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EMERGING & PROMINENT ISSUES IN GLOBAL CONTEXT



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PREFACE

The modern world and its all type of constituent countries whether developed, developing or underdeveloped; have been facing various issues. Some of these issues have emerged furiously due to COVID-19 pandemic. More or less every country of the world is suffering with the issues of unemployment, poverty, pollution, climate change, terrorism, political instability, money-laundering and adoption of new education policy from primary to higher level including research keeping in view the changing and increasing demands of the modern business world. The list of prominent and emerging issues of the world is not exhaustive.

Due to COVID pandemic, some issues have further developed in their worst form like unemployment problems, retrenchment problems, reduction in industrial growth and economic development, work from home and its management, online and distance education, shortage of health facilities, problems of migrant labour, black marketing of goods and services, increasing expenditures of the government on health, education and social welfare schemes etc. Besides these, most of the countries have developed and declared relief packages for various sectors of the economy but now the problem arises how these funds will be arranged and managed. MSME sector has suffered a lot due to this ongoing pandemic.

In this special issue of Journal Global Values; articles, research papers and case studies have been invited to address, discuss and analyse the various emerging and prominent issues in the Global Context. For this issue, we have received scholarly contributions on various topics like National Education Policy of India, various natural & environmental problems, COVID-19 & its related aspects, work from home, latest development in the field of life sciences & social sciences, international relations & co-ordination, various problems like corruption, unemployment etc. and effect of music, literature & art on society etc.

Nowadays most of the issues are directly or indirectly related to the side effects of ongoing COVID pandemic. Various Government and non-government efforts are continuously there to sort out the various type of issues resulting due to COVID effects. But more severe, sincere and continuous efforts are still required to solve and deal with the above mentioned issues and problems arising directly or indirectly due to COVID.

ACKNOWLEDGEMENT

It has been a herculean task to invite, collect and edit the various research papers and articles related to the main theme "Emerging & Prominent Issues in Global Context" for our research journal. As this edition is multi-disciplinary, various sub-themes were also decided to cover all the ocean of knowledge around us. These themes were Online Education, e-Content Developing, Teachers' Training for Modern ICT Tools for providing education, New Education Policy of India, its various characteristics and pros-cons, Work from Home and its various aspects, its effect on productivity and efficiency, Self-dependency versus Globalized Economy, Changing role of Liberalisation, Globalization and Privatization in modern era, Starts-ups and Skill Development in developing countries, COVID generated Unemployment in various countries of the world and its reduction, Impact of COVID on Expenditure Habits, Investments & Savings and Capital Markets, Measures to combat COVID and after COVID strategy of different economies of the world, Various natural problemsclimate change, global warming, water scarcity; Development of Medicines, Vaccines for the COVID, Arms Race in the world & relationship with the neighbouring countries, Data Centres-quality of data provided, their importance etc., Future Trends in various life sciences & social sciences, Changing role of Music, Art & Literature in the modern social, political and economic environment, Creativity in the field of Literature & Art in the society and Impact of COVID on the life style and attitude and behaviour of people in the society etc.

We have taken up this task to get published these research papers and articles, in a Refereed and Peer Reviewed International Research Journal. We are highly thankful to Mr. Vishal Mithal, Anu Publications, Meerut (U.P.) who gave his consent to publish these papers as a special edition on "Emerging & Prominent Issues in Global Context" in his Reputed, Refereed & Peer-reviewed International Research Journal Global Values'. We highly thank & appreciate the work of Anu Publications, Meerut.

I am also highly thankful to my team of expert professors working with me as editors. I am highly thankful to Dr. Sanjay Kumar Bansal, Associate Professor in Commerce, N.R.E.C. College, Khurja and Dr. Manish Kumar Gupta, Associate Professor in Commerce, Sahu Jain College, Najibabad.

Also, I would also like to extend my special thanks to Dr. Manish Kumar Gupta for managing and co-ordinating this whole assignment. Besides it, I also extend a vote of thanks to various members of my Peer Review Board for their timely advice and suggestions regarding the contents of this research journal.

And all of the above, I extend a vote of thanks to all the subject experts, professionals, academicians and scholars etc. for their contribution in form of their various research papers, articles and case studies etc.

During this course, despite all the possible efforts, some errors must have crept inside, please ignore.

Thanks everybody.

Dr. Abhai Kumar Mital Chief Editor

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COVID-19 AND ITS IMPACT ON GST IN INDIA

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ABSTRACT

The outbreak of the covid-19 created uncertainty in the world. Several countries were under lockdown. In India on 25th March 2020, the whole country was under lockdown. The State Government and Central Government suffered for loss of revenue due to lockdown from GST. In the beginning of the 2020 Corona virus was spread around the world. Due to coronavirus, the GST collection has reduced but now several states are looking and resuming the economic activities under the permission given by the home ministry. On relaxation in this regard first of all liquor shops were opened and sales helps to generate the revenue.

KEY WORDS: Corona Virus, Economic Activities, Lockdown, Unlock

INTRODUCTION:

GST is an indirect tax in India on the supply of Goods And Services. It is a multistage destination based tax system. It is comprehensive because it has subsumed almost all the indirect taxes with the exception of certain few. Seven months after the formation of the Modi Government, the new finance minister Honorable Shri Arun Jaitley introduced the GST bill in Lok Sabha and set another deadline of 1st April 2017. The GST came into effect from 1st July 2017. The tax rate rules and regulations are governed by GST Council which consists of the finance ministers of Central Government and all the States.

ABOUT GST:

GST are divided into five different categories for the collection purpose. The rate of taxes are 0%, 5%, 12%, 18%, and 28%. But few taxes are not subsumed under GST. Central taxes like Basic Customs Duty, Research and Development Cess, Export Duty, Anti-Dumping Duty, Safeguard Duty etc. and States Taxes like State Excise Duty, Stamp Duty, Professional Tax, Motor Vehicle Taxes are subsumed.

GST COUNCIL:

The following are the members of GST Council---

The union finance minister chairperson, the Union Ministers of state in charge of revenue or finance member, the Minister in charge of finance for taxation or any other Minister nominated by each state government member. The vice chairperson of GST Council is elected by the GST Council from among its members.

The goods and services tax council shall make recommendations on certain matters like taxes, cess and surcharge levied by the Union, the State and Local Bodies which may be subsumed in the Goods and Service Tax and the rate including floor rates with bands of goods and services taxes and other matters.

PRODUCT IDENTIFICATION:

India is a member of World customs organization since 1971 using 6 digit HSN code to classify commodities for customs and Central Excise. but two more digits are added to make more precise. Now 8 digit classification made the GST more systematic and it is accepted globally. The purpose of HSN code is to remove the requirement of detailed description of the goods.

CORONAVIRUS AND IMPACT:

The outbreak of the covid-19 created uncertainty in the world. Several countries were under lockdown. In India on 25th March 2020, the whole country was under lockdown. The State Government and Central Government were suffered for loss of revenue due to lockdown from GST. In the beginning of the 2020 Corona virus was spread around the world. All countries imposed lockdown to prevent the coronavirus spreading around the world and within the country. As a result some businesses were closed and somehow manage to run through on line mode. But all have to suffer loss of revenue. Due to loss of revenue the Government suffered loss of revenue in the form of taxes.

CGST SGST IGST CESS TOTAL Month April 2020 5,065.60 5,949.67 7,955.47 631.59 19,602.33 May 2020 10,324.10 12,904.79 16,060.08 5.578.03 44,867.00 June 2020 23,965.13 7,057.43 18,975.00 24,592.82 74,590.38 July 2020 21,415.28 16,144.08 22,266.20 6,458.22 66,283.78 August 2020 15,905.78 21,063.89 23,084.91 6,542.39 66,596.97 September 2020 17,740.23 23,130.13 25,041.85 6,335.52 72,247.73 October 2020 19,192.53 25,410.53 29,162.71 7,078.77 80,844.54 18,949,78 25,245.03 29,720.30 81.344.94 November 2020 7,429.53

TAX COLLECTION DURING APRIL 2020 TO NOVEMBER 2020 (Rupees in Crores)

Source: GST website

TAX COLLECTION

DURING APRIL 2019 TO NOVEMBER 2019 (Rupees in Crores)

Month	CGST	SGST	IGST	CESS	TOTAL
April 2019	21,164.58	28,802.70	31,444.77	8,115.21	89,527.26
May 2019	17,811.04	24,462.27	25,015.64	7,171.82	74,460.77
June 2019	18,366.44	25,343.49	25,791.75	7,581.81	77,083.49
July 2019	17,911.57	25,007.47	26,366.24	7,754.31	77,039.59
August 2019	17,732.65	24,239.16	24,140.09	6,431.56	72,543.46
September 2019	16,629.68	22,597.66	22,971.86	6,891.84	69,091.04
October 2019	17,581.34	23,676.80	25,071.09	6,832.83	73,159.06
November 209	19,591.90	27,144.82	28,078.44	6,858.38	81,673.54

Source: GST website

From the above table it is found that reduction on collection was in April 2020 was Rs. 69924.93, in May 2020 was Rs.29593.77, in June 2020 was Rs.2493.11, July 2020 was Rs.10755.81, August 2020 was Rs.5946.49. But due to unlock of economic activities in September 2020 was positive of Rs.3156.69 and October 2020 was Rs.7685.48. If we see the above table, we find that there is a change in collection of GST. The collection was increased because of unlock of the country various sectors were unlocked slowly and so the business activities are started during September October November 2020. But as mentioned in the table above the month wise collection was not as against the previous year months respective the previous year months.

IMPACT ON ECONOMY AND ROLE OF GOVERNMENT:

Indian economy was the fastest growing economy and it is 5th largest economy by GDP across the world. In India Central Government when imposed lock down then the purpose was to prevent the Corona virus. Just to prevent from spreading the whole country. Due to lockdown the economic activities for halted almost in all sectors. All sectors except Medical and Software were closed down. Pattern of business were changed due to lock down. All economic activities were affected as well as the government revenue towards GST is also affected. But there are few sectors which were not affected up to certain extent. Like education and medical activities. In the last few months economic activities are restarted by lifting lock down gradually. As per Reserve Bank of India in current fiscal year contraction in economic activities will continue. Government is trying to recoup the situation.

Reserve Bank of India Governor said that government is observing the negative economic impact of covid-19 prudently. Honorable Finance minister announced various measures to combat covid-19 situation. These measures are like

- 1. Waiver of late fee levy on delay in filing of Return
- 2. Extension of timelines
- 3. Clearance of funds
- 4. Reduction or waiver of the interest and delay of Taxes
- 5. Simplification in filing of returns
- 6. Extension in validity of e way bill

Due to coronavirus pandemic various coronavirus various types of impacts are there. Since business operations were interrupted then there was the default in commitment happened like the delay in in delivery of goods and services, cancellation of goods and services. This happens in majority like rentals and construction area. As a result parties have to pay fines and penalties as mentioned in the agreement CGSTACT 2017. Section 15 shall apply and GST will have to be collected on such damages as the time. Now it is necessary to know the time of cancellation. There are two cases 1. tax invoice has been issued and GST has been deposited by the supplier and 2. before services were rendered.

GST was affected due to long lock down in the country and economic activities like tourism, E-Commerce platforms, automobiles, IT sector, transport, textile, and restaurant. Now activities are continuously done but the collection was not up to the mark. Various factors changed their business model such as in medical sector various items like hand sanitizers mass work donated but due to increase in demand in this sector items was sold and positive impact was there. Like software development, software's were used during the chronicle and in education sector certainly used. There was a need of internet connections and due to online education activities. All activities of education sector like teaching is done through from work from home simultaneously various companies started to allow their employees work from home and has there was need of internet like school. Technology is used by schools and teachers. Now there is need of on line education required and it helps not only to grow the economy but also growing a new way of teaching. It is helping to prevent the pandemic. In addition after unlock there is need of various equipments and GST was collected by the government. Various training programs were delivered through online in education sectors and need of internet connections with high speed data was needed. Because of

internet connection is required by all stakeholders like courts, teaching college and students. There is change in volume which was increased.

Various measures are taken by the government, and hoping for the best in future. As seen from the data above we found that economic activities are continuously growing the revenue for all stake holders. Government is trying to recovers the situation with care. The revenue may will be higher in the forthcoming period because all activities of domestic as well as on international platform is continuing.

CONCLUSION:

Due to coronavirus, the GST collection has reduced but now several states are looking and resuming the economic activities under the permission given by the home ministry. On relaxation in this regard first of all liquor shops were opened and sales helps to generate the revenue. Sales of petrol and diesel were increased because of transportation activities are unlocked by the states and there were no barriers between the states. Now movement of goods and passengers are open and people who are in need to travel are travelling. Taxes are collected on the transportation. Taxes on fuel and liquor are providing 40% to 50% revenue to the state. So this help the states to generate the revenue. Now resuming the services and after resumed services are providing 60% to 70% of the GDP.

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2

A STUDY OF THE ROLE AND PERFORMANCE OF FIU-IND

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Abstract

FIU-IND is working significantly keeping in view the various rules and regulations of Prevention of Money Laundering Act 2002 to have a check on the various money laundering activities and related offences through its intelligence management function. Financial Intelligence Unit of India is consistently busy in maintaining database of various reports received from various reporting entities. It analyses and disseminates the various reports received by it. It entertains request for information from domestic and foreign Agencies and provide information to them. Besides intelligence management, Financial Intelligence Unit of India is also actively engaged in continuous strategic management activities. These activities include review of operational, strategic and regulatory and policy matter issues and suggest changes in these policies and methods. It also develops various plans and programs to create awareness regarding money laundering, terrorist financing and other economic offences and building mechanism in financial sector for effective identification, reporting, analysing and dissemination of doubtful transactions.

Key Words-FIU-IND, STR, CTR, PMLA, Reporting Entities

Each and every country of the world whether developed, developing or undeveloped; all are suffering from the problems of money laundering, terror financing, problems of illegal dealing in property & money, problem of unaccounted income, corruption, bribery, cyber frauds and other economic offences etc. To have a control on these type of activities, most of the countries have of mechanism of different controlling agencies and intelligence agencies. In India, we have Financial Intelligence Unit-India to have a control on the various suspicious transactions, various economic offences, terror financing etc. under the various provisions of Prevention on Money Laundering Act 2002. Its functions can be broadly divided into Intelligence Management Functions & strategic Management Functions. In this paper, 'A **Study of the Role and Performance of FIU-IND';** different aspects of the role and functions of Financial Intelligence Unit of India and pertaining rules of PMLAAct 2002 have been thoroughly discussed.

Objectives of the Paper

- To have an idea about the profile of Financial Intelligence Unit of India
- To analyse the functions of FIU-IND
- To have a glimpse of performance of FIU-IND quantitatively and qualitatively
- To have a basic idea of various terminology used in PMLA Act 2002 pertaining to functions of FIU-IND
- To have an idea of the various aspects of mechanism and methodology of FIU-IND functioning

Collection and Analysis of Data

This paper is basically based of secondary data resources. The quantitative and qualitative facts, information and data has been derived from the official websites of the different Govt. Ministries, the annual reports of these ministries and through various articles and paper published pertaining to our topic.

Analysis and interpretation techniques have been adopted for fact finding and analysis of information & data. Tabular presentation has been done to clear the picture. For analysis of performance span of data has been taken from 2014-15 to 2018-19 i.e. 5 Years.

Financial Intelligence Unit-India (FIU-IND)

Financial Intelligence Unit-India (FIU-IND) is the central agency of India for receiving, processing, interpreting, segmenting and disseminating information relating to doubtful financial transactions. These doubtful transactions may be leading towards Money Laundering, Terror Financing and other economic offences. FIU-IND also coordinates and strengthens the efforts of national and international intelligence, investigation and enforcement agencies in combating money laundering, associated predicate offences and terrorist financing. It works independently and reports to the Economic Intelligence Council headed by the Finance Minister.

