the values presented to the children by their family, peer groups and the society at large. The greatest difference between the ancient societies and the modern industrial societies lies in the fact that in the former education is largely concerned with transmitting a way of life while in the latter because of the host of available, the application of science to production process and the elaborate division of labour, formal education not only dominates the process of education as a whole but is also zealous to the communication of pragmatic knowledge. The content of education now is marked by more a scientific approach.

It is thus from this viewpoint that formal education in the present societies can be regarded as communicating independently ideas and values which play a role in regulating behaviour. Education from infancy to adulthood is therefore a crucial means of exercising social control. Through education new generations acquire the social customs and become acquainted with their duties and responsibilities within the system of social stratification. In modern societies where formal education becomes predominant, it often comes into conflict with other means of control. This tussle may become acute with the extension of higher education to a much larger proportion of population, and the educational system may increasingly provide one of the main sources of change and innovation of social traditions and values.



Thus culture constituting of these norms and values can rightly be considered as the end and means of formal education. We live in a mobile world whose everyday pace is on increase, where change is the constant rule, where nothing can be taken for granted and where no possessions are guaranteed. In such a situation, in every dominion we observe a growing need for knowledge, education, intelligence and imagination. Therefore education as a social activity transcends all barriers and culminates to a wide spectrum. It is only through education, that courage, calm, self-control, teamspirit, respect towards others and similar virtues can be nurtured and if the youth recognise and adopt them ,they will be able to face not only the rough and precarious world but also reconstruct a splendid and exciting world for themselves.

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## Study of insect pest infestation in Tea gardens and statistical comparing the effects of environmental factors (Rainfall and Temperature) with productivity by using Minitab 18

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### Abstract

India is the 2<sup>nd</sup> largest producer of tea after China (1<sup>st</sup>). In India, tea is grown in 13 states and Assam, West Bengal, Tamil Nadu and Kerala are the largest producers. The **North Bengal Tea Industry** production areas are in the North Bengal region of West Bengal state. It includes tea estates and facilities in the districts of Darjeeling, Jalpaiguri, Alipurduar, Cooch Behar, North Dinajpur in West Bengal. North Bengal has about 450 tea gardens spread out in the Darjeeling Hills, Terai & Dooars regions that are registered as sellers in the Siliguri Tea Auction Centre. Most of the tea gardens in the Dooars region are members of the Dooars Branch of the Indian Tea Association (DBITA), while those in the Terai region are members of the Terai Branch of the Indian Tea Association. (Ghosh S,2016).

Tea plantations roughly resemble a “single species forest” (Cranham1966), and insect and mite species coexist by minimizing competition through intra-tree distributions or well-defined stratification and/or ecological niche formation (Banerjee 1979, 1983).

The distribution and abundance of tea pests are largely influenced by weather, altitude, crop variety and the cultural operation such as pruning, manuring, regulation of shade, use of pesticides, natural enemies of pests and economics of tea production (Muraleedharan N.,1992).

As tea pests disturb the production of tea & lower its quality and thus affecting its economic value every tea garden takes some measure to control tea pests. In this dissertation work we have observed different types of pest present in tea gardens we visited and documented the damage inflicted by them on tea leaves. The paper tried to correlate between abiotic factors (Temperature, rainfall) & infestation by pests in terms of productivity of tea by statistical analysis by Minitab 18 software.

**Keywords:** Tea, plantation, species, pests, pesticides etc.

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### Introduction:

Tea, *Camellia sinensis* is an intensively managed perennial monoculture crop cultivated on large scale and small-scale plantations. At present, tea is grown in more than 50 countries around the world. Tea is found from sea level to 2300 m. The prime producers of tea are China, India, Sri Lanka and Kenya. Vietnam, Turkey, Indonesia, Argentina, Japan, Bangladesh, Malawi, Uganda and Tanzania produce the rest of the world tea crop. The tea crop has unique characteristics that influence pest ecology in special ways (Calnaido1973). Tea is an evergreen and a perennial (over 100 years) crop that is grown as plantations (Banerjee 1983), with genetically diverse cultivars and the interplanting of shade trees, particularly in South east Asia (Deka et al. 2006).

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As tea pests disturb the production of tea & lower its quality and thus affecting its economic value every tea garden takes some measure to control tea pests. In this dissertation work we have observed different types of pest present in tea gardens we visited and documented the damage inflicted by them on tea leaves. We have also tried to correlate between abiotic factors (Temperature, rainfall) & infestation by pests in terms of productivity of tea by statistical analysis by Minitab 18 software.

### **Selection of tea gardens:**

We selected Tasati Tea Garden, Majherdabri Tea Garden&Kadambini Tea Garden in this study located respectively in Jalpaiguri and Alipurduar District (both Majerdabri&Kadambini Tea Garden).

#### **1. Tasati Tea Estate**

**Location:** 26.647193°N, 89.147817°E

**Elevation:** 69m above sea level

**Average rainfall:** 3337.1 mm (averaged from data of 2008-2017)

**Average temperature:** 20.7°C (averaged from data of 2008-2017)

**Total area:** 600.51 Hectors

**Total labours employed:** 1153 (Permanent); 432 (casual)

**Chief pests of the tea leaf:** Tea Looper, Tea Mosquito Bug, Black Looper, Red spider mites, Red slug caterpillars

**Average total tea production in a year:**483909 Kg (averaged from data of 2008-'17)

#### **2. Majherdabri Tea Estate**

**Location:** 26.543835°N, 89.539213°E

**Elevation:** 49m above sea level

**Average rainfall:** 3375 mm (averaged from data of 2009-2018)

**Average temperature:** 23.4°C (averaged from data of 2009-2018)

**Total area:** 486.5 Hectors

**Total labours employed:** 1028 (Permanent); 423 (Casual)

**Chief pests of the tea leaf:** Tea Looper, Tea Mosquito Bug, Black Looper, Black Tea Thrips, Red spider mites, Scarlet spider mites



**Average total tea production in a year:** 747974.3 Kg (averaged from data of 2009-'18)

### 3. Kadambini Tea Estate

**Location:** 26.523825°N, 89.238233°E

**Elevation:** 68m above sea level

**Average rainfall:** 2865.98 mm (averaged from data of 2009-2018)

**Average temperature:** 23.7°C(averaged from data of 2009-2018)

**Total area:** 448 Hectors

**Total labours employed:** 1034 (Permanent), 400 (Casual)

**Chief pests of the tea leaf:** Tea Looper, Tea Mosquito Bug, Black Looper, Black Tea Thrips, Red spider mites, Red slug Caterpillar, Mealybugs

**Average total tea production in a year:** 877391.7 Kg (averaged from data of 2013-'18)

**Distance Between Tasati Tea Estate &Majherdabri Tea Estate:** 65 km

**Distance Between Tasati Tea Estate &Kadambini Tea Estate:** 23 km

**Distance Between Kadambini Tea Estate &Majherdabri Tea Estate:** 42 km

#### Objective of the study:

- *This study is aimed at obtaining information about different types of pest prevalent in tea gardens of North Bengal.*
- *To study variation in tea production with respect to environmental factors (rainfall, Temperature).*
- *To study trends in rainfall patterns and temperatures in the last 5-10 years at the selected tea gardens.*
- *To learn different control measures adopted for the tea pests found in the tea gardens.*
- *To sample (Biased & Unbiased) affected leaves and tabulate the Leaf Area Index (LAI) data as total leaf area vs affected leaf area.*
- *To statistically analyze the raw data using Minitab 18 such as Correlation, T-test, ANOVA etc.*

#### Optimal environmental conditions requisite for Tea production:

- **Temperature:** 13°C-29°C (Average 23°C)
- **Rainfall:** 1500-2500mm
- **Slope:** Undulating
- **Soil:**
  1. The soil should be permeable and porous.
  2. There should be presence of iron, aluminum, calcium and phosphorus in the soil.
  3. Soil should be acidic. [pH 6.0 – 6.5]
  4. More than 2% organic matter (humus) should be present.
- **Day length:**When days of less than 11hr 15min duration last for at least six weeks, tea bushes become dormant.
- **Climate:**In its wild state, tea grows best in regions which enjoy a warm, humid climate with a rainfall measuring at least 1000mm a year. Ideally, it likes deep, light, acidic & well-drained soil. Given these conditions, tea will grow in areas from sea level up to altitudes as high as 2100 meters above sea level.



### Procedure followed:

- We first travelled to the pre-selected tea gardens and took permission from The Manager to do the study.
- We then took a group picture with him.
- Next, we collected affected leaves with the help of horticulture expert of the tea garden. We first collected only affected leaves (Biased sampling) and then collected leaves at random without differentiating between affected & non-affected leaves (Unbiased sampling).
- The horticulture expert of the tea garden introduced us to the various pests present, their symptoms & management practices for those pests.
- We photographed and documented the affected leaves; the pests present in them and the symptoms.
- Next, we made graphs of the leaves collected to measure the total area of the leaves & affected area of the leaves for calculating Leaf Area Index.
- Lastly secondary data i.e. Rainfall, Temperature & Tea production of last 5-10 Years was collected from the Manager; later, on which statistical analysis was performed in lab using Minitab 18.
- **GPS monitoring:** We took GPS co-ordinates of the places from which we collected the leaves by using GPS in-built in mobile phones.
- **Sampling of leaves:**
  - i) **Biased Sampling:** Intentional collection of affected leaves.
  - ii) **Unbiased Sampling:** Natural, accurate, well-balanced random collection of tea leaves. Through random (Unbiased) sampling, the sample should represent most of the pest population.

Biased vs Unbiased sampling is needed because in biased sampling, it is impossible to know how well the representation of pest population is done. It is also not possible to calculate the confidence intervals & margin of error. For this problem, Unbiased sampling is needed.

- **Calculating the percentage of infestation by different pests:** We calculated the number of leaves affected by a specific pest & then divided the value by the total number of affected leaves we collected & then multiplied it with 100. This gives percentage of specific pest infestation & helps to determine the chief tea pests present.

$$\frac{\text{No. of leaves affected by a specific pest}}{\text{Total No. of affected leaves}} \times 100\% = \% \text{ of specific pest infestation}$$

## 1. Tea Looper

**Scientific Name:** *Biston suppressaria*

### Life Cycle:

- Female deposits up to 200 eggs in batches on the tree trunks.
- Incubation period 7-10 days.
- On emergence, caterpillars suspend by silken threads and get dispersed by wind.
- Larvae dark brown with pale greenish white lines on the back and side; on the leaves, they move like leeches.



- After 4-5 weeks, they pupate in the soil for a period of 3-4 weeks; pupa is brownish, 2-2.5 cm Long.
- Life cycle completed in 8-10 weeks.

#### Damage to tea leaves & symptoms:

- The young larvae nibble irregular holes along the margins of tender leaves causing the leaves to appear as though holes have been punched in them.
- As the larvae grow, small pieces of leaf are eaten initially along the margin but later the entire leaf is affected.
- Later larval instars prefer to eat the older maintenance leaves and in severe attacks, entire bushes can be completely stripped of foliage.
- Severe attack by *B. suppressaria* caterpillars in tea fields recovering from pruning can result in death of the bushes.
- Damage occurs mostly during the night and early mornings.
- During the day, the caterpillars rest on the twigs and branches of tea bushes, where they are camouflaged and not revealed by superficial examination.

#### Control measures:

- Adult moths, which congregate on tree trunks and rocks, can be collected by hand, as can the caterpillars & pupae. This serves as a useful tool to control *B. suppressaria*.
- Deltamethrin 2.8% EC @ 0.25 ml/L is sprayed to kill larvae of tea loopers.

## 2. Black looper/Black inch worm

Scientific name: *Hyposidra talaca*

#### Life cycle:

- On an average, the life cycle takes 55 days during the winter months of December–February (mean maximum temperature 25°C and mean minimum temperature 12°C) and 30 days during the warmer months of April–June (mean maximum temperature 31°C and mean minimum temperature 23.5°C).
- The eggs are oval, initially greenish blue, turning yellow and finally orange as they develop. The incubation period is about 6 days.
- *H. talaca* usually has five larval instars and an occasional 6th instar. It takes approximately 16 days to reach pupal stage from the 1<sup>st</sup> instar.
- The pupa is blackish brown, with characteristic anal process. Pupation takes place in the soil around the collar region of tea bushes.
- The pupal period is about 8 days after which adult emerge. Adults show sexual dimorphism.

