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Foreword

It is our great pleasure to publish the 12th volume of our ***Academic Journal 2018-19***.

Our main objective of publishing this journal is to disseminate knowledge among ourselves and get enriched. We have put our best effort to make this journal rich in value as well as quality. Round the clock effort of all the staff of the college has made it possible to publish the Journal.

We are trying hard to publish the Journal every year and hope that we will be able to come up with journals of richer and better quality in future years.

Dr. Sandip Dasgupta

Principal & Secretary,

DumDum Motijheel Rabindra Mahavidyalaya

Contents

	Page No.
Our Blue Planet : Legacy of Ice and Fire – Heading for a Cliff — <i>Argha Sen</i>	1
উপনিবেশিক ভারতীয় কারা ব্যবস্থা — একটি পর্যালোচনা — <i>অরোজিৎ হালদার</i>	7
The Significance of Peace Education — <i>Arpita Chakraborti</i>	13
বাংলা সমাজে তুলসী দেবী : প্রসঙ্গ বাংলার উপপুরাণ — <i>দুর্গা শঙ্কর কোলো</i>	16
Printing as a Medium of Mechanical Reproduction of Art vis a vis Printmaking — <i>Dr Kamal Sarkar</i>	22
Comparative Analysis of Sex Workers' Life: Ancient Times and Recent Times — <i>Mithun Chowdhury</i>	25
Nonviolence: A Comparative Study between Gandhi and Buddhist Philosophy — <i>Moumita Banerjee</i>	30
Play for Children – A Developmental Overview — <i>Ratul Nandi</i>	35
Nomophobia: A Study about Smartphone Dependency among College Students — <i>Sanghamitra Som</i>	39
Subversion of Silence Through Poetry: A Comparative Study of a Few Poems of Kamala Surayya, Kishwar Naheed and Fahmida Riaz — <i>Souvik Mondal</i>	43
Assessment of Forest Cover Area of West Bengal Through Remote Sensing and Geographical Information System — <i>Dr Suchita Dutta</i>	48

OUR BLUE PLANET : LEGACY OF ICE AND FIRE – HEADING FOR A CLIFF

Argha Sen*

[This article is about our Planet Earth – its rich natural resources and diverse ecology where both flora and fauna as well as human beings mutually coexists and therefore, they lead a long bountiful life. But in recent times, our living planet has become a fragile system engulfed by the avarice and mindless actions of the human beings, who are depleting the Earth's natural resources and thereby disrupting the forces of nature and its vital habitats. Thus, causing harm to our Blue Planet which is now heading for a cliff. But humans are also the last best hope for our Planet to survive; as it is only with our selfless actions we can predict whether our Planet will survive another Ice Age (Ice) or devastated by volcanic eruptions (Fire). "It's time we stopped ignoring the environment. Let's not let another election go by without making this a high priority." – David Suzuki]

Keywords: natural resources, ecology, flora and fauna, human beings, coexists, living planet, fragile system, vital habitats, hope, cliff, selfless actions, Ice or Fire, survive, environment.]

Introduction

"We are at a unique stage in our history. Never before had we had such an awareness of what we are doing to the planet, and never before have we had the power to do something about that. Surely we all have a responsibility to care for our Blue Planet. The future of humanity and indeed, all life on earth, now depends on us."

– David Attenborough

Earth, broadly known as the Blue Planet is where life flourishes in leaps and bounds. The weather gives us predictable patterns of rainfall, the sunlight delivers energy to us all, ocean currents carry essential nutrients around the globe, the volcanoes create and fertilize the land. Together, these natural forces have helped shape our living planet but it's now become a fragile system (David Attenborough, 2021, *A Perfect Planet*, Season 01, Episode 05 - "Humans").

Human activity is now so dominant that it is disrupting the forces of nature and the vital habitats that life needs to survive on Earth. This is the most burning issue of our time. According to the environmentalist, Jeremy Rifkin – *"We are likely to lose over half the species of life on Earth over the next eight decades."* (David Attenborough, 2021, *A Perfect Planet*, Season 01, Episode 05 - "Humans"). Therefore, we must rise from our long slumber and try to comprehend the enormity of this impending event.

Changing Scenario

The world around us is undergoing rapid changes. As our mindless actions warm the planet, we create more extreme droughts and floods which makes it increasingly difficult for many animals and even humans to survive in such harsh situations. For instance, in Kenya, Africa, the watering holes are quickly drying up due to no rainfall, thereby killing hundreds of elephants each year (David Attenborough, 2021, *A Perfect Planet*, Season 01, Episode 05 - "Humans"). And in Miami, USA, the flooding of streets makes daily commuters face sheer adversity due to the sudden rise in the sea-level (Leonardo DiCaprio, 2016, *Before The Flood*).

Earth As A Burning Furnace

Humanity is now acting as a super-volcano. Almost every part of modern life is now releasing CO₂ by burning fossil fuels in an even greater scale, thus warming our planet further. *Globally, we now release hundred times more carbon dioxide into the atmosphere than all the Earth's volcanoes combined*

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(David Attenborough, 2021, *A Perfect Planet*, Season 01, Episode 05 - "Humans"). In this way, humans have become one of the most powerful, destructive forces on the planet. This CO₂ in turn disrupts the weather system on Earth and poses a threat to the life of both animals and humans alike. As a result, hurricanes, flash floods, droughts and forest fires are devastating our ecosystem incessantly. This sounds like some nightmarish science fiction film. New research suggests that '*For every one degree rise in global temperature may result in billions of people becoming homeless wanderers which could trigger one of the greatest human migrations in history.*' (David Attenborough, 2021, *A Perfect Planet*, Season 01, Episode 05 - "Humans").

The greatest hope and buffers against a warming planet is its rich ecosystem – the oceans, the jungles, the mangroves, etc. In Manaus, Brazil, the Amazon rainforest is being wiped out at a frightening rate due to urban expansion, cattle ranching and mining. The '*Amazonas Environmental Protection Unit*' aims to save animals trapped in city and return them into the wild. These animals are needed to disperse seeds and pollinate the plants that helps maintain a rich biodiversity.

Marine Oasis Is Under Crisis

The oceans produce up to 70% of the oxygen we breathe. Just like our forests, the marine life and plants absorb vast amount of carbon from the atmosphere. In fact, it is the tiny microscopic organisms like '*phytoplankton*' that takes carbon dioxide and transforms it into oxygen for the planet. *Phytoplankton is the base of food chain and it helps sea life to thrive upon it. It also traps the carbon and keeps our climate cool.* But the current problem remains that the *oceans absorb about 25% of emitted CO₂ which leads to increasing acidification of seawaters are not only destroying the coral reefs but decimating some phytoplankton, the amount of which has fallen by 40% in recent years (Climate Change 101: Climate Science Basics, 2016).* As a result, marine oasis is being slowly transformed into a desert. '*Eutrophication*' decreases the biodiversity of marine life as it kills the fishes that feed on algae. Not only this but also human actions like overfishing has removed about 90% of all large predatory fish and fewer fish means marine system store less carbon. Moreover, illegal fishing and poaching of dolphins, whales and sharks by humans have worsened the situation. *Currently, around 5% of oceans are under protection by law but there is a global campaign to raise that to 30% in order to protect the most vulnerable species of marine life and also to create a healthier ocean to absorb more CO₂ (Josh Duhamel, 2012, Planet Ocean).*

Also human actions are disrupting the flow of ocean currents that carries essential nutrients across the globe thereby regulating Earth's climate and weather. But due to increase in global warming, the polar ice caps are melting at a faster rate which is pushing freshwater glaciers into the oceans and the sea-level is rising at an alarming rate. This poses a threat to the Arctic's aquatic animals like seals, narwhals, polar bears, etc. and coral reefs are dying as well. *In the last 30 years, about 50% of all coral reefs had been lost all over the world.* To mention, the cities like Florida, Malaysia, etc. are vulnerable to go under water due to rise in sea-level (Leonardo DiCaprio, 2016, *Before The Flood*).

Glyphosate-based Herbicides And Soil Desertification

The ramifications of human activities is not only limited to the sky and the oceans, but also in the land in the area of agriculture. Nowadays, '*glyphosate*' – *a toxic chemical supposedly to cause cancer is sprayed over billions of acres of crops that has found its way into our soil, food, drinking water and ultimately enters our body. And these toxic pesticides are then transferred directly to the infants while breastfeeding. It also results in the children's developmental disabilities like ADHD, pediatric cancer, etc. (Woody Harrelson, 2020, Kiss The Ground).* Also high concentrations of bio-magnification of DDT disturbs calcium metabolism in birds which causes thinning of eggshell and their premature breaking, eventually causing decline in bird populations (Biology, Chapter - 16, *Environmental Issues*, pg. 276).

Apart from this, human activities like overgrazing, deforestation, poor agricultural practices and excessive use of pesticides results in arid patches of land unsuitable for agriculture. This also leads to

soil erosion and desertification. *By 2050, it is estimated that 1 billion people will be refugees due to soil desertification.* Poor land leads to poor people as they fall prey to social break down. Desertification also leads to flash floods and droughts, mass emigrations across borders and intercity, and also leads to ideal recruitment conditions for orphans into terrorist groups (Woody Harrelson, 2020, *Kiss The Ground*).

In Africa, the Sahara desert is advancing southwards. In order to combat it, the 'Green Wall' project is undertaken. *The goal is to plant over 1 billion drought resistant trees like acacias to stretch over 5,000 miles across Senegal, Africa.* The trees not only hold the topsoil but also African wells are filling up again allowing crops to grow (David Attenborough, 2021, *A Perfect Planet*, Season 01, Episode 05 - "Humans").

Air-pocalypse Lead Way To Renewables

One of the most significant events of today is the mountain-top removal with explosives for procuring coal, fracking for natural gas, offshore drilling for oil and the tar sands – all are disseminating our ecosystem to produce fossil fuels. They take away massive forests, water in the streams and rivers are poisoned. It has severe impact on wildlife and native communities. Even the burning of fossil fuels has escalated air pollution. *Air-pocalypse due to its toxicity has led to shut down of schools in Beijing, China and also in New Delhi, India.* Thus, every country must prioritize wind and solar energy rather than coal and must transition to renewable sources for a healthy environment. *Sweden boosts renewables to become first fossil fuel free nation which is a historic step that all the countries must adopt* (Leonardo DiCaprio, 2016, *Before The Flood*).

Energy Consumption And Climate Change

India is world's third largest fossil fuel emitter, yet it is struggling with massive power shortages and rolling blackouts. *There are about 300 million people without power and access to energy which makes India equivalent to entire population of the USA.* Till now, Indian villages like Nuh of Haryana relies on cow dung cakes as their only source of cooking energy. *About 30% of the households in India are yet to have access to electricity.* But the consumption of developed countries like USA, China, etc. is going to put a hole in the planet. The fact is we need to put the issue of our lifestyle and consumption at the centre of climate negotiations. In India, the agricultural productivity is falling down and crops are being destroyed due to massive climate change. Some countries still believes that climate change is a figment of our imagination but they need to check the reality. *Ironically, the countries like India, Bangladesh, etc. which contributes less to the causes of global warming and climate change are the worst affected by such dire issues* (Leonardo DiCaprio, 2016, *Before The Flood*).

Need For A Plant-based Diet

Moreover, one of the most powerful Greenhouse gas is Methane which is produced by livestock like cows, cattle and even in rice fields. *Methane has more impact on atmosphere than CO₂ as every molecule of methane is equivalent to 23 molecules of CO₂.* And about 50% of the land of most of the countries relies on beef as compared to chicken. *The only way for us to reduce the percentage of methane in our atmosphere is to shift to chicken or a plant-based diet* (Woody Harrelson, 2020, *Kiss The Ground*). The latter even proves to be a panacea for diseases like cancer, thalassemia, etc.

Plastic Pollution

Another pressing issue in recent times is plastics – the pollutants of our industrial creation. More than 46,000 pieces of plastics per square kilometre are found on an average across all seas. Not only marine life but even birds and animals alike are eating it and getting severely affected by our fickle mindedness. *Humans dump about 6 billion kilos of plastics per year into the sea.* Plastic doesn't decompose but its micro-fragments were consumed by fishes, birds and even by humans as food. *Plastic threatens wildlife, spread toxins and also contributes to global warming.* It is most visible in Asian and African Nations where garbage collections are inefficient. Polluting the oceans at this point means poisoning ourselves. *In 2012, protected marine areas are only 1% of the ocean. So, we must*

resolve to protect at least 30% of the ocean by 2030 (Josh Duhamel, 2012, *Planet Ocean*).

Age of Anthropocene

After 9 years of research, the evidence shows that we have left the Holocene and entered into the Anthropocene epoch because humans now has changed the Earth and its system more than all natural processes combined. (Alicia Vikan, 2018, *Anthropocene: The Human Epoch*).

Anthropocene is a clarion call sounding an urgent message. From Kenya's Nairobi National Park's stockpiling of tusks of around 10,000 African elephants denouncing the evil commodity of poached ivory to Siberia town of Norilsk, Russia, a factory town smothered in metallurgical pollution; to Lithium-rich brine water extracted from beneath the arid surface in Chile's Atacama Desert; to a flooded Venice drenched by a freakish storm; to an excavated landscape in Immerath, Germany, a town literally being wiped off the map as a result of aggressive open-pit coal mining – all such abstract imagery are at once beautiful and horrifying (Review: 2019, *Anthropocene: The Human Epoch*. By Steve Davis in *The Austin Chronicle*).

Humans are now Terra-forming the Earth. Every year humans extract between 60-100 billion tons of materials from the Earth and move more sediments than all the rivers of the World combined. Therefore, evidence shows that “*humans now dominate over 75% of ice free land because of mining, agriculture, industrialization and urban growth*” (Alicia Vikan, 2018, *Anthropocene: The Human Epoch*).

International Agreements and Conferences

Global warming, another hot-button issue, leads to the depletion of Ozone layer over the Antarctic region which allows harmful UV rays to enter the Earth's surface. It causes skin cancer and cataract in humans and also leads to acid rain. UV-B damages DNA and mutations may occur (Biology, Chapter - 16, *Environmental Issues*, pg. 283).

As a result, '*Montreal Protocol*' of 1987 was signed at Montreal, Canada to reduce and control the emission of CFCs and other ozone depleting chemicals. In 2015, about 195 countries came together to fight for climate change at the '*United Nations Conference for Climate Change*' held at Paris, France. According to this agreement, it calls for keeping climate warming well below 2 degrees Celsius while striving for 1.5 (Leonardo DiCaprio, 2016, *Before The Flood*).

Solutions And Mitigations

There are small things that we can do as individuals like eating a more plant-based diet, using organic compost in our small gardens. We can create a garden of Eden on Earth by regeneration (Woody Harrelson, 2020, *Kiss The Ground*). Regenerative agriculture is the need of the hour as it stands in stark contrast to the vicious cycle of industrial agriculture that fosters the use of pesticides. *Regenerative agriculture helps to reverse the effects of desertification through no-tilling systems, crop diversity, planned livestock grazing and bio-sequestration* (process of storing carbon in plants and other organisms). (Review: 2019, '*Kiss the Ground*': How soil might be Earth's climate change savior, Kevin Crust in *Los Angeles Times*).

As a human, it is our moral responsibility that we must take care of our dying planet by saving it. *Humans must realize the intrinsic value of the forests and the government needs to be financially incentivized to keep forest standing so as to keep balance in our ecosystem. One can reduce CO2 emissions by consuming less or rinsing some of our resources. The public must be made aware and educated on the need to act now* (David Attenborough, 2021, *A Perfect Planet*, Season 01, Episode 05 - "Humans"). Fossil fuel companies must not manipulate and dictate the science and policies that affect our future (Leonardo DiCaprio, 2016, *Before The Flood*).

We must vote for leaders who will become the harbingers of peace and fight for the climate change by adopting the following measures – ending fossil fuel subsidies, investing in renewables, prioritize wind and solar energy, supporting a price on carbon (Leonardo DiCaprio, 2016, *Before The Flood*),

stop subsidies for industrial fishing, ban deep sea fishing permanently, promote small-scale fishing, maintain the Antarctic Treaty (Josh Duhamel, 2012, *Planet Ocean*), promotion of reduced meat consumption, rely more on plant-based diet, plant trees to reduce pollution (Woody Harrelson, 2020, *Kiss The Ground*), promotion of eco-friendly natural fibre carry-bags by discarding the use of plastics and polythene bags, stricter emissions standards for diesel vehicles, promotion of afforestation in deserted areas, adoption of sanitary landfills as the substitute for open-burning dumps (Biology, Chapter - 16, *Environmental Issues*, pg. 278), ban poaching of African elephants for ivory, improving efficiency of energy usage, slowing down the growth rate of over-population, need of family planning, reducing poverty, promotion of literacy, reducing the emigration problem, reforestation in affected areas, capture rainwater, replenish groundwater and the like (*Climate Change 101: Climate Science Basics*, 2016).

Conclusion

From the ancient boreal forest in Canada that have been cleared cut, the rainforest in Indonesia have been incinerated, crops are literary being washed away in India to the sea-level rise flooding the streets of Miami, USA to Beijing, China choked in industrial pollution; while in Finland and Arctic the ancient glaciers are rapidly disappearing well ahead of scientific predictions (Leonardo DiCaprio, 2016, *Before The Flood*) – all are the signs that *our planet is heading for a cliff*. Whether our Planet will survive another Ice Age (Ice) or devastated by volcanic eruptions (Fire) – only time and human actions can predict. Time is of the essence and we need to act now. *Change is required, one that leads to a new collective consciousness of human race inspired and enable by a sense of urgency and obligations to protect our Blue Planet* (Leonardo DiCaprio, 2016, *Before The Flood*). Therefore, to this, one might relate –

*“If an impending disaster is barging through the door,
can our species survive the mass extinction?”*

Humans have the will to do the needful, but we have less time to perform a miracle. We cannot escape the responsibility of tomorrow by evading it today. Therefore, we must take small steps now to make massive changes in near future. '*Our House is on Fire*', '*Save our Planet, Save our Future*' – these slogans are our conscience talking to actively participate in the efforts for a better future.

Therefore, *we have to practice what we preach*. Everything we are now taking for granted might not be available to our future generations to cherish. The fate of our planet is in our hands. We will either be lauded by our future generations or vilified by them. *We, “humans” are the last best hope of Earth. We must try our best to conserve and protect it or we and all living things we cherish, will soon become history* (Leonardo DiCaprio, 2016, *Before The Flood*).

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উপনিবেশিক ভারতীয় কারা ব্যবস্থা — একটি পর্যালোচনা

অরোজিৎ হালদার *

ভূমিকা

ভারতবর্ষে জেল বা কারা ব্যবস্থার সূত্রপাত উপনিবেশিক আমলে হয়নি। প্রাচীনকাল থেকেই ভারতবর্ষে এই ব্যবস্থা চলে আসছে। প্রাচীন ভারতবর্ষে শাস্তি প্রদানের জন্য বেশ কিছু প্রতিষ্ঠান ছিল। প্রাচীন ভারতীয় সমাজের আইনগুলির উৎস ছিল ‘মনুস্মৃতি’ ও ‘যাজ্ঞবল্ক্যস্মৃতি’-র মত স্মৃতিশাস্ত্র, চাণক্যের বিভিন্ন রচনা এবং বিভিন্ন ধর্মশাস্ত্র। বিভিন্ন সমস্যার সমাধানে স্থানীয় প্রতিষ্ঠানগুলি উল্লেখযোগ্য ভূমিকা নিয়েছিল। পরবর্তীকালে মধ্যযুগীয় ভারতবর্ষে মুসলমান শাসকরা ক্ষমতায় আসার পর প্রথমে সুলতানি শাসকরা এবং পরে মুঘল শাসকরা এই কারা ব্যবস্থাকে আরও এগিয়ে নিয়ে গিয়েছিলেন। এরপর ব্রিটিশরা পদার্পন করে পশ্চিমী আদর্শ অনুযায়ী নতুন কারা ব্যবস্থার সূত্রপাত ঘটায় ভারতবর্ষে।

উপনিবেশিক ভারতবর্ষে লর্ড ওয়ারেন হেস্টিংস ১৭৭৩ সালে রেগুলেটিং অ্যাক্ট ও জেনারেল রেগুলেশন প্রবর্তন করেন। যার মাধ্যমে ভারতে প্রথম সুপ্রিম কোর্ট প্রতিষ্ঠিত হয়। এরপর ১৭৯৩ সালে কর্ণওয়ালিস কোড প্রবর্তনের মাধ্যমে ভারতে একটি নির্দিষ্ট আইন প্রবর্তনের কথা বলা হয়। ১৭৯৩ সালেই The Criminal Tribes Act এবং The Vagrancy Act প্রবর্তনের মাধ্যমে ভারতে একটি নির্দিষ্ট শাস্তি সংক্রান্ত বিধি ও একটি কারাব্যবস্থা গঠনের ভিত্তি রচিত হয়। ১৮৩৬ সালের ২রা জানুয়ারী T.B. Macaulay এর সভাপতিত্বে Prison Discipline Committee (জেল শৃঙ্খলা রক্ষা কমিটি) গঠনের মধ্য দিয়ে জেল ব্যবস্থার সংস্কারের জন্য প্রাথমিক পদক্ষেপ নেওয়া হয়। ১৮৩৮-এ এই কমিটি তার রিপোর্ট জমা দেয়। পরবর্তীকালে ১৮৬৪ সালে Prison Enquiry Committee (জেল অনুসন্ধান কমিটি) গঠনের মধ্য দিয়ে উক্ত বিষয়টিকে আরও এগিয়ে নিয়ে যাওয়া হয়। ভারতবর্ষে প্রাচীন কাল থেকেই একটি কারা ও বিচার ব্যবস্থা চলে আসলেও ঊনবিংশ শতাব্দীতে এসেই প্রথম তা আতস কাচের তলায় এসেছিল। এই সময়েই ভারতীয় কারা ব্যবস্থা প্রথম তদন্তের মুখোমুখি হয়েছিল। এসবের ফলে বিগত তিন শতাব্দীতে ভারতীয় কারা ও বিচার ব্যবস্থার চরিত্রের ক্ষেত্রে ব্যাপক পরিবর্তন পরিলক্ষিত হয়। কিন্তু এতদ সত্ত্বেও প্রশ্ন ওঠে যে উপনিবেশিক ভারতবর্ষের কারা ব্যবস্থা আদৌ কি তার প্রকৃত উদ্দেশ্যগুলি পূরণ করতে সফল হয়েছিল? অর্থাৎ উপনিবেশিক প্রশাসকরা ভারতবর্ষের ক্ষেত্রে কি ইউরোপীয় আধুনিক এবং বিজ্ঞানসন্মত কারাগারের ধারণার বাস্তব প্রয়োগ ঘটাতে পেরেছিলেন? নাকি এটি শুধুমাত্র চিন্তা ভাবনার স্তরেই থেকে গিয়েছিল? উপনিবেশিক ভারতবর্ষের জেলগুলির ইতিহাস চর্চা করতে হলে উক্ত বিষয়গুলি সম্বন্ধে পুঙ্খানুপুঙ্খ জ্ঞান লাভ খুবই গুরুত্বপূর্ণ।

উপনিবেশিক ভারতীয় কারা ব্যবস্থা

কারা ব্যবস্থা সম্পর্কে আলোচনা করতে গেলে প্রথমেই আমাদেরকে জানতে হবে কারা ব্যবস্থা কি? কারা ব্যবস্থা প্রতিষ্ঠার উদ্দেশ্যগুলি কি কি? এবং কেনই বা সমাজে কারা ব্যবস্থার প্রয়োজন? যেকোন সমাজে জেলখানা বা কারাগার প্রতিষ্ঠার পশ্চাতে চারটি মুখ্য উদ্দেশ্য থাকে, সেগুলি হল —

(১) Retribution (২) Incapacitation (৩) Deterrence এবং (৪) Rehabilitation।

(১) Retribution অর্থাৎ যদি কোন ব্যক্তি সমাজে অন্যায় করে থাকে অথবা সমাজ বিরোধী কোনো কাজ করে থাকে তখন ঐ ব্যক্তি নীতিগতভাবে অথবা সাংবিধানিক ভাবে তার অপকর্মের জন্য যে শাস্তি পাওয়ার যোগ্য সেই শাস্তি তাকে প্রদান করা। যাতে অপরাধী সমাজের প্রতি তার ঋণ পরিশোধ করতে পারে।

