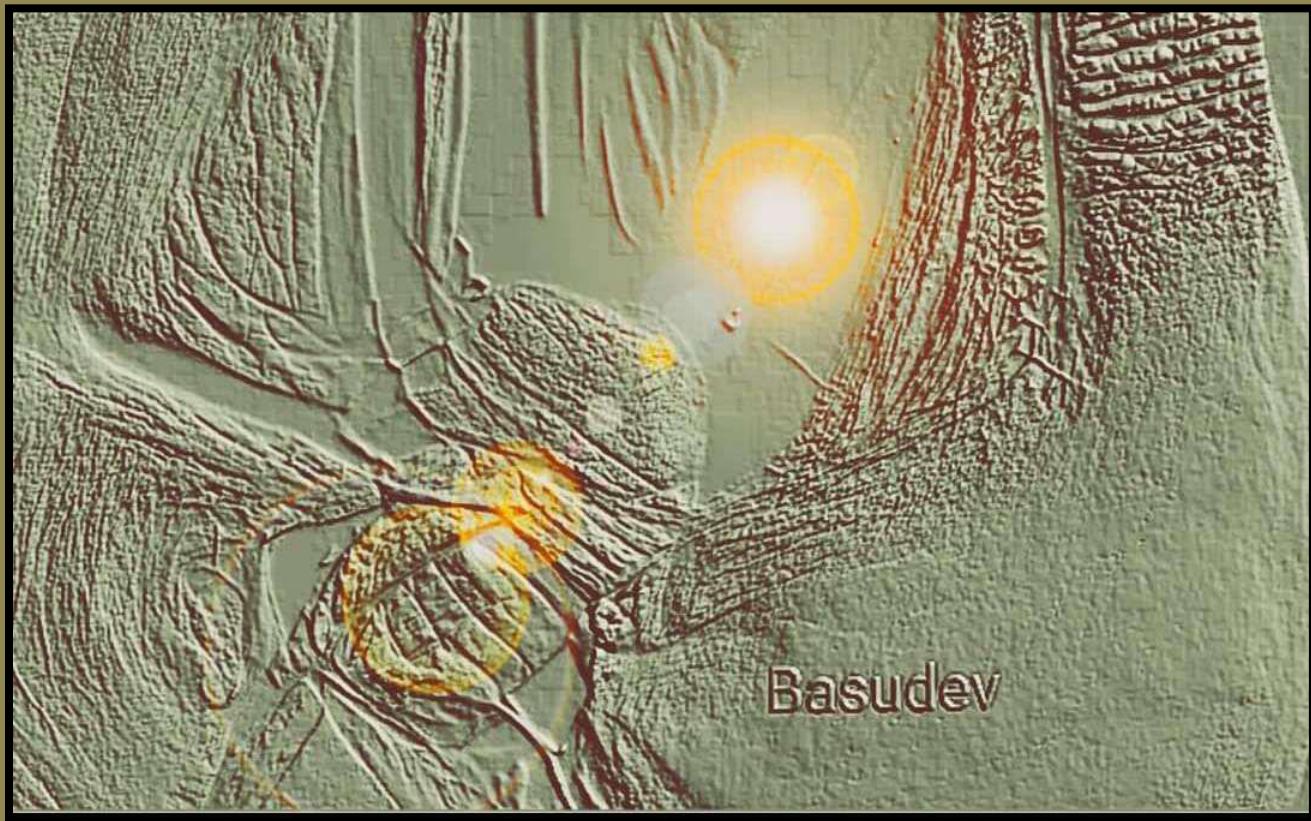




ISSN: 2278-8670  
ISSUE-21, JUNE, 2022  
VOLUME-I

**INTERNATIONAL JOURNAL  
OF  
INTEGRATED RESEARCH AND DEVELOPMENT  
(Peer Reviewed and Multi-Disciplinary)**



**Artist: Basudev Mondal. Title: New Dawn.**

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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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Dr. Barin Kumar Roy  
Editor-in-Chief  
Mobile: 09433128121  
E-mail: [barinkp1969@gmail.com](mailto:barinkp1969@gmail.com)  
Or [editor.ijird@gmail.com](mailto:editor.ijird@gmail.com)

Dr. Biswajit Maiti  
Managing Editor  
Mobile: 09836952605  
E-mail: [bmkgc@gmail.com](mailto:bmkgc@gmail.com)



Volume: 1/Issue: 21/June. 2022-ISSN: 2278 8670

# International Journal of Integrated Research and Development

ISSN: 2278-8670

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## PREFACE

The June, 2022 issue of our journal has been published. I want to convey that we have been delayed in publishing the issues of our journal due to some unavoidable situations. I hope our function will be regularized from our next issue.

Our journal was previously UGC enlisted journal, but after introducing CARE list the journal required to be further re-enlisted in the CARE list. We had already applied following all the protocols and formalities to the Eastern zone that is, Tezpur University, Assam. We also got positive response from them. But unfortunately our journal is not enlisted in the CARE. We are trying our best and we hope that it may be included in the list soon.

We have placed one beautiful digital painting of renowned artist Basudev Mondal on the cover page of the journal. The title of the painting is ‘New Dawn’. The justification of the title of the painting in today’s perspective is that we have recovered from the adverse situation and a new journey begins.

Basudev Mondal is Assistant Professor & H.O.D, Bengali at Dr. B. R. Ambedkar Satabarshiki Mahavidyalaya, Hochen, W.B. Apart from his teaching profession he is a renowned artist. He is one of the members of the board of associate editors of our journal. He has achieved various awards and honours in the field of art and painting. Some of the achievements are mentioned here:

### Awards:

1. Triple Champion Medalist, Calcutta University.
2. Honour and Felicitation from Kolkata Theatre for Human Development at Rabindra Sadan Kolkata.
3. Bina Pani Samman from Barasat Suti Sanskriti Sanstha, 24 Pgs(N).
4. Honour and Felicitation from Bongaon Charukala Parsad, 24 Pgs(N).
5. Honour and Felicitation from Cultural Unit of Duttafulia, 24 Pgs(N).
6. Honour from ‘DOUR’ Bengali Magazine, 24 Pgs(N).
7. Honour from ‘NOUKA’ Bengali Magazine at Bangla Academy, Kolkata.
8. Honour from ‘BALMIKI’ Bengali Magazine at Bangla Academy, Kolkata.
9. Honour and Felicitation from ‘AMAR EKUSHE’ Bengali Magazine, 24 Pgs(N).
10. Honour and Felicitation from ‘EKATA SANGHA’ 24 Pgs(N).
11. West Bengal Govt. CRIRA O YUBAKALYAN BIVAG Award (2<sup>nd</sup>).
12. Certificate of Proficiency (1<sup>st</sup>) C. R. Roy Memorial Art Contest.

### Solo Exhibition:

1. 2012 AJANTA ART GALLERY, Kolkata-124.
2. 2009 EKATA SANGHA, Mandapghata, 24 Pgs(N).
3. 2007 Barasat Suti Sanskriti Samsad, 24 Pgs(N).

### Invited Exhibition:

1. 2012 All India Annual Paintings Exhibition, Ajanta Art Gallery, Kolkata-700124.
2. 2011 Boi Mela Exhibition Ashoknagar, 24 Pgs(N).
3. 2010 Charukala Prasad, Bongaon, 24 Pgs(N).
4. 2010 Book Fair Exhibition Ashoknagar, 24 Pgs(N).
5. 2009 Book Fair Exhibition Ashoknagar, 24 Pgs(N).
6. 2009 Charukala Parsad, Bongaon, 24 Pgs(N).



**Group Exhibition:**

1. 2012 All India Annual Painting Exhibition, Ajanta Art Gallery, Kolkata-700124.
2. 2011 Japan, Tokyo-CHUWA GALLERY, Tokyo-104-0061 Japan.
3. 2011 Birla Academy of Art and Culture.
4. 2011 Academy of Fine Arts, Kolkata.
5. 2011 Kala Mela Academy of Fine Arts, Kolkata.
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12. 2009 Charukala Parsad, Bongaon, 24 Pgs(N).
13. 2009 Book Fair Exhibition Ashoknagar, 24 Pgs(N).

Our effort is to present a good quality journal before the society as a whole and before the intellectual community in particular.

Thank you.

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



## EDITORIAL-1

We are recovering from the pandemic situation of COVID-19 that persisted for more than two years. All the social and economic activities are adversely affected due to the situation. The small business, healthcare and education system are mostly affected in India. Especially the education system has been totally disrupted. Now the situation in school, colleges and universities are back to their normal position. The mode of learning and teaching are returning back from online to the existing offline mode.

The economic impact of COVID-19 has been much discussed. Economists across the world equivocally admitted that the global economy had experienced one of the worst years in history and India had no exception. The external factors such as lockdown and behavioral changes of people and enterprises, driven by fear are the causes of slowdown in economic activities. So to nurse the economy back to its good health we should act immediately with utmost urgency. Confidence should be injected back in the entire ecosystem. People must feel confident about their lives and livelihood. Entrepreneurs must feel confident of reopening and making investments. Bankers must feel confident about providing capital. Multilateral organizations must feel confident enough to provide funding to India. Sovereign rating agencies must feel confident about India's ability to fulfill its financial obligations and restore economic growth.

A meaningful cash transfer can restore confidence. Money in the hands of people can provide an immediate sense of security and confidence. India is perhaps the only large democracy that has not provided direct cash assistance of a significant amount during the COVID-19 crisis. There seems to be misplaced sense of apprehension that providing large cash assistance may deter people from returning to the workforce when needed and starve industry of labour. There is also a dire need to restore confidence in the financial system which acts as the vital lubricant for the economy. COVID-19 assistance measures undertaken by the Reserve Bank of India (RBI) and the government such as interest rate reductions, but they have already failed since banks are not confident of lending. Reviving the health of banking sector is not merely about capital infusion or disinvestment of public sector banks. Allowing institutions such as the RBI, public sector banks, bankruptcy boards, securities and insurance regulators to function freely and professionally is the fundamental step to restoring confidence in the financial system, which is the cornerstone to restoring economic normalcy.

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



## EDITORIAL-2

Following the COVID-19 pandemic there is a paradigm shift in the mode of teaching-learning activities from the traditional offline to online mode of education. Though the present online method is more flexible and student centric, we the teachers feel that the method is not complete in totality to provide the ways for the all-round mental and physical development of a student. On looking at the teachers of how he is delivering a lecture, discussing and analyzing some critical issues, solving a difficult problem, his expression, posture, interaction with the students shed great impact on the mind of a student. Students learn how to tackle a difficult problem, face a tough situation and make proper planning for its solution. This is quite impossible in online mode, where a student only listens to the digitized voice of a teacher, but the teacher's mental and physical expression is absent to him. So, the students learn the techniques and methods and formulas to solve a problem, but the planning of execution is absent. They feel it difficult; we see fear in their eyes when an unknown problem is put to them.

Besides this, laboratory activities, project work, field visit and practical classes give the students the opportunity to perform hands on experiment, expose them to the practical aspects of design, adaptation to the unexpected situation. They learn to work in a team and it helps in overall cognitive and skill development of a student. In virtual mode, through animation, we can show them how a machine works, how people are working in a workshop, the sports and skill of a player; they learn these from mere observation; though a teacher from a distance may explain the facts, but not being physically involved, learning of the students cannot be complete. So, there is no parallel to offline mode of teaching.

At this moment, as the students are well acquainted with online mode of education and are equipped with mobile and internet network, we cannot take them out of this out right. A blending mode of education through some online and some offline classes, along with this practical classes and field work will surely bring them back from their virtual world. So, it is better, we should provide the students good lecture materials, good lessons, some home work through virtual mode which they can do at their convenient time, but effort should be there to bring them back to formal mode of education.

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



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### **EDITORIAL-3**

Hope all are well by the grace of God after Covid-19. We are not at all fit for our normal environment. We are not fully fit for our normal duties in the diverse field of our life. But during new normal, after Covid pandemic situation, we are trying to back right in our path. All the sphere of our work is going to be normal if we work properly and run the process scientifically in a managed way. So, in this situation we have to choose our right direction for our study, research and extension. In this volume of IJIRD, authors are trying to broadcast their ideas, views and research dimensions with a fruitful and managerial way. Thanks to all authors and well wishers of IJIRD family for a long journey to run the journal smoothly. Pray to God for a better tomorrow.

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



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## **Blockchain Technology Aiding Cryptocurrencies and The Inception of Central Bank Digital Currency**

**Abeera Mallick**

Student, 1<sup>st</sup> Year Economics Honours,

Maulana Azad College.

Email id: [delhi.77.21@gmail.com](mailto:delhi.77.21@gmail.com)

**Dr. Barin Kumar Roy**

Associate Professor of Economics,

Maulana Azad College.

### **Abstract**

*Technology improvements are making governments and financial institutions able to migrate from actual fiat money to a credit-based fiat paradigm in which holdings and operations are digitally recorded. It is also making cryptocurrency trading simple and reliable. Blockchain enables decentralisation. That is, everyone on the crypto platform has a say. But, central banks would not want that. Further, they would want a fiat currency to be exclusively issued and controlled by them. Digital currencies issued by central banks would minimise the dangers associated with utilising digital currencies in their current form. Cryptocurrencies are very volatile, with their value shifting all the time. This volatility may generate significant financial hardship in many people and jeopardise an economy's overall stability. CBDCs, backed by the government and supervised by the central bank, would provide a reliable means of exchange for homes, consumers, and enterprises.*

**Keywords:** financial transactions, Bitcoin, cryptocurrency, digital currency, blockchain, ledger, proof-of-work, double-spending, consensus, algorithms, dark-web, Central Bank Digital Currency (CBDC), cyber-security.

(Paper published on 1<sup>st</sup> June, 2022.)

### **Introduction**

There was a time when people lived without governments and in those days there was no currency or central system that coordinated financial transactions. When Bitcoin first evolved it undoubtedly littered with records of failed attempts. Initially most people were of the view that cryptocurrency and Bitcoins where doomed to fade away, just as previous attempts to create a digital currency had failed. It's obvious that those who failed to take advantage of the opportunity in blockchain and cryptocurrency eventually miss out on the chance to become key players in their respective industries. Governments and Financial Institutions all around the world enable projects in the crypto worlds to function.

One difficulty that all technology is the process of popularisation that is, how to educate the public about the new technology. The same is the case for blockchain. Blockchain technology is still young. But despite this it has shown the powerful benefits it can bring into our lives.



These include cross-border capability, early capital rising and improvements to securities. The applications of blockchain and cryptocurrency are challenging in the existing financial market. The attitude about how quickly to adopt new technology varies from country to country. With decentralised, immutable trustworthy and traceable features blockchain plus the government also has the potential to transform the society.

### **Literature Review**

A cryptocurrency is a digital or virtual currency that is secured by cryptography, which makes it nearly impossible to counterfeit or double-spend.

Blockchain allows Bitcoin and other cryptocurrencies to operate without the need for a central authority, by spreading its operations across a network of computers.

A simple analogy for understanding blockchain technology is a Google Doc. When we create a document and share it with a group of people, the document is distributed instead of copied or transferred. This creates a decentralized distribution chain that gives everyone access to the document at the same time. No one is locked out awaiting changes from another party, while all modifications to the doc are being recorded in real-time, making changes completely transparent. Of course, blockchain is more complicated than a Google Doc, but the analogy is apt.

A blockchain is a database that stores encrypted blocks of data then chains them together to form a chronological single-source-of-truth for the data. Blockchain has a nearly endless amount of applications across almost every industry. The ledger technology can be applied to track fraud in finance, security share patient medical records between the healthcare professionals and even act as a better way to track intellectual property in business and music rights for artists etc.

Digital assets are distributed instead of copied or transferred, creating an immutable record of an asset. This asset is decentralized, allowing full real-time access and transparency to the public. A transparent ledger of changes preserves integrity of the document, which creates trust in the asset.



Central Bank Digital Currency or CBDC is an electronic form of central bank money that citizens can use to make digital payment and store of value.

Cryptocurrencies don't have a central issuing or regulating authority, depending instead on a decentralized system to log transactions and produce new units. On the other hand, CBDC is a digital form of central bank money that is widely used by the public. They are based on a country's fiat currency's value.

### **Data and Methodology:**

Most of the data have been taken from authentic sources like the RBI website, newspapers like The Hindu, The Indian Express, The Times of India, The Wall Street Journal and The New York Times. Several e-books were also referred on Blockchain technology and cryptocurrency (which are mentioned in the References, at the end).

The methodology for implementing the policies of CBDC will be cost efficient as it does not involve cost of production by mining, distribution, printing and storage of cash and coins. Due to CBDC, India will move towards digital currency i.e. towards cashless country which will allow India to print less money (cash) and this will help to reduce the cost. No intermediaries are required in transaction of CBDC whereas middlemen are involved in fiat money. Use of solar energy will ease to cut down the cost of mining of digital currencies of CBDC by producing electricity in an environment friendly way. However, production of fiat money is not so eco-friendly. CBDCs also minimise the maintenance required for a complicated financial system, cut cross-border transaction costs, and give lower-cost choices to people who now utilise other money transfer methods. Emergence of CBDC may also lead to financial inclusion. It is a cheaper alternative compared to other online transactions. It could be used for cross-border payments subject to individual country wise design, compatibility, interoperability and legal permissibility. Payments are safe and secured and offer an unprecedented level of anonymity. If cryptocurrencies are stored in digital wallet then valuable assets are at hand. Hence, it is simple to transfer it to anyone without obtaining permission. The most important advantage of CBDC is that it is not volatile like cryptocurrency and is regulated as well as backed by the Central Bank. Therefore, commercial bank collapses are diminished.



"If you told me you owned all the bitcoin in the world and you offered it to me for \$25, I wouldn't take it. Whether it goes up or down in the next year or 5 or 10 years, I don't know. But the one thing I'm pretty sure of is that it doesn't produce anything." This was very famously said by the great business magnate, Warren Buffett.

### **Blockchain Technology**

A blockchain is a growing list of humongous records called blocks that are securely linked together using cryptography. It sometimes referred to as Distributed Ledger Technology (DLT), makes the history of any digital asset unalterable and transparent through the use of decentralization and cryptographic hashing. This technique was originally described in 1991 by a group of researchers and was intended to timestamp digital documents so that it's not possible to back date them or tamper with them. In 2009, when Satoshi Nakamoto adapted it, blockchains were used again to create the digital cryptocurrency called Bitcoin. The identification of Satoshi Nakamoto is still unknown. Cryptocurrencies are generated using mining. Mining cryptocurrency is a method of creating new currencies and simultaneously validating existing transactions. The process involves downloading software that contains a partial or full history of transactions that has occurred in this network. A blockchain acts as a distributed ledger that is completely open to anyone. Each block contains data, hash and hash of previous block. Once some data has been recorded inside a block, it becomes very difficult to change it. The data that is stored inside a block depends on the type of blockchain. It can be public blockchain or private blockchain or federated blockchain. The hash identifies a block and all of its contents are always unique. Changing something inside the block will lead to change in hash. The hash of the previous block creates a chain of blocks and it is this technique that makes a blockchain secure. A common belief has been that cryptocurrency is private and untraceable, thus leading many actors to use it for illicit purposes. This is changing and now specialised tech companies provide blockchain tracking services making crypto exchanges, law enforcement and banks more aware of what is happening with crypto funds and fiat-crypto exchanges. Blockchains also have something called the proof-of-work. This mechanism makes it very hard to meddle with the blocks because if one block is tampered then the proof-of-work for all the following blocks needs to be recalculated.



There are several uses of blockchain like in finance, smart contracts, cyber security, health records, Non-Fungible Tokens, voting and many more. Out of these, the most prevalent use of blockchain comes in case of cryptocurrencies. This technology is used to record transactions. When it comes to banks, it keeps records in multiple spreadsheets but for crypto, there is one spreadsheet which keeps record of all transactions and this is called a ledger. For example, the Bitcoin network and Ethereum network are both based on blockchain technology. By spreading its operations across a network of computers, blockchain allows Bitcoin and other cryptocurrencies to operate without the need for a central authority. The implementation of blockchain within Bitcoin made it the first digital currency to solve the double spending problem without the need of a trusted authority. Cryptographic trust and assurance technology applies a unique identifier or digital fingerprint to each transaction. Then consensus algorithms are applied which enforces the rules within a blockchain system. Once the participating parties set up rules for the blockchain, the consensus algorithm ensures that those rules are followed.

Cryptocurrencies are popular on the dark web because it provides a convenient method of obfuscating identities and transaction details. Criminals open online accounts with digital currency exchanges, which accept fiat currency from traditional bank accounts. Then they start a ‘cleansing’ process (mixing and layering) that is moving money into the cryptocurrency system by using mixer, tumblers and chain hopping (also called cross currency). Cryptocurrencies are not just used as a means for money laundering but also drug trafficking. The government is taking several steps, including hiring of technical experts to assist in intelligence collection and investigation, setting up of e-surveillance and monitoring systems, training field officers on cyber and forensic technologies and coordination with foreign drug law enforcement agencies. Narcotics Control Bureau and Central Board of Indirect Taxes and Customs have unearthed payment of approximately ₹2.2 crore through cryptocurrency in 11 cases linked to drug trafficking. Although cryptocurrencies are very secure, exchanges don't seem to be that secure. Most exchanges store the wallet data of users to figure their user ID correctly. This data is often stolen by hackers, giving them access to lots of accounts. After getting access, these hackers can efficiently transfer funds from those accounts.

Demonetisation led to an increase in preference for digital payments. There was an unintended boost to crypto investments, driving tech-savvy customers to the virtual asset. So,



RBI (Reserve Bank of India) having an apprehension, released a circular in 2017. A warning was given that virtual currencies are not a legal tender. In March, 2018 a draft scheme for banning virtual currencies was submitted by the Central Board of Direct Tax to the finance ministry and just after a month, RBI came out with a circular restraining banks and payment system providers from dealing with virtual currencies. India ranks second in terms of crypto investors (USA being the first one) and this gave a heavy blow to Indian crypto exchanges which resulted in 99% fall in trading volume. Several writ petitions were filed in the Supreme Court (SC) to bring back crypto in India and the ban was ultimately stricken down by the Supreme Court, declaring the RBI circular unconstitutional. The SC noted that in the absence of any legislative ban on the buying or selling of cryptocurrencies, the RBI cannot impose disproportionate restrictions on trading in these currencies. In 2022 Union Budget speech, it was announced, "Any income from transfer of any virtual digital asset shall be taxed at the rate of 30%." This move discouraged the newcomers of crypto. There are many traders and investors who are leaving for places with more friendly regulation countries like Dubai, El Salvador, USA, Thailand or Cayman Islands for investing in crypto. According to recent reports, the Dubai Multi Commodities Centre free zone has said 16 of the new company registrations recorded in quarter one of 2022 were of crypto and blockchain companies.

### **Central Bank Digital Currencies (CBDCs):**

Central Banks, faced with dwindling usage of paper currency sought to popularise a move to accept electronic form of currency. It wants to meet the public's need for digital currencies and manifested in the increasing use of private virtual currencies and thereby avoids the more damaging consequences of such private currencies. It also aims to examine the policy and legal framework for cryptocurrencies. Hence, finance minister Nirmala Sitharaman announced in her budget 2022 speech about the RBI launching its own digital rupee in financial year 2022-23. Central Bank Digital Currency is a legal tender that will be issued by the RBI. The idea of Central Bank Digital Currencies (CBDCs) is not a recent development. Some attribute the origins of CBDCs to Nobel laureate James Tobin, an American economist, who in 1980s suggested that Federal Reserve Banks in the United States could make available to the public a widely accessible 'medium with the convenience of deposits and the safety of currency.' It is only in the last decade, however, that the concept of digital currency has been widely discussed by central banks, economists & governments. CBDC is an electronic record or digital token of a country's official currency, which fulfils the basic



functions of a medium of exchange, unit of account, store of value and standard of deferred payment. CBDC ecosystems may be at similar risk for cyber-attacks as the current payment systems are exposed too. Further, in countries with lower financial literacy levels, the increase in digital payment related frauds may also spread to CBDCs. Ensuring high standards of cybersecurity and parallel efforts on financial literacy is therefore essential for any country dealing with CBDC.

### **Conclusion:**

It was very rightly said by Jack Ma, the co-founder of Alibaba, “Blockchain technology could change our world more than people imagine.” Thus, the burgeoning blockchain technology paved the way for the mass appealing cryptocurrency, which has even made the central banks scramble to develop one of their own pie. Since cryptocurrencies doesn’t have legality, in long term it poses risk to total economy. They have to be regulated on par with normal currencies and measures have to be taken accordingly. There is an estimated \$20 billion in Bitcoin to still enter the market. Blockchain innovation has been coming very fast but effectively applying blockchain technology to finance will require more experience or financial background.

One of the most pessimistic future crypto predictions is that it will be regulated out of existence. It’s not that far-fetched. There are uncertainties concerning cryptocurrency (Bitcoin) as a store of value. The biggest among these may simply be the fact that there are still issues surrounding all cryptocurrencies but the future will reveal itself as time goes by. We will have to be patient.

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## Primary Components in the Structure of Revolutionary Ideologies in British Indian Political Scenario

**Ahin Roychoudhury**

Ph.D. Researcher

Department of History,

Rabindra Bharati University

Email: [ahinroychoudhury@gmail.com](mailto:ahinroychoudhury@gmail.com)

### **Abstract**

*The first decade of the 20th century saw the rise of the revolutionary terrorism in Indian politics with active participation from extremists within the congress. The revolutionaries wanted quicker results and discounted the value of persuasion. The revolutionary terrorists aimed at overthrowing British rule from India. They were inspired by the Irish terrorists and Russian Nihilists and followed their method of assassinating corrupt and unpopular officials. They also engaged in dacoities to raise funds for the purchase of arms and ammunitions etc. popularly known as "Swadeshi Dacoities". The revolutionary terrorists were operating in Bengal, Bihar, United Provinces, Punjab, Maharashtra and parts of South India and even in foreign countries, such as- Burma, Singapore, Thailand etc. many secret societies of the terrorist youths also came into existence.*

**Key Words:** Hinduism, Nationalism, Swadeshi, Revolutionary movement & Socialism

(Paper published on 1<sup>st</sup> June, 2022.)

The armed rebellions against the British rulers were not organized before the beginning of the 20th century. The revolutionary philosophies and movement made its presence felt during the 1905 Partition of Bengal. Arguably, the initial steps to organize the revolutionaries were taken by Aurobindo Ghosh, his brother Barin Ghosh, Bhupendranath Datta etc. when they formed the Jugantar party in April 1906. Jugantar was created as an inner circle of the Anushilan Samiti which was already present in Bengal mainly as a revolutionary society in the guise of a fitness club. The Jugantar party leaders like Barin Ghosh and Bagha Jatin initiated making of explosives. The Alipore bomb case, following the Muzaffarpur killing tried several activists and many were sentenced deportation for life, while Khudiram Bose was hanged. Madan Lal Dhingra, a student in London, murdered Sir Curzon Wylie, a British M.P. on 1July 1909 in London. The Anushilan Samiti and Jugantar opened several branches throughout Bengal and other parts of India and recruited young men and women to participate in the revolutionary activities. Several murders and looting were done, with many revolutionaries being captured and



imprisoned. During the First World War, the revolutionaries planned to import arms and ammunitions from Germany and stage an armed revolution against the British. The Ghadar Party operated from abroad and cooperated with the revolutionaries in India. This party was instrumental in helping revolutionaries inside India catch hold of foreign arms. The ideologies and strategies of the revolutionary parties were not very straight worthy prominent due to mixing of different kind of revolutionary group. Always they worked to establish their militant nationalist ideology from the beginning of twentieth century; mainly Bal Gangadhar Tilak and Aurobindo Ghose were the chief constructor of militant nationalism towards the Indian freedom movement through the several revolutionary organizations. If we are reviewing Tilak's contribution, it's necessary to note that his active life is divided into two equal halves. The first half belongs to the nineteenth century, from 1880 to 1900. And the second half falls during the first two decades of the twentieth century, from 1900 to 1920. During the first half he was mainly concerned with the public life of Maharashtra. But in the second half he played his part as the foremost leader of nationalist India.<sup>1</sup> In Bengal, the beginning of revolutionary activities is traced to the Bhadralok class. Secret societies like the Anushilan Samity came to be established by Pramotha Mitra at Calcutta and by Pulin Das at Dacca. In 1905, Lord Curzon, the Viceroy and Governor-General(1899–1905), ordered the partition of the province of Bengal for improvements in administrative efficiency in that huge and populous region, where the Bengali Hindu intelligentsia exerted considerable influence on local and national politics. The partition created two provinces: Eastern Bengal & Assam, with its capital at Dhaka, and West Bengal, with its capital at Calcutta (which also served as the capital of British India). An ill-conceived and hastily implemented action, the partition outraged Bengalis. Not only had the government failed to consult Indian public opinion, but the action appeared to reflect the British resolve to divide and rule. Widespread agitation ensued in the streets and in the press, and the Congress advocated boycotting British products under the banner of swadeshi. During this period nationalist poet Rabindranath Tagore penned and composed a song (roughly translated into English as "The soil of Bengal, the water of Bengal be hallowed...") and himself led people to the streets singing the song and tying Rakhi on each other's wrists. The people did not cook any food (Arandhan) on that day. The Congress-led boycott of British goods was so successful that it unleashed anti-British forces to an extent unknown since the Sepoy Rebellion. A cycle of



violence and repression ensued in some parts of the country (see Alipore bomb case). The British tried to mitigate the situation by announcing a series of constitutional reforms in 1909 and by appointing a few moderates to the imperial and provincial councils. A Muslim deputation met with the Viceroy, Lord Minto (1905–10), seeking concessions from the impending constitutional reforms, including special considerations in government service and electorates. The All-India Muslim League was founded the same year to promote loyalty to the British and to advance Muslim political rights, which the British recognized by increasing the number of elective offices reserved for Muslims in the India Councils Act of 1909. The Muslim League insisted on its separateness from the Hindu-dominated Congress, as the voice of a "nation within a nation."