#### Damage to tea leaves & symptoms:

- Early instars nibble the tender leaves and make pin holes on the leaves, whereas the 4th to 5th and occasional 6th instar larvae are voracious feeders and prefer mature leaves.
- But, in the absence of such leaves (for example during winter season when tea bushes are pruned and forest plants are also devoid of tender leaves) they may even feed and survive on mature and maintenance leaves.
- In severe damage, *C. sinensis* bushes are completely stripped of foliage.
- Significant defoliation is caused by caterpillars of the 4th and 5th instar stages.

#### Control measures:



- To minimize egg deposition by the female moth of *H. talaca*, light scrapping of bark, removing moss, parasitic and epiphytic plants followed by lime washing of the shade tree trunks up to a height of 6 m is practiced.
- Sometimes, Light traps are used as physical control which has significance in *H. talaca* management in tea. Black-light traps, the Pest-O-Flash traps, Actinic blue light traps (emit near-UV light) have been found useful for capturing the moths.
- Bifenthrin 8% suspension concentrate (SC), deltamethrin 2.8% emulsifiable concentrates (EC) and quinalphos 25% EC are generally used for controlling *H. talacain* tea within the limits (Maximum Residue Limit, MRLs) recommended by FSSAI.

### 3. Black Tea Thrips

**Order:** Thysanoptera

**Family:** Thripidae

[*Thrips* is a generalized term used for multiple species (Sucking Pests) of the family: *Thripidae*.]

**Scientific name:** *Helio thrips haemorrhoidalis*

*Scirto thrips bispinosus*

*Scirto thrips dorsalis*

*Myctero thrips setiventris*

**Life Cycle:**

- Winged adults, male and female, are found normally on the green plant parts, where they feed. Eggs are inserted into young and soft tissues of leaves, stems and fruit.
- Eggs hatch after 7-8 days.
- Egg hatch into larva, two larval instars, creamy white in color, prominent eyes.
- Prepupa and pupae are found in the leaf litter and soil.
- Adults emerge from the pupae after 3-5 days; they are weak fliers, dispersal and migration is helped by wind.
- Adults emerge by November / December & reaches peak in February-April.

**Damage to the tea leaves& symptoms:**

- Thrips prefer tender/mature leaves, buds and flowers.
- The first and second larval stages are found on the green plant parts from which the second stage larvae seek out some sheltered place (leaf litter or crevices of bark) and then pass through two resting stages called pro-pupa and pupa, respectively.
- Winged adults, male and female, are found normally on the green plant parts, where they feed. Eggs are inserted into young and soft tissues of leaves, stems and fruit.
- The underside of the affected leaves become silvery with black spots.
- Feeding marks on the unopened buds and parallel brown lines on the leaves which affect the quality of tea leaves. Feeding punctures also cause development of chlorotic spots.
- The growing shoots are stunted with shortened internodes and defoliation often occurs.
- Severely infested leaves papery & wilted and soon die.

**Control measures:**

- Timely pruning of tea bushes is done to avoid thrips infestation.



- Neem formulation containing azadirachtin 1% @ 3 ml/L or azadirachtin 5% @ 1 ml/L is sprayed on the infected leaves.
- Deltamethrin 2.8% EC @ 0.3 ml/L or profenofos 50% EC @ 2 ml/ L is sprayed in severe infestation.

#### 4. Tea mosquito bug

**Scientific name:** *Helopeltis theivora*

##### Life Cycle:

- The females make a slit with the ovipositor and deposit an egg separately, which remains completely embedded in the plant tissue.
- A single female can lay a maximum of 220 eggs in 36 days, with 4-10 eggs per day. The maximum number of eggs laid by a female ranged from 136 to 180 during September, and the minimum number of eggs laid was 73 and 74 during January and February, respectively.
- There are five nymphal instars. The nymphal period varies from 8.4 to 16.2 days.
- From May to October, nymphal development is completed within a short time, whereas it is longer in the month of January.
- From nymph adult emerges; females started to mate after 4 days of emergence and males are ready to mate within 2 days of emergence.

##### Damages to the tea leaves & symptoms:

- Nymphs and adults suck the sap from tender stems, young leaves and buds forming circular feeding punctures.
- The feeding spots develop watermarked area, which turn circular and pale green and subsequently dark brown within hours of feeding.
- Damaged leaves curl upward and desiccate in severe infestations.
- Initiation of new shoots is prevented due to the death of the stem and may result in total loss of the crop.

##### Control measures:

- Plucking every 10-15 days is helpful for reducing the infestation as the eggs are removed during plucking. It is good practice to pluck out all the badly damaged buds which will stimulate the growth of new shoots. Light or moderate pruning limits the population in the seriously affected fields.
- Natural enemies (spiders, dragonflies, praying mantis, and predatory coccinellids) are encouraged to reduce the *Helopeltis* population.
- Thiamethoxam 25% WG @ 1 g/L or profenofos 50% EC @ 2 ml/L is sprayed during severe infestation.

#### 5. Red spider mites

**Scientific name:** *Oligonychus coffeae*

##### Life cycle:

- Females lay 40-50 eggs singly on the upper surface of the leaf along the mid-rib and veins from which larva, nymph & finally adult emerges.
- The duration of the various stages in days at a constant temperature of 22°C, are--- eggs 4 to 5, larva 4 to 5, protonymph 4, deutonymph 2 to 3, development from egg to adult occupies 10 to 15 days.





- In North East India, the duration of egg to adult is shorter in the summer months and may be completed in 9–12 days in May and June, whereas it may take as much as 28 days in cold weather.

#### **Damages to the tea leaves& symptoms:**

- Nymphs and adults lacerate cells, producing minute characteristic reddish brown marks on the upper surface of mature leaves, which turn red in severe cases, resulting in crop losses from 17 to 46%.
- *O.coffeae* normally attack the upper surface of the mature leaves in which the sap is not flowing freely.
- In a severe infestation, particularly under conditions of dry weather, the lower surface and the young leaves are almost equally attacked.
- The affected leaves turn brown, then bronze, and may eventually dry up and fall off.

#### **Control measures:**

- Shade and mulching are increased to increase humidity, as mites are favoured by dry and hot weather conditions.
- Spraying foliage with water (or water mixed with a little soap) is helpful in reducing mite population.
- The natural enemies (predatory mite, *Phytoseiulus*, *Amblyseius*, *Typhlodromus* and *Mexeches*, tiny black lady beetle, *Stethorus*spp, spiders, *Chrysoperlaspp*.) are encouraged to reduce the mite population.
- Azadirachtin 5% @ 0.5 ml/L or fenpyroximate 5% EC @ 0.75 ml/L or dicofol 18.5% EC @ 5 ml/L is sprayed for effective control of mites.

### **6. Scarlet spider mites**

**Scientific name:** *Brevipalpus californicus*

#### **Life cycle:**

- 60-70 bright red coloured and elliptical eggs are laid on the leaf petiole by the female moth at the base of the leaf hair, or inside cracks and crevices of the stem from which larva, nymph & adult emerges.
- The life cycle is completed in 30 to 60 days.
- Mites congregate on the under surface of mature leaves.

#### **Damages to the tea leaves& symptoms:**

- Both nymphs, and adults suck the cell contents from the under surface of leaves, mainly along the midribs and base of the petiole.
- Infested leaves have brown scurf followed by splitting of petiole and defoliation.

#### **Control measures:**

- Shade and mulching are increased to increase humidity, as mites are favoured by dry and hot weather conditions.
- Spraying foliage with water (or water mixed with a little soap) is helpful in reducing mite population.
- The natural enemies (predatory mite, *Phytoseiulus*, *Amblyseius*, *Typhlodromus* and *Mexeches*, tiny black lady beetle, *Stethorus*spp, spiders, *Chrysoperlaspp*.) are encouraged to reduce the mite population.
- Pruning greatly reduces population of scarlet mites.



- Azadirachtin 5% @ 0.5 ml/L or fenpyroximate 5% EC @ 0.75 ml/L or dicofol 18.5% EC @ 5 ml/L is sprayed for effective control of mites.

## 7. Red slug caterpillar

**Scientific name:** *Eteru siaaedeae*

### Life Cycle:

- The life cycle consists of egg, five larval instars, pupal, and adult stages.
- *Eteru siaaedeae* female lays eggs in masses on the blade and axils of leaves which are covered with buff coloured scales and hairs, preferably during night.
- Incubation period varies from 8 to 12 days in May–June, however in winter, the incubation period is prolonged.
- Larval period consists of five instars.
- Pupation takes place usually within the folded leaves. Pupae are pale yellow with a pinkish yellow cocoon.
- The pupal period is approximately 10–14 days.
- Male and female moths have a life-span of 5–6 days and 6–7 days, respectively. The total life cycle is approximately 50–63 days.
- Emergence of moths usually occurs during night and some of them can even be seen on tea bushes strengthening their wings in the morning hours.

### Damage to the tea leaves & symptoms:

- The early instar larva of *E. aedeae* usually nibbles the lower epidermis by scraping out tea leaves.
- Matured leaf is preferred as food by advanced larva of *E. aedeae*.
- In pruned areas, where there is lack of matured leaves, the larva may attack the bark of one or two-year-old stems.
- Normally red slug attack reduces the leaf area index of tea plants.
- Severe infestation may lead to completely stripping of the tea bushes.

### Control measures:

- During winter, trunks of most of the shade trees are scraped and followed by white washing with lime and synthetic pyrethroid mixture, which act as oviposition barrier for adult moths.
- As red slug caterpillars normally rest under the bushes during hot day time, a ring of crude petroleum jelly or grease on and around the bushes would prevent the caterpillar to get on a plant by evening and go to other bushes.
- Light traps are an important component of physical control and play a great role in *E. aedeae* management in tea. Black-light traps, the Pest-O-Flash traps, Actinic BL light trap (emit near-UV light) were found useful for capturing moths.
- Only a few pesticides viz., quinalphos 25EC @1:400, deltamethrin 2.8 EC@ 1:2000, bifenthrin 8% EC @1:1600 and fenpropathrin 30EC@1:1600, emamectin benzoate 5% SG @1:2500 and flubendiamide 20NG @1:5000 are presently used for red-slug caterpillar management in India.



## 8. Tea aphids/Black Citrus aphids

**Scientific name:** *Toxoptera aurantia*

### Life cycle:

- Colonies of aphids consist of dark brown alate and apterous adult females and nymphs.
- Females do not mate and produce live nymphs via parthenogenesis.
- There are four nymphal stages separated by molts.
- Nymph becomes adult in 4-12 days, depending on the temperature.
- Adult aphids may live 3-4 weeks and produce about over 4400 offsprings each in 3 weeks in the absence of natural enemy.

### Damage to the tea leaves& symptoms:

- Both nymphs and adults found in the colonies on tender buds, leaves, shoots and suck the sap leads to reduction of growth.
- Continuous feeding makes the leaf wrinkled forming a boat shaped structure.
- Severe infestation leads to delayed recovery of the plant leading to poor crop productivity.
- In severe cases, aphid secretes honeydew on the leaves which results in the development of black sooty mould. This affects the photosynthesis of the plant.

### Control measures:

- The affected parts of plants are collected and destroyed to prevent the further spread.
- Predatory coccinellids beetles are encouraged to reduce the population.
- Botanicals insecticides containing azadirachtin 5% (1 ml/L) or azadirachtin 1% (3 ml/L) or neem seed kernel extract 4% are sprayed in moderate to severe infestation.

## 9. Mealy bugs

**Scientific name:** *Nipae coccusviridis*

### Life cycle:

- Female lays a large number of eggs, hatches out in 7-10 days but unhatched eggs or young nymphs sometimes remain inside the protected cottony sac during unfavorable environmental conditions.
- Immature nymphal stages mature in about 6 to 9 weeks.
- Adult males are small winged insects without functional mouthparts whose primary role is to fertilize females.

### Damages to the tea leaves & symptoms:

- Both nymphs and adults congregate on shoot, stem, branches and suck the sap which results in drying of branches.
- In severe cases, the mealy bugs secrete honeydew on the plant parts from which black sooty mold develops, which affects the photosynthesis and quality of tea leaves and can lead to death.

### Control measures:

- Sticky bands like Track-trap or Bird Tangle Foot on arms or main stem are applied to prevent crawlers from reaching the bunch.
- Predatory coccinellid beetles viz., *Cheilomenes sexmaculata*, *Rodoliafumida*, *Scymnus coccivora* and *Nephus regularis* are encouraged to reduce infestation.



- Chlorpyrifos 20 EC @ 2 ml/L or imidacloprid 200 SL @ 0.5 ml/L at 15 days intervals are sprayed during severe infestation.