Mission of FIU-IND

"To provide quality financial intelligence for safeguarding the financial system from the abuses of money laundering, terrorism financing and other economic offences"¹

Vision of FIU-IND

"To become a highly agile and trusted organization that is globally recognized as an efficient and effective Financial Intelligence Unit"

Core functions of FIU-IND

FIU-IND receives, processes, interprets, make segments of; the financial information and disseminates actionable intelligence in appropriate cases to relevant law enforcement agencies, regulatory agencies and intelligence agencies. The core functions of the FIU can be segmented into the two broad segments—

- Intelligence Management
- Strategic Management

Intelligence Management

a) Maintaining Data Base—-FIU maintains a national database of the various types of reports received from various reporting entities under the provisions of the Prevention of Money Laundering Act, 2002 (PMLA). These reports are—

- o Cash Transaction Reports (CTRs),
- o Suspicious Transaction Reports (STRs),
- o Counterfeit Currency Reports (CCRs),
- o NPO Sector Transaction Report (NTR)
- o Cross Border Wire Transfer Report (CBTR)
- o Immovable Property Report

There are three types of reporting formats for the various information which are following-

- Account based reporting for STRs
- Transaction based reporting for CTRs, CBWTRs etc.
- Reporting for counterfeit currency

b) Analysis—FIU conducts operative and strategy-based analysis of the various statutory reports received from reporting entities.

c) Entertain request for information— FIU conducts screening and processing of the requests for information received by it from domestic law enforcement, regulatory & intelligence agencies and from foreign FIUs.

d) **Providing Information**— In response to the various requests for information received by it from domestic law enforcement, regulatory & intelligence agencies and from foreign FIUs, FIU-Ind disseminates actionable intelligence to those domestic law enforcement, regulatory & intelligence agencies and to foreign FIUs.

Strategic Management

- Reviews operational, strategic and regulatory issues
- Reviews policy matters and suggests policy changes regarding and combating with the problems of moneylaundering, associated predicate offences and terrorists' financing etc.
- Develops various plans and programs to promote awareness regarding money laundering, terrorists' financing and other economic offences.
- Building mechanism in the financial sector for effective identification, reporting, processing, analysing and dissemination of the doubtful transactions.

Prevention of Money Laundering Act

The Prevention of Money Laundering Act, 2002 (PMLA) is the principal legislation of India to combat the problems of money laundering, terrorist financing and other economic offences.

PMLA and the related rules came into force w.e.f. 1st July, 2005.

"Under section 3 of the PMLA, attempting or knowingly indulging in any process or activity connected with proceeds of crime including its concealment, possession, acquisition or use and projecting or claiming it as untainted property is chargeable with the offence of money-laundering."²

Important Definitions

Meaning of Money Laundering

"Money Laundering involves disguising financial assets so that they can be used without detection of the illegal activity that produced them. Through money laundering, the launderer transforms the monetary proceeds derived from criminal activity into funds with an apparently legal source."

Meaning of Money laundering Offence

"Whosoever directly or indirectly attempts to indulge or knowingly assists or knowingly is a party or is actually involved in any process or activity connected with the proceeds of crime and projecting it as untainted property shall be guilty of an offence of money laundering."²

Proceeds of crime

"Proceeds of Crime means any property acquired, directly or indirectly, by any person as a result of criminal activity relating to a scheduled offence or the value of any such property."³

Schedule Offences

"Scheduled offence means-

- (i) the offences specified under Part A of the Schedule; or
- (ii) the offences specified under Part B of the Schedule if the total value involved in such offences is 5 [one crore rupees] or more; or
- (iii) the offences specified under Part C of the Schedule."4

Schedule mean the Schedules to PMLA.

Terrorists' financing involves the activities of arrangement, provisioning, collecting, transferring and distribution of funds and other financial support to individual terrorist or group of terrorists or the groups/institutions/agencies supporting terrorist activities.

Other economic offences are a wide word which involves fraud, forgery, counterfeiting and disobedience of various law & legislations related to finance, money, movable & immovable assets.

Transactions to be reported to FIU-IND

The following transactions have been specified under the Prevention of Money Laundering Rules. Proper record maintaining and reporting is required for the following specified transactions—-

CTR—Cash Transaction Reports

STR-Suspicious Transaction Reports

CCR-Counterfeit Currency Reports

NTR-Non Profit Organization Sector Transaction Reports

CBWTR-Cross Border Wire Transfer Reports

Immovable Property Reports

Detail follows-

Type of Transaction	Value		
All cash transactions	>Rs. 1000000 or its equivalent in foreign currency.		
All series of cash transactions integrally connected	<rs. 1000000="" currency<="" equivalent="" foreign="" in="" its="" or="" td=""></rs.>		
to each other which have been individually valued			
All series of cash transactions integrally connected	>Rs. 1000000 or its equivalent in foreign currency.		
to each other where such series of transactions			
have taken place within a month and the monthly			
aggregate			
All transactions which also include receipts by non	>Rs. 1000000 or its equivalent in foreign currency.		
-profit making organisations			
All cross border wire transfers where origin or	> five lakh rupees or its equivalent in foreign		
destination of funds is in India	currency		
All purchase and sale by any person of immovable	valued at fifty lakh rupees or more		
property that is registered by the reporting entity.			
All transactions involving cash where forged/counterfeit currency notes or bank notes have been utilised			
as genuine or where any forgery of a valuable security or a document has taken place to facilitate the			
transactions;			
All the suspicious cash or non-cash transactions including attempted transactions			

All the suspicious cash or non-cash transactions including attempted transactions.

Time Frame to submit information and reports

All reports and information will be submitted to FIU on a **monthly basis by the 15th day of the succeeding month** except the following——

- The Suspicious Transaction Reports will be furnished within 7 working days on being satisfied that the transaction is suspicious.
- The information in respect of immovable property transactions will be furnished every quarter by the 15th day of the month succeeding the quarter.

Meaning of Suspicious Transactions

"Suspicious Transaction means a transaction (including an attempted transaction) whether or not made in cash which, to a person acting in good faith:

a) gives rise to a reasonable ground of suspicion that it may involve the proceeds of crime; or

b) appears to be made in circumstances of unusual or unjustified complexity; or

c) appears to have no economic rationale or bona fide purpose; or

d) gives rise to a reasonable ground of suspicion that it may involve financing of activities relating to terrorism."5

Various Reporting Entities

Reporting entities are those entities which are liable to file various information and returns under PMAAct & PMA rules to the office of Financial Intelligence Unit of India. These entities are as follows—

• Banking Companies —

"Nationalized banks, State Bank of India and its associates, Private Indian Banks and Private Foreign Banks, Primary, District and State Co-operative Banks, Regional Rural Banks."⁶

• Financial Institutions —

"Financial I institutions as defined in Section 45-1 of the RBIAct, Insurance Companies, Hire-Purchase Companies, Chit Fund Companies, Housing Finance Companies, Non-Banking Financial Companies, Payment System Operators (Credit Cards), Authorized persons (Money changers), India Post."⁶

Intermediaries —

"All entities registered under section 12 of the SEBI Act including Stock Brokers and Sub-brokers, Share Transfer Agents and Registrars to issue, Bankers to an Issue and Merchant Bankers Underwriters, Trustees to Trust Deed, Portfolio Managers and Investment Advisers, Depositories and Depository Participants Custodians of Securities, Foreign Institutional Investors, Credit Rating Agencies, Venture Capital Funds, Collective Investment Schemes including Mutual Funds, Intermediaries regulated by Forward Market Commission (FMC),Intermediaries regulated by Pension Fund Regulatory and Development Authority (PFRDA)."⁶

Liabilities of the Reporting Entities

• Appointment of Officials— Every reporting entity will appoint the following and communicate their name, addresses and contact nos. to the FIU-IND—-

-a 'Principal Officer' and

-a 'Designated Director'

"Principal Officer is an officer designated by a reporting entity for the purpose of Section 12 of PMLA."7

"Designated Director is a person designated by the reporting entity to ensure compliance to various provisions of PMLAct and the PML Rules and it also includes –

- (i) the Managing Director or a whole-time Director if the reporting entity is a company,
- (ii) the managing partner if the reporting entity is a partnership firm,
- (iii) the proprietor if the reporting entity is a proprietorship concern,
- (iv) the managing trustee if the reporting entity is a trust,
- (v) a person or individual who controls and manages the affairs of the reporting entity if the reporting entity is an unincorporated association or a body of individuals, and
- (vi) such other person or class of persons as may be notified by the Government if the reporting entity does not fall in any of the categories above."⁸

Follow up of Client Due Diligence—

"The reporting entity is required to-

- (i) identify its clients, verify their identity, obtain information on the purpose and intended nature of the business relationship
- (ii) to determine whether a client is acting on behalf of a beneficial owner, and
- (iii) identify the beneficial owner and take all steps to verify the identity of the beneficial owner."9

Verification of identity of clients is required at the time of opening the account of customer and also on the time of having any transaction with customer. This has to be reviewed periodically.

- Maintaining Records The reporting entity is also required to maintain proper data and record both in hard copy and soft copy; of the specified transactions for the specified period and in specified formats as directed by various prescribed and concerned authorities like FIU-IND, RBI, SEBI, IRDA or other regulators etc.
- Online Uploading of information to FIN-IND—- Specified information will also be uploaded online on the Portal 'https://finnet.gov.in/'available on the site of FIU-IND i.e. http://fiuindia.gov.in. For uploading on the portal registration of the reporting entity and the Principal Officer is must on the portal.
- As per section 14 of the PMLA, the reporting entity, its directors and employees shall not be liable to any civil or criminal proceedings for furnishing information to FIU-IND.

Powers of Director of FIU-Ind

- o Imposing various restrictions on the reporting entities for non-compliance of various provisions of PML Act and PML Rules
- o Impose penalty from Rs.10,000/- to Rs.1,00,000/- for each failure in compliance of various provisions of PMLAct and PML Rules
- o Make necessary enquiry/enquiries
- o Impose fine on reporting agencies
- o Exercising the same powers as vested in a civil court under the Code of Civil Procedure, 1908

Beneficiaries of the information received through the FIU-IND

FIU provides information to various domestic agencies regarding the various reports and information received by it. These agencies are—-

- · law enforcement agencies
- · intelligence agencies
- · regulators and others

Some of the above agencies are -

Central Bureau of Investigation, Narcotics Control Bureau, Directorate General of Income Tax Investigation, Central Economic Intelligence Bureau, Research and Analysis Wing, Intelligence Bureau, Ministry of Home Affairs, Defence Intelligence Agency, National Security Council, Anti-Terrorist Squad, Anti-Corruption Bureau, Directorate of Revenue Intelligence, Department of Criminal Intelligence, Directorate of Military Intelligence, Securities and Exchange Board of India, Insurance Regulatory and Development Authority of India, NABARD, Telecom Regulatory Authority of India, National Housing Bank, Registrar of Companies, Central Board of Direct Taxes, Central Board of Indirect Taxes and Customs(previously called Central Board of Excise and Customs), RBI etc.

One STR can be disseminated to more than one agency. Besides domestic agencies FIU-IND provides information to foreign FIUs also.

Feedback for the information disseminated by FIU-IND to Domestic Agencies and Foreign Agencies

As FIU-IND disseminates a lot of information regarding various suspicious transactions to the various domestic agencies and foreign agencies. These domestic and foreign agencies further take necessary action on these transactions. Properties movable & immovable, unaccounted cash, counterfeited currencies are seized. Various Penalties, Fines and Recoveries are realised. But the FIU-IND is not given proper feedback by these agencies regarding these seize or realisation etc.

On an average, FIU-IND receives feedback in only about 5% cases. So through feedback from various domestic and foreign agencies only, the outcome and importance of FIU-IND and its activities can't be ascertained.

Performance of FIU-IND

The following tables shows the performance of FIU-IND in respect of various types of specified transactions-

- Table no. 1 shows the no. of various types of reports received by the FIU-IND during the last 5 years ending on 2018-19.
- Table no. 2 shows the no. of STRs received, processed and further disseminated to various domestic and foreign agencies during the last 5 years ending on 2018-19.
- Table no. 3 shows the no. of disseminations to various types of agencies during the last 5 years ending on 2018-19.
- Table no. 4 shows the no. of Information Exchanged with Foreign Financial Intelligence Units
- Table no. 5 shows the results on action taken on STRs during the last 5 yrs. ending on 2018-19.

Year	CTRs	STRs	CCRs	NTRs	CBWTRs
2014-15	8008237	58646	353837	367585	6332016
2015-16	16393289	105973	410899	613008	15305924
2016-17	15929176	473006	733508	706192	9091149
2017-18	13364476	1436340	353795	809179	9407903
2018-19	13975397	323162	331682	845556	10719253

Table 1 Reports Received by Financial Intelligence Unit-India (In Million)

Source—Annual Reports of FIU-IND—various issues

Table 2Analysis of STRs Information by FIU

Year	Received	Processed	Disseminated
2014-15	58646	77624	42422
2015-16	105973	97965	53200
2016-17	473006	74945	56978
2017-18	1436340	82595	65022
2018-19	323162	85641	76920

Source—Annual Reports of FIU-IND— various issues

Table 3
Dissemination of STRs to Various Agencies

Agencies	2014-15	2015-16	2016-17	2017-18	2018-19
Law Enforcement Agencies	45,952	56,321	63,466	71313	96,432
Intelligence Agencies	13,819	3,441	1,735	808	3,021
Regulators & others	1,492	4,107	1,504	1.276	1,671
Total	61,263	63,869	66,705	73397	1,01,124

Source—Annual Reports of FIU-IND— various issues

Year	Requests received from Foreign FIUs	Spontaneous disclosures from Foreign FIUs	Requests sent to Foreign FIUs on behalf of domestic agencies	Spontaneous disclosures to Foreign FIUs
2014-15	112	63	55	2
2015-16	100	120	140	0
2016-17	123	125	138	2
2017-18	108	129	177	0
2018-19	111	160	289	0

Table 4
Information Exchanged with Foreign Financial Intelligence Units

Source—Annual Reports of FIU-IND—various issues

Table 5Results of Action taken on STRs

Year	Action			
2014-15	•	• CBDT detected unaccounted income of Rs. 4,471.65 crore		
	•	CBDT seized assets of Rs. 65 crore		
	•	CBEC detected service tax evasion of Rs. 21.59 crore		
	•	ED detected and seized proceeds of crime of Rs. 25 crore		
2015-16	•	CBDT detected assets of Rs. 154.89 crore		
	•	DRI detected assets worth Rs. 300 crore		
	•	ED detected proceeds of crime of Rs. 107.47 crore		
2016-17	•	CBDT detected assets of Rs. 3561.07 crore		
	•	CBEC detected cases of duty evasion and hawala transactions of over		
		Rs.7 crore & Rs.20 crores respectively		
2017-18	•	CBDT detected unaccounted income of Rs. 11440.38 crores		
	•	ED seized unaccounted assets of Rs. 984.98 crores		
2018-19	•	CBDT detected unaccounted income of ? 1255.34 crores		
	•	CBDT attached assets worth? 3.59 crores		
	•	DRI imposed a demand of ? 2.76 crores		
	•	ED imposed penalties of ? 0.55 crores		

Source—Annual Reports of FIU-IND— various issues

Conclusion and Suggestions

It is clear from the above discussion that FIU-IND is working significantly keeping in view the various rules and regulations of Prevention of Money Laundering Act 2002 to have a check on the various money laundering activities and related offences through its intelligence management function. Financial Intelligence Unit of India is consistently busy in maintaining database of various reports received from various reporting entities. It analyses and disseminates the various reports received by it. It entertains request for information from domestic and foreign Agencies and provide information to them. Besides intelligence management, Financial Intelligence Unit of India is also actively engaged in continuous strategic management activities. These activities include review of operational, strategic and regulatory and policy matter issues and suggest changes in these policies and methods. It also develops various plans and programs to create awareness regarding money laundering, terrorist financing and other economic offences and building mechanism in financial sector for effective identification, reporting, analysing and dissemination of doubtful transactions.

More punishment in form of fine and imprisonment; should be there for the entities involved in very in various money-laundering and associated offences and terror financing. It must be made mandatory by law that Agencies whether domestic or International getting information provided by Financial Intelligence Unit of India: must submit their feedback report on actions taken by them on the various doubtful transactions as the feedback ratio is only 5%. It must be made mandatory to submit feedback and action report to FIU-IND to in case of availing services of it.