(২) Incapacitation অর্থাৎ অপরাধীকে সমাজ থেকে বহিষ্কারের মাধ্যমে তাকে অক্ষম করা, যাতে সে সমাজের নিরাপরাধ অসহায় সাধারণ মানুষের কোন ক্ষতি সাধন করতে না পারে।

(৩) Deterrence অর্থাৎ অপরাধীর সামনে প্রতিবন্ধকতা সৃষ্টির মাধ্যমে তাকে ভবিষ্যতে অপরাধ জনক কাজকর্ম থেকে প্রতিহত করা। যাতে মানুষ কোন অপরাধ করার আগে বহুবার চিন্তা করে। এর মাধ্যমে কারাগার গুলি সর্বদা চেষ্টা করে যাতে মানুষের

* অধ্যাপক, ইতিহাস বিভাগ, দমদম মতিঝিল রবীন্দ্র মহাবিদ্যালয়

জেলমুখি গমনের প্রবণতাকে কিছুটা হলেও কমানো যায়।

(৪) Rehabilitation অর্থাৎ জেলের ভিতরে বিভিন্ন শিক্ষামূলক পাঠদান, কর্মদক্ষতা বৃদ্ধি মূলক শিক্ষা প্রদান এবং মনস্তত্ত্ববিদ এর পরামর্শ ইত্যাদি প্রদান করার মাধ্যমে অপরাধীকে সামাজিক জীবনে পুনর্বাসিত করা। এর মাধ্যমে অপরাধী অপরাধীকে সমাজের একজন আইন মান্যকারী সভ্য মানুষে পরিণত হয় এবং তার দ্বারা সৃষ্ট অপরাধকে হৃদয়ের গভীর থেকে উপলব্ধি করতে সক্ষম হয়।^১

ইংল্যান্ডে জেরেমি বেন্থাম-এর হাত ধরেই ফৌজদারি আইনের সংস্কারের জন্য আন্দোলন শুরু হয়। বেন্থাম ইংল্যান্ডের পুরানো জেলগুলির ভারি ভারি স্থাপত্য কে সমালোচনা করেছিলেন। ১৭৯১ এ তিনি তাঁর গ্রন্থ ‘Panopticon’ এ বহু বহু জেল ভবন গঠনের প্রস্তাব দেন। সেই সঙ্গে তিনি অন্ধকার কুপেরও বিরোধিতা করেন।^২ মিশেল ফুকো তাঁর ‘Discipline and Punish : The birth of the prison’ গ্রন্থে বলেছেন, অষ্টাদশ শতাব্দীর মাঝামাঝি সময়ে ফ্রান্সে রাষ্ট্র যেকোন অপরাধীকে অত্যন্ত নির্মমভাবে শাস্তি প্রদান করত। কখনও গায়ে গরম তেল ঢেলে দেওয়া হতো, কখনও ছুটন্ত ঘোড়ার লেজে বেঁধে দেওয়া হতো, আবার কখনও শূলে চড়ানো হতো। তবে ১৮৩০ এর দশক থেকে এই ধরনের বর্বরোচিত শাস্তি প্রদানের ক্ষেত্রে বেশ কিছু পরিবর্তন আসতে থাকে। এই সময় থেকে শাস্তি প্রদানের ক্ষেত্রে অপরাধীর শরীরকে এড়িয়ে যাওয়ার প্রবণতা শুরু হয়। এই সময় থেকে শাস্তি প্রদানের মূল লক্ষ্য হয়ে দাঁড়ায় যাতে অপরাধী শাস্তি গ্রহণের মাধ্যমে তার দ্বারা সৃষ্ট অপরাধকে হৃদয় থেকে উপলব্ধি করতে পারে।^৩

কিন্তু উপনিবেশিক ভারতের জেলগুলি সম্পর্কে চর্চা করলে আমরা দেখতে পাই যে সেগুলি ইউরোপীয় আধুনিক আদর্শ অনুযায়ী বিশেষ অগ্রগতি লাভ করতে পারেনি। জেল কর্তৃপক্ষ পশ্চিমী আদর্শ অনুসরণ করে বেশ কিছু আধুনিক নীতি গ্রহণ করলেও বহু ক্ষেত্রেই সেগুলির বাস্তব প্রয়োগ সঠিকভাবে ঘটাতে পারেন নি। জেলে হিংসা ও বন্দি পলায়ন থেকে পুনর্বাসন-এর ক্ষেত্রে ব্যর্থতা, স্বাস্থ্য থেকে শিক্ষা ইত্যাদি বহু ক্ষেত্রেই অবনতি ঘটেছিল। জাতপাত মূলক বৈষম্য বৃদ্ধি পেয়েছিল। যা একটি অসংগঠিত ও বিশৃঙ্খল কারা ব্যবস্থার প্রতি ইঙ্গিত করে।

মহর্ষি অরবিন্দ ঘোষ সমগ্র ব্রিটিশ ব্যবস্থার সমালোচনা করে বলেছেন, ব্রিটিশ বিচার ব্যবস্থার সবথেকে বড় ব্যর্থতা হল তারা শাস্তি ও ন্যায় পরায়নতার উপর থেকে বিশ্বাস হারিয়ে ফেলেছিল। প্রশাসন রাজস্ব বৃদ্ধির চেষ্টা করেছিল, যা সাধারণ মানুষের পক্ষে বহন করা সম্ভব ছিল না। বিচার ব্যবস্থায় এই বিশৃঙ্খলা বিচার ব্যবস্থার প্রতি মানুষের বিশ্বাসকে টলিয়ে দিয়েছিল। শুধুমাত্র যে সমস্ত রাজ্য মানুষের জন্য সঠিক বিচার ও সুরক্ষা প্রদান করতে পেরেছিল শুধুমাত্র তারাই অস্তিত্ব টিকিয়ে রাখতে সক্ষম হয়েছিল।^৪

কারাগারের অভ্যন্তরে জাতি বৈষম্য

উনবিংশ শতাব্দীর জেলগুলিতে ব্রাহ্মণ বন্দীদের নির্মম শাস্তির হাত থেকে মুক্তি দেওয়া হয়েছিল। জেল প্রশাসন প্রমাণ করেছিল যে জাত-পাত ব্যবস্থা হিন্দু ধর্ম ও সমাজের সঙ্গে অঙ্গাঙ্গিভাবে জড়িত। হিন্দু জাতপাত ব্যবস্থা জেল ব্যবস্থাকে ব্যাপক ভাবে প্রভাবিত করেছিল। জেলের মধ্যে বিভিন্ন হিন্দু রীতি রেওয়াজ মেনে চলা হত। এই সময় জেলের অভ্যন্তরে জাতপাত সংক্রান্ত সমস্যা ব্যাপক আকার ধারণ করেছিল।^৫ এমনকি জাতপাত মূলক হিংসাকে কেন্দ্র করে জেলগুলিতে বহু আন্দোলন ও ধর্মঘটের ঘটনা ঘটেছিল। জেলের আভ্যন্তরীণ এইসব ক্ষোভ-বিক্ষোভ ক্রমশ জেলের বাহিরে বৃহত্তর সমাজের ব্রিটিশ বিরোধী আন্দোলনের সঙ্গে যুক্ত হয়েছিল।^৬

শিক্ষা ক্ষেত্রে বৈষম্য ও সংস্কারের অভাব

সুস্থ-সবল শ্রমিক উপনিবেশিক সরকারের কাছে একটি শক্তিশালী যন্ত্র হিসেবে বিবেচিত হয়েছিল। ১৮৩৮ এর জেল শৃঙ্খলা রক্ষা কমিটির সদস্যরা মনে করেছিল যে কোন ধরনের ভারী কাজ যা মানুষের শরীরে যন্ত্রণা প্রদান করে তা ভারতীয়রা সহজেই করতে পারে। তারা বিশ্বাস করতো যে ভারতীয়দের কাছে অরুচিকর বলে কিছু হতে পারে না। যার মধ্য দিয়ে তাদের বৈষম্যমূলক মনোভাবই প্রকাশ পায়।^৭

উনবিংশ শতাব্দীতে ব্রিটেনে নাবালক বন্দীদের শৈশব জীবনের উপযোগী শিক্ষা প্রদান করা হত। ১৮৭০-এর দশকে ব্রিটেনে বেশ কিছু শিক্ষা সংক্রান্ত আইন প্রবর্তনের মাধ্যমে বেশিরভাগ নাবালক বন্দীকে প্রাথমিক বিদ্যালয়ে পাঠানোর কথা বলা হয়।

এমনকি ব্রিটেনে এই সময়ে নাবালক বন্দীদের প্রাপ্তবয়স্ক অপরাধীদের থেকে পৃথক রাখার নীতি নেওয়া হয়।^{১৭} অন্যদিকে এই সময় ভারতবর্ষের জেলগুলিতে ভারতীয় নাবালক বন্দীদের ঠিকমতো তত্ত্বাবধানের ক্ষেত্রে জেল কর্তৃপক্ষের মধ্যে একপ্রকার হীনমন্যতা লক্ষ্য করা গিয়েছিল। উনবিংশ শতাব্দীর শেষার্ধ্বে পর্যন্ত ভারতের জেলগুলিতে নাবালক অপরাধীদের প্রাপ্ত বয়স্ক অপরাধীদের থেকে পৃথক করার কোন ব্যবস্থা গ্রহণ করা হয় নি। শুধুমাত্র ১৮৫০ সালে Apprentice Act প্রবর্তনের মাধ্যমে দরিদ্র ঘরের শিশুদের সং জীবিকা অর্জনের জন্য প্রয়োজনীয় শিক্ষা গ্রহণের সুযোগ সুবিধা প্রদান করা হয়েছিল, যাতে তারা কোন প্রকার অপরাধমূলক কর্মকাণ্ডের সঙ্গে জড়িয়ে না পড়ে। তবে ১৮৭০-এর দশকের আগে তা কার্যকর করা হয়নি।^{১৮} এই সময় জেলগুলিতে পোশাক-আশাক, খাদ্য ইত্যাদি প্রদানের ক্ষেত্রেও ভারতীয় বন্দীদের সঙ্গে বৈষম্যমূলক আচরণ করা হত।^{১৯}

জেলের স্বাস্থ্য ব্যবস্থায় সংস্কারের অভাব

উনবিংশ শতাব্দীর ভারতবর্ষের জেলগুলিতে দেখা যায় মৃত্যুহার আশ্চর্যজনক ভাবে বৃদ্ধি পেয়েছিল। উনবিংশ শতাব্দীর প্রথম ১০ বছরে মৃত্যুহার ছিল মোট বন্দীর ২৫শতাংশ। মূলত তারা কলেরা, ম্যালেরিয়া, আন্ট্রিক ও পেটের রোগ জনিত কারণে মারা যেত। ১৮৩৮ সালে ম্যাসালোর জেলে ২৬৩ জন বন্দীর মধ্যে ১৫১ জন মারা গিয়েছিল। নিম্ন বাংলার জেলগুলিতে ১৮৪৩ থেকে ১৮৬৭ এর মধ্যে ৪০,৫৫০ জন বন্দী বিভিন্ন রোগে আক্রান্ত হয়ে মারা গিয়েছিল। এ থেকে প্রমাণিত হয় যে উপনিবেশিক আমলের প্রথমদিকে জেলগুলি তৈরি করার ক্ষেত্রে উন্নত মানের পরিকল্পনাকে গ্রহণ করা হয়নি।^{২০}

বাংলার জেলগুলির ইন্সপেক্টর জেনারেল Dr. F.J. Mouat (ডঃ এফ. জে. মট) তাঁর পর্যবেক্ষণের পর জানিয়েছিলেন জেলগুলির জল নিকাশি ব্যবস্থা, বাতাস চলাচল ব্যবস্থা, স্বাস্থ্যব্যবস্থা ও স্বাস্থ্যবিধির প্রতি খুব সামান্যই নজর দেওয়া হয়েছিল। বেশিরভাগ জেলগুলি বাঁশ দিয়ে তৈরি করা হতো। ফলে জেলের সুরক্ষা ব্যবস্থা নিয়ে প্রশ্ন চিহ্ন দেখা দেয়। এরপর ১৮৮৯ সালে জেল কমিটির পর্যবেক্ষণ রিপোর্ট প্রকাশিত হয়। সেখানেও বলা হয় যে পুরানো জেলগুলিকে আধুনিক বিজ্ঞানসম্মত জেলে পরিণত করার কোনো প্রয়াস সরকারের পক্ষ থেকে ইতিপূর্বে নেওয়া হয়নি। এই সময় সরকার জেলগুলির ক্ষেত্রে কম খরচে বেশি সুরক্ষার নীতি নেয়। এই সময় জেলগুলিতে মানুষের রোগ ও মৃত্যু বৃদ্ধির কারণ ছিল পর্যাপ্ত জায়গার অভাব, বাতাস চলাচলের অভাব, অপরিষ্কৃত জেল ভবন গঠন, অপরিষ্কৃত জল নিকাশি ব্যবস্থা এবং উপযুক্ত তত্ত্বাবধানের অভাব।^{২১}

ঋষি অরবিন্দ ঘোষ তাঁর কারা জীবনের অভিজ্ঞতার বর্ণনা দিতে গিয়ে বলেছেন, “..... জানিতাম না যে এই দিনটাই আমার জীবনের অংকের একটা শেষ পাতা। আমার সন্মুখে এক বৎসরের কারাবাস। এক বৎসর কাল মানব সমাজের বাইরে পিঞ্জরাবদ্ধ পশুর মত থাকিতে হইবে। স্নানের বন্দোবস্ত নেই, কাজেই স্নান করিলাম না। ৫ই মে আলিপুরে কারাবাস আরম্ভ। আমার নির্জন এই কারা গৃহটি ৯ফুট দীর্ঘ ও ৬ ফুট প্রস্থ ছিল। আমাদের কক্ষের সাজ-সরঞ্জামের ক্ষেত্রেও কর্তৃপক্ষ আতিথেয়তায় কোন ত্রুটি করে নাই। একখানা থালা ও একটি বাটি উঠোন কে সুশোভিত করত। বাটির জাত নাই বাটির বিচার নাই, কারাগৃহে যাইয়া সেই বাটিতে জল নিয়া শৌচক্রিয়া করিলাম। সেই বাটিতেই মুখ ধুইলাম, স্নান করিলাম, অল্পক্ষণ পরে আহার করিতে হইল, সেই বাটিতেই ডাল বা তরকারি দেওয়া হইল, সেই বাটিতেই জল পান করিলাম এবং আচমন করিলাম। আমার ভাগ্যে প্রথমে জলকষ্ট ছিল না, কিন্তু তাহা পরে ঘটিয়াছিল। আলিপুর গভর্নমেন্ট হোটেলের যে বর্ণনা করিলাম এবং ভবিষ্যতে আরও করিব — তাহা নিজের কষ্ট জ্ঞাপন করিবার জন্য নয়, সুসভ্য ব্রিটিশ রাজ্যে মুকদ্দমার আসামীর জন্য কী অদ্ভুত ব্যবস্থা, নির্দোষীর দীর্ঘকালব্যাপী কী যন্ত্রণা হইতে পারে — ইহা দেখানোর জন্যই এই বর্ণনা।”^{২২}

কারাগারের অভ্যন্তরে শিশু ও মহিলাদের অবস্থার অবনতি

এই সময়কার জেলগুলিতে নাবালক ও মহিলা বন্দীদের অবস্থার অবনতি হয়েছিল। জেলগুলিতে শিশু ও মহিলাদের নিরাপত্তা বিঘ্নিত হয়েছিল। তাদের জন্য সত্যিকারের কোনো সংস্কারমূলক পদক্ষেপ নেওয়া হয় নি।^{২৩} উনবিংশ শতাব্দীর আলিপুর জেলের একজন আধিকারিক বলেছেন যে, এখানে ব্যক্তিগত যৌনতাকে স্বীকৃতি দেওয়া হত না। যদিও বেশিরভাগ জেলেই মহিলা ও পুরুষ বন্দীদের জন্য পৃথক ব্যবস্থা ছিল না। এই সময়কার বাংলার বেশিরভাগ জেলগুলিতে পুরুষ বন্দীদেরই সংখ্যাধিক্য ছিল। ফলে মহিলা বন্দীরা এখানে খুব একটা সুরক্ষিত ছিল না। এমনকি মহিলা বন্দীদের পুরুষ কারারক্ষীদের সুরক্ষায় থাকতে হতো।^{২৪}

খাদ্য পরিবেশনের ক্ষেত্রে বৈষম্য

১৮৩৬ সালের পূর্বে জেলের ভারতীয় বন্দীদের খাদ্য ক্রয় করার জন্য মাত্র ৫ পয়সা ১ আনা করে ভাতা দেওয়া হতো। অন্যদিকে

ইউরোপীয় বন্দীদের জন্য বিশেষ ভাতা দেওয়া হতো। এই সময় জেল কর্তৃপক্ষ জেলগুলিতে নিকৃষ্টমানের খাদ্য সরবরাহ করার নীতি নেয়। এরফলে খাদ্য সংকট সৃষ্টি হয়। ফলে বহু মানুষের মৃত্যু হয়।^{১৬} অযোধ্যা জেলের ইন্সপেক্টর Dr. H.M. Cannon (ড: এইচ. এম. ক্যানন) বলেন, ১৮৬০ এর দশকে জেলে খাদ্য প্রস্তুত ও খাদ্য গ্রহণের সমগ্র ব্যবস্থাটাই ছিল চূড়ান্ত বিশৃঙ্খলাময়। যত্রতত্র নোংরা সেখানে ছড়িয়ে-ছিটিয়ে থাকত। এছাড়া জল, ছাই, কাঁচা মাটির উনুন, জ্বালানী প্রভৃতিও ছড়িয়ে-ছিটিয়ে থাকত।^{১৭} জেলগুলিতে এই সময় ইউরোপীয় ও ভারতীয় বন্দীদের জন্য দু'রকমের নীতি নেওয়া হয়েছিল। একদিকে ইউরোপীয়দের জন্য সেখানে খাসির মাংস, মোষের মাংস, পাউরুটি, আলু ইত্যাদি খাদ্যের ব্যবস্থা করা হতো, তেমনি অন্যদিকে ভারতীয় বন্দীদের জন্য শুধুমাত্র রুটি ও ডালের ব্যবস্থা করা হতো।^{১৮}

কারাগারের অভ্যন্তরে হিংসা ও বন্দী পলায়ন

এই সময় আলিপুর জেলে হিংসার ঘটনা বৃদ্ধি পায়। ১৮৩৪ সালে কয়েদিরা আলিপুর জেলের একজন ম্যাজিস্ট্রেটকে হত্যা করে। ভারতবর্ষের অন্যান্য জেলগুলির অবস্থাও একইরকম ছিল। এফ. জে. মট তাঁর ১৮৭৭-এর প্রশাসনিক রিপোর্টে জেল থেকে পলায়ন করা আসামীদের একটি তালিকা দিয়েছিলেন। সেখানে বলা হয় বাংলায় ৬৩ জন, পাঞ্জাবে ৮ জন, আসামে ১৭ জন, বার্মায় ১৫ জন, উত্তরপ্রদেশে ১৮ জন, অযোধ্যায় ৪ জন, মাদ্রাজে ১১ জন এবং বম্বেতে ৩ জন বন্দী জেল থেকে পলায়ন করেছিল। জেলগুলি বসবাসের অযোগ্য হওয়ার কারণেই তারা পলায়ন করতে বাধ্য হয়েছিল।^{১৯}

Mary Carpenter (মেরি কার্পেন্টার) তাঁর রিপোর্টে বলেছেন, কোনো জেলেই বন্দীদের উপযুক্ত শিক্ষা প্রদান করা হতো না, এমনকি জেল কর্মচারীদের মধ্যে কোন বিদ্যালয় শিক্ষক ছিলেন না। যা উপনিবেশিক সরকারের একটি নেতিবাচক মনোভাবের পরিচয় দেয়।^{২০} প্রথমদিকে জেল বন্দীদের জন্য কোনরকম শিক্ষাদানের ব্যবস্থা ছিল না। পরবর্তীকালে যখন জেলবন্দীদের জন্য শিক্ষাদানের ব্যবস্থা করা হয় তখন তার উদ্দেশ্য হয়ে দাঁড়ায় বন্দীদের জন্য কর্মসংস্থানের সুযোগ তৈরি করা। তবে কি ধরনের শিক্ষা জেলবন্দীদের দেওয়া প্রয়োজন? কে আসামীদের শিক্ষা প্রদান করবে? বন্দীদের প্রাথমিক শিক্ষা দেওয়া হবে না কর্মদক্ষতা বৃদ্ধিমূলক শিক্ষা দেওয়া হবে? এই সমস্ত প্রশ্নগুলি উঠতে থাকে। যার কোনো স্পষ্ট উত্তর উপনিবেশিক প্রশাসনের কাছে ছিল না।^{২১}

বন্দী পুনর্বাসনের ক্ষেত্রে ব্যর্থতা

কারা ব্যবস্থার সর্বপ্রধান উদ্দেশ্য ছিল বন্দী পুনর্বাসন। যদিও তৎকালীন জেলগুলিতে পুনর্বাসন ব্যবস্থা আদৌ কার্যকরী ছিল কিনা তা নিয়ে সন্দেহের অবকাশ আছে। এই প্রসঙ্গে লিওপোল্ড বলেছেন তৎকালীন জেলগুলিতে পুনর্বাসনের বিষয়টি খুব একটা সফল হয়নি, বরং বহু ক্ষেত্রে এর উল্টোটাই ঘটেছিল।^{২২} বিভিন্ন সূত্র থেকে জানা যায় যে বহু ক্ষেত্রেই সুপ্রশিক্ষিত কর্মীর অভাবে জেলের আভ্যন্তরীণ পরিচালনা ব্যবস্থা সম্পূর্ণ ভেঙে পড়েছিল। জেল প্রশাসন এই সময় দুর্নীতিগ্রস্ত হয়ে পড়েছিল। বহিঃসমাজের সঙ্গে যোগাযোগের মাধ্যমে আসামীরা পাচার ও বিভিন্ন চোরাচালান সংক্রান্ত কাজের সঙ্গে যুক্ত হয়ে পড়েছিল। বন্দীরা বহু ক্ষেত্রেই নেশাগ্রস্ত হয়ে পড়ত। তারা গাজা জাতীয় নেশার দ্রব্য ও বিভিন্ন তামাক জাতীয় দ্রব্য সেবন করতো। বহুদিন ধরে নারীসঙ্গ না পাওয়ার কারণে আসামীরা নিজেদের মধ্যে সমকামী যৌনতায় লিপ্ত হতো। কখনো কখনো তা পাশবিক যৌন অত্যাচারের রূপ নিয়ে নিত। অথচ জেল প্রশাসনের পক্ষ থেকে এর বিরুদ্ধে কোন গঠনমূলক পদক্ষেপ গ্রহণ করা হয়নি।^{২৩}

মূল্যায়ণ

একটি স্বাধীন রাষ্ট্রের কারাগারের সঙ্গে উপনিবেশিক অঞ্চলের কারাগারের বেশকিছু আদর্শগত এবং কাঠামোগত পার্থক্য রয়েছে। একটি স্বাধীন রাষ্ট্রে কারাগার প্রতিষ্ঠার উদ্দেশ্য হল প্রকৃত অপরাধীদের শাস্তি প্রদান করার মাধ্যমে সমাজে শান্তি-শৃঙ্খলা বজায় রাখা। অর্থাৎ এক্ষেত্রে রাষ্ট্রের মূল লক্ষ্য থাকে সমাজ তথা দেশের কল্যাণ সাধন। কিন্তু উপনিবেশিক রাষ্ট্রের সরকার বহুক্ষেত্রেই তার রাজনৈতিক স্বার্থ চরিতার্থ করার জন্য কারাগারকে ব্যবহার করে এবং এর মাধ্যমে উক্ত দেশের নাগরিকদের নানাভাবে প্রভাবিত করার চেষ্টা করে। উপনিবেশিক ভারতবর্ষও তার ব্যতিক্রম নয়। কিন্তু একথা স্বীকার্য যে ব্রিটিশরাই ভারতবর্ষে সর্বপ্রথম একটি আধুনিক আইন, বিচার ও কারা ব্যবস্থার প্রবর্তন ঘটায় এবং একটি সুসংগঠিত শাস্তি বিধান নিয়ে আসে। কিন্তু পূর্বের আলোচনার পরিপ্রেক্ষিতে আমরা বুঝতে পারি যে উপনিবেশিক সরকার আধুনিক জেল ব্যবস্থার প্রবর্তনের জন্য বেশকিছু নীতি গ্রহণ করলেও বহু ক্ষেত্রেই সেগুলির সঠিক বাস্তব প্রয়োগ ঘটাতে পারেনি। ফলে নীতিগুলি বাস্তবে