There were other societies as Swadesh Bandana and Sadhana Samaj. Jugantar, a weekly was started by Barin Ghosh and Bhupendranath Dutta in 1908. The Bengal revolutionary namely Khudiram Bose and Prafulla Chaki threw a bomb on the carriage of Kingsford, the unpopular judge of Muzzafarpur in 1908. In Maharashtra, the first political murder of a European was committed at Poona by the Chapekar brothers, Damodar and Balkrishna. In 1904, V. D. Savarkar organized the Mitra Mala that later merged into the secret society Abhinav Bharat formed on the lines of Mazzini's young Italy. In Punjab, the revolutionary movement rose under Lala Lajpat Rai and Ajit Singh. A bomb was thrown at an English official by Rash Behari Bose and Sachindranath Sanyal. The Ghadar Movement was founded in the United States by Sohan Singh Bhakna and recognized by Hardayal. Some of its prominent members were Rahamat Ali Saha, Bhai Premananda, Mohammed Barkatulla, Ram Chandra and so many. It aimed and brought out an armed revolution in India and brought out a weekly called Ghadar. Under the leadership of Lala Hardayal, the Ghadar Party operated from Germany and set up an Indian independence committee at Berlin. The committee planned to mobilize Indian settlers abroad to make all efforts, send volunteers to India to incite rebellion among the troops, to send explosive to Indian revolutionaries and even organize an invasion of British India to liberate the country. In reaction to the revolutionary activities the government unleashed repressive measures against the revolutionaries. Many legislations were passed to curb the activities of the revolutionaries. At the 23<sup>rd</sup> session of the Congress of Surat, the moderates and extremists came into conflict. The split was caused due to the differences of opinion on the resolution of Swadeshi and Boycott passed



by the Calcutta Session of the Congress in 1906 under Dadabhai Naoroji. In between two World Wars there were four revolutionary groups in Bengal,- 1) Anushilan Samity, centralized in East Bengal specially at Dhaka; 2) Jugantar Group, centralized in West Bengal specially at Calcutta; 3) B.V. Group, directed from Madinipur in West Bengal and 4) Revolutionary Group that was built by the agitated members from the all organizations, under the leadership of Satkari Bandopadhyay, they built up their “Rebellious Group” at 24-parganas and Calcutta in West Bengal, primarily this was made from Calcutta Congress.<sup>2</sup> Anushilan and Jugantar each were organized on different lines, reflecting their divergence. Anushilan Samiti was centrally organized, with a rigid discipline and vertical hierarchy. Jugantar, was more loosely organized as an alliance of groups, acting under local leaders that occasionally coordinated their actions together.

In India two Home Rule Leagues were formed in 1916, one by Tilak at Poona in July 1916 and the other by Any Besant in September 1916 based on the Irish Home Rule League. Tilak's league was to work in Maharastra while Basant's league was to work on all India basis. Both the leagues were to work in unison and aimed at the achievement of self government for India. The league's objective was to educate the people and provide the Congress demand for self government more strongly. The Home Rule League functioned independently from the Congress. They aimed to pressurize the British public for granting self government to India. The activities of the league consisted of holding public meetings, organizing discussions, distribution of pamphlets, posters etc. The Lucknow Session of the Congress held in 1916 under the presidentship of A.C. Majumder is known for two things. Firstly it marked the reunion of the moderates and the extremists after the Surat split of 1907. Tilak and Ani Besant dominated the proceedings of the session. The Lucknow session is also memorable because the congress and the Muslim League came together and signed the Lucknow Pact in 1916. This pact accepted a united scheme of constitutional reforms. Revolutionary terrorism was a byproduct of the process of the growth of militant nationalism in India. It acquired a more activist form as a fall out of the Swadeshi and Boycott movement. The first revolutionary group was organized in 1902 in Midnapore under Janendranath Basu and the Anushilan Samity founded by Promothanath Mitter and Barindra Kumar Ghosh in Calcutta. The methods adopted by the revolutionaries were



propagation of revolutionary ideas through the organization of secret societies in India and abroad, publication of pamphlets, books and journals, organization of military conspiracies, assassination of oppressive and unpopular officials etc. In 1908 Prafulla Chaki and Khudiram Bose threw a bomb at a carriage supposed to be carrying judge Kingsford in Muzaffarnagar. Two ladies instead got killed for this outrage. Khudiram Bose was the first revolutionary to be hanged. In 1908 Barrah Dacoity was organized by Dacca Anushilan Samity under Pulin Das. Rash Behari Bose and Sachindranath Sanyal staged a spectacular bomb attack on Viceroy Hardinge in 1912. In Maharashtra, the Chapekar brothers, Damodar and Balkrishna murdered the plague commissioner of Poona, Rand and one Lt. Ayerst in 1897. Savarkar and his brother organized Mitra Mela, a secret society in 1899 which merged with Abhinav Bharat in 1904. Madan Lal Dhingra in 1909 assassinated Curzon Wyllie.

During the First World War, the Berlin Committee for Indian independence was established in 1915 by Virendranath Chattopadhyay, Lala Hardayal and others. Bagha Jatin organized revolutionary activity in Bengal and died in an encounter at Balasore. Revolutionary terrorism was again revived after the sudden withdrawal of non-co-operation movement. The revolutionaries were influenced by Russian Revolution (1917), journals such as Atmasakti, Sarathi, Bijoli, novels and books such as Bandi Jivan by Sachindranath Sanyal and *Pather Dabi* by Sarat Chandra Chatterjee. In 1924 Hindusthan republican Army was founded at Kanpur by Sachin Sanyal and Jogesh Chandra Chaterjee with an aim to organize an armed revolution to overthrow the colonial government. The most important action of HRA was the Kakori robbery in which official railway case was looted on 9<sup>th</sup> August 1925.<sup>3</sup> The participants Bismil, Asfaqullah, Roshan Singh and Rajendra Lahiri were hanged. In 1928 Hindusthan Socialist Republican Association was organized in Delhi under the leadership of Chandra Sekhar Azad. In December 1928 Bhagat Singh, Azad and Rajguru shot dead Saunders, the police official responsible for the lathi charge on Lala Lajpat Rai in Lahore. Bhagat Singh would not spare even Lajpat Rai, when, during the last years of his life, Lajpat Rai turned to communal politics. He then launched a political-ideological campaign against him. Because Lajpat Rai was a respected leader, he would not publicly use harsh words of criticism against him. And so he printed as a pamphlet Robert Browning's famous poem, 'The Lost Leader,' in which Browning criticizes



Wordsworth for turning against liberty. The poem begins with the line ‘Just for a handful of silver he left us.’ A few more of the poem’s lines were: ‘we shall march prospering, — not thro’ his presence; Songs may inspirit us, — not from his lyre,’ and ‘Blot out his name, then, record one lost soul more.’ There was not one word of criticism of Lajpat Rai. Only, on the front cover, he printed Lajpat Rai’s photograph! Significantly, two of the six rules of the Naujawan Bharat Sabha, drafted by Bhagat Singh, were: ‘To have nothing to do with communal bodies or other parties which disseminate communal ideas’ and ‘to create the spirit of general toleration among the public considering religion as a matter of personal belief of man and to act upon the same fully.’ Bhagat Singh also saw the importance of freeing the people from the mental bondage of religion and superstition. A few weeks before his death, he wrote the article ‘Why I am an Atheist’ in which he subjected religion and religious philosophy to a scathing critique. He traced his own path to atheism, how he first gave up belief ‘in the mythology and doctrines of Sikhism or any other religion,’ and in the end lost faith in the existence of God. To be a revolutionary, he said, one required immense moral strength, but one also required ‘criticism and independent thinking.’ In the struggle for self-emancipation, humanity had to struggle against ‘the narrow conception of religion’ as also against the belief in God. ‘Any man who stands for progress,’ he wrote, ‘has to criticize, disbelieve and challenge every item of the old faith. Item by item he has to reason out every nook and corner of the prevailing faith.’ Proclaiming his own belief in atheism and materialism, he asserted that he was ‘trying to stand like a man with an erect head to the last; even on the gallows.’<sup>4</sup> They dreamed an independent and undivided India through an armed revolution. The Marxist Revolution in Russia added a new dimension to what had inspired the Indian revolutionaries so far—the French and the American revolutions of the late eighteenth century and the lives of Garibaldi, Mazinni and Bismarck. Now, D’Valera of Ireland and Kemal Ataturk of Turkey both fighting against the British had become, besides Lenin, the avowed enemy of all types of colonialism, their new source of inspiration. The great World War ended in November, 1918. The Govt. had as was natural during the war, armed itself with a defence of India Act to put anyone to prison, without trial, on mere suspicion of any act prejudicial to the security of the state. It irked nationalist opinion but they suffered it during the war. The Govt. was anxious to arm itself with more powers to curb terrorist activities, especially in the Punjab, Delhi and Bengal.<sup>5</sup>



Some of the militant nationalist revolutionary worked for the Congress Party and politics to make a strategy to re-built or organize a militant revolutionary group within the Congress. One of them Kalipada Bagchi an ex-detenu son of Gopal Das Bagchi of Meghna, P.S. Pangsha, Dist. Rangpur and Rangpur town. He was present in the meetings held in the non-co-operation mess on 13.5.1921 in which they settled to adopt non-co-operation. He was working for the Congress from the very beginning of the non-co-operation movement in the district from behind. He was not in favor of Mr. Gandhi's programme but has adopted it as a cloak for re-organizing his revolutionary party in North Bengal. Since the arrest of Biren Babu and departure of Kshitish Bagchi for Ahmedabad, he was actually directing the town Congress work. But he has not enrolled himself as any of the office bearers nor as a Santi Sena, although he had organized the Santi Senas by indenting men from Madaripur. He attended the Bengal Provincial Congress Committee meeting held at Bogra on the 18<sup>th</sup>.<sup>6</sup> In 1921 Surya Sen, Nirmal Sen and Ambika Chakrabarty organized a Assam-Bengal railway labour organization to protest against British recruitment policy and low pay scale. It was against the congress politics. At that time congress leader Jatindra Mohan Sengupta gave his support to Surya Sen activity. But another congress leader Charu Bikash Dutta wished that all revolutionary gave up their militancy and join main stream congress politics but Surya sen refused it and he absconded himself to avoid arrest.<sup>7</sup> At the middle of 1926 The Jugantar Party was content to make preparations for a big event, but its Chittagong branch under the leadership of Surya Sen who was then absconding, favoured the New Violence Party. This was the most active group and it claimed connections with terrorist cells in the United Province, Punjab, Bihar, Orissa and with Assam. The Anushilan Party had lost many adherents when they joined the New Violence Party and the main bulk now became more interested in Communist affairs and methods which had been introduced by Gopen Chakravarty, an emissary of M.N. Roy. The programme of all branches was the collection of arms, bombs and other materials and intensive recruitment. There were indications that arms were being smuggled into the country partly via Burma where a branch group existed. Indeed in 1926 Sudhangshu Chaudhri was sentenced to imprisonment under the Arms Act and section 120-B, I.P.C., for having smuggled a revolver from Burma into Calcutta to use north-east frontier. Surya Sen was arrested in October 1926 and the leadership of the Chittagong group passed to



Bijan Kumar Banerji, the Bengal leader of the Hindusthan Republican Association who infused new life into the party. It seems that the leaders of the Jugantar and the Anushilan parties attempted to form a coalition about this time but in these circumstances the scheme was short lived. Other raids by the police in August and September 1927 removed bomb making materials from the possession of members and resulted in some convictions. By July a new leader had appeared who claimed to have established touch with revolutionaries in Assam and United Provinces. He was also in touch with Indra Chandra Narang, a Punjabi student in Calcutta and Bengali members of the Hindusthan Republican Association in Calcutta. This man was making rapid strides towards establishing his leadership when he was arrested in Deoghar in possession of two Mauser pistols and cartridges. He gave his name as Birendra Nath Bhattacharji of Kalagaria, Dacca. Amongst the papers seized was a notebook containing in cipher, group by group, names and address with their code introductions and passwords to 68 members of the revolutionary party in Bengal, Assam, Bihar, Orissa, the United Provinces and the Punjab.<sup>8</sup>

Revolutionaries also involved their ideology to serve the state society and try to built up a revolutionary nationalist mind through the teaching of the marginal people. It's possible because the wide mentality of the revolutionaries and they came from different society also, they felt the need of the sociological and educational development among the poor and marginal people to understand the British policy. The name of Babu Hemanta Kumar Sarkar son of late Madan Mohan Sarkar of Krishnanagar, Nadia may be included in the list of suspect. He is rabidly anti-British and a pro-Bolshevik (vide no. 116 Bengal who's who). He is living here at Krishnanagar, tendering resignation of the appointment under H.H. the Maharaja of Dewas (Junior) Central India. He is now anxious to spread Bolshevism all over Bengal and gave out in "Jagaran" dated 11.6.1928 (weekly news paper) that he would join the Communist Party to obtain Swaraj earlier. The name of Ajit Kumar Ganguly alias Patol of Meherpur an important worker of the Meherpur Congress Committee, may also be included in the list. His name was unearthed in April 1927 when we wrote several letters to an active Congress worker Babu Mayatosh Mukerji of 2A Banka Roy Street, Calcutta. From the statement of an agent dated 12.6.1928 which was forwarded to you, under this office no.932 on 14.6.1928. It is learnt that Ajit alias Patol is in



close touch with the workers of the Hooghly Bidya-Mandir, Faridpur, Calcutta, Jadabpur B.T. School, 24 Parganas, Chittagong, Khulna and other places.<sup>9</sup>

Jagat Chandra Bhattacharjee, S/o Sarat Chandra Bhattacharjee is an active Congress worker and a man of terrorist party. He was closely intact with Satya Dutt, Mohini Singh, Atul Govinda dev and others who have got anti-British feelings. He has been working at Nohalipara P.S.- Badarganj among the Santhals. He has started a night school there and has gained the confidence of the Santhals – as regards the other man he has been here by the Deshabandhu Palli Samity of Calcutta to work in this district under Bejoy Kumar Rai Chaudhuri of Tulshighat P.S.- Gaibanda. He has been working at Badarganj side among the Santhals, has started night schools according to the suggestion of the Mr. C.R. Das.<sup>10</sup> He was in close touch with many Congress men and realizes subscription from the public in order to maintain the schools and also to distribute prizes among the boys for the encouragement. Entertains revolutionary ideas.<sup>11</sup> Ex-state prisoner Purna Chandra Das of Isibpur, Faridpur who reached the highest rung of notoriety in respect of revolutionary crimes is reported by different sources corroborating one another to have been actively reorganizing his party since his release on. Purna Das is connected with and is canvassing for the “Servant”- a newspaper which is going to be shortly published under the editorship of Shyam Sundar Chakrabarti of Bharenga, Pabna.<sup>12</sup> This Shyam Sundar, as we know from his recent public speeches is still a staunch supporter of the extremist party and is assisted in the matter of starting this paper by other unrepentant revolutionist such as, Girindra Banerjee of the Rodda’s case, Kiran Mukherji, Manmohan Bhattacharji and others.<sup>13</sup> Purna Das started a mango business in the New Market managed by several ex-detenus of his party and has thereby kept them together under his control with the idea of maintaining their revolutionary spirit. He has made the Calcutta and Madaripur the chief centers of his activity having undertaken the change of Calcutta himself and placed one Pratap Chandra Guha Ray of Datta Kendua at the helm of the Madaripur organization. A “Sevasram” has been started at Bajitpur by one Binode Das, a satellite of Purna Das with the ostensible object of training boys in respect of religion and morality but actually with the intension of recruiting boys for the revolutionary camp.<sup>14</sup> Purna Das is reporting to have been preaching that the distance of a revolutionary party is a necessity to extort anything favorable to the real progress of the country from an align Government and that



the partition of Bengal would not have been annulled of the Reform Scheme introduced but for the activities of the revolutionists.<sup>15</sup> It was an established fact that Moti Lal Roy of Chandernagore was a leading member of the Revolutionary Party in Bengal. He and his party at Chandernagore were carrying on their revolutionary activities and organization through various institutions both at Chandernagore in a French territory and in different places in Bengal and outside Bengal in British territory. These institutions were collectively known as the Prabartak Sangha. In order to spread a network of organization throughout the country and with a view to carried on their propaganda under the cloak of philanthropic works, Moti Roy with the help of the members of his party had started many educational and business institutions and centers.<sup>16</sup>

Freedom struggle through revolutionary movement in Assam has a unique character of its own. The people of Assam made remarkable contributions at every stage of the freedom movement since 1920 to 1947. The visit of Mahatma Gandhi to the State in 1921 gave fillip to the freedom movement which had already gathered momentum in both valleys of Assam. Kanak Lata Barua, a girl of fifteen years became the first martyr of 1942 revolution. Others who lost their lives for the freedom of the country include – Pushpalata Das, Satis Chandra Kakati, Navadwip Ranjan Patgiri, Pabindra Nath Sarma and many others. Some of the notable revolutionary as well as freedom fighters and some names are unknown for us. I try to cultivate those people who had done remarkable activity to earn freedom during the process of revolutionary movement. Latter some revolutionary group of leaders was to incorporate the ideology of socialism their program. Many among them turned Marxist and its leaders got moving according to a well led out plan. In the 1920s most of the revolutionaries took recourse to a new strategy. They joined the Congress, many among them finding breaths in executive committee of the Bengal Provincial Congress as well as the All India Congress Committee. From the beginning of 1929 the revolutionaries once again started their activities in a well planed order in different part of India through the link of North-Eastern provincial states. This very satisfactory state of affairs continued in 1936 as it evident from the list of crimes committed during the year. For the first time since 1920 terrorists committed no major outrages during the year, although Himangshu Bhaumik when surrounded fired at the police party but was himself shot in the legs and arrested at Feni, district Noakhali. This great improvement is to a large extend due to the change of the public attitude to terrorism.



The man in the street is always activated by a natural desire to back the winning horse and the principal has not been belied in the case of the Bengal public and terrorism. The year 1936, however, clearly shows that the spread of Communist ideas is an important factor in the future policy of terrorists. The infusion of communistic doctrines into the terrorist ranks had been noticeable since the early days of the Hindusthan Socialist Republican Army, the very name of which shows that Bhagat Singh and his associates had been tainted with these principles. Most of the detainees in detention camps in recent years have been intensively studying communism and socialism and have been impressed by the value of an armed mass revolution as a means to obtaining independence. It must not be understood that terrorists have embraced the Communist doctrine as a whole, for the very creed is aimed at the elimination of their own particular class, the bhadralok. They do, however see in Communist principles and specially in those principles which relate to action, a great resemblance to their own, and they are unduly engaged by the hope that through Communism they will approach nearer to a mass rising than they ever did by their old terrorist methods. On the other hand there is no reason to believe that the Communist Party accepts or will ever accept the bhadralok terrorist at his face value but there exists in communism the obvious basis for the fusion of both schools of revolutionary idealism.

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<sup>3</sup>W.B. State Archives, I.B. File No.-345/1925.

<sup>4</sup>Bipan Chandra, *India's Struggle for Independence 1857-1947*. pp.244-249.

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<sup>10</sup>Ibid.

<sup>11</sup>Ibid.

<sup>12</sup>W.B. State Archives, I.B. File No.-189/1920.

<sup>13</sup>Ibid.

<sup>14</sup>Ibid.

<sup>15</sup>Ibid.

<sup>16</sup>W.B. State Archives, I.B. File No.-335/1922.



## An Assessment of Apple as a Major Horticultural Crop in Himachal Pradesh

**Dr. Anupriya Chatterjee**

Assistant Professor

Dept. of Geography

Kishore Bharati Bhagini Nivedita College (Co-Ed)

Email: [geopriya@yahoo.com](mailto:geopriya@yahoo.com)

### **Abstract**

*In Himachal Pradesh, there has been a boom in production of horticultural crops such as fresh fruits, mushrooms, floriculture, etc., because the state is endowed with well suited temperature, rainfall, soil and other parameters of advantageous agro-climatic condition. In spite of many fruits, apple is considered as the most important and major horticultural crop of Himachal Pradesh. Apple farming is the fastest growing commercial crop of the state and is being grown in 9 districts out of 12 districts. But presently, apple farming is bedevilled by sharp fluctuations in production due to frequent attacks of several diseases and various other problems that could be attributed to weak extension efforts at educating the farmers and lack of timely input supplies of plant protection material. This paper is an assessment of the area under apple, growth pattern and production of apple, problems faced in cultivation and governmental measures to enhance the productivity of apple as a major crop of Himachal Pradesh.*

**Keywords:** Apple, farming, crop, fruit etc.

(Paper published on 1<sup>st</sup> June, 2022)

### **Introduction**

Agriculture is the backbone of the economy of Himachal Pradesh. According to the agro-climatic zones, the state is divided into (i) Foot Hills upto an elevation of 1000 metres above mean sealevel (nisi) which are fit for intensive farming, (ii) Low Hills suitable for citrus, stone fruits, vegetables and other horticultural crops, (iii) High Hills good for apple cultivation and raisingof forests and (iv)Alpine zone - above 3500 metres (ms1). The development of horticultural crops not only leads to socio-economic growth but also provides higher income and employment per unit of land. The marginal lands too areutilised for cultivation of horticultural crops, which also helps in checking the soil erosion. Horticulture encompasses the cultivation of (a) fresh fruits such as apple, mango, citrus fruits,stone fruits, (b) nuts and dry fruits, (c) vegetables and potatoes and (d) new emerging cropenterprises like



floriculture, mushroom growing, hops cultivation and bee-keeping. This paper focuses on apple as a major horticultural crop and attempts to examine its growth trends in area under apple and its production. The developmental policy framework with special reference to infrastructure and subsidies is also reviewed.

### **Methodology & Data Source**

The entire analysis is based on statistical computation from secondary data source. The data are collected from Department of Horticulture, Department of Planning, Directorate of Economics and Statistics, Himachal Pradesh and various studies conducted by the Agro-Economic Research Centre of Himachal Pradesh University, Shimla.

## **1. STANDARD PREREQUISITES FOR APPLE PRODUCTION**

### **1.1. Agro-climatic requirements**

**Relief:** Apple can be grown at altitudes 1,500-2,700 m. above mean sea level in the Himalayan range.

**Climate:** The regions of Kullu which experiences 1,000-1,500 hours of chilling (the no. of hours during which temperature remains at or below  $7^{\circ}\text{C}$  during the winter season) is best suited for apple cultivation. The temperature during the growing season is around  $21\text{-}24^{\circ}\text{C}$ . For optimum growth and fruiting, apple trees need 100-125 cm. of annual rainfall, evenly distributed during the growing season. Excessive rains and fog near the fruit maturity period result in poor fruit quality with improper colour development and fungal spots on its surface. Areas exposed to high velocity of winds are not desirable for apple cultivation.

**Soil:** Loamy soils, rich in organic matter with pH 5.5 to 6.5, proper drainage and aeration are suitable for cultivation.

### **1.2. Varieties of Apple Cultivated**

Important varieties cultivated in different states of India are given below:

Category	Varieties
Clonal rootstocks	M 9, M 26, M7, MM 106, MM 11
Scab resistant	Prima, Priscilla, Sir Prize, Jonafree, Florina, Macfree, Nova Easy Grow, Coop 12, Coop 13 (Redfree), Nova Mac, Liberty, Freedom, Firdous, Shireen



Hybrids	Lal Ambri (Red Delicious x Ambri), Sunehari (Ambri x Golden Delicious), Chaubattia Princess, Chaubattia Anupam (Early Shanburry x Red Delicious), Ambred (Red Delicious x Ambri), Ambrich (Richared x Ambri), Ambroyal (Starking Delicious x Ambri)
Low Chilling	Michal, Schlotmit, Anna, Tamma, Vered, Neomi, Tropical Beauty, Parlin's Beauty
Pollinizing	Tydemar's Early, Red Gold, Golden Delicious, Mc Intosh, Lord Lambourne, Winter Banana, Granny Smith, Starkspur Golden, Golden Spur

### 1.3. Planting season

Planting is usually done in the month of January and February.

### 1.4. Spacing

The average number of plants in an area of one hectare can range between 200 to 1250. Four different categories of planting density are followed viz. low (less than 250 plants/ha.), moderate (250-500 plants/ha.), high (500-1250 plants/ha.) and ultra-high density (more than 1250 plants /ha.). The combination of rootstock and scion variety determines the plant spacing and planting density/unit area.

### 1.5. Planting Method

Square or hexagonal system of planting is followed in the valleys whereas contour method is usually followed on the slopes. Plantation of pollinator species in between the main species is essential for proper fruit setting. For establishment of an orchard having Royal Delicious variety, plantation of Red Delicious and Golden Delicious as pollinators is recommended by the Horticulture Department.

### 1.6. Nutrition

Farmyard manure @ 10 kg./ year is applied along with other fertilizers. The ratio of N, P and K which is applied in an orchard of optimal fertility is 70:35:70 g./year (age of the tree). After 10 years of age, the dose is stabilized at 700:350:700 g. of N, P and K /year. The standard fertilizer dose of N, P and K in an “off” year (when the crop load is low) is 500 g., 250g. and 400 g. respectively. On some trees deficiency of zinc, boron, manganese and



calcium may be observed which is corrected with the application of appropriate chemicals through foliage spray.

### **1.7. Irrigation**

The water requirement of apple is 114 cm. per annum which can be scheduled in 15-20 irrigations. In summer, irrigation is provided at an interval of 7-10 days while in winter it is given at an interval of 3-4 weeks. At least 8 irrigations are to be provided during critical period (April-August) i.e. main requirement after fruit set.

### **1.8. Training & pruning**

Timely pruning and training operation is essential for proper growth and good productivity. The plants are trained according to growth habit and vigour of the rootstocks. The standard trees are trained on modified central leader system so that plants receive proper light. This improves fruit colour and also minimises the effect of heavy snowfall and hail. Spindle bush system is suitable for high density planting under mid hill conditions.

Pruning is essential to maintain a proper balance between vegetative growths and spur development. Proper pruning of weak and undesirable branches/twigs is necessary after six years of plantation.

### **1.9. Intercultural Operations**

Application of glyphosate @ 800 ml./ha. or Gammaxone /Paraquat (0.5% ) as post emergence herbicide suppresses weed growth for 4-5 months.

### **2.10. Mulching**

Mulching with hay or black alkathene is found to be effective in controlling the weeds in cool climates and also in conserving moisture. Use of dry grass or oak leaves has also been found to be effective in conserving soil moisture.

### **2.11. Inter-cropping**

Green manuring crops viz. sunflower and bean may be cultivated in the early years of plantation in order to improve soil texture and nutrient status of soil.

### **2.12. Growth regulators**



Use of growth hormones is essential for good flowering and proper colouration in fruits. Heavy bearing in apple usually results in small-sized, poor quality fruits and sets in alternate bearing cycle. Fruit thinning is essential in pollinating varieties for regulating adequate cross-pollination.

### **2.13. Plant Protection Measures**

The **insect pests** mostly observed are San Jose scale (*Quadrastriotusperniciosus*), white scale (*Pseudoulacaspis* sp.), wooly apple aphid (*Eriosomalanigerum*), blossom thrips (*Thripsrhopalantennalis*) etc. Planting of resistant rootstocks, suitable intercultural operations and spraying with chloropyriphos, fenitrothion, carbaryl etc. have been found to be effective in controlling the pests.

The main **diseases** reported are collar rot (*Phytophthora cactorum*), apple scab (*Venturia inaequalis*), sclerotius blight (*Sclerotium rolfsii*), crown gall (*Agrobacterium tumefaciens*), cankers, die-back diseases etc. Plants resistant to the diseases should be used for cultivation.

In apple, there are three distinct **fruit drops**, i) early drop resulting from un-pollinated or unfertilized blossoms, ii) June drop (due to moisture stress and fruit competition) and iii) Pre-harvest drop.