At last, we can say that Financial Intelligence Unit of India is playing a significant in controlling the various money laundering activities and related offences under the PMLAAct in India through its wide range of services. The information provided by them on suspicious transactions and the various strategic management activities done by it, are quite beneficiary for domestic as well as foreign agencies.

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3

ECONOMIC SECURITY AND UNEMPLOYMENT IN INDIA

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ABSTRACT

Man is concern with his use of natural resources, such as land, water and others. The way on which land is used varies according to the human numbers, human types and the stage of economic development of different human groups. The rapid growth of population in any region whether it is regional or administrative affect the present and future of that particular region in India.

Among resources, human resources are the most important. Man is itself a creator or producer and consumer or destructor of resources. He puts his physical and mental labour when to create a resource and plays a vital role in the development of the society. The role of man as a consumer is equally important because human need boost the process of production which includes food cloth and shelter. Thus, study of human resource is vital from economic welfare point of view. The use and mis-use of land largely depend on their inhabitants.

Introduction

Much economic development is derived on account of its gazetteer nature and because of its implied assumption bout the absolute nature of geographical values, usually defined in physical terms. Sometimes it is difficult to distinguish from regional economic geography and regional geography and regional science. The study of economic security in India said to contain material that is more property the concern of economists; sociologist and ecologists.

Progress of modern society is identified on the basis of economic growth and economic security. In general, the terms 'economic growth' and 'economic development' are used interchangeably. However, there is a fundamental difference between the two terms. Economic growth is a steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national income. It is a uni-directional phenomenon which includes high rates of growth of per capita output and population, high rates of total factor productivity, especially labour productivity, structural transformation of the economy, and the international spread of the growth to reach out to the rest of the world for markets and raw materials. Economic growth benefits society as it increases the ranges of human choice.

Economic security is much more than just economic growth, while economic growth is an essential component of development; it is not the only one. This is because development is not purely an economic phenomenon. It encompasses more than the material and financial sides of people's level. Development is a multi-dimensional process involving the reorganization and reorientation of the entire economic and social system. In addition to improvement in incomes and output; it typically involves radical changes in institutional, social and administrative structures, popular attitudes, and sometimes even customs and beliefs, as well as the reduction of in equally and

eradication of absolute poverty. Development represents the entire gamut of change by which the entire socioeconomic system turned to the diverse basic needs and desires of individuals and social groups moves from unsatisfactory level towards materially and spiritually better condition.



Economic Security and Unemployment

MODERNIZATION AND ECONOMIC SECURITY

The major premises of this theory are that economic growth mainly depends on the availability of capital as revealed by the history of economic development of the developed countries. Therefore, developing countries also can be developed by investing more capital. Several development models such as those by Lewis (1954), Rostov (1960), Nurkse, Hirschman etc. were published. The supporters of balanced development believe that the less developed countries suffer from the vicious cycle of poverty which leads to a high contraction in the commodity market. A balanced investment in several inter-dependent industries needs to be done so as to enlarge the market. Supporters of unbalanced development, on the other hand, favour investment is selected sections only.

Neo-liberal theory, while accepting a limited role of the state in development, considers free capital market as promoter of development but restricts the role of the state in the creation of favourable conditions only. John Williamson, the proposer of the consensus, laid down the following points:

- Monetary regulation.
- Readjustment of priorities of public expenditure.
- Taxation modification.
- Liberalisation of rate of interest.
- Competitive exchange rate.
- Openness in trade (minimum tariffs and restrictions on exports/ imports).
- Liberalisation in foreign direct investments,
- Privatisation.
- Deregulation
- Modification in corporate governance.
- Movement for eradicating corruption.
- Inclusion of elasticity in labour market.
- Observance of rules of the W.T.O.
- Stable or changing currency.
- Movement for eradicating poverty

ECONOMIC SECURITY AND UNEMPLOYMENT IN INDIA

An economy is the realized social system of production, exchange, distribution, and consumption of goods and services of a country or other area. A given economy is the end result of a process that involves its technological

evolution, civilization's history and social organization, as well as its geography, resource endowment, and ecology, among another factors. These factors give context, content, and set the conditions and parameters in which an economy function. There are number of ways to measure economic activity of a nation. These methods of measuring economic activity include consumer spending, exchange rate, gross domestic product (GDP), GDP per capita, GNP, interest rate, national debt, rate of inflation, unemployment and balance of trade.

Unemployment is a major hindrance in the development of a country. For a country to be developed, the basic requirement is economic security of the citizens, which, in turn, depends on the available employment opportunities. Unemployment is the state in which a person is without work, available to work, and is currently seeking work. The unemployment rate is used in economic studies and economic indexes. The rate is determined as the percentage of those in the labour force without jobs. The organization for Economic Co-operation and Development defines the employment rate as the percentage of the working age population (ages 15 to 64 in most OECE countries) who are currently employed.

CONCLUSION AND SUGGESTIONS

Unemployment affects both individual, in particular, and society, in general. Unemployed individuals are unable to earn money to meet financial obligation. This may lead to homelessness through foreclosure or eviction due to failure to pay mortgage payments or to pay rent. Unemployment also increases susceptibility of an individual to malnutrition, illness, mental stresses, psychological anxiety, depression and loss of self-esteem.

Another problem with the unemployment is that the combination of unemployment, lack of financial resources and social responsibilities can cause under-employment. That is, unemployed workers may be forced to take jobs that do not fit their skills or allow them to use their talents.

During a long period of unemployment, workers can lose their skills, causing a loss of human capital.

High unemployment can encourage xenophobia and protectionism as native workers fear that foreigners are stealing their jobs. In light of this, many countries have imposed legal barriers against "outsiders" who want jobs obstacles to immigration and/or tariffs and similar trade barriers against foreign competitors.

Finally, a rising unemployment rate concentrates the oligopsony power of employers by increasing competition amongst workers for limited employment opportunities.

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4 COVID-19: BEHAVIORAL IMPACT OF COVID-19 ON AGRICULTURE, MIGRANT LABOURERS, MSME SECTOR (LOCKDOWN & AFTERMATH)

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Abstract

This paper throws light on economic crises facing by country during lockdown period and its devastating affects which all about to face in future. The economic activities came to halt as and when lockdown imposed on 24 March, 2020. All sectors whether manufacturing, service, real-estate, tourism, hospitality etc., came to standstill with no future ahead. The economy felt the dose of economic package and need of Government's support on the behest of monetary and fiscal measures. This slump down is more robust than that of 2009 World crises. This paper discusses all those challenges during lockdown and its far-reaching implications for future as well. Here, we see various measures taken by the Government in the form of economic package with the theme of 'Self-Reliant'. Various policies formed by the Government either for the M.S.M.E sector or for agricultural sector or both and other sectors too have been discussed in this paper. In this paper various heads like R.B.I measures, economic package, investment plans, FDI rule, findings, and conclusion have been focused on.

Key words: crises, lockdown, slump down, robust, self-reliant

Introduction

The economic disruption caused by pandemic is of gigantic proportions. The loss of economy could be at least one quarter of GDP growth, given that economy has been in a lockdown mode since the last two months. As the whole World has been reeling under the pandemic impact, India itself could not evacuate from this corona influence. The activities came to halt, manufacturing stopped, shops shutdown without any prior notice and warning. All this said to be announced just given ultimatum of 4 hours. Probably, nobody prepared well in advance to handle the situation. Nation shocked by it, but Government had nothing left with only need was to impose lockdown. The whole World has been facing such situation and all turned to impose lockdown, India too follows the same. But mostly such nations were developed, they could spend heavily on public welfare and other expenditures, they even could not bear a big jolt. On the other hand, India is a developing country with large fiscal deficit and trade imbalance suffered a lot. As, the nation already going through a slow pace of development, since the demonetization and G.S.T., the small business houses yet have to come out of that. The liquidity problem still persists for such small-scale units employing more than 11 cr. of population. Not of these, but the migration of vast labour force from various Industrial base due to hasty decisions and fear of spread of corona among labourers and loss of livelihood due to lockdown posed a greater threat to nation which are an engine to the manufacturing. Besides, the pandemic had impacted lot growth and investments too. The GDP fell down drastically and India witnessed another wave of depression. The investments in capital market came to halt with another blow.

This pandemic brings opportunities too, we have to waive that. Turns this moment to an opportunity as the P.M. said. But, this all alone could not be possible without Government's support. An outlook should be framed for such disaster. The Government has already initiated steps under P.M. leadership, the RBI's policies along with Government's economic package served as a booster for sinking economy.

Objectives of the study

The objective of the study is to focus on the impact of COVID-19 during pre and post COVID period related to some sectoral implications on Indian economy.

Research Methodology

The data has been collected through secondary source only from various economic surveys, books and citations in journals etc., Personal observations and articles in newspaper have also been put forward in the study.

Economic Challenges during COVID-19

The economic disruption is of tantamount nature. The Country witnessed a great depression after three decades when economic reforms ushered in our country. The dislocation of migrant labourers and disruption in domestic transport has adversely impacted agriculture, business units, suppliers and exporters. There are predictions that demand and consumption of durable items will significantly go down in this financial year. The sentiments of the public will not be created soon. Moreover, the rural demand has been adversely affected due to return back of migrant labourers at different parts of country with empty hands. The 86% of land holding of agricultural fields in rural areas is less than 2 hectares and such fields already overburden with excess men supply. The petty shopkeepers and small shop owners are facing liquidity problems, as most of such shops are located at rural areas and small localities where there is no reach of transport due to lockdown. The challenges are not only restricted to economy but also of structural forms. The core objective lies within secondary objectives. This lockdown felt the need of robust infrastructure and planned development policies. Now there is a need we must reach at transformational stage. It also seems the problem that millions of people again went down below poverty line. The lower- and middle-income group was also the worst hit as closing and shutdown of many small and medium business units have retrenched lot of work force. In this sense, tourism and hospitality could not be ignored where more than 6 cr. youth left unemployed. So, may who be in middle- and lower-income group may fall or reach to poverty line. India's factor markets- capital, labour and land still remain major constraints on economic activity.

Financial markets in India remain weak. Banks have large volume of NPAs and loan defaults issues which will remain after COVID-19 era. Safety and security measures of workers at the factory premises are ill and handicapped which violate the word democratic state.

Finally, land market rigidities too need to be considered. High land prices have made even infrastructure projects costly.

Sectoral Implications of COVID-19 in India

Well, COVID-19 had far reaching effects that will remain for some time. With special reference to the economic concern, some issues are discussed.

Agricultural Sector

Agriculture remains a central pillar of the Indian economy. More than 70% of the Indian population depends on agriculture and its share in GDP is mere 20%. Despite, it has been a big source of generation of employment. The sector serves the food needs of the whole country, while also placing among the top exporters of agriculture produce in the World. The agriculture sector faced challenges during lockdown on some key issues discussed below as per the report.

Impact Factors during lockdown	Percentage
Unable to Sell	55
Low Yield	52
Unable to Sow on time	42
Yield Loss	40
Unable to harvest	30

Table 1
Impact of COVID-19 on Farmers

Source: Survey Report

As per the schedule, 55% of the farmers were forced to store their produce and unable to sell them during COVID-19. More than half of the farmers who harvested their crops suffered a lower yield during nationwide lockdown. It is also seen that 42% farmers were unable to sow on time during lockdown. While, 40% of the farmers suffered a yield loss due to lack of labour, transport factors. Around 30% were unable to harvest their crops due to lockdown issues.

Migratory Labour

The International Labour Organization in its report describes the corona virus pandemic as 'the worst global crises since World War II'. About 400 million people (76.2 of the total workforce) working in the informal economy in India are at a risk of falling deeper into poverty due to catastrophic consequences of the virus.

Impact Factors during lockdown	(Percentage)
Not finding work	83.1
Run out of Ration	80.8
Not able to return to Village	47.8
Illness	15.1
Not faced any Problem	3.5
Not able to pay for Education	2.4

Table 2Impact of Corona virus on Migrant Labourers

Source: Jan Sahaas Survey (2020)

The table reveals that 83.1 % of the migrant labourers were not able to find work or either lost the job. While, 80.8% labourers were not avail the ration cards despite 1700 billion of relief package announced by the Government. Sudden displacement of labourers due to lockdown led the migrants halted or did not return back to their towns. Nearly 50% of such migrant labourers faced such situations.

MSME Sector

Micro, Small and Medium enterprises, which have created more than 90 percent of the jobs in India, employing over 114 million people and contributing 30 percent of the GDP are at the risk of having severe cash crunch. Many of these MSMEs have loan obligations and monthly EMIs to pay. Considered as the growth engine of the nation, the MSME sector accounts for 33.4% of India's manufacturing output, employing about 120 million and generating 45% of India's export. However, the pandemic outbreak and the consequent stoppage of economic activities have triggered panic across the nation, with businesses facing extinction risks. Although some business activities within

the 'non-essential category' were resumed as the lockdown extended, economic activity, except for agriculture and essential activities, remains halted.

Impact Factors during lockdown	Percentage
Shut down	80%
Liquidity Crunch	70%
Job losses	54%
Lay-off	45%
Revenue Loss	33%

Table 3Impact of COVID-19 on MSME

Survey: CII report

As per the report, nearly 80% units accepted that they could have shut the businesses, if it would continue for 3 more months. 70% have liquidity problem or cash crunch. Nearly, 54% persons lost job and 45% feared to layoff even after post lockdown period. Nearly 33% MSME units suffered revenue loss. Besides, these factors credit deficit, non-availability of working capital led the position in grim.

Impact on GDP

COVID-19 pandemic is constantly growing and showing little signs of relief. It's adverse impact on economic growth will probably a serious problem. U.N. warned that the coronavirus pandemic is expected to have a significant adverse impact on global economy, and most significantly, GDP growth of India for the present economy is projected to decline to 4.8%.

F.Y.	GDP (Growth %)
2015-2016	8
2016-2017	8.3 (+0.3%)
2017-2018	6.6 (-1.4%)
2018-2019	6.1 (-0.5%)
2019-2020	4.2 (-1.9% est.)
2020-2021	-5 (-9.2% est.)

Table 4 Impact on GDP

Report: Statistical Source

As per the report, it is clear that during FY 2019-20, the GDP is consistently down as compared to previous years. But, during lockdown, it has witnessed sudden downfall and estimated to remain at 4.2% in 2020. Post lockdown period affected much to predict GDP negative and may fall down below 0 to remains at -5.2 (a fall of -9.2%) which may be a big jolt to economy. The imposition of GST and demonetization in 2016 were the main reason for GDP fall but lockdown added fuel to the fire during FY 2019-20.

Policy measures taken by the Government

Finance Minister Nirmala Sitharaman has taken most observers by surprise by including wide ranging reforms in her stimulus package. Post-COVID-19 revival strategy gives a major thrust to agriculture and MSMEs. Since the first-generation reforms, dwindling prospects in agriculture have capped economic growth by containing the overall demand. The Government now wishes to create unified market in agriculture commodities, pushing investment in agriculture supply chain through Agriculture Infrastructure Fund. The Government recently hiked MSP from 50% to 83% cost of produce. Proposals relating to the Essential Commodities Act; agriculture marketing; and legal framework for farmers represent the deepest reforms.

MSME will benefit from a range of measures which include easy access to loan with 3.70 lakh cr. loan disbursement facilities. The NBFC also provided with 50,000 cr. loan benefits as these are the backbone of our unorganized sector and financial inclusion of saving mobilization

The 20-lakh cr. package which is about 10% of G.D.D access many segments manufacturing, trade, mining, agriculture, exports and various others would brings in favorable environment to the economy. The thrust to mining notably in coal and other minerals, introduction of a seamless exploration-mining-production regime, measures in civilization, privatization of power distribution and space will bring private interest in these sectors.

Announcements in the financial sector cover a wide turf, addressing the concern of all. The government is pushing public sector banks to provide additional working capital to small businesses at 7.5% interest under the loan guarantee scheme that proposes to provide 3 lakh cr.

The Government created an emergency facility for business enterprise with a turnover of up to Rs 100 crore and outstanding loans of up to Rs 25 crore to get additional 20% working capital through a government guarantee with interest rate cap at 9.25%. The emphasis on technology driven systems in health and education, administrative reforms and privatization of public sector units in terms of disinvestment will bring required efficiencies. Opening up of space and atomic energy for private sector also entails positive spillover effect of technology.