সঠিকভাবে প্রয়োগ না হওয়ায় এর কার্যকারিতা নষ্ট হয়ে যায়। বহুক্ষেত্রে সরকার কারা ব্যবস্থার সংস্কারের জন্য ভারি ভারি প্রস্তাব পেশ করতো, কিন্তু সেগুলি তৃণমূল স্তর পর্যন্ত সঠিকভাবে কার্যকর হচ্ছে কিনা সে বিষয়ে সরকার উদাসীন ছিল। কোন দেশের কারাব্যবস্থা কেমন হবে তা সেই দেশের আইনের উপর নির্ভর করে। পাশ্চাত্যের বেস্থামিয় ভাবনার অনুকরণ ভারতবর্ষের ক্ষেত্রে আবশ্যিক নয়। বিভিন্ন দেশে কারাব্যবস্থা পরিচালনার ক্ষেত্রে পদ্ধতিগত পার্থক্য থাকে। তবে বেস্থামিয় আদর্শকে সামনে রেখে ভারতবর্ষের কারা সংস্কার অসম্ভব নয়। বিশেষ করে যখন পাশ্চাত্যে ইতিপূর্বে বেস্থামিয় আদর্শের গুরুত্বকে স্বীকার করে নেওয়া হয়েছে। একইরকম ভাবে কারাগার পরিচালনার ক্ষেত্রে Retribution, Incapacitation, Deterrence এবং Rehabilitation এগুলির গুরুত্বকেও অস্বীকার করা যায় না। কিন্তু দেখা যায় সুপ্রশিক্ষিত কর্মীর অভাবে উপনিবেশিক ভারতীয় জেলগুলির আভ্যন্তরীণ পরিচালনা ব্যবস্থা অনেকাংশে ভেঙে পড়েছিল। জেল প্রশাসন দুর্নীতিগ্রস্ত হয়ে পড়েছিল। আবার ভারতবর্ষে কারা ব্যবস্থার প্রকৃত সংস্কার সাধনের ক্ষেত্রে সকল উপনিবেশিক প্রশাসকের মানসিকতা যে একইরকম ছিল একথাও বলা যাবে না। অনেক ব্রিটিশ প্রশাসক ভারতীয়দের প্রতি বৈষম্যমূলক মনোভাব নিয়ে চলতেন, যা তাদের আচার-আচরণেই প্রকাশ পায়। যেমন লর্ড কর্নওয়ালিস মন্তব্য করেছিলেন, “আমার দৃঢ় বিশ্বাস যে হিন্দুস্থানে প্রত্যেকটি মানুষ দুর্নীতিগ্রস্ত এবং ভারতীয়রা চারিত্রিক দিক থেকে ব্রিটিশদের তুলনায় নিম্নমানের।” তিনি আরও বলেছিলেন, “আমি আইন ও বিচার ব্যবস্থার গঠনের প্রক্রিয়ায় কোন ভারতীয়কে নিয়োগ করার পক্ষপাতী নই।” এ থেকে বোঝা যায় যে ব্রিটিশরা ভারতবর্ষে প্রশাসনের গুরুত্বপূর্ণ পদগুলিতে কোন ভারতীয়কে নিয়োগ করতে চায়নি। এমনকি উপনিবেশিক সরকার ব্রিটিশ ও ভারতীয়দের জন্য পৃথক পৃথক আইন তৈরি করেছিল এবং এই আইনগুলি পুরোমাত্রায় উপনিবেশিক রাষ্ট্রের স্বার্থে প্রবর্তিত হয়েছিল। এ থেকে তাদের বৈষম্যমূলক মনোভাবেরই প্রকাশ পায়। এ থেকে প্রমাণিত হয় উপনিবেশিক প্রশাসন ভারতবর্ষের ক্ষেত্রে ইউরোপীয় আধুনিক ও বিজ্ঞানসম্মত কারাগারের ধারণার বাস্তব প্রয়োগ ঘটাতে অনেকাংশে ব্যর্থ হয়েছিল এবং তাদের এই প্রয়াস মূলত চিন্তা ভাবনার স্তরেই থেকে গিয়েছিল। আর তাই কারা ব্যবস্থার সংস্কার সাধনের ক্ষেত্রে উপনিবেশিক প্রশাসনের আন্তরিকতা নিয়ে প্রশ্ন ওঠা খুবই স্বাভাবিক।

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THE SIGNIFICANCE OF PEACE EDUCATION

Arpita Chakraborti*

[True education means flexibility of mind with the help of proper meditation and supportive classroom. Peace education is indeed the key factor of success in life as it helps to fulfil different need without being selfish and non-violent thought towards others. Peace education has taken different shapes and developed ideas around the World. The way of war is not the solution to live peacefully in the World according to history. In school and community peace educators have to create the values of Global citizenship and human relations with the effect of violent solution and non-violent behaviour. They should teach about holding patience, calm listening, how to solve the critical problem, making love and non-violence thinking for living a peaceful life.]

Keywords : Formal Education, Moral Education, Curriculum, Meditation, Non-violence]

Introduction

As we all know, Education is the only way to change the human personality by changing their behaviour and attitude with moral values and non-violent thought. In everyone's life education plays a vital role to build a culture, carrier and spread peace by making good relation and positive behaviour with the people.

But, in the past things were different. By traditional education people were forced on cognitive learning and thinking which based on violence behaviour. History books describe about the movement of violence kings and their way of war for established their Kingdom and power as well as described about military heroes and their movement towards war. As a result, in many countries of the World society started well but suffering from non-violence attitude and behaviour of Government, later causes the collapsed of that society as well as the Kingdom.

So, the main objective of 'Peace Education' is to change the behaviour of students, youths and adults as well. It will help to prevent violence and building positive attitude for improving skills towards successful life with moral values but more importantly it has a motive to spread peace in the atmosphere. Therefore 'Peace Education' is for love to each other, fairness and co-operation for the human family to live life peacefully on our beautiful Planet. It has a purpose of non-violent thoughts and maintaining peace at the Global level.

Concept of Peace

The word 'Peace' in the English language is arrived from Latin word 'Pax'. It means a cessation in fighting as well as rule over subject races.

Peace is an active process of understanding values, not a passive state. It is hard to establish and take years to build up a stable but easy to destroy by one wrong Act. There are some types of peace like Psychological peace, behavioural peace, inner peace of mind and outer peace. It is not often in the state of excitement, when we are happy then excited but peace is when one's mind is satisfied.

Peace is dynamic process and concept of social friendship. Some of history leaders have used peace-making agreements to establish a regional peace and economic growth through various forms.

Historical Background of Peace Education

In the early 1900's women became an especially active part of this modern peace education movement, they began campaigning for social justice and arguing that poverty inequality was causes of war.

'Maria Montessori' was one example of an influential theorist in the mid of 20th Century. She found a new connection between peace and education and linked methodology to peace building which will

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help the next generation to avoid the Violence. 'Herbert Read' began encouraging the use of art and student's creativity to promote peace. 'Paulo Freire' focused on training students for critical analysis and reform of Society.

Peace studies became a more serious academic subject soon after 'World War II' in 1945 after seen the devastating sight of violence as well as the mankind used the 'Atomic War' which destroyed a whole city of Hiroshima and Nagasaki in Japan within a minute. And then brought a new war method called 'Cold War'. After that international perspective had changed about peace education and The 'UNESCO' was founded in 1945 month of November with the main object of (since war begins in the mind of human, it is in the mind of human that defences of peace must be constructed). The programmes of UNESCO is spread of education, development of natural science and development of culture but more importantly establish peace in the World instead of non-violence and War. After 1980's particular peace education has developed in many directions.

Importance of Peace Education in 21st century

From the beginning of 21st Century the World seems much smaller and the global issues are becoming local thing for our developing and modern technologies. Television, Satellite, Computer and Internet makes the communication easier to us. After 'World War II' peace education becomes a necessity to maintain peace in the whole World by improving the behaviour and making good relation between students with students, teachers with students, teachers with teachers, families, friendship, neighbours, workgroup and offices. So, the need of peace education has never been greater than it is today.

Peace education is so important and essential for all educational institutions. Modern society needs the different thought of non-violent activities for developing peace. It starts first with an honest willing to engage educators in the teaching and learning process. The students need the skill to create and maintain peace in the mind. Therefore, teachers will encourage them for non-violence thinking and creating a supportive classroom throughout our formal educational system. Peace education will be mandatory part of curriculum and co-curricular activities like reading story books, sports, drawing, singing, dancing etc. They also teach about moral education in the classes for develop non-violence behaviour from the beginning, it will help to change the attitude of students. Also the practice of reading biographies of great personalities will help developing peaceful thought towards a successful future. Teachers will increase concentration through meditation and for create a non-violent mind.

But, in 21st century the world seems same as like it was. Many nations as well as the countries chosen the path of war. Big and powerful nations trying to capture the leadership of the World for being a powerful King. Increasing their weapons stockpile and tested the devastating power of weapons many times to creating violence. Terrorism, intolerance, envy, malice spreads all over the world, the Mankind and the mother Nature is in a big trouble for that non-violence. So, we strongly need the Peace education as a mandatory subject to create peaceful and non-violent mind to save the Mankind as well as our beautiful Planet.

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বাংলা সমাজে তুলসী দেবী : প্রসঙ্গ বাংলার উপপুরাণ

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সূচক শব্দ : তুলসী, দেবীর আবির্ভাব, বাংলার পুরাণ।

তুলসী বাংলাদেশ-এর বহুল প্রচারিত এক শব্দবন্ধ। তুলসী সমাজের কোন সময়ে কোন কাজে আসে না তা ভেবে বর্ণন করা বাঙালির পক্ষে কষ্টদায়ক। আসলে গ্রামবাংলার এমন কোন ‘হিন্দুর বাড়ি’ খুঁজে পাওয়া যাবে না যে যেখানে তুলসী তলায় প্রদীপ না দিয়ে সম্বোধন হয়। কোন ব্যক্তির মৃত্যু কালে তাকে তুলসী পত্র দেয়া চাই। এভাবেই এক অপরিসীম মহিমামণ্ডিত ভূমিকায় অবতীর্ণ হয়েছে তুলসী। আবার সকলেই জানি যে তুলসী কেবল পত্র হিসেবে বহুল প্রচারিত তা নয় তুলসী কিন্তু দেবী হিসেবে সকলের কাছে আরাধ্য বাঙালির সমাজে।

এখন খুব স্বাভাবিক ভাবেই প্রশ্ন ওঠে কিভাবে তুলসী বাংলার সমাজে এইরকম মহিয়সী ভূমিকায় আবির্ভূত হলেন। কীভাবেই বা তিনি দেবীর মর্যাদায় আভূষিত হলেন এই সব হাজারো প্রশ্ন আমাদের দৃষ্টিগোচরভূত হলেও সেই সমাধান আজও লোকচক্ষুর অন্তরালে রয়ে গেছে। অবশ্য এই প্রসঙ্গে আলোচ্য সেই ঋকবেদ থেকেই লেখকরা এই সমস্ত গাছগাছালির জ্ঞান সম্পর্কে অবহিত, অথর্ববেদ তো রচিত হয়েছে এই সম্বন্ধের জ্ঞানকে codified করার উদ্দেশ্য নিয়ে। সেখানে তো একবার ও তুলসীদেবী হিসেবে উচ্চারিত হলেন না। তুলসী বৃক্ষকে ব্রাহ্মণ্যতান্ত্রিক কাঠামোর মধ্যে আনার প্রথম সার্থক প্রয়াস দেখা যায় মহাপুরাণ গুলির মধ্যে। তাকে কৃষ্ণ-এর সাথে সংশ্লিষ্ট করার চেষ্টা করা হলো। মহাপুরাণগুলি এই টুকুতেই সীমাবদ্ধ ছিল কিন্তু পরিস্থিতি একেবারে অন্যরকম হয়ে বাংলাদেশের দুই জনপ্রিয়তম উপপুরাণে এদের দেবী হিসেবে উন্মোচিত করা হলো। তুলসীর মূর্তিময়ী রূপের এক পরিকল্পনা লক্ষ করা যায়। তার পূজার বিধি ও সময় প্রস্তুত করা হলো। এ কি শুধুই ব্রাহ্মণদের অর্থভাবে উদারময়তা দান করা না কি এর পিছনে লুকিয়ে আছে অন্য কোন গোপন সমীকরণ। এই সব চাঞ্চল্যের প্রশ্নের উত্তরের সন্ধান অত্যন্ত গুরুত্বপূর্ণ।

বস্তুতপক্ষে আজ আমাদের সামনে তুলসীর ব্যাপক মাহাত্ম্য কীর্তন দেখতে পাই তা কি একদিনে সম্ভব হয়েছে? কিভাবে এই বিপুল জনপ্রিয়তা অর্জন করলেন যাতে বাংলার ঘরে সন্ধ্যা হয় তুলসী মঞ্চের প্রদীপ জ্বালানোর মাধ্যমে তা সত্যিই গবেষণার বিষয়। প্রতি সন্ধ্যায় তুলসী মঞ্চের প্রদীপ ব্যতীত বাংলার সমাজ অকল্পনীয়। গ্রাম বাংলার ঘরে ঘরে ‘তুলসী তলা’, ‘তুলসী বন’, ‘তুলসী মঞ্চ’ দেখা যায়। দেবতার পূজায় হোক কিংবা সামান্য সর্দি, কাশি, কিংবা যে কোন রোগেই হোক তুলসীপাতা অপরিহার্য। আবার মৃত ব্যক্তির চোখে তুলসী পত্র ব্যতীত কোন মৃত্যুর মুক্তিসাধন ঘটে না বলে সমাজের বিশ্বাস। বস্তুতপক্ষে তুলসী কিভাবে বাংলার সমাজে ও লৌকিক বিশ্বাসে এতটা মহিমামণ্ডিত হয়ে উঠল তা সত্য ভাবার বিষয়। কীভাবে সদা উপকারী ঔষধি গাছে উন্মোচিত হল কিংবা তুলসী বাংলার সমাজে দেবীত্ব অর্জন করেছিল, তা জানা অত্যন্ত তাৎপর্যবাহী ও সৃজনশীল।

ঔষধি হিসাবে তুলসীকে চিকিৎসা শাস্ত্রের চর্চায় সুমহান মর্যাদায় স্থান দেওয়া হয়েছে। আয়ুর্বেদ চর্চায় তুলসীকে ‘ষড়গুণের’ (সাধারণভাবে আয়ুর্বেদ শাস্ত্রে কুড়িটি গুণের কথা বলা হয়েছে। ‘গুণ’ ধারণাটি সাংখ্য দর্শনের প্রধান চেতনা হিসেবে ধরা হয়। এরমধ্যে তুলসীকে ষড়গুণের অধিকারী হিসাবে চিহ্নিত করা হয়েছে এবং ত্রিদোষ বায়ু-পিত্ত-কফ দোষ থেকে মুক্ত হওয়ার কথা বলা হয়েছে)। আসলে পৃথিবীর বিভিন্ন সংস্কৃতিতে বিশেষত ভারত, গ্রীক, রোম কিংবা মিশরে সংস্কৃতিতে বিভিন্ন বৃক্ষকে দেবদেবীর সাথে সংশ্লিষ্ট করার প্রক্রিয়া লক্ষ্য করা যায়। ভারতবর্ষে বহু গাছপালাকে ধর্মের মধ্যে সংশ্লিষ্ট করণের প্রক্রিয়া, তাকে কেন্দ্র করে বিভিন্ন অনুষ্ঠান ঘটানো কথা জানা যায়। তুলসী, আমলকী, বিশ্ব, হরিতকী, কৃষ্ণচূড়া প্রভৃতি গাছকে কেন্দ্র করে বিভিন্ন কাহিনী পুরাণগুলিতে দেখা যায়। এদেরকে বিভিন্ন দেবতার সাথে সংশ্লিষ্ট করার কথা জানা যায় আবার অনেকেই পৃথক দেব-দেবী হিসাবে চিহ্নিত করতে দেখা যায়। এ প্রসঙ্গে তুলসী, আমলকী, বিশ্ব-এর কথা বলা যেতে পারে — যাদের পৃথক দেবী হিসাবে চিহ্নিত করা হয়েছে। বাংলার উপপুরাণ গুলিতে কীভাবে তুলসী ‘দেবী’ হিসাবে পরিচিতি হল তা দেখার আগে একটু বৈদিক সাহিত্য থেকে উল্টে পাল্টে তুলসী সম্পর্কে কে কী বলেছে তা একটু দেখে নেওয়া যাক।

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বৈদিক সাহিত্য থেকে বৃক্ষ-এর গুণাগুণ সম্পর্কে অবহিত হওয়ার সংবাদ পাওয়া যায়। বৈদিক সাহিত্য তার গুণাগুণের উপর ভিত্তি করে একে চার ভাগে ভাগ করার খবর জানা যায়।^১

(১) অথর্বন (পবিত্র) (২) আঙ্গিরস (যাদুবিদ্যায়ুক্ত) (৩) দৈবী (৪) মানুষ্য।

ঋকবেদে (1200-1000 BCE) কাশ্যপ, অঙ্গিরস, কাম্ব সহ পাঁচজন ঋষির কথা বলা হয়েছে, যারা ভেষজ ঔষধ আবিষ্কার করে জনপ্রিয় হয়েছেন।^২ ঋক বৈদিক যুগের প্রধান দেবতাদেরকে বহু জটিল রোগ থেকে মুক্তিদাতা হিসাবে চিহ্নিত করা হয়েছে। ঋকবৈদিক সাহিত্যে বলা হয়েছে মরুত কুষ্ঠ রোগ থেকে মুক্তি ঘটান, সূর্যদেব হৃদয়রোগ থেকে মুক্তি ঘটান, আবার অগ্নিদেব যক্ষ্মা, জটিল জ্বর, সর্দি কাশি থেকে মুক্তির দেবতা হিসাবে চিহ্নিত হয়েছেন।^৩ অথর্ববেদ সাহিত্যে (1000-800 BCE) অনধ্বন, অপামার্গ, অরুক্ষতি সহ বহু রকমের বৃক্ষের মহাঔষধি হিসাবে পরিচয় দেওয়া হলেও, তাদের রোগ নির্ণয়কারী ক্ষমতার কথা বলা হলেও তুলসীর কথা বলা হয়নি।^৪ সুতরাং বোঝা যায় ঋকবৈদিক ও পরবর্তী বৈদিক সাহিত্যে তুলসীর ঔষধি হিসাবে জ্ঞান ছিল না, তাই এর সম্পর্কে বৈদিক সাহিত্যে সম্পূর্ণ নিশ্চয় থাকতে দেখা যায়।

প্রাচীন আয়ুর্বেদ সংহিতায় তুলসীর ধারণা

চরক সংহিতা (100 BCE- 200 CE) সেখানে তুলসীকে মহাঔষধি হিসাবে চিহ্নিত করা হয়েছে এবং তুলসীকে ‘আয়ুর্বেদ শাস্ত্রের’ ষড়গুণের অধিকারী হিসাবে চিহ্নিত করা হয়েছে।^৫ শুক্র সংহিতায় (100 BCE- 500 CE) তুলসীকে মহাঔষধি রূপে ও আশ্চর্য রোগ নির্ণয়কারী হিসাবে চিহ্নিত করা হয়েছে।^৬ যাই হোক এটা বোঝা যায় যে শুক্র ও চরক সাহিত্যে অর্থাৎ খ্রীষ্টীয় চতুর্থ শতকের মধ্যে এদের মহাঔষধি রূপে সম্যক ভাবে সমাজে উপলব্ধি প্রাপ্ত হয়েছিল।

মহাপুরাণ গুলিতে তুলসীর ধারণা

সাধারণভাবে খ্রীষ্টীয় চতুর্থ শতকের পরবর্তী সময়কালে ‘মহাপুরাণ’ রচনাকাল হিসাবে চিহ্নিত। মহাপুরাণ গুলিতে তুলসীর সম্পর্কে কাহিনী গড়ে উঠতে দেখা যায়। সাধারণ ভাবে পুরাণগুলিতে ‘তুলসী’কে বিষুপ্রিয়া হিসাবে চিহ্নিত করা হয়েছে। বায়ুপুরাণে বলা হয়েছে তুলসী সমুদ্র মন্থনজাত।^৭ স্কণ্ডপুরাণে বলা হয়েছে ‘যে গৃহস্থ ব্যক্তি গৃহে তুলসী বৃক্ষ রোপন করেন, তাহার গৃহে কদাচ দারিদ্র্য দুঃখ উপস্থিত হয় না’। তার সম্পর্কে আরো বলা হয়েছে তিনি ‘অমৃতকনোৎপন্ন এবং হরিবল্লভা, তুলসী ভক্ষক ব্যক্তি যমলোক দর্শন করেন না, মস্তকে তুলসী ধারণ করলে তিনি নির্বান পদবী লাভ করেন, হস্তে তুলসী ধারণ করলে ত্রিতাপ বর্জিত হওয়া যায়।’^৮

বাংলার উপপুরাণ গুলিতে তুলসীর ধারণা

বাংলায় রচিত বৃহৎস্মরণপুরাণে, ব্রহ্মবৈবর্ত পুরাণ, দেবী ভাগবত পুরাণ এ ‘তুলসী’ কে দেবী রূপে চিহ্নিত করা হয়েছে। যাই হোক এই পুরাণ গুলির রচনা কে করে তা নিয়ে পণ্ডিতদের মধ্যে বিতর্ক থাকলেও R. C. Hazra -এর মতো পণ্ডিতরা স্বীকার করে নিয়েছেন যে এই উপপুরাণগুলির রচনাকাল একাদশ-দ্বাদশ শতকের পূর্বে নয়।^৯ মোটামুটিভাবে দশম, একাদশ-দ্বাদশ-এর পরবর্তী সময় বাংলায় উপপুরাণ গুলির রচনার কাল বলে পণ্ডিতরা মনে করেন। উপপুরাণ গুলিতে বাংলার সমাজের চিত্র উন্মোচিত হয়েছে। উপপুরাণ পুরাণ গুলিতে বাংলার সমাজে বর্ণজাতি ব্যবস্থা সহ একাধিক কাঠামো ধারণা প্রথম গড়ে উঠতে দেখা যায়। আসলে পণ্ডিতরা মনে করেন একাদশ-দ্বাদশ শতকে বাংলার সমাজে যে নতুন সঙ্কট প্রবাহিত হয়েছিল, সেই সংকটের মোকাবিলা করতে ব্রাহ্মণরা বা ‘পুরাণ’ রচনাকাররা এইভাবে বাংলার সমাজকে ছকে বেঁধে ফেলতে চেয়েছিলেন।

দেবীভাগবত পুরাণে তুলসীর উদ্ভব কাহিনী বর্ণনা করা হয়েছে। এখানে বলা হয়েছে ‘আমি (তুলসী) পূর্বে গোলোকে গোপিকা ছিলাম, শ্রীকৃষ্ণের কিশোরী হইয়া, সর্বদা তাহার সেবা করিতাম। আমি (তুলসী) রাধার অংশসমুভূতা এবং প্রিয়তম সখী ছিলাম। একসময়ে আমি (তুলসী) রাসমন্ডলে গোবিন্দ সহ ক্রীড়া কৌতুক ভোগ করত মুর্ছিতা হইয়া পতিতা হইয়াছিলাম, সেই সময় রাসেশ্বরী রাধিকা সেই স্থানে আগমন করিয়া সেই অবস্থায় বহু ভৎসনা করিলেন এবং আমাকে এই শাপ দিলেন পাপিষ্ঠে! তুই মনুষ্য যোনিতে গমন কর।’^{১০}