**Measurement of affected & unaffected area of tea leaves collected from Tasati Tea Estate**

**1. Biased Sampling of leaves:**

Sl. No.	TOTAL LEAF AREA (in cm <sup>2</sup> )	AFFECTED LEAF AREA (in cm <sup>2</sup> )
1	34.86	4.38
2	25.38	0.52
3	22.57	5.9
4	32.46	2.27
5	25.97	0.23
6	20.64	6.35
7	15.71	3.02
8	24.48	1.42
9	22.46	3.75
10	31.73	3.18
11	16.15	0.78
12	32.55	7.52
13	34.35	0.5
14	34.09	2.2
15	19.3	1.85
16	10.85	3.8
17	15.7	1.38
18	44.75	15.1
19	37.05	2.82
20	28.17	1.79
21	37.24	11.53
22	20.36	2.21
23	19.27	3.56
24	45.15	10.5
25	33.12	3.11
26	28.24	2.52
27	29.15	7.15
28	18.44	2.11
29	20.12	6.07
30	30.86	2.08
31	32.55	4.94
32	22.97	2.6
33	31.42	1.79
34	20.78	2.15
35	18.36	3.63
36	44.28	11.2



37	38.5	7.26
38	28.26	0.62
39	29.78	7.68
40	22.58	6.02
41	9.68	2.63
42	29.29	5.24
43	46.22	8.78
44	26.9	2.3
45	24.25	2.36
46	47	4.6
47	35.83	5.59
48	34.95	4.25
49	46.75	2
50	30.25	4.75
51	10.15	4
52	24.64	8.73
53	18.7	3.25
54	15.5	2.4
55	22.75	5.14
56	18	4
57	61.37	7.67
58	47.78	10.14
59	25.27	2.34
60	49.25	5.28
61	20.56	4.75
62	39.45	1.25
63	72.15	20.53
64	26.83	3.34
65	47.28	28.93
66	23.37	9.43
67	41.92	5.46
68	36.96	3.74
69	18.16	2.08
70	28.38	12.53

## **2. Unbiased Sampling of leaves:**

<b>Sl. No.</b>	<b>TOTAL LEAF AREA (in cm<sup>2</sup>)</b>	<b>AFFECTED LEAF AREA (in cm<sup>2</sup>)</b>
1	22.87	2.24
2	18.2	0
3	14.31	3.19
4	18	0
5	20.9	0



6	39.1	0.13
7	24.54	0
8	17.8	1.36
9	17.56	0
10	19	1.15
11	15.34	0.78
12	14.4	0.25
13	12.8	0
14	21.44	0
15	22.63	0.35
16	20.76	0
17	38.25	6.47
18	28.41	3.09
19	15.25	3.18
20	23	3.07
21	35.04	3.48
22	27.06	0.04
23	8.8	0.07
24	23.68	0
25	34.35	7.6
26	24.1	8.02
27	14.43	0.69
28	8.86	1.5
29	10.59	0
30	15.31	0
31	24.82	0.07
32	25.48	0
33	21.39	0.08
34	30.59	0.79
35	22.09	5.68
36	20.11	0
37	16.28	0
38	22.09	0
39	7.25	0
40	23.35	0
41	29.25	0
42	28.25	4.25
43	16.65	0
44	20.1	0.25
45	7.35	0
46	24.05	0
47	10.82	0.25
48	21.46	1.11
49	18.31	0





53	32.12	0.68
54	36.13	0
55	34.16	1.35
56	15.18	0
57	18.45	2.52
58	27.17	0
59	21.12	0
60	28.14	0
61	41.18	4.15
62	19.22	0
63	43.82	0.48
64	13.51	0.42
65	29.32	1.11
66	13.96	0
67	13.22	0
68	12.44	0
69	13.62	0
70	19.26	0

**Measurement of affected & unaffected area of tea leaves collected from Majherdabri Tea Estate**

**1. Biased Sampling of leaves:**

Sl. No.	TOTAL LEAF AREA (in cm <sup>2</sup> )	AFFECTED LEAF AREA (in cm <sup>2</sup> )
1	23.16	3.75
2	13.1	0.89
3	26.3	1.04
4	23	1.46
5	26.1	1.13
6	22.6	0.75
7	16.25	1.52
8	17.81	1.31
9	19.57	0.24
10	20.16	0.38
11	20.39	2.41
12	14.54	0.26
13	14.18	2.57
14	35.6	1.52
15	49.78	1.2
16	44.2	1.8
17	39.63	2.58
18	16.57	1.74
19	21.7	9.58
20	27.05	5.59



21	19.96	1.38
22	29.47	3.23
23	22.23	4
24	28.56	3.77
25	29.78	0.19
26	26.63	1.86
27	19.31	0.15
28	12.11	2.87
29	25.22	2.04
30	19.25	0.84
31	19.24	0.78
32	33.49	4.58
33	26.41	1.83
34	36.64	1.9
35	16.05	0.67
36	27.23	1.2
37	14.32	0.08
38	13.37	0.61
39	24.61	0.79
40	11.3	0.52
41	16.53	1.21
42	10.65	2.98
43	29.15	1.73
44	25.16	0.81
45	10.55	2.15
46	18.58	0.2
47	12.09	1.54
48	30.89	6.36
49	26.41	3.9
50	27.39	5.05
51	15.84	0.29
52	22.28	5.49
53	13.05	1.15
54	50	1.14
55	55.87	9.57
56	41.95	4.11
57	47.97	4.84
58	21.17	4.01
59	24.47	6.01
60	13.02	0.21
61	37.05	13.16
62	28.11	3.88
63	22.23	0.81
64	17.16	2.75



65	14.19	1.34
66	12.05	0.82
67	12.86	0.21
68	17.64	0.58
69	15.47	0.07
70	13.56	2.28

## 2. Unbiased Sampling of leaves:

Sl. No.	TOTAL LEAF AREA (in cm <sup>2</sup> )	AFFECTED LEAF AREA (in cm <sup>2</sup> )
1	12.18	0.92
2	11.42	0
3	22.8	0
4	16	0
5	15.2	0.95
6	17.5	3.8
7	10.45	0
8	15.52	1.13
9	16	1.94
10	30.14	4.91
11	20.07	0
12	29.64	0
13	38.38	0.52
14	13.67	0
15	18.6	0
16	18.26	0
17	32.22	0
18	13.32	0
19	22.14	1.26
20	14.5	0.08
21	19.26	6.17
22	9.14	0
23	12.28	2.32
24	16.25	0.07
25	11.34	0
26	8.25	0
27	19.22	0
28	17.25	2.12
29	15.91	0.36
30	13.7	1.1
31	20.85	0.92
32	39.28	1.74
33	15.97	9.47
34	13.43	1.14
35	12.12	3.28



36	10.66	0
37	22.11	2.17
38	21.16	5.34
39	21.82	0.8
40	12.9	0
41	43.55	11.24
42	8.88	0
43	9.02	2.01
44	8.55	0
45	14.5	1.22
46	22.2	2.51
47	17.82	1.33
48	13.52	0.09
49	17.9	0
50	19.7	1.39
51	33.47	0
52	18.46	0
53	23.86	1.29
54	37.53	0
55	25.52	0.97
56	22.46	0.61
57	14.74	0
58	9.7	0
59	10.65	0
60	24.05	0
61	19.95	14.2
62	12.8	2.9
63	40.25	0
64	39.47	0.40
65	14.9	0
66	26.1	0
67	20.85	1.17
68	14.6	0
69	16.25	0
70	10.1	0

**Measurement of affected & unaffected area of tea leaves collected from Kadambini Tea Estate**

**1. Biased Leaf collection**

Serial No.	Total Leaf area (cm <sup>2</sup> )	Affected Leaf Area (cm <sup>2</sup> )
1.	19.28	4.36
2.	16.79	4.25
3.	29.26	5.48



4.	15.17	1.79
5.	23.45	1.97
6.	17.62	2.07
7.	20.66	0.29
8.	17.94	2.19
9.	13.97	0.71
10.	16.52	0.46
11.	23.94	0.73
12.	13.41	2.53
13.	14.06	2.3
14.	12.03	0.57
15.	16.83	3.98
16.	16.07	0.69
17.	13.24	3.65
18.	14.46	0.96
19.	24.95	2.11
20.	23.67	2.91
21.	18.83	0.53
22.	16.12	2.03
23.	19.53	4.63
24.	9.21	0.73
25.	11.01	0.8
26.	9.77	2.25
27.	7.33	0.55
28.	8.31	2.76
29.	10.37	1.14
30.	7.48	1.6
31.	11.74	0.59
32.	11.62	0.85
33.	14.32	0.9
34.	22.48	1.73
35.	13.5	2.55
36.	15.62	2.1
37.	20.59	4.03
38.	22.5	1.85
39.	16.47	1.7
40.	7.32	1
41.	9.29	0.86
42.	9.68	0.44
43.	15.6	1.9
44.	9.93	1.28
45.	8.54	2.66
46.	12.47	6.21
47.	6.34	1.33
48.	8.29	2.68



49.	15.83	4.09
50.	11.07	3.32
51.	10.45	3.81
52.	16.18	0.96
53.	14.81	1.16
54.	17.06	3.7
55.	13.66	1.73
56.	12.45	1.42
57.	13.68	1.85
58.	13.94	1.93
59.	11.37	1.4
60.	10.59	1.79
61.	9.53	0.71
62.	7.43	0.49
63.	12.24	0.93
64.	15.44	1.64
65.	8.41	1.33
66.	14.96	0.74
67.	15.11	1.21
68.	10.99	1.36
69.	8.41	1.11
70.	16.1	0.97

## **2. Unbiased Leaf Collection**

Serial No.	Total Leaf Area (cm <sup>2</sup> )	Affected Leaf Area (cm <sup>2</sup> )
1.	19.09	0
2.	7.37	0.34
3.	24.06	1.76
4.	9.98	1.02
5.	17.1	2.93
6.	12.63	1.14
7.	10.46	0
8.	12.48	0.88
9.	36.68	0.23
10.	20.75	0
11.	18.45	0.87
12.	16.1	0
13.	13.78	0.7
14.	21.8	0.52
15.	24.62	8.10
16.	29.14	1.15
17.	18.22	1.18
18.	23.23	0.63
19.	18.82	0.45





20.	18.7	0.47
21.	18.96	1.49
22.	13.54	0
23.	27.99	1.35
24.	17.34	0.33
25.	17.65	0.36
26.	28.03	1.19
27.	17.27	2.29
28.	13.61	0
29.	28.58	2.15
30.	25.17	5.12
31.	18.32	0
32.	12.28	4.68
33.	13.64	2.54
34.	19.45	2.36
35.	20.37	5.74
36.	7.41	1.23
37.	13.61	1.3
38.	16.4	0
39.	16.53	0
40.	15.18	0
41.	6.44	0.34
42.	16.18	0.82
43.	10.31	3.29
44.	10.58	1.63
45.	10.14	0.43
46.	19.59	0.91
47.	13.79	4.65
48.	13.06	0
49.	8.4	2.26
50.	9.04	0.67
51.	22.13	0.7
52.	17.81	0.61
53.	15.82	0
54.	16.61	0.28
55.	13.25	2.45
56.	9.95	0
57.	9.16	0.58
58.	18.79	1.31
59.	28.7	0
60.	18.74	1.79
61.	13.4	0
62.	15.15	0
63.	15.77	0
64.	14.51	0



65.	15.91	0
66.	21.95	0.47
67.	12.1	0.72
68.	21.68	0.46
69.	13.70	0
70.	10.8	0.31

### Percentage of infestation by different pests

#### *1. Tasati Tea Estate*

<i>Name Of the pest</i>	<i>No. of Affected Leaves</i>	<i>No. of total affected leaves</i>	<i>% of infestation</i>
1.Tea Looper	37	104	35.57%
2.Black Looper	27	104	25.96%
3.Red spider mites	08	104	7.69%
4.Black tea Thrips	04	104	3.7%
5.Red-slug caterpillar	09	104	8.65%
6.Tea-mosquito bugs	19	104	18.26%