Findings of the Study

The people centric approach adopted in the package deserves praise. Increase in the allocation for MGNREGS by Rs 40000 cr. to accommodate migrant labourers, faster refunds, low-cost housing and ease of doing business will cushion against the adverse impact of the COVID-19 crises the issue of gainfully employing migrant workers in the long run and their up skilling, not included in the package. Moreover, policy concerning workers in unorganized sector is also absent in the package. But, economic policies have always been fascinating in terms of the diversity of opinions. Income generation through agriculture and allied activities is expected to support MSME sector along with preference for our local products and government procurement seem to exist in new policy. Low rate of interest and liquidity support to NBFCs helped them in building confidence. The change of MSME definition and changes announced in the bankruptcy code for MSMEs will also bring reforms in insolvency code too.

Suggestions:

In fact, COVID-19 offers India an excellent window of opportunity to implement reforms that would help it maximize the benefit of overall development. Some measures suggested here are given below:

- i) Reopening of export market after COVID-19
- ii) Strict measures of protectionism regarding dumping of goods especially by China.
- iii) 'Ease of doing' and 'Make in India' initiative must be pushed up.
- iv) Adoption of single window system in terms of business applicants.
- v) There must be a need of reform in land acquisition and land use pattern system.
- vi) The slogan of 'Self-Reliant' as given by P.M. should be focused on.
- vii) Try to make domestic firms competitive with the outside World
- viii) There is a need to bring changes in labour laws and make it more dynamic.

Conclusion

The lockdown has shown up the severe limitations in India's state capacity, worst affected by which have been migrant workers. Not only have many of them been deprived of their livelihood, the state had very limited means to

stand them up. On the heels of this pandemic, P.M. has already outlined a vision which calls for quantum change in the economy. For this change to come about, there also has to be a quantum change in the way government functions. Global recession seems inevitable. But how long the situation continues depend upon the policies taken by the Government and how the MSME and other sectors react to overcome out of it, with the vision of 'Atmanirbhar Bharat'. The country is facing challenges and tough time but economic packages announced by the Government help in supporting to come out of this menace. The post-lockdown however going to be much worst for Indian economy and its shocks will remain for many coming financial years.

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ABSTRACT

A study was conducted related to eNAM in Chandauli District of U.P with the objective to assess the impact of eNAM on the income of farmers and variation of price of tomato after establishment of eNAM. The sample included 360 farmers and 41 traders of Chandauli Block of the Chandauli District. Major finding suggested that the eNAM plays great role to get more profit & income to the farmers those have knowledge about eNAM. Arrival of Tomato in Chandauli mandi increased after eNAM i.e. 2.37 to 12.85%. The total price spread cost percentage Pre eNAM and Post eNAM was 47.61% and 39.56% respectively. Producer's share increases form 52.38% to 60.43% after implementation of eNAM. The higher marketing margin intercepted by market intermediaries during Pre eNAM resulted in the poor efficiency of marketing of tomato.

Key words - Electronic-National Agriculture Market (eNAM), BHIM, UPI, income.

INTRODUCTION

Electronic-National Agriculture Market (eNAM) was launched on 12th July 2016 by government of India. Presently, there is vast channel around 585 mandis linked with eNAM across 16 states and 2 UTs having users' approx. 1.66 cores farmers, 1.28 lakhs traders and 70,934 agents. Digital transaction around 662 cores have been carried out during eNAM transactions which indirectly benefited to more than 10, 17,849 farmers. Due to eNAM we can see an increase in competitiveness among the buyers which indirectly boost farmer's income by obtaining prices depending upon quality of their Agri-produce. In future eNAM will be expanded to 1,000 mandis. The central government has introduced a proposal that will allow all the farmers to sell their produce from selected warehouses directly or from premises of farmers producer organisations (FPO) over electronic marketing platform eNAM, completely by passing the mandi & the ministry has also added a new logistics module to support transportation (that can be tracked) of produce directly from warehouses and FPO centres to promote buying and selling of commodity. These steps will help farmers to sell produce at remunerative prices near to their farm gate without coming to mandis. Currently 150 products including fibres, oilseeds, food grains vegetables and fruits is being traded and about 977 FPOs are linked out of which around 98 FPOs are transacting on eNAM. Farmers can get their payments for their commodity through various online payments i.e. BHIM, UPI credit card etc. There are various features like viewing quality certificate, push notification, bunching of invoices, shopping card features, along with 360 degree images of commodity lot etc. which can be used by the traders for taking a better decision while bidding on eNAM application.

Lastly, the eNAM has proved itself as a modern dynamic solution to the farmers and their stakeholders to conduct their trade efficiently from traditional agricultural trade. So, the eNAM through its various dynamic features is trying well enough to achieve the dream of digital India and also to improve the livelihood of farmers.

OBJECTIVE

• To assess the impact of eNAM on the income of farmers.

REVIEW OF LITERATURE

- Aggarwal, Jain & Narayanan (2017) This paper examines Karnataka's pioneering agricultural output marketing reforms with the twin goals of assessing the state and challenges of implementation and to glean lessons from Karnataka's experience for India's e-National Agriculture Market.
- Yadav and Sharma (2017) stated that National Agriculture Market would play the role of game changer for the Indian farming community. They also stated that eNAM would provide the farmers more option of sale of their produces and would increase the accessibility of market to farmers through warehouse based sale which obviated the need to transport the produce to the Mandis.
- Amarendra Reddy (2018) examines experience of e-markets in Karnataka since 2012, with the intention to suggest improvements to eNAM. Results show that e-markets help increase competition, eliminate collusion among traders resulting in increased farmers' price and market arrivals. They facilitate competitive bidding and same day payments to farmers
- **Bisen & Kumar (2018)** this study captures various challenges in the implementation of eNAM, Efficient markets offer efficient price discovery and level playing field for all the actors. This paper systematically reviews developments in Indian agricultural marketing and emphasizes on addressing the challenges in implementation of eNAM to achieve the goal of doubling farmer's income.
- **Pavithra S, Gracy C P et al. (2018)** in this analyses the effectiveness and challenges of e-tendering marketing system and indicated that e-tendering has been successful in reducing transaction time, bringing transparency in price discovery and increasing market revenue, besides enhancing market competition.
- Sally (2018) found that the agriculture ministry has added six new features in eNAM, to make it more easy to use, the ministry included MIS dashboard for analysis, BHIM for payment and mobile payment by traders, new features on mobile app like gate entry and mobile payment, farmer's database integration and e-learning module on eNAM website.
- **Reddy et al. (2019)** investigated that an increase in prices received by the farmers and more markets have linked to eNAM due to the introduction of e-auction, timely online payment of sale proceeds to the farmer's bank account and reduced chances of collusion among traders.
- **Chaudhary et al. (2020)** the agricultural marketing introduced by government of India is highly fragmented and inefficient supply chains that emerging as a viable solution to eNAM. Increase direct access to markets, reduce intermediation costs and promote common procedures, scientific storage, quality grading are the sale options to farmers provide by B2B E-commerce.

RESEARCH METHODOLOGY

District of Chandauli, Uttar-Pradesh was selected purposively for the study. Chandauli APMCs was also selected purposively for the study because this district is one of the leading areas in selling and buying of commodities through eNAM. Chandauli district contains 9 blocks, out of these, Chandauli blocks which have maximum number

of eNAM respondents was also selected purposively. Villages namely Sirasi, Bisauri, Shikari, Futia, MajhorKhas, Machiya Kalan, Baburi and Alahifrom the Chandauli block was selected randomly for choosing eNAM respondents, 360 were selected as respondents for the study. Data were collected by survey method through personal interview using questionnaire from farmers and traders. The study was conducted in agriculture year 2018-2019.

FINDINGS

Price variation & price trends of tomato after establishment of eNAM in study area

Agriculture is the most important sector of Indian Economy. India follows diversifying and multiple cropping system from cash crops to non-cash crops across states. In this study the price variation in Tomato crop is discussed. Table: 1 presents price differences in Tomato crop in Uttar Pradesh during 2012-15 and 2016-19. The result showed that price for Tomato crop given in the table have improve during the period.

Categories	Pre-eNAM				Post-eNAM			
Сгор	Average cost (Rs/Qtl.) (2012)	Average cost (Rs/Qtl.) (2013)	Average cost (Rs/Qtl.) (2014)	Average cost (Rs/Qtl.) (2015)	Average cost (Rs/Qtl.) (2016)	Average cost (Rs/Qtl.) (2017)	Average cost (Rs/Qtl.) (2018)	Average cost (Rs/Qtl.) (2019)
Tomato	1611.87	1643.16	1662.08	1695.50	1728.73	1779.02	1831.53	1876.31
Price difference (%)		1.94	1.15	2.01	1.96	2.90	2.95	2.44

Table: 1. Crop Price differences in pre and post-eNAM periods.

Source: Krishi Utpadan Mandi Samiti, Chandauli.

The prices of Tomato was 1695.50 & 1728.73 during 2015 to 2016 and then started rising to reach Rs 1831.53 to 1876.31 during 2018 to 2019 per quintal. Based on the secondary data analysis, it is reported that eNAM has contributed much to the farmers and traders, they received higher price for their crops after the implementation of eNAM.

Table: 2. Market arrivals of Tomato in pre-eNAM and post-eNAM periods in the selected Mandi.

Selected Mandis	Pre-e (Q	NAM tl.)	Post-eNAM (Qtl.)		Post-eNAM (Qtl.)		ırrival share)	e (2014-	e (2017 - 19
	2014-15	2015-16	2016-17	2017- 18	2018- 19	Total a (2014-16 19	Total a (Mandi	% chang 16	% chang 201
Chandauli	5487	5753	5379	6521	6738	29878	58.02	+2.37	+12.85
Mugalsarai	4736	4968	4878	3785	3267	21634	41.98	+2.39	- 19.78

Source: Krishi Utpadan Mandi Samiti, Chandauli.

Table: 3. Average income of different size of tomato farmers & trends in market arrival in pre-eNAM and post-eNAM periods in the selected Mandi.

S.N	Categories	Average income (Rs/Year) 2015-2016	Average income (Rs/Year) 2016-2017	Income Difference (Rs/Year)	% Change in income
1.	Marginal	67530	71400	3870	5.73
2.	Small	115500	125700	10200	8.83
3.	Large	275000	304500	29500	10.72

Source: Krishi Utpadan Mandi Samiti, Chandauli.

Graph: 1 Average income of different size of tomato farmers & Trends in market arrival in Chandauli Mandis: Tomato



Graph: 1(I) & 1(II)

Source: Krishi Utpadan Mandi samiti, Chandauli.

Graph: 2 Trends in market arrival in Mugalsarai Mandis: Tomato



Source: Krishi Utpadan Mandi Samiti, Chandauli.

The above table: 2 & 3, and graphs: 1(I) & 1(II) & 2 shows that Chandauli (58.02%) is the major market followed by Mugalsarai (41.98%). Total arrival of tomato at Chandauli and Mugalsarai during 2014-2019 was 29878 and 21634 quintals, arrival of Tomato in Chandauli mandi increased after eNAM i.e. 2.37 to 12.85% and the income of marginal farmers was increased by 5.73 per cent, small farmers by 8.83 per cent and large farmer by 10.72 per cent in the study area.

Impact of eNAM on the income of tomato farmers

Marketing activities and the intensity or the degree of market performance reveals about marketing efficiency. Marketing cost indicate the extent of cost incurred in the movement of a commodity from the producer to the consumer. Market margin refers to the difference between the price paid and received by a given marketing intermediary in the marketing of a commodity such as wholesaler, retailer etc. Assessment and impact of eNAM has been positive on marketing efficiency of agricultural commodities. Tomato is a major vegetable in food table its efficiency was worked out. The findings are presented in table: 4 given below.

The most common marketing shortest engaged in the marketing of tomato in the Chandauli District (U.P) was as follows.

- Producers- retailers- consumers.
- Producers-Commission agent Wholesalers-Retailers-Consumers.
- Producers-eNAM-Wholesalers-Retailers-Consumers.

Table: 4. Impact of eNAM on the income of tomato farmers and Marketing Cost, Margin andEfficiency of Tomato

		Pre eNAM	Post eNAM
S.N.	Particulars	(Rs/Qtl.)	(Rs/Qtl.)
		2015	2016
А.	Producer sale price	1695.50	1728.73
1.	Cost incurred by the producer		
i.	Packing cost	17(0.77)	20(0.86)
ii.	Packing material cost	15(0.68)	15(0.65)
iii.	Transportation cost	20(0.91)	25(1.08)
iv.	Loading and unloading charges(physical labour + mechanical charges)	15(0.68)	15(0.65)
v.	Weighting charges	15(0.68)	15(0.65)
vi.	Miscellaneous charges	36(1.63)	40(1.72)
2.	Total marketing cost (i-vi)	118(5.35)	130(5.61)
3.	Market fees (1-2%)	35(1.59)	35(1.51)
4.	Commission to Commission agent	387(17.56)	
5.	Total cost (2+3+4)	540(24.50)	165(7.12)
6.	Net price received by producer	1155.50(52.44)	1563.73(67.52)

Source: Krishi Utpadan Mandi Samiti, Chandauli.

7.	Cost incurred by the wholesaler	1695.50(76.94)	1728.73(74.64)
i.	Loading and unloading charges and labour cost.	13(0.59)	15(0.65)
ii.	Marketing cost	27(1.22)	30(1.29)
iii.	Losses & Miscellaneous charges	47(2.13)	80(3.45)
iv.	Total cost (i-iii)	87(3.94)	125(5.39)
8.	Wholesaler margin	125(5.67)	160(6.90)
9.	Sale price of wholesaler to retailer	1907.50(86.57)	2013.73(86.95)
10.	Cost incurred by the retailer		
i.	Weighting charges	15(0.68)	15(0.65)
ii.	Loading & unloading charges and labour cost	15(0.68)	15(0.65)
iii.	Town charges	10(0.45)	10.20(0.44)
iv.	Carriage up to shop	10(0.45)	10(0.43)
v.	Miscellaneous charges	9(0.40)	10(0.43)
vi.	Total charges(i-v)	59(2.68)	60.20(2.60)
11.	Retail margin	237(10.75)	242.03(10.50)
12.	Sale price of retailer to consumer	2203.50	2315.96
		(100.00)	(100.00)
13.	Producer share in consumer rupee (%)	52.44	67.52
14.	Price spread	1048(47.56)	752.23(32.48)
15.	Marketing efficiency (%)	2.10	3.08

 Table: 5. Crop Price differences of producer sale and consumer sale price, market share of Chandauli mandi in pre-eNAM and post-eNAM periods.

Categories	Pre-eNAM					Post-6	eNAM	
Сгор	Average cost (Rs/Qtl.) (2012)	Average cost (Rs/Qtl.) (2013)	Average cost (Rs/Qtl.) (2014)	Average cost (Rs/Qtl.) (2015)	Average cost (Rs/Qtl.) (2016)	Average cost (Rs/Qtl.) (2017)	Average cost (Rs/Qtl.) (2018)	Average cost (Rs/Qtl.) (2019)
Producer' sale price	1611.87*	1643.16*	1662.08*	1695.50*	1728.73	1779.02	1831.53	1876.31
Consumer price	1981.79	2073.69	2140.64	2203.50	2315.96	2455.02	2530.05	2590.05

Source: Krishi Utpadan Mandi Samiti, Chandauli.

*includes charges of commission agents.



Graph: 3.

Marketing efficiency has been worked out and presented in table: 4 for tomato crop. It revealed from the table that the total price spread cost Pre eNAM and Post eNAM was Rs. 1048 and Rs.752.23 respectively. The higher marketing margin intercepted by market intermediaries during Pre eNAM resulted in the poor efficiency of marketing of tomato. Thus, this shows that the market for Tomato is more efficient in Post eNAM system rather than Pre eNAM system, signifying that the implementation of the eNAM has improved the efficiency of tomato marketing. The reason for improved efficiency of Tomato may be the reduction in role of middle men in selling of the produce. This means the agenda of the scheme to curtail the role of middle men is working effectively and is in favor of the farmers. Thus, increasing the returns from selling the Tomato through eNAM has improved the income of Tomato Growers. This suggests that the coverage about the e-tendering should be increased as the system is increasing the efficiency of market.