দেবী ভাগবত পুরাণে তুলসীর উদ্ভব কাহিনী বর্ণনা করা হয়েছে তাতে একজন প্রিয়তম সখী হিসাবে যেমন চিহ্নিত করা হয়েছে ঠিক তেমনিভাবে সে কেন পৃথিবীতে দেবী রূপে আবির্ভূত হয়েছেন তার কারণ বর্ণনা করা হয়েছে, বলা হয়েছে তিনি রাধিকার

অভিসম্পাতের কারণে পৃথিবীতে অবতীর্ণ হয়েছেন এবং মনুষ্য যোনিতে তার জন্ম হবে দেবী ভাগবত পুরাণের কাহিনী থেকে জানা যায়। বস্তুতপক্ষে অন্যান্য পৌরাণিক কাহিনীর মতো অভিশাপ দ্বারা সম্পাদিত হয়ে পৃথিবীতে আগমনের যে কাহিনী প্রচারিত হতে দেখা যায় সেটি আমরা দেখতে পাই দেবীভাগবতম পুরাণে। তুলসীকে সরাসরিভাবে দেবী হিসেবে কেন উন্মোচিত করেনি, সে বিষয়ে খুব স্বাভাবিকভাবেই বলা যেতে পারে দেবী ভাগবত পুরাণ যেভাবে শাক্ত দেবীকে নিয়ে চিহ্নিত করতে ব্যস্ত সেখানে বৈষ্ণব ধারণায় শ্রীকৃষ্ণকে এবং তার সন্তৃত সখীকে নিয়ে চিত্রিত ছিলেন না তাই দেবী ভাগবতম পুরাণ তুলসীর দেবীত্ব অর্জন নিয়ে কাহিনী প্রচার করেনি। এখানে কেবল মাত্র তুলসীর পৃথিবীতে এবং মনুষ্য যোনিতে আগমনের কাহিনী পরিবেশিত হয়েছে।

ব্রহ্মবৈবর্ত্য পুরাণ কৃষ্ণকে নিয়ে সর্বাঙ্গিক ভাবে চিত্রিত। এই পুরাণে কৃষ্ণকে সর্বশ্রেষ্ঠ ঈশ্বর হিসেবে চিত্রিত করেছে, এমনকি বিষ্ণু - শিব - ব্রহ্মা - গণেশ কৃষ্ণের বিভিন্ন রূপ হিসেবে অবতারণা করা হয়েছে। এই পুরাণে রাধার কথা মুখ্য আখ্যায়িকা হিসেবে উপস্থাপিত হয়েছে। রাধার অংশসম্পূর্ণতা হিসেবে চিত্রিত করা হয়েছে তুলসীকে – পরিণতিতে তুলসীকে বিশেষ মর্যাদায় চিত্রিত করা হয়েছে।

ব্রহ্মবৈবর্ত্য পুরাণে তুলসীর উদ্ভব কাহিনী বর্ণনা করা হয়েছে। এই পুরাণে বলা হয়েছে লক্ষ্মী, সরস্বতী, লোক পাবনী গঙ্গা, তুলসী ইহারা চারিজন নারায়ণের সঙ্গী। ব্রহ্মবৈবর্ত্য পুরাণে বলা হয়েছে সাধবী তুলসী কিভাবে নারায়ণ পত্নী হয়েছেন। পূর্বজন্মে তিনি কোথায় জন্মগ্রহণ করেছেন? তিনি কে? তিনি কিভাবে নারায়ণ পত্নী হয়েছেন — এইসব কিছুই উত্তর দেওয়া হয়েছে। দেবী ভাগবতম পুরাণের মতো এখানে তুলসীর পূর্বইতিহাস রূপে গোলকের গোপিকা থাকার কথা, রাধিকার দ্বারা শাপগ্রস্ত হওয়ার সংবাদ পাওয়া যায়।^{১১}

ব্রহ্মবৈবর্ত্য পুরাণে তুলসীর জন্মকাহিনী বর্ণনা করা হয়েছে, বলা হয়েছে ‘ধর্মধজপত্নী শুভক্ষণে শুভ দিনে শুভযোগে শুভলগ্নে শুভাংশে মনোহর স্বামীগৃহে কার্তিকী পূর্ণিমাতে শুক্রবারে লক্ষ্মীর অংশরূপিনী মনোহরা এক কন্যা প্রসব করিলেন, তাহার পাদপদ্মে পদ্মচিহ্ন বিরচিত, তাহার অঙ্গে রাজরাজেশ্বরী লক্ষ্মীর ভঙ্গি প্রকাশ পাইতে লাগল।’^{১২} আরো বলা হয়েছে ‘মুখমণ্ডল, শরৎকালীন চন্দ্রের ন্যায় মনোহর, লোচন শরৎকালীন বিকচ কমলসদৃশ, তাহার ওষ্ঠ পঙ্কবিল্মোপম, তাহার হস্ত ও পদতল রক্তবর্ণ এবং নাভি নিম্ন ও মনোহর’^{১৩} ব্রহ্মবৈবর্ত্য পুরাণে ‘তুলসী’ কেন ‘তুলসী’ নামে অভিহিত করা হয়েছে তা বলা হয়েছে। বলা হয়েছে “শ্বেতচম্পকবর্ণা, শ্যামা সুকেশী, মনোহরা সুন্দরী, শ্রেষ্ঠাকে দর্শন করিয়া, নরনারীগণ তাহাকে ‘তুলসী’ নামে অভিহিত করলেন।”^{১৪} ব্রহ্মবৈবর্ত্য পুরাণে বলা হয়েছে তিনি নারায়ণ আশীর্বাদে “তুমি (তুলসী) জগতে সকল পূজার প্রধানা ও বিষ্ণুর প্রাণাধিকা হইবে, তোমা ভিন্ন সকল দেবতার পূজা বিফল হইবে। তুমি বৃন্দাবনী নামে বৃক্ষরূপে অবস্থান করিবে এবং তোমার পত্র দ্বারা গোপ গোপিকাগণ মাধবকে পূজা করিবে। তুমি বৃক্ষের অধিষ্ঠাত্রী দেবী রূপে আমার (নারায়ণ) বরে নিরন্তর গোপ বেশধারী শ্রীকৃষ্ণের সহিত স্বচ্ছন্দে বিহার করিবে।”^{১৫} ব্রহ্মবৈবর্ত্য পুরাণে তুলসী পূজার নিয়মাবলী বলা হয়েছে। তুলসী পূজার গুণাবলী ব্যক্ত করা হয়েছে — (১) ‘কার্তিক মাসে বিষ্ণু উদ্দেশ্যে তুলসী পত্র দান করলে অযুত গো-দানের ফল হয়’। (২) ‘পুত্রহীনের পুত্র, বন্ধুহীনের বন্ধু, রোগী রোগ হইতে, ভীত ভয় হইতে, পাতকী পাপ হইতে মুক্ত হয়’। (৩) ‘যিনি তুলসী পূজা করিয়া বৃন্দা, বৃন্দাবনী, বিশ্বপাবিনী, পুষ্কসারা নন্দিনী। এই অর্থযুক্ত স্তোত্র পাঠ করিবেন, তিনি অশ্বমেধের ফল ভোগী হইবেন।’^{১৬}

বৃহৎস্মপুরাণে বলা হয়েছে “ব্রাহ্মণেরা যথায় বাস করেন, সেই ভূভাগই তীর্থ, পদ্মবনতীর্থ, তুলসীবন তীর্থ। তুলসী মূল হইতে দশদিক ষোড়শ হস্ত পরিমিত স্থান দেববন্দিত মহা তীর্থ।”^{১৭} এখানে তুলসীর উদ্ভবের কাহিনী ব্যক্ত করা হয়েছে। বলা হয়েছে তিনি হলেন ‘বিষ্ণুপ্ৰীতিকারিনী, বৈষ্ণবীপ্রিয়া’। তাঁর দেবী রূপে আবির্ভাব সম্পর্কে বৃহৎস্ম পুরাণে বলা হচ্ছে “কল্যাণী তুলসী দেবী মূর্তিমতী হইয়া প্রকাশ পাইলেন, তুলসী দেবী শ্যামাঙ্গী, চারুমুখী, দ্বিভুজা এবং ঈষৎ হাস্যপূর্বক হস্তে পদ্ম, শঙ্খ পরিধানে শুক্লবস্ত্র, নামান অলংকার ভূষায় তিনি সজ্জিতা।”^{১৮}

উপরিউক্ত আলোচনায় দেখা যায় ঋক বৈদিক ও অথর্ববেদ সাহিত্যে বহু বৃক্ষের ঔষধি হিসেবে চিহ্নিত করা হলেও তুলসীর বিষয়ে নিশুচপ ছিল। চরক ও শুশ্রূত সংহিতা যার রচনাকাল চতুর্থ শতকের মধ্যে সমাপ্ত, তুলসীকে আশ্চর্য রোগ হননকারী মহাঔষধি রূপে স্বীকৃতি দিলেন তারপর থেকেই মহাপুরাণ গুলিতে ধর্মের সাথে দেব দেবীর সাথে সংশ্লিষ্ট করণের প্রচেষ্টা লক্ষ্য

করা যায়। একাদশ-দ্বাদশ শতকের মধ্যে কেবল ধর্মের সাথে সংশ্লিষ্টকরণ করে ক্ষান্ত থাকতে স্মৃতিকার বা পুরাণকারদের দেখা গেল না। তারা পৃথক দেবীর মর্যাদা দিয়ে পূজাবিধি, পূজার ফল লাভ প্রচার করলেন। বস্তুতবক্ষে এইভাবে ‘দেবী’ হিসেবে কিংবা ধর্মের সাথে সংশ্লিষ্ট করণের উদ্দেশ্য ছিল সংরক্ষণ ও আরো তুলসী বৃক্ষ রোপণের জন্য প্রচার। শাস্ত্রকারেরা একদিকে যেমন চেয়েছিলেন তুলসী ‘দেবী’ পূজা করে তাদের অর্থভাব প্রশস্ত হোক, তেমনি মানুষের কাছে এগুলির গুরুত্ব সম্যকভাবে উপলব্ধি হোক।

সাধারণভাবে একটি গুরুত্বপূর্ণ প্রশ্ন ওঠে যে সংস্কৃত ভাষায় লিখিত এই সমস্ত গ্রন্থের কথা কতজন মানুষ জানতেন বা বুঝতেন। উত্তরে বলা যায় ঐ জনই পূজো প্রচলন করে এগুলির সংরক্ষণের বা নতুন বৃক্ষ স্থাপনের উদ্যোগের প্রচার করা হয়। আসলে এইভাবেই সংরক্ষণ ও রক্ষণাবেক্ষণের বিচিত্র পদ্ধতি লক্ষ্য করা যায়। গান্ধী যেরূপে ‘দেওতা’ হয়েছিলেন তুলসী যে সেইরূপ ‘দেবী’ তা বলতে বাধা রাখে না।^{১৯} বৃহৎস্মপুরাণে দুটি বক্তব্য সংরক্ষণ ও বৃক্ষ স্থাপনের বিষয়টির উত্তর দিয়ে দেয় – (১) “এ পরম আনন্দদায়িনী দেবী আমলকীকে সকলেরই স্থাপন, সন্মান, অর্চনা করা উচিত।”^{২০} (২) “তুলসী মূল হইতে দশদিক ঘোড়শ হস্ত পরিমিত স্থান দেববন্দিত ও মহাতীর্থ।”^{২১}

বস্তুতপক্ষে লক্ষণীয় প্রাচীন ভারতীয় সমাজে – একেবারে বৈদিক সাহিত্য থেকে ঔষধি রূপে বিভিন্ন বৃক্ষের জ্ঞানের সঙ্গে গভীরভাবে সংযুক্ত ছিলেন। তারা এই জ্ঞানের বস্তুগত চেতনাকে ধর্মের সাথে তথা বৈদিক যুগের প্রাচীন দেবতার সাথে সংশ্লিষ্ট করণ করে আয়ুর্বেদ জ্ঞানের বার্তাকে একটি পৃথকভাবে উন্মোচনের রাস্তা করেছিলেন তা পরিলক্ষিত হতে দেখা যায়। প্রাচীন ভারতের আয়ুর্বেদ জ্ঞানের প্রবাহ একটি বিশেষ মাত্রায় ও চেতনায় উন্নীত হয়েছিল তার ‘বিশুদ্ধ জ্ঞান প্রাপ্ত হয় আয়ুর্বেদ’ রচনার মাধ্যমে। অথর্ববেদ রচনায় আয়ুর্বেদ সাহিত্যের চরম উন্নতির উৎকর্ষ প্রতিভাত।

দেখা যায় বাংলার পুরাণ গুলি ‘তুলসী’র একটি রূপকে তুলে ধরার চেষ্টা করলেন। বাংলার পুরাণগুলি যেভাবে আঞ্চলিক স্বকীয়তা বা বৈশিষ্ট্য দেবার চেষ্টা করলেন তা অত্যন্ত অভিনব। বিশিষ্ট অধ্যাপক কুনাল চক্রবর্তী তাঁর বিভিন্ন গবেষণা, আলোচনায় ও বক্তব্যে বাংলার উপপুরাণ গুলির একটি পৃথক পরিচয় দানের সত্ত্বা গড়ে ওঠার দিকে দৃষ্টি আকর্ষণ করতে দেখা যায়। আসলে যেভাবে বাংলা উপপুরাণ গুলিতে পৃথক দেবী সত্ত্বায় উন্মোচিত করলেন তা সত্যি অভিনব। আসলে বাংলায় লৌকিক ধর্মের দেবতার সাথে প্রাচীনকাল থেকে গভীর সংশ্লিষ্টকরণের জন্য কি এই প্রবণতা – এই প্রশ্ন থাকবেই? কেননা গুপ্তদের বাংলায় প্রাপ্ত একাধিক ভূমিদান পট্রে বাংলায় প্রাচীনকালে ব্রাহ্মণগণ তাদের নামের পাশে ‘শর্মা’ ব্যবহার করছেন না তার ইঙ্গিত দেওয়া যায়। এই সমস্ত ভূমিদান পট্রে যেভাবে কিছু নির্দিষ্ট সংখ্যক ব্রাহ্মণদের পাশে শর্মার ব্যবহার আবার কিছু ব্রাহ্মণদের নামের ক্ষেত্রে ব্রাহ্মণগণ শর্মা ব্যবহার করছেন না তা সত্যিই দৃষ্টান্তপূর্ণ। আসলে বাংলায় যেভাবে মনসামঙ্গল গড়ে ওঠা ঠিক সেইভাবেই পুরাণগুলিতে তুলসীর দেবীত্বের ধারণা গড়ে তোলা হয়েছিল কী না তা বলা বেশ কঠিন। আসলে পুরাণগুলি ছিল ব্রাহ্মণ পন্ডিতদের দ্বারা রচনা করা মহা পুরাণের জ্ঞানের সাথে তুলসীর ধারণাকে সংশ্লিষ্ট করে নতুন আঞ্চলিক সত্ত্বায় একটি নব্য দেবীর কাহিনী প্রস্তুতকরণের ঘনঘটা। বাংলায় ‘তুলসী দেবী’ উত্থানের ক্ষেত্রে বাংলায় প্রচলিত দেবী পূজার পৃথক ভাবনার দিকটিও আমাদের সামনে দৃষ্টিগোচর হয়। বাংলায় যেভাবে ‘কালিকাপুরাণ’ কিংবা ‘দেবীভাগবতম’ পুরাণ রচনা করা হয়েছে কিংবা যেভাবে শক্তি বা শাক্ত দেবীর ধারণাকে বিকশিত করা হয়েছে সেই ক্ষেত্রে দাঁড়িয়ে তুলসীকে বাংলার লেখকগণ আর কৃষ্ণের সাথে সংশ্লিষ্ট করণ করলেন না, তাকে পৃথক দেবীমাহাত্ম্যে বিভূষিত করলেন, যাতে তার শক্তি কাঠামোর সমস্ত রোগ এমনকি ‘ত্রিতাপ’ বর্জিত হওয়া যায়। আসলে এটি প্রচলিত বাংলায় স্মৃতিকার ও পুরাণ রচনাকারদের পৃথক দেবী শক্তি কাঠামোর উপর দৃঢ় বিশ্বাস ও চিন্তনের প্রতি আমাদের মনোনিবেশ করায়। মহাপুরাণগুলি তুলসীকে কখনোই পৃথক দেবী শক্তি হিসেবে উন্মোচিত করা হয়নি। তুলসীকে কখনোই ‘শক্তিহীন’ প্রচার করেছে এমনটা নয় কিন্তু পৃথক দেবী হিসেবে উপস্থাপিত করার ভাবনা দেখা যায়নি মহাপুরাণগুলির ভাবনার স্রোতে।

আদি মধ্যযুগের ধর্ম চেতনায় যেভাবে cult কিংবা শাক্ত দেবীর পৃথক সত্ত্বা উন্মোচিত হতে দেখা যায় তা অভিনব। শাক্ত দেবীর উন্মোচন হিসেবে আসামের কামাক্ষ্যা দেবীর উন্মোচন এক নতুন ইতিহাস তৈরি করে।^{২২} আবার একইভাবে ত্রিপুরার ত্রিপুরেশ্বরী কিংবা ত্রিপুরাসুন্দরী দেবীর কথা বলা যেতে পারে।^{২৩} অধ্যাপক ব্রজদুলাল চট্টোপাধ্যায় তার গবেষণায় আদি মধ্যযুগীয় পর্বে ধর্মের সংশ্লিষ্ট করণের ক্ষেত্রে ‘পৃথক দেবী শক্তির’ আরাধনা হিসাবে তিনি দেবী কামাক্ষ্যার উদ্ভব ও তার

ইতিহাসকে অতি জনপ্রিয় করে তুলেছিলেন। কিংবা জগন্নাথকে কেন্দ্র করে কাল্টবাদ অতি জনপ্রিয় হয়ে উঠেছে উড়িষ্যাতে সেটি যেমন পরিলক্ষিত হয়, তেমনি ভাবে বাংলায় মধ্যযুগীয় সাহিত্যে মনসামঙ্গল-চণ্ডীমঙ্গল এর ভাবনার স্রোত উন্মোচিত হয়েছিল ঠিক সেইভাবে। উপপুরাণ গুলির ছত্রে ছত্রে এই আঞ্চলিক ‘ভাবময়তা’ দান কিংবা লৌকিক শক্তিগুলিকে পৃথক দেবী হিসেবে উন্মোচিত করার প্রবণতা সূত্রে ‘তুলসীকে’ পৃথক ‘দেবীত্ব’ শক্তিতে রূপান্তরিত করণ করার চেষ্টা – তা প্রশ্ন থাকবেই।

এই ছোট প্রবন্ধে যেটি দেখানোর চেষ্টা করা হল তা বাংলার পুরাণগুলি কিভাবে তুলসীকে দেবীর মর্যাদায় অভিষিক্ত করেছে। খুব স্বাভাবিক ভাবেই প্রশ্ন ওঠে এই প্রবণতা কি ভারতবর্ষের অনন্য স্থানে প্রাপ্ত উপপুরাণগুলিতে ঘটেছিল? সেই আলোচনা এখানে প্রকাশিত হলো না ঠিক কিন্তু সেই আলোচনা পন্ডিতগণ কর্তৃক সাধিত হলে বিষয় ভাবনার চেতন সমৃদ্ধশালী হবে।

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২২. কামাক্ষ্যা দেবীর মন্দির ৫১তম সতীপীঠের অন্যতম হিসেবে চিহ্নিত করা হয়। ৫১টি শক্তিপীঠ-এর মধ্যে একটিতে এবং ৪টি আদিশক্তি

গুলির মধ্যে কামাক্ষ্যা মন্দিরটি বিশেষ কারণে দেবী সতীর গর্ভ এবং যোনি এখানে পড়েছিল এবং দেবী কামাক্ষ্যাকে উর্বরতা দিবা ‘রক্তক্ষরণকারী’ দেবী হিসাবে চিহ্নিত করা হয়েছে। এই মন্দির চত্বরে দশমহাবিদ্যার মন্দির আছে। কামাখ্যায় প্রাচীন হিউয়েন সাঙের রচনাতে পাওয়া গেছে। হিউয়েন রচনাতে কামাক্ষ্যা কে ও ব্রাহ্মণ কিরাত জাতীয় উপাস্য বলে গণ্য করা হয়েছে। নবম শতাব্দীতে শ্লেষু রাজবংশের বানমলবর্মদেবের তেজপুর লিপিতে প্রথম কামাক্ষ্যার শিলালিপি পাওয়া যায়। পরবর্তীকালে কোচ রাজবংশের প্রতিষ্ঠাতা বিশ্বসিংহ এই মন্দিরে পূজার পুনঃপ্রবর্তন করেন। কেননা মুসলিম আক্রমণ কর্তৃক ধ্বংসপ্রাপ্ত হয়।

২২. ত্রিপুরা সুন্দরী মন্দিরটি ৫১টি শক্তিপীঠ এর মধ্যে গণ্য করা হয়, কিংবদন্তী অনুসারে এখানে সতীর ডান পা পড়েছিল। এখানে শক্তিতে ত্রিপুরাসুন্দরী হিসেবে ঘোষণা করা হয় এবং সহচর ভৈরব ত্রিপুরা নামে পরিচিত করা হয়। ১৫০১ খ্রিষ্টাব্দে মহারাজা ধন্য মানিক্য কর্তৃক নির্মিত একটি ঘনক্ষেত্রের ভবন বাংলা রত্ন শৈলীতে নির্মিত।



PRINTING AS A MEDIUM OF MECHANICAL REPRODUCTION OF ART VIS A VIS PRINTMAKING

Dr Kamal Sarkar*

[This paper aims to critically analyze the impact of mechanical reproduction on art as well as on printmaking. In printmaking artist also takes editions, are those editions considered as a mechanical reproduction or each one of them is single work of art. What are an original print and the difference between reproduction? These are some of the questions I tried to find an answer to in this research.]

Keywords: reproduction, mechanical, printmaking, art etc.]

The invention of printing technology is closely associated with entertainment, amusement, religiosity, education, culture, and so on. When printing technology was introduced to the Western world in the last half of the 14th century, there were not only religious imagery in woodcut that dominated the market, but the printed playing card was also developed earlier in the early 14th Century. Before the invention of printing technology, scribbles, calligraphy, illumination were used for creating pictures and writings, mainly for the royal and upper classes, but printing replaced this nepotism or, in other words, developed a middle path to reproduce designs. **John Berger** mentioned in the first episode of Ways of Seeing, *“Reproduction is an image of an image that travels or appears to the viewers. But the original remains in its authentic location like the human eye that can travel one place at one time.”* This statement of John Berger was on the reproduction of Western art or, moreover, about the physicality of fine art, which became transmittable because of reproduction i.e. printing photography and video.

Printing VIS a VIS Printmaking: John Berger held printing as one of the crucial methods for the reproduction of images. Printing is a technology that can reproduce texts and images. **'Technology'** the dictionary defines the term as, **“an application of complex process and principals of science to achieve industrial or commercial objectives.”** Progressively, advancement in printing technologies and possibilities of mechanical reproduction has enhanced the power of the print as a functional object/material. The emergence of print culture deeply affected social and cultural practices, for instance, mass circulation of prints democratized the access to knowledge and information for the masses, enhanced possibilities of effective communication, revolutionized visual culture, education, documentation and image-making. The power of printing and printed material lay in its function as a medium to shape or affect the public view, discourse or discussion. Impact of newspapers, books, periodicals, mass-circulated images on public discourse are some of the examples pertinent in this context. The 21st century sees a remarkable development towards printing and other sophisticated technologies, which can replace the idea of printing or printed material to computer-generated soft copy - a paradigm shift from the real to the virtual.

On the other hand, Printmaking has evolved as a process of making artworks, primarily from early printing technology. Printmaking is a **technique**, the dictionary defines the term as, **“a way of doing an activity that needs skills.”** Printmaking allows an artist to prepare the matrix or personified printing surface reflecting his/her creativity. This further leads to taking a print or an edition by him or with the help of assistance. A printmaker is fully aware of the particular technique he/she wants to use for their artwork and is involved in each and every step to prepare the matrix. Printmaker's intention is not merely to reproduce or transfer the image into a medium but to use the exclusive features of the particular medium. Hence the objective of printmaking differs from printing. Printing is a commercial

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technology to reproduce text and images. It was not commenced for creating artworks. In the 15th century, European artist-painters employed printing technology to reproduce their drawings and paintings. Gradually, artists simplified these printing technologies as techniques and adopted them as an independent fine art medium. These fine art printing techniques are known as Printmaking. The prints produced by the artists using these printing techniques are as original as any other fine art creation i.e. painting and sculpture. Through printmaking, it is possible to reproduce art in the form of the printed edition, with the exclusive attribute of each printing techniques, crucial expediency to the Printmaker.