### **2.14. Harvesting and Yield**

The orchard start bearing from eighth year and the economic life of an apple tree exceeds 30 years. From eighth to seventeenth year, productivity goes on increasing and thereafter remains constant up to 30 years. The level of productivity varies from elevation to elevation. Production stage extends up to even forty years depending upon agro-climatic condition. Apple being a climacteric fruit, the maturity period does not coincide with ripening. The fruits are usually harvested before they are fully ripe. The average yield of different apple varieties in the state of Himachal Pradesh is around 11-13 tonnes/ha.

## **2. POST HARVEST MANAGEMENT**

### **3.1. Pre-cooling**

The fruits are placed in a cool and ventilated place to remove field heat before packing. Fruit surface must be free from moisture before grading, wrapping or packing in cartons.



### **3.2. Grading**

Grading of apples is done according to fruit size and fruit appearance or quality. On the basis of fruit size, apples are graded manually in 6 grades. On the basis of fruit colour, shape, quality and appearance, apple fruits can be graded in three or more quality grades. These grades are designated as AAA, AA and A; A, B, C; or extra fancy, fancy class I and fancy class II.

### **3.3. Storage**

Apples have a long storage life compared to other fruits and can be stored for a period of 4-8 months after harvesting. The fruits can be kept in cold storage at a temperature of about – 1.10 to 00 C and 85-90% relative humidity.

### **3.4. Packing**

Apples are usually packed in wooden boxes having the capacity to accommodate about 10 or 20 kg. fruits. Corrugated fibre board cartons are also used for packing.

### **3.5. Transportation**

Road transport by trucks is the most popular mode of transport due to easy approach from orchards to the market.

### **3.6. Sorting and gradation of apple**

The state has taken up a number of measures for augmenting the infrastructural facilities for grading, packing, transportation, storage, processing, etc. The apples are sorted out into seven grades, i.e., (i) super large (87 mm), (ii) extra-large (81 mm), (iii) large (75 mm), (iv) medium (69 mm), (v) small (63 mm), (vi) extra small (57 mm), and (vii) pitoo (less than 51 mm). The last grade is mixed with C grade apples and sold as culls for processing. Broadly, the apples are graded into A and B grades meant for table purposes and the C grade is considered fit for processing.

## **3. AREA, PRODUCTION AND PRODUCTIVITY OF APPLE IN THE STATE OF HIMACHAL PRADESH OVER THE YEARS**

Himachal Pradesh is the 2nd largest apple producing State in India and is famous as “Apple State of India”. Apple constitutes almost 86 percent of the total production and 47 percent of



land under apple production. The apple fruit is grown mainly in the districts of Shimla, Kinnaur, Mandi, Chamba, Lahaul & Spiti and some parts of Sirmour. Above 2 lakh families are engaged in horticultural activity of apple cultivation out of which about 90 percent are small and marginal according to latest National Horticulture Board of India. Apple cultivation is the most important economic activity of the state and is being grown in 9 districts out of 12 districts. The total area under apple production has increased by nearly 67.09 percent from the year 1992-93 to 2018-19. As per the average annual compound growth rate, it grew 2.16 percent per annum. Apple production has taken new pace and has increased by about 102.67 percent also during the above mentioned period.

**Table 1: Compound Annual Growth Rate of Area, Production and Productivity of apple crop in Himachal Pradesh.**

PERIOD	% OF AREA IN 000' HA	% OF PRODUCTION IN 000'MT	% OF YIELD IN MT / HA
1992-93 TO 2002-03	3.38	-5.03	-8.11
2002-03 TO 2012-13	1.14	4.31	3.17
2012-13 TO 2018-19	1.26	18.7	17.4
1992-93 TO 2018-19	2.02	3.75	1.68

Source: Directorate of Horticulture, Government of Himachal Pradesh Indian Horticulture Database 1998, 2012, 2014, 2016, 2017, 2019

The Compound Annual Growth Rate of apple crop in Himachal Pradesh is calculated on the Area, Production and Productivity during the years of 1992-93 to 2002-03, 2002-03 to 2012-13, 2012-13 to 2018-19 and 1992-93 to 2018-19. The average of annual growth rate of apple production was found -5.03 percent, 4.31 percent, 18.7 percent and 3.75 percent during these decadal years respectively. During the first decade a negative annual growth rate of production is observed , while during 2012-13 to 2018-19 there was highest average annual growth was 18.7 percent because during 2010-11 highest production was recorded 2.5 times more than average growth. The area under apple cultivation was found 3.38 percent, 1.14 percent, 1.26 percent and 2.02 percent during the same periods. The yield of apple crop as per annual average growth rate was 1.68 percent during 1991-92 to 2016-17. Thus it proves that the area and production of apple fruit crop is increased and shows positive relation during the same periods.



#### 4. RELATIONSHIP BETWEEN AREA, PRODUCTION AND PRODUCTIVITY OF APPLE

The area, production and productivity trends and contribution of apple fruit in Himachal Pradesh is statistically investigated Karl Person's Coefficient of Correlation was computed for Area, Production with Productivity figures and finding are presented in the table below:

**Table 2: Karl Pearson's Correlations**

		AREA	PRODUCTION	PRODUCTIVITY
AREA	PEARSON CORRELATION	1	0.637	0.425
	SIG. (2 TAILED)		0.000	0.029
	N	26	26	26
PRODUCTION	PEARSON CORRELATION	0.634**	1	0.922**
	SIG. (2 TAILED)	.000		0.000
	N	26	26	26
PRODUCTIVITY	PEARSON CORRELATION	0.427*	0.925	1
	SIG. (2 TAILED)	0.029	0.000	
	N	26	26	26

Source: Data compiled and calculated from dataset of Statistical Abstract of Himachal Pradesh and Directorate of Horticulture, Government of Himachal Pradesh Indian Horticulture Database of 1998, 2012, 2014, 2016, 2017 and 2019.

\*\*. Correlation is significant at the 0.01 level (2-tailed)

\*. Correlation is significant at the 0.05 level (2-tailed)

1. Correlation coefficient between Area under Apple crop and Productivity is 0.425 is significant at (p-value <.01), which indicates that as the Area increases Productivity also increases proportionately and vice versa.
2. Correlation coefficient between Quantity Produced of Apple crop and Productivity is 0.922 is highly significant at (p-value <.05), which indicates that as the Quantity Produced increases; Productivity also increases and vice versa.
3. Correlation coefficient between Quantity Produced and Area is 0.634 which is highly significant (p-value <.05), which indicates that the Area under apple is directly proportional to the Production of apple in Himachal Pradesh.



## 5. DEVELOPMENT POLICY FRAMEWORK AND GOVERNMENT INITIATIVES

The production of fruits requires phased supply of inputs at the right time and in right quantity. Because of high marketable surplus, fruits and vegetables need quick disposal for which grading, packing, transportation, etc., are the important pre-requisites. A little delay or deficiency in all of these may adversely affect the profit of the farmers.

The development of infrastructure facilities relating to horticulture can be divided into three categories-

- (a) Production facilities, i.e., supply of inputs for plants, insecticides, pesticides and fertilisers,
- (b) Disposal facilities, i.e., grading, packing, transportation, storage co-operatives, etc.,
- (c) Institutional facilities, i.e., Himachal Pradesh Processing and Marketing Corporation (HPMC), co-operatives, etc.

The initiatives taken by the State Government to enhance the growth of apple as the major horticultural crop of this state are as follows -

- a) Mukhya Mantri Adarsh Krishi Gaon Yojana has been started in the State by covering two Panchayats in each constituency for creation and upgradation of Horticulture infrastructure.
- b) Market yard has been constructed for ensuring remunerative prices to the growers.
- c) To have a sustainable growth in horticulture, adequate thrust is being given on the productivity enhancement. In this direction Government is importing improved varieties and root stocks of Apple and distributing it to the farmers.
- d) To protect crops especially Apple from hail storms, government has enhanced the subsidy on anti-hail nets to 80 percent.
- e) Under Apple rejuvenation project a financial assistance have been provided for uprooting of old plantation.
- f) Government has introduced Weather Based Crop Insurance Scheme, initially by covering crops of Apple and Mango in limited areas but now the coverage area has also been expanded and additional fruit crops are being brought under the coverage for the benefits of a large number of orchardist.



- g) Government is creating cold chain network by constructing Controlled Atmosphere (CA) stores and automatic packing – cum –grading units in major fruit growing areas.
- h) Government has introduced Rajiv Gandhi Micro Irrigation Scheme which is targeting 8,500 hectare area to be brought under Drip/Sprinkler irrigation system and an incentive of 50 percent subsidy has been provided for construction of Lift Irrigation Scheme/installation of Bore Wells by individual group of farmers for irrigation purpose.
- i) For transporting the Horticulture produces through HRTC Buses Govt. Has provided concessional rates of transportation.
- j) Government has taken an initiative to make Himachal Pradesh an organic State, for this purpose an integrated action plan has been designed to encourage bio-fertilizers, bio pesticides and discourage chemical fertilizer and pesticides.
- k) Government has launched World Bank funded “Himachal Pradesh Horticulture Development Project”. Under this project focus will be on to provide new technologies to the Horticulturist for increasing the productivity and capacities.

### **Conclusion**

Apple is commercially the most important temperate fruit. The study and facts shows that the apple productivity is associated with changes and fluctuations. The productivity of apple crop depend on climate, serving days of chilling, pollination, irrigation facilities, orchid management and pesticides (Sikka&Swarup, 1985), (Martin, 1985), (Singh, Kalia, &lal, 2007), (Panwar, 2011), (Ajay, 2011).The income from Apple orchids was more compared to other field crops and the productivity of apples in Himachal Pradesh can be doubled if orchid management is improved (Sharda & Raman, 1996). The importance of Horticulture crops to the economic development of hills can't be over emphasised. The Horticultural production mainly the apple fruit cultivation is considered to best way to utilize the natural resources of the hills which gives significantly more remuneration than the field crops and generate more income and employment and thus turns has resulted in the farming shifting their area from field crops to horticulture (Chadda, 1987), (Azad, 1998), (Ghosh S. 2000), (Swarup&Sikka, 1987), (Dalip&Gosain, 2007).



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## The Weavers' Community of Murshidabad District: An Overview

**Avijit Saha**

Assistant Professor, Department of Political Science,  
Government General College, Tehatta, Nadia, West Bengal

[Emai.id-avijit.avijit.saha023@gmail.com](mailto:Emai.id-avijit.avijit.saha023@gmail.com),

&

PhD. Scholar, Department of Political Science  
University of Kalyani, Nadia, West Bengal.

### **Abstract**

*The main aim of this article or research work is to explore the social, economic, and political life and conditions of the Weavers' community of the Murshidabad district in the state of West Bengal. As a student and researcher of social science as well as political science, such kind of research work should be treated as an unavoidable task and especially, those who come from a social science background cannot deny his responsibility in this regard. Weavers as a productive group and their contribution to society are immense. Thus, we have tried to explore the social, economic, and political aspects of the Weavers' community. To do it, we have followed and used various techniques of research methods as much as possible. For this purpose, this article is divided into nine parts. These are: i) introduction; ii) statement of the main theme; iii) objectives of the study; iv) historical & theoretical context of the study; v) research questions; vi) research methodology; vii) findings; viii) research gap; ix) conclusion.*

**Keywords:** *Weavers', Community, Social, Economic, Political, Production-Management, Trade union.*

(Paper published on 1<sup>st</sup> June, 2022.)

### **Introduction**

In this research work, the researcher has tried to analyse the socio-economic and political conditions and overall lifestyle of the weavers' community scattered across Murshidabad district in the state of West Bengal. In the study or research in any area of social science, communities or groups situated in various strata of society— are very important. The prime responsibility of any scholar of social science is to highlight the conditions or roles of those communities which are directly or indirectly associated with the work of social production. No social scientist can deny this role of his/her. This is no exception for the scholar here. This kind of research that deals with those who are associated and are involved in social production must identify two things at the outset: a) identification of the community on which the research would be carried out and b) to create an understanding of the community with its problems, needs, and demands. The weaving industry is an indigenous and eco-friendly industry. The weavers are scattered across the Murshidabad district and these weavers can broadly be categorized into three groups: i) Hereditary weavers, those who depend on others, especially on *Mahajans*, ii) Labour weavers, iii) *Samiti* weavers. The socio-economic and political conditions of these three groups of weavers are completely different because they all



play different roles in the process of production and these roles define or fix their position in the social sphere. In order to understand the socio-economic and political conditions of these weavers, an Ethnographic study of this community has been conducted/made by the researcher himself.

### **Statement of the Main Theme**

As we know, the main aim of this research work is to explore or analyze the social-economic and political condition and overall lifestyle of the weavers' community. In general, as a productive community, weavers are socially oppressed and backward, economically weak, and vulnerable and politically passive and apathetic. So, our utmost task was, as a researcher, to find the real as well as material conditions of the weavers' community in this region.

### **Objectives of the Study**

In any type of social science research, it is a very important tradition to specify some objectives. So, in this context, the researcher has followed these traditions and some objectives have been mentioned by the researcher. These are the following:

- a) What are the socio-economic conditions of the weavers of various areas of Murshidabad District?
- b) What are the natures of production management of the weaving industry?
- c) What is the role played by trade unions in the whole process of production?
- d) What is the correlation between socio-economic conditions and political behaviour of the different strata of the weaving community of Murshidabad district?
- e) What role do the women folk play in the weaving industry?
- f) What is the role of the government to ensure the welfare of the weavers?

### **Historical Context and Theoretical Context**

India as well as Bengal has had a rich weaving industry from very ancient times. 'The birthplace of the Cotton Manufacture is India, where it probably flourished long before the date of authentic history'<sup>1</sup>. So, the history of the Indian weaving industry is quite ancient. It



(weaving) started its journey from the Indus valley civilization or an earlier period. Thus, it should be considered as an important phenomenon. Again, among the other parts of India, Bengal was famous for her weaving industry. Annapurna Chattopadhyay in her article, titled *Crafts of Ancient Bengal (Textile)* (2015) wrote, ‘Amongst the various crafts of ancient Bengal the most important was, of course, that of textile of cotton and silk. Cloth and garments (*vasas*) are, no doubt, described in the Vedic and other early Indian texts; but nowhere does Bengal figure as a great manufacturing centre of textile. It is only from the *Arthashastra* of Kautilya that we have a graphic account of the textile products of ancient Bengal’<sup>2</sup>. During the Mughal era, especially at the time of Jahangir, Shahjahan, and Aurangzeb, the textile industry reached its highest point of excellence. During the Mughal rule, we find the existence of several factories that were for the manufacturing of handicrafts. It is true that during this period, e.g. 1650-1857, weavers of Bengal had to undergo several kinds of changes which were very long, heterogeneous, full of curves and loaded with lots of events. After the disruption of the Mughal era, ‘The Rule of the East India Company proved disastrous to the handicraft industry in India for a number of reasons’<sup>3</sup>. Debendra Bijoy Mitra wrote, ‘The production organization in the cotton industry of Bengal underwent several significant changes during British rule and hence makes an interesting study’<sup>4</sup>. The pernicious effects of British rule were rightly assessed by Debendra Bijoy Mitra and in this context, he aptly wrote, ‘However, this traditional organisation of production gradually changed with the growth of European Commerce in Bengal’<sup>5</sup>. It must be clearly stated that before the Pre-Plassey era the textile industry was based on and followed some traditional arrangements which completely collapsed, neglected after the post-Plassey era. A.R Desai in his book named as, *Social Background of Indian Nationalism* depicted a clear outline of how the British government severely destroyed indigenous handicrafts tradition as much as possible. He elucidates this point very succinctly: ‘The Industrial Revolution, thus brought about, created a powerful industrial and manufacturing class in England. This class increasingly got control of state power in Britain which it used to deprive, in course of time, the East India Company of its monopoly of the eastern trade and also to compel it to adopt economic and political measures as would serve the economic needs of the British industries. After a stubborn struggle, industrial capital scored a political victory over trading capital in Britain’<sup>6</sup>. After Independence, several initiatives and Institutional arrangements were also taken by both Central and State Governments. So, it must be acknowledged that in our research work we have heavily influenced by the above-mentioned historical context. Thus,



without having proper historical knowledge or context we were not able to explore the present conditions of the weaving industry.

As a student and research scholar of political science, it is our duty to explore various aspects of the weavers' community as much as possible. Political Science not only deals with political matters exclusively but also tries to deal with other important parameters of society, like Social and economic dimensions. So, in this article (also in our research work) we have tried to explain what is the real meaning of Social, Economic and Political; and what is the relation of these terms with our research work. In general, Sociology and its various strands deal with society, which expresses the specific character of social life. Economics deals with the process of material production, the nature of the production management, and the economic relation as well as class relation between employer and employee. In general, Politics is also concerned with power, authority, state character, the class character of the ruling class, counter-strategy of the subject class etc. Lenin rightly observed, politics is the most concentrated expression of economics. So, by using these theoretical terms we have proved the fact that at least theoretically, such a kind of study is possible and may be effective. So, in this respect, we can say that our study is based on a certain historical and theoretical context, and it did not come from a fiction story or didn't fall from the sky.

### **Research Questions**

To frame several research questions are considered an important and necessary task for the research work. As a result, we have tried to maintain such a spirit or traditions. These are our research questions:

- a) What are the socio-economic conditions of the weavers of various areas of Murshidabad District?
- b) What are the natures of production management of these weavers?
- c) What is the role played by trade unions in the whole process of production?
- d) What is the correlation between socio-economic conditions and political behaviour of the different strata of the weaving community of Murshidabad district?
- e) What is the nature of their political culture?
- f) What role do the women folk play in the weaving industry?



g) What is the role of the government to ensure the welfare of the weavers?

h) What are the possibilities and prospects of modernization of the weaving industry?

### **Research Methodology and Data Management**

In general, irrespective of all disciplines in the academic world, every research work has to follow a certain research methodology or procedure as far as possible. Here we can refer to the observation of Rakhahari Chatterjee, ‘A student of political science must first direct his attention to substantive issue and theoretically significant problems and then choose the most useful method for dealing with them rather than allow a method to determine his substantive concerns’<sup>7</sup>. The Murshidabad district is divided into five administrative units or subdivisions. So, in this context, we have decided or to some extent finalized that thirty weavers, as sample, would be chosen from each sub-division. As a result, the total number of surveyed people is near about 150. So, in this paper, the social, economic, and political realities of 150 weavers have been presented by the researcher. The targeting people have been chosen by the Stratified Random Sampling method and other methods like the snowball sampling method. Data has been collected from both primary and secondary sources. All the categories of weavers have been encompassed by the study of face-to-face interviews for data collection which has helped us in the data processing process and finally data analysis. Above all, this research has followed various aspects of the Empirical Method.

Furthermore, for collecting data and information, both kinds of methods (qualitative and quantitative) have rapidly been used. Thus, in a single line, we can say that in our research work both types of data viz., qualitative, and quantitative have been used and we have mixed it as necessary. In our research work, for collecting data we have used a schedule instead of questionnaires. In our schedule, we have incorporated a total of 66 questions for all kinds of weavers’ communities; through which we have collected data regarding the social, political, and economic matters of the weaver community. Meanwhile, we have mentioned that in our research work, we have found three types of weavers that are associated with different kinds of the production system. Thus, for realising the distinct characteristics of each level of production management of the weaving industry, we have made another three sets of questions, separately for each kind of weaver, like, the Hereditary weaver (19 questions) Samiti weaver (13 questions) and Labour weaver (09 questions). In order to explore the production nature of the weaving industry we had to prepare three sets of separate



schedules for each group, for realizing the production nature of the weaving industry. In our schedule we have included three types of questions, like, i) structured/standardized questions; ii) unstructured/non-structured questions, iii) quasi-structured or fixed alternative questions. So, in our research work, we have eked out three types of questions by which we have tried to fulfil our needs. The first one is, by posing/asking various kinds of questions, we have got different types of answers as well as information from the respondent. The second one is, we have got both kinds of data like quantitative data as well as qualitative data. As a result, in our research work, we have mixed both kinds of data.

As a result, in our research work, we have found various kinds of data because we included different types of questions. In this connection, we had to follow different kinds of research methods for analysing the data which were variegate itself and collected by us. Hence, in our research work for interpreting such variegating data, we have openly and spontaneously adopted different kinds of research methods. Moreover, in our research work, we have followed a survey Method in particular, which provided Quantitative data exclusively. Although as we have mentioned that we have also collected qualitative data. Hence, we have tried to mix up both types of data as much as possible. Quantitative data has been presented with the help of Bar graphs, tables, charts etc. On the other hand, qualitative data has been presented through the literary form or deep data analysis method or making concepts. Besides these, Government reports, different types of published documents, Oral History, in-depth interviews, and the collection of Narratives have been immensely used. However, the researcher has adopted/ followed a flexible approach which has helped him to take any type of method for the smooth functioning of research. We can conclude our discussion by putting important observations made by Mcnabb. He wrote, ‘However, the researcher must remember that both the design of the study and the method followed are dictated by the nature of the research problem and the objectives for the research’<sup>8</sup>.

## **Findings**

We have already mentioned this fact that the main aim of this study or research work was to explore the Social, Economic and Political life of the weavers' community. By using survey method and other necessary methods we have collected both kinds of data viz., qualitative, and quantitative data by which we have got a picture about the social, economic,



and political reality (in conditions they lived, their daily life, their experiences, level of exploitations, their resistance to the authority etc) of this productive group.

## Social

It should be clearly stated that to pursue the social life of this community we solely depended on the schedule. Side by side we have used various sociological concepts like sociological imagination (propounded by the American sociologist C. Wright Mills, 1970) social structures of values (propounded by Radhakamal Mukherjee). Through our research work, we have tried to mix theory and practice as much as possible. In our schedule, we have used a total of 17 questions. Some of these questions were, i) how many years have you been associating yourself with this profession; ii) as a weaver in which generation do you belong; iii) is weaving your family profession; iv) do you want your next generation to join this profession; v) do you believe that you enjoy enough social status in this profession etc. It must be acknowledged that these questions helped us to fulfil our main intentions and the intentions were: a) to examine the nature of the social structure of the weavers' community; b) to examine how far the weavers' community have been able to form or made a collective representation (collective beliefs, customs, collective productions mechanism) in any form or ways by which they dominate individuals or groups through this collective representation; c) to examine which kind of social action they (weavers) organise by which they build a special kind of social relationship explicitly or implicitly. In this theoretical connection, our main findings can be presented in this way: i) majority of the weavers do not want to continue this work anymore if they find another suitable job opportunity; ii) in this connection they said their next generation would not join this profession; iii) in the questions of the social status: most of the weavers said that they had enjoyed social status partially. Besides, we identified some social values of this profession which help us to realize the social conditions of the weaving industry these are: a) weaving is not only associated with the production of some clothes, but also it carries some values, customs of our society; b) not only the weavers but also the individual who wear or use these products they also bear these rituals, custom. As a result, it establishes a special set of social, cultural relationships between the both (weavers/seller and buyer). It may be called a reciprocal relation between the both; c) weaving is an eco-friendly production, nowadays when we are suffering from the pernicious/detrimental effects of climate change too much. So, it is our duty to preserve this kind of industry; d) it also has our very old, rich, cultural heritage, which is too old. So, in this context such an industry should be treated as an indigenous industry; e) above all, it is



related to our national pride. Our father of the nation Mahatma Gandhi was a great supporter of the handloom industry. f) lastly, it also contributes to our national income too. After the agriculture sector, the weaving industry is the second largest sector where too many people are associated.

## Economic

As a part of our research work, here, we have tried to understand the meaning of economics (production management of weaving industry, nature of production) and how we would relate it with our research. It must be said that in our research work several economics-related questions have been included, for the comprehending of the economic life of the weavers' community as much as possible. In this section, we have included a total of 20 questions for all kinds of weavers. Again, it should be clearly stated that weavers as a productive group may be divided into three broad categories. These are, i) Hereditary weavers; ii) Samiti weavers; iii) Labour weavers. As a result, we had to prepare three separate sets of questions for each productive group. Now here we are presenting some examples of economic-related questions that were included in our schedule. These were, a) do you have your own handloom machine? b) do you work on the basis of an advanced system (*dodon* in Bengali)? c) how much do you earn in each financial year? d) are the raw materials (yarn, colour) required for production readily available? e) Are you able to produce every product with the same efficiency? f) do you feel bored during the time of production process? g) according to your consideration which faculty between mind and body is more engaged/involved in the process of production or both are engaged/involved at the same level. By posing such questions to the respondent we have collected different types of data which revealed the economic conditions of the weaving industry as well as weavers. Here we can present these findings in this way: i) hereditary weavers and Samiti weavers admitted that they have their own weaving machine. But labour weavers acknowledged that they didn't have their own weaving machine; ii) the monthly income of all kinds of weavers on average are ₹5000-6000 per month. In this regard, (the economic conditions of the weavers) we can present the observations of the Fourth All India Handloom Census in this way, 'However, a significant share of weaver households continue to earn less than Rs. 5000 a month.....'<sup>9</sup>. iii) without Samiti weavers, the rest of the weavers work on the basis of an advanced system. In that case, advances to the weavers are provided by the Mahajan or local merchant in a monopolistic way; iv) most of the weavers confirmed to us that the supply of raw material is readily available. But they openly acknowledged that during the time of the covid-2019



outbreak the supply and demand chain was also collapsed, disrupted and their business also faced several challenges So, in order to realize the economic conditions of weavers, the economy itself helped us to understand the economic life of weavers community in a various way: a) it helped us to realize the production management (nature of the production process, ownership of the weaving machine, supply of raw materials) and to examine whether any type of advance system is existed or not, and levels of earnings of weavers community; b) we have also assessed, how much the production process is influenced by the body-mind equation of weavers or dialectical relation between the both; c) we have tried to see how long they are engaging themselves in the production process each day. Further, we have tried to realize the nature of labour relations, occupational problems, hazards in terms of earnings, lifestyle, purchasing power and how it would be eliminated; d) we have examined the nature of the classification of the weavers in the production process and how they do participate in the production process, and try to identify what are the basic and fundamental differences among three types of weavers?

### **Political**

Besides, social, and economic, our main purpose was to explore the political life of the weavers' community also. As a term, politics itself is treated/considered as very critical as well as ambiguous. So, it was a very tough job to explore the political conditions of the weavers group. To do it, we have adopted several initiatives. In short, we have tried to blend the data (political data, which we got through the field survey by asking some questions to the respondent) with the existing political theories. Basically, through these questions our intention was, what kind of facilities, services, assurances, social security they are getting from the state power/government machinery as a societal group in this region. To achieve this goal, we have prepared a schedule in which we have included several questions. These are a) do you have any organised trade union? b) if the answer is yes, are you satisfied/pleased with the activities of these trade unions? c) which types of trade unions do you like— i) political party affiliated trade union; ii) political party non-affiliated trade union; d) do you have any kind of government-sponsored welfare scheme? e) do you cast your own vote? e) do you read any type of newspaper, regularly? f) do you engage yourself with any kind of social media, such as Facebook, WhatsApp. g) do you want to join active politics? By posing/asking such kinds of questions to the weavers we have got different types of answers from the respondent.



Here we can present some samples of these observations which were made by the respondent exclusively. These are i) Most of the weavers mentioned that they are not a member of any kind of trade unions still today; ii) most of the respondents said that they liked political party non-affiliated trade unions; iii) all of the weavers mentioned that they always cast their own vote; iv) they (weavers) neither read any kind of newspaper nor associate themselves with any kind of social media; v) about the profession related social welfare scheme (which was designed for the weavers exclusively) the remarks of the weavers was different and interesting too; vi) lastly, most of the weavers said that they were not interested to join politics or in politics. So, by getting such observations from the respondents we can draw an outline about the political views of the weavers' community in this way: i) weavers as a group may be identified as a less interested group in terms of active politics; by which they can be treated as a politically apathetic group to some extent; ii) again, they may be treated as an unorganised because they are not engaging themselves with the trade unions. As a result, we have seen that as a group they are unable to articulate their just demands and fail to submit their demands to the state or political system.

### **Research Gap**

According to our consideration, several aspects could have been highlighted or discussed separately. But we have pegged our discussion at the social, economic, and political levels of said community. We hope it will be discussed or researched in future in a more organised way. These are the role of women, the scope of further technological advancement, and finally production management and marketing strategies.

### **Conclusion**

It should be clearly stated that our study or research must be treated as an exemplary example of interdisciplinary or multidisciplinary study. Because it has used several techniques as well as key notions, concepts of some academic subjects like sociology, economics, ethnography, cultural studies, etc. Although it must be clearly stated that those concepts, notions are not beyond the realm of political science at all. The main challenge was to relate it with our research work and we have successfully done it by following two ways. i) to relate these concepts with political science; ii) how we will use such notions in the realm



of political science and it was too critical. In our research work, we have tried to relate various concepts with the spirit of research work as much as possible. Because it has been covered most of the major disciplines of social science in this way, Firstly, the Economy has helped us to realize the production-management of the weavers' community, secondly, the Social-Ethnographic study has helped us to realize their social status, interaction levels to the society, and their ethnographic specialities, which they have. Finally, Political study has helped us to make a piece of knowledge about their political beliefs, attitudes, and approaches to the state, character of the state power.