CONCLUSION

In eNAM produce can be sold directly at a national platform with higher producer's share in consumer's rupee. Lesser the involvement of middlemen higher is the marketing efficiency. This study found that eNAM has the potential to increase the marketing efficiency. This is due to fact that the role of middlemen has been reduced significantly by selling produce through e-tendering system. This leads to recommendation that the coverage of more farmers should be brought within the ambit of eNAM so that they can get higher returns from selling their produce without involving middlemen. It was found that the income of marginal farmers increased by 5.73 per cent, small farmers by 8.83 per cent and large farmer by 10.72 per cent in the study area.

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IMPACT OF FARM BILL ON AGRICULTURE, COMMODITY MARKET AND FARMERS IN INDIA

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ABSTRACT

Most of the population of India is engaged in the agriculture sector and earnings are so small that it is not sufficient for the farmers. Sometimes they cannot bear their cost of cropping. To solve this problem government started minimum support price (MSP). This price helps the farmer to take minimum price for their produce. But now government has passed a bill for better opportunities for the farmers to sell their crop in any market of a country and take better prices for their produce. The benefits of this bill should be given to the farmer directly without any mediator and commission based work.

INTRODUCTION

Farm bill is a bill that was passed by the Indian government to protect the farmer's benefits. It gives freedom to sell their products in different states and take benefits.

The new legislations that look to rejig India's vast and fragmented agriculture markets together with amendments to the Essential Commodities Act are significant structural changes brought in by the Narendra Modi government. So far protests by farmers have largely concentrated in north-western India, in Punjab and Haryana, but the legislations are likely to have far reaching impact over the next few years across states.

The government hopes competitive markets and higher private investments in the food supply chain will improve farm-gate prices. Here are five indicators to watch out to understand the near-term impact of these reforms.

OBJECTIVE OF THE STUDY

Objective of the study is to check the real impact of this bill in the commodity market and market of different states.

WHAT IS FARM BILL

The three ordinances that have been passed into Acts are:

- 1. Farmers Empowerment and Agreement of Price Protection Assurance and Farm Service Act 2020.
- 2. Farmers Produce Trade and Commerce Promotion and Facilitation Act 2020.
- 3. Essential Commodities (Amendment) Act of 2020.
- The Farmers Produce Trade and Commerce (Promotion and Facilitation) Bill-2020 prohibits the State Governments from levying any tax on the sale and purchase of agricultural produce outside mandis and gives the farmers freedom to produce their produce at a remunerative price. The government argues that this bill will strengthen the economic condition of farmers.
- The Essential Commodities (Amendment) Bill-2020 has been brought for amendment in the nearly 65year-old Goods Act. In this bill, there is a provision to exclude food, pulses, potatoes, onions and some food items (oil) etc. from the list of essential commodities. The government argues that this will help private investors to do business and get rid of government intervention. The government also claims that this will encourage foreign investment in agriculture.
- The Farmers (Empowerment and Protection) Agreement Bill-2020 on Price Assurance and Agricultural Services provides that farmers can enter into a written agreement for the supply of agricultural produce at a pre-determined price. The central government will also issue a model agriculture agreement for this, so that farmers can get help and the role of middlemen can be eliminated in earning economic benefits.

This is one of the main features of this act. According to Sec 3(1) of the act, the farming agreement may provide information relating to terms and conditions for supply of farming produce including the time of supply, quality, grade, standards, price and other matters. This agreement includes quality standards of not only farming produce but also quality farming practices, labour and social development standards.

The act ensures the best value for farmers as the value is already decided in agreement and it can't be changed even if the market prices rise or fall. The farming agreement may be linked with insurance service providers or credit schemes of the central and state government.

BILL RELATED TO COMMODITY MARKET

- To remove commodities like cereals, pulses, oilseeds, onion and potatoes from the list of essential commodities. It will do away with the imposition of stockholding limits on such items except under "extraordinary circumstances" like war
- This provision will attract private sector/FDI into farm sector as it will remove fears of private investors of excessive regulatory interference in business operations.
- To bring investment for farm infrastructure like cold storages and modernising food supply chain.
- To help both farmers and consumers by bringing in price stability.
- To create competitive market environment and cut wastage of farm produce.

GOVERNMENT VIEWS ABOUT FARMING

The government has said these reforms will accelerate growth in the sector through private sector investment in building infrastructure and supply chains for farm produce in national and global markets. They are intended to help small farmers who don't have means to either bargain for their produce to get a better price or invest in technology to improve the productivity of farms. The bill on Agri market seeks to allow farmers to sell their produce outside APMC 'mandis' to whoever they want. Farmers will get better prices through competition and cost-cutting on transportation. However, this Bill could mean states will lose 'commissions' and 'mandi fees'. The legislation on contract farming will allow farmers to enter into a contract with agri-business firms or large retailers on pre-agreed prices of their produce. The Essential Commodities (Amendment) Bill, 2020, seeks to remove commodities like cereals, pulses, oilseeds, edible oils, onion and potatoes from the list of essential commodities. This will end the imposition of stock-holding limits except under extraordinary circumstances.

VIEWS OF FARMERS ABOUT THE FARMER BILL

Farmers in Punjab and other parts are protesting against these reforms. Badal, too, tendered her resignation after the Bills were passed. Opposition parties, including TMC, Congress, DMK and BSP, opposed the agriculture sector reform bills, saying they were against the interests of small and marginal farmers. Congress upped its ante

against the Modi government, terming the move a conspiracy to defeat the Green Revolution. Slamming the government, Congress leader Gaurav Gogoi said: "This government has been eyeing, how they can take the farmers' land to benefit their capitalist friends, whether is the Land Acquisition Act, whether in the industrial system through weakening the labour courts and now this three-pronged attack on the Indian agricultural system through the two bills on farming - one related to APMC, the other one is related to contract farming and the third bill which is on essential commodities... a three-pronged attack on the Indian farmers." —-Article taken from Times of India

IMPACT OF FARM BILL ON COMMODITY MARKET

Farmers were not so happy with this bill and they were protest against it. They were jamming the whole Delhi entrances. Main reason of this, some basic problems that will be faced by the farmers in future. To understand this problem, we examine the data given below:

COMMODITY	JUNE	JULY	AUG	SEP 2020	OCT	NOV 2020
	2020	2020	2020		2020	
Agridex	1042.25	-	1095	1134	1191	1207
Barley	1459	1635	1357	-	-	-
Castor seeds	3930	3668	4024	4082	4300	4700
Chana	4204	3985	4389	4942	5432	5321
Coriander	6280	5650	6630	6920	6824	6940
Cotton seeds	2129	1837	1910	1863	1851	1955
oilcake						
Guar gum 5MT	5520	5287	6574	6450	6755	6625
Guar gum 10MT	3630	3370	4170	4037	4318	4196
Jeera	13715	13525	14325	14180	14285	14645
Kapas	988	971	1011	1032	1110	1163.5
Maize	1302	1335	-	1300	-	-
Muster seeds	4665	3958	5159	5447	5814	6099
Ref soya oil	801.6	755	878.2	899.2	963.2	1003
Soy bean	3720	3570	3800	3904	4340	4319
Turmeric	5750	5850	5930	6158	6450	6180

BEST SELLING PRICE OF COMMODITY BEFORE AND AFTER FARM BILL 2020

This bill was passed by the government on 20th Sep. 2020. So we have taken data before 20th Sep. 2020 and after Sep. 2020. From this data we examine that price of commodity was increasing and farmers getting good price.

After this bill price of commodities goes up and it also help the farmers to store their produce and sell them when they get good price. But it also difficult for those farmers who have small piece of land they cannot bear the cost of storage and they can sell their produce as early as possible.

So, this data can show that every farmer can get benefits from this bill with some amendments.

MERITS OF FARM BILL

• The said Act in section 3(3) gives farmers the freedom to enter into an agreement with corporate companies. The act states that the minimum period for agreement shall be for one crop season or one production cycle of livestock, as the case may be and the maximum period shall be five years.

- Section 5 gives farmers the right to gain more profit in accordance with the fluctuating market conditions, as there are chances of earning high profits. When the farmer is entering into a contract, the delivery of farming produce needs to be collected by the sponsor within an agreed time frame. The act does not permit to enter into an agreement with considering the farmland as a mortgage, lease, sale or raising any permanent structure or making any modification on the land.
- This very act also gives freedom to both the parties to terminate such agreement for any reasonable cause with mutual consent.
- If the sponsor fails to make payment of the amount due then he is imposed with one half times of the total penalty. So, it gives payment security to farmers as well.
- The farmers produce trade and commerce promotion and felicitation act 2020.
- Firstly, farmers used to sell their crops in Mandis and other local markets. This particular act allows the farmers to carry on the intra-state trade and commerce. The said act gives payment security to farmers as well. It basically directs the trader to make the payment on the same day or within the maximum three working days after the delivery. Earlier when farmers were selling their produce in local mandis, they were supposed to pay the mandis tax. The said act restricts such mandis and APMC markets to collect tax from farmers.

DEMERITS OF FARM BILL

- Farm bill promotes Contract Farming. But in reality, it will only benefit Big Farmers and not Small farmers. For example, if Lays want 1000 tons of Potatoes for production of chips they will only contact Big Farmers for their requirement and not the small Farmers. Big corporates have highly paid and skilful team of lawyers, farmers don't have this facility, hence there is a huge risk of exploitation of farmers from big corporates.
- Dispute redressal system is not practical. Sub-Divisional-Magistrate has an already a huge load of cases adding this will only result in delay, and we all know that justice delayed is justice denied.
- Market fees levied by state governments are removed. Generally, according to the APMC Act, the state government applies a certain amount of tax to trade between farmers and traders. Removal of market fees for trade outside mandis will result in shutting down of state mandis. The state government earns a fairly large income through taxes on this trade; they will lose this income source.
- In mandi by law payment shall be made on the same day. But this act allows traders 3 credit days and to be honest with you people will misuse this provision. In mandi, traders or middlemen have to complete certain conditions led down by the government and they have a license to do trading. But anybody with a PAN card can enter into trading; some can misuse this and present fake PAN cards to exploit farmers. In mandi farmers after years of trading know who to trust and who not to trust. People know each other really well. When farmers go to different states for trading local people may have problems with outsiders coming and selling products in their locality.
- The biggest concern here is the MSP minimum support price. The government offers to buy 23 products at MSP to support farmers. But in reality, only wheat and rice are purchased by the government. Haryana and Punjab are the biggest benefactors of this scheme. With permission to trade outside mandi traders will only trade outside because there is no provision of MSP while dealing with private players. This might lead to farmers being underpaid again. Farmers have this fear that's why protests are happening. But with relating to MSP only 6% of farmers in India know about this provision and they get to benefit from this. The implementation is really not good.

CONCLUSION

The 3 Acts are revolutionary if government can address the loopholes and convince the farmers that these acts are completely implemented. The other matter is contract farming and the government should form a new mechanism to protect farmers from greedy contractors or corporates. The government should also try to solve the third problem of the farmers that is solution of dispute that may arise at any time of selling of their produce. Government should make a separate regulatory body for the solution of dispute. MSP should also be provided to the farmers so that they cannot get exploited by the corporates or the middlemen. Government can take help of gram panchayats to explain about these acts so that the farmers may be able to take real benefits of these acts.

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AN ANALYSIS OF THE EFFECT OF BANNING CHINA PRODUCTS IN INDIA

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Abstract

Boycott China has now become a very prominent emotion of Indian people. People today desperately feel that they should boycott products from China. Most of the videos try to convince you by bringing the Patriotism sentiment in you. China is the Bulkiest Exporter country on this globe by population and the third largest by province, sharing long borders with several other nations. it is one of the top ten manufacturing countries of the world. Most of the countries are directly dependent on China for their trade. In this paper we will try to find out the effects of banning China products in India. In this paper we will try to have a glimpse of trade between India & China.

Key words: India China Trade, Export-Import, Partners, Atmanirbhar Bharat, Trade Deficit

The main question behind India Economy is that Does "Import Substitution" will really work for us to reboot Economy? And how will the adoption of Atmanirbhar Bharat Mission will help in this? China is way ahead of us in foreign trade. Can self-reliance help correct this disparity? This paper will try to find out the difference between Myths and reality between India-China trade relations.

Objectives of the Study

The main objective of this paper is to study the impact of Banning China Products in India. of China India trade relations on foreign trade of India. A glimpse of trade between India & China will also be taken.

Data and Methodology

In this research, secondary data has been taken from various Govt. & non-Govt. websites and form the various published reports, journals and articles etc. The analysis and interpretation technique has been used to study the facts.

India-China Relations

The relationship between two giants of Asia and the world has been progressing at a tremendous pace. Both Superpowers have witnessed their share of ups and downs over the years. In the year 1984, India and China entered into a trade Agreement, which provided them with the status of most favoured nation (MFN). In contrast India began to switch from the inward-oriented controlled regime to outward oriented controlled regime. In 1992 India and China got involved in a full-grown bilateral trade relation.

In global economy the year 1994 noticed the beginning of a new era in the India-China economic relations. In this year a double Taxation Agreement was signed between India and China. The government of both the countries

also took the necessary initiatives to turn into dialogue partners in the Association of Southeast Nations (ASEAN). In 2003, Bangkok Agreement was signed between the two Countries. Under this agreement both India and China offered some trade preferences to each other.

Both nations share a variety of common socio-economic characteristics. Various protocols have been signed to facilitate export of Indian rice, rapeseed meal, tobacco and fishmeal/fish oil and chilli meal from India to China. A workshop was jointly conducted by National Medical Products Administration China and Central Drugs Standard Control Organisation India, to train Indian Pharma exporters on the updated regulatory practices of China, on 21st June 2019, at Shanghai, China.

China mainly contributed about 13.7% of India's imports across sectors such as chemicals, automotive components, consumer electronics, and pharmaceuticals. Medical industry in India is largely dependent on Chinese ingredients to manufacture medical instruments and medicine in India.

The rapid expansion of India China trade since the beginning of this century propelled China to emerge as our largest goods trading partner by 2008, a position which China continues to hold today. Since beginning of the current decade, bilateral trade between the two countries recorded tremendous growth. In 2017 and 2018 bilateral trade recorded has registered two digit growth. In the year 2019 India was the 12th largest trading partner of China.

Due to the border controversy between these two countries, bilateral trade between India and China, has already depressed by 15% since 2018. India is exporting many products to China. A few most common ones are; cotton yarn, iron ore, and electrical machinery. India exports 36% of its diamonds to China. The Government of India has been consistently making efforts for achieving a more balanced trade with China in all our official engagements with the Chinese Government, requesting them to lower trade barriers for Indian exports to China. Delay in adoption of India export oriented strategy results into India's relatively Curtailed export volume today.

What we Import from China?

The most imported products by India from China are Electronic items valuing US\$ 20.6 Billion followed by the machinery valuing 13.4 Billion dollars, organic chemicals of 8.6 Billion dollars, and plastic items valuing at 2.7 Billion dollars during 2018-19. China accounted for around 14% of India's total imports in 2018-19.

Main Commodities imported from China are Electronics products, Organic Chemicals, Nuclear Machinery, Parts of computers, Cars and motorcycles parts, Toys, Fertilizers, Mobiles, Lightings, Milk products, Optical and medical instruments and Iron and steel etc.

Main Imports of India from China								
Products	Products 2018-19 (Rs. Cr.) 2017-18 (Rs. Cr.)							
Electrical machinery	144405	184789						
Nuclear Machinery	93616	87282						
Organic Chemicals	60082	45691						
Plastic items	19038	15246						
Fertilizers	14412	6912						
Iron and steel items	12165	9497						
optical ad medical instruments	11108	10718						
Vehicle and accessories	10636	9371						
Iron and steel	9950	10445						
Other chemical products	8994	8692						

Table 1					
Main	Imports of India from China				

Source: Ministry of Commerce & Industry

What we Export to China?