Though we can't deny that mechanical reproduction such as printing, photography, film and other sophisticated technologies of the 20th and 21st century had a great impact on art. Mechanical reproduction provokes the idea of authenticity in art and enhances the possibility to experience art as a daily life experience easily available for all. With access to sophisticated technology and the internet, we can now see images of anything anywhere in any situation without it being printed. It has revolutionized the accessibility of text and images. People now have the power to manipulate images for their own purpose and information. A single image can be used all over the world at the same time with different meanings in different cultural contexts.

L.H.O.O.Q by Marcel Duchamp, is a cheap postcard reproduction of the iconic painting from The Renaissance era, **Mona Lisa** by Leonardo da Vinci, which was reappropriated hilariously by Marcel Duchamp by putting in a mustache and beard to challenge the identity of Classicism. Working with Readymade objects was a crucial practice in Dadaism. Readymade objects are often mass-produced, hence printing and photography were also considered as readymades by Dadaist artists. John Berger in '**Ways of Seeing**' encountered different possibilities regarding how an image changes and upgrades its meaning, through reproduction. But with mechanical reproduction, we lose the actual fine art surface, hence, fine art surface can only be experienced through the original or authentic artwork. For example, if we consider an original painting of Van Gogh and a print of the same, what is the difference between these two and what is the viewer's experience? Van Gogh's famous painting, **The Starry Night**, copy of the original, available in varying pixels on the internet but the fact is, you can't feel or experience the bold brushstrokes or the brilliant impasto technique in reproduction, only the authentic masterpiece has that. Reproduction can only pretend to be alike. It is incapable of replacing the authenticity of the medium.

But for printmaking, is different as the print medium itself is the artistic medium. So each and every edition has the authentic quality of the master matrix known as '**the original print**' and not a reproduction. Reproduction is the copy of an existing image while the original prints are created by the artist in multiple but each piece or edition is considered a work of art because the artist executed them with printmaking medium. In 1961 the *Print Council of America* published a catalogue on '**what is an original print**', according to that, "*an original print is a graphic art, the general requirements of which are: 1. The artist alone has made the image in or upon the plate, stone, woodblock or other material, for the purpose of creating a work of graphic art. 2. The impression is made directly from that original material, by the artist or pursuant to his directions. 3. The finished print is approved by the artist.*"

However, from the beginning, printmakers always rely on skilled technicians and printers, as an example, according to some scholar Albrecht Dürer did not himself prepare the block but other skilled block makers used to do it for him. Whether Durer collaborated with other craft person or not that is uncertain, but with the advent of photomechanical and computerized process, technical assistance became essential.

The approval of print by the artist is determined by his signature and numbering of each edition, the convention of the Plastic Art Congress held in Vienna in 1960 emphasized this process. Some of the

instructions are, if each and every step from matrix making to printing is done by the artist himself, it should be mentioned in the print by writing '**imp**' following by his signature. If someone else printed the editions for the artist it should be written as, '**artist name del**'-'**printer name imp**.' Trial proofs pulled in various stages when perusing the preparation of matrix, they are not part of the edition, they must pressurize as '**A/P**'. If an edition is referred to as limited-edition, the maximum number of the edition should appear on each impression. If the same plate is reused by the artist to take further edition, it should be mentioned as '**2nd ED**', and if reworked it should be mentioned as '**2nd state**'. *"An artist should not sign a reproduction of his work unless it is clearly indicated that the work is a reproduction and not an original print."*

With mechanical reproduction, art is now transmittable and print plays an enthusiastic role in the reproduction of art. However, the reproduction replaces the authenticity of work of art, but printmaking became a separate medium of visual art, where artists take editions and these editions are not reproductions but original print.

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COMPARATIVE ANALYSIS OF SEX WORKERS' LIFE: ANCIENT TIMES AND RECENT TIMES

Mithun Chowdhury*

[In recent times Sex Workers are regarded as marginalised people in our society. They and their family live a miserable life. Women related to this profession lead a most insecure, shameful and economically backward life. But this is a profession which was prevalent from the very distant past. This paper tries to make a comparative analysis of these sex-workers' life between the ancient times and recent times. For olden ages discussion is made with special reference to some ancient literature and for present time it is made by discussing the results of primary survey (2016) and with reference to some reports.

Keywords: Sex-workers' Life in Ancient Times, Sex-workers' Life in Recent Times, Jabala and Satyakam in the Upanishads, Chanakya period, Protection, Security, Rights]

A Discussion on Sex Workers' Life in Ancient Times

There is no accurate information on when, where and how prostitution started. However, if we talk about the time of Purana-Upanishads, Ramayana-Mahabharata, then it is seen that the women engaged in sexual work was very powerful. In present days we entertain the guests of our house through the address and welcome by the head of the family. At that time, there were examples of these sex workers entertaining the guests. Not only that, they were given equal and more dignity as human beings. They could not go beyond the obligations of patriarchal society, but sexual enhancement was not considered a crime or a sin at that time.

The Story of Jabala and Satyakam in the Upanishads

Jabala's son was Satyakam. When Satyakam was at his young age, he went to Acharya Gautam and prayed for education. Sage Gautam then asked Satyakam, "Who is your father?" "What is your kool and gotro (genealogy)?" But Satyakam neither know the name of his father nor aware about his genealogy. So he came to his mother and asked, "What is my father's identity?" "What's my genealogy?" Without any hesitation, Jabala answered Satyakam very simply: "Go, son, go and tell Acharya Gautam, my mother has served many men in her youth and you are the fruit of it. As a result, it is not possible for me to say the name, Kool and gotro of your father. When you go to Acharya, you will say I am Satyakam, Jabala's son Satyakam."

Satyakam goes to Acharya and echoes his words in the same way as his mother utters. But Acharya did not deprive him but gave him discipleship.

Raja Palak, king at that time, asked Acharya that whether is it possible to uplift someone as Brahmin (through a custom called 'upanayan') without any identity? Does he have any right to knowledge? Acharya said—Rajan, some questions are annoying but they are inevitable. There are mothers who can't tell the truth before their children but Jabala did it. There is only truth hidden in the womb of truth. Who can only tell the truth, who can hear the truth and who can contain the truth—will be the best in the world. At the time when Satyakam told the truth of his life without any hasitation, I saw Satyakam being one with Brahmo.

"Jati niti kul gotra duragam roop guna doshvarjitam
Desakala bisyati bartiayang brahmatatvasi bhabayatmasi. "

Source: Adi Shankar, Vivekachuramani, 254 volumes

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That is, there is no need for race-clan-tribe-name-form (i.e., genealogy) for knowledge, the desire for knowledge is the only condition for gaining knowledge.

Chanakya Period

Chanakya or Kautilya or Vishnugupta (360 BC-263 BC) was not only the king's advisor, he was a professor of Economics and Politics at Takshila University. He was referred to as 'Machiavelli of India' for introducing Classical Monetary Policy. Vishnugupta has moral philosophy, which is also called 'Chanakya Principle'. He spent his days in Pataliputra practicing Economics, Politics and Ethics. He also practiced Mahabharata in the morning and evening. He has tried to explain in various ways that all his knowledge is taken from Mahabharata.

'Arthashastra' (written by Chanakya) showed that profession of prostitution was under the control of the state at that time. State-owned brothels (2.26.1), independent prostitutes (2.26.28) operated with the full support of the state. There was another type of sex worker who was known as Asati or Kulta (3.13.37).

The collection of tariffs was an important aspect of the economy of the state. At that time, the head of the state used to pay about 1000 pon to a prostitute and 500 pon to his assistant to purchase ornaments, furniture, musical instruments as well as other items required in their business (2.26.1). The head of the treasury would see if more tariffs were being raised than what was being invested. That was their main goal (2.26.10). It is true that independent prostitutes do not receive money from the state, but they have to pay one-sixth of their income to the treasury as tax (2.26.28). However, if the state's economic situation deteriorated, those two types of prostitutes would be forced to pay extra taxes, which would sometimes be half of their income (5.2.21,23,28).

Area of sex workers was located at the southern part of the city (2.4.11). When the army went out to fight, prostitutes were their companions and they lived in different tents (10.1.10). Even during war, these women carried cooked food and drink. They encouraged soldiers to fight (10.3.46).

At that time, these prostitutes were not only bedfellows, they were also trained in dance, music, conversation, acting, recitation, various writings, drawing pictures, understanding each other's minds, making perfumes and of course having sex (2.26.28). The sons of prostitutes were taught drama and dance when they were in their eighth year (2.26.29).

It didn't matter what family she came from, if a woman was beautiful, young and talented, she would be placed in the top position of prostitutes (2.26.7). This value would be equal to one year's salary of the second highest secretary of state. If a prostitute was a companion of a king, her annual salary would be 1000 to 3000 pon (2.26.4) depending on her appearance. The king's personal advisers, physicians, astrologers, chariot drivers, poets were paid 1000 pon a year. However, it is seen that the son of that prostitute could not be the owner of the brothel. His daughter handled it after retirement or death. If there were no sons and daughters of a prostitute, then that brothel would be considered the property of the state (2.26.2,3).

The state not only controlled the work of prostitutes, but also maintained them. Money would help them in their personal needs. However, a prostitute could not sell or adopt her jewellery and ornaments to anyone except the chief prostitute (2.26.11). They were obliged to give happiness to any customer who came. The customers must be punished for speaking badly or physically abusing them (2.26.14). Again, if a person addicted to prostitution harassed her or stole her belongings or deprived her of the money received, then that person must be severely punished (2.26.14). If a virgin daughter of a prostitute destroys her chastity without her consent, the punishment of that person was inevitable. The prostitute had to pay 16 times the prescribed amount (4.12.28).

If anyone killed Prostitute Supervisors or Pradhan or Rangana, the punishment was threefold of that for killing an ordinary prostitute (2.26.18). On the other hand, if a prostitute killed a client, then the provision of burning that prostitute was inevitable (2.26.22).

Every prostitute had to register the names of the customers and the details had to be send to the prostitute-regulator under the finance department. The chief and controller kept track of the income, gifts, expenses, etc. of the prostitutes. Care was also taken to ensure that no prostitute spent extravagantly (2.26.24,10). In order to approve foreign entertainers, a license fee of five pon was required in each case (2.26.28).

A Discussion on Sex Workers' Life in Recent Times

A Primary Sample Survey in Siliguri, Khalpara

In 2016, in a primary sample survey, 73 samples were collected from 45 families from Siliguri Khalpara (brothel).

Firstly, out of 73 boys and girls, there are 18 boys and girls of these families, who have never been admitted to school, including 5 boys and 13 girls.

Secondly, a total of 14 members dropped out of school before the end of pre-primary school, including 4 boys and 10 girls.

Thirdly, on the basis of this sample obtained, the number of boys and girls who have completed primary education but have not completed lower secondary is the highest total of 29, out of which 10 are boys and 19 are girls.

Fourthly, it is seen that the total number of boys and girls who have completed lower secondary level but have not completed higher secondary level is 10, out of which 3 are boys and 7 are girls.

Fifthly, that is, the last level where the high school has been completed, the total number of boys and girls is 2, of which 2 are boys, and no girl has been able to complete this level, based on the samples collected.

Based on the samples collected from Siliguri Khalpara, some of the incidents have been highlighted through which the present day situation can be inferred. The incident is of a family in this brothel. The members of that family are a mother, a daughter and a son. The boy is 10 years old and he is in the sixth grade after passing the fifth grade. The girl is 14 years old and could not pass the eighth grade. In the case of this girl, it is seen that she has been sexually harassed more than once in the school by some classmates of her class. She reported the matter to her mother and the school teachers. Since she was a sex worker, her mother also heard a lot of things from the school authorities that forced her to drop out her daughter from school. This is not an isolated incident to this girl. Majority of children, specially girl children, has to face this type of incident almost everyday in their life. The types of harassment is sometimes physically and most of the time mentally.

A Report in Anandabazar Patrika

Looking at a report in 'Anandabazar Patrika' on Sunday, February 19, 2017, the horrified situation of the society will be understood. According to the report, in a family, when the mother is five months pregnant, the father leaves, the mother finally gives birth to the child. The girl is now in the eighth grade. But she is not eligible to get the money from "Kanyashree Prakalpa" (a West Bengal state government policy for girl child) because the school authority complaints against the child as an 'illegitimate child'. But the mother and daughter have not given up. They go to the High Court for getting judgement of law. The administration has been active in this court. Preparations are underway to show cause to the school authorities. In her statement, the mother says that while the other five girls are receiving money from the government policy, my daughter is totally deprived as she is dissoning to give her father's name. The school authorities did not want to take her application. The daughter says that the school authority compel me to take signature from my father for getting 'Kanyashree' but the father does not want to accept me as a daughter. The Supreme Court has said that the identity of either the father or the mother is sufficient for the child. And also she says "I have read the rules written on the back of the form. It does not say that the father's signature is required." Amit Sarkar, secretary of the

voluntary organization Legal Aid Forum, has lodged a complaint with the Calcutta High Court alleging deprivation of children's rights in several other places. So the thing is, this girl's mother is not a sex worker, she has to be deceived. However, such attitude of the schools reminds us again and again that the patriarchy is being made compulsory without following the law.

There are various reasons for the regular police intervention in the red light areas, the increase in the number of flying sex workers (non-residents), the harassment of thugs and for these reasons the number of customers in this area is declining. As a result, their standard of living, their economic situation is deteriorating.

A Report of Durbar Durbar Mahila Samanwaya Committee

On Friday, April 26, 1996, Durbar's report revealed the eviction of a red light area in Babubazar. The time is exactly in the mid-fifties. The practice of adhiya and chukri has not started yet. So the sex workers could not stay anywhere and came to the empty field of Babubazar and started living in huts. By the way, it is better to say that the field where they lived was an unused place of a zamindar. After staying there for some time, the sex workers gradually settled down and built mud houses instead of huts, brick and tin-walled houses. Gradually after the abolition of the zamindari system, it was announced from the government that the people who were living in the land by giving rent to zamindars and by building their own houses, now will have to pay tax to the government and government will own the land. The point is that the land will be occupied by the tenant. But this law was no use for the illiterate sex workers. They gave thumbprint on the white paper given to the zamindars, they wrote that the zamindars have built houses on this land. As a result, the sex workers were deprived of the tenancy and became the tenants of the zamindars. Look at the cruel irony of fate, if they did not give thumbprint on the white paper and went as tenants, saying that we have built a house on this land and lived there from the beginning, then they are the owners of that house themselves. After that zamindar thought, if the truth is revealed one day, he will have to lose everything again. That is why, he wanted to plan to build a multi-storey building with the promoter. All the sex workers came to Durbar's branch office in Munshiganj and spoke to Mala Singh, the then secretary of Durbar, and she advised them to come together to protest against it.

The next day, on 22nd September, at 6.30 pm, a group of young men entered the house of the sex workers and threw everything outside and locked the house. And after a while the houses were bulldozed. After reporting to the police and with further retaliation, they were told to pay Rs 15,000 per house as compensation. No one else had the power to do anything.

A Comparative Analysis

Hence it is seen that from very ancient period to the present time period, the time has changed, the ages have changed, the position of the society has changed, the level of thinking of the people has changed, but life of some people has not changed, they are still in the dark. Though the state, the society, the law have extended a helping hand towards this marginalised people in various ways, but their position was bad and in recent times the situation has turned into a nightmare.

So it turns out that in the light of all the discussions, the social image of sex workers in ancient times or of sex workers during Chanakya is somewhat different from sex workers of today.

The places where we can notice the differences are-

1) Protection

During Chanakya's period, sex workers had a place in society and of course they were met with special protection. As can be seen, the remuneration of some sex workers was the same as that of the king's personal advisers, physicians, astrologers, meeting poets. Then they were financially secure.

But based on the various reports received at the present time, this picture is mostly opposite.

2) Security

In Chanakya's time, we see that the state not only controlled the activities of prostitutes, but also maintained them. For example, punishment for any harassment or theft of their belongings was also inevitable. And also the punishment for the murder of ganikas was severe.

In the present period, we can see from Durbar's report that how the red light areas in Babubazar have been evicted. In this case, the state did not come forward to help them but helped in the work of eviction.

3) Rights

We see the incident of Jabala Satyakam in the Upanishads where it is said that the worthy must be given priority. And Gurumahasaya i.e. teacher and director of state i.e. Raja gave the right to education to a sex worker's child despite not having his father's name.

But now we see from various incidents, such as the report of Anandabazar newspaper, even though the girl is not a child of a sex worker, the school authorities have deprived her from her due rights as she is alleged as an illegitimate child, because she did not give her father's name.

Finally, to speak up for them, people from all walks of life have to come forward. From gram panchayats to municipalities, blocks at all levels and above all through various government programmes, they have to be provided with various facilities so that they can return to the mainstream of society.

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NONVIOLENCE: A COMPARATIVE STUDY BETWEEN GANDHI AND BUDDHIST PHILOSOPHY

Moumita Banerjee*

[Nonviolence or Ahimsa laterally means non-injury or non-killing. We also discovered various techniques and various views of ahimsa where we find ahimsa in Pre-Buddhism, Ahimsa in Buddhism, Ahimsa in Mahavira's thought, Ahimsa in the Vedas and Upanishads etc. Gautama wanted to glorify well lived according to the dictates of the right law which was equated with righteous living. Gautama Buddha did not call for mystical dogmas in support of his simple teachings or supernatural revelations. The path which preached by Buddha was well within the bounds of pure reason. Buddha was also not even taking God into consideration. Asoka has tried to extent popularity of Ahimsa as preached by Gautama. Asoka himself was a secularist. He himself called as a Buddhist and he was a great follower of Buddha dhamma and sangha. At last we can say Mahatma believes in equality. According to him we never reach ahimsa without attain economic equality, political equality and social equality.]

Keywords: Nonviolence, ahimsa, Asoka, Buddhist, Gautama Buddha]

Introduction

Nonviolence laterally means non-injury or non-killing, but is somewhere translated as Ahimsa. Ahimsa has also play the role if *karma* or transmigration. On the other hand tolerance is one of element of Ahimsa. Ahimsa also includes the *tapasya* or austerities and non-attachment or *samsara*. Except Gandhi, there are so many supporters of ahimsa. We also discovered various techniques and various views of ahimsa where we find ahimsa in Pre-Buddhism, Ahimsa in Buddhism, Ahimsa in Mahavira's thought, Ahimsa in the Vedas and Upanishads etc. Now, I have reflects only the Gautama's, and Gandhi's concept of ahimsa on nonviolence.

Ahimsa in Buddhist Philosophy

Gautama has showed actually a religious creed but a way of life. He wanted to glorify well lived according to the dictates of the right law which was equated with righteous living. The only way of brahma is that to pervade the world with kindness, sympathy, and pity and equable.

Gautama Buddha did not call for mystical dogmas in support of his simple teachings or supernatural revelations. The path which preached by Buddha was well within the bounds of pure reason. Buddha was also not even taking God into consideration. There is some controversy between Mahavira and Buddha about the God whether he exist or not. Gautama was a social philosophy who was quick to realize that peace could reign only in a Society based firmly on the equality of the individual. We find only the strife and none other than struggle in a society based on caste system. According to Gautama there is no other caste system and he has showed that nobility was not a matter of birth but it's about the conduct. The caste system was situated as in this way, the Aryans who were the higher and most privileged class, then the under privileged class named by Sudras and then the Chandalas who were beyond our society. But Gautama was that person upheld the right of every individual in our society, whether they are Aryans or Dravidians or a Chandalas or sudras.

According to Gautama any Society based on the equality, peace and Nonviolence. He dealt with individuals and groups. George Kotturun writes in his book *Ahimsa: Gautama to Gandhi* – “Gautama contended should be governed by a code of conduct which is conduct is contained in the famous five principles or “panchasheel”. The five principles are includes cardinal tenets of Buddhist Ahimsa. The

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five principles are- not to kill, not to still, not to tell lies, not to commit adultery, and not to use intoxicants. According to Buddha, all this is depending upon your honesty and righteousness. Peace and prosperity are the two important and indispensable aspects of our moral perceptions.

Buddha exhorts “just as a mother as long as she live cares for her only child, so should man feel an all-embracing love to all living beings”. Gautama was advocated non killing as sweet reasonableness. Jains was advocated Ahimsa as strict sense. But Gautama's Ahimsa is not liked them. According to Buddha one would be saved since everyone would have killed something sometime or the other. Buddha believed only the importance of loving kindness, the universal compassion is the only way to achieve Ahimsa. Gautama advocates that, a society can based only by forbearance, love and compassion. He realizes that violence cannot stop violence. We have to break the cycle of violence. Violence always induces more and more violence – “Never in this world has hatred ceased by hatred, hatred ceases by love”.

According to Gautama Buddha there was no other nonviolence without kind and compassion and love. He wants to lead the path of Nirvana. We have to abolish or destroy the anger, the delusion, and manifold evil of ourselves. A man who has given up the violence replaced hatred by peace and love with the whole world. Bitterness, anger and envy and feelings would never sully his thought and all unfriendly feelings would remain foreign to his spirit of Universal benevolence”. We can say that the one of the true follower of Nonviolence was Buddha himself. We never forget that the duty and responsibility of every individual is to promote peace and understanding between the nations and society. This is way to follow Ahimsa or nonviolence. Tolerance co- existence, co-operation is a virtue in individual. A society might differ in so many ways named by social systems, religious faiths and racial traits, but at that time they should learn to live in a spirit of give and take. So, what is the conclusion? Some people engaged in war, war is a one of offence against humanity.

Gautama Buddha has tried to endorse that riches people should not be the considered as the exclusive possession of their owner. But this view is quite different from Gandhi. Gandhi asked the reaches people have to consider themselves the trustees of their wealth. Gautama said “the one who uses his reaches riches rightly and gives his wealth away is like a clear pellucid lake near a village where folk may bathe, or draw water for drinking”. So, we can say that the Ahimsa and the concept if peace as peached by Buddha is inevitable.

Asoka's Ahimsa Teachings

Gautama to Asoka is span of time three hundred years. We all are aware about the most popular and most historical Kalinga war. This war converted Asoka's to Buddhism. Once Asoka has faced a victorious moment of his life but his life turned away from war and conquest and embraced the teachings of Buddhist ahimsa. This is the time when he was attracted to Buddhism by its greatness Of nonviolence. After the very poor experience in the Kalinga, The king had come to hate any type of killing to people. Then he has started to follow the path of Buddha. His name has changed “*Chandashoka*” to “*Dharmashoka*”. Then he has started to love and compassion for the living beings and the innocent people. His tolerance, sacrifice, enlightenment, happiness are the indescribable and indispensable elements of ahimsa teachings.

Asoka has tried to extent popularity of Ahimsa as preached by Gautama. Asoka himself was a secularist. He himself called as a Buddhist and he was a great follower of Buddha *dhamma* and *sangha*. After Asoka, Asoka's empire which was based on Buddhist Ahimsa, became has faced a downfall situation. After Asoka's death, his emperor has again faced a very poor situation which can be called as downfall or spill.

Gandhi's Unique Approach to Violence

Mahatma was the modern thought holder and the leader of Ahimsa. Here I just want to discuss the similarity between Gautama and Gandhi in brief.

The Concept of Ahimsa as Preached by Gandhi

Gandhi's view of ahimsa is totally based on truth and nonviolence but according to Gandhi there can be no truth without nonviolence. He wrote: "Ahimsa is my God, truth is my God. When I look for ahimsa, truth says, find it out through me; when I look for truth, ahimsa says, find it out through me". (*Young India*, 1925).