#### *2. Majherdabri Tea Estate*

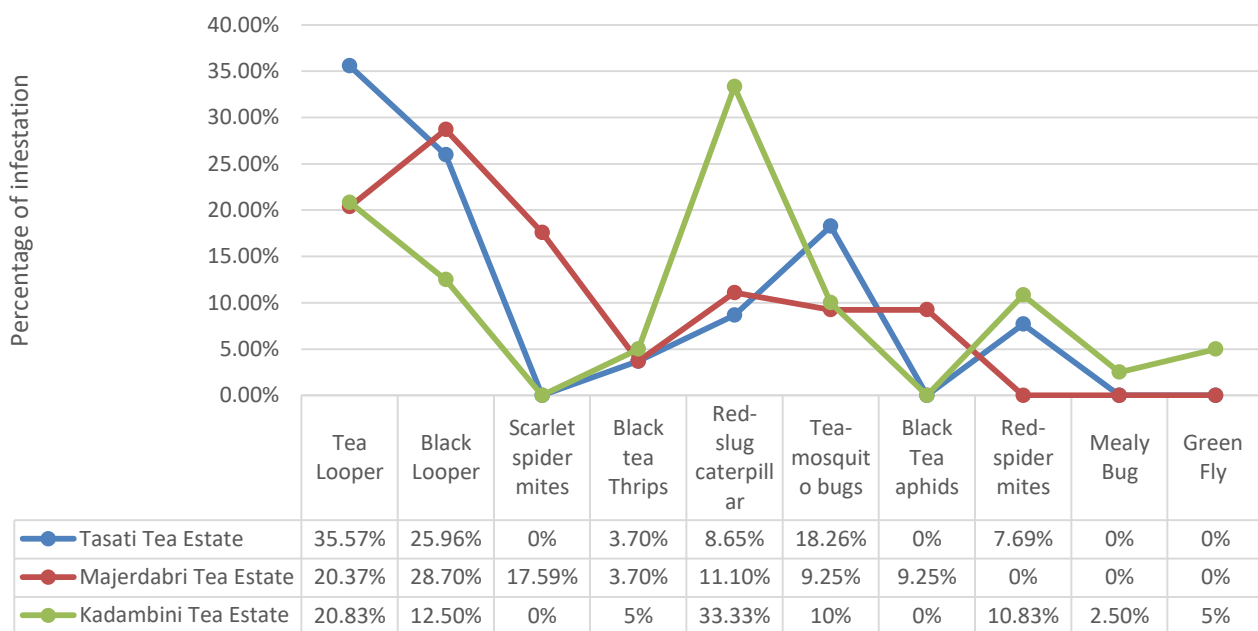
<i>Name Of the pest</i>	<i>No. of Affected Leaves</i>	<i>No. of total affected leaves</i>	<i>% of infestation</i>
1.Tea Looper	22	108	20.37%
2.Black Looper	31	108	28.7%
3.Scarlet spider mites	19	108	17.59%
4.Black tea Thrips	04	108	3.7%
5.Red-slug caterpillar	12	108	11.1%
6.Tea-mosquito bugs	10	108	9.25%
7. Black Tea aphids	10	108	9.25%

#### *3. Kadambini Tea Estate*

<i>Name Of the pest</i>	<i>No. of Affected Leaves</i>	<i>No. of total affected leaves</i>	<i>% of infestation</i>
1.Tea Looper	25	120	20.83%
2.Black Looper	15	120	12.5%
3.Green fly	06	120	5%
4.Black tea Thrips	06	120	5%
5.Red-slug caterpillar	40	120	33.33%
6.Tea-mosquito bugs	12	120	10%
7. Mealy bugs	03	120	2.5%
8. Red spider mites	13	120	10.83%



**Comparison between % of specific pest infestation between Majherdabri & Tasati Tea Estate**



**\*\*Note: As none of the leaves collected were infected by more than one pests (verified by Horticulture & Tea Leaf Damage control experts), this graph does not provide any ambiguous data.**

**Usually particular areas of Tea Gardens are affected by particular pests. As we identified the damaged leaves with the help of experts, there is very little chance of multiple infestation and hence data on % of infestation is by specific pest is accurate. Although it may vary according to different parts of the tea garden.**



LAST 10 YEARS CROP & RAINFALL STATEMENT [ 2008-'17 ]: TASATI TEA ESTATE														
YEAR	CROP & RAINFALL	NAME OF MONTH												TOTAL
		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	
2008	CROP( in kg)	0	0	23039	37481	45557	43932	56244	45651	47663	67675	36443	24353	428038
	RAINFALL(in mm)	0	14	114	188	221.6	622.9	938	946	328	62	0	0	3434.5
2009	CROP( in kg)	0	784	11407	5123	26361	27196	36796	50033	39388	75460	40882	20637	321876
	RAINFALL(in mm)	0	0	25	186	231	829	791	532	348	285	0	0	3227
2010	CROP( in kg)	0	2530	38846	27342	34287	22227	61857	54297	54882	61647	26514	14887	399316
	RAINFALL(in mm)	0	0	80	189	348	787	659	756	350	47	7	0	3223
2011	CROP( in kg)	0	0	24330	21157	48251	39246	71589	71835	69156	83060	44789	8230	481643
	RAINFALL(in mm)	0	14	43	147	210	575	601	329	382	94	11	0	2406
2012	CROP( in kg)	0	0	12664	25868	32386	60363	57131	65001	67471	66731	47075	20327	455017
	RAINFALL(in mm)	0	8	5	188	276	1045	1198	569	616	116	0	0	4021
2013	CROP( in kg)	0	0	31642	15942	39993	45855	57751	58251	66716	71318	43011	24538	455017
	RAINFALL(in mm)	0	15	4	74.5	369	687	943	546	557	263	3	0	3461.5
2014	CROP( in kg)	0	0	30219	22902	45251	57193	64270	68846	63866	77840	46154	27927	504468
	RAINFALL(in mm)	0	55	0	16	475	510	372	1009	381	13	0	0	2831
2015	CROP( in kg)	0	0	0	8855	50401	45031	60752	70346	63876	84503	50528	18152	452444
	RAINFALL(in mm)	0	18	34	190	434	935	321	1187	252	45	0	0	3416
2016	CROP( in kg)	0	0	61887	23249	46405	63313	75668	85119	104602	64987	67455	63581	656266
	RAINFALL(in mm)	0	0	96	198	306	1248	1061	200	532	162	0	0	3803
2017	CROP( in kg)	0	0	62299	26300	53261	74365	82186	89663	82235	116107	69392	29197	685005
	RAINFALL(in mm)	0	4	106	113	246	786	575	1049	513	156	0	0	3548



LAST 10 YEARS CROP & RAINFALL STATEMENT (2009-'18): MAJHERDABRI TEA ESTATE														
YEAR	CROP & RAINFALL	NAME OF MONTH												TOTAL
		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	
2009	CROP( in kg)	0	12155	23567	34191	61028	78514	85017	97576	85788	124495	74812	24886	702029
	RAINFALL(in mm)	0	0	45	135	366	709	725	773	108	0	0	0	2861
2010	CROP( in kg)	13015	975	25756	22320	66880	65731	82078	82882	86549	124972	68298	22909	662365
	RAINFALL(in mm)	0	0	104	336	446	927	773	749	287	34	0	0	3656
2011	CROP( in kg)	6583	225	30487	33425	89954	78315	89634	90130	95041	132219	70518	18727	735258
	RAINFALL(in mm)	0	22	179	169	262	549	758	551	303	6	0	0	2799
2012	CROP( in kg)	21674	0	14058	17792	55017	55014	81964	88745	95116	102705	71311	18061	621457
	RAINFALL(in mm)	0	0	3	167	246	1287	934	514	111	0	0	0	3262
2013	CROP( in kg)	15246	1813	45510	24951	68271	82884	87780	115996	100884	131821	76802	36221	788179
	RAINFALL(in mm)	0	14	5	146	275	433	878	525	458	145	0	0	2879
2014	CROP( in kg)	0	0	42117	19365	36688	78342	91134	119826	76849	111369	79213	39978	694881
	RAINFALL(in mm)	0	21	4	24	407	519	253	962	368	30	0	0	2588
2015	CROP( in kg)	12000	1871	33109	23481	68393	60406	73441	130040	83890	129754	77815	30521	724721
	RAINFALL(in mm)	19	0	41	103	423	1078	544	519	253	962	368	30	4340
2016	CROP( in kg)	23322	4470	47230	32037	69754	80513	83359	96674	148866	49003	114188	37919	787335
	RAINFALL(in mm)	8	3	171	149	339	1449	885	209	696	226	0	0	4135
2017	CROP( in kg)	0	10955	37402	36080	76695	99207	105634	110462	105324	152000	93657	38342	865758
	RAINFALL(in mm)	0	0	165	112	766	734	1227	414	238	0	0	0	3656
2018	CROP( in kg)	7250	6055	49720	33906	84029	97395	110011	146079	111208	142308	83672	26127	897760
	RAINFALL(in mm)	0	2	27	240	262	917	541	386	754	386	52	7	3574



<i>LAST 6 YEARS CROP &amp; RAINFALL STATEMENT [ 2013-'18 ]: KADAMBINI TEA ESTATE</i>														
YEAR	CROP & RAINFALL	NAME OF MONTH												TOTAL
		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	
2013	CROP( in kg)	0	3424	45829	24806	48336	53876	89407	83323	100405	105689	79703	55683	690481
	RAINFALL(in inch)	0	0.47	0.11	4.19	9.2	13.73	29.4	15.86	13.07	8.26	0.16	0	94.45
2014	CROP( in kg)	2157	1171	33531	21859	49272	74651	86596	94069	87361	86345	77597	51280	665889
	RAINFALL(in inch)	0	0.95	0.5	0.31	14.41	30.93	13.39	30.4	17.49	2.24	0	0	110.62
2015	CROP( in kg)	2280	3555	42385	34553	64268	72343	86055	98155	902739	109200	63911	37403	1516847
	RAINFALL(in inch)	0.75	0	1.33	6	19.88	31.07	14.8	38.57	15.13	0.5	2.57	0	130.6
2016	CROP( in kg)	4331	1291	33752	19081	56977	70332	85710	100420	110472	94575	99234	35117	711292
	RAINFALL(in inch)	0.25	0.3	2.62	4.1	9.77	59.5	36.5	11.22	23.75	4.4	0	0	152.41
2017	CROP( in kg)	0	0	28446	30653	78116	92232	109780	98771	91155	102091	76806	65464	773514
	RAINFALL(in inch)	0	0	3.15	6.67	8.89	15.1	13.7	42.05	20.5	11.55	0	0	121.61
2018	CROP( in kg)	0	2666	44649	37364	107667	90588	130474	141565	82520	140843	70609	57382	906327
	RAINFALL(in inch)	0	0.35	4.1	6.35	15.85	29.89	36.2	21.5	29.15	1.8	0	0.05	145.24

*Tasati Tea Estate (Last 10 years month-wise temperature) [in °C]*

NAME OF MONTH	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
<i>January</i>	25	5	25	11	23	6	21	6	25	4	24	2	22	3	20	4	24	6	32	5
<i>February</i>	23	4.5	26.5	5.5	28	12	27	8	25	7	27	4.5	27	6	24	8	25	7.5	28	9
<i>March</i>	25	5.5	30	11.5	32.5	13	33	14	34	14	35	7	32	14	33	13	34	13	31	16
<i>April</i>	32	14	34	17	32	10	34	15	36	14	34	17	32	15	33	15	36	17	33	17
<i>May</i>	33.5	17.5	35	21	33	17	37	17	35	15	35	19	33	18	34	17.5	38	20	39	10
<i>June</i>	34	20	36	22	34	20	36	19	35	18	37	20	35	20	34	14	39	22	38	20
<i>July</i>	34	20	36	20	35	29	36	20.5	34	19	35	20	36	23	37	20	33	19	37	20
<i>August</i>	35	20	35	22	35	20	38	19	36	20	35	22	35	20	34	20	40	18	34	20
<i>September</i>	34	20	36	23	36	22	38	18	35	18	35	21	35	21	34	21	34	18	37	20
<i>October</i>	33	18	33	19	34	17	35	13	35	12	34	17	35	17	35	19	34	17	40	18
<i>November</i>	30	14	29	10	29	12	30	9	29	8	26	14	25	10	29	15	30	15	37	13
<i>December</i>	27	12	25	7	25	7	28	5	25	5	26	7	25	8	27	8	28	12	31	10
<i>Average Temperature</i>	22.4		17.5		20		16		19.6		16.7		22.7		24.5		24.1		23.9	