India exports just 5% of its total exports to China while China sends just 2% of its export to India. Main Commodities exported to China are Cotton yarn, Iron ore, Organic chemicals, Mineral fuels, Plastic items, Fish, Salts, Electrical machinery, Iron and steel and Gems & Jewellery etc.

Effects if India Discontinued Imports from China

- 1. If the imports fall, the price of many imported goods could shoot up. This may cause higher inflation in the country.
- 2. If the supply of raw material is disrupted, the local production of many goods may suffer a lot.
- 3. Pharmacy and electronics are the most vulnerable items which may experience huge falls in production due to dip in the supply of ingredients used in the manufacturing of these goods.

Main Exports of India to China					
Exported Products	2018-19 (Rs. Cr.)	2017-18 (Rs. Cr.)			
1.Organic Chemical	22760	13578			
2.Mineral fuels	20031	9731			
3.Cotton	12444	6476			
4.Ores	8572	8124			
5.Plastic items	7759	3552			
6.Nuclear machinery	5790	4615			
7.Fish	5094	1043			
8.Salts	4756	4336			
9.Electrical machinery	4071	3093			
10.Iron and Steel	2230	2089			

Source: Ministry of Commerce & Industry

Effects if India Discontinued Exports to China

Pharmacy and Electronic products are likely to be the most affected because India imports many intermediate types of equipment from China and export them after making finished products.

India, imports many intermediate goods from China which are further used in processing the final products in India and exported to China. And if we are thinking to reduce the Indian exports to China, it will affect both nations, not only China but also India as well.

Trade Deficit between India & China

Table 3 India China Trade Performance (US \$ Billion)

		•	,
Year	India's Exports to China	India's Imports from China	Trade deficit
2015	13.4	58.26	-44.86
2016	11.75	59.43	-47.68
2017	16.34	68.1	-51.76
2018	18.83	76.87	-58.04
2019	17.97	74.92	-56.95
2020 Jan Sep.	15.32	45.18	-29.86

Source: General Administration of Customs, China

It is clear from above table that we had a continuous deficit that we buy more from China than we sell. This trade deficit with China is also a major contributor to India's overall trade deficit.

Is it possible for India to boycott Chinese products completely? What are the Effects of boycotting the Chinese products on Indian economy?

1. India could relinquish Chinese Projects or Investments:-

A report says that investment from China to India has been increasing steadily over the past two decades. The number of Chinese companies investing in India increased from 21 in 2010 to 48 in 2019.

2. China won't realize the grieve of Indian boycott:-

On the opposite hand, because the world's 'factory'; China is among the most important trade partners of just about all the countries across the globe. India has only a little share in World's exports and imports, so its boycott will not hurt China much.

3. Boycott could harm India's trade in a big way:-

United Nations Conference on Trade and Development (UNCTAD) data for 2018, says that 15.3% of India's imports are from China, and 5.1% of India's exports go to China, Despite the huge trade imbalance, it is difficult to say whether Chinese imports harm India, since, for instance, chemicals are used to manufacture drugs, are imported from China which are exported to other countries.

4. China is the second largest trading partner of India:-

Before last two years, the United States verged past China to become India's biggest trading partner at 11.3%. However, China still remains on second largest trading partner and hold a share for 10.6% of our trade.

5. India is one of the smallest trading partners of China:-

India accounts for less than 2.1% of Chinese trade, and is in 12th place based on figures in 2018. US tops the list at 13.7%.

Myths vs. Facts behind boycotting Chinese products

If we are going to boycott Chinese products, India has to face some major issues and challenges which are:

- 1. If we boycott Indian companies that uses Chinese raw material then it is assumed there are few Indian companies left. To understand the fact behind it we can take the example of automobile industry. Indian automobile companies -TVS and Bajaj both uses Chinese raw material in automobiles. Can we stop goods which is prepared after importing raw material from China? Can we stop using motorcycles of Bajaj and TVS?
- 2. India is a member of WTO (World Trade Organization) and according to WTO rules we can't discriminate our trading partner. If we do so then get ready to face the reactions from WTO.
- 3. India is the third largest exporter to China and this will affect our trade. Companies import raw material from China and then export the furnished products in other countries and made profit, if we stop those imports then the trade deficit will increase.

Conclusion

Border tension between India and China has added some new issues, with rising chorus to boycott Chinese goods. If the government acts in accordance with the general public demand, it could strain trade ties between both the countries. Turning the border dispute into a boycott of Chinese goods is thus contrary to resolve the situation. Beside this the Indian economy is already set to contract in fiscal year 2020-2021 due to the corona virus lockdown halting economic activities; any trade war will only impair India.

Around about 225 Chinese companies have invested in India between 2003 and 2020. There are many industries such as telecom industry in China, in particular, has a large presence in India. And on other hand Huawei

and Xiaomi also have the highest number of projects operating in India, at 13 each. ZTE and Vivo each have 5 ongoing projects.

So there is a need for India to focus on measures to prevent trade partners, mainly in Southeast Asia, from rerouting Chinese goods to India with little added value. If we really want to boycott China products, we will have to focus on demand of our goods from other Asian nations and also we should target mainly core import commodities of base metals, electronic components for laptops and mobile phones, furniture, leather goods, toys, rubber, textiles, air conditioners and televisions, among other items. It is not easy to remove China from our trade basket completely but there is a need to adopt right strategy for China. If we want to fulfil the Atmanirbhar mission we have to adopt a right strategy for China and for other nations too. Because we cannot make ourselves completely self-reliant by boycotting only Chinese products. We have to decrease our share of imports for other nations too and focus on Import substitution. At last we would also like to add that India is a part of this huge world. The world is now a 'Global Village', so boycotting any country and its products is not the solution.

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COVID -19 VACCINE: A DEEP DIVE

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ABSTRACT

In December 2019, the first case of a respiratory disease in 55-year-old citizen reported in city of Wuhan, in China. After further investigation this respiratory disease is termed as COVID -19. In March 2020, World Health Organisation declared COVID -19 as "Pandemic Disease". Unfortunately, no drug, medicine or vaccine is available to treat COVID -19 (SARS-CoV-2). This outbreak pushed researchers, scientists, drug companies and medical institutes and organisations to make a suitable and effective vaccine or medicine against COVID - 19. In this paper we are going to get detailed review about the present status of developed and under developed vaccines. We are also going to discuss about corona virus, its transmission and symptoms, goals of a vaccine development, how a vaccine is developed under clinical trials.

KEY WORDS- Pandemic, Outbreak, Corona virus, SARS –Cov-2, COVID-19, Clinical trials, mRNA, Nucleoside, Vaccine, Incubation, Respiratory syndrome, Plasmids etc.

INTRODUCTION

The growing corona virus outbreak is causing chaos in global financial markets. It's freezing supply chains. It's causing companies all over the world to create work from home plans and ban business travel. In late January 2020 Chinese scientists in Shanghai released the full sequence genome of the novel corona virus that was wreaking havoc in Hubei province. That kicked off a race to drug companies and government labs to develop the cure for corona virus or at least its symptoms. While people are practicing social distancing, companies and academics institutions worldwide are racing to create a corona virus vaccine. Covid 19 is a new disease and what's known, is rapidly evolving and might change in the future.

Right now, the corona virus COVID-19 is affecting 218 countries and territories around the world. The highest number of cases reported in the U.S.A. around 1 crore 80 lakh total COVID -19 cases. In which around 1 crore 5 lakh are recovered from COVID -19 and 7 lakh cases are still active. Total deaths in U.S.A. is around 3 lakh 23 thousand. After U.S.A. the second country with the highest number of cases is India around 1 crore cases. In which 95 lakh cases are recovered and 3 lakh cases are still active. We are at number three in case of total deaths after Brazil in which 1.86 lakh people are died due to covid. In India around 1.45 lakh people are died due to COVID.

The main objectives of this paper are:

- 1. To get details about corona virus, its first case and methods of transmission and symptoms,
- 2. To know how a vaccine is developed,
- 3. Present status of COVID -19 vaccines.

WHAT IS CORONA VIRUS?

Corona viruses are a large group of viruses. They consist of a core of genetic material surrounded by lipid envelope with protein spikes. Which gives it a crown shape appearance. There are different types of corona viruses that causes illness in animals and humans. In humans, corona viruses can cause respiratory infections ranging from common cold to more severe diseases.

FIRST CASE AND WORLDWIDE OUTBREAK ANNOUNCEMENT OF COVID-19

In December 2019, there was a cluster pneumoniac cases in city of Wuhan, in China. Some of the early cases had reported visiting or working in sea food and live animal market in Wuhan. Investigations found that the disease was caused by newly discovered corona virus. The disease was subsequently named covid-19. Covid-19 spread in china and rest of the world within few weeks. On 30 January 2020 the world health organisation (WHO) declared the outbreak a public health emergency of international concern.

TRANSMISSION & SYMPTOMS OF COVID-19

The disease can spread from person to person through droplets. When an infected person releases those droplets through coughing, sneezing or talking when close to another person. It can also spread when infected droplets land on objects and when another person touches them and then touches their eyes, mouth or nose.

The incubation period is an average 5-6 days but can be ranges from 1-14 days. There can be a range of symptoms from very mild to severe symptoms. Some people may not develop symptoms. Common symptoms include fever, fatigue and respiratory symptoms such as sore throat, cough or shortness of breath. Some people reported loss of their sense of taste, smell and some may develop a skin rash. In more severe cases, there could be pneumonia, organ failure or sometime death.

METHODS OF DIGNOSIS OF COVID-19

The infection is commonly diagnosed by test called reverse transcriptase polymerase chain reaction generally known as RT-PCR. This test identifies the virus based on its genetic fingerprints. There is also a blood test that checks the antibodies against the virus, which may show that someone was infected in the past.

METHODOLOGY

Our approach is guided by secondary research Qualitative research method in order to gain insight of economic implications due to corona virus. Content analysis method is adopted by using literature of peer-reviewed journals of social sciences and medicine, periodicals released by international and national organizations, to rationalize the approach of study. Periodicals used in the study are selected keeping in mind the reliability, accuracy and adequacy of information.

GOALS OF VACCINE DEVELOPMENT

It seems like the whole world is holding its breath for the vaccine of COVID-19. There are two main goals in vaccine development. First the vaccine needs to be safe to administer to the general population, second the vaccine needs to be efficacious against the pathogen, for instance a virus. There are a couple ways to identify that, by seeing if it produces a significant immune response to the virus or by seeing it reduces the chance of getting the disease itself. Before a candidate vaccine even begins, being administered to humans. It goes through extensive animal testing, typically using lab mice. In this phase researchers are looking for side effects within the mice which can range from mild skin irritation at the site of injection to death. Researchers also take blood samples from the mice over the next several days to weeks. Researchers measure the blood antibody levels of mice and specifically look

for antibodies being produced that would combat the virus. A sufficient number of antibodies being produced after the vaccine is administered is a promising result. Sometimes mice are given the virus to see if having the vaccine prevents them from getting the disease. If there are no significant negative side effects and there's evidence of vaccine efficacy the vaccine can move to clinical trials.

CLINICAL TRIALS

Clinical trials are broken down in three phases and are designed to measure both the safety of the candidate vaccine and the immune response. In all of these phases, humans are given the candidate vaccine and others are given placebo with the goal to help make it easier to compare the efficaciousness of the vaccine. Healthy adults are usually chosen for these studies because the goal is to ensure that they are least likely to develop a serious problem from the vaccine and so that if they do develop the health issue its most likely from the vaccine and not from underlying condition.

Phase 1- In phase 1 trials a small group of individuals on the order of a few dozen are picked to establish a candidate vaccine safety such as side effects as well as upper and lower limits for vaccine doses. Vaccine doses that are too low may not create an efficacious immune response whereas, vaccine doses that are too high may cause unwanted side effects. So finding the right dose is really important.

Phase 2- In phase 2 trials the primary focus is on the efficacy of a candidate vaccine. Researchers are trying to answer the question, does the vaccine at this dose produce a sufficient immune response? In these trials a few hundred individuals who match the demographics of the population are given the vaccine.

Phase 3- In phase 3 trials the goal is to get a larger sample size of people usually in the thousands to further prove that the vaccine is efficacious. Researchers in this phase are looking to see if individuals who received the candidate vaccine contracts the disease circulating in the real world. This phase takes months or years to gather enough information.

If a candidate vaccine makes it through all three phases of clinical trials and is shown to be safe and efficacious at combating the virus then it is approved for manufacturing and distribution to the population.

Early / **limited approval**- Until now, 41 vaccines are in phase 1 trials, 16 are in phase 2, and 16 vaccines are currently in phase 3 trails. 5 vaccines are in for early/limited use, and 6 candidate vaccine has been approved. The name of first approved vaccine is BNT162b2 an mRNA based vaccine developed by Pfizer, BioNTech, and Fosun Pharma.



Figure.1 Different phases in Clinical trials during development of a vaccine

PRESENT STATUS OF CORONA VIRUS (COVID-19) VACCINE

Around the world the race to develop a vaccine against the new corona virus continues pace. Vaccines normally required years of testing and time to build up production volume. The World Health Organisation (WHO) has said it doesn't expect widespread vaccination against corona virus until-mid-2021 but even that is optimistic. Here is the list of the potential human corona virus vaccines/drugs pharmaceutical companies and their vaccines across the world that are developing COVID-19 vaccines after the Wuhan corona virus outbreak (COVID-19).

The following list is detailed information about the authorized/approval vaccines for COVID-19 with their manufacturer companies and the countries in which these vaccines are available for society:

1. BNT162b2- On Nov. 9, New York-based Pfizer and the German company BioNTech made history by presenting preliminary data indicating that their corona virus vaccine was over 90 percent effective. BioNTech scientists started planning the vaccine in January. They put together it with respect to a hereditary particle called courier RNA (mRNA). The immunization contains hereditary guidelines for building a Covid protein, known as spike. When infused into cells, the immunization makes them to make spike proteins, which at that point get delivered into the body and incite a reaction from the immune system.

Trials - BioNTech collaborated with Pfizer in March to scale up the research, dispatching a clinical trial in May. They found that the immunization made volunteers produce antibodies against SARS-CoV-2, just as insusceptible cells considered T cells that react to the infection. On July 27, the organizations reported the dispatch of a Phase 2/3 preliminary with 30,000 volunteers in the United States and in different nations including Argentina, Brazil, and Germany.

In September, Dr. Albert Bourla, the CEO of Pfizer, said the Phase 3 trials would convey enough outcomes when October to show if the vaccine worked or not. At last, on Nov. 8, Pfizer and BioNTech delivered pre-examination of the initial 94 cases. In the following month, Pfizer and BioNTech released more information on more cases. On Dec. 8 the FDA released their independent analysis of the clinical trials. They confirmed that the antibody has an efficacy rate of 95%.

Background of BNT 162b2 - BNT162b2 is a nucleoside modified mRNA-based vaccine developed by BioNTech and Pfizer. Fosun Pharma has licensed BNT162b2 in China. The vaccine is given as an intramuscular injection in two doses 21 days apart. BNT162b2 generates an immune response against SARS-CoV-2, the virus that causes COVID-19, by encoding a mutated form of the full spike protein of the virus.

2. CoronaVac - Sinovac Biotech, a private Chinese organization, built up an inactivated vaccine called CoronaVac.

Trials -Several large international trials including Phase 3 trials with the Instituto Butantan in Brazil, Turkey and in Indonesia, and a trial of up to 9,000 patients in the healthcare industry. Previously, Sinovac launched a Phase 1/2 trial of 743 healthy volunteers and a Phase 1 trial of 143 participants and a Phase 2 trial of 600 participants. Efficacy results are expected in mid-December.

3. Sputnik V - The Gamaleya Research Institute, part of Russia's Ministry of Health, has created a vaccine with an efficacy rate of 91.4%, according to a December 14, 2020 announcement.

Trials -Phase 1/2 trials recruited about 38 participants each to receive the vaccine candidate and are completed. Sputnik V is additionally being evaluated in a small Phase 2 trial of 110 participants older than 60 years. A Phase 3 trial of about 40,000 participants at multiple centres in Russia is underway. Outside Russia, Sputnik V is being tested in Belarus and the United Arab Emirates.