Gandhi has fought for truth, love and ahimsa. He himself calls a truth seeker. According to Gandhi this truth cannot be understood without nonviolence or ahimsa. Gandhian means and end both are convertible to each other. Gandhi says: "*Truth is God; nonviolence is the means of realizing him.*" And he also says that: "Nobody in this world possesses Absolute Truth. This is God's attribute alone. Relative truth is all we know. There, we can only follow the truth as we see it." According to Gandhi the usual meaning of ahimsa is non-killing or non-injury. This non killing or non-injury and it should be treated from the universal point of view. Gandhi also has a big supporter for mercy killing and he saw in his Sabarmati Ashram a cow has suffered from an incurable pain. Some Hindus were shocked because they deliberating it as cow killing. But on the other hand Gandhi had no patience with such superstitions. Gandhi has decided that only killing should be the consequences as this type of sufferings. Gandhian approach to ahimsa somewhere is noticeable. Because he has considered "ahimsa" as a liberal sense, not grant as strict sense. Ahimsa is also including a sweet reasonability.

Every occupation for example, farming, agriculture all are involves killing. Even our breathing, eating, it may be tree's element, it might be fish, all could be considered as himsa. So, no one cannot move or talk or walk without harming or injuring or killing something or other. That's why Mahatma says: "taking life may be duty we do destroy as much life as we think necessary for sustaining our body."

Gandhian view of nonviolence is totally based on morality and ethics and this ethics is based on upanishadic *Karma* and transmigration, which I have already discussed. According to Mahatma after controls our passion, then a man can attain the truth. There is no place for violence, anger, hatred, and lie. According to Gandhi, "A man immersed in worldliness being always after the material pleasures of the body would never be able to come face to face with which is actually an attribute of the soul".

Non coalition and non-occupancy are also the part of Ahimsa teachings. Gandhi has tried to give a use theoretical view or a pragmatic view of non-possession. This control does not mean to control anything, whereas it possesses a lot of wealth but that man should not be connected to the wealth. Gandhi says in his *My Experiments of Truth*: "I understand the Gita teachings of non-possession to mean that those who desire salvation should act like trustees who, though having control over great possessions, regard not an iota of them as their own."

Gautama and Gandhi

Gandhian Ahimsa was attracted by Buddhist Ahimsa. The greatest exponent of nonviolence since Mahavira and Gautama, Gandhi verbally has tried to show their feeling by addressing morality as the essence of religion itself. Gandhian "Truth" identified a near universal value. Gandhi was the exponent to the idea of a morally ethical understanding that is natural, human manifestation of the Truth, which is none other than *Ahimsa*. It is the expression to apply this state leads to the collection of the truth. And from this collection, in a way *Ahimsa* spontaneously streams. That's why; the two are far from dividable. According to Gandhi "Ahimsa is the means, truth is the end. Means to means, must always be within our reach, and so *ahimsa* is our supreme duty". Gandhi's view of violence in the sense of the end of life is Absolut ability in this whole world. Buddha and Gandhi both have specified that real realization nonviolence implies a virtue that goes beyond only stopping from any type of harmless. This doctrine is specially expressed in Mahayana tradition.

They both are belonging to same clan or race. Gautama Buddha was a monarch of his family, but he saw the sufferings and have decided to it will work only by compassion. On the other hand Gandhi was a great philosopher as well as he was a great lawyer and he went to South Africa, and after that he has changed his mind because, he saw terrible injustice which was happening of their own countrymen.

Buddhism has set the motion named by *Dharmachakra*, and likewise Gandhi has proposed the role of *Charka*, which has played the one of important role in Gandhi's movement of the freedom. The span of Gandhi and Gautama are divided into two thousand and five hundred years. Buddhism had started a new sense or a stirred society and far reaching changes in the country to a unity and love of brotherhood under the umbrella of Ahimsa teachings likewise Gandhi wanted to build up and fulfill their great work and the foundations that others had laid before him. We have already seen in the following phases how the ahimsa ideal perfected and proclaimed by Gautama, Vedas, and Upanishads came to be absorbed in the everyday life and work of the every individual. Gandhi has showed to us new dimensions to Ahimsa or nonviolence, which are leads to us to face the modern environment. The world had also greatly and spontaneously changed from the time Gautama preached his four noble path of truth.

Gautama has believed that worldly existence's consequence is the only suffering. On the other side Gandhi had put questions about suffering which is self-suffering, to a high plinth and deliberated that this is in itself a means of reclamation. Gautama and Gandhi both have considered war as a great evil.

Some Other Aspects of Gandhian and Buddhist Nonviolence

Some Aspects of Gandhian Nonviolence

1. Some critics are commented against Gandhian nonviolence. According to them, if we accept some sort of Idea that should be a Universal one, then there must be no other exception. But Gandhi described ahimsa in a liberal sense, which has some exception. For example: a man should violent at that time, when another man wants to kill or injure him, or somebody comes to harm or injure, he or she can be violent to safeguard his own life. The another exception is if someone is facing some sort of physical trouble which is irremovable, then we can keep the hand of himsa for living being. So, if we accept ahimsa as a universal concept, then we cannot mention any type of exception. But Gandhi already accepted ahimsa as a Universal concept.
2. Mahatma always has believed Hindu ethics, like, Vedas, Upanishads, Mahabharata, Puranas etc. But according to the critics Gandhiji's thought and practice was different in terms of nonviolence. Because, according to the Vedic Literature, we should harm or injure our enemy. And in the war of Kurukshetra, we can see the practicality of that type of thought. But Gandhiji always told that we should never hold the hand of ahimsa. So, if we admit Gandhi's point of view, then everyone must go against the Vedic literature. Even, the critics have mentioned that every person should take up a weapon to save his life. But Gandhi's nonviolence is always against to taking up of arms and weapons.
3. We all are admitting of some kind of reflex action, which is a necessary condition of our human psychology. For example, if someone is approaches to touch my eyes, my eyes spontaneously or suddenly get closed. At the same time we are try to remove his or her hand, which had approached my eyes. So, it is all our human nature. If we accept Gandhian concept of nonviolent action then we have to disagree with our human psychology.

Some other aspects of Buddhist Nonviolence

1. Buddha did not willing to form religious or political position which is an important aspect of our daily life, and nor a philosophy of environment. So, we can easily say that, historically he lived before the period of embodied, and well defined about the human association. He addressed himself as a man to another man. He has focused only a separate type of duty. Now, we are taking an example, the Democratic states that we have seen in our India- we find no other theory, no other belief or a total structure of our society or government that could promote the bedrock of man to man choice.[1]
2. Here Gautama has emphasized about pacifism. Buddha's nonviolence never teach about social and political philosophy, and he taught a way of life, not an usual or common epistemology. Buddha has reflected some levels of personality or individuality, different roles and responsibilities. So, Gautama has emphasized every person according to their action or *karma*.
3. Some critics have criticized that Buddhist *Dhamma* is mere passive. But Gautama replied he taught

inactivity in regard to fruitful things and “activity by way of good conduct in deeds, words and thoughts”. Buddhist was giving the principles, not the use of any type of infinite varieties of signification and practicality.

4. Buddhist nonviolence use as a bolter. If one has to commit with the path of ahimsa, everything must be under this bolter. Now we need to have taking into account the terrorism which was happened at the time of 11th September, 2001, we have seen that different type of Buddha followers are working with a mirror of self-insight rather than a political or social formulation.

*[1] Fleischman, Paul. *The Buddha Taught Nonviolence, Not Pacifism*, Baree Centre for Buddhist Studies, 2002

5. Unfortunately, Buddhas' are never claimed that they could bring the peace to the whole universe. Buddha saw that we all are passing through some kind of suffering. This suffering is limitless. Gautama always rejected vanquishing and promise to keep this theory: “a practical path to reduce suffering, which includes a generous dispensation of itself to others”.

Concluding Remarks

The circle and the environment of cooperation and coexistence it is so much necessary to stick every type of nonviolent action. Gandhi wants to express his nonviolence as a Universal ethics, which is based on morality. Gandhi and Buddha both have specified that their theory of nonviolence is based only upon the morality. But, in this era no country can be said to be really independent today. If we need to take some type of violence activity, we have seen that, Rohingyas of Myanmar, the corruption instability, unfriendliness that have taken place between India and its neighboring countries and so on. So, we need to have the infrastructure of economic development, police as peace officers, policy changes and the reckless behavior and etc.

We have to first understand crucial elements of Gandhian nonviolence because it is not a theory or idea. It can be use all the time in everyday life by our creed, thought and speech, I think Gandhi's nonviolence so much practical, so much pure and so much political or social. But on the other hand we find no other social and political thought in the Buddhist Ahimsa. Nowadays, for reaching or attaining a democratic government, nonviolence is inevitable. And this ahimsa should be based upon a Gandhi's touch. But we never forget the exponent of nonviolent approach which was found by Buddha. Buddha has described right speech as: “thus does he live as one who binds together those divided. ... a peacemaker, a lover of peace. ... speaker of words that make for peace”.

At last we can say Mahatma believes in equality. According to him we never reach ahimsa without attain economic equality, political equality and social equality. According to Mahatma Darkness does not dispel darkness. It has to said that how can we reach the goal, because the end identifies the means. So, if we understand the notion of nonviolent action, the notion of justice, participating friendly communication, friendly association, discussion through dialogues, then one can establish a better world which Gandhi believes as “Vasudhaiva Kutumbakam” that the world is my family.

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PLAY FOR CHILDREN – A DEVELOPMENTAL OVERVIEW

Ratul Nandi*

[The article is about the importance of play from the perspective of the developmental area. Here, the age will be considered as the early childhood stage (3-6 years). At this stage, children are growing up fastest in their lives. So, it is very important to identify the developmental process of a child in this stage of life. According to researchers, play has an important role in our lives. Play is very important for the child's all-over development.]

Keywords: Early Childhood, Play for Children, All-over development, Developmental Process.]

Introduction

Play is a huge term for various types of exercises and encounters that can be found in all ages, especially in the age between 3-6 years. It is the activity of understanding each other. The Play has been esteemed in early childhood and accentuates the significance of play to children's development and learning. The play covers the vast area of human life. It is the all-over developmental perception among the children.

There are no basic definitions of play. The play has many definitions, features and qualities. "No one definition of play can cover up all the views, perceptions, and experiences that are connected with it." (Kernan, 2007). Some definitions are given by the researchers.

Freud (1961) describes the play as - "Children repeat everything that has made a great impression on them in real life and that in so doing, they recreate the strength of the impressions and make themselves masters of the situation" (p. 11).

Montessori (1967) Regarded play as "the child's work."

According to Erikson (1977, p. 78) "The growing child's play is the training ground for the experience of leeway of imaginative choices within an existence governed and guided by roles and visions."

Piaget (1962, p. 93) described the play as a "happy display of known actions."

Vygotsky (1978, p. 102) considered "Play is an adaptive mechanism promoting cognitive growth. It creates the zone of proximal development. In the play a child always behaves beyond his average age, above his daily behavior; in play, it is as though he were a head taller than himself."

As indicated by the above definitions, we can track down some comparable perspectives of the researchers. These include: that children are curious and learn new things with their bodies, different kinds of objects, and surroundings; and that play is children's natural way of learning and acquiring new knowledge (Treasure, Oxford University Press). So according to the definitions, we can reason that play is an outflow of inner exercises which incorporate the psyche and body developments to take in new things from the climate.

Play might be hard to define, yet researchers concurred that there are portions of the qualities which characterize play and its attributes. There are some characteristics which help a child to develop themselves through play.

- Activity

Play requires active physical and mental participation. From which child bring the new ideas. They explore and figure out how to communicate and respond to events and people around them (Gordon Biddle et al. 2014, p. 273).

- Meaningful

Children's play reflects what they have seen and heard, as well as what they know and can do.

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- Symbolic

Sometimes play can be symbolic too. Children can observe feelings, behaviors, and replicate things that they have already learned.

- Self-chosen

Play is a self-chosen, spontaneous thing that children can change, alter and manipulate freely.

- Adventurous

Play helps children to explore the unknown. Bruner (2014, p. 693) suggested that “Play can be seen as the main opportunity for children to take risks without fear of failure.”

- Communicative

The play presents a natural opportunity for children to communicate the movements of their bodies, postures, and other non-verbal postures.

- Interactive

Children should play freely, probably a portion of the time. The play presents a remarkable and developmental chance for children to take part in friendly communications and construct associations with different children and grown-ups.

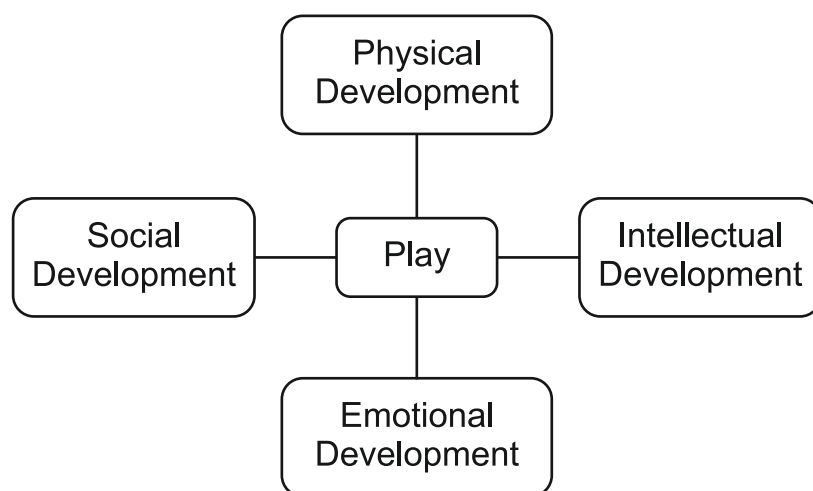
- Therapeutic

Play is fun, engaging, and meaningful and it can be very therapeutic for children too.

These fundamental characteristics of play portray its intricacy and assortment and add to a more profound comprehension of the play. Investigating every one of these attributes permits us to comprehend play for children and its importance for their sound and created life during the early childhood years.

Now the question is how play can help children? Or what kind of developmental factors engage with play for the children? Or why play is important for children? Or is there any developmental value related to play?

Many researchers have examined the need or importance of play for the development of children. The researches show that there are immense possibilities, where play can help to develop the different aspects of a child. Christine Macintyre (2002) formulates different aspects of the development of a child in her book *Play for Children with Special Needs* (2002). She demonstrates four (4) domains of development.



Social Development

Social development is termed as the increasing competency of a child, shown in building relationships with adults and their peer group. This allows them to react appropriately in groups and different

social/cultural situations (Macintyre, 2002).

Social skills that would be assessed in the early years are:

- Having the certainty to talk with others outside the regular region (where children are comfortable with their known individuals).
- Interact appropriately with grown-ups and children.
- Being a sensible person to listen and respect another's point of view.
- Make Companions.
- Enjoying participate.

Many researchers identify the importance of social development. Moreover, being accepted as part of a group or team in the society gives confidence that grows into other areas of learning. Vygotsky's (1978, p. 86) idea of 'Zone of Proximal Development (ZPD)' ¹ and 'Scaffolding' ² both are related to how children's learning can develop by others. It finds that children were supposed to learn new things more easily from others rather than they tried to do on their own.

Now, how play can help the child's social development - Play allows children to do whatever they want. It allows children to interact with the other child to build interaction for their play purpose.

The strategy to help would seem to be to have children imitate and so internalize acceptable ways. Providing a role model who demonstrates 'good behavior' and who explains the reason why this is a good way of doing things, can be very helpful.

Physical / Motor Development

Play is important for children's physical development. It helps children with their coordination, balance, motor skills. Motor skills can be divided into two types –

Gross motor skill: It involves control of the arms, legs, head, and shoulder. Play can help children to develop gross motor skills.

- run
- jump
- throw and catch
- climb up

Fine motor skills It involves the control of small muscles in the hands, feet, fingers, and toes.

- Make shapes from clay or play-dough.
- Arrange & stack the blocks of various sizes.
- Solve the puzzles from the various size and shapes.

Gross and fine motor skills are an essential tool that children use in their classroom, at home, and on the playground. Play is one of the best ways to sustained physical development.

Mental / Cognitive Development

In 1967, the English translation of Vygotsky's lecture on "Play and its role in the mental development of the child" appeared in the Soviet Psychology Journal, it describes the importance of play for the mental development of a child. Vygotsky (1966, [Problems of psychology], 12(6), 62–76) admitted that play can develop the child's mental development in different aspects. In his lecture, he quoted and described it as - "It seems to me that from the point of view of development, play is not the predominant form of activity, but is, in a certain sense, the leading line of development in the preschool years." (In the lecture of "Play and its role in the mental development of the child" appeared in Soviet Psychology, 5(3), 6–18, Vygotsky, 1967)

¹ Zone of Proximal Development (ZPD) is an area or zone where children can't learn new things on their own. They need someone (it may be an elder person or peer) to learn new things.

² Scaffolding means to support, as teachers guide the children to solve their problems.

So, as per Vygotsky's point of view and in some other research findings we can say that - Play is important for a child's mental development – It increases a child's ability to think, understand, communicate, remember, imagine & explore.

Children want to learn how things work. And play is the best learning process. Children at play are solving problems, creating, experimenting, thinking, imagining, exploring, and learning new things all the time.

Emotional Development

According to Cohen (2005), social and emotional development “refers to a child's developing capacity to: experience, manage and express the full range of positive and negative emotions; develop close, satisfying relationships with other children and adults; and actively explore their environment and learn” (p. 2). Emotional development is important for children to develop skills necessary for self-regulation, managing emotions, impulses, and disruptive behaviors, and healthy attachment. Developing positive emotional skills helps children to be more successful in their academics, peer/family relationships. These emotional skills will help children to deal with stress, have confidence, be happy, resolve conflict, communicate, and connect with people they meet throughout their lives (Martin et al, 2014).

Play is a very unique domain for the developmental aspect of children. It is an interactive process as well as a developmental process. It is very hard to take away children from play. Play is a very basic inner instinct of a child. It is not divided by any caste, creed, or sex. Play is for everyone.

Conclusion

If play disappears from childhood, then it will be the worst thing. Researchers have shown that without play, children's physical, social, emotional, and intellectual development is compromised. Their capacity for communication will be reduced and their urge towards aggressiveness and violence will increase. In short, human nature as we have known it will be deeply changed, increasing many of the problems that are already affecting children and society.

If we do not focus on the play now, then childhood will go away from our hands. In the current scenario, children are stuck in their houses with their electronic gadgets. So, the developmental values are decreased rapidly. Parents and administration need to emphasize it, otherwise, the day is not very far when children are going to transfer as a gadget freak person and have no relation with the outside world.

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NOMOPHOBIA: A STUDY ABOUT SMARTPHONE DEPENDENCY AMONG COLLEGE STUDENTS

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[We all are aware of the role a smartphone plays in our lives today. Be it shopping, ordering food to paying our utility bills, we do it all through our smartphones. But this convenience has also made our lives dependent on a smartphone. This study will focus on the smartphone dependency among college students and how it has changed their natural or rather more conventional learning curve. This study will also try to find out whether college students have become too much dependent or addicted to mobile phones and whether it has affected their academic and attention levels. This phenomenon or fear of mobile phone unavailability is also known as "Nomophobia" which may lead to psychological disorder.

Keywords : NOMOPHOBIA, SMARTPHONE]

Introduction

Nomophobia is stated as a psychological syndrome in which someone is frightened of being out of mobile phone or cell contact.

Nomophobia, coined from “no-mobile-phone-phobia” at some stage in a research study to discover the psychological ramifications and stress level of smartphone usage on behaviour, describes the level of fear generated when a user can't be able to communicate through their phone. Claustrophobia, arachnophobia, acrophobia — these are the kinds of phobias, but perhaps the most modern-day phobia is nomophobia, or “no–mobile-phone phobia”.

Do our college students are experiencing anxiety, panic, or stress when the battery on their phone turns into dangerously low, or if their phone isn't nearby? Often related to separation anxiety, nomophobia comes with a set of identifiable symptoms: multiplied heart fee and blood pressure, shortness of breath, tension, nausea, trembling, dizziness, depression, discomfort, fear, and panic. Though, there is debate among the medical network on its class; is it a phobia, anxiety disease, or lifestyle disorder?

Four dimensions of nomophobia were identified as follows

- Unable to communicate.
- Losing connectedness with each other.
- Unable to access information.
- Giving up convenience.

Symptoms

- Anxiety
- Tachycardia
- Obsessive Thoughts
- Headache and Stomach Pain
- Loneliness
- Amputation
- Boredom

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Causes

- Lack of confidence - Reflected in the need to be in continuous contact with others (fear of isolation or loneliness).
- Excessive perfection - Caused by the thought of losing social events and consequent anxiety for not being present.
- Social anxiety - Also called “FOMO” from the acronym “Fear of Missing Out” is a form of anxiety associated to social networks and it's reflected in the necessity to be continuously online.

Effects in Education or Academic Performance

Recently, researchers have found that 57% of students multitask in class with their cell phones, behaviour that may be exacerbated by overall phone obsession (Lee, 2015). However, how students perceive their multitasking to affect their performance won't align with how students actually perform academically.

Need of the Study

This research will aim towards finding the following:

- ✓ The impact of mobile phones on the academic performance of the students.
- ✓ The impact of mobile phones on the academic attention levels of the students.
- ✓ To assess the addiction of mobile phones in graduate and post graduate students.

Objectives of the Study

- ✓ To find out the risk of Nomophobia in graduate and post graduate students.
- ✓ To find out the risk of Nomophobia and its effect on attention level in the classroom.

Review of Related Literature

Monika Prasad, Basavaraj Patthi, Ashish Singla, Ritu Gupta, Sabyasachi Saha, Jishnu Krishna Kumar, Ravneet Malhi, and Venisha Pandita 2017

39.5% among the students agreed that their scores are low in professional exams if they spend more time on phone. The number of students who frequently checked their mobile phones during their classes or while doing clinical work were 24.7%. Among total students, 24.12% were found to be already nomophobic and 40.97% were at the point of risk to be nomophobes. A significant difference was found among preclinical, clinical, interns and postgraduates regarding the usage and effect of mobile phones on them.

MP Tavalacci, G Meyrignac, L Richard, P Dechelotte, J Ladner 2015

A total of 760 students have been included, the sex ratio (M:F) was of 0.44 and the mean age was of 20.0 years (SD = 2.4). 79.6% of the students had a smartphone. 12.3% of the students declared being woken up by their MP several times during the month, 13.6% must to be reachable 24/7, this accessibility was stressful for 11.3% of students, 31.3% were anxious caused by non-availability of a MP for 24 hours and 30.4% spent too much time on their MP. A higher score (Q1) was notably associated with female gender AOR = 2.71 [1.55-4.74], cyberaddiction AOR = 3.68 [2.18-6.23], insomnia AOR = 3.19 [1.72-5.91] and high frequency of texting and duration of calling is OR = 2.53 (1.62-3.97) and AOR = 1.84 (1.19-2.85) respectively.

Gabriel Aguilera-Manrique, Verónica V. Márquez-Hernández, Tania Alcaraz Córdoba, Genoveva Granados-Gómez, Vanesa Gutiérrez-Puertas, Lorena Gutiérrez-Puertas 2018

The goal of this study was to analyze the relationship between the level of nomophobia and the distraction associated with the usage of smartphone among nursing students during their clinical practicum. Methods A cross-sectional study was carried out on 304 nursing students. The nomophobia questionnaire (NMP-Q) and a questionnaire about smartphone usage, the distraction associated with it, and opinions about phone restriction policies in hospitals were used. Results A positive correlation

between the use of smartphones and the total score of nomophobia was found. Similarly, there was a positive correlation between opinion about smartphone restriction policies with each of the dimensions of nomophobia and the total score of the questionnaire.

Ajeet Kumar Khilnani, Rekha Thaddanee, Gurudas Khilnani 2018

Excessive use of smartphones, including smart phones, is found to result in various health related, social and psychological problems. Nomophobia expands to 'No Mobile Phobia', i.e., fear of losing mobile phone contact. Previous studies on nomophobia have focused on the student populations, considering that the younger generation is much technology savvy. This questionnaire-based study want to know the prevalence and factors which leading the nomophobia in general population. Methods: This study was conducted in western Gujarat from September 2018 to October 2018. A prevalidated questionnaire, containing three parts, the demographic details, details about the characteristics of mobile phone usage and the Nomophobia Questionnaire (NMP-Q), was sent through emails and WhatsApp to 1000 individuals. The responses were tabulated and analyzed. Results: Out of 331 respondents 192 (58%) were males and 139 (42%) females. There was no such difference between average NMP scores and gender ($p = 0.401$), age brackets ($p = 0.135$), marital status ($p = 0.123$) and profession ($p = 0.055$). However, NMP scores were significantly greater in individuals who spent more time on mobile phones per day ($p = 0.000$), checked their mobile phones more frequently.