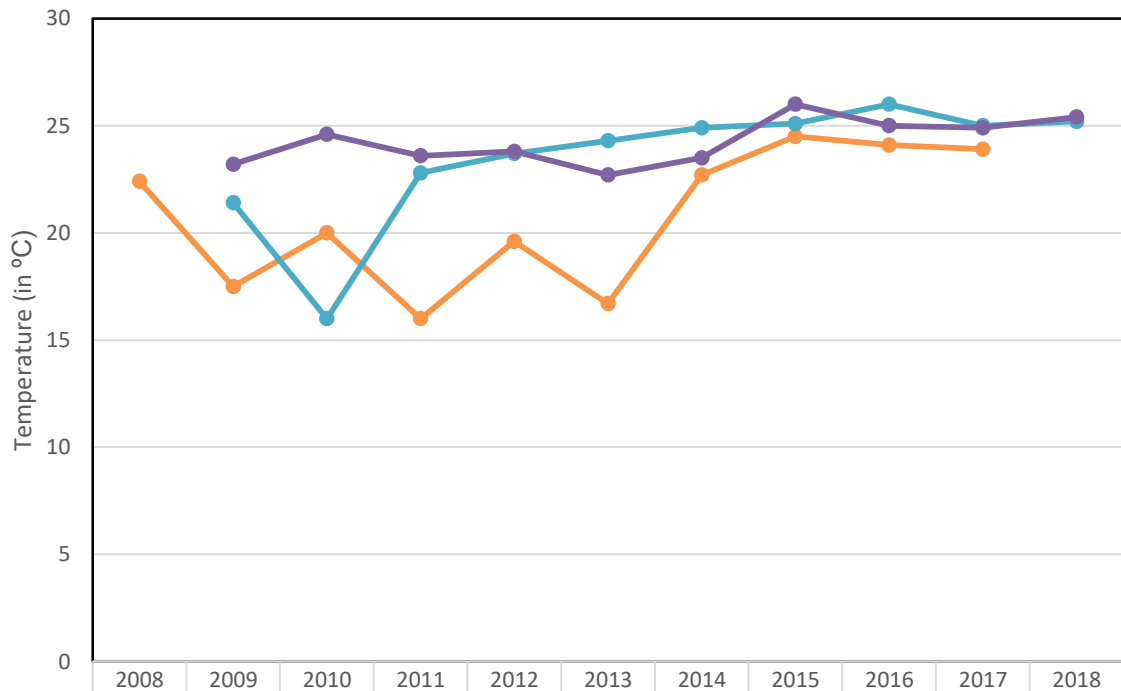
*Majherdabri Tea Estate (Last 10 years month-wise temperature) [in °C]*

NAME OF MONTH	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MI N	MAX	MI N	MAX	MI N	MAX	MIN	MAX	MIN	MAX	MIN
<i>January</i>	23	5	21	6	20	4	19	3	20	4	26	5	24	7	25	4	25	5	27	6
<i>February</i>	28	9	27	8	24	8	25	10	29	8	29	8	28	9	31	8	28	12	30	12
<i>March</i>	32.5	16	33	14	33	13	32	8	35	9	33	17	34	16	35	20	36	15	33	19
<i>April</i>	32	17	34	15	33	15	33	16	36	18	33	15	37	20	39	18	35	17	36	18
<i>May</i>	33	10	37	17	34	17.5	36	20	37	19	36	20	39	21	38	22	37	15	37	19
<i>June</i>	34	20	36	19	34	14	37	19.5	38	20	36	21	36	19	39	24	37	20	38	20
<i>July</i>	35	20	36	20.5	37	20	37	21	37	23	39	22	37	21	36	22	37	23	37	23
<i>August</i>	35	20	38	19	34	20	36	22.5	36	22	37	24	36	22	40	25	36	25	36	22
<i>September</i>	36	20	38	18	34	21	36.5	23	37	21	36	22	36	24	39	24	36	22	37	21
<i>October</i>	34	18	35	13	35	19	36	22	34	20	35	19	36	21	35	18	38	20	34	20
<i>November</i>	29	13	30	9	29	15	25	15	29	15	30	16	28	14	29	15	28	13	29	15
<i>December</i>	25	10	28	5	27	8	27	11	28	10	27	12	29	10	30	10	29	12	28	10
<i>Average Temperature</i>	21.4		16		22.8		23.7		24.3		24.9		25.1		26		25		25.2	

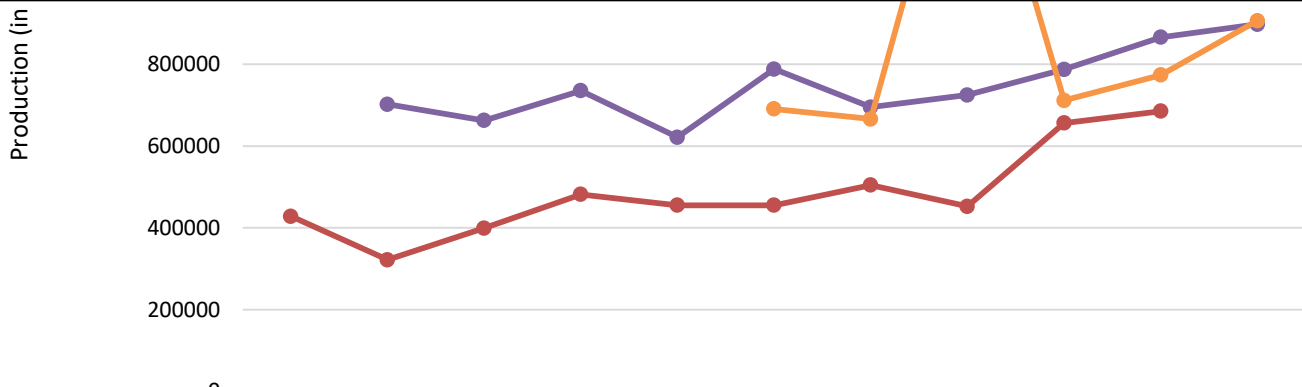
*Kadambini Tea Estate (Last 10 years month-wise temperature) [in °C]*

NAME OF MONTH	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
<i>January</i>	23	10	25	11	21	6	20	5.5	24.5	4	24	2	25	9	25	13	23	10	25	8
<i>February</i>	24	5	27	11	26	8	25	7.5	25	4.5	27	6	26.5	10	24.5	15	24	11.5	27.5	9
<i>March</i>	30	12	32	13	33	12	32	14	35	11	33.5	13.5	31	15	34	16	32.5	15.5	30.5	14.5
<i>April</i>	32	15	34	17	34	15	36	17	35.5	16	36	15	35	16	36.5	17	33	14	33.5	13
<i>May</i>	33.5	17	35	20	33	17	37	17.5	36	15.5	35	19	33	18	38	20	35	11	36	16
<i>June</i>	34	20	36	22	34.5	20	36	19	35.5	18.5	37.5	20	35	20.5	36	18.5	39	21	38	19.5
<i>July</i>	34	21	36	20	35	22	36.5	20.5	34	19	35	21	36.5	23	38	21	36	19	37	20
<i>August</i>	35	23	35	22	35	21	38	22	35	20	36	22	34	21	40	19	35	20.5	36.5	22
<i>September</i>	34	19.5	36	22.5	36	23	38	18	35	19	35	21	35	20	34	20	34	17.5	35	19
<i>October</i>	33	17	33	19	34	17	35	14	34	12.5	33	18	33	15.5	33	17	29	15	30	14
<i>November</i>	30	14	29	11.5	29	13	30	9.5	29	8	26.5	14	30	13.5	30	15	26	10	25	12
<i>December</i>	30	11.5	32	12	30	12	34	11	30	8.5	28	7	32	12	29	12	28	11	28.5	14
<i>Average Temperature</i>	23.2		24.6		23.6		23.8		22.7		23.5		26		25		24.9		25.4	

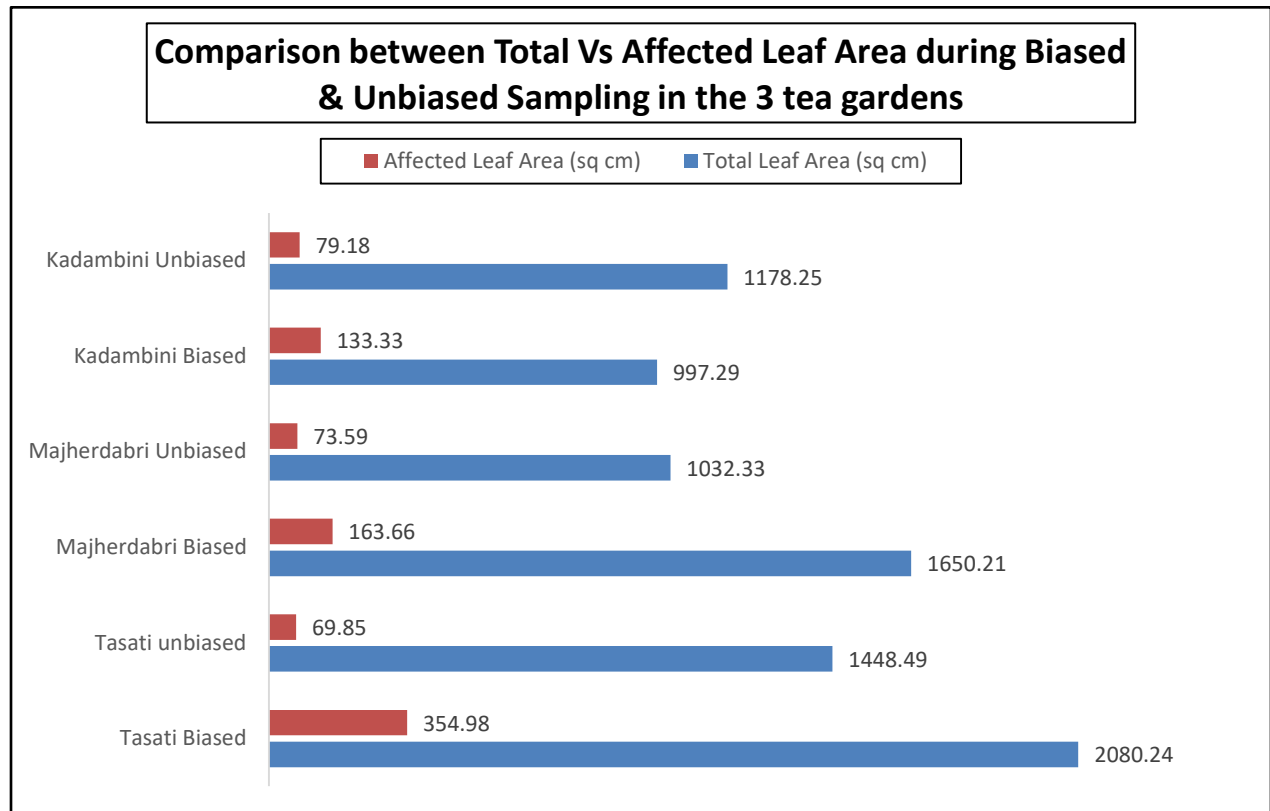
### Comparison of average temperature (in °C) of year between 3 tea gardens visited



<span style="color: orange;">●</span> Tasati Tea Estate	22.4	17.5	20	16	19.6	16.7	22.7	24.5	24.1	23.9	
<span style="color: teal;">●</span> Majherdabri Tea Estate		21.4	16	22.8	23.7	24.3	24.9	25.1	26	25	25.2
<span style="color: purple;">●</span> Kadambini Tea Estate		23.2	24.6	23.6	23.8	22.7	23.5	26	25	24.9	25.4



<span style="color: red;">●</span> Tasati T.E	428038	321876	399316	481643	455017	455017	504468	452444	656266	685005	
<span style="color: purple;">●</span> Majherdabri T.E		702029	662365	735258	621457	788179	694881	724721	787335	865758	897760
<span style="color: orange;">●</span> Kadambini T.E.						690481	665889	1516847	711292	773514	906327



*Statistical Analysis of the Data obtained from the tea gardens*

Tasati Tea Garden

Correlation: Productivity (kg), Total Rainfall (mm), Average Temperature (°C) [Of Last 10 years (2008-2017)]

Correlations

	Productivity	Total Rainfall
Total Rainfall	0.242	
Average Temperat	0.560	0.395
	0.092	0.258

*Cell Contents*

*Pearson correlation*

*P-Value*

**Interpretation of the result:**

- The *Pearson correlation* between Total Rainfall & Productivity is 0.242. This indicates **low degree of positive correlation** between the two variables. As the value is positive it



can be deduced that if rainfall increases production also increases. But the relation is not perfectly linear.

- The *Pearson correlation* between Average Temperature & Productivity is 0.560. This indicates **moderate degree of positive correlation between the two variables**. As the value is positive it can be deduced that if temperature increases production also increases. But the relation is not perfectly linear.
- Majherdabri Tea Garden

Correlation: Productivity (Kg), Total Rainfall (mm), Average Temperature (°C) [Of Last 10 years (2009-2018)]

Correlations

	Productivity	Total Rainfall
Total Rainfall	0.243	
	0.499	
Average Temperat	0.508	0.131
	0.133	0.719

Cell Contents

*Pearson correlation*

*P-Value*

**Interpretation of the result:**

- The *Pearson correlation* between Total Rainfall & Productivity is 0.243. This indicates **low degree of positive correlation** between the two variables. As the value is positive it can be deduced that if rainfall increases production also increases. But the relation is not perfectly linear.
- The *Pearson correlation* between Average Temperature & Productivity is 0.508. This indicates **moderate degree of positive correlation between the two variables**. As the value is positive it can be deduced that if temperature increases production also increases. But the relation is not perfectly linear.