4. **BBIBP-CorV**-Sinopharm is developing a second inactivated COVID-19 vaccine candidate, BBIBP-CorV, with the Beijing Institute of Biological Products.

Trials - BBIBP-CorV is currently being evaluated in a Phase 2 and Phase 3 trial in China as well as a Phase 3 trial in Argentina.

On Sept. 14, the U.A.E. gave acceptance for Sinopharm's vaccine to use on health care workers, and soon government authorities and others were likewise getting it. Under two months after the fact, on Dec. 9, the U.A.E. gave full endorsement to the Beijing Institute vaccine, declaring it had an efficacy of 86 percent.

These are the leading vaccines around the globe which are fully authorized by their or some other governments.

S. No	VACCINE NAME	TYPE OF VACCINE	PRIMARY DEVELOPERS	COUNTRY OF ORIGIN	AUTHORIZATION/ APPROVAL	
1.	Bnt162B2	mRNA	Pfizer, BioNTech &	Multinational	UK, Bahrain,	
		based	Fosun Pharma		Canada, Mexico,	
		vaccine			US	
2.	CoronaVac	Inactivated	Sinovac	China	China	
		vaccine				
3.	Sputnik V	Non-	Gamaleya Research	Russia	Russia	
		replicating	Institute, Acellena			
		viral vector	Contract Drug			
			Research and			
			Development			
4.	BBIBP-CorV	Inactivated	Beijing Institute of	China	China,	
		vaccine	Biological Products;		UAE(United Arab	
			China National		Emirates)	
			Pharmaceutical Group			
			(Sinopharm)			
5.	EpiVacCorona	Peptide	Federal Budgetary	Russia	sia Russia	
		vaccine	Research Institution			
			State Research Center			
			of Virology and			
			Biotechnology			

 Table 1

 Names and Details of Authorized Vaccines until now

Source: www.raps.org, www.nytimes.com

Hence, the above vaccines are approved by their respective governments for their population. And the process of vaccination is carried on, it doesn't mean that the development of vaccines for COVID-19 by another world is stopped. Many other vaccine candidates are still in lab trials, some are in phase 1, some are in phase 2 and many other vaccines are in phase 3. It means the war with corona virus is not stopped.

Here is the list of other candidate vaccines which are under trials:

S.No.	CANDIDATE	TYPE OF	TRIAL PHASE	INSTITUTE	SPONSORED BY			
	VACCINE	CANDIDATE						
	NAME	VACCINE						
1.	mRNA-1273	mRNA based	Phase 3	Kaiser	Moderna			
		vaccine		Permanente				
				Washington				
				Health Research				
				Institute				
2.	Ad5-nCoV	Recombinant	Phase 3	Tongji Hospital;	CanSino Biologics			
		vaccine		Wuhan, China				
3.	AZD1222	Replication-	Phase 3	The University	The University of Oxford;			
		deficient viral		of Oxford, the	AstraZeneca; IQVIA;			
		vector vaccine		Jenner Institute	Serum Institute of India			
		(adenovirus from						
		chimpanzees)						
4.	Covaxin	Inactivate	Phase 3	Indian Council	Bharat biotech; national			
		vaccine		of Medical	institute of virology			
				Research				
				(ICMR),				
				National				
				Institute of				
				Virology (NIV),				
				Pune				

Table 2 List of Other Vaccines under Trials

5.	JNJ-78436735	Non replicating	Phase 3	Johnson & Johnson	
	Ad26.COV2.S)	viral vector			
6.	NVX-CoV2373	Nanoparticle vaccine	Phase 3	Novavax	Novavax
7.	Bacillus Calmette-Guerin (BCG) vaccine	Live – attenuated vaccine	Phase 2/3	University of Melbourne and Murdoch Children's Research Institute; Radboud University Medical Center; Faustman Lab at Massachusetts General Hospital	University of Melbourne and Murdoch Children's Research Institute; Radboud University Medical Center; Faustman Lab at Massachusetts General Hospital
8.	INO-4800	DNA vaccine (plasmid)	Phase 2/3	Center for Pharmaceutical Research, Kansas City. Mo.; University of Pennsylvania, Philadelphia	Inovio Pharmaceuticals
9.	ZyCoV-D	DNA vaccine (plasmid)	Phase 2	Zydus Cadila	Zydus Cadila
10.	BNT 162	mRNA based vaccine	Phase 1,2,3	Multiple study sites in Europe, North America and China	Pfizer, BioNtech

Source: www.raps.org, www.nytimes.com

HOW COVID-19 VACCINES ARE PRIORTIZED TO POPULATION

As vaccines are under developing and some are being developed, but the question arrives is this that who is going to get vaccinated first? Or how will covid -19 vaccine are prioritized to the population? So answer to that question is the people who are going to be prioritized to receive the vaccine are healthcare workers who are right now on the front lines. As well as anybody who works in the hospital, and then those who live in a skilled nursing facilities. Skilled nursing facilities are about 6% of the total population, but almost 40% of them are died due to covid -19. So, they are the individuals who are at very high-risk zone of getting caught by covid -19. So, they should be prioritized for vaccination.

SIDE EFFECTS OF COVID-19 VACCINE

The side effects of covid -19 vaccines are the same side effects that someone would get from influenza or a tetanus vaccine. Person would get a sore arm for a day or two, maybe a headache or fatigue but that will go away after some times. But there are very light chance of getting corona virus from a covid -19 vaccine. It's just a small fragment of RNA that encodes for a small portion of the spike protein. In this way it doesn't replicate and can't cause COVID.

CONCLUSION

The whole world is waiting for a cure to COVID -19. But we have to maintain our disciplined life for the future. We are going to have to wear mask and maintain social distancing for the foreseeable future. When we will able to stop masking and social distancing is when we achieve some level of herd immunity within our communities. That's going to take 60-70% of the population to be immune. When the vaccines come out, they will come out in limited quantities, so we are not going to able to vaccinate everyone all at once. We anticipate that we will be able to achieve that 60-70% of immunity either way, through infection or through vaccine in the middle of 2021 or may be at the end of 2021. That we will have to see.

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DEVELOPMENT OF MEDICINES & VACCINES FOR THE COVID-19 IN INDIA

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ABSTRACT

All COVID vaccines offering protection at a high level was surprising because, with mucosal infections, you usually see less protection than for infections at other sites. Influenza vaccines, in a good season, offer about 60% and this can be much lower when the strains are not matched. If we look at enteric infection vaccines, they can be 85-90% protective, but not in all parts of the world. With parenteral (non-oral) vaccines for a mucosal infection, one example we have is the polio-vaccine – you can give an injectable polio-vaccine, and its pretty good at preventing disease, but it doesn't really protect against mucosal component which is infection of the enteric tract. I don't think we expected these vaccines to perform as well as they are. As we follow them for longer, the efficacy is not going to be maintained. These are early results, when the immune response has just been made. That said, for a reasonable timeframe, I don't think the rates are going to decline incredibly.

Introduction

The last two weeks have seen a string of encouraging results from corona virus vaccine trials. What do these findings mean, what questions remain, and what does India need for a mass vaccination exercise?

Let's start with a very simple design, which is a 1:1 randomisation. This means half the people will get the vaccine and the other half will get a placebo. If we re-looking at a vaccine trial with 20,000 people in this design, 10,000 would be vaccinated and 10,000 would not.

Let's say 10% of people would normally get the infection with a very high attack rate. So, of the 10,000 people who have not received the vaccine; 1000 people will get the disease within a defined period. Now, we also have 10,000 people who have received the vaccine. In them, if the vaccine does not work at all, we will get 1000 infections, because 10% will get infected. If a vaccine has 50% efficacy, 500 people will get the infection and, if it has 90% efficacy, only 100 people will get infected.

Scientists Probe Cell Membrane Defence against Corona Virus

To infect a human cell, the novel coronavirus needs to first bind to the cell membrane using its spike protein. The cell membrane is thus the cell's outermost line of defence against the coronavirus. Researchers are now investigating what treatments could make the membrane more resistant to virus entry. Cell membranes serve as a barrier between the cell's interior and its surrounding environment. In themselves, they host many activities necessary for cell function. They are just a few nanometers thick.

Researchers from Virginia Institute of Technology and the US Department of Energy's Oak Ridge National Laboratory (ORNL) are using neutron scattering to investigate how the cell membrane and the virus impact each other. By determining how the coronavirus penetrates the cell membrane, scientists can develop treatments that hinder this process. Many researchers are exploring ways to combat the virus by targeting its spike proteins; but fewer are paying attention to the site where the infection process begins; the cell membrane.

The new research looks to establish a molecular understanding of the membrane properties that allow viral entry, how membranes change when in contact with the virus, and what membrane modification could inhibit the infection process. The team is using ORNL's liquids reflectometer to examine the conformation of membranes and viral spike proteins, as well as the effects of certain therapeutic candidates. With the instrument, scientists can measure the trajectories of neutrons as they interact with different biological materials. They then use the information to determine how a sample is organized at the molecular level.

The researchers did their experiments with a membrane model that closely mirrors the shape and composition of cell membranes within human lungs. They measured how the membrane's properties change when exposed to either melatonin or azithromycin – commonly available products that are currently being investigated as possible treatments for mitigating covid-19 symptoms.

Will it work in younger people? Will it work in people who are immunocompromised? Are these vaccines you can give to pregnant woman? What would their safety record be? How long does protection last? What does the immune response look like? What is the b-cells component [aB-cell is a type of white blood cell that helps create antibodies against a pathogen while it is infecting the body]? What's the T-cell component (T-cells are types of white blood cells that are part of the body's long-term immune response against a virus, actively seeking it out to destroy it)?

We have some of this data from the phase Z studies, but the detailed look at immunology so far is in small numbers. It's good to see validation of the vaccines in different population, but we also need to learn more about the safety issues – RNA, for instance, is very inflammatory. We saw there were more reactions in the people who got the highest dose in the Moderna trial, for example, and that dose is not being used for further studies.

The efficacy information released by these companies are just headline numbers in pressure leases. We haven't seen the actual data, so we can't say what protection looks like. Companies are going to have to publish this data and submit it to the regulators. Earlier, experts said a vaccine with 60-70% efficacy was desirable.

If you have 90% efficacy, and it lasts six months versus having 60% efficacy that lasts 10 years, which one would you pick? We can't make decisions based on press releases. If's encouraging information, but we have to wait for the full datasets, analyse them, and then decide how we want to move forward. It is about the performance characteristics of the vaccine and the goals you are trying to achieve.

If we look at other vaccines. In the case of the oral polio-vaccine, immune responses in low- and middleincome countries are much lower than for injectable polio vaccines. But, a decision was made to go with oral polio vaccines, because they are much easier to deliver to the population. You wound up using more doses of oral polio vaccine, but you still to the same goal of trying to eliminate the disease from the country. Now, we are trying to eliminate the disease from the country. Now, we are trying to eradicate it by combining oral injectable vaccines.

The Pfizer and moderna vaccines don't seem feasible for developing countries. What sort of vaccine would be better suited for India?

A good vaccine for India is an affordable vaccine that can be made in large numbers and delivered easily – preferably as a single dose. It should give long-term protection – I would like lifetime protection. We don't know this will happen, but one dose eases the burden on the immunization programme, because you don't have the problem of needing to track the person down for the second dose.

We don't have a vaccine as expensive as the Astrazeneca vaccine (covishield) in our programme at the moment, and that's at S3 a dose – the lowest price announced. It still means you need S6 just for the vaccine and more to

deliver it in campaign mode. If you're talking S10 per person per set of vaccination, that already makes it the most expensive vaccination program this country has ever had – at the individual, per person, cost and not just in terms of the number of people that would need to be immunized.

If we are talking about national programmes and immunizing everybody in the country, we are going to need something under a dollar a dose, preferably under 50 cents. These are the kinds of things second wave candidates should aim for. How soon can a first-wave vaccine be realistically expected in India?

The first-wave vaccines that are going to come out quicker than others [globally] are the two mRNA candidates and probably Astrazeneca's.

Concerning ramping up of manufacturing with Astrazeneca – though we've heard about how they're going to make hundreds of millions of doses (of covishield) – [Serum Institute of India CEO] Adar Poonawalla said this month we have 40 million doses and, in subsequent months, we will have more. That's not the message we got 3-4 months ago, when we were told about hundreds of millions of doses being made every month. I think initial availability is going to be limited and the trickle will become stronger as production increases – we are not really going to have serious amounts of a vaccine even with the successful candidates for another three to five months.

That's time to get logistics for delivery together, because I don't think we are as ready as we should be. I don't think I've heard enough about the planning to know most problems have been anticipated and the roll-out will be smooth and as high volume as is being projected.

Healthcare Workers: Plans to Roll out Covid-19 Vaccine:

As the country prepares a roadmap to roll out the COVID-19 vaccine in the coming months, the Delhi government has also initiated the process for carrying out the ambitious immunization programme. The Delhi government, in coordination with the centre, has identified 609 cold chain points in the national capital which will be used for immunization of healthcare workers, who will be the first to get the vaccine when it arrives.

According to the World Health Organisation (WHO) the purpose of the vaccine cold chain is to maintain product quality from the time of manufacture until the point of administration by ensuring that vaccines are stored and transported within recommended temperature ranges.

As per the initial plan that has been chalked out so far, between 1.8 lakh and 2.25 lakh healthcare workers will be vaccinated in the first phase. At present, three vaccine candidates – Bharat Bio-tech's Covaxin, Serum Institute – Oxford's Covishield and the Pfizer India Vaccine – are in the fray for emergency use authorization.

Dr. Sunita, Director, Professor of the Department of Community Medicine at Maulana Azad Medical College (MAZM), told the Indian Express "All top hospitals in Delhi will be used as cold chain points, which will be utilized for immunization. Primarily, the centres will be manned by medical officers who will be coordinating the programme". Garg is also a public health expert for the Covid-19 vaccination programme.

Hospitals such as Lok Nayak Kasturba Gandhi, Baba Saheb Ambedkar, AIIMS, RMI and Safdarjung are among 609 points from where vaccination will be carried out. According to officials, more facilities may be added depending on the need and demand.

Dr. Suresh Kumar, Medical Director of Lok Nayak said, "we have prepared a list of 3,900 healthcare workers from our hospitals who will be vaccinated in the first phase. The immunization will take place in our hospital and we have the entire infrastructure ready for it".

Conclusion and Suggestions

The Pfizer and Moderna vaccines, both mRNA, need to be stored at different, low temperatures. Is it possible to develop an mRNA vaccine that can be stored at warmer temperatures?

Every mRNA vaccine is different Gennova Biopharmaceuticals (which is also working on an mRNA vaccine) is planning to make a vaccine that can be stored at 2°C to 8°C, Cure Vac. [of Germany] is also working on a 2°C to 8°C formulation. Even Pfizer is planning to modify its formulation, but it will take them a couple of years to get to that point, which is not surprising, because Moderna has been in the mRNA game for a long time, while BioNTech and Pfizer's tie-up was fairly recent. It takes time to develop these more stable formulations.

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10 AIR POLLUTANTS AND THEIR IMPACT ON HEALTH

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ABSTRACT

Air pollution is undesirable change in physical, chemical & biological properties of air which adversely affect the plant, animal & human beings. The race of development & industrialization all over the world is the key reason for air pollution. There are several kinds of pollutant which are released into the atmosphere which affect the quality of air adversely. Pollutants includes - carbon dioxide, sulfur dioxide, oxides of nitrogen, ozone, heavy metals etc. All the pollutants affect plants, animals & human adversely. Present paper deals with different kinds of pollutants & their impact on health.

Key Words: Air Pollution, Pollutants, Fossil Fuel, Health

Introduction

Air pollution can be defined as the emission of particulate toxic elements into the atmosphere by the anthropogenic or natural sources (1). These sources are of two types - mobile or stationary sources (2).

Man-made Sources

Man made sources are mostly related to burning different kinds of fuel.

- 1. Stationary Sources- It includes smoke stacks of thermal power plants, factories, waste incinerators & furnaces as well as other types of fuel-burning heating devices. Burning of wood, crop waste and dung also cause air pollution.
- 2. Mobile Sources- includes motor vehicles, marine vessels, aircraft and the effect of sound etc.