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## Sigmund Freud's View on Error

**Madhuri Ray**

Assistant Professor, Department of Philosophy,  
Swami Niswambalananda Girls' College,  
Hooghly, West Bengal, Pin – 712232, India  
E-mail: [madhuriray.80@gmail.com](mailto:madhuriray.80@gmail.com)

### Abstract

*Although Freudian slip theory is different from the error theory of Freud, in analysing human error, each theory provides us with an exciting insight. The slip does not cover all types of human error. This article emphasises finding the general features and causes of human error, so it explores the common features of human error. In some of his lectures on psychoanalysis, Freud analyses various types of errors. He was interested in finding the essence of error in psychoanalysis; however, he gave significant importance to a slip of the tongue. Analysing Freud's lectures, this discussion points out some general features of error and highlights how it will help in reducing error.*

**Data Collection:** Data was collected through books, journals, websites etc.

**Key words:** *slip, error, intentional error, unconscious mind*

(Paper published on 1<sup>st</sup> June, 2022.)

### Introduction

"To err is human", so people always try to avoid errors. They often think errors take place unknowingly, and agents are just not to be blamed for it unconditionally. However, in addition, following Freud, we can say people may make an error because they want to do them, so they have responsibility for their commence. This study emphasises this exciting sight. This discussion divides into some parts. Firstly, it explores what Freud says about errors in his lecture series. 2ndly, following the first context, explains the general view of error. Then It Analyses the examples given by Sigmund Freud on account of error. Next, Following Freud, this paper points out some more features of human errors. Furthermore, that differences will add a new sight to error theory. Finally, it concludes with the prospect of the discussion at the end.

### Aims and objectives

Discussing Freud's view on error is followed by his three lectures on the error collected in the books General Psychology of Psychoanalysis and some other resources. In these lectures, Freud did not give any definition of error, or he did not try to establish any general theory of error. He was investigating whether there is any significance or importance



of error in the process of psychoanalysis. Even after that, we discuss error following Freud because although he does not establish a theory of error, these lectures provide us with a clear view of error. And understanding human error from a phycological point of view, this discussion will be no doubly very resourceful.

### **Discussion**

In the first lecture, Freud used slip of the tongue as the leading example to explain the general conception of error. According to him, slip of the tongue is not a special kind of error, but he picked it just as the representative of all types of error. He believed essential characteristics of slip of tongue would be applicable for all sorts of errors.

In the second lecture, Freud started his discussion with some examples of errors of various kinds. According to Freud, errors are individual actions, and the only agent is responsible for their error. For example, an error of speech in which one intends to say something but he uses the wrong or inappropriate word. A similar incident may happen with their writing. He also gave an example of misreading, where one reads something different from what is printed or written. A similar phenomenon may occur in the incident of mishearing there without any disturbance of the auditory function, and one understands something different from what is said. He took the example of forgetfulness, when a person cannot remember a name they know, or when one forgets to carry out a specific project at the proper time but which one remembers later.

### **Common features of errors**

Here it is noticeable that, according to Freud, an error is one kind of action. On the other hand, in rationalist philosophers' point of view, an error is nothing but one type of irrationality. Freud by error means to slip in action, and he points out that all kinds of errors have a similarity. The footnote indicated that naming all erroneous actions uses the German language's prefix 'ver'.

For examples:

Slip of tongue: verprechen

Slip of pen: verschreiben

Misreading: verlesen

Mishearing: verhoren



Forgetting: vergessen

Mistake at cooking: verkoche

Laying in a wrong way (mislaying): verlegen

### **Common cause of error**

By mentioning this similarity, Freud may highlight a correlation between all these types of erroneous action. Finding out the similarities at first, he analyzes some more examples of slips of the tongue that occur in our everyday lives. Applying his findings to all types of errors, he points out some common conditions related to those who commit an error.

1. When they are ill or
2. When they feel fatigued or
3. When they are getting excited or
4. When they are distracted from their goal

That means errors are the immediate effect of a distraction from the agent's attention. And generally, this type of distraction caused either by organic or psychic factors of the error committer

“... one mixes up words or objects during excitement, one picks up the wrong things; and the forgetting of projects, as well as the doing of any number of other unintentional acts, becomes conspicuous when one is distracted; in other words, when one's attention is concentrated on other things.”<sup>1</sup>

### **Some other characteristics of human error**

There are some more characteristics, we may highlight to explore human error. Some of them are discussed below:

#### **Mistakes is insufficient attention to the action**

It is noticeable that Freud explains errors as unintentional acts. He cites a differentiation in these conditions of error. Illness and disorders of circulation afford to

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<sup>1</sup>Freud, S. (1920). *A General Introduction to Psychoanalysis* (pdf book), P. 20.

Source: <http://www.pdfbooksworld.com>. (Retrieved on 19.04.2014)



indicate a psychological basis of error. On the other hand, excitement and fatigue are different sorts of error conditions. The origin of these conditions of errors is physical. So, according to this discussion, we may say that the immediate cause of errors is insufficient attention to the action. Whereas, behind this inattention, there is a psycho-physical basis of causality.

### **Inattention is not only one immediate cause of error**

Freud tried to find out another issue about the root causes of error. Giving some examples of errors, he points out that there are some errors which are not caused by any type of inattention or there are not any psycho-physical conditions that are prominent. Such as, we often forget a proper name or fail to present a project at a reasonable time. So, Freud believes that inattention is not the only immediate cause of the error. According to him, such errors and forgetting occur even when people are not fatigued, distracted or excited. It may take place in every way in their normal state.

### **Causes behind mechanical actions are different than intentional actions**

He also gives examples of many acts which an agent performs in a purely mechanical way. These kinds of actions need very little attention. But they are yet carried out quite successfully. For example, a pedestrian who hardly knows where he is going nevertheless keeps on the right path and stops at his destination without going off track. He also gives an example of the practised pianist who selects the right keys without thinking of them. He may, of course, also make a rare mistake. In this context, Freud said, some errors are such types of action which are most successfully carried out when they are not in the centre of attention. And the mistakes occur just at the point where one is most anxious to be accurate. Therefore, a distraction of the necessary attention is the least permissible here. This issue is very relevant to surgical/medical errors. But Freud emphasizes the issue of why a specific type of error occurs. “When it happens that I commit a slip of the tongue, I could make any one of an infinite number of slips, and in place of the one right word say any one of a thousand others, make innumerable distortions of the right word. Now, is there anything that forces upon me in a specific instance just this one special slip out of all possible, or does that remain accidental and arbitrary, and can nothing rational be found an answer to this question?”<sup>2</sup>

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<sup>2</sup> Ibid. P.24.



### **Slip also makes sense and some error may have a hidden meaning**

In this context, Freud analyzes many examples collected by Meringer and Meyar. Meringer was a philologist and Meyar was a psychiatrist. They find a resemblance between the said word and the intended word. But Freud highlights that the most conspicuous form of slips of the tongue was speaking the word is just opposite of the word that means to say. There is no sound relation or resemblance effect between said word and the intended word. So, in these types of errors, Freud tries to find a connection of psychological association. In this context, he said, the product of the slip also makes sense. In explaining "it makes sense", he says, "I think that the product of the slip has itself a right to be considered as a valid psychic act which also has its purpose, as a manifestation having content and meaning."<sup>3</sup> This statement is quite revolutionary to our traditional concept of error. It cites that "if sometimes the error itself were quite a normal act, except that it has thrust itself into the place of some other expected or intended act"<sup>4</sup> where we think the error is an unusual act. Giving an example, Freud explains this error view:

Once a president said, in his opening address, "I declare the meeting closed." according to Freud ", When the president with his opening words closes the session of the House of Representatives, instead of opening it, we are inclined to consider this error meaningful by reason of our knowledge of the circumstances under which the slip occurred. He expects no good of the assembly and would be glad if he could terminate it immediately." Thus Freud says that a slip of the tongue is nothing but an unmistakable expression of a consistent purpose. Freud clearly declares that although he concentrates his investigation on a slip of the tongue, he tries to establish a general theory of error which will be applicable to all types of error. But here, he just wants to say that some errors may have a meaning, and this meaning may have great importance in human life and personality. "...if it should turn out that not only a few cases of slips of the tongue and of errors in general, but the larger part of them, have a meaning, then this meaning of errors of which we have hitherto made no mention, will unavoidably become of the greatest interest to us and will, with justice, force all other points of view into the background."<sup>5</sup>

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<sup>3</sup> Ibid. P. 26.

<sup>4</sup> Ibid. P. 26.

<sup>5</sup> Ibid. P. 26.



### **Error has a purpose or it follows an intention**

In the third lecture, finally, Freud admitted error has a purpose, or it follows an intention. In the context of the president's inaugural address, he says that there it may happen that the president committed the mistake with a particular hidden intention of terminating the session. Freud repeatedly said that he did not mean that the president actually wanted to terminate the session. He just tried to indicate that there is a possibility that this error was committed by him purposefully. Thus, Freud concludes that errors do not occur accidentally. It is a valid psychic act.

Here, it is vital to clear that Freud was not interested in establishing a theory of error in these lectures. He was finding the importance of error in psychoanalysis. But to do that, he had to explain what is an error and the basics of error. And exploring what an error is, we pick his conception of error. And from these lectures, we find that, according to Freud, "They (errors) have their meaning; they arise through the collaboration—or better, the mutual interference—of two different intentions."<sup>6</sup>

### **Observation**

After all this analysis, it can be said, in any discussion of error, Freudian slip is a well-known topic, but here we have not discussed Freudian slip but the error theory of Freud. Naturally, a question arises here: What is the difference between slip and error? Generally, a slip is used as an unintentional error, but not all types of errors are involuntary. Before explaining intentional and unintentional errors, one needs to know what is an error. Error is an unsuccessful action with an unintended outcome. To illustrate the error, we can describe it in three parts: intention, action, and result. Action may be two types intentional and unintentional. Spontaneous actions are examples of undeliberate actions.

On the other hand, eating, writing is speaking are intentional actions. When we are going to act primarily, we have a notion of what we will do. Moreover, an idea of how we would perform our work as we expect the result of our performance. These are the features of intentional action. However, when we react to one pinching, there are no such plans. That is why the first action is intentional, whereas the second one is unintentional. Furthermore, now

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<sup>6</sup> Ibid. P. 26.



the question is, is the slip intentional or unintentional? Before that, we have to explain what is slip. All the examples given by Freud are slip.

In explaining the intentional error, we may say that when we do a sum following a wrong method is an Intentional error. If we do a sum with the correct approach but put a wrong number carelessly, that is an example of unintentional error. Both intentional and unintentional errors, there is a purpose and plan. Furthermore, in both cases, the objective is unfulfilled, or the action is unsuccessful. However, the difference is that in making an intentional error, we follow the program with proper attention, but we commit our action mechanically. As a result, we fail.

### **Conclusion**

Finally, it can be said that all the examples of Freudian slips are going under the heading of unintentional error. But Freud cites another point as unmistakable expression. Where he wants to say, we perform some mistakes intentionally. In this case, I can remember an example of my personal experience. One of my unsuccessful actions was to prove that she couldn't do that work just because she just wanted to avoid the job. But the Freudian example is a little bit different. He said we all might make some intentional mistake to satisfy my secret wish!!! We always suppress our intention to live a social life. Our superego controls us. And in the camouflage of our mistake, the intent is fulfilled. In the context of intentional and unintentional action, their errors may need another expansion or research.

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## **Arsenic Toxicity in Tehatta and Krishnanagar Subdivisions of Nadia District, West Bengal.**

Susmita Mandal,  
Department of Geography,  
South Calcutta Girls' College.  
Email: [susmitascgc@gmail.com](mailto:susmitascgc@gmail.com).

### **Abstract**

*Level of arsenic in Tehatta and Krishnanagar subdivisions of Nadia districts alarmingly high, nearly one fourth of the population suffer from arsenic poisoning. Arsenic in drinking water as well as in irrigation water causes accumulation of this heavy metal in cereals, milk, and fish and in poultry items. The supply of arsenic free potable water is a challenge to the administration in this area. To protect groundwater from arsenic pollution is no less important to restrict bio accumulation and simultaneously prevent people from arsenic toxicity. Master plan for arsenic mitigation and national rural drinking water programme together are taking charge to control arsenic pollution all over the area.*

**Key word:** arsenic, drinking water, pollution.

(Paper published on 1<sup>st</sup> June, 2022.)

### **Introduction**

Arsenic is a natural inorganic element found in the environment, in its inorganic form it is highly toxic; long term exposure to arsenic through food and drinking water causes severe arsenic poisoning, which is known as arsenicosis. Skin manifestation, kidney, liver and neurological problems are very common due to arsenic poisoning. The source of arsenic is of two types- natural and anthropogenic. Normally, arsenic is found in the sediment layer and is easily mixed up with groundwater. It can either enter the body through drinking water or food when arsenic-contaminated water is used for irrigation. A plant can absorb arsenic and through the food web, it flows throughout the ecosystem. Natural sources are common in India. Ganga basin and deltaic regions are affected by the poisonous claws of arsenic. Humans are situated at the topmost layer of the food web, and therefore the rate of concentration of inorganic arsenic is also high which causes arsenicosis or arsenic poisoning in the human body.

The permissible level of arsenic in drinking water has changed with time and space. According to the World Health Organization (WHO) in the year 1958, it was 200 µg/L, in 1963 the amount of arsenic concentration changed from 50 µg to 10 µg/L, but the high



concentration of arsenic caused adverse effects on health. So it was again fixed to 10 µg / L in the year 1993. In India as per the Bureau of Indian standard (2012) and WHO guidelines, the maximum amount of permissible limit of arsenic in drinking water is 0.01 mg /L or 10µg/L. But if there is no availability of an alternate source of drinking water, the permissible limit is set to 50 µg /L. In India 86 districts are arsenic affected where people have to take drinking water with more than 50 µg /L arsenic concentration. Based on the arsenic source, the affected areas are of two types: 1) source of arsenic from late quaternary deposits; for example, the states of West Bengal, Bihar, Jharkhand, Assam and Manipur 2) source of arsenic in the igneous deposition in the form of Arsenopyrites; for example, Chhattisgarh and Karnataka.

### Study Area

The Nadia district is located in the southern part of West Bengal and consists

of four administrative subdivisions, Tehatta, Krishnanagar, Ranaghat and Kalyani. The two subdivisions namely Krishnanagar and Tehatta of the Nadia district have been chosen for the present study of arsenic. The study area consist of eleven blocks; Karimpur -I, Karimpur -II, Tehatta -I, Tehatta -II of Tehatta subdivision and Kaliganj, Nakashipara, Chapra, Krishnanagar -I , Krishnanagar -II, Nabadwip, Kaliganj of Krishnanagar subdivision. The study area is surrounded by Bangladesh to the east, Murshidabad to the northern part, Hooghly and Bardhaman districts to the western part and Ranaghat subdivision of

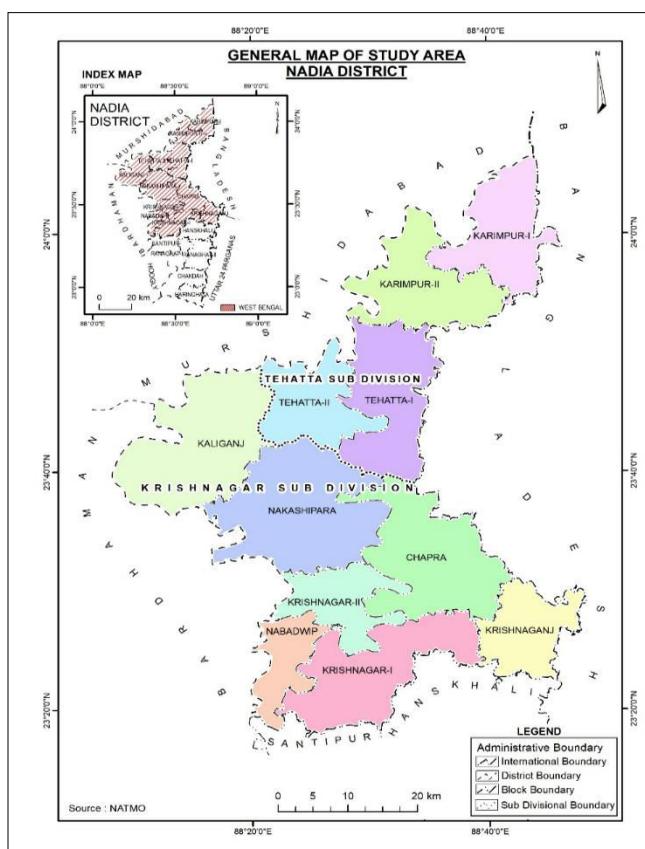


Fig -1 Location map of study area

the same district in the southern part. The study area is extended from 23° 18' N to 24° 11' N latitudes and from 88° 09' E to 88°48' E longitude and covers an area of about 2518 sq. km.



The area belongs to the lower Gangetic plains and the climatic condition is humid summer and short dry winter, the main occupation of this area is agriculture and more than 80 % agricultural area has irrigation facilities.

### Arsenic Toxicity in Study Area

According to a report of the study by Central Ground Water Board (CGWB) in 1978, arsenic concentration in groundwater was found higher than the permissible limit in some parts of West Bengal. It was fully admitted by the School of Tropical Medicine, Kolkata, in the year 1983 by their clinical report. West Bengal is among the worst arsenic affected states in India and in eighteen affected districts of West Bengal, Nadia has recorded high numbers of arsenic affected patients. The presence of arsenic concentration more than the permissible limit of 50 µg/L was first found in four districts of West Bengal in 1983. The chronic arsenic toxicity in groundwater was considered the worst environmental hazard in West Bengal in the early eighties.

**I.** According to Guha Majumder et al (2014), all seventeen blocks in Nadia district are arsenic affected and about 15.43% (surveyed year was 2005-06) people suffered from arsenicosis, which was mainly caused by the high level of arsenic contamination in drinking water. In Nadia district high arsenic concentration is found in shallow aquifers within quaternary sediment, the depth varies from 20m to 80m. The contaminated water can move vertically and horizontally.

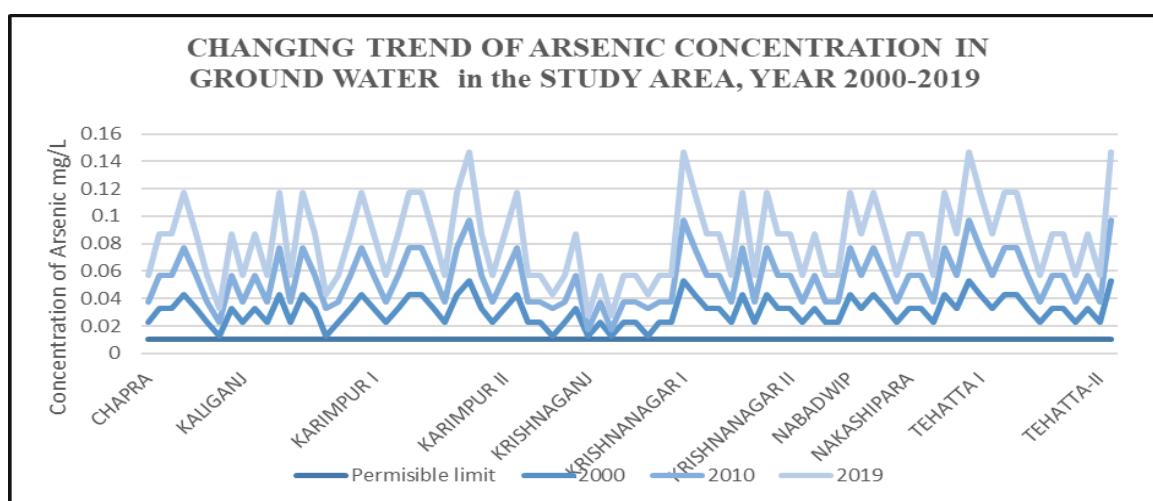


Fig -2, Block Wise Change In Arsenic Concentration

Data source: School of Environment Studies. J.U., Compiled by author

The 23 years long study report in Nadia district by Rahaman, M.M. et al (2013) is showing that groundwater is the main source of drinking water in all seventeen blocks and arsenic level is very high in this area. So neurological complications and arsenical skin symptoms are found in the population, but all are not equally affected. The amount of arsenic in the drinking water in all the 11 blocks of the study area of Nadia district is higher than the permissible arsenic concentration in the water suggested by WHO.

**II.** The main occupation of this region is agriculture practice and the groundwater which is used for irrigation purposes is often found arsenic contaminated. When this water is used for irrigation, a part of arsenic is incorporated into the crops, mainly rice and vegetables (Biswas, A et al, 2011). Various researches show that food is the second contributor to arsenic intake

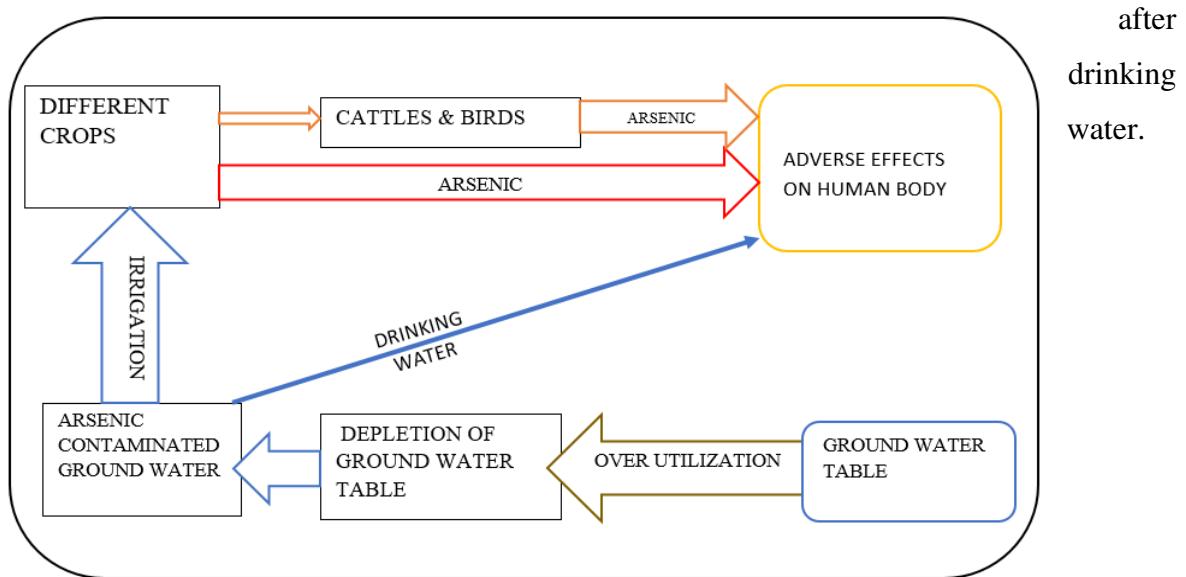


Fig 3. One Way Flow Of Arsenic ( Model Constructed By Author)

A shallow tube well is the most available technology to provide irrigation throughout the year. It usually extracts available contaminated water for agricultural practice, and the arsenic is easily incorporated with rice and vegetables.

A huge amount of water is required in study area during Boro cultivation or winter cultivation and therefore the Boro rice carries more arsenic than the Aus paddy (Bhattacharya, S. 2012)

**III)** Arsenic affected patients are mainly found in Karimpur I and II, Tehatta I and II, Nakashipara, and Nabadwip blocks. The data for the year 2000 shows that the extreme



southern part of the Krishnaganj block has the lowest arsenic concentration during the year 2000. It is observed that the concentration of arsenic changes over time throughout the region. It is due to the change in the withdrawal of groundwater and the consequent increase in arsenic contamination. The highest arsenic concentration was found in the western part of Nakashipara, Nabadwip and Krishnanagar -II blocks. All other blocks have moderate concentration which is higher than the permissible level.

**IV)** Rice is the main staple food of the study area, unfortunately, rice is more efficient to accumulate and store arsenic than any other cereals. The grain and straw of paddy contaminated with arsenic do not remain as a local problem but manifest as a global problem, as these food products are sale out not only within the country but are exported to other countries also (Bhattacharya, S. et al 2012).

**V)** In the year 2010, the area of accumulation of arsenic remarkably increased with time from 2000 except for some parts of the Krishnaganj block. High arsenic accumulation is found in Karimpur-I and Karimpur-II, the eastern part of Tehatta -I of the Tehatta subdivision. The groundwater is not suitable for drinking purposes, according to CGWB, the area suffers from a lack of groundwater resources. On the other hand southern part of Kaliganj, Nakashipara, Krishnanagar I and a few parts of Chapra and Tehatta -II of Krishnanagar subdivision the arsenic concentration increased in a short period which is harmful to the local people as well as its effect ecosystem.

**VI)** The districts facing problems related to arsenic in nature and the domestic animals also face problem associated with it. The majority of animals bred in arsenic-prone areas, particularly ruminants, do not show clinical symptoms, but a significant amount of arsenic is expelled in their faeces and milk, contaminating the pasture and entering the human food chain. A huge number of livestock and poultry raised in the Nadia district of West Bengal drank from arsenic-contaminated tube well. People in arsenic-endemic areas have been diagnosed with arsenicosis after having been provided with arsenic-free drinking water for more than 12 years (Newsletter AIIHPP., 1996). As a result, arsenic from sources other than water is likely to enter the food chain through agricultural products, fish, and animal products such as meat, milk, egg, and so on. Arsenic is also said to be excreted through milk. As a result, human arsenicosis can be caused by eating agricultural goods, fish, meat, milk, milk products, and eggs (Datta et al., 2012).



The SAMOE (severity-adjusted margin of exposure)-risk thermometer of most commonly consumed meals estimated in a particular geographical area, indicates the human health risk in descending order: drinking water > rice grain > cow milk > chicken > egg > mutton, with classes ranging from 5 to 1. The USEPA's health risk assessment approach finds that adults are at higher risk than children, implying that there is a serious cancer risk from diets in which edible animal proteins cannot be overlooked. As a result, domestic animals should be treated with surface water as soon as possible, while the afflicted human population must be provided with both arsenic-free drinking water and nutritional supplements to overcome the severe arsenic problem.

Arsenic toxicity in cattle manifests itself in a variety of ways, from gastrointestinal problems to fatal neurological symptoms (Krajcovicová and Eschenroeder, 2007). Weight loss, erratic appetite, conjunctivitis, mucosal and erythematic lesions including mouth ulcers, anaemia, liver and kidney damage, hyperpigmentation, skin damage (keratosis), and black foot disease are the most common symptoms of chronic arsenic toxicity (Bahri and Romdane, 1991; Wu et al., 1989; ATSDR, 2000).

Arsenic concentrations in egg yolk and albumen, as well as chicken products, are much higher in arsenic endemic zones (than in non-endemic zones). As a result, the amount of arsenic in eggs, chicken products, contaminated meals, and cow's milk may limit a food chain, resulting in arsenicosis in humans (Datta et al., 2012). Thus, it is evident that most species of flora or fauna are affected by the excessive presence of arsenic or its toxicity which leads to ultimate entry into the human food chain. Cow milk, chicken eggs, poultry meat and agricultural food products are grown on polluted soil from an arsenic endemic area may cause public health hazards.

### **Protective Measures**

- A. Rahaman, M. M., Sengupta M. K. et al. (2005) in their study in a village of Murshidabad has shown that the amount of rainfall in this area is about 200 cm. Many rivers and lakes are plenty, and therefore huge surface water is available in this area. Rainwater may easily be preserved in reservoirs, where modern water purification is not available. My study area shares its boundary with Murshidabad, whose agro-climatic conditions are the same, so surface water may be used in this area also to protect itself.



- B. To control the adverse effect of arsenic contamination the people the study area may switch over to surface water and storage rainwater.
- C. All 17 blocks of Nadia district are arsenic affected, various schemes are taken by Govt at different times under different projects.
- D. Master Plan for Arsenic Mitigation underwater quality submission established in 2006-07, later it merged with National Rural Drinking water programme since 1st April 2009, various schemes are taken under this action plan in Nadia-Murshidabad districts as well as the study area, these are-
- Community based Arsenic removal plant was established in Nabadwip.
  - One Mega piped water supply scheme, based on River Ganga running in the district, is in Haringhata and Chakdaha (part) blocks, this is not included in our study area.
  - Ground water-based, arsenic removal plants for multiple villages' piped water supply schemes are implanted in the study area.
  - Arsenic removal plant attached with Hand pump is installed in Study area. It provides arsenic iron-free groundwater.

E. Arsenic-free groundwater is the main requirement of the area, in some areas groundwater is supplied through the pipeline for drinking purposes, after purification. The total number of these supply schemes are 168 in the study area, which is not sufficient. Rainwater harvesting schemes are taken by Government but it is in an initial state, only one project was completed in the Krishnaganj Block of Study area. It is the safest way to collect arsenic-free water.