- Kadambini Tea Garden

Correlation: Productivity (Kg), Total Rainfall (mm), Average Temperature (°C) [Of Last 6 years (2013-2018)]

Correlations

	Productivity	Total Rainfall
Total Rainfall	0.248	
	0.636	
Average Temperat	0.700	0.806
	0.121	0.053



Cell Contents

Pearson correlation

P-Value

**Interpretation of the result:**

- The *Pearson correlation* between Total Rainfall & Productivity is 0.248. This indicates **low degree of positive correlation** between the two variables. As the value is positive it can be deduced that if rainfall increases production also increases. But the relation is not perfectly linear.
- The *Pearson correlation* between Average Temperature & Productivity is 0.700. This indicates **fairly high degree of positive correlation between the two variables**. As the value is positive it can be deduced that if temperature increases production also increases. The relation is close to being perfectly linear.

- Majherdabri Tea Garden

One-Sample T: Productivity (Kg), Total Rainfall (mm), Average Temperature (°C)[Of Last 10 years (2009-2018)]

Descriptive Statistics

Sample	N	Mean	StDev	SE Mean	95% CI for $\mu$
Productivity	10	747974	87205	27577	(685592, 810357)
Total Rainfall	10	3375	594	188	(2950, 3800)
Average Temperature	10	23.440	2.938	0.929	(21.338, 25.542)

$\mu$ : mean of Productivity, Total Rainfall, Average Temperature

**Interpretation of the result:**

- Mean of last 10 years Annual Productivity is 747974.
- Mean of last 10 years Total Rainfall is 3375.
- Mean of last 10 years Average Temperature is 23.440.
- 95% CI for  $\mu$  for Annual productivity indicates that if 100 random samples is taken for productivity, 95 of them would be within the value of 685592 -810357.
- 95% CI for  $\mu$  for Total Rainfall indicates that if 100 random samples is taken for Total Rainfall, 95 of them would be within the value of 2950-3800.
- 95% CI for  $\mu$  for Average Temperature indicates that if 100 random samples is taken for Average Temperature, 95 of them would be within the value of 21.338- 25.542.

- Tasati Tea Garden

One-Sample T: Productivity (Kg), Total Rainfall (mm), Average Temperature(°C)[Of Last 10 years (2008-2017)]

Descriptive Statistics

Sample	N	Mean	StDev	SE Mean	95% CI for $\mu$
--------	---	------	-------	---------	------------------



Productivity	10	483909	110437	34923	(404907, 562911)
Total Rainfall	10	3337	461	146	(3008, 3667)
Average Temperature	10	20.74	3.22	1.02	(18.44, 23.04)

$\mu$ : mean of Productivity, Total Rainfall, Average Temperature

**Interpretation of the result:**

- Mean of last 10 years Annual Productivity is 483909.
- Mean of last 10 years Total Rainfall is 3337.
- Mean of last 10 years Average Temperature is 20.74.
- 95% CI for  $\mu$  for Annual productivity indicates that if 100 random samples is taken for productivity, 95 of them would be within the value of 404907- 562911.
- 95% CI for  $\mu$  for Total Rainfall indicates that if 100 random samples is taken for Total Rainfall, 95 of them would be within the value of 3008-3667.
- 95% CI for  $\mu$  for Average Temperature indicates that if 100 random samples is taken for Average Temperature, 95 of them would be within the value of 18.44-23.04.
- Kadambini Tea Garden

One-Sample T: Average Temperature(°C) [Of Last 10 years (2009-2018)]  
Descriptive Statistics

N	Mean	StDev	SE Mean	95% CI for $\mu$
10	24.270	1.064	0.336	(23.509, 25.031)

$\mu$ : mean of Average Temperature

**Interpretation of the result:**

- Mean of last 10 years Average temperature is 24.270.
- 95% CI for  $\mu$  for Average Temperature indicates that if 100 random samples is taken for Average Temperature, 95 of them would be within the value of 23.509-25.031.

**Note: As only last 6 years Productivity & rainfall data was present, One-Sample T for these 2 variables could not be done.**

One-way ANOVA: Total area (cm<sup>2</sup>) versus Type of sampling Method

Null hypothesis            All means are equal  
Alternative hypothesis    Not all means are equal  
Significance level         $\alpha = 0.05$   
*Equal variances were assumed for the analysis.*

Factor Information

Factor	Levels	Values
Type of sampling	6	Kadambini biased, Kadambini Unbiased, Majherdabri Biased, Majherdabri Unbiased, Tasati Biased, Tasati Unbiased





Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Type of sampling	5	10465	2093.00	28.09	0.000
Error	414	30848	74.51		
Total	419	41313			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
8.63203	25.33%	24.43%	23.15%

Means

Type of sampling	N	Mean	StDev	95% CI
Kadambini biased	70	14.247	4.886	(12.219, 16.275)
Kadambini Unbiased	70	16.832	5.964	(14.804, 18.860)
Majherdabri Biased	70	23.57	10.36	(21.55, 25.60)
Majherdabri Unbiased	70	19.03	8.52	(17.00, 21.06)
Tasati Biased	70	29.72	11.84	(27.69, 31.75)
Tasati Unbiased	70	21.484	8.220	(19.456, 23.512)

*Pooled StDev = 8.63203*

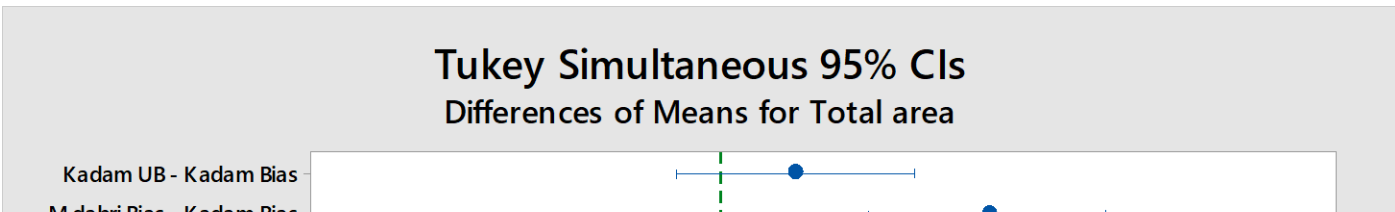
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

Type of sampling	N	Mean	Grouping
Tasati Biased	70	29.72	A
Majherdabri Biased	70	23.57	B
Tasati Unbiased	70	21.484	B C
Majherdabri Unbiased	70	19.03	C D
Kadambini Unbiased	70	16.832	D E
Kadambini biased	70	14.247	E

*Means that do not share a letter are significantly different.*

Tukey Simultaneous 95% CIs





### Interpretation of the result:

- The p-value of the total area ANOVA is less than 0.05. This result indicates the mean difference between total area of leaves ( $\text{cm}^2$ ) of biased & unbiased sampling of different tea gardens is statistically significant.
- The predicted  $R^2$ [R-sq(pred)] value is 23.15%. This is on the low side. The value indicates that the model generates imprecise predictions for new observations. The imprecision may be due to the small size of the groups. Thus, the model should not be used to make generalizations beyond the sample data. So, **this model & result is only valid for the sampled tea leaves; not the whole garden.**
- Mean of total area ( $\text{cm}^2$ ) of Biased sampling in Kadambini Tea Garden is 14.247.
- Mean of total area ( $\text{cm}^2$ ) of Unbiased sampling in Kadambini Tea Garden is 16.832.
- Mean of total area ( $\text{cm}^2$ ) of Biased sampling in Majherdabri Tea Garden is 23.57.
- Mean of total area ( $\text{cm}^2$ ) of Unbiased sampling in Majherdabri Tea Garden is 19.03.
- Mean of total area ( $\text{cm}^2$ ) of Biased sampling in Tasati Tea Garden is 29.72.
- Mean of total area ( $\text{cm}^2$ ) of Unbiased sampling in Tasati Tea Garden is 21.484.
- 95% CI of Biased sampling in Kadambini Tea Garden indicates that if 100 random samples of Tea Leaves is taken for Total area calculation, 95 of them would be within the value of 12.219 -16.275.
- 95% CI of Unbiased sampling in Kadambini Tea Garden indicates that if 100 random samples of Tea Leaves is taken for Total area calculation, 95 of them would be within the value of 14.804 -18.860.
- 95% CI of Biased sampling in Majherdabri Tea Garden indicates that if 100 random samples of Tea Leaves is taken for Total area calculation, 95 of them would be within the value of 21.55-25.60.



- 95% CI of Unbiased sampling in Majherdabri Tea Garden indicates that if 100 random samples of Tea Leaves is taken for Total area calculation, 95 of them would be within the value of 17.00- 21.06.
- 95% CI of Biased sampling in Tasati Tea Garden indicates that if 100 random samples of Tea Leaves is taken for Total area calculation, 95 of them would be within the value of 27.69- 31.75.
- 95% CI of Unbiased sampling in Tasati Tea Garden indicates that if 100 random samples of Tea Leaves is taken for Total area calculation, 95 of them would be within the value of 19.456- 23.512.
- The pooled Standard deviation is 8.63203.
- The Tukey comparison results are used to formally test whether the difference between a pair of groups is statistically significant. If a Tukey simultaneous confidence interval range does not include zero, it indicates that the difference between the means of a pair is statistically significant.
- In the **Tukey Simultaneous 95% CIs plot**, it is observed that only Biased vs Unbiased sampling in **Kadambini Tea Garden** for **difference of means for total area** has a confidence interval range which includes zero. **So, difference between means of Unbiased & biased Sampling of Total Area of Leaves is not Statistically Significant.**
- In the **Tukey Simultaneous 95% CIs plot**, it is observed that Biased vs Unbiased sampling in **Majherdabri & Tasati Tea Garden** for **difference of means for total area** has a confidence interval range which does not include zero. **So, difference between means of Unbiased & biased Sampling of Total Area of Leaves in those two tea gardens is Statistically Significant.**

One-way ANOVA: Affected area versus Type of Sampling Method

Null hypothesis All means are equal  
 Alternative hypothesis Not all means are equal  
 Significance level  $\alpha = 0.05$   
*Equal variances were assumed for the analysis.*

Factor Information

Factor	Levels	Values
Type of Sampling	6	Kadambini biased, Kadambini Unbiased, Majherdabri Biased, Majherdabri Unbiased, Tasati Biased, Tasati Unbiased

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Type of Sampling	5	803.3	160.668	22.89	0.000
Error	414	2906.0	7.019		
Total	419	3709.3			

Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
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2.64939 21.66% 20.71% 19.37%

Means

Type of Sampling	N	Mean	StDev	95% CI
Kadambini Biased	70	1.905	1.306	(1.282, 2.527)
Kadambini Unbiased	70	1.131	1.540	(0.509, 1.754)
Majherdabri Biased	70	2.338	2.432	(1.716, 2.960)
Majherdabri Unbiased	70	1.341	2.600	(0.718, 1.963)
Tasati Biased	70	5.071	4.676	(4.449, 5.694)
Tasati Unbiased	70	1.075	1.869	(0.453, 1.698)