Research Design

The study was a fact-finding survey type work.

Tools

A structured interview schedule was prepared for the students to know the level of Nomophobia.

Population

The researcher selected a specific area for data collection. All Under-Graduate (Honours) and Post-Graduate students of the Department of Education, Gobardanga Hindu College form the population of the study.

Sample

The study was conducted on 25 Under-Graduate (Honours) students and 25 Post-Graduate students selected randomly.

Analysis of Collected Data

The researcher had collected responses from 25 Under-Graduate (Honours) students and 25 Post-Graduate students. The researcher had chosen seven different questions in the interview schedule.

- I) When asked about managing without a smartphone, 23 students out of 25 Under-Graduate (Honours) students and all the 25 Post-Graduate students said that they cannot manage without a smartphone.
- II) When asked about learning through a smartphone, 22 students out of 25 Under-Graduate (Honours) students and all the 25 Post-Graduate students said that smartphone is a major learning aide for them and the absence of a smartphone would disrupt their learning process.
- III) When asked whether they feel disconnected from their families without a smartphone, 90% of both Under-Graduate (Honours) students and Post-Graduate students said that not only they feel disconnected but their guardians too feel the same without a smartphone.
- IV) When asked whether smartphone causes lack of attention in the classroom, 70% of Under-Graduate (Honours) students and 85% of Post-Graduate students said that smartphone causes lack of attention in the classroom as they check for new notifications every five minutes.
- V) When asked whether they prefer e-books over conventional textbooks, 40% of Under-Graduate (Honours) students and 80% of Post-Graduate students said that they prefer e-books over conventional textbooks as its more convenient and economical.

Conclusion

This research work tried to evaluate the level of smartphone dependency among college students and also revealed how a smartphone has impacted their academic and attention levels. It also tried to bring out the advantages of using a smartphone but at the same time, tried to reveal whether college students have become “nomophobic” or not. Based on the small sample size, this study could only bring out the possibilities but a more detailed study with a larger sample size could possibly be a major breakthrough revealing behavioural patterns.

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SUBVERSION OF SILENCE THROUGH POETRY: A COMPARATIVE STUDY OF A FEW POEMS OF KAMALA SURAYYA, KISHWAR NAHEED AND FAHMIDA RIAZ

Souvik Mondal*

*“Your fear
of my being free, being alive
and able to think
might lead you, who knows into what travails.” (Kishwar Naheed)*

[This paper is to examine the poems of these prolific female writers from India and Pakistan, who paved the path that led to female emancipation from the shackles of patriarchy, and to find solidarity in resistance through a somewhat comparative study of their poems. It also focuses on a developmental study towards a better understanding of female subjectivity, domestication and as a cry of protest. The long suppressed shrieks of women resulting from abusive domesticity, unfair treatment, confined personal space and lack of dignity find a voice in the poems of a few writers from the Indian Subcontinent. Kamala Surayya, often referred to as the mother of Modern Indian English poetry, wrote about the 'woman-self', feminine desires, and about the quest for identity. In her autobiography, titled 'My Story', she expresses that “she wrote sad poems about dolls who lost their heads and remained headless for eternity”. The headless dolls is a metaphor for the systematic denial of women as thinking individuals by the patriarchal society.]

Kishwar Naheed, one of the prolific feminists writers of Pakistan, was born in Bulandshahr, Uttar Pradesh, India in the year 1940. In an interview published in Herald, she stated that : “Creativity cannot be regulated nor should it be..”, her poems mirrored her inner feelings and are social commentaries on the predicament of women and their subsequent denial of machismo. Deeply influenced by Simone de Beauvoir and Virginia Woolf, she adequately addressed the problems of the female psyche, be it the trauma of the women affected during Partition, or of those who are confined in the domestic spheres.

Fahmida Riaz, a progressive writer, a force to reckon with amongst Pakistani female writers, who lived and wrote unapologetically, unravelling the innermost desires of a woman, her pangs and also advocating her rights. Exiled in India for sedition during Zia's reign, she nonetheless persevered in expressing the emotions of motherhood, of love, she also criticised the religious dictums of stoning and purdah rampant in the Pakistani male dominated society. In a conversation with Amar Sindhu, Fahmida says: “They seem to think that your mind is an unnecessary appendage that is best left ignored..”, she subverted this accepted narrative through her work.

Keywords: *feminine psyche, subservience, halal, hudood ordinance, inequality, domesticity, patriarchy, chauvinism, phallocentric, emancipation.]*

Kamala Surayya's poem “An Introduction” delineates the denigrated position of women in the patriarchal society, and at the same time is also a vehement refusal against the dehumanizing roles prescribed for women. She opines that if a woman's mind is aware and is observant then she can use (any) language as a weapon to freely express her happiness, longings and penury. Her language being funny, Half English, half Indian, helps in providing Indian English a position of power. The burden of womanhood seemed too heavy for her, when her love was reciprocated by lust and forceful pruriency.

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She shed her womanhood like a skin and tried to imitate men by wearing “a shirt and my Brother's trousers, cut my hair short”. Demarcating the illusions of existence, the subservient role of women through the expectations of society is described in the lines:

“Dress in sarees, be girl,
Be wife, they said. Be embroiderer, be cook,
Be a quarreller with servants. Fit in. Oh,
Belong, cried the categorizers.”

The “categorizers” want women to adhere to the confinements of male understanding of women. They refuse women an identity of their own, and rather force them to stereotypical domesticated role-playing.

Kamala observes “I” as a concrete idea of individuality and of being able to exist by one's own terms. She urges women to stop playing pretentious games of existence, and to seek love like a woman, to be patient in waiting, thus transgressing the confined roles assigned to women. The emancipation of women is possible only if she finds out the “I” in herself, and one she does that she could equally experience her desires. She could become the beloved and the betrayer, the jilted and the accepted, the saint and the sinner, experiencing all the joys and aches that an individual experiences, thus acknowledging herself as “I”.

Kishwar Naheed in her poem, “**Who Am I**”, vociferously opines that women are no longer doormats, or can be confined in the labyrinth of evil social customs. The atrocious domination of patriarchy on women by trying to bury them alive under gender biased mandates, by complying to the codes of Hudood Ordinance and “Karo-Kari”, which results in stoning. She expresses that “stones can never suppress a voice”, and that women will rise. Women are endowed with the burden of traditions which make their lives dark and insipid, society weighs them down by chaining their spirits, their ambitions, hence she urges women to be torch bearers, and as Maya Angelou says, should “...rise into a daybreak that's wondrously clear.”

She enunciates the myth of Sohni who got drowned while going to meet her lover Mahiwal. She used to go to meet him at the banks of Chenab using a hard baked earthen ware, which was later replaced by an unbaked fragile one by her sister-in-law. The next day while going to meet her beloved, the earthenware got dissolved in water eventually drowning Sohni. She suffered a tragic fate for her defiant love, she is eternalized by Kishwar Naheed as she writes, that society never knew that “sohni cannot die braving the river on a fragile pot of clay.” She epitomises courage by following her passions, a woman who challenged the biased notions of society, who resolutely pursued her love like Leander pursued Hero and endured the same fate. The societal evils of getting young girls married to get rid of them, replacing their ambitions and desires with fidelity and motherhood, confining them in the veils of shyness and modesty spirals women into an abyss of degradation in the name of embracing womanhood. She urges women to free their minds of slavery, evade themselves from the clutches of customs, and to be rejuvenated with vigor, and to rise.

Fahmida Riaz in her poem “**Chadur and Diwari**”, opines about the veil, which acts as a prison for women, shrouding her identity. The black “Chadur” is said to be worn to show a state of mourning, to cover a diseased body, and is wrapped onto a sinner or a criminal. She denies to wear that veil, she is a woman who is entombed in the veil to hide her from the lewd male gaze. The “chadur” acts as a protector and a prison, as a cloth of feminine shyness, and as a cloth of oppression. She delineates the readers to the pitiful condition of a corpse lying bare in the fragrant chambers of a man. The violence upon women in the disguise of conjugal union has turned her into a cold passive entity. Fahmida Riaz repudiates the abuse of women in the name of “halala”, she voices her concern about the hostage women and the maids who are taken undue advantage of by pernicious men.

The line: “...the blood of their innocent youth stain the whiteness of your beard red.” bemoans the deflowering of young girls that had left an indelible blot on the predatory society. The rows of “bibis”

waiting their turn to consummate their marriage abiding the laws of “Halala”, is exemplary of the “bloody spectacle of the murder of humanity” in the hands of a chauvinistic society and gender biased customs. As Zehra Nigah comments: “this chadur of compromise has taken me years to knit.” She avowedly states that the veil of compromise is shredded to pieces by their resistance, and urges a collective awareness towards such conventions. The limitless woes and dissatisfaction of women is expressed but this poems do ingrain a sense of hope that mirrors Betty Freidan's statement; “Who knows what women can be when they are finally free to become themselves? Who knows what women intelligence will contribute when it can be nourished without denying love?” Fahmida Riaz explores how women should denounce the veil, acknowledging that her flight is being limited by the four walls of domestic space, and forthrightly opposing commodification of women as an object of lust. She has turned the veil into an emblem of emancipation, which allows them to toil hard and to face the ordeals of mankind, and will only accept the veil on her “rotten carcass”. Meanwhile, she harps that the veil should be used to cover the cruel deeds of men and society, and that she is moving ahead with hope, self assured of being the companion of the new Adam.

“I have a name, had it for thirty
Years, chosen by someone else
For convenience, but when you say
Don't spoil your name, I feel I
must laugh, for I know I have a life to be lived...”

In these lines from the poem, “**Spoiling the Name**”, Kamala Surayya demystifies the aspect of self identity attached to a “name”, and points out at the benevolent sexism in the name of honour, which society think is a woman's responsibility to maintain. She denies to be confined into a structured sexist regime, and urges women to realize that they have a life to live. She is not going to cower under the weight of that “name” pinned to her as a “medal” bearing a phallocentric proclivity, rather she rises and celebrates “the gift of life.”

Kamala Surayya extensively criticizes the brutish silencing of women, the denial of the power of language. She expresses how words form in her mind, like leaves on trees, but she is regulated to remain silent by the patriarchal society, aptly pointed out by Helene Cixous: “her words almost fall almost always upon the deaf male ear, which hears in language only that speaks in the masculine.” In the poem “**Words**”, Kamala Surayya hints at the existence of words, nuances, thoughts and beliefs that solely stem from long suppressed female emotions and intellect. She proclaims the power of those “words” coming from deep within herself, as “a blast of burning air or, A knife most willing to cut...”, thus transgressing from the snare of silence.

Fahmida Riaz in her poem “**Akleema**”, lashes out at the patriarchal notions of keeping a woman out of her own life, of denigrating her to the position of a silent observer. In these lines:

“Akleema,
the sister of Cain and Abel,
is born of the same mother
but she is different.”
Different between her thighs
And in the bulges of her breasts
Different in her gut
And inside her womb..”

Fahmida Riaz points out at the parochial mentality of the society which discriminates a woman based on her body, and how an absence of a “phallus” results into a denial of expression. Akleema shares the fate of a “sacrificial lamb” at the hands of patriarchy, where she is not considered as a thinking entity. According to one version of the legend it was Akleema for whose hand Cain and Abel fought, but her opinion was not asked. They didn't acknowledge that “Akleema has a head too.” The poet puts forward

a hope that maybe God will talk to her and care about her opinion. Bereft of a voice, she felt trapped in her body, quivering to say what Ishrat Aafreen meant in the lines:

“in the prisons of our bodies
countless restless bodies
and grieving souls sob
they wander round from stairway to stairway
asking us when we shall free them..” (Liberation)

In the poem “**We Sinful Women**”, Kishwar Naheed explores the amalgamation of dejection and protest in women. She posits women as a sinner, devoid of fear, never battling an eye in front of the society and the misogynists. The “sinful women” reappraised their strength by not adhering to the entrapments of patriarchy, discarding the notions of “genteel nothingness” of women who are forced to comply to the domestic life.

“It is we sinful women...
Who are not awed by the grandeur of those who wear gowns
Who don't sell our lives
Who don't bow our heads
Who don't fold our hands together..”

These lines mirror the courage of the women who no longer sell themselves for survival, who don't bow down or fold their hands in surrender and are deemed as the “Other” by the male chauvinistic society. Naheed has vividly visualized how women would come forward with their truths, against the lies and hypocrisies of the society in protest against the “persecution of women” and “severed tongues” of those who dared to speak. The valiant vigour of the women to speak up for their rights, to stand up for equality and the realisation of their potential is provided strength in this poem. She opines that these women have refused to remain in the darkness of atrocities, and that they have decided to become the flag-bearers of light and emancipation. The walls of relentless oppression, inequality and domestic monotony are torn down by these women, thus corroborating Simone de Beauvoir's statement, “One is not born a woman but becomes a woman.”

The above mentioned writers have advocated the protest of women against systematic hierarchical phallocentrism. They revealed the inner desires of women, their emotions, their anguish and their self-realisation and their eventual mobility towards expressing the very possibility of change. They furiously thwarted the pseudo religious fanaticism, the corrupt social practices that hindered the growth of women, and the narrative of male supremacy in socio-political and literary fields through their poetry and prose. Their literary careers are devoted to realise that “in one another we will never be lacking”, and to further concretize the words of Helene Cixous in her famous essay “The Laugh of the Medusa”:

“Write! Writing is for you, you are for you: your body is yours, take it..

Write, let no one hold you back, let nothing stop you: not man; not the imbecilic capitalist machinery.”

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ASSESSMENT OF FOREST COVER AREA OF WEST BENGAL THROUGH REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEM

Dr Suchita Dutta*

[Forests play a big role to keep maintaining ecological stability, socio-economic wellbeing and development of a country. India has long history of indigenous conservation and forest management practices.

In this study we are trying to assess the forest cover of West Bengal with the help of Geographical Information System (GIS) & Remote Sensing (RS) technology which is an important tool for assessing forest cover in comparison to State Forest Report (SFR). In this study we are trying to keep maximum accuracy level for assessing the forest cover of West Bengal with respect to SFR.

According to the validation results the forest cover estimated from remote sensing and the same by SFR was found to differ by 2%. The yearly variation of forest cover was found to be increased by 4.4% from 1987 to 2007. When the regional variation of forest cover was observed it was found that North has 9% more forest cover than the South West Bengal. The seasonal variation of forest cover as determined from the remote sensed imageries of different seasons was found to vary within 0.02 to 0.03% with respect to monsoon season. Due to mangrove forest cover (except coniferous & deciduous forest) in southern part of West Bengal, Southern Bengal contains approximately 12% to 15% much more forest cover than northern Bengal.

The study was conducted with the help of MODIS imagery and the image was processed for the IR band. The seasonal as well as yearly variation of forest cover was calculated to get an overall view of the dynamism of forest cover over West Bengal.

Keywords: Forest cover, Geographical Information System (GIS) & Remote Sensing (RS), MODIS Imagery]

Introduction

Forest is a complex ecosystem which consisting mainly of trees that buffer the earth and support myriad life forms. Forests play a big role to keep maintaining ecological stability, socio-economic wellbeing and development of a country. Importance of Forests is not only recognized globally as important source of subsistence, employment, revenue earnings, raw materials to a number of industries but also for their vital role in balancing the ecology, environmental stability, conservation of biodiversity, food security and sustainable development of a country. These have to be managed judiciously not only for environmental protection and other services but also for various products and industrial raw materials. Forests play in the country's ecological stability and economic development. According to the current National Forest Policy aims at maintaining a minimum of 33 percent of country's geographical area under forest and tree cover (SFR, 2019). This needs periodic monitoring of the forest cover for effective planning and sustainable development.

Forest cover is defined as an area more than 1ha.in extent and having tree canopy density of 10% and above. India has long history of traditional conservation and forest management practices. In this study we are trying to assess the forest cover of West Bengal with the help of GIS& Remote Sensing technology which is an important tool for assessing forest cover in comparison to State Forest Report (SFR). In this study we are trying to keep maximum accuracy level for assessing the forest cover of West Bengal with respect to SFR.

Types of image-processing techniques were developed for the estimation of forest inventory and

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biophysical parameters from remotely sensed images. The use of remotely sensed images allows the mapping of large areas efficiently and in a digital manner allows for accuracy assessment and integration with geographic information systems.

Mapping forest vegetation from aerial photograph was first attempted in 1850s. It was first utilized by the geologists for mapping, landform and terrain analysis. Research with colour photography permitted vegetation scientists to look at terrain in infrared spectral region for better separation of vegetation types and associated land use. The development of optical mechanical scanning devices revolutionized the process of data acquisition. These sensors were invented on satellite remote sensing in early 1970s. Since, the researchers have been using satellite remote sensing technology as a tool for mapping natural resources. India has made most significant contribution by developing state of art sensor systems, building launch capabilities of remote sensing series satellites and developing applications needed for national development. With judicious combination of satellite data sets with ground-based studies, it is possible to carry out detailed mapping and monitoring of ecosystems. The most wider application of satellite remote sensing technique has been stated the usage of coarse and medium resolution datasets from sensors like, NOAA-AVHRR, SPOT-VEGETATIO, ERS and IRS-WiFS. These satellites provide multispectral data and also have very high temporal resolution, allowing reconstruction of phenological trend and use it for discriminating major communities of the forest. These applications are most suitable for regional, global and continental estimations. They have been used for large scale deforestation in Indonesia, Amazonia, Thailand, and North-east India. Depending on the areas of investigation, the national forest cover assessment, however, requires medium resolution sensors (in order of ~50m). This kind of study was carried out in India by National Remote Sensing Agency (1983), at national level to assess forest cover during the periods of 1972-75 and 1980-82. The multispectral digital data from satellite viz., IRS LISS or SPOT or Landsat MSS/TM have additionally been used comprehensively to stratify forest types on the basis of community formations. Advanced digital image processing techniques like, neural network and artificial intelligence further improve the accuracy of the derived thematic layers from satellite image. In that case, it is also possible to include altitude, climate and contextual details for accurate classification. Digital change detection has also been used to look at the human dimensions (encroachment, deforestation, and shifting cultivation) in the forest landscape. This provide new dimension to the understanding of ecosystem dynamics and bio-physical parameters in the forested landscape. Finally, these satellites derived forest/vegetation cover maps offer true basis for designing sampling and sampled distribution for detailed ground inventories.

Spectral reflectance curve for healthy green vegetation almost always manifest the 'peak and valley' configuration. The visible portions of the valleys in the spectrum are dictated by the pigments in plant leaves. Chlorophyll, for example, strongly absorbs energy in the wave length bands centered at about 0.45 and 0.65 micron. Hence our eyes perceive healthy vegetation as green in colour because of the very high absorption of blue and red energy by plant leaves and the very high reflection of green energy. As we go from the visible to the reflected infrared portion of the spectrum beyond 0.7 micron the reflectance of healthy vegetation increases dramatically. In the range from about 0.7 to 1.3 micron, a plant leaf reflects about 50 percent of the energy incident on it. Plant reflectance in 0.7 to 1.3 micron range results primarily from the internal structure is highly variable between plant species. Reflectance measurement in this range often permits us to discriminate between species, even if they look the same in visible wave lengths. Beyond 1.3 micron, energy incident upon vegetation is essentially absorbed or reflected, with little to no transmittance of energy. Dips in reflectance occur at 1.4, 1.9 and 2.7 micron because water in the leaf absorbs strongly at these wave lengths (Majumdar, 2009).

Objectives

The present study tried to estimate the seasonal and yearly change in the forest cover of West Bengal from 1987 to 2009.

- The main objective of this study was to assess the forest cover of West Bengal based on digital

interpretation of satellite data from the IR band and validation of the same with the State Forest Report (SFR).

- Decadal changes of forest cover assessment is an another important objective of this study where it highlights the incremental and detrimental changing manner of forest cover.
- Estimation of seasonal variation of forest cover from previous decade.
- Assessment of forest cover differentiation in different parts of West Bengal.

Literature Review

◆ **Pahari and Murari**, 1997 states that forest is one of the most important natural resources of the world, vital for sustaining the global environment including the human life. However, deforestation due to increased needs of the human population has been an issue of major concern for global environment. This study is an attempt to make predictions for the future state of global forest cover by first developing a correction model linking population with the forest loss and then making the spatial forest loss projections for the future based on the UN medium variant long term population projection.

◆ The paper of **Mishra and Singh**, 2005 examines the change and diversity in forest cover of the Chamoli District of Uttarakhand Himalayas. The Geo Spatial Data Library (GSDL) in digital format has been used for the forest cover assessment. Landsat-TM for October 1989 and Landsat-ETM for November 2004 had been used for the study using Erdas Imagine 8.7 image processing software and thus the analysis had been done using ArcGIS 9.0. Information about environmental awareness and perception.

◆ This study was done by Das et. al. March 1996. In the present study, forest cover and river, bed changes are attempted by using temporal aerospace data of the year 1960 and 1993. Subsequently, PAMAP GIS package has been used for the change detection analysis. The study indicates that the land cover changes are mainly because to biotic factors. A number of the important changes in forest cover are: (i) transformation of mixed forest to scrub forest in 67 ha (ii) the sal mixed and mixed sal forest categories have replaced sal forest in 262 ha (iii) significant increase in forest plantation i.e. 2075 ha in the year 1960 to 3793 ha in 1993 (iv) eighteen times increase in Chirpine area, it increased from 13 ha in 1960 to 230 ha in 1993. The land cover changes in 6663 ha (45%) out of 14962 ha of the study area. The consequential changes within the river beds due to the change in the forest cover were also analyzed. During this era river beds with boulders have increased by 87 ha. These river bed changes include lengthening and broadening of river and alter in river course.

◆ This article of Wilder provides a summary of the image-processing methods which can be applied to remotely sensed data for the estimation of forest structural parameters while also acknowledging the various limitations that are presented. Current advancements in remote-sensor technology are increasing the knowledge content of remotely sensed data and resulting in a requirement for brand spanking new analysis techniques. These advances in sensor technology are occurring concurrently with changes in forest management practices, requiring detailed measurements intended to enable ecosystem-level management during a sustainable manner.

◆ This review of remote-sensing image analysis techniques, with respect to forest structural parameters, illustrates the dependence between spatial resolutions to the extent of detail of the parameters which can be extracted from remotely sensed imagery. As a result, the scope of a particular investigation will influence the type of imagery required and therefore the limits to the detail of the parameters which will be estimated. The complexity of parameters which can be extracted are often increased through combinations of image-processing techniques.

◆ **Cohen and Goward** December 18, 2008 states that Remote sensing, geographic information systems, and modeling have combined to provide a virtual explosion of growth in ecological investigations and applications that are explicitly spatial and temporal. Of all remotely sensed data, those acquired by Landsat sensors have played the foremost pivotal role in spatial and temporal scaling. Modern terrestrial ecology relies on remote sensing for modeling biogeochemical cycles and for characterizing land cover, vegetation biophysical attributes, forest structure and fragmentation in

relation to biodiversity. Given the record of Landsat data of more than 30-year, mapping land, vegetation cover change & using the derived surfaces in ecological models is becoming commonplace. In this article, we summarize this large body of work, highlighting the unique role of Landsat.

◆ **Hayes and Cohen** describe the development of a strategy for scaling observations of changes in tropical forest cover to large areas at high temporal frequency from coarse resolution satellite imagery. The approach for estimating proportional forest cover change as endless variable is based on a regression model that relates multispectral, multitemporal MODIS data, transformed to optimize the spectral detection of vegetation changes, to reference change data sets derived from a Landsat data record for a study site in Central America. A number of issues involved in model development are addressed here by exploring the spatial, spectral and temporal patterns of forest cover change as manifested during a time-series of multi-scale satellite imagery.