#### Rainwater harvesting scheme in the Study area:

Sl no	Name of the block	Location of scheme	Present condition
1	Krishnaganj	Matiari -Banpur High school Banpur	complete
2	Chapra	Dayerbazar Vidyamandir High school	In progress
3	Chapra	Boro andulia High school	In progress
4	Tehatta -I	Tehatta High school	In progress
5	Tehatta - II	Palashipara Mahatma Gandhi smriti Vidyalaya	In progress



6	Karimpur -I	Sikarpur High School	In progress
7	Karimpur -I	Jamsherpur Bhupendranath high school	In progress
8	Karimpur -II	Natidanga Amiya Smiriti Bhavan	In progress

Source: SWID (State water investigation directorate)

As per the groundwater assessment of CGWB (Central Ground Water Board) of 2020, the record shows that the groundwater resource of Nabadwip and Krishnanagar -II blocks is in safe condition but in Krishnanagar-I, Nakashipara, Krishnaganj, Kaliganj, Chapra , Tehatta-I and II, Karimpur I and II is in semi-critical conditions. In this context, if the dependency does not shift to surface or rainwater in future this area faced an agricultural drought.

## Conclusion

Arsenic deposition is very common in this area due to geological causes. Over utilisation of underground water accelerated the arsenic concentration rate, the water used for irrigation and daily use. Which have very harmful effects on living beings. So, arsenic-free water is the main requirement of the study area which may store from rainwater by water conservation method. The use of water can be reduced in the agricultural sector by adopting spring irrigation or drip irrigation. As arsenic has no taste, colour or odour so, it cannot be easily detected immediately but its slow poisoning is fatal for human health. So, more arsenic removal plants and rainwater harvesting are necessary for this area with proper management.

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## Humanity and Politics: Effect of Partition in Khuswant Singh's Train to Pakistan

**Dr. Debasree Bhattacharya**

Assistant Professor,

Department of Philosophy,

Maulana Azad College, Kolkata.

Email id- [debasreeb96@gmail.com](mailto:debasreeb96@gmail.com).

### Abstract

*Post-Independence Indian literature mostly dealt with the effects of colonisation. The partition of India resulted in a poignant scar in the souls of many writers. Independence of India is associated with bloody riots which became a major theme in many post independence literature. Some of the writers focused on the massacres during refugee migration. On the other hand a large number of authors depicted the trauma and difficulties faced by the refugees in both side of the border.*

*Partition devastated both India and Pakistan. In 1947 as India gained Independence from British Empire, the subcontinent was divided along sectarian lines. Nearly 15 million people were displaced from their homes. The fanatic leaders from both communities played a vicious role in inciting the evil of communalism.*

*Train to Pakistan is a 1956 historical novel by Khushwant Singh. The novel is set in the backdrop of 1947 partition of India that culminated in the creation of separate Nations Pakistan and India. Train to Pakistan depicts that trauma of the ordinary citizens who were displaced from their homes. It gives a human dimension to the effect of partition, the event which turned out to be one of the deadliest times in the history of the two Nations. Till the partition Muslims, Sikhs and Hindus lived together despite religious and cultural differences. Mano Majra was one such village in the novel where Hindus and Sikhs and Muslims in Christians coexisted happily and peacefully for hundreds of years. Mano Majra the small village was situated on the border of two countries. Lala Ram Lal the money lender was the only Hindu. Rest of the village had almost equal number of Sikhs and Muslims. Among the villagers Sikhs were the land owners and richer whereas Muslims were the tenants.*

*Khushwant Singh's Train to Pakistan depicts the sordid picture of horror and genocide unleashed on the Indo Pakistan border during the partition days of 1947. Khushwant Singh in this novel shows that this was a period of great disillusionment and bankruptcy of values. The author realised that the conviction and beliefs he cherished all through his life were shattered. His novel is an account of brutal story of political hatred and violence during the fateful and turbulent days that preceded and followed the partition of British India. Khushwant Singh recreates a small village in Punjabi countryside in that fateful summer. The most painful part of the novel is its ending when the government decides to transport all the Muslim families from Mano Majra to Pakistan. The Muslims had to leave in just ten minutes notice and the non Muslim counterparts of Mano Majra did not get a chance to say goodbye to them.*

**Keywords:** Partition; Refugees; Riots; Ghost train; Religious persecution; Communal harmony; Displacement

(Paper published on 1<sup>st</sup> June, 2022.)



The trauma of partition left an indelible impression in the minds of people both in India and Pakistan. So far as the joy of Independence is concerned it evoked mixed response from the citizens of independent India. While it was greeted by one section of the citizens, many others considered it as a false emancipation. They maintained that the so called Swaraj did not bring relief to the hungry children; moreover it was a divided India. Post independence literature of India also reflected this agony of partition. The pangs of partition had been a major theme in stories and fictions of Krishna Chandra, Amrita Pritam, Saadat Hasan Manto. Khushwant Singh's 'Train to Pakistan', Amitabh Ghosh's 'Shadow Lines' and Salman Rushdie's 'Midnight's Children' deserve special mention in this context. According to Meenakshi Mukherjee, the major issues facing the 20th century Indian novelists were involvement and concern: involvement with the changing national scene and concern for the destiny of the country. Emotionally charged national experience assumes significance beyond mere historical reality. In turn, it becomes grand treasure and inspiration for literary material. Hence the American Civil War, the French Revolution along with the Napoleonic aftermath has all been a valuable material for literature.

In Train to Pakistan Muslims are deported on trains to Pakistan and Hindus on trains to India. The novel begins with the killing of Lala Ram Lal, the money lender of Mano Majra. The police falsely imprison Jugga and Iqbal Singh in this murder. Jugga had a bad reputation but possesses a good heart. He is in love with Nooran the daughter of the village Imam. A fierce dacoit called Malli along with his gang of robbers killed Lala Ram Lal but Jugga was accused and imprisoned in the murder. In this murder another accused was Iqbal Singh who is a social worker from Delhi. He arrived in Mano Majra with a mission of organising people to take up political action in new India. Hukum Chand who is a magistrate in Mano Majra instructs the police sub inspectors to arrest Juggat and Iqbal Singh. Hukum Chand is a corrupt magistrate with so many vices. He knew Jugga is a bitter enemy of Malli the notorious dacoit who actually committed the crime of killing Lala Ram Lal. In this background in one of the last remaining peaceful villages on the frontier chaos and violence started to spread. One day a train load of dead bodies of Hindus and Sikhs arrives in Mano Majra. Villagers came to know about it when the military and police burn the bodies. The arrival of this ghost train shaken even the corrupt magistrate Hukum Chand. Jugga and Iqbal are still in prison. But at this point when the sub inspector reveals to Hukum Chand that Malli



is the main culprit in Lala Ram Lal murder, the magistrate orders the arrest of Malli and his gang of dacoits as well. The rest of the novel is packed with actions and events. Khuswant Singh with his powerful narrative technique unveils how vested interest of politics mercilessly paves the way for communal riots. Communal riots never erupt spontaneously; it is always plotted by the politicians. Even one of the most peaceful villages Mano Majra on the frontier where Hindus and Muslims and Sikhs lived happily was not spared.

Panic started to spread across Mano Majra as ghost train brought thousands of dead bodies killed in communal frenzy. Gradually the atmosphere in Mano Majra started to deteriorate and politicians with vested interest availed all opportunities to disturb the peace and harmony of this village. Hukum Chand is a functionary of these politicians and he now plans to convince Mano Majra to evacuate its Muslim villagers. In order to facilitate this design Malli and his gang of dacoits are also released and were brought to the Sikh temple. There the head constable implicates Iqbal and a gang of Muslim dacoits in Lala Ram Lal's assassination.

In the temple premises the head constable announces that all Muslims in Mano Majra will be taken to a refugee camp. The event of the arrival of a ghost train clubbed with other developments like this announcement resulted in a complete polarisation of Mano Majrans. Both Sikhs and Muslims started to look at each other with suspicion from this point. The novelist here describes how a group of Sikhs assemble at the temple to discuss the future plans. One Sikh infuriated by the behaviour of his Muslim neighbours expresses his anger in the assembly. But good sense prevails and he is dissuaded from grudging Muslims. Imam Baksh and his two other associates also join the group at the temple site in order to explore the possibilities for a way out from the situation. Considering many pros and cons it was decided that the Muslims will go to a refugee camp for the time being. However, the decision was quite heart rending for the Muslims.

At this juncture Nooran is informed by her father Imam Bakhs that they have to leave. Nooran absolutely perplexed by this news rushed to Jugga's house. Jugga was still in jail. Nooran talks to Jugga's mother and tells her that she is pregnant with Jugga's child. Noor is soothed by the aged lady who assures her that Juggu will find her wherever she is.



The situation turns grim very fast. The following day the convoy arrives from the refugee camp to take the Muslims away. They are allowed to take only a limited portion of their property. But the irony lies in the fact that these Muslims will not stay in the refugee camp for long, they will soon be transported to Pakistan leaving behind their hearth and home for ever. Khuswant Singh splendidly describes how Malli, along with the gang of dacoits plan to loot the property of the Muslims after their evacuation. In this act of looting he is joined by the Sikh refugees from Pakistan. The novelist depicts with great skill how the menace of communalism once planted takes its toll in the name of religion.

Amidst this pandemonium Sutlej river is in spate causing a new crisis in Mano Majra. The normal life is disrupted for a while and the river swells with blood stained dead bodies. It only confirms another massacre owing to the communal riot. At this point another ghost train arrives from Pakistan. This time no mass funeral, the bodies are simply disposed off in mass grave.

Gradually we reach the climax of the novel. The situation in Mano Majra turns grimmer. After the exit of the Muslims all the remaining villagers assemble in the Gurdwara. From a sense of insecurity and an uncanny feeling none of them wanted to be alone. The Sikh priest Meet Singh ends his prayer. Suddenly a group of militant Sikhs enter the temple. They sought assistance from the Mano Majrans in their plan to unleash massacre on the train which will carry the Mano Majra Muslims to Pakistan. The Sikhs from Mano Majra however summarily reject the proposal and refuse to take part in the conspiracy. Malli and the fellow dacoits along with the Sikh refugees however join the plot.

Hukum Chand initially endorsed the plan of attack on the train carrying Mano Majra Muslims to Pakistan. When he comes to know that Hasseena the prostitute with whom Hukum Chand is involved will also be in the train he changes his mind. He orders the release of Jugga and Iqbal hoping they will be able to save the lives of the Muslims in the train. This shows the hypocrisy and moral bankruptcy of Hukum Chand who being a Magistrate himself fails in his responsibility towards fellow citizens and engages Jugga, a civilian who has a questionable reputation to save the lives of the



Muslims of Mano Majra. At the end of the novel the plot of killing the Muslim refugees in train from Mano Majra is actually thwarted by Juggu. The trains that ply between Mano Majra and Lahore has to cross a bridge. The conspirators tie a rope across the bridge designed to kill Muslim refugees sitting on the top of the train. Once it happen the mob deputed around the bridge will start killing the passengers inside the train. Eventually Jugga climbs the bridge and cuts the rope. Jugga is shot and falls to death while pursuing his mission of saving his Muslim neighbours.

Juggu is character compounded of good and evil. In a civil society he is truly an uncouth and rustic person. He therefore is different type of hero having traits of a villain. He rehabilitates himself to the eyes of the readers by his supreme sacrifice. Khuswant Singh brings diverse range of characters in Train to Pakistan to delineate the condition of the society during the partition. We come across corrupt and dishonest magistrate Hukum Chand. There is Haseena Begum, a young Muslim prostitute with whom Hukum Chand spends night. Nooran is in a relationship with Juggu and by the end of the novel she is pregnant with Juggu's child. Then there is Imam Baksh, who is Nooran's father and the Imam of Mano Majra mosque. Blind Imam however is unaware of his daughter's relationship with Juggu. Another noteworthy character in the novel is Iqbal Singh. The creation of this character is intriguing and symbolic. His name suggests he could be a Hindu, Muslim or a Sikh. He was a social worker and came to Mano Majra as a political worker. The purpose of sending him there was to stop the bloodshed and to stand by the victims of partition.

Besides these characters it is evident from the title of the novel that trains play a key role in Train to Pakistan. Previously trains connected this tiny little village to the rest of the world. Passenger train rushing to Lahore used to be the morning alarm for the Mano Majrans and with the arrival of the final goods train the villagers got prepared to go to bed. This train as a symbol changed its association with the passage of time. This happened ever since the first train loaded with dead bodies of Sikhs rolled into Mano Majra. Gradually trains became ghost trains carrying either refugees or dead bodies. Similarly the Railway bridge on Sutlej river which the trains in and out have to cross is yet another symbol. Towards the end of the novel this bridge turns out to be the rallying point of the Muslim massacre plot. Finally this bridge becomes the place for the supreme sacrifice of Juggu in his bid to save the lives of the Muslims of Mano Majra.



In the final analysis religious persecution and the aftermath of displacement are two major driving forces in Train to Pakistan. Freedom therefore is an elusive idea in the novel.

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## Healthcare Services Access by the Children in Rural West Bengal

**Dr. Mahua Patra**  
 Assistant Professor,  
 Department of Sociology,  
 Maulana Azad College,  
 8, Rafi Ahmed Kidwai Road, Kolkata, W.B.  
 Email: [mahua.research@gmail.com](mailto:mahua.research@gmail.com).

### Abstract

*Children are the future of society. Their future role in society depends on the perfect organization of their body and mind. To ensure a perfect mind in a perfect body everybody needs access to basic healthcare facilities. This paper tries to explore the healthcare access situation of the children of rural areas of West Bengal. Data was collected through a primary survey of the children, parents and health staff of a particular village area. It has been found that maximum guardians are aware of the Laws, Welfare Policies regarding their children's health. The facilities of the welfare projects have reached the grassroots level to some extent. Healthcare access situations are improved.*

**Keywords:** Children; healthcare facility; healthcare access; rural; Government welfare policies

(Paper published on 1<sup>st</sup> June, 2022.)

### Introduction

Children are the future of society. Their future role in society depends on the perfect organization of their body and mind. To ensure a perfect mind in a perfect body everybody needs access to basic healthcare facilities. According to the census of 2011, 35.50 per cent of the total population in our country is children. A vast majority of this children population lives in rural areas. The researchers wish to find out how far the government policies have benefitted the serural children regarding healthcare.

### Background of the Study

Studies on the health status of children reveal some alarming indicators. About half of under-five deaths occur in only five countries: China, the Democratic Republic of the Congo, India, Nigeria, and Pakistan. India (22%) and Nigeria (13%) together account for more than one-third of all deaths of children under the age of five. (Chaib, 2013).The health status of West Bengal state is also not up to the mark.

The Total Fertility Rate of West Bengal state is 1.8. The Infant Mortality Rate is 31 and the Maternal mortality Ratio is 145 (NRHM Data).In the rural area of Birbhum district, the situation is both surprising and pathetic. From the report of NHRM-RET, WB 20019-20study on Birbhum district it is known that ASHA system and Suswasthakendra was just



introduced in the District and the ANM delivered services work satisfactorily. But rural health care infrastructure and public awareness regarding this needed to be explored. Thus, it is imperative to study the extent of change that has occurred in the children health access in rural West Bengal after the introduction of ASHA system, Suswasthakendra and the Janani Suraksha Yojana.

### **Objectives of the Study**

The main objective of this study is to find out the actual situation concerning accessibility to the basic health service for the children of rural West Bengal. As such the present study was conducted with the following specific objectives:

- A) To understand the role of various government initiatives in the development of the health access of rural children.
- B) To fathom the reach of the facilities of the welfare projects at the grassroots level.
- C) To find out the awareness of the guardians about their children's health.

### **Methodology**

A descriptive study was conducted among 50 families having 100 children in the remote village of Rampurhat health district of West Bengal State in India. The total number of families having children (age between 6 to 14) in that village was 165 (source: ASHA worker). The present study is based on mainly Primary data. The respondents are selected with a systematic random sampling method. Respondents are the children, parents of children, and health employees of this village. They are interviewed face to face on the basis of the interview schedule for the purpose. Structured interview methods have been used.

### **Location of the Study**

One of the remote villages in India of West Bengal State, Nalhati Block in Rapurhat health district has been selected for the study.



## 2.1 Demographic details of the study participant:

**Table 1: Monthly Income of the Families(in INR)**

<b>Monthly Income of the Family</b>				<b>Total</b>
<b>Below 5000</b>	<b>5001-10000</b>	<b>10001-15000</b>	<b>Above 15000</b>	
16 (32%)	16 (32%)	11 (22%)	07 (14%)	50 (100%)

More than half (64%) of the respondents belong to poor families with a monthly income of less than five thousand Rupees to less than or equal to ten thousand rupees per month. Only a meagre 14% of respondents' families have a monthly income of more than fifteen thousand rupees.

**Table 2: Occupations of the Head of the Family**

<b>Occupation of the Family Head</b>					<b>Total</b>
<b>Agriculture</b>	<b>Business</b>	<b>Service</b>	<b>Daily Labour</b>	<b>Others</b>	
12 (24%)	4 (8%)	06 (12%)	28 (56%)	-	50 (100%)

The majority of the families of respondents (56%) are engaged in daily wagelabour for earning. Only 12% of the respondent families had income from service in the private as well public sectors. Due to a lack of ownership of cultivable land, only 24% of the families were engaged in agricultural activities for a living.



### Health Status of Respondents

**Table 3: Institutional/Non-Institutional Birth of Child**

Gender	Institutional/Non-Institutional Birth of Child					<b>Total</b>	
	At Home	Outside the Home					
		Quack Doctor	Sub-Health Centre	Block/District Hospital	Private Hospital		
Male	-	16	-	42	-	58 (58%)	
Female	-	7	-	35	-	42 (42%)	
Total	-	23 (23%)	-	77 (77%)	-	100 (100%)	

In the above-mentioned Child Birth Place Table, it is found that 23% of children were born under quack doctor.77% were born in Block/ District Hospitals. The majority of the children were born in Govt. Hospitals. So, the tendency to go to the Govt. Hospitals have increased remarkably.

### Disease at Birth

Gender	Disease at Birth		<b>Total</b>
	Have	Have not	
Male	10	48	58 (58%)
Female	11	31	42 (42%)
Total	21 (21%)	79 (79%)	100 (100%)



In the above-mentioned disease after birth table, it is found that above 21% of children suffered from disease after birth. And 79% of children were free from any disease. So, it is found that most of the children were free from disease but 21% of the children were born with a disease which implies their pre-natal care should be more proper.

**TABLE 5: Percentage of Immunization after Birth**

Gender	Vaccine after Birth		Total
	Taken	Not Taken	
Male	58	00	58 (58%)
Female	40	02	42 (41.11%)
Total	98 (98%)	02 (02%)	100 (100%)

In the abovementioned vaccine after birth table, it is found that above 98% of children took the vaccine. And 2% of children did not take the vaccine. The tendency is that most of the children are vaccinated.

**Table 6: Institutional/Non-Institutional Clinic for Medical Care**

Gender	Place of Clinic						Total
	Quack Doctor	Sub - Health Centre	Block/District Hospital	Private Hospital	Homeopath	Others	
Male	5	15	32	-	6	-	58 (58%)
Female	4	08	27	-	3	-	42 (42%)
Total	9 (9%)	23 (23%)	59 (59%)	-	9 (9%)	-	100 (100%)

According to the above place of clinic table, it is found that when children fall ill only 9% go to quack doctors, 23% go to the sub-health centre, 59% go to block/district hospital, and 9% go to homoeopath for treatment. So, we can say that most of the children are going to Block/District hospital for treatment.

**Table 7: Taken the Facilities of Janani Suraksha Yojana**

Taken the Facilities of JananiSurakshaYojana		<b>Total</b>
Taken	Not Taken	
92 (92%)	08 (8%)	100 (100%)

In the above-mentioned Taken the Facilities of JananiSurakshaYojana table, it is found that above 92% of families took the facilities of JananiSurakshaYojana. And 8% of families have not taken the facilities of JananiSurakshaYojana. The tendency noted is that most of the families took the facilities of JananiSurakshaYojana.

**Table 8: Nature of Food after Birth**

<b>Gender</b>	<b>Nature of Food</b>		<b>Total</b>
	Mother's Breast Milk	Baby food	
Male	45 (50.00%)	13 (08.89%)	58 (58%)
Female	34 (37.77%)	08 (3.34%)	42 (42%)
Total	79 (79%)	21 (21%)	100 (100%)

According to the above Nature of Food after Birth table, it is found that 79% of children have taken their mother's breast milk and 21% of children have taken baby food. So, it is found that most of the children have taken their mother's breast milk. The number of children having access to baby food is noticeable. It needs more awareness among parents by the ASHA.

**Table 9: Facilities of I.C.D.S. Project**

<b>Taken the Facilities of I.C.D.S. Project</b>		<b>Total</b>
<b>Yes</b>	<b>No</b>	
96 (96%)	04 (04%)	100 (100%)

According to the above taken the facilities of I.C.D.S. Project table, it is found that 96% of families had taken the facilities of I.C.D.S. Project and 4% of children did not avail the facilities of I.C.D.S. Project. So, it is found that most of the families had taken the facilities of I.C.D.S. Project. People are aware about this project.

**Table 10: Different Causes for Not Taking the Govt. Hospital Facilities**

<b>Causes for not Going to Govt. Hospital</b>				<b>Total</b>
Lack of Reliability	Absenteeism of Doctor	Irregular Supply of Medicine	Low Quality of Medicine	
09 (50%)	02 (10%)	06 (33%)	01 (5.5%)	18 (100%)

In the above-said Causes for not going to Govt. Hospital table, it is found that people are not going to govt. hospital for the cause of lack of reliability i.e., faith in alternative medicine 50%, absent of doctors 10%, irregular supply of medicine 33% and low quality of medicine 5%.

**Table 11: Sanitation Facility**

<b>Sanitation</b>		<b>Total</b>
Present	Absent	
93 (93%)	7 (7%)	100 (100%)



According to the above Sanitation table, it is found that 93% of families have toilet facilities in the home and 7% of families have no toilet. So, it is found that a very less number of families are deprived of toilet facilities.

**Table 12: Safe Drinking Water**

<b>Safe Drinking Water</b>		<b>Total</b>
Have	Have Not	
83(83%)	17 (17%)	100 (100%)

In the above said Safe Drinking Water table, it is found that above 83% of families have safe drinking water and 17% of families have no safe drinking water facility. The fact is that most families have safe drinking water. However, this access to safe drinking water does not refer to treated water as such but to the tube wells provided by the local Panchayats under Sajal Dhara Project.

**Table 13: Awareness of the Guardians about Health-Related Govt. Projects and Laws**

<b>Awareness of the Guardians about Govt. Projects and Laws</b>		<b>Total</b>
Aware	Not Aware	
82 (82%)	18 (18%)	100 (100%)

According to the above Awareness of the Guardians about Health-Related Govt. Projects and Laws table, it is found that 82% of guardians have been aware of the health-related govt. projects and laws and 18% of guardians had no knowledge about the health-related govt. projects and laws. So, it is found that most of the guardians have been aware of the health-related govt. projects and laws.

**Table 14: Children Involved In the Mid-Day Meal System**



<b>Involved in the Mid-Day Meal</b>		<b>Total</b>
<b>Yes</b>	<b>No</b>	
92 (92%)	08 (8%)	100

According to Table 14, it is found that 92% of children have been involved in the mid-day meal at school and 8% of children have not been involved in the mid-day meal scheme. So, it is found that most of the children have taken the mid-day meal scheme. It is beneficial for nutrition and attendance in school.

### **Conclusion**

From the above brief discussion that included several tables about health data, it may be concluded that the health status of rural children of the Birbhum district has improved. The various projects are undertaken by the Govt. for the development of the health of rural children exist in this village. It is found that maximum guardians are aware of the Laws, Welfare Policies regarding their children's health. The facilities of the welfare projects have reached the grassroots level to some extent. The main barrier to attaining proper health coverage for children is economic backwardness. Another barrier is the reluctance and apathy on the part of a few guardians.

It is also imperative to conduct more awareness generation programmes about health and available health services among the rural people. Rural people need to be more proactive to avail themselves of healthcare services. Suswatha Kendras are sufficiently active and controlled by BMOH. A telemedicine system is now established for better consultancy in rural areas.

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## FDI in the Retail Sector in India – Prospects and Challenges

**Dr. Tulika Kar**  
 Assistant Professor,  
 Department of Economics,  
 Chanchal College,  
 Chanchal, Malda.  
 Email: [tulika\\_slg@yahoo.com](mailto:tulika_slg@yahoo.com).

### **Abstract**

One of the main pillars of Indian economy is retailing in India and it accounts 14% to 15% of its GDP. The retail market of India is estimated to be US \$ 450 billion and one of the top five retail market in the world. India is one of the fastest growing retail markets in the world, engaging 1.2 billion people. During 1990s India introduced widespread free market reform, including some related to retail. In between 2002-2010 consumers of selected cities in India have begun to experience the quality, choice, convenience and benefits of organized retail industry. A report of 2021 reveals that Indian retail market generate sales of about \$ 470 billion a year, of which \$ 27 billion comes from organized retail such as supermarkets, chain stores and shopping malls. As claimed by some, the opening of retail industry in the free market competition will enable rapid growth in retail sector of Indian economy. But owing to retail reforms, independent stores will close leading to massive job losses. All said, organized retail will need workers. The expected jobs in future India organized retail would total over 85 billion. Millions of additional jobs will be created during the building of and maintenances of retail stores roads, cold storage centers, software industry, electronics cash registers and other retail supporting organizations. Competition and investment in retail will provide more benefits to consumers through lower prices, wider availability and improvement in supply chain logistics.

**Keywords:** FDI, Retail Sector, Logistic Industry.

(Paper published on 1<sup>st</sup> June, 2022.)

### **Introduction**

One of the main pillars of Indian economy is retailing in India and it accounts 14% to 15% of its GDP. The retail market of India is estimated to be US \$ 450 billion and one of the top five retail market in the world. India is one of the fastest growing retail markets in the world, engaged 1.2 billion people.



In India retail industry mainly consists of small shops. In 2010, only 4% of the industry was larger format convenience stores and supermarkets and these were situated in large urban centers. 40 million Indians. That is 3.3% of Indian Population are employed in retail and logistic industry.

Till 2011, the Government of India denied FDI in multi-brand retail, prohibiting the foreign group from any ownership in supermarkets, convenience store or any retail outlet. Single-brand retail was also limited to 51% ownership. During November 2011, the government of India proclaimed retail reforms for both multi-brand and single-brand stores. These removes make possible the retail innovation and competition with multi-brand retailers such as Wal-Mart, Carrefour and Tesco, As well as single-brand majors such as IKEA, Nike and Apple. But in December 2011, under pressure from the opposition the government of India withholds the retail reforms till it reaches consensus. In January 2012, the government of India approved reforms for single brand stores and in September 14, 2012, The Govt. of India announced opening of FDI in multi-brand retails. Economists and the markets welcome this decision and on 20 September 2012, the Govt. of India officially announced the FDI reforms for single and multi-brand retail and makes it effective under Indian law.

### **Background**

Most Indian shopping takes place in open markets or millions of small, Independent grocery and retail shop. Shoppers have no pick or examine the product from the shelf, they only stand outside the retail shop and ask for what they want. There is limited storage area when the shoppers request the products they are looking for, the shopkeepers goes to the shelf or back of the store , bring it out and offer to the shopper for sale. In these small retail shops, there is no price level of the products. The shopkeepers may charge different prices for the same product on the same day of different consumers.

India's retail and logistic industry, both organized and unorganized, employs about 40 million Indians (3.3% of Indian population).The retail shops are so small only 4% of them have the size larger than 500 sq. ft. In India for every thousands people there are about 11 shops. Most of the unorganized retail shop in India employ family member, do not have scale to produce



transport product at high volume, have no quality control technology and have no training for safe and hygienic storage system. There is a chain of middleman between unorganized retailers and the consumers.

Through the 1990s India introduced widespread free market reform, including some related to retail. In between 2002-2010 consumers of selected cities in India have began to experience the quality, choice, convenience and benefits of organized retail industry.

### **Growth**

In 1997 India allowed FDI in cash and wholesale sector and required Government approval. In 2006 the approval requirement was relaxed and automatic permission was granted. In between 2002-2010 Indian retail attract about \$1.8 billion in FDI which was only 1.5% of total investment flow into India.

Single brand retailing attracts 94 proposals between 2006 and 2010 of which 57 were approved and implemented. But this is a very small number compare to its population. Because of very limited integrated cold chain and other infrastructure, Indian retail has experienced limited growth. India has only 5386 stand-alone cold storage, which have only 23.6 million metric ton Storage capacity. Out of these 80% is used only for potatoes. The remaining infrastructure capacity is less than 1% of the annual farm output of India and grossly inadequate during peak harvest season.

India has already allowed FDI in cold chain infrastructure to the extent of 100%. There has been no interest in FDI in cold storage infrastructure build out. In the absence the organized retail competition and with a ban on FDI in multi brand retailers, FDI are unlucky to begin in cold storage and form logistic infrastructure.