*Pooled StDev = 2.64939*

Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

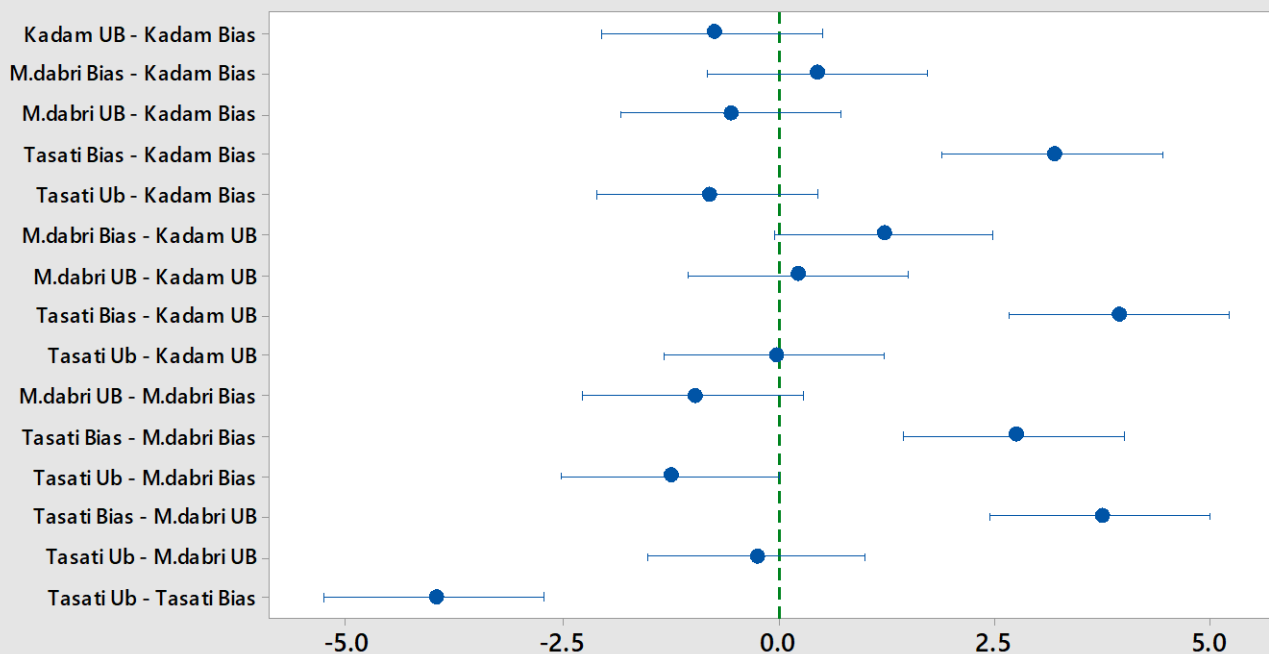
Type of Sampling	N	Mean	Grouping
Tasati Biased	70	5.071	A
Majherdabri Biased	70	2.338	B
Kadambini Biased	70	1.905	B
Majherdabri Unbiased	70	1.341	B
Kadambini Unbiased	70	1.131	B
Tasati Unbiased	70	1.075	B

*Means that do not share a letter are significantly different.*

Tukey Simultaneous 95% CIs



### Tukey Simultaneous 95% CIs Differences of Means for Affected area



If an interval does not contain zero, the corresponding means are significantly different.

difference between affected area of leaves (cm<sup>2</sup>) of biased & unbiased sampling of different tea gardens is statistically significant.

- The predicted R<sup>2</sup>[R-sq(pred)] value is 19.37%. This is on the low side. The value indicates that the model generates imprecise predictions for new observations. The imprecision may be due to the small size of the groups. Thus, the model should not be used to make generalizations beyond the sample data. So, **this model & result is only valid for the sampled tea leaves; not the whole garden.**
- Mean of affected area (cm<sup>2</sup>) of Biased sampling in Kadambini Tea Garden is 1.905.
- Mean of affected area (cm<sup>2</sup>) of Unbiased sampling in Kadambini Tea Garden is 1.131.
- Mean of affected area (cm<sup>2</sup>) of Biased sampling in Majherdabri Tea Garden is 2.338.
- Mean of affected area (cm<sup>2</sup>) of Unbiased sampling in Majherdabri Tea Garden is 1.341.
- Mean of affected area (cm<sup>2</sup>) of Biased sampling in Tasati Tea Garden is 5.071.
- Mean of affected area (cm<sup>2</sup>) of Unbiased sampling in Tasati Tea Garden is 1.075.
- 95% CI of Biased sampling in Kadambini Tea Garden indicates that if 100 random samples of Tea Leaves is taken for affected area calculation, 95 of them would be within the value of 1.282- 2.527.
- 95% CI of Unbiased sampling in Kadambini Tea Garden indicates that if 100 random samples of Tea Leaves is taken for affected area calculation, 95 of them would be within the value of 0.509- 1.754.
- 95% CI of Biased sampling in Majherdabri Tea Garden indicates that if 100 random samples of Tea Leaves is taken for affected area calculation, 95 of them would be within the value of 1.716- 2.960.



- 95% CI of Unbiased sampling in Majherdabri Tea Garden indicates that if 100 random samples of Tea Leaves is taken for affected area calculation, 95 of them would be within the value of 0.718- 1.963.
- 95% CI of Biased sampling in Tasati Tea Garden indicates that if 100 random samples of Tea Leaves is taken for affected area calculation, 95 of them would be within the value of 4.449- 5.694.
- 95% CI of Unbiased sampling in Tasati Tea Garden indicates that if 100 random samples of Tea Leaves is taken for affected area calculation, 95 of them would be within the value of 0.453- 1.698.
- The pooled Standard Deviation is 2.64939.
- The Tukey comparison results are used to formally test whether the difference between a pair of groups is statistically significant. If a Tukey simultaneous confidence interval range does not include zero, it indicates that the difference between the means of a pair is statistically significant.
- In the **Tukey Simultaneous 95% CIs plot**, it is observed that Biased vs Unbiased sampling in **Majherdabri & Tasati Tea Garden** for **difference of means for affected area** has a confidence interval range which includes zero. **So, difference between means of Unbiased & biased Sampling of Total Area of Leaves is not Statistically Significant. This indicates that both the biased & unbiased samples represent nearly equal affected areas due to pest infestation.**
- In the **Tukey Simultaneous 95% CIs plot**, it is observed that Biased vs Unbiased sampling in **Tasati Tea Garden** for **difference of means for affected area** has a confidence interval range which does not include zero. **So, difference between means of Unbiased & biased Sampling of affected Area of Leaves in the tea gardens is Statistically Significant. This indicates that the biased samples are different from unbiased samples with respect to affected areas due to pest infestation.**

### Conclusion:

- Through this dissertation work we observed different types of pests present in the tea gardens. We came to know the damages done to the tea leaves by them & control measures undertaken in the gardens to reduce pest infestations.
- We collected data on variations of Total Rainfall & Average Temperature of last 6-10 years and analyzed the trend in their change.
- We also collected Tea Production data & statistically analyzed and presented relation between Tea Production, Temperature & Rainfall.
- It is observed that correlation between Annual Rainfall & Tea production is nearly same in the all three gardens & correlation between Average Temperature & Tea Production is nearly same in Tasati And Majherdabri Tea Estate but a little higher in Kadambini Tea Estate.
- So, we were successful in comparing effects of Environmental factors (Rainfall, Temperature) with productivity.
- Also using Analysis of Variance we determined how much accurately we sampled the pest affected leaves during leaf collection by comparing difference in means of total & affected areas of leaves in Biased & Unbiased sampling.

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#### E-resource:

- <https://www.tocklai.org/activities/tea-cultivation.html>
- <https://www.tea.co.uk/tea-growing-and-production.html>
- <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/anova/how-to/one-way-anova/before-you-start/example/>
- <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/anova/how-to/one-way-anova/before-you-start/overview/>





- <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/basic-statistics/inference/how-to/one-sample/1-sample-t/before-you-start/overview/>
- <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/basic-statistics/inference/how-to/one-sample/1-sample-t/before-you-start/example/>
- <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/regression/how-to/correlation/overview/>
- <https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/regression/how-to/correlation/example/>

<https://support.minitab.com/en-us/minitab-express/1/help-and-how-to/modeling-statistics/regression/how-to/correlation/interpret-the-results/>

## Solar cell: A brief review on its journey from amorphous to perovskite

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### Abstract:

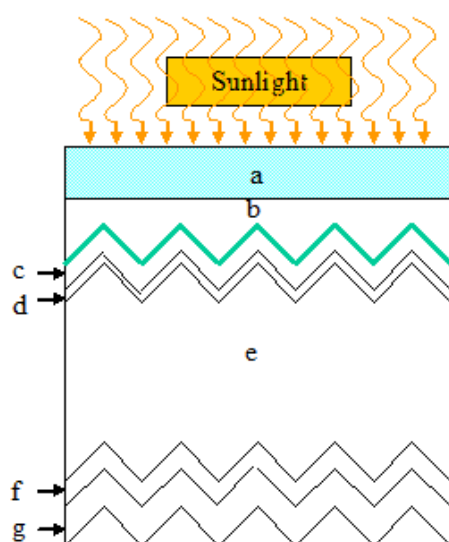
Converting solar energy into a clean, practical alternative power source will require highly efficient and inexpensive devices that generate electrical power from solar irradiation. Scientists have categorized solar cell into three different part.(i) first generation solar cell which include single crystalline and polycrystalline solar cell, (ii) second generation solar cell comprising of amorphous silicon solar cell and (iii) third generation solar cell fabricated with dye-sensitised solar cell, organic photovoltaic, quantum dot and perovskite solar cell. In this article, a brief review of different types of solar cell on its evolution and progress is discussed.

**Keywords:** Conservation, cell, energy, power, solar.

(Paper received on 30/04/2019; Paper accepted on 15/05/2019; Paper published on 1<sup>st</sup> June, 2019.)

### 1. Amorphous hydrogenated silicon solar cell

In order to make solar photovoltaic (PV) systems economically viable for large-scale power generation needed for different applications, we must first choose a low cost material that can be deposited over a large surface. Secondly, the solar cell fabricated from such a material must have a



a: glass, b: textured TCO, c: P-a-SiC:H, d: buffer layer, e: I-a-Si:H, f: N-a-Si:H, g: reflector metal

Cell output parameters:

Short-circuit current density  $J_{sc}$ , Open-circuit voltage  $V_{oc}$

Efficiency  $\eta = (\text{Maximum power output} / \text{Power input}) \times 100\%$

Fill-Factor  $FF = (P_{max} / J_{sc} \times V_{oc})$

**Fig. 1. Schematic diagram of a single junction cell**



high enough efficiency, so that it may be possible to reduce the cost per watt from the PV system to a reasonable value. Hydrogenated amorphous silicon (a-Si:H) based solar cells are promising in the first respect, but suffers from light-induced degradation (LID), which reduces the efficiency of a single junction solar cell fabricated from this material by ~25%, before stabilization sets in. To obtain a higher stabilized efficiency, we may experiment with novel materials such as silicon of different degrees of crystallinity such that, over 9% stabilized efficiencies has been achieved using single junction micro crystalline silicon (mc-Si) solar cells [1].

The economic advantage of these materials and numerous unique properties of the amorphous state viz., non - conservation of wave number selection rules etc., are main reasons behind the increasing interest in amorphous semiconductors during the last two decades. Though there are several disadvantages like lack of reproducibility, low mobilities and high defect densities, these materials can be good cost-effective substitutes for their crystalline counterparts in the field of photovoltaic applications.

Hydrogenated amorphous (a-Si:H) *PIN* solar cells have been extensively investigated for use as low-cost solar cells. In amorphous silicon solar cells, the diffusion lengths are very short due to low carrier mobilities and shorter lifetimes, which in turn, is the consequence of the large number of defect states present in the material. In doped a-Si:H, the diffusion lengths are even shorter, due to a higher concentration of defects. Thus, in these cases, a solar cell cannot be constructed by merely stacking a *P*-type and an *N*-type film. Such a device would not show photovoltaic activity, as the lifetimes of the photo-excited free charge carriers are too short to separate any significant fraction of them. Hence, an intrinsic layer (I-layer) with a relatively low defect density must be incorporated in between the *P*- and *N*-type layers (Fig.1) to fabricate a *PIN* structure. The highest efficiency for single junction thin film hydrogenated amorphous silicon solar cell is 10.2% [2,3].

## 2. Dye sensitized solar Cells:

Though the production cost is cheap in case of amorphous Silicon solar cells but the main problem is the efficiency of this type of cells. For several years the efficiency of amorphous silicon solar cell is stuck around 10%. So people are searching for other types of materials which can overcome the challenges of future generation solar cells. To fulfill these requirements, it attract attention of researchers working on various photovoltaic technologies, especially dye sensitized solar cells (DSSCs) and organic photovoltaic (OPV) with emphasis on better efficiency.

It was observed that organic dye produce electricity at oxide electrode in electrochemical cells. One of the efficient DSSCs devices uses ruthenium-based molecular dye, e.g. [Ru(4,4'-dicarboxy-2,2'-bipyridine)<sub>2</sub>(NCS)<sub>2</sub>] (N3) which is bound to a photo-anode via carboxylate molecules.

The anode of a DSC consists of a glass plate which is coated with a transparent conductive oxide (TCO) film. Generally Indium tin oxide (ITO) or fluorine doped tin oxide (FTO) are used as

TCO. On TCO a thin layer of titanium dioxide ( $\text{TiO}_2$ ) is applied which exhibits a high surface area because of its porosity. Thus, the dye molecules encapsulate the  $\text{TiO}_2$  when the  $\text{TiO}_2$  film is soaked with dye. The cathode is a Pt film coated on glass where the Pt film serves as a catalyst. An iodide/triiodide solution is used as the electrolyte as shown in fig: 2.