◆ **Potapov et.al** estimate the forest cover change is important for boreal forests, one among the foremost extensive forested biomes, because of its unique role in global timber stock, carbon sequestration and deposition, and high vulnerability to the effects of global climate change. We used time-series data from the MODerate Resolution Imaging Spectroradiometer (MODIS) to produce annual forest cover loss hotspot maps. These maps were accustomed assign all blocks (18.5 by 18.5 km) partitioning the boreal biome into strata of high, medium and low likelihood of forest cover loss. A stratified random sample of 118 blocks was interpreted for forest cover and forest cover loss using high spatial resolution Landsat imagery from 2000 and 2005. Area of forest cover gross loss from 2000 to 2005 within the boreal biome is estimated to be 1.63% (standard error 0.10%) of the total biome area, and represents a 4.02% reduction in year 2000 forest cover. The proportion of identified forest cover loss relative to regional forest area is much higher in North America than in Eurasia (5.63% to 3.00%). Of the entire forest cover loss identified, 58.9% is owing to wildfires.

◆ **Hansen et. al** estimated annual forest cover loss indicator maps for the humid tropics from 2000 to 2005 derived from time-series 500 m data from the MODerate Resolution Imaging Spectroradiometer (MODIS) were compared with annual deforestation data from the PRODES (Amazon Deforestation Monitoring Project) data set produced by the Brazilian National Institute for Space Research (INPE). The annual PRODES data were used to calibrate the MODIS annual change indicator data in estimating forest loss for Brazil. Results indicate that MODIS data may be useful in providing a primary estimate of national forest cover change on an annual basis for Brazil. When directly compared with PRODES change at the MODIS grid scale for all years of the analysis, MODIS change indicator maps accounted for 75% of the PRODES change. This ratio was accustomed scale the MODIS change indicators to the PRODES area estimates. A sliding threshold of percent PRODES forest and 2000 to 2005 deforestation classes per MODIS grid cell was used to match the scaled MODIS to the official PRODES change estimates, then to differentiate MODIS change within various sub-areas of the PRODES analysis. Results indicate significant change outside of the PRODES-defined intact forest class. Total scaled MODIS change area within the PRODES historical deforestation and forest area of study is 120% of the official PRODES estimate. Results emphasize the importance of synoptic monitoring of all forest change dynamics, including the cover dynamics of intact humid forest, re-growth, plantations, and cerrado tree cover assemblages. Results also indicate that operational MODIS-only forest cover loss algorithms may be useful in providing near-real time areal estimates of annual change within the Amazon Basin.

Study Area

Geography

West Bengal is on the eastern bottom neck of India. It stretches from the Himalayas in the north to the Bay of Bengal in the south. It is bounded on the north by Sikkim and Bhutan and to its east it has Assam and Bangladesh. The Bay of Bengal on the south side and in the west it has Bihar, Orissa and Nepal. The state lies between 27°13'15" and 21°25'24" north latitudes and 85°48'20" and 89°53'04" east longitudes. Its area is 88,725 kms. West Bengal has two natural divisions i.e. the Himalayan north and the alluvial plains.

From the Darjeeling Himalayan hill region to the extreme north, the state has Sandakfu, the highest peak of West Bengal. The state is essentially a flat, featureless alluvial plain large portion of it being a part of delta of river Ganges, just one per unit of its area in the far north is really mountainous. The narrow Terai region separates the region from the plains, which successively moves into the Ganga delta towards the south.

Climate

Climate varies from moist tropical in the south-east and dry tropical in the south-west and from subtropical to temperate in the mountains of north. Annual rainfall varies from 900mm in southwest to about 5000mm in the part of north. The temperature range is from sub zero within the hills during the winter to about 46°C in southern part during the summer.

Natural Vegetation

The vegetation cover of the state is around 15.86% of the geographical area (SFR 2003). The vegetation cover includes village orchards/ groves, tea garden and horticulture plantations.

Total recorded forest land within the state is **11,879 sq. km.**, of which **59.38% is Reserved Forest, 31.75% is Protected Forest** and **8.87% is Unclassed State Forest**, thus constituting 13.38% (SFR 2005) of the geographical area of the state.

The forest cover including the forests created outside the recorded forest area is 15.52% of the geographical area as assessed in the year 2004 by the GIS Cell of the W.B. Forest Department on the basis of Satellite Imagery procured from NRSA, Hyderabad in digital data format. While computing the forest cover of the State the protocol developed by RRSSC, Kharagpur under Dept. of Space, GOI, NRSA, Hyderabad in earlier studies was followed. Estuarine water bodies like rivers & creeks in mangrove forest and river flowing through the recorded forest land in Jalpaiguri have been included while computing the forest cover. Similarly large portions of farm forestry plantation, raised outside forest land, having forest like micro ecosystem.

Demography

The population of West Bengal is 80.18 million (Census 2001) of which, rural population is 72% and urban population is 28%. The Scheduled population is 5.5%. West Bengal has the highest population density (903 person / sq. km.) within the country. The livestock population is 41.62 million (Livestock Census 2003)

Methodology

The present study tried to establish the forest cover of West Bengal with the assistance of remotely sensed imageries.

Satellite Data Download

In this regard the first step was to download the latest imageries of West Bengal. As in IR band the canopy cover seen must prominently. IR imagery from MODIS was downloaded from 2001 to 2009 the resolution and other details of the image has furnished in table 1. The figure 1. showed the methodology adopted to measure the area of forest cover in West Bengal.

Radiometric Correction & Contrast enhancement

Radiometric correction Contrast correction has been applied for improving visual impact of the image. Some trial and error enhancements were expected to find out the desired results, and then the enhancement values were applied to the image data file.

Area of Interest (AOI) Creation

AOI layer has been created for unsupervised classification of West Bengal from the entire India. The AOI Tools enable us to select, create, and edit areas of interest (AOIs). An AOI may be a point, line, or polygon that is selected as a training sample or as the image area to be used in an operation. They are often used as input to the Signature Editor prior to image classification.

Unsupervised Classification

Unsupervised classification is performed for ISODATA algorithm. After AOI creation unsupervised

classification has been performed to get out put files as gray scale colour scheme. If the initial cluster means are arbitrary. If the initial cluster means are from an existing signature set, then the output file uses the colors of this signature set. We also use the Raster Attribute Editor to change the color scheme. During the unsupervised classification algorithm a digital imagery classified into classes of same DN or reflectance value. In the present study AOI was created and Unsupervised Classification was performed to differentiate the image into different classes of geographic features including forest cover.

Neighborhood GIS analysis

Neighborhood GIS analysis also has been done to reduce the intrusion of negative pixel values.

Validation

Finally all the data of West Bengal has been verified with State Forest Report (SFR) for the interpretation of Forest Cover Map of West Bengal. The scale of the imagery was actualized with the real area of West Bengal as collected from SFR 2005.

Figure 1: Flow Chart Showing Methodology of Forest Cover Mapping

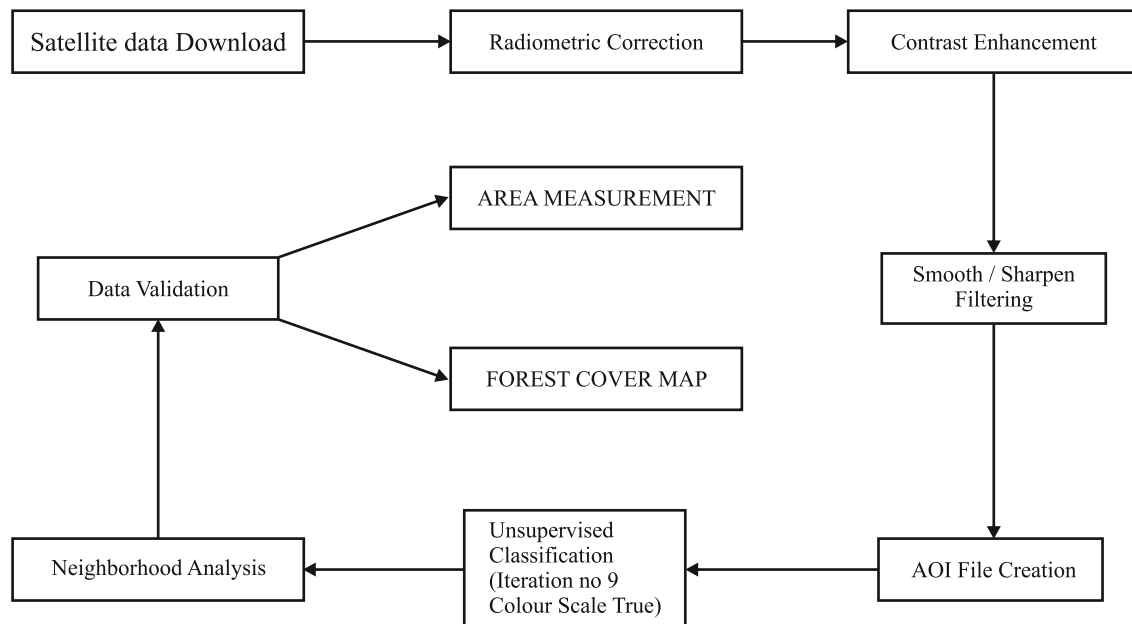


Table1. Application of Remote Sensing Technology in Forest Cover Mapping

YEAR	SENSOR	SPATIAL RESOLUTION	SPECTRAL RESOLUTION	SCALE	FOREST COVER (SQ. KM.)
1987	LANDSAT-MSS	80 m.	4 Bands	1:1 million	8432
1989	LANDSAT-TM	30 m.	7 bands	1:250,000	8015
1991	LANDSAT-TM	30 m.	7 Bands	1:250,000	8015
1993	LANDSAT-TM	30 m.	7 bands	1:250,000	8186
1995	IRS-1BLISSII	36.25 m.	4 Bands	1:250,000	8276
1997	IRS-1BLISSII	36.25 m.	4 Bands	1:250,000	8349
1999	IRS-1C/1DLISSIII	23.5 m.	4 Bands	1:250,000	8362
2001	MODIS VCF	500 m.	7 Bands	1:10,000	10051
2003	MODIS VCF	500 m.	7 Bands	1:10,000	11646
2005	MODIS VCF	500 m.	7 Bands	1:10,000	13614
2007	MODIS VCF	500 m.	7 Bands	1:10,000	12765
2009	MODIS VCF	500 m.	7 Bands	1:10,000	15708

Limitations of Remote Sensing Technology

There are few limitations of remote sensing based mapping of forest cover. Some of the important ones are mentioned below

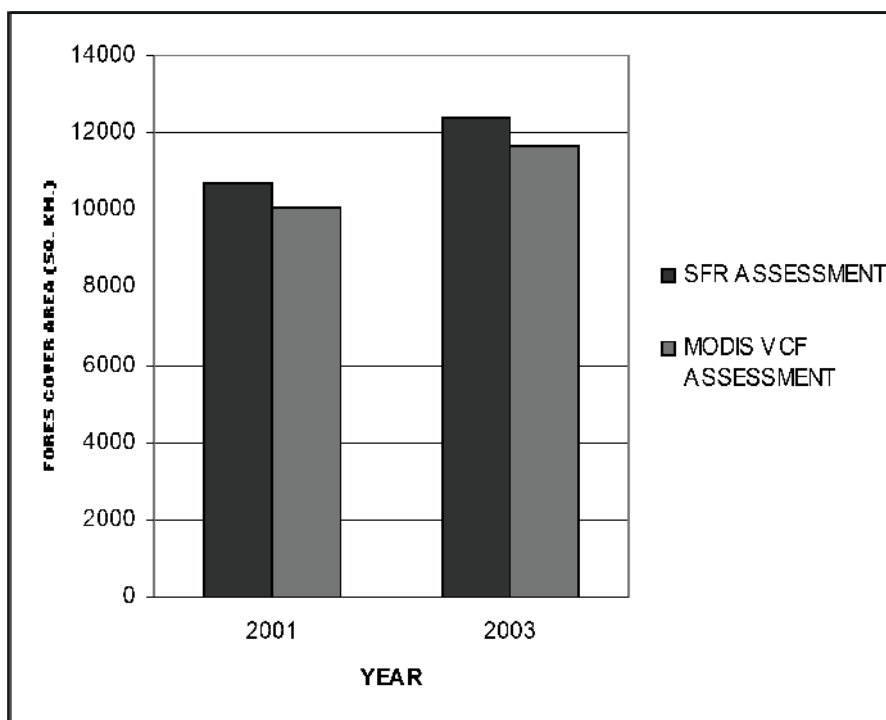
- Resolution of data of MODIS VCF sensor is 500 m, linear strip of forest cover along road, canals and railway lines of lesser width are generally not captured.
- It is difficult to interpret such areas which are obscured by clouds and shadows.
- Agricultural crop lands often poses problem in delineation of forest cover.
- Variation in spectral reflectance in winter period create problem in interpretation of forest cover.

Results and Discussions

Validation of Results

From this above study of Forest cover of West Bengal the change detection of forest cover has been clearly defined by these techniques. According to our objectives the difference of forest cover area from State Forest report has been measured clearly. SFR 2003 and 2005 which contains data of 2001(12343 sq. km.) and 2003 (12413 sq. km.) forest cover assessment respectively, according to our study forest cover area of West Bengal is differed 2% Mean Square error (MSE) than SFR assessment. Figure. 3 shows the Mean Square Error (MSE) by bar graph.

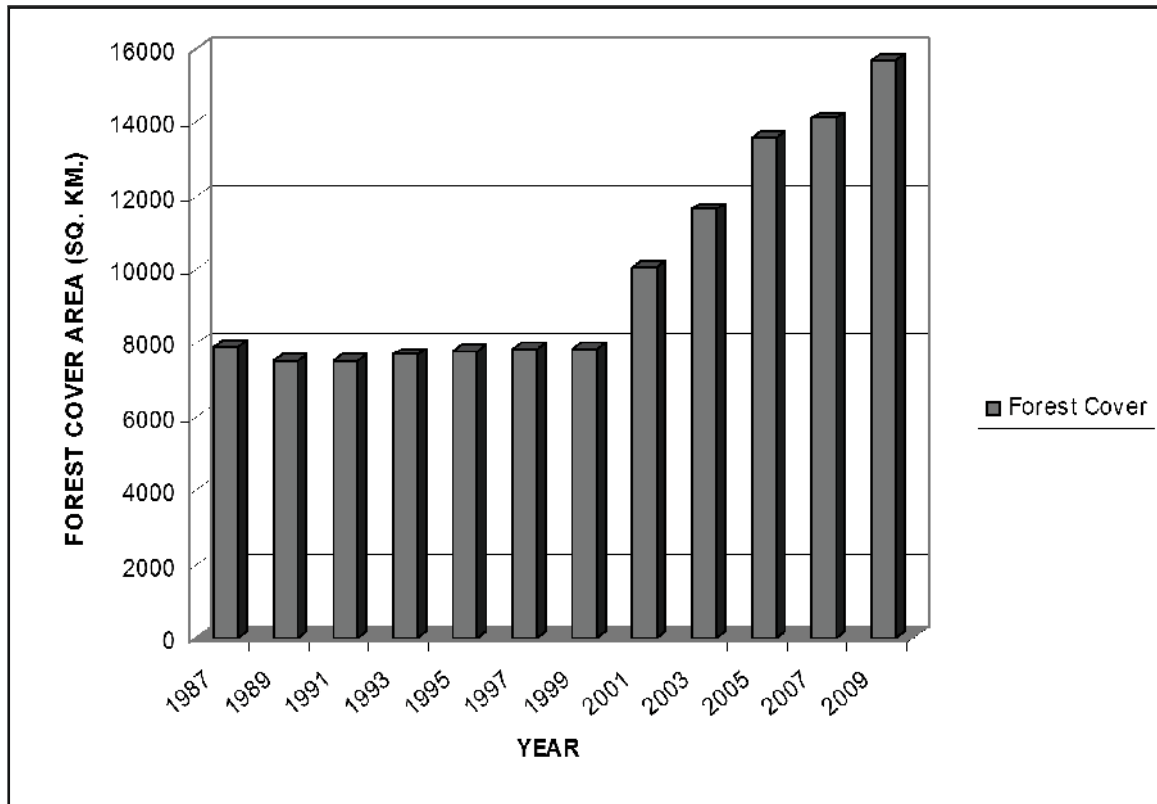
Figure 2: Validation of MODIS Forest Cover in Respect to SFR Forest Cover



Results

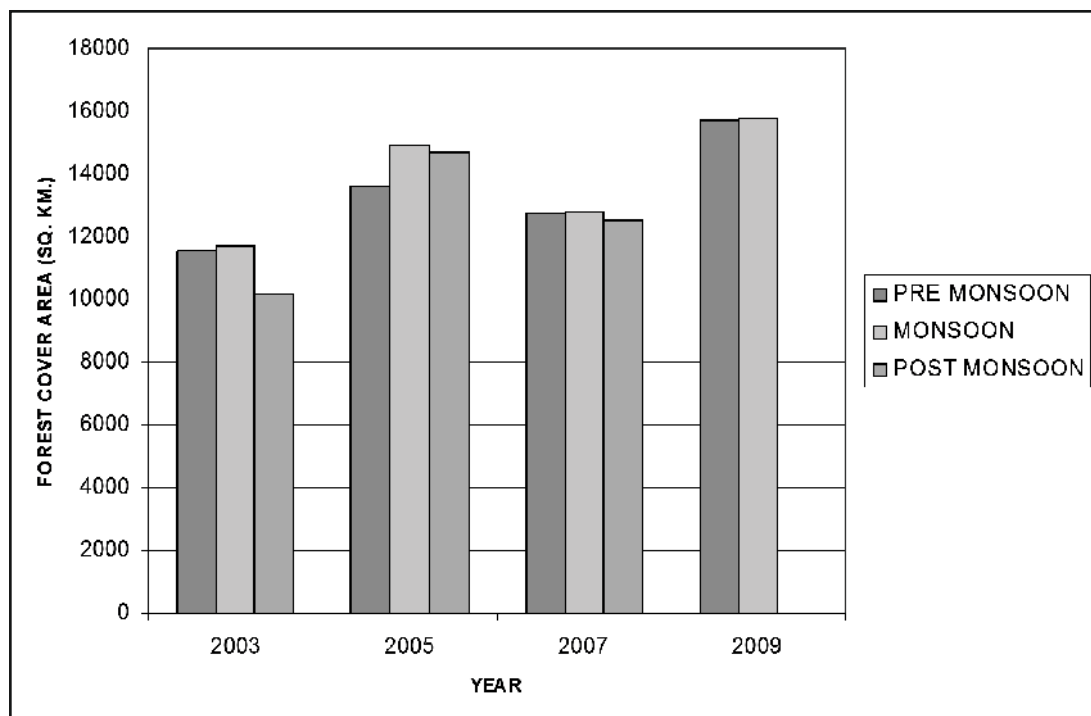
The changes in forest cover with respect to the previous assessment of last two decades, which clearly depict that from 1987 to 1997 forest cover decrease 1.2%. On the other hand from 1997 to 2007 (Fig 4.) the forest cover area of West Bengal has been increased at the rate of 5.6% in 10 years. From the above results we find the decreasing and increasing manner of forest cover of West Bengal from 1987 to 1997 and 1997 to 2007 respectively. After justifying that the total forest cover of West Bengal, it has been increased from 1987 to 2007 at the rate of 4.4% (Fig.4).

Figure 3: Temporal Variation of Forest Cover Area of West Bengal (1987-2009)



- Seasonal variation of forest cover are also measured in this study with the help of pre-monsoon, monsoon and post-monsoon images of West Bengal. Seasonal percentage of forest cover varies from 0.02% to 0.03% (Fig.5) in a year at an increasing rate from pre-monsoon to monsoon and decreasing rate from monsoon to post-monsoon.

Figure 4: Seasonal Variation of Forest Cover



- Forest cover differed from one region to another region within West Bengal. According to the study southern region (Burdwan, Murshidabad, Nadia Bankura, Birbhum, East & West Medinipur, North & South 24 Parganas, Howrah & Kolkata) of West Bengal (2003-2007) has been found to be maximum and forest cover than northern region (Darjeeling, Cooch Behar, Jalpaiguri, Maldaha) (fig.6). Forest cover varies more or less 12% to 15% from north to south Bengal. Except coniferous and deciduous forest southern Bengal has also included mangrove forest cover. Due to this southern Bengal forest cover is much higher than northern Bengal.

Figure 5: Regional Differentiation of Forest Cover of West Bengal

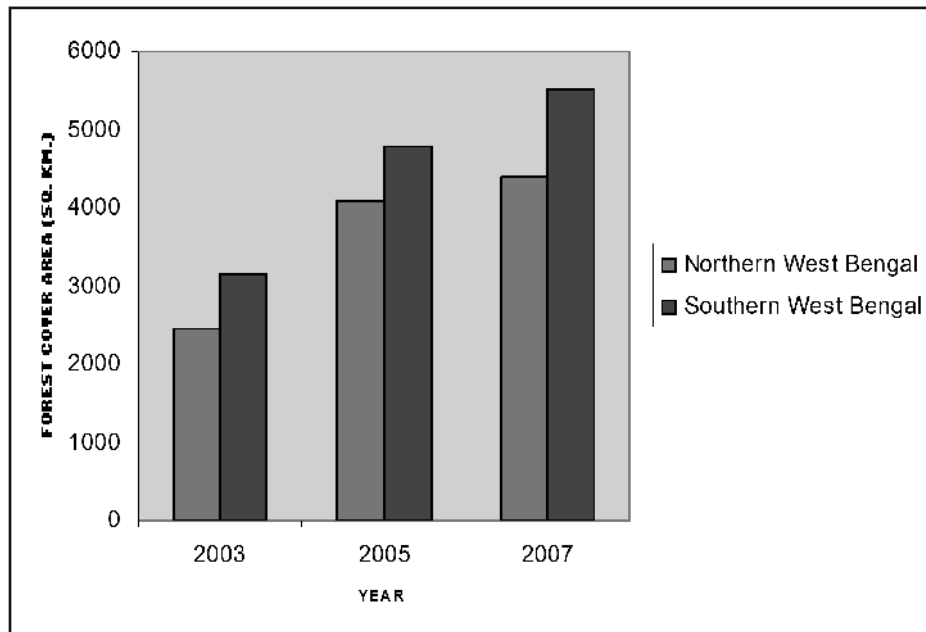
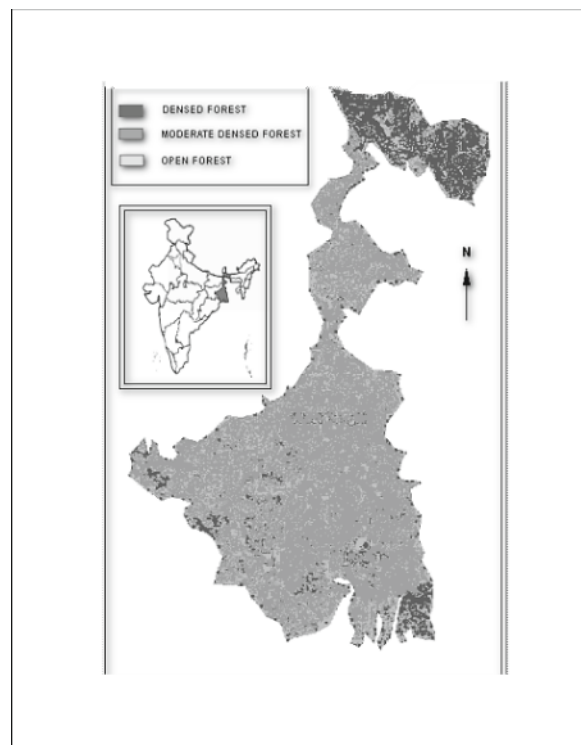


Figure 6: Forest Cover Map of West Bengal



Not to scale

Conclusion

The present study tried to estimate the forest cover of West Bengal with the help of IR band of MODIS imagery taken over West Bengal at a resolution of 1: 10000. According to the validation results the forest cover estimated from remote sensing and the same by SFR was found to differ by 2%. The yearly variation of forest cover was found to be increased by 4.4% from 1987 to 2007. When the regional variation of forest cover was observed it was found that North has 9% more forest cover than the South West Bengal. The seasonal variation of forest cover as determined from the remote sensed imageries of different seasons was found to vary within 0.02 to 0.03% with respect to monsoon season. Due to mangrove forest cover (except coniferous & deciduous forest) in southern part of West Bengal, Southern Bengal contains approximately 12% to 15% much more forest cover than northern Bengal.

The study was conducted with the help of MODIS imagery and the image was processed for the IR band. The seasonal as well as yearly variation of forest cover was calculated to get an overall view of the dynamism of forest cover over West Bengal.

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