Up to 2010, Indian retail market was dominated by intermediaries and middleman. Due to the predominance of intermediaries in Indian retail market, there lacks transparency in pricing. Over 60% of the total price paid by the consumer goes to the pockets of middleman and there is limited growth in traditional retail shop which prevented innovation in retail industry. A 2007



report revealed that there is a radical structural change in India and in increasing no of people are turning to the service sector for employment due to relatively low compensation offered by the traditional agriculture and manufacturing sector. The organized retail market is growing at about 35% annually where as unorganized market is growing at 6% per annum.

Now Indian Retail Business is at the point of inflection. From 2008 there is rapid change in investment and several Indians and multinational companies are planned to invest up to US \$25 billion in the next 5 years. Organized retail has expected to garner about 16-18% of the total retail market in next 5 years.

### **Growth After 2011**

A report of 2021 reveals that Indian retail market generate sales of about \$ 470billinon a year, of which \$ 27 billion comes from organized retail such as supermarkets, chain stores and shopping malls. The opening of retail industry to free market competition, some claim will enable rapid growth in retail sector of Indian economy. The Economist forecast that retail market in India will double in economic value, expanding by about \$ 400 billion by 2020. This project increase is only compared with the current retail size of France. In 2011, food accounted for 70% of Indian retail. AT Kearney estimates India's organized retail had a 3% in clothing in share and apparel, while the home supplies retail was growing in between 20%-30% annually. These data correspond to retail prospects prior to November announcement of retail reform.

### **The Indian Retail Market**

Indian clothings are increasing their brand presence overseas, mainly in developed markets. Arvind Brands, Madura garments, Spykar Lifestyle and classic polo are busy chalking out foreign expansion plans through the distribution route and standalone stores as well. Another denim wear brand, spykar, which is now moving towards becoming casual wear lifestyle brand has launched its store in Melbourney recently and has planned to open three stores in London. The Mahindra Groups unique in retail market because it plans to focus on lifestyle products. It is the 4<sup>th</sup> largest Indian business group in retail market followed by Reliance Industry Ltd, the Aditya Birla group and Bharti enterprises Ltd.



- REI AGRO LTD Retail: 6TEN and 6TEN kirana stores
- Future Groups-Formats: Big Bazaar, Food Bazaar, Central, Fashion
- Raymond Ltd: Textiles, The Raymond shop, Park Avenue, Women, Parx, Colourplus , Neck Ties & More, Shirts & More etc.
- Fabindia : Textiles, Home furnishings, handloom apparel, jewellery
- RP-Sanjiv Goenka Group Retail-Formats: Spencer's Hyper, Spencer's Hyper, Spencer's Daily, Music World, Au Bon Pain, Beverly Hills Polo Club
- The Tata Group- Formats: Westside, Star India Bazaar, Steel junction Landmark, Titan, Tanishq , Croma.
- Reliance Retail-formats: Reliance MART ,Reliance SUPPER, Reliance FRESH, Reliance Footprint , Reliance Living, Reliance Auto zone, I store
- K Raheja Corp Group-Formats: Shoppers Stop, Crossword, Hyper City, Inorbit Mall
- Nilgiri's-formats: Niligiri's supermarkets chain
- Sri Kannan Departmental Store(P)Ltd: Groceries, Clothing, Cosmetics [Western Tamil Nadu's Leading Retailer]
- Pyramid Retail-Formats : Viveks , Jainsons, Viveks Service Centre, Viveks Safe Deposits Lockers
- PGC Retail -T-Mart India [4], Switcher, respect India, Grand India Bazaar, etc.
- Aditya Birla Group – Formats: more ,acquired pantaloons from future Group, Acquired Trinetra (Fabmall and Fabcity)
- Vishal Retail Group -Formats: Vishal Mega Mart
- BPCL – Formats : In & Out
- Shoprite Holdings -formats: Shoprite Hyper
- Paritala stores bazar: honey shine stores
- Kapas-Cotton garments outlets
- Aaram Shop – a platform which enables hybrid commerce for thousands of neighborhood stores.
- Gitanjali-nakshatra, Gili, Asmi, D'damas, gaintti, Gitangali Gifts, etc



According to A. mc Kinsey in India the retail productivity is very low as compared to international peer measure. For example, in 2010, the labour productivity in Indian retail was just 6% of labour productivity in US. Indian labour productivity in food retailing is only 5% where as in Brazil it is 14%. In compare to Poland's 25% non food retailing Indian's labour productivity is only 8%.

Currently, only 6% of Indian Labour work force employs in Indian's retail market ( both organized and unorganized ) most of which is unorganized. This is about 1-3<sup>rd</sup> of levels of US and Europe and about half of levels in other emerging economics. A complete Expansion of retail sector to levels and productivity similar to emerging economies such as United States would create about 50 million jobs in India. Training and development of labour and management of higher retail productivity is expected to be challenge.

Up to 2011, the government of India denied FDI in multi-brand Indian retail. ON November 24<sup>th</sup> 2011, our Prime Minister Manmohan Singh announced the following:

- India will allow foreign groups to own up to 51 percent in Multi-brand retailers as supermarkets are known in India, in the most radical pro-liberalization reforms passed by an Indian cabinet in years.
- Single brand retailers, such as apple and Ikea can own 100% of their Indian stores, up from the previous cap of 51% percent
- Both multi brand and single brand, stores in India will have to source nearly a third of their goods from small and medium sized Indian suppliers ;
- All multi-brand and single brand stores in India must confine their operations to 53-odd cities with a populations over one million, out of some 7935 towns and cities in India. it is expected that these stores will now have full access to over 200 million urban consumers in India.
- Multi -brand retailers must have a minimum investment of US\$100 million with at least half of the amount invested in back end infrastructure, including cold chains, refrigerator, transportation, packing, sorting and processing to considerably reduce the post harvest losses and bring remunerative prices to farmers
- The opening of retail competition will be with in India's federal structure of government. In other words, the policy is an enabling legal framework for India. The states of have the prerogative to accept it and implement it, or they can decide to implement it if they so choose. Actual Implementation of policy will be within the parameters of state laws and regulations.



- The opening of retail industry to global competition is expected to spur a retail rush in India

On January 11, 2012, India approved increased competition in innovation in single brand retail. This reform improved the ability of goods for consumer, encourage increases sourcing of goods from India, attract investment in operation in marketing and enhance competitiveness of Indian enterprises through access to global designs, technologies and management practices. Now India require single brand retailer with more than 5% foreign ownership, to source at least 30% of the value of products from Indian small industries, village and cottage industries artisans and craftsmen.

### **Social Impacts**

Critics have the following points of criticism.

1. As a result of retail reforms independent stores will close leading to massive job losses.
2. The small retailers and the middleman present in the retail industry plays a large part in supporting the local economy by procuring goods and services. As a result wealth redistribution and economic activity increases. The large efficient retailers kill the local economy because the corporate profits are not spent in those areas where they are generated
3. We have seen that soft drink industry become a monopoly in India and hence raise prices Pepsi and Coca Cola wiped out all the domestic brands
4. Since home grown companies and traditional markets may be able to the job India doesn't need foreign retailers
5. It is not support that work will be done by Indians, but profit will go to foreigners
6. The government claims modern retail will create 4 million new jobs but in reality this is not possible

Supporters of the retail reforms claims that organized retail will need workers. The expected jobs in future India organized retail would total over 85 billion. Million of additional job will be created during the building of and maintenances of retail stores , roads, cold storage centers, software industry, electronic cash registers and other retail supporting organizations. Instead of job losses, retail reforms are likely to be massive boost to Indian job availability. India needs huge amount of dollar to build its manufacture, hospitals, housing and school for its growing population. India is a developing country with limited surplus capitals and is already



operating on budget deficits. So, it is impossible for Indian govt. investors to their funds for jobs creation and growth at the rate India needs, O, through FDI global capital investments is necessary. Indian retail industry also needs knowledge and global integration can open export markets for Indian farmers and producers. Global retail leaders can only bring this knowledge. Walmart, Tesco, Metro, Coop are some of the global retail companies with annual sales over \$1 billion. They have not become monopolies.

With 51% FDI limit in multi-brand retailers, nearly half of the profits will remain in India. All profits will be subject to taxes so such taxes will reduce India Govt. budget deficit. Indian small shops employ workers without proper contracts, making them work long hours. Many unorganized small shop depend on child labour. A well organized retail market will help curtail these abuses.

### **Conclusion**

A survey conducted over the weekend of dec 3,2011, overpowering most of the farmers and consumers around 10 major cities all over the country support the retail reforms. More than 90% of consumers said FDI in retail will bring down prices and offer a wider choice of goods. Nearly 78% of farmers said that they will obtain better prices from the multi formal stores of their products. With global majors for expansion capital and opportunity to gain expertise in supply chain management. Spencer's retail with 200 stores in india, and with retail of fresh vegetable and fruits accounting for 55% of its business claims retail reform to be a win-win situation, as they already procure the farm products directly from the growers without the involvement of middleman or traders. Spencer's claims that there is scope for it to expand existing Indian retail firms such as spencer's, Foodworld supermarkets ltd, Nilgiri;s and shoprite support retail reform and consider international competition as a blessing in disguise. They expect a flurry of joints ventures its footprint in terms of store location as well as procuring farm products. Foodworld, which operates over 60 stores, plans to ramp up its presence to more than 200 locations. It has already tied up with Hong Kong- Based Dairy farm International. With the relaxation in international investment in Indian retail, India's Foodworld expects its global relationship will only get stronger. Competition and investment in retail will provide more benefits to consumers through lower prices, wider availability and improvement in supply chain logistics.



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## ব্যক্তিক গঠনসমূতরি ভূমিকা

জগদীশ দাস

Jagadish Das

(লখেক পরাচিতি: স্নাতক ও স্নাতকোত্তর যাদবপুর বশিববদ্যালয়ের দর্শন বভিগ থকে  
উত্তীর্ণ; এম ফলি—স্কুল অব কগনিটিভ সায়ন্স, যাদবপুর বশিববদ্যালয় থকে উত্তীর্ণ এবং  
বর্তমানে যাদবপুর বশিববদ্যালয়ের দর্শন বভিগে গবেষণারত (পি এইচ ডি))।

Ph.D. Scholar, Jadavpur University.  
Email id: [das.jagadish90@gmail.com](mailto:das.jagadish90@gmail.com)

### Abstract

সারাংশ:—ব্যক্তিক গঠনসমূতরি ভূমিকা আছে। কন্তু সম্পূর্ণ ব্যক্তিক বেল সমূতহি  
যথবেট নয়। সমূতরি প্রয়োগও যথবেট গুরুত্বপূর্ণ। দখে যায় যারা যত শিক্ষাকে বাস্তবে কাজে  
লাগাতে পারনে তারা তত উন্নত ব্যক্তিক রে অধিকারী। কন্তু প্রশ্ন জাগতে পারে সমূতি অর্থাৎ  
জ্ঞান আছে কন্তু তার বাস্তব প্রয়োগ নহে তমেন পরস্থিতি কী বাস্তবে সম্ভব? এই প্রশ্নের  
উত্তরে Antonio R Damasio এর লেখে "Descartes' Error" 'Emotion Reason and Human Brain'  
গ্রন্থটির উদাহরণ তুলে ধরা যায়। এই বইটির প্রথম কয়েকটি অধ্যায়ে দখে যায় Phineas P.  
Gage নামক এক জন ২৫ বছর বয়সের ব্যক্তির কথা। যার দুর্ঘটনার ফলে বাদ গেলি মাথার কছু  
অংশ। বহু পরীক্ষার ফলে দখে গেছে যে এই বাদ দেওয়া অংশটুকু সমূতরি ব্যবহারকি প্রয়োগের  
ক্ষেত্রে গুরুত্বপূর্ণ ছিল। এই অংশটুকু বাদ যাওয়ার ফলে তিনি সামাজিক জ্ঞান, নেতৃত্ব জ্ঞান থাকা  
সত্ত্বেও বাস্তব পরস্থিতিতে সঙ্গেলে প্রয়োগে অসমর্থ হচ্ছেন। কাজেই এ থকে সদ্ধান্ত  
নেওয়া যায় যে জ্ঞান বা সমূতি থাকা সত্ত্বেও তার বাস্তব প্রয়োগের দক্ষতা গুরুত্বপূর্ণ।  
অর্থাৎ এমন অবস্থায় মানুষ উপনীত হতে পারনে যথোন্ন মানুষের মধ্যে জ্ঞান থাকা সত্ত্বেও  
তার প্রয়োগ হয় না। এই রকম অবস্থাকে বলা যায় আলস্থ, অক্রমণ্যতা, কুঁড়মোৰি এইগুলি  
ব্যক্তিক অবগুণ। এই অবগুণগুলি পরিগামে দুঃখ-দায়ক। ব্যক্তির উন্নত চর্ত্র অর্জনে এরা  
খাত্মক প্রভাব ফলে।

(মূল শব্দ:—Phineas P. Gage, Elliot, A NEW MIND, Wechsler Adult Intelligence Scale, স্বল্পকালীন  
মৌখিক সমূতি, Responding to the challenge)

(Paper published on 1<sup>st</sup> June, 2022.)

### ভূমিকা

ব্যক্তির ব্যক্তিক বলতে তার পরিশেতের সমাজে থকে সঠকি ব্যবহার  
ও সুষ্ঠু জীবন যাপনকে বোঝায়। আর তাত্স্মূতরি ভূমিকা অপরসীম। সমূতি ছাড়া  
ব্যক্তি কোন কাজই সঠকিভাবে করতে পারে না। দৈনন্দনি ব্যবহার একপ্রকার  
অসম্ভব হয়ে পড়ে। কন্তু প্রশ্ন হ'ল কবেল মাত্র সমূতি থাকলেই কী ব্যক্তিক রে



সঠকি গঠন সম্ভব? কারণ স্মৃতি থাকলেও কেন কেন ক্ষত্রে মানুষেরে ব্যক্তিত্বেরে ভারসাম্য বিদ্ধিন্তি হতে দেখে যায়। যমেন Antonio R Damasio এরলখো "Descartes' Error" 'Emotion Reason and Human Brain' গ্রন্থে দেখে যায় যে কেন ব্যক্তিসকল প্রকার স্মৃতি থাকা সত্ত্বে বশিষ্যে কারণ বশতঃ সে সামাজিকি ও নতৈকি অনকে ক্রয়ি-কলাপে অসমর্থ হচ্ছে। আর তার জন্য দায়ী বশিষ্যে দুর্ঘটনায় মস্তিষ্কেরে বশিষ্যে অংশ কটে বাদ যাওয়া। অর্থাৎ স্মৃতিশক্তির জন্য প্রয়োজনীয় যে মস্তিষ্কেরে অংশ, তা অক্ষুণ্ণ থাকলেও সহে স্মৃতিতে থাকা নীতি-বাধি পালনরে ক্ষত্রে যে অংশ প্রয়োজন কেন কারণে সহে অংশ যদি বাদও যায় তাহলেও তথ্য সঞ্চয়ে ও পুণরূদ্ধরকে কেন সমস্যা হয় না। অর্থাৎ স্মৃতি আছে অথচ তার প্রয়োগেরে সামর্থ্য নহে এমন অবস্থায় উপনীত হওয়া কী সম্ভব? যদি তা হয় তাহলে তা ব্যক্তিত্ব গঠনে যথেষ্ট হানকারক। আলোচ্য নবিন্থে সহে বষিষ্যে অনুসন্ধান চালানো হব।<sup>i</sup>

### প্রক্ষেপট

১৮৪৮সালরে এক গ্রীষ্মে Phineas P. Gage নামক এক জন ২৫ বছর বয়সেরে ব্যক্তি যনি পশোয় ছলিনে রলে পথনর্মাগেরে ঠকিদার, তনি Vermont এর Cavendish নামক স্থানে এক ভয়াবহ দুর্ঘটনায় পড়নো। পথে একটি পাহাড় পড়ে। তখন সহে পাহাড়ে বস্ফোরণ ঘটিয়ে একটি সুড়ঙ্গ তরৈ করা আবশ্যক হয়েপড়ে। Phineas P. Gage ছলিনে এক জন দক্ষকর্মী। সুস্বাস্থ্যেরে অধিকারী এই ব্যক্তি নজিরে দায়ত্ব অত্যন্তদক্ষতার সাথে পালন করতনো। এই কাজে শারীরকি শক্তিরি সাথে সাথে বুদ্ধি মত্তার প্রয়োজন ছলি। সুড়ঙ্গ তরৈ করতে কতক গুলি ধাপ অনুসরণ করতে হয়। প্রথমে পাহাড়েরে গায়ে একটা ছোট গর্ত খুঁড়তে হয়। সহে গর্তে বস্ফোরক পাউডার ভর্তি করা হয়, সখেনে একটা সলতে ভরে দেতিতে হয়, তারপর বালদিয়ি মুখ বন্ধ করে লোহার রড দয়ি চেপে দেতিতে হয়। বাল্মীনা দলিলে বস্ফোরণ পাহাড়ের মধ্যে না হয়ে বাইরে চলে আসতে পারো। ভদ্রলোক বালদিয়ি গের্তেরে মুখ চেপে দেওয়ার জন্য একটি বশিষ্যে ধরনরে লোহার দন্ড তরৈ করে ছলিনো।

তার পর ঘটল সহে ঘটনা। সটো ছলি গ্রীষ্ম কালরে এক বকিলে বলো। প্রায় সাড়ে চারটে নাগাদ ঘটনা টিপ্পটো। তনি গর্তে বস্ফোরক পাউডার ভরে তাতে একটি সিলতে করে দয়িছেলিনো। এবং তার সহযোগী এক জনকে বললনে গর্তেরে মুখটা বালদিয়ি ভরে দেতিতো। এমন সময় পাশ থকে কড়ে তাকে ডাকো। Gage সদেকিতে তাকান। তার মনযোগে বিদ্ধিন্তি হয়। সহযোগী বালদিয়ি মুখ ভরার আগতে তনি বস্ফোরক পাউডাররে উপরে লোহার দন্ড দয়ি ঠাসতে থাকনো। সহে মুহূর্তত্তে ঘটে যায় দুর্ঘটনা। বস্ফোরণ এর আঘাত এসে পড়ে তার মুখে। দুর্ঘটনার্থুব মারাত্মক ছলি। কয়কে সকেন্দরে মধ্যে ঘটে যাওয়া দুর্ঘটনা। হাতে থাকা গ্রীষ্ম লোহার দন্ডটি গজেরে



চেঁয়াল ভদ্রে করণে মস্তিষ্ক হয়ে ১০০ ফুট দূরে গায়ে পড়। তাতে লগে থাকে রক্ত এবং মস্তিষ্কের অংশ। গজে ছটিকে দুরগেয়িে পড়নো। যদিও তনি নিস্তিব্ধ হয়ে পড়নে তবুও তনি সিচতেন ছলিনো।<sup>ii</sup>

বর্ণনা অনুসারে আমরা জানতে পারি কি ভাবে Gage তার হারানো দ্বৈকি শক্তি ফরিপে লেনো। তনি স্পর্শ করা, শ্রবণ করা, দখো ইত্যাদিকাজ গুলোর সাথে সাথে কথা বলতে পারতনো। যদিও তনি তার বাঁচেখে দখেতে পতেনে না কন্তু ডান চেঁখে দখেতে পতেনো। তনি ভালো ভাবে হাঁটতে পারতনো, তনি হাত দয়িে শক্ত করে কঢ়ি ধরতে পারতনো। এবং ভাষার ব্যবহার ও করতে পারতনো। তা সত্বেও হারলো বর্ণনা করছেন যে বৌদ্ধিক প্রক্রিয়া দ্বারা এবং পাশবকি প্রবণতার নয়ন্ত্রণের সামর্থ্য নষ্ট হয়ে গয়েছেন। এই পরবর্তন ধরা পড়ল যখন মস্তিষ্কের আঘাত প্রশমনি হলো। তার দক্ষতা কমে এল, স্থূল তম অশ্লীল বিষয়ে কাল ক্ষপে করতে থাকলনে---যগেলি তনি আগে করতনে না। সহকর্মীদের সাথে দুর্ব্যবহার করতে শুরু করলনে, মতবরিণেধ হলে ধরেয় হারা হয়ে পড়লনো। তনি ভবিষ্যৎ সম্পর্কে অনকে পরিকল্পনা করতনে কন্তু সগেলি একে পর এক জমা হতে লাগল, কন্তু তাদের বাস্তবে রূপ দত্তে পারলনে না। তার বুদ্ধি শশু সুলভ অথচ প্রবৃত্তি মুখনিতায় এক জন শক্তি শালী মানুষের মত। তার ভাষা এত কুস্তি হয়ে পড়ে ছলি যে মহলিদের তার আশে পাশে বশে ক্ষণ না থাকার উপদশে দওয়া হত। কারণ তা না হলে তার কথার দ্বারা ওই মহলিদের মনক্ষুন্ন হতনো। অর্থাৎ শারীরিক স্বাস্থ্য ফরিপে এলে ও মানসিক স্বাস্থ্য তথা সুব্যবহার ফরিপে আসনো। Gage এক নতুন ব্যক্তিত্বের অধিকারী হলনে, যথোনে বর্তমান বিক্ষুব্ধ ব্যবহার এবং দুরঘটনা-পূর্ব-বিচেনা-পূর্ণ শক্তিশালী চরিত্র---এদের মধ্যে পার্থক্য দখেগলো। দুরঘটনার আগে তার মানসিক ভারসাম্য সুন্দর ছলি যার ফলে পরিচিত ব্যক্তিরা তাকে দেক্ষ কৌশলী ও ভালো ব্যবহার কারী মনে করতনো। তনি তার ব্যবসায়ী পরিকল্পনা গুলি বাস্তবায়িত করতনো। অর্থাৎ সর্বপরিতনি এক জন সফল পশোদার ব্যক্তি ছলিনো। কন্তু দুরঘটনার পর তার পরিচিতিরা তাকে চনিতে পারলনে না। তারা দখেলনে সহে Gage আর যনে সরেকম নহে। তার চরিত্রে এত পরবর্তন হয়েছেন যে যথোনে তনি কাজ করতনে সখোনে তাকে আর পুণর্বহাল করা হয়নি। এক্ষত্রে শারীরিক সমস্যা ছলি না, সমস্যা হয়ে ছলি তার মধ্যে এক নতুন চরিত্রের আবরিভাব হওয়া কে কন্দ্ৰ।

Gage-এর এই মানসিক অবস্থা অপরবর্ততি থাকে, তাই সে আর আগেরে জীবকি টি ধরে রাখতে পারল না। অবশ্যে একটি ঘণ্টার আস্তাবলরে কাজনলিনো। নয়িমানুবর্ততির অভাবে তার কোন কাজই দীরঘস্থায়ী হ'ত না। তনি যনে সরেকম কাজ থুঁজে বড়েতনে যা তার পক্ষে সম্ভব নয়। অবশ্যে তনি একটি সার্কাসে কাজ নলিনো। সখোনে তনি নজিরে মস্তিষ্কের ক্ষত আর সহে লাই দন্ডটি দখেয়িে মানুষকে আনন্দদিতিনো। এই সময় তার পশুদেরে প্রতি এবং বভিন্ন বস্তুর প্রতি প্রবল আকর্ষণ অনুভব করতে দখে যায়। যা আগে দখে যায় না। এই ধরনের সমস্যা



সাধারণতঃ এই রকম আঘাত প্রাপ্তদেরে অথবা যাদেরে আটস্টিকি রোগ আছে তাদেরে দখে যায়।

যে অপর্যাপ্ত তথ্য পাওয়া যায় সহে তথ্য অনুযায়ী Gage মৃগী রোগে আক্রান্ত হয়ে পড়েন। ১৮৬১ সালের ২১শে মে থেকে কয়েকদিন যাবে অসুস্থতার পর তনি প্রাণ ছারান। মৃত্যুর আগে পর পর অনেকে গুলি খাঁচুনি একরে পর এক আসতে থাকে। সহে তৌব্র কম্পন এবং খাঁচুনি থেকে তনি আর সচতেন অবস্থায় ফরিয়ে আসনে ননি। এই অবস্থাকে বলা হয় status-epilepticus<sup>iii</sup>। মাত্র ৩৮ বছর বয়সে তনি প্রাণ ছারান।<sup>iv</sup>

## গুরুত্ব

ব্রিটিশ শারীরবাদী David Ferrier অসুস্থ Gage এর এই ঘটনাটির বশিল্ডেণ ও পর্যবেক্ষণ করনে দক্ষতা ও অনুরাগের সাথে। তনি ইলকেট্রোকিয়াল স্টেমিলশেন নয়ে অনেকে পরীক্ষা-নরীক্ষা করনে পশু পাথদিরে মস্তিষ্কের সরেবিরাল কর্টেক্স বাদদিয়ে দয়ি। তনি সদিধান্তে পেঁচান আমাদের মাণিক্র এবং ল্যাঙ্গুয়জেরে নয়িন্ত্রণকারী একটি অংশ আছে মস্তিষ্কে। তনি তার নাম দলিনে prefrontal cortex, এবং এই অংশের ক্ষতি হলে ব্যক্তিত্বের বিশে পরিবর্তন হওয়া সম্ভব। বিশে করে বলতে হয় Gage এর ক্ষত্রে যা হয়েছে অর্থাৎ মানসিকতার অবনমন। Harlow এবং Ferrier উভয়ে Phrenology থেকে এই প্ররোগে পান।

যদিও Gage-এর মস্তিষ্কের কছু অংশ যাদুরঘটনায় নষ্ট হয়ে গেছেন সহে অংশ টুকু তার ভবিষ্যতে পরিকল্পনা, সামাজিক ব্যবহার এবং নৈতিকিতা করে নয়িন্ত্রণ করে এমন জানা গয়েছেন তথাপি ঠিক করেন অগ্রচল করেন ক্রয়িকে নয়িন্ত্রণ করতে আবশ্যিকার করা তেকালীন যুগে যথেষ্ট কঠনি ছিল। বলা বাহুল্য তাই তখন কার মত স্পষ্ট করতে তমেন কছু জানা যায়ননি।

এ বিষয়ে গবেষণার সুবাধির জন্য লখেক Gage এর মতো আচরণকারী করেন ব্যক্তি করে খোঁজা হচ্ছিল। তমেরি একজন করে পাওয়াগলে যারসাথে Gage-এর ব্যবহারের অনেকে মন পাওয়া যায়। এখানে যেটো জানার বিষয় ছিল তা হল ব্যবহারের এই পরিবর্তন করেন করেন রোগের ফল? ইন্নি নজিরে অপারগতার জন্য কাজ হারয়ে ছিলনে এবং তার করেন জ্ঞানাতিরি কাছে আশ্রয় পয়েছেলিনে। কন্তু লাভজনক ভাবে পরিশ্রম নাকরায় তনি সঠকি পারশ্চরমকি পাচ্ছিলিনে না। অথচ অনেকে চকিৎসকই বলছেন যে তার মানসিক বিষয়গুলি সঠকি ভাবে কাজ করছে। জানা যায় যে Elliot ছিলনে অলস এবং বশে বভিন্ন রকম দুষ্কর্মকারী।

Elliot এর উপরকরা কম্পিউটার-কৃত tomography magnetic resonance<sup>v</sup> এর দ্বারা জানা যায় মস্তিষ্কের ডান দিক এবং বাম দিক উভয় দিকের frontal lobe



ক্ষতিগ্রস্তহয়, এবং এই ক্ষতি বাম দক্ষিণে তুলনায় ডানদিকে বশে হয়। বাস্তবে, বাম দক্ষিণে left frontal lobe, বাঁদিকের যত ক্ষতিসম্পর্ক orbital এবং medial sector এ সীমাবদ্ধ। ডান দক্ষিণে একই রকম ভাবে ক্ষতিগ্রস্ত হয়, কিন্তু পার্থক্য হল সহে সাথে lobe এর core (cerebral cortex এর শ্বতেবস্তু) ও ক্ষতিগ্রস্ত হয়। যার ফলে right cerebral cortex এর একটা বড় অংশ আর ক্রিয়াশীল থাকেনা।

উভয় দক্ষিণে frontal lobe এর কচ্ছি অংশ যারা motor বা premotor অঞ্চলের মুভমেন্ট নিয়ন্ত্রণ করে তারা ধ্বংস হয়েনি এটা আশ্চর্যের বিষয় নয়, কারণ Elliot এর movement ছলি সম্পূর্ণ স্বাভাবিক। আশা করা যায় যে frontal language এর সাথে যুক্ত cortices গুলি অবকৃত ছলি। এই অঞ্চল শখিন এবং স্মরণের জন্য প্রয়োজনীয় অঞ্চল গুলির একটি যদিতা ধ্বংস হতো তাহলে তার স্মৃতিশক্তি ও বিদ্যুৎ হত।