The mechanism is that, when sunlight enters the cell through the TCO and strikes the dye on the surface of the  $\text{TiO}_2$  and absorbed in the dye. The absorbed photon took the dye to its excited state, from where an electron can be "injected" directly into the conduction band of the  $\text{TiO}_2$  and diffuses (as a result of an electron concentration gradient) through the anode. In this way, the dye molecule will decompose due to loss of electron if another electron is not provided. The dye strips one from Iodide ( $\text{I}^-$ ) in electrolyte below the  $\text{TiO}_2$ , oxidizing it into triiodide ( $\text{I}_3^-$ ). The reaction is very fast, i.e, the time of reaction is lesser than compared to the time that it takes for the injected electron to recombine with the oxidized dye molecule. The oxidized dye molecule is again regenerated by electron donation from the iodide in the electrolyte. In return, iodide is regenerated by reduction of triiodide on the cathode. This process prevents the recombination reaction that would effectively short-circuit the solar cell. The missing electron of the triiodide is recovered by mechanically diffusing to the bottom of the cell, where the counter electrode re-introduces the electrons after flowing through the external circuit.

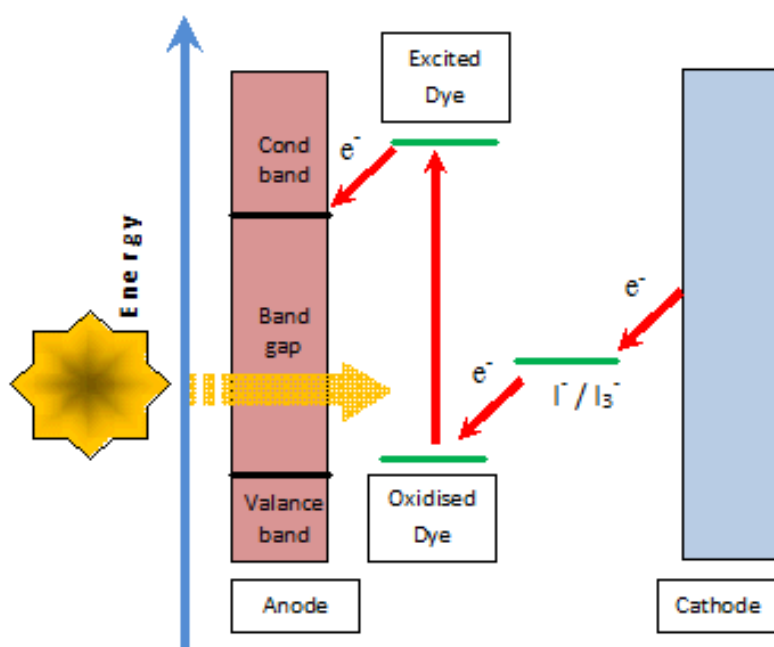


Fig-2: Schematic diagram of DSSC

DSSCs are currently the most efficient third-generation [4] solar technology available. Other thin-film technologies are typically between 5% and 13%, and traditional low-cost commercial silicon panels operate between 14% and 17%. This makes DSSCs attractive as a replacement for existing



technologies in "low density" applications like rooftop solar collectors, where the mechanical robustness and light weight of the glass-less collector is a major advantage. They may not be as attractive for large-scale deployments where higher-cost higher-efficiency cells are more viable, but even small increases in the DSSC conversion efficiency might make them suitable for some of these roles as well.

The main disadvantage of dye sensitized solar cell is that dyes do not absorb entire incident light and it has major problem with temperature. At low temperature the electrolyte can freeze and stop power generation and also at higher temperature liquid electrolyte can disrupt the power production. Replacing liquid electrolyte with solid has been an ongoing research but still degradation takes place for constant using.

### 3. **Perovskite Solar Cells:**

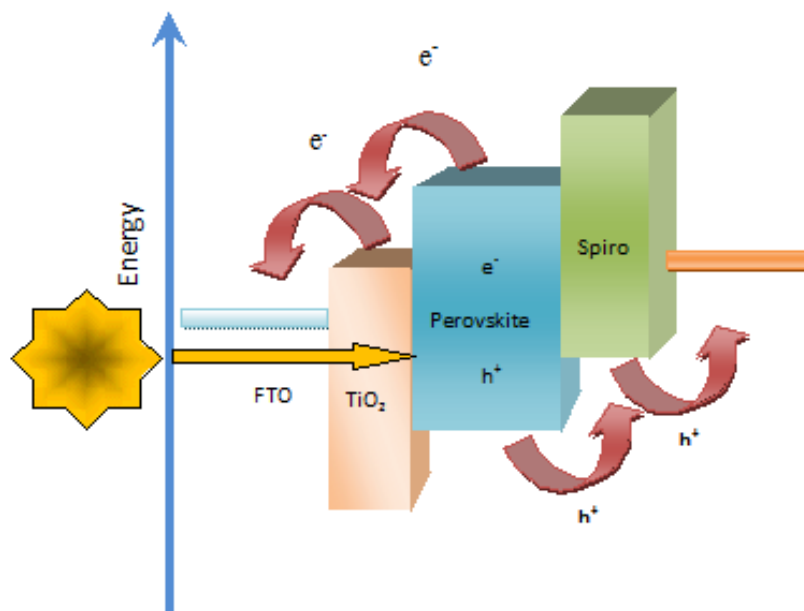
To achieve this goal of high efficient economically viable next generation solar cell, organometal-trihalide perovskite semiconductors are one of the technologically promising materials. The absorption of light by the perovskite layer of solar cell generates a greater no of electron and hole pairs in compared to that produced in the intrinsic layer (I-layer) in the PIN structure. On optimizing the device design and film-deposition parameters and techniques, it is expected that, perovskite thin film solar cells offer more advantages than other conventional thin film photovoltaic cells for high power requirement in future.

The key feature of perovskite structure in the device is that the perovskite responds much quicker to light in quadrillionths of a second. This shows that the photo generated electrons flow freely as the perovskite are deposited on the solar cells without any imperfections or flaws. This process may become helpful to produce thick solar cells and eventually absorb more light and generate more electron hole pair, producing more electricity. Recent studies on perovskite structure also indicate some unique characteristics which are very useful for solar cell materials. Also, some of the benefits of mechanical properties of perovskite layer used in the solar cells are their light weight, high flexibility, innovative architectural design owing to the ability of perovskite to generate multiple translucent colors, innovative and ability to achieve nearly 20% solar cells efficiency.

Perovskite absorber layer absorbs light and generates charges while the light falls on the PSCs. The electrons and holes pairs are created by the thermal energy, which diffuse and get separate through electron and hole selective contacts, respectively. Once electrons and holes are present at the cathode and anode, respectively, external load can be powered by connecting a circuit through it.

In recent years, hybrid metal halide perovskite materials have revolutionized the field of photovoltaic materials due to their rapid improvement of power conversion efficiency (PCE) from the point 3.8% in 2009 [5] up to 22.6% in 2017 [6] (certified 22.1%). In 2009, Mysaka turns to pervskite as possible replacement of Dye and achieved 3.8% efficiency.

Miyasaka et. al. [5] designed  $\text{CH}_3\text{NH}_3\text{PbBr}_3/\text{TiO}_2$ -based and  $\text{CH}_3\text{NH}_3\text{PbI}_3/\text{TiO}_2$ -based DSSCs with a Power Conversion Efficiency of 3.13% and 3.81% respectively. But the problem is that liquid electrolyte dissolved the perovskite quickly. In 2012 Nam-Gyu Park [7] replaced the liquid electrolyte with solid hole transporting layer. In 2013, M. Z. Liu, M. B. Johnston and H. J. Snaith [8] fabricated planar heterojunction PSCs via vapor deposition, and the efficiency of the PSCs device is



**Fig-3: Schematic diagram of Perovskite Solar Cell**

up to 15.4%. E. K. Kim, J. H. Noh, and S. I. Seok et al. in 2017 [6] showed that, introduction of additional iodide ions into the organic cationic solution used to form the perovskite layers through an intra-molecular exchanging process decreasing the concentration of deep-level defects and raising the power conversion efficiency of PSCs at 22.1%.

PSCs with regular configuration (Fig 3) is transparent conductive oxide (TCO) / blocking layer (electron transport layer (ETL)) / perovskite absorber layer/hole transport layer (HTL) material/gold (Au). Methyl Ammonium Lead halide ( $\text{CH}_3\text{NH}_3\text{PbX}_3$ ) is used as perovskite layer.  $\text{TiO}_2$  is used as electron transport layer. Spiro OMeTAD is used as hole transport layer. Gold is used as electrode.

The next few years promise to be exciting ones for research and development of organic–inorganic halide perovskite solar cells. On-going efficiency improvements are expected, as well as a rapidly growing understanding of their material properties and optimal cell designs. Some data shows efficiency of different type of solar cell.

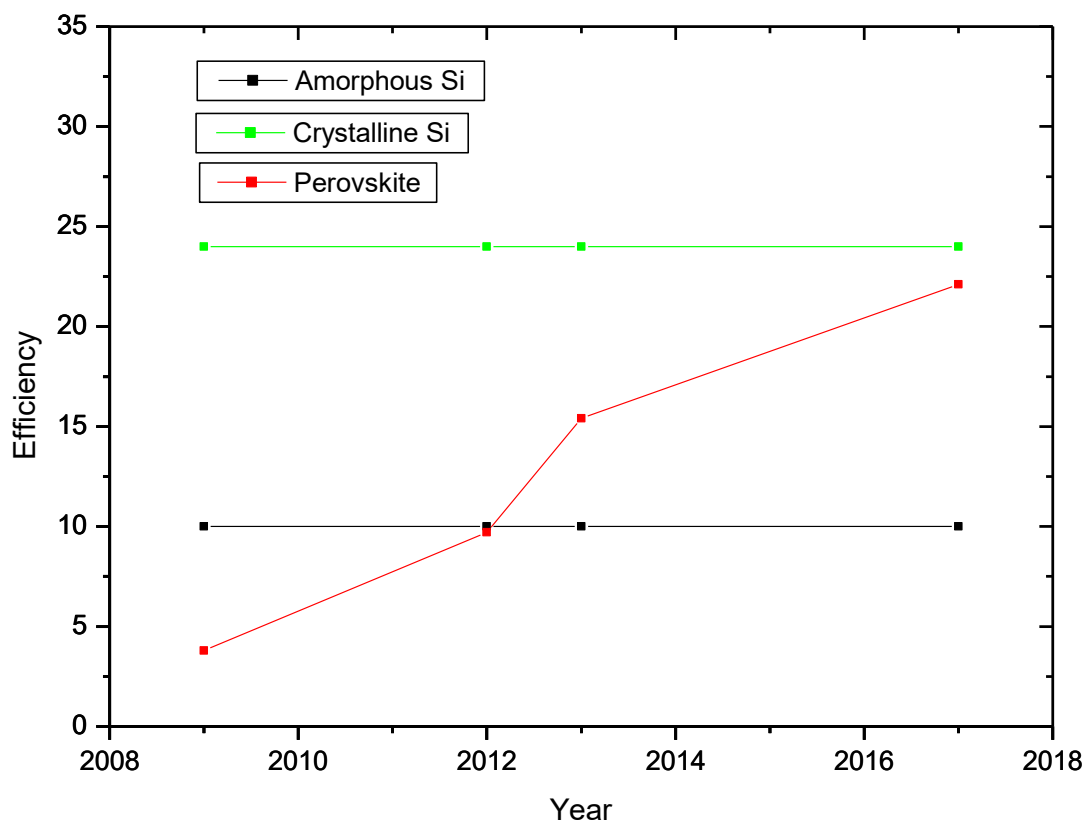


Fig. 4 Year wise performance of different types of solar cells with respect to their efficiency

Table: 1

Year wise performance of different type of solar cells.

Efficiency	2009	2012	2013	2017
Amorphous silicon	10.0 %	10.0 %	10.0 %	10.0 %
Perovskite cell	3.8 %	9.7 %	15.4 %	22.1 %
Crystalline silicon cell	24.0 %	24.0 %	24.0 %	24.0 %

**Further challenges to address:**

Though the advantage of greater Power Conversion Efficiency but for production of large-area PSCs device there are still has some issues needed to be solved, In the case of large-area PSCs device, surface, bulk defects and interfaces introduce recombination centers producing fast non-radiative losses and interface losses, which intern decreases the Voc, Jsc and fill factor (FF). Also, the perovskite material is easily thermal decomposition and hydro decomposition which leads to the lack of stability for PSCs device in practical use.

The main issue have to be solved is the poor stability of the perovskite materials. This challenge hinders the Perovskite solar cell device to be used in industry and outdoor applications.



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