Elliot এর মস্তিষ্কে অন্য কথোন ক্ষতিরে কথোনো প্রমাণ পাওয়া যায় কি? এর উত্তর স্পষ্টতই না। Temporal, occipital এবং parietal অঞ্চল গুলি উভয় hemisphere এ অক্ষত। The large Gray-matter nuclei beneath the cortex, the basal ganglia and the thalamus প্রভৃতি অঞ্চল গুলি ও অক্ষত ছলি। সুতরাং ক্ষত কবেল prefrontal cortices এ সীমাবদ্ধ ছলি। ঠিক যনে গজেরে মত ওই cortices গুলির ventro-medial sector নষ্ট হয়েছেন বলে ধরা হয়। Elliot এর ক্ষতেরে বামদক্ষিণে তুলনায় ডানদিকে ক্ষত বশে বিস্তৃত ছলি।

কটে হয়তো ভাবতে পারনে যে লেস্বু মস্তিষ্ক নষ্ট হয়ে গেছেন; তার বাঁদিকের অংশটা অক্ষত ছলি। যদি ও মস্তিষ্কের ক্ষতিরে যপেরগাম হওয়ার কথা সব সময় সরেকম দখো যায় না। কারণ মস্তিষ্ক একটাব ড্স্নায়ু কথোপরে পণ্ড নয় যারা সব সময় একই কাজকর। সদিধান্ত নওয়ার জন্য মস্তিষ্কের যে অংশ আবশ্যিক সহে অংশ Gage এবং Elliot উভয়েরই নষ্ট হয়ে যায়।

## A NEW MIND

Elliot স্মৃতি সংক্রান্ত পরীক্ষায় যথোনে সময়ের ব্যবধান ছলি সথোনে তর্নি স্বাভাবিক ছলিনো। একটা পরীক্ষা যথোনে স্মরণটা করা হবে তনি সকেন্ডে ১৮ মিনিট দরেতিকে করতে বেললে পছেন দক্ষিণ গুগে সহে একই সময়ের ব্যয়ে বেলতে হতো। অপর একটা পরীক্ষায় ১৫ সকেন্ডে পরে দখো যায় সময়টা হসিব করতে বেরেয়ি যায়। যাদের frontal lobe সমস্যা আছে তাদের পরীক্ষার ফল অস্বাভাবিক আসে। Elliot উভয় কাজে ভালো ফল করছে। তর্নি উভয় পরীক্ষায় যথাক্রমে ১০০% ও ৯০% সফল হয়ে ছলিনো।



অসম্পূর্ণ তথ্য থকে কোন বিষয়ে পুরুনুমান করাটা উন্নত বুদ্ধির প্রকৃতগতি বিশেষিত্ব আর সটো প্রায়শ frontal lobe নষ্ট হলে ব্যাহত হয়। Tim Sallice এবং M.Evans একটি পরীক্ষা প্রস্তুত করলেন যথোননে কতগুলো প্রশ্ন রাখা হয় যার কোন নির্দিষ্ট উত্তর নহে, এবং এই উত্তর বিভিন্ন প্রকার অসংলগ্ন তথ্য গুলি একত্রিত করে এবং তার উপর যৌক্তিক দক্ষতা খাটয়ি তরো করতে হবে একটা বধে অনুমানের আকার। উদাহরণ স্বরূপ বলা যায় New York city তে কত গুলি জরিফ আছে, অথবা Iowa শহরে কত গুলি হাতি আছে? এই প্রশ্নের উত্তর দিতে আপনাকে অবশ্যই ধরে নতি হবে যে এই ধরনের কোন পশু উত্তর আমরেকিয় স্বাভাবিক ভাবে হয় না, কবেল মাত্র চড়িয়াখানা এবং বন্যপ্রাণী সংরক্ষণ অঙ্গচলনে এদের দখোয়ায়। আপনাকে অবশ্যই নড়িয়ারক সঠিরি এবং আইওয়া সঠিরি মান চত্র দখেতে হবে যাতে স্থোনে অবস্থিতি সমস্ত পশুশালা এবং সংরক্ষণ অঙ্গচল পাওয়া যাবে, এবং অন্য কোন জ্ঞানের উপর থকে জানতে হবে সহে পশুদের সংখ্যা, তার পর সগুলি কে যোগ করতে হবে। তবু এই প্রশ্নের উত্তর আসবে অনেকেটা আনুমানিক। যদি কটে একদম সঠিক উত্তরটা দয়ি ফলেনে তাহলে সটো বিস্ময়কর। কারণ এই প্রশ্নের উত্তর দিতে অনেকে অসম্বন্ধিত জ্ঞানের মধ্যে সম্বন্ধ আবশ্যিকার করতে হবে এবং সাধারণ যৌক্তিক সামর্থ্য থাকতে হবে, মনোযোগ স্বাভাবিক থাকতে হবে, ওয়ার্কিং মেমোরি ও স্বাভাবিক থাকা চাই। এই পরীক্ষার ক্ষত্রে ও দখো যায় Elliot স্বাভাবিক উত্তর দয়ে।

এই ভাবে Elliot তার জন্য সাজয়ি রাখা বিশেষভাবে চক্র পার হয়ে গেছে ছলিনো। কনিতু ব্যক্তিত্ব নির্ণয়ের পরীক্ষা করা হয়নি লখেক এই পরীক্ষাটি করতে উদ্যত হয়েছেন। Minnesota Multiphasic Personality Inventory কমিক্স সংক্ষিপ্তে বলা যায় MMPI এর সাহায্যে ব্যক্তিত্ব পরীক্ষা করা হয়। মনে হতে পারে যে Elliot সটোটে উত্তীর্ণ হবে, কারণ অন্যান্য পরীক্ষায় তার দক্ষতা ছলি অক্তরমি।

এই সমস্ত পরীক্ষার পর মনে হতে পারে যে—Elliot এক জন স্বাভাবিক বুদ্ধি সম্পন্নমানুষ, যে কনিবি সঠিক ভাবে কোন ব্যাপারে সদিধান্ত নতি পারনে না, বিশিষ্টে করে যখন ব্যক্তিগত বা সামাজিক ব্যাপারে সদিধান্ত নতেয়ার প্রয়োজন হয়। এখানে প্রশ্ন জাগে যে তাহলে সামাজিক এবং ব্যক্তিগত ব্যাপারে সদিধান্ত নতেয়ার প্রক্রিয়াটি কী বিভিন্ন স্থান, বস্তু, সংখ্যা, শব্দ ইত্যাদি ব্যাপারে সদিধান্ত নতেয়ার প্রক্রিয়া থকে আলাদা? তারা কী পৃথক কোন স্নায়ুতন্ত্রের ক্রিয়া-কলাপের অন্তর্ভুক্ত? এক্ষত্রে সদিধান্তে আসতে হয় যে যদি মস্তিষ্কে বিশিষ্ট ক্ষতরে জন্য এই সমস্ত পরিবর্তন, তাসত্ত্বে ও পরীক্ষাগারে উপকরণ সমূহ দ্বারা পরীক্ষা করে কচুতে এর কারণ গুলি নির্দিষ্ট ভাবে জানা যাবনো। একই রকমের রংগ যুক্ত অন্যান্য রংগীরা সদিধান্ত নতেয়ার বলোয় কচুটা ব্যর্থ হতেন, কনিতু তাদের কারণে এরকম মারাত্মক সমস্যা ছলি না, যতদুর গবেষকরা (ঐ পরীক্ষায় সংশ্লিষ্ট) জানতে পরেছেন। যদি অসুবিধি গুলি নির্ণয় করতে হয়, তাহলে আমাদের নতুন পন্থা অবলম্বন করতে হবো। আর যদি Elliot এর



আচরণ জনতি সমস্যা কে নির্ণয় করতে হয় তাহলে আমাদেরে প্রচলিতি পন্থা থকে  
সরাতে আসতে হব।<sup>vi</sup>

## Responding to the challenge

লখেকরে সহকর্মী Jeffry Saver পরে এই আপত্তির উত্তর দিয়েছিলেন Elliot  
এর আচরণকে পরীক্ষা করার পর। পরীক্ষা গুলি ছিলি সামাজিক সম্মলেন এবং নতোকি  
মূল্যবোধ সংক্রান্ত, যা পরীক্ষাগারে বসনেওয়া হয়। পরীক্ষা গুলো নম্নরূপ---

প্রথম পরীক্ষাটি ছিলি কোন কাজ করার জন্য বকিল্প তরৈ। এই পরীক্ষায়  
চারটি সামাজিক পরিস্থিতি বা দুর্ধর্ষ অবস্থা পরীক্ষার্থীদের সামনে তুলে ধরা হবে  
মৌখিক ভাব। প্রত্যেকেটি ক্ষত্রে পরীক্ষার্থীকে পৃথক পৃথক মৌখিক উত্তর  
দিতে বলা হব। একটি পরিস্থিতিতে, কোন ব্যক্তি তার পত্নীর ফুল দানা ভঙ্গে  
ফলেছেনে; পরীক্ষার্থীকে জজিগ্রাসা করা হবে, যে ওই ব্যক্তি তার স্ত্রীকে শান্ত  
রাখার জন্য কোন পন্থা অবলম্বন করবনে? একটা স্থান্ডার্ড কোশ্চনেরে সটে  
থাকব, যমেন, "এক্ষত্রে সে আর করতে পারত?" তাকে বলা হল বকিল্প সমাধান  
বলার জন্য। এক্ষত্রে তার স্কোর নওয়া হয়।

দ্বিতীয় কাজটি ছিলি পরিগাম সম্পর্কে তনিসচতেন আছনে কনিতা পরীক্ষা  
করা। এই পরীক্ষায় মাপা হবে যে ব্যক্তি স্বতঃস্ফূর্ত ভাবে পরিগাম বুঝতে পারে  
কনিতা। এখানে পরীক্ষার্থীর সামনে চারটে প্রাকল্পকি বকিল্প তুলে ধরা হবে যে  
বকিল্প গুলতিতে সাধারণ সামাজিক বধিন অতক্রিম করার প্রলাভে থাকব। যার  
একটি অংশে থাকব—কোন ব্যক্তি কে ব্যাংক একটি চকেরে বনিমিয় অনকে বশে  
টাকা দিয়ে ফলে। পরীক্ষার থকে বলা হবে এই দৃশ্যটিকি বেরণা করতে—কভিাবে  
প্রারম্ভ হবে, কভিাবে অগ্রসর হবে, ওই ব্যক্তিরি আচরণ কর হবে, ওই আচরণের  
পূর্বে তার চন্তা কর্তৃত ইত্যাদি পরীক্ষার্থী যে বিশিষ্টে বকিল্প বছে নবেনে তার  
উপর নির্ভর করতে তার স্কোর কমেন হব। এই পরীক্ষায় ও Elliot যে কোনো  
নয়ন্ত্রিতি গোষ্ঠী অপক্ষে উন্নত ছিলি।<sup>vii</sup>

তৃতীয় পরীক্ষাটি ছিলি উদ্দেশ্যে ও উপায় সংক্রান্ত সমস্যা সমাধান।  
পরীক্ষার্থী কে কোন সামাজিক লক্ষ্যে পোঁচানোর জন্য একটি কার্যকরী উপায়  
উদ্ভাবন করার সামর্থ্য আছে কনিতা দখো হব। পরীক্ষার্থীদের দশটি পৃথক দৃশ্য  
দেওয়া হবে এবং যথা যথ ও কার্যকর ব্যবস্থা গ্রহণ করতে বলা হবে যাতে কনিতা  
সামাজিক প্রয়োজন পূরণ হয়—উদাহরণ স্বরূপ বলা যায় বন্ধুত্ব স্থাপন, একটি  
রোমান্টিক সম্পর্ক বজায় রাখা, অথবা জীবকি সংক্রান্ত কোনো জটিলতার  
সমাধান করা। পরীক্ষার্থীকে বলা হলো কোন ব্যক্তিরি কথা যে কনিতা নতুন  
পরিষেবে বসবাস করতে যাচ্ছে, এবং সখোনে অনকে নতুন বন্ধু তরৈ করবে এবং  
বাড়ির মত অনুভব করব। তখন পরীক্ষার্থী কে বলা হবে যে একটা গল্প বলতে



যথোনে ওই ব্যক্তি এই উদ্দেশ্যে সাফল্য পাবো এক্ষত্রে স্কোর হবে যেত গুলি সফলক্রয়ির কথা সে বলতে পারবো এখানে ও Elliot ভালো ভাবে কর্ম সম্পাদন করল।

চতুর্থ পরীক্ষাটি ছিল কোন ঘটনার সামাজিক ক্রম প্রয়ায় নির্ণয়েরে পরীক্ষা। ত্রিশিটি পরীক্ষণ বস্তুর প্রত্যক্ষেত্রে পরীক্ষার্থী দখেবে একটি নকশাচিত্রে তালিকা যা আন্তর্ব্যক্তিক পরিস্থিতিকিং উপস্থাপতি করা হয়, এবং পরবর্তী তিনিটি তালিকা থকে কোন একটি কে বছে নতিবে বলা হয় যাটি সব চয়ে ভালো প্রথমটির সঙ্গে মিলে যায়। সঠিক নির্বাচনের সংখ্যা দখে স্কোর নির্ণয় করা হয়। Elliot সাধারণ মানুষের তুলনায় কোন অংশে আলাদা ছিল না।

পঞ্চম এবং অন্তমি পরীক্ষাটি ছিল নতৈকি বচির এর একটি সাক্ষাৎকার (L. Kohlberg and colleagues এরদ্বারা Heinz dilemma এর বিবরণিতি রূপে রসমতুল্য), এর দ্বারা নতৈকি বচিরে উন্নতি ও বোঝায়। পরীক্ষার্থীর সামনে একটি সামাজিক পরিস্থিতি তুলে ধেরা হয় যথোনে দুটি নতৈকি নায়িমের মধ্যে দ্বন্দ্ব আছে, পরীক্ষার্থীকে বলা হবে ওই দুটি বকিল্প মধ্যে কোনটি বছেনতি এবং কনে বছেনয়ে হয়েছে তার একটি বিস্তারিত বিবরণ দিতো। উদাহরণ স্বরূপ বলা যায় এমন একটা পরিস্থিতি তাকে দেওয়া হলো যথোনে তাকে জজ্ঞাসা করল সে তার মরণাপন্ন স্ত্রীকে বাঁচাতে ওষুধ চুরকি রবকেনো। এ ক্ষত্রে যে স্কোর হবে তা নতৈকি উন্নয়নের স্তর নির্দেশেক হবো।

সংক্ষেপে, Elliot এর একটা স্বাভাবিক সামর্থ্য ছিল সামাজিক পরিস্থিতির প্রক্ষেত্রে একটি বকিল্প উত্তর তৈরি করা এবং স্বতঃস্ফূর্ত ভাবে সহে বকিল্প উত্তরের পরিনাম বিচেনা করার। এ ছাড়া কোন সামাজিক উদ্দেশ্য সাধনের উপায়কে ও এসে বেঁধ করতে পারে, এবং সক্ষত্রে সামাজিক পরিস্থিতি কমেন হবে তাও সবেঁধ করতে পারে, এবং বশে উন্নত ও উচ্চ প্রয়ায়ে নতৈকি যুক্তি দিতো পারো। এই অনুসন্ধান থকে প্রমাণিত হয়ে frontal-lobe এর ventro-medial sector নষ্ট হয়ে গলে ও অর্জন সামাজিক জ্ঞান নষ্ট হয় না---কারণ শর্ত নয়ন্ত্রণ এ পরীক্ষাগুলিতে ওই সামাজিক জ্ঞানের পুনরুৎপত্তি হতে দেখো যায়।

Elliot যহেতু বুদ্ধি এবং যুক্তি সংক্রান্ত প্রচলতি পরীক্ষায় সম্পাদিতি ক্রয়গুলিতে ভালো স্কোর করনে, সহেতু তার থকে প্রমাণিত হয় যে, তার বুদ্ধি ও স্মৃতির সাথে সদিধান্ত গ্রহণের ব্যাপারে অনকে পার্থক্য। কভিবে তা ব্যাখ্যা করা যাবো? সুতরাং পরীক্ষাগারে এই ক্রয়গুলির শর্ত এবং দাবগুলি বাস্তব জীবনের শর্ত বা দাবগুলি থকে অনকে আলাদা। এই পার্থক্যগুলি বিশ্লিষণ করা যায়।

কবেল মাত্র শয়ে পরীক্ষণ ক্রয়টি ছাড়া বভিন্ন বকিল্পগুলির মধ্য থকে বছে নওয়ার প্রয়োজন ছিল না। শুধু মাত্র বকিল্পগুলি এবং তদনুগ ফলাফলগুলি নওয়াই যথষ্টে ছিল। অন্যকথায়, সমস্যার মধ্যদিয়ে যুক্তি প্রয়োগ করলেই



ষথষ্টে ছলি, কনিতু সদিধান্তের ব্যাপারে ঘূর্ত্তি প্রয়োগেরে আবশ্যকতা ছলি না। এইসব পরীক্ষণ ক্রয়ির সাধারণ নষ্পাদন দখে প্রমাণিত হয় যে, সামাজিক জ্ঞান এবং তার উপলব্ধি অস্তিত্ববান ছলি। বাস্তব জীবনে কোন একটি বিকল্প গ্রহণ করতে আমরা বাধ্য হই। যদি এমন বাধ্যতা না থাকে তবে Elliot এর মত সদিধান্তহীন হতে হবে।<sup>viii</sup>



এবষিয়ালনে চনাকরতে মূলতঃ Antonio R Damazio এর লিখে "Descartes' Error" 'Emotion Reason and Human Brain' গ্রন্থেরে কচুঅংশনাড়ো হয়েছে। এছাড়াও অন্যান্য প্রয়োজনীয় তথ্য কাজে লাগলেও এই বইটির ভূমিকাই প্রধান। আলোচ্য অংশটি প্রয়ালোচনা করলে দেখে যায় যে এখানে একজন দুরঘটনা-গ্রস্ত মানুষ মস্তিষ্কেরে বশিষ্ঠে অংশ হারয়ি কীভাবে মানসিক ভারসাম্য হারয়ি ফলেনো। আর তার ফলে দখে যায় ব্যক্তির অস্তিত্ব বজায় রাখাই কর্তনি হয়ে দাঢ়ায়। স্মৃতিতে আছে সব কচু। সামাজিক নীতবিশ্বাদে, মূল্যবোধ, কর্তব্যবোধ প্রভৃতি ষথষ্টে আছে। অন্ততঃ বভিন্ন প্রকার পরীক্ষায় যা এখানে দেখেনো হয়েছে তাতে দখে যাচ্ছে নীতবিশ্বাদ স্মৃতিতে থাকলেও তাকে বাস্তবে কর্মক্ষণেরে প্রয়োগ করতে তারা অক্ষম। দখে যাচ্ছে যে সামাজিক সকল জ্ঞান থাকা সত্বেও বাস্তবে সামাজিক হওয়ার জন্য তা ষথষ্টে নয়। কবেল জ্ঞান অর্জনই ষথষ্টে নয়, সহে জ্ঞানকে কাজে লাগানো খুব দরকারী। তাই শক্ষিয়া কবেল তথ্য সর্বস্ব হলেই হয় না। সহে শক্ষিয়াক সম্পূর্ণ হয় না যদিনা তাকে কাজে লাগানো না যায়। এর জন্য সর্ব প্রথম প্রয়োজন ইচ্ছাশক্তির সঠকি নয়িন্ত্রণ। কাজেই ব্যক্তিত্ব গঠনে কবেল জ্ঞানই ষথষ্টে নয় তার জন্য প্রয়োজন সুনয়িন্ত্রণ ইচ্ছাশক্তি ও তার প্রয়োগ সামর্থ্য।

আলোচ্য অংশে দখে যায় যে দুরঘটনা করলতি হয়ে ব্যক্তি বশিষ্ঠেরে মস্তিষ্কেরে বশিষ্ঠে অংশেরে বচ্ছদেরে ফলেই সবে বাস্তব জীবনে নীতি বধি প্রয়োগে অসমর্থ হচ্ছেনো। কনিতু বাস্তবে দখে যায় সুস্থ মানুষও করণীয় কী জানা সত্ত্বেও তার বাস্তব প্রয়োগে অসমর্থ হন। এটি একটি অবগুণ। একে আলস্যতা বলো। দখে যায় এই আলস্যতা একদিনে আসে না। একে দীর্ঘদিনি ধরে অনুশীলন করে আয়ত্ত করতে হয়। অর্থাৎ দীর্ঘদিনি যাব মানুষ ষথন বার বার করণীয় কী তা বুঝতে পারে কনিতু বাস্তবে করে না, তখন এটা আলস্য নামক একটি কুঅভ্যাসে পেরণিত হয়, আর তা বাস্তবে মানুষেরে জীবনে অশষে দুর্ভোগেরে আমদানি করো।<sup>ix</sup>



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## Ecological notes on habitat and species diversity in Sikkim

Debabrata Das<sup>1</sup> and Pampi Ghosh<sup>2</sup>

<sup>1</sup>Associate Professor & HOD, Department of Botany  
Lalgarh Govt. College, Lalgarh, Jhargram, W.B. 721516  
Email: [abc9800301026@gmail.com](mailto:abc9800301026@gmail.com)

<sup>2</sup>- Individual Researcher,  
Assistant Professor (S-3) & HOD, Department of Botany  
Seva Bharati Mahavidyalaya, Kapgari, Jhargram, W.B. 721505

### Abstract

Diversity is the uniqueness of species, ecosystem and gene. It reflects diversity of organisms in terms of long time of time and space though variations exist between species and genes but in general exhibition of morphogenetic characters and their expression depends on environmental factors. In this communication a general notes on landscape diversity of Sikkim has been placed in connection with some probable explanations though it may be or may not be exactly fit with the same environment. Species diversity in general has been placed in connection with ecosystem diversity.

**Keywords:** *Sikkim, landscape diversity, species, ecological notes, management.*

(Paper published on 1<sup>st</sup> June, 2022.)

### Introduction

The Sikkim Himalaya exhibits as smallest but biologically significant and diverse Himalayan states in India. It is unique because of close proximity to both the Tibetan Plateau in one side and hilly part of West Bengal thereby having affinities with tropical moist forests in the south and cold desert in the north. Its uniqueness is due to its terrain and waterfalls intermingled with valleys. Heavy precipitation during winter as well as summer season has given rise to lush green vegetation. Therefore, the state has its own strong influence of both west and east Himalayan bio-geographic provinces. The west Himalayan elements found in the state are Himalayan tahr (*Hemitragus jemlahicus*) and blue sheep (*Pseudois nayaur*). Not only that, the state exhibits more affinities with the eastern Himalayan elements as evident from the presence of red panda (*Ailurus fulgens*) state animal of Sikkim, clouded leopard (*Neofelis nebulosa*), serow (*Capricornis milneedwardsii maritimus*). It shows a high diversity of orchid species including varieties of rhododendrons in sub-alpine as well as in alpine habitats. The ecological significance of these elements is immense though the prediction of composition is infinite. The state is act as a historical range of golden takin (*Budorcas taxicolor*). Colourful street dogs and yak (hairy cattle) are found in open valley sites like Nathang and Yumthang. Many bird species like Rufous-headed hornbill, Chestnut-crowned



Laughingthrush, Whit-crested laughing thrush, Barred Cuckoo-dove, Oriental Turtle-Dove, Green-billed Malkoha, Himalayan Cutia, Fire-tailed sunbird, Barn Swallow, Russet Sparrow, Yuhina, Fulvta and black birds are available here. Species of angiosperms, gymnosperms, ferns, lichens, bryophytes and fungi make the ecosystem unique because of its physiognomic features and latitudinal difference. Snapdragons, Orchids, dwarf grasses, *Schima wallichii* and dwarf Rhododendrons are common at slopes. Aside the lakes many woody lianas are available.

Plants and animals exhibit high levels of endemism like other part of Eastern Himalaya. The present study reflects landscape diversity along with priority areas of research and conservation in connection with better management of ecosystem in near future.

### **Area under Study**

Present Study includes East and North Sikkim part of the State. It includes places like Rangpo, Rorathang, Rongli, Lingtham, Nimachen, Phadamchen, Dzuluk, Gnathang, Kupup, Gangtok, Mangan, Chungthang, Yulgang, Lachen, Kalapathar, Yathang, Thangu, Chopta, Gurudongmar, Lachung and Yumthang including Zero point. The highest peak of the place Gurudongmar is situated at 17100 ft. from mean sea level which is very close to Tibetan plateau.

### **Materials and Methods**

Field survey was done in a group (9 persons) for 9 Days and frequently visited all the places in the month of May and June, 2022 (26<sup>th</sup> May to 3<sup>rd</sup> June). We started our journey from New Jalpaiguri (NJP) Rly. Station and visited Eastern part and gradually visited northern part covering the places as per the direction mentioned in the area under study. Local people and field guide were taken and official help was taken in many places. Camera, GPS, binocular and field guide book for the identification of birds and plants were taken during study. GPS software map was taken through smart phone and a place was demarcated as per the plan prepared earlier. As high altitude Rhododendrons bloom at May, so the specific time was chosen for study because special attraction on habitat study was Rhododendron. Photographs were taken and questionnaires on sheet were prepared for each site to know the management strategy of the habitat. Culture and life style of the local people was studied during visit in village at some places. Literature studied <sup>1-24</sup> before and after the



study field and data was cross checked with other literature available time to time for species identification.

## Result and Discussion

Sikkim is a state for nature Lovers. Its uniqueness is due to varied floral and faunal elements with landscape diversity. Forests types of the state are mainly characterized by temperate coniferous forest to sub alpine forest. The highest canopy cover flooded by plant species such as *Abies densa*, *Acer campbellii*, *Betula utilis*, *Rhododendron arboreum*, *Taxus baccata*, *Tsuga dumosa*, *Larix griffithii*, etc., found mainly at Lachen and Lachung in temperate coniferous forest. A wide variety of *Rhododendron* species are recorded in this region. The ground vegetation such as *Paris polyphylla*, *Arisaema* spp., *Primula* spp., *Pedicularis* spp., *Potentilla* spp., *Juncus thomsonii*, *Euphorbia sikkimensis*, *Panax pseudoginseng*, *Cotoneaster* spp., *Berberis* sp., etc., were dense in the forest floor along with lichens and mosses.

Various types of tree species were recorded i.e. adult, sapling and seedling. Highest adult individuals were recorded is *Castanopsis tribuloides* followed by *Leucosceptrum canum*, *Symplocos lucida* and *Rhododendron arboretum*. The lowest adult tree individual was recorded in case of *Glochidion acuminatum* followed by *Rhododendron grande*. Highest saplings state was recorded for *Symplocos lucida* followed by *Cryptomeria japonica* and *Castanopsis hystrix* whereas from seedling the highest individual was recorded from *Castanopsis tribuloides* followed by *Symplocos lucida* and *Symplocos glomerata*. The relative density of tree species under higher girth were found for *Castanopsis tribuloides* followed by *Leucosceptrum canum* and *Symplocos lucida* but highest relative frequency of occurrence was recorded in case of *Castanopsis tribuloides* and *Symplocos lucida*. The frequency of occurrence in the saplings was lower compared to seedlings. So, highest value was observed in case of *Castanopsis hystrix* followed by *Symplocos lucida* and *Symplocos glomerata* in all study sites.

In case of shrubby species highest percent cover was recorded for *Rubus ellipticus* followed by *Dichroa febrifuga*, *Rosa* sp., *Viburnum erubescence*, *Polygonum molle*, *Daphne* sp. The lowest percent cover was recorded for *Rubia cordifolia* followed by *Rubus*



*paniculatus* and *Edgeworthia gardneri*. In the shrubberies near roadside and in the agricultural garden *Saurauia* sp., *Mussaenda* sp., *Clerodendrum japonicum*,

A large number of herbaceous species were recorded in the study site which includes species like *Polygonum molle*, *Arisaema intermedium*, *Asplenium Laciniatum*, *Boehmeria* sp., *Carex* sp., *Digitaria sanguinalis*, *Diplazium Dilatatum*, *Allantodia stoliczkae*, *Elatostema platyphyllum*, *Eragrostis ciliaris*, *Ageratina adenophorum*, *Girardinia diversifolia*, *Gleichenia longissima*, *Impatiens stenantha*, *Lycopodium japonicum*, *Monachosorum henryi*, *Nephrolepis cordifolia*, *Pilea stricta*, *Pilea umbrosa*, *Plagiogyria pycnophylla*, *Pouzolzia sanguine*, *Rumex Nepalensis*, *Selaginella biformis*, *Selaginella chrysocaulos*, *Selaginella monospora*, *Smilax aspera*, *Urtica dioica*, *Urtica parviflora*, *Oreocnide frutescens* and *Viola sikkimensis*. Subba et al. (2015) argued that Sikkim boosts ca. 4500 species within 7096 km<sup>2</sup> landscape. The life-form study under Raunkiaer's system (1934) was made for classifying plant entities within a community and understanding its adaptive manifestation to certain ecological condition (Mera et al. 1999). It is true in a natural landscape where no gradual change takes place due to change of land mass though other factors lead to change the ecosystem conditions. In true sense, the Raunkiaer's life-form shows the structural diversity of the plants in any place and is therefore important from the ecological point of view, where most of the time it reveals the change in the forest continuum. Therefore prediction and assessment is not possible because of the high rate of fragility in the ecosystem in case of hilly part of landscape.

## Conclusion

Sikkim shows a versatile uniqueness in terms of landscape though ecosystem not truly tuned in all the cases. High rate of fragility and high anthropogenic activates faster the rate of degradation which lead to loss of species in many areas so landscape diversity is altering its state due to threats. Landslides and surface runoff gradually diminishing the loss of land cover which ultimately causes loss of population of species even loss of species. It is urgently needed to make policy in high fragile area so that no permission allowed for tourists even to construction for local people. Census and species introduction or species protection for any kind of loss may be encouraged so that the natural cover fill the form of land cover automatically which could develop succession stages and establishment of species in such



area. Eco-restoration is highly recommended to stop the eco-degradation in many areas of hills.

### Photographs



Fig. 1 *Saurauia* sp. (Local Name-Gogan)



Fig. 2 *Mussaenda* sp. (Wild Mussaenda, Dhobi)



Fig. 3 *Clerodendrum japonicum* (Dhago phool)

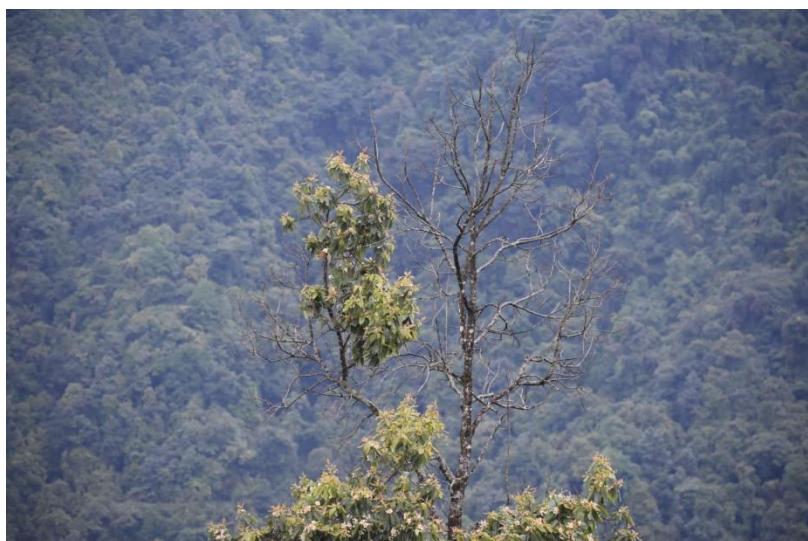


Fig. 4 Vegetation of Pangolakha Wildlife Sanctuary, Mankhim, Sikkim , May-2022

(The dominant visible plant is *Schima wallichii*- Locally called Chilouni)

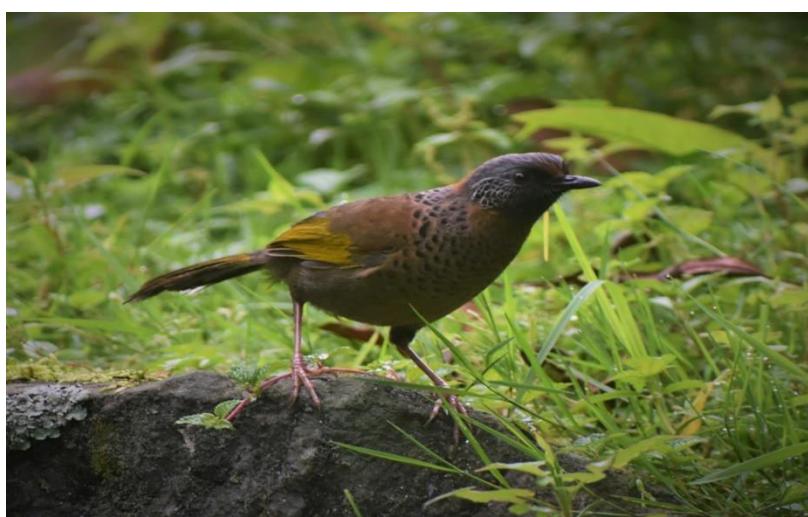


Fig. 5 Chestnut-crowned Laughingthrush



Fig. 6 Barn Swallow (*Hirundo rustica*)



Fig. 7 Russet sparrow, Pangolakha WLS





Fig. 8 Snapdragon flowers in the wild (At Lachung)



Fig. 9. High altitude Rhododendron sp. (At Lachen)



Fig. 10 Nathang valley, Sikkim

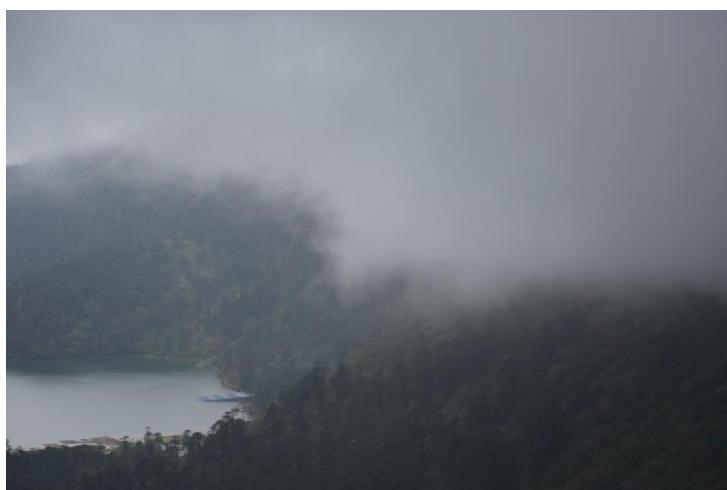


Fig. 11 Landscape beauty of Menmecho Lake, Sikkim during May, 2022



Fig. 12 Street Dog at Phadamchen, Sikkim



Fig. 13 Yak at Nathang Valley, Sikkim

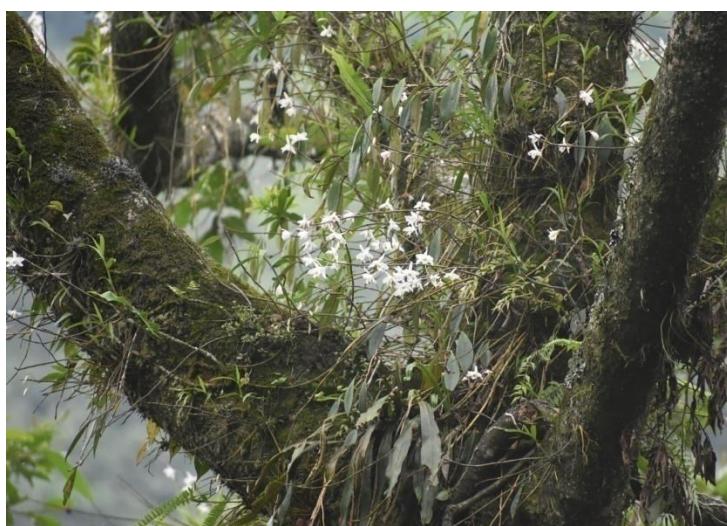


Fig. 14 Orchids in the wild, Pangolakha WLS



## Acknowledgements

Authors are thankful to OIC, Lalgarh Govt. College and Principal of SBM, Kapgari, Jhargram, W.B. We are also thankful to the State Biodiversity Board. Thanks to the officers of Department of Forest, Environment and Wildlife Management, Govt. of Sikkim, for providing the necessary permission in protected areas. Special thanks to Mr. Rabin Rai, Birder, for his constant support and help during this survey period especially for birds. Thanks to Mr. M. K. Sathpathy, Alok Kr Maiti for their help in the field. For bird identification Atmaja Avirupa Das, individual researcher is well acknowledged.

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## Fasting: A Boon

**Dr.Nusrat Jahan**

Assistant Professor,

Department of Philosophy,

Presidency University,

Kolkata.

Email: [nusrat.philo@presiuniv.ac.in](mailto:nusrat.philo@presiuniv.ac.in)

### Abstract

*Fasting or sawm is practiced in some form or the other by people from all walks of life; but scientific analyses of the significance of the same are more recent. Apart from the spiritual aspect; fasting has much to contribute towards our mental and physical health as well. It has much ado with our wellbeing and longevity. Scientifically, fasting, if done in the right way, is an effective way to improve the health of an individual. It takes care of our brain health too. Besides this, studies have shown that fasting may promote Anti-aging and can extend lifespan. It could reduce depression and anxiety, as well. Fasting may even prevent/cure cancer through autophagy, which is activated by fasting. ‘Autophagy’means “self-eating”; it is the cell’s self-cleansing, a process of removing damaged and dangerous parts and replacing them with healthy ones. There by protecting and curing the body of harmful diseases. This process is stimulated by fasting... so fasting is indeed a boon.*

**Keywords:** *Fasting, boon, autophagy, regenerate, cure.*

(Paper published on 1<sup>st</sup> June, 2022.)

### Introduction

Fasting or sawm is practiced in some form or the other by people from all walks of life. Periodic fasting, motivated by religious and spiritual beliefs, is common to several cultures and has been practiced since ages, but scientific analyses of the significance of the same is more recent. Published research works uphold the benefits of fasting...yes fasting indeed is a boon... Not only does it bring one, closer to the Divine Being, it helps one reflect within one's own self, thereby leading to one's spiritual growth.



## **Benefits of fasting**

Fasting kindles compassion and empathy in our hearts, which is the need of the hour. It motivates us to feel the pain and sufferings of the underprivileged. Apart from the spiritual aspect; fasting has much to contribute towards our mental and physical health as well. It has much ado with our wellbeing and longevity. Scientifically, fasting, if done in the right way, is an effective way to improve the health of an individual, as it keeps a check on heart disease by reducing LDL cholesterol, blood triglycerides, blood sugar and insulin resistance. Again, it helps overcome obesity as it promotes losing fat and gaining lean muscle mass. Moreover, due to fasting, our body is able to focus on detoxification, as we give the digestive system a rest.

It takes care of our brain health too, by increasing the release of BDNF (brain-derived neurotrophic factor) in the brain, and may aid the growth of new nerve cells. It may also protect against Alzheimer's disease, Parkinson's disease, dementia and the like. Besides this, studies have shown that fasting may promote Anti-aging and can extend lifespan. In the blue zones region of Ikaria, long-living people there observe about 150 days of religious fasting a year.

It could reduce depression and anxiety, as well. Fasting leads to improved mental health and wellbeing as it also boosts peace of mind and gives the will power to avoid unwanted binge eating and cravings. Fasting may even prevent/cure cancer... how?... through autophagy, which is activated by fasting.

I would like to mention here about the Japanese cell biologist Yoshinori Ohsumi, who won the Nobel Prize in Medicine in 2016, for his research on how cells renew and recycle their content, a process called autophagy.

### **A Brief Introduction to Autophagy**

The question arises as to what is Autophagy?

‘Autophagy’ is a Greek term where “auto” stands for self and “phagy” means eat, so ‘autophagy’ means “self-eating,” and this is exactly what happens in case of autophagy. In the course of autophagy, the cells of our body check all their inner parts, and look for whatever is old, impaired, worn out or defective, and substitute them with healthy fresh ones. The old damaged parts are either recycled or destroyed. It is the cell’s self-cleansing, a process of removing damaged and dangerous parts and replacing them with healthy ones.



Autophagy is an elementary physiological function through which our body cells feed on themselves for several reasons. It is one of the metabolic procedures of the body, which stimulates the cells to convert food into some form of energy, which the cells can utilise to grow and divide. One of the benefits of autophagy is that it supports the body at the time of deficiency of oxygen and nutrients.

Even though it may sound a little weird, nonetheless autophagy is vital for our good health and wellbeing. It's cleaning at the cellular level, is like flushing out toxins from the body as well as providing a recycling system. Autophagy goes a long way to help protect the body against diseases like, obesity, diabetes autoimmune disorders, neurodegenerative disorders, and even cancer to name a few. Research is still going on to detect the several ways in which autophagy affects our health and well-being.

### **The process of Autophagy**

As already mentioned above, autophagy is the mechanism of the body of cleaning itself up by way of destroying and reusing unnecessary fragments of the cell, pathogens (disease-causing microorganisms), and such other cellular debris. In the case of most eukaryotic cells i.e. cells with a clearly defined nucleus, there is a continuous process of cellular degradation. Thereby resulting in the massing up of the damaged cells, proteins and constituents of the cell or organelles, inside the cell.

Another way the damaged cell remains may form is due to some diseases or pathogens. This heaping up of debris at the cellular level can lead to an irreversible transformation of the cell's genes, thereby making it difficult for the cell to reconstruct the structures, required for it to thrive and survive.

### **Main Benefits of Autophagy**

One of the main benefits of autophagy is that it supports the body at the time of deficiency of oxygen and nutrients, in order to keep it running by providing the required energy, the elementary building blocks, and the nutrients. It arranges for an alternative bank of energy through the procedure of recycling and regeneration at the cellular level. Extensive



research is being conducted on autophagy due to its contribution to anti-ageing and its capacity to cure several diseases.

## **Further benefits of autophagy**

### **Anti-ageing**

Autophagy promotes youthfulness and revitalization thereby leading to an increase in lifespan.

### **Prevents Neurodegenerative Diseases**

Autophagy helps in removing the toxic protein present in the cells, which are related to neurodegenerative diseases; it also fights pathogens such as viruses, bacteria, and such other microorganisms which cause infection.

### **Reduces the Risk of Autoimmune Diseases**

Autophagy reduces the threat of autoimmune diseases.

### **Cures and Prevents Cancer**

Most importantly, autophagy can prevent cancer. It inhibits the growth of cancer-cell and also induces cell death.

Autophagy reduces depression and anxiety.

Ongoing research shows that autophagy could reduce depression and anxiety.

Autophagy also promotes Weight Loss — a much-desired outcome in today's world...

This most beneficial tool of the body can be triggered by fasting.

### **The mechanism of fasting**

Our body is designed to protect us from starvation. In order to accomplish this, it stocks a reserve of the nutrients necessary for survival, when we eat. Fasting, pushes the body cells to a state of mild stress, and our body, thereby starts releasing the reservoir of nutrients to fuel itself. Intermittent fasting and prolonged fasting triggers autophagy.

To explain briefly, during fasting, since we are not eating, our body is not getting sufficient amount of nutrients. This deficiency of nutrients further triggers our body to break down old proteins and cells to get the required energy. Essentially, autophagy induces our body to clean away the old, damaged, and unnecessary cells, and at the same time recycle and also fix the damaged parts and regenerate new cells. Thus, autophagy is body's mechanism of protecting and curing itself of harmful diseases. This process is stimulated by fasting... hence fasting is indeed a boon.



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## Importance of Economic Thought in Times of Pandemic

**Sutapa Malakar**

Faculty, Dept. of Economics,  
East Calcutta Girls' College, Lake Town &  
Research Scholar,  
Gokhale Institute of Politics and Economics, Pune.  
Email id: [sutapamalakar6@gmail.com](mailto:sutapamalakar6@gmail.com)

**Dr. Lalita Gauri Kulkarni**

Assistant Professor  
Gokhale Institute of Politics & Economics, Pune.

**Dr. Santanu Ghosh, WBSES**

Professor of Economics  
Maulana Azad College, Kolkata.

### Abstract

Economic thought is always important to examine different theories, different policies and also to get solutions to different economic problems. Economic history is based on historical progress. History of economic thought tells us that knowledge of past theories and their applications are very much necessary. It also tells us about the different pandemic situations all over the world. The effects of pandemic and the policies to control the situation of a country are explained through the history. Therefore, it can be said that past theories are important to examine its validity and relevance in the present. This paper attempts to examine the importance of history of economic thought in times of pandemic.

**Key words:** Pandemic, Economic Thought, Covid-19, Lockdown, Non-pharmaceutical Interventions.

(Paper published on 1<sup>st</sup> June, 2022.)

### Introduction

History of economic thought is important to develop a theory. From the history one can gather knowledge. It helps to make a policy regarding different economic problems. From history of economics, one may gather knowledge about pandemics and effects of pandemics on economy. From the historical experience one can gather knowledge about how to prevent pandemics and also about implementation of the non-pharmaceutical interventions, like use of masks, social distancing, limitations of gathering etc; during times of a pandemic, different social functions are also restricted so as to arrest the spread of the disease.

A pandemic is an occurrence of a disease that affects worldwide or over a wide area. In terms of medical science, it can be said that a true pandemic causes a high degree of mortality



(death). Usually, a pandemic spreads across multiple countries. During the last hundred years, the world experienced several pandemics of varying intensity, viz.

- A severe one during 1918-20 (Spanish Flu) caused by HINI. It was the influenza pandemic in US history. It continued from January 1918 to December 1920.
- In 1957-58 there was ‘Asian Flu’ caused by the H2 N2 subtype.
- In 1968-69 (‘Hong Kong Flu’) caused by the H3N2 sub-type.
- The Plague Pandemic was one of the alarming pandemics of the world. It is estimated that plague caused over one million deaths in India by 1902 and almost one million further deaths in 1903.
- The latest one to visit the world is the ongoing Covid-19 pandemic.

Pandemic is one of the alarming situations in a country. The thinkers of history of economic thought can give solutions to the different economic and social problems. Government has to take different measures or different policies to prevent pandemic. One can get experience from earlier situations.

Different studies show the impact of pandemics and associated counter measures and also the management of that crisis. Health issues and economic effects are important areas of concern during a pandemic. In order to understand the importance of history of economic thought in the context of pandemic, it is necessary to examine the role of co-ordination of epidemiologists, virologists, demographers and medical historians and as well as old records of different pandemic situations over the world.

Berkers.et.al examine the long run economic effects of a pandemic from our history and serves as a resource for future research on the long run economic effects of the current pandemic.

### **Importance of History of Economic Thought**

The study of history of economic thought clearly shows that there is a certain unity in economic thought and this unity connects us with the ancient times. To understand the origin of economics it is necessary to know about the history of thought. To understand the economic theory and different economic policies, the history of economic thought gives a new dimension (Donald. F. Gordon,1965).



The importance of history of economic thought may be outlined briefly.

First, the theory of history of economic thought enables us to know the foundations of different theories. From literature, previous pandemics of the world are known. The effects of pandemic on social, political and economic life of people can be known from the past experience of different countries.

Pandemic is an abnormal situation. Past incidents and theories tell us about the measures that were adopted to control the then pandemics and how did the policy makers face the challenges thrust upon by the abnormal situations.

Second, different concepts of history of economic thought facilitate us while taking policy decisions. We may get an idea about the different consequences of various policies; the government and policy makers can get an idea about previously used different control measures and their effectiveness. For example, it is known from the experience of Spanish flu that non pharmaceutical intervention is essential to decrease the mortality rate of flu pandemic. This knowledge can be used in today's world suffering from Covid-19 pandemic. Not only the government but also different private health care institutes and non-government voluntary organisations take initiatives in this regard.

Third, the ideas of past thinkers always pave the way for solutions to different economic and social problems. The thinkers of history of economic thought could predict about the today's problems and give solutions previously (Roger.E.Backhouse, 1994). To understand modern economic theory, history of economic thought is important. To know the origin of economics, the concept of history of economic thought is necessary. We must know the observation and understanding of the past theories. It is most important to analyse and to give solutions of modern economic issues.

History of economic thought connects all to the ancient times and paves the way to go to the modern times. To know the historical evolution and to understand the concept of basic economic theory, history of economic thought plays a key role. Observations and understanding of the past are necessary.

Methodology plays an important role. There is always a link between history of economic thought and modern economic theories.



## Pandemic and History

Different literature reviews give a glance on the importance of history of economic thought in times of pandemic. History of economic thoughts gives us information regarding different devastating situations of the world and also about the policy frame of the government to prevent these abnormal situations. From different historical evidence it suggests that pandemics have influenced and changed the economics and politics of the world (Ceylan et al., 2020). Different Various literatures have shown demonstrated the effects of pandemics on the economy. These effects may be captured in terms of sharp decline in economic activity, decrease in the number of productive labour, rise in unemployment in different sectors and so on also increase.

In the human history, the plague during the medieval era and the influenza of 1918-20 – i.e., the so-called Spanish flu – have been the deadliest situations in the world.

Spanish flu was the fourth major economic shock on income and consumption following World War 2, World War 1 and the Great Depression. As a result of this pandemic, per capita income decreased at that time. The country was adversely affected. Productivity of the economy decreased. It led to decrease in savings and investment also. To recover the losses caused by the flu, better public management was necessary (Chowell.G, and Cécile Viboud, 2016). Spanish flu during the period 1918-20 resulted in around 39 million deaths in 43 countries (Baro. R.J., Ursua, J.F., Weng., J.,2020). They understood that health sector related to health care services had totally been disrupted due to the outbreak of the pandemic.

The plague, on the other hand, is known as the Black Death of the medieval era. It had changed the role of the working class (Bell.C, Maureen Lewis, January 2005). Total labour supply of the economy decreased coupled with the rising dependence on capital rather than on labour.

The world has been facing the Covid-19 pandemic, a new mutation of coronavirus, for the last two years. In fact, the first case of coronavirus infection was in Wuhan district of China by the 1<sup>st</sup> December, 2019. It is said that after 1<sup>st</sup> and 2<sup>nd</sup> waves, India is going to witness the 3<sup>rd</sup> wave and the forthcoming wave will be more dangerous for children.



From the history of pandemics, it is known that the economies get disrupted when a pandemic hits mankind. It adversely affects Pandemics the entire economy of a country and/or the global economy.

### **Pandemic and It's Effects**

In times of pandemic, an economy faces an abnormal situation. Per capita income of people falls during this in that time. Productive labour force decreases; . consumption, investments, savings, finance all are all badly affected. Because of From fear of lockdown, common people stock necessary items. So there may be a chance of proliferation of black market which adversely affected the whole economy. During pandemic, the GDP of the country decreases. In different pandemic situations, health sector is badly totally disrupted. Sometimes this situation may change a country's socio-economic and political scenario .The literature (Grantz.K.H, et al., 2016) also explained the effect of socio economic disparities on influenza (1918 Spanish flu) mortality.

According to Megan O'Donnell, et al (2021), Covid-19 pandemics increased poverty, social insecurity, violence, unpaid work, global recession and also food insecurity among many communities (Megan O'Donnell, et al., 2021). This literature also told that Covid-19 brings global recession. Berkers et.al (2016) discussed about the long run effects of Covid-19 and also similar pandemics of the world. They argued that social distancing is more extensive than non-pharmaceutical interventions in the period of 1918 (Adhikari, 2021). Travel, Tourism and hotel industry are badly affected. The aviation industry also incurs a huge loss. There is also a problem of migration of labour across states.

Sandeep Kumar et al. in the paper 'Social economic Impact of Covid-19 Outbreak in India' have attempted to estimate the effects of Covid-19 on different sectors in India's economy during the period April – June, 2020 in terms of gross value added; the decomposition of negative impacts is shown in the following pie chart.

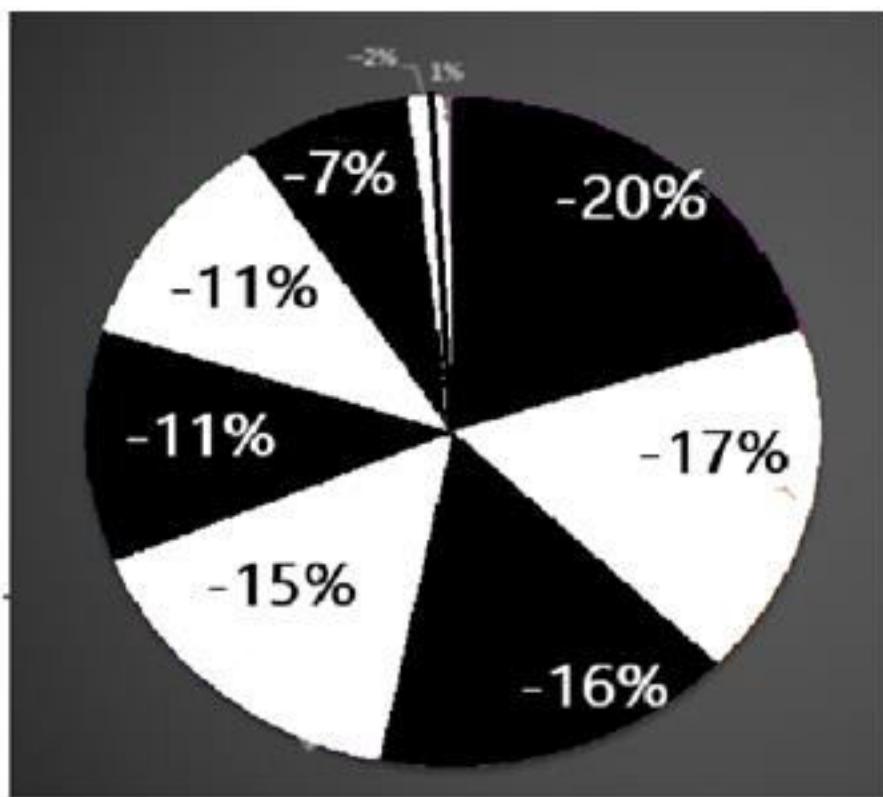


Figure – 1: Estimated Impact of the COVID-19 on India’s GVA (April -June, 2020)

-20%: Financial, Real Estate and Professional Service

-17% - Mining and Quarrying

-16% - Electricity, Gas. Water Supply and other Utility Services

-15% - Construction

-11% - Trade, Hotels, Transport, Communication and Broadcasting Service

-11% - Overall CVA

-7% - Manufacturing

-2% - Agriculture, Forestry and Fishing

-1% - Public Administration, Defense and Other Services

(Source: Sandeep Kumar et al.)



Brodeur et al. (2020) surveyed literature on the economic consequences of Covid-19 and government responses to that. The survey covers issues related to different socio-economic consequences, social distancing measures, government interventions etc. Various policies to control Covid-19 disease have also been discussed. The survey showed different pandemics in different time periods all over the world. The authors have also furnished data of the cumulative cases of Covid-19 of top 10 countries up to 23rd June, 2020 from the Coronavirus Resource Center, John Hopkins University

Due to Covid many farmers of the Indian economy have faced uncertainty. Different enterprises, informal sectors, daily workers have badly been affected (Das, 2020). Primary, secondary and tertiary sectors are all suffering during the pandemic situation. Due to lock down, there has been transport problem also. Chicken farmers were severely affected; at the initial phase of Covid-19, there was a rumour that people are suffering from Covid-19 because of chicken consumption (Mahendra Dev, 2020).

Transmission of the disease forced countries to apply lock down. So schools, colleges were closed. Offline classes were replaced by online classes. Many students have been suffering from psychological problems and mental agony for failing to attend schools. They have missed their regular routine, activities of schools and at the most they are missing their friends. Total educational system has been disrupted. At the same time closure of schools has caused discontinuity of learning in case of poor children. Social and economic conditions have also been affected. Poor network connectivity and lack of resources to avail internet are burden for online classes. Manish Kumar Singh and Yadawananda Neog (2020) represented the effects of Covid-19 and lock down on macro-economic perspectives, viz. travel & tourism, transportation, stock market, human capital and trade. In India, Covid-19 crisis has put a serious challenge before the health sector; health care services have badly been affected. There is lack of adequate infrastructure in hospitals and nursing homes to give treatments to a large number of patients.

Again, leading software industries have suffered due to decline in investment. (Sandeep.K.M et.al., 2020). However, as a result of the outbreak of the pandemic, while there has been steep growth in online shopping, financial activities have been hit too. Due to lockdown and social distancing, incidence of domestic violence has increased. In a nutshell it can be said that the ongoing pandemic increased mortality, but decreased the growth rate.



## Conclusion

From different studies it is known that different pandemic situations create a disaster all over the economy. To overcome the risks, lockdown of the economy is one of solutions. But due to lockdown, different sectors face problems. Informal sector workers, like the daily laborers, hawkers, are badly affected. Train service is totally disrupted. On the whole, there is a decline in economic activities.

To prevent the pandemics, implementation of non pharmaceutical interventions, like social distancing, use of masks, hand sanitization etc. is important. Reorganisation of healthcare system is necessary. Number of beds in hospitals, respiratory instruments, oxygen cylinders, oximeter must be made available in adequate quantities. Precautionary actions are less costly than recovery expenses (Ceylan.et.al, 2020).

Vaccination started all over the world to get rid of Covid-19 pandemic. Initially, in India there was crisis of vaccine. Now India is staring at the third wave of Covid-19. To combat the adverse effects of Covid-19 like pandemics, there must be an effective policy with respectto health, education, industry and informal sectors etc. Government has to implement different policies to stabilize the economy and take appropriate steps to manage this type of situations. By acquiring knowledge from different pandemic situations. appropriate steps must be taken. There is a hope of overcoming this type of abnormal situation.

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