Natural Sources

Dust from natural sources, usually large areas of land with less /no vegetation. Methane (CH4) emitted by the digestion of food by animals e.g. cattle. Smoke and carbon monoxide from wildfires. Volcanic activity, which produce sulfur, chlorine, and ash particulates.

The materials which cause pollution are called as pollutants. On the bases of they exist in the environment pollutants are of two types:

- A. **Primary Pollutants:** These pollutants are emitted from any natural or anthropogenic source directly into the atmosphere. They exist as such in the environment after being added to the environment. Example- ash from volcanic eruption, CO from vehicle & oxides of sulfur etc.
- **B.** Secondary Pollutants: These pollutants are not emitted directly. They are formed in the air when primary pollutants react or interact. Example- PAN [Peroxyacetyl nitrate]. Sources of air pollution include burning of fossil fuel, emission from vehicle, industries, thermal power plants, natural causes, deforestation, population explosion etc.

MAJOR POLLUTANTS

SULFUR DIOXIDE (SO2):

Sulfur dioxide is a harmful gas. It is emitted mainly by burning of fossil fuel. The annual standard for SO2 is 0.03 ppm (3). It affects human, animal, and plant life. Susceptible people as those with lung disease, old people, and children, who present a higher risk of damage. Sulfur dioxide causes respiratory irritation, bronchitis, mucus production, and bronchospasm, as it is a sensory irritant and penetrates deep into the lung. It may cause skin redness, damage to the eyes and mucous membranes & also worsen pre-existing cardiovascular disease (4). Acidification of soil and acid rain, seem to be associated with sulfur dioxide emissions (5).

NITROGEN OXIDE (NOx):

Nitrogen oxide is emitted from automobile engines (6, 7). Nitrogen oxides are gasses that react with other air pollutants when they are present in air. Nitrogen oxides play an important role in the formation of Ozone [O3] in the lower atmosphere, and in acidification & also in eutrophication processes. It penetrates deep in the lung & cause respiratory diseases, coughing, wheezing, dyspnea & even pulmonary edema when inhaled at high levels. It also affect eye, throat, and cause nose irritation (4).

FLUOROCARBONS (FLUORIDES):

Chief sources of fluoride pollutants are glassworks, steelworks, ceramic factories, phosphate fertilizer plants, brickworks, aluminum factories and uranium smelters. Combustion of coal is also source of fluorine pollution to some extent. Most injurious fluoride pollutant is gaseous hydrogen fluoride (HF). Fluoride is released into the air in large quantities by aluminum reduction plants, phosphate processors, steel mills, coal burning operations, brick and tile manufacturers, and various less significant sources (8). It can cause adverse effects when ingested by domestic animals or absorbed by plants. Fluoride air pollution adversely affect health of human beings. Fluorides are released into the atmosphere in gaseous state (as hydrogen fluoride and silicon tetra-fluoride) as well and in form of solid particles. These particles fall on and the gases are absorbed by, plants/ vegetation near the source of pollution. If such vegetation/ plants are consumed by the animals like cattle, sheep, horses, or pigs they will suffer from serious problems as these animals, particularly the cattle are vulnerable to fluoride (9). Ninety-six percent of the ingested fluoride accumulates in the bodies of animals is incorporated into the crystal structure of bone and tooth mineral (10, 11). Fluorides affect the bones & teeth (9, 12, 13).

VOLATILE ORGANIC COMPOUND (VOC):

VOC can be a range of different contaminants, such as carbohydrates solvents & organic compounds. These compounds usually derive from petrol and gasoline reservoirs, industrial processes and fuel combustion, agricultural activities or paint and cleanser use. VOC play an important role in ozone shaping in the lower atmospheric layer, the main cause of smog. Volatile organic compounds (VOCs) such as toluene, benzene, ethylbenzene and xylene (14), reported to cause cancer in humans (15). VOCs pollute indoor air & may have adverse impact on human health (14, 15). VOCs are responsible for indoor air smells. Short-term exposure can cause irritation of eyes, throat, nose and mucosal membranes, while those of long term exposure include toxic reactions (16).

CARBON MONOXIDE (CO):

CO is colorless, odourless & non-irritating gas. This gas produce during incomplete combustion of fuels i.e. coal, wood or natural gas. CO also contributes to the greenhouse effect, acidification & smog. The affinity of CO to hemoglobin is more than that of oxygen. This gas bind to hemoglobin found in blood, thus prevent O2 {oxygen} transport in the body. The symptoms of poisoning due to inhaling carbon monoxide include headache, dizziness, weakness, nausea, vomiting, and, finally, loss of consciousness

PARTICULATE MATTER (PM):

Solid & liquid particles suspended in air are called as particulate matter.

They arise from erosion, grinding, spraying, automobiles, fuel burning, industries [e.g. cement factories, lime & gypsum processing industries etc.] and construction etc. Particles having diameter of about 10 im, generally settle out in a day or so but particle of diameter 1 im or less remain in the air for weeks. Particulate matter (PM) has adverse effect on health. The penetration of particles is dependent on their size (17). Particulate matter contains tiny liquid or solid droplets that can be inhaled &cause adverse effect on health (18). Particulate https://www.effect.com but particles that can be inhaled &cause adverse effect on health (18). Particulate matter contains tiny liquid or solid droplets that can be inhaled &cause adverse effect on health (18). Particulas https://www.effect.com but particles that can be inhaled &cause adverse effect on health (18). Particulate matter contains tiny liquid or solid droplets that can be inhaled &cause adverse effect on health (18). Particules <10 im in diameter (PM10) after inhalation can affect the lungs & even, they can reach the bloodstream. Long-term exposure to PM for years can cause cardiovascular diseases and infant mortality. Long-term chronic effects of PM include respiratory diseases (19). People suffering from pneumonia, diabetes, asthma, respiratory and cardiovascular diseases are more susceptible & vulnerable to the effects of particulate matter.

Particulate Matter (PM) is divided into four main categories on the bases of size & type (20):

Particulate contaminants [diameter in µ] $\text{Smog}\,0.01-1\mu$ Soot 0.01-0.8 µ Tobacco smoke 0.01-1 µ Fly ash 1–100 µ Cement Dust 8-100 µ **Biological** Contaminants Bacteria and bacterial spores $0.7-10 \mu$ Viruses 0.01-1 µ Fungi and molds $2-12 \mu$ Allergens (dogs, cats, pollen, household dust) 0.1–100 µ Types of Dust Atmospheric dust 0.01–1 µ Heavy dust 100-1000 µ Settling dust 1-100 µ Gases Different gaseous contaminants 0.0001-0.0 µ

OZONE (O3):

Ozone [O3] is Produced when nitrogen oxides (produced by vehicle emissions) and volatile organic compounds (VOC) chemically react in presence of sunlight. Ozone can travel to distant areas. Upper layers of the skin and the tear ducts are affected by ozone (21). Ozone has the capacity to penetrate deeply into the lungs (22). Toxic effects induced by ozone includes functional, biochemical, morphologic & immunological disorders (23). Ozone being a secondary pollutant formed during the atmospheric photochemical reactions involving oxides of nitrogen & reactive hydrocarbons emitted from automobiles (24). Ozone can travel for thousands of kilometers. The atmospheric half life of Ozone is 1–2 weeks in summer & 1–2 months in winter (25).

METALS:

Mercury, lead, zinc and cadmium are the metals commonly found in air. They are released in atmosphere by natural sources, human activities & industries etc. Heavy metals include basic metal elements such as lead, mercury, cadmium, arsenic and other toxic metals are released into the environment by several processes including waste and coal burning, metal mining and smelting, other industrial processes and volcanic emissions (26, 27).

Lead is one of the heavy metals used in various industrial plants & also emit from some petrol motor engines, radiators, batteries etc, (28). Main sources of lead pollution in the air are metals, Ore etc. Lead adversity effect the health. Lead, when inhaled, accumulates in the blood, nervous, soft tissue, liver, lung, bones & reproductive systems. Even, loss of concentration & memory, as well as joint & muscle pain, are reported (29, 30). High amounts of lead in the environment are harmful to plants and crop growth.

Conclusion

As mentioned above that different pollutants released from various sources affect health of humans adversely. Not only these pollutants like CO2 (Carbon dioxide), CFCs (chlorofluorocarbons), CH4 (methane) & NOx are greenhouse gases responsible for Global Warming. Gases like SO2 & NOx form acid in presence of water & cause acid rain. CFCs in stratosphere cause depletion of Ozone layer. Pollution is threat to the environment. So, it become necessary to save environment as well as life on earth by taking right step at right time.

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COVID-19 LOCKDOWN PHASE: AN ANALYSIS OF RIVER YAMUNA WATER QUALITY ALONG THE CITY OF DELHI

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Abstract

The present paper is based on the analysis of Biochemical Oxygen Demand (BOD) in 5 sites along the stretch of River Yamuna during April 2020 (COVID-19 lockdown period) and comparison with the previous data of 2019 during the same time (April). The normal increasing trend of BOO suddenly exhibited a sharp turn during COVID-19 lockdown phase. The BOD values declined significantly in all the 5 stations with the spatial trend- Okhla Barrage (after meeting Shahdara drain) (23.3 mg/l) > ITO Bridge (22.1mg/l) > Agra Canal (Jaitpur) (17.2 mg/l) > Okhla Bridge (Agra canal) (16.2 mg/l) > Nizamuddin Bridge (16.0 mg/l).

At Okhla Barrage (after meeting Shahdara drain) the water quality improved by 16.8%, as it recorded 23.3 mg/l BOD levels in comparison to 28.0 mg/l in April 2019. ITO Bridge saw an improvement of 21.0% in water quality. The BOD levels here were 22.1mg/l in comparison to 28.0 mg/l in April 2019. At Agra Canal (Jaitpur), the water quality improved by 25.2% with BOD levels of 17.2 mg/l, as compared to 23.0 mg/l in April 2019. Okhla Bridge (Agra canal) the Biochemical Oxygen Demand (BOD) value of 16.2 mg/l was observed, compared to 24.0 mg/l in April 2019, which is an improvement of 32.5%. At Nizamuddin Bridge, the improvement in water quality was of 20.0%, which recorded BOD levels of 16.0 mg/l as compared to 20.0 mg/l in April 2019. The data clearly confirms an improvement in water quality in context to BOD level during lockdown period.

Key words: Biochemical Oxygen Demand (BOD), River Yamuna, COVID-19, Water quality

Introduction

BOD is the amount of oxygen needed by microorganisms to decompose organic matter (waste or pollutants) under aerobic reaction (in the presence of oxygen). A higher BOD level means that more oxygen is needed to decompose a large quantity of organic matter (waste or pollutants) present in the water. So, a higher value of BOD means that the water is more polluted.

The stretch of Yamuna from Wazirabad to Okhla through Delhi, which includes the present study area, is found to be one of the most polluted rivers stretches in the world (CPCB, 2006) (Khan & Singh, 2013). Alarmingly low

flow rates are maintained for ecological concerns (DHI Group, 2010). There are three main sources of pollution in the area: household and municipal disposal sites, soil erosion resulting from deforestation occurring to make way for agriculture, and resulting chemical wash-off from fertilizers, herbicides, and pesticides and run-off from commercial activity and industrial sites.

The oscillation of BOD level has a far-reaching impact on the biotic community and hence a baseline data of BOD is essential to evaluate the water quality in context to biodiversity of the area, which has been provided by the lockdown effect associated with COVID-19. The lockdown effect, in real sense, started from 25th March 2020 to combat the spreading of the pandemics COVID-19. The present paper is an approach to acquire an insight on the water quality depending on the BOD values of five sites along the River Yamuna.

Materials and methods

Site selection

Five sites were selected for the present study, which are basically the zones of anthropogenic

influence. These study sites are:-(1) Okhla barrage (after meeting Shahdara drain) (2) ITO bridge (3) Agra Canal (Jaitpur) (4) Okhla Bridge (Agra canal) (5) Nizamuddin Bridge.

Analysis of BOD

The collection of samples for BOD analysis was carried out in the selected sampling stations during the COVID-19 lockdown phase on 17th April 2020. For each observation, three samples were collected from the study site and all three samples from each site were subjected to "BioSens BOD Analyser" for the determination of BOD. Average value for each sampling site was calculated and taken as representative BOD value for that particular site.

Results

At Okhla barrage (after meeting Shahdara drain) the water quality improved by 16.8%, as it recorded 23.3 mg/l BOD levels in comparison to 28.0 mg/l in April 2019. ITO bridge saw an improvement of 21.0% in water quality. The BOD levels here were 22.1mg/l in comparison to 28.0 mg/l in April 2019. At Agra Canal (Jaitpur), the water quality improved by 25.2% with BOD levels of 17.2 mg/l, as compared to 23.0 mg/l in April 2019. Okhla Bridge (Agra canal) the Biochemical Oxygen Demand (BOD) value of 16.2 mg/l was observed, compared to 24.0 mg/l in April 2019, which is an improvement of 32.5%. At Nizamuddin Bridge, the improvement in water quality was of 20.0%, which recorded BOD levels of 16.0 mg/l as compared to 20.0 mg/l in April 2019. The data clearly confirms an improvement in water quality in context to BOD level during lockdown period. It is interesting to note that the BOD values have declined during the COVID-19 lockdown phase (Table1).

Table 1: Comparison of BOD values along with percentage improvement in water quality (during lockdown period) along the five selected sites along the Delhi stretch of Yamuna River

S.No.	Name of the Sample site	BOD Value (in April 2019)	BOD Value (in April 2020)	Percentage Improvement in water quality
1	Okhla barrage (after meeting Shahdara drain)	28.0 mg/l	23.3 mg/l	16.8%
2	ITO bridge	28.0 mg/l	22.1 mg/l	21.0%
3	At Agra Canal (Jaitpur)	23.0 mg/l	17.2 mg/l	25.2%
4	Okhla Bridge (Agra canal)	24.0 mg/l	16.2 mg/l	32.5%
5	Nizamuddin Bridge	20.0 mg/l	16.0 mg/l	20.0%

Discussion

The Yamuna River, is one of the most polluted rivers in India and especially in urban cities like Delhi is of a critical water quality. The discharge of untreated waste water is the main reason of the degradation in water quality. While emission sources like dumping of waste material, religious offering of flowers or food, immersion of idols, holy baths, clothes washing or cattle bathing can lead to serious pollution, industrial wastewater pollution is a serious matter of concern (S.K. Singh and Shailvy Kaushik). River Yamuna enters the Delhi Stretch at the Palla Village and is exited from the Okhla Barrage, this study is aimed to analyse BOD values at five different sites along this stretch.

It is clear from the table that compared to the earlier BOD levels (In April 2019), the value has declined by 16.8%, 21.0%, 25.2%, 32.5%, and 20.0% at Okhla barrage (after meeting Shahdara drain), ITO bridge, Agra Canal (Jaitpur), Okhla Bridge (Agra canal) and Nizamuddin Bridge respectively during April, 2020. The lockdown associated with COVID-19 brought a significant change in water quality, preferably with respect to BOD. This upgradation of water quality is congenial for the survival and growth of aquatic lives preferably fishes. The BOD5 of pond aquaculture effluents usually ranges from 5 to 20 mg/l. The study clearly points towards the upgradation of Yamuna water quality along the city of Delhi due to almost zero anthropogenic disturbances during the COVID-19 lockdown phase

Ever since the first COVID-19 case was confirmed in India, numerous companies and even the government sector institutions and offices have instituted a 'work from home' drill using information and communications technology (ICT) to understand whether remote working conditions are feasible. We have observed that remote working also has its limitations and cannot be carried out for too long and by other sectors like agriculture, fishery, retail, hospitality, or manufacturing, leaving them no choice but to face interruption, leading to an adverse impact on the economy spinning around these sectors. However, "every crisis has a silver lining around the dark cloud and serves as a learning opportunity", and this silver lining is definitely the upgradation of environment as observed in the present study.

Conclusions

- 1. Large scale anthropogenic activities in Delhi is the main reason for degrading water quality in Yamuna along the Delhi stretch.
- 2. Controlled anthropogenic activities can bring an improvement in water quality of Yamuna River, as is evident from the present study during lockdown phase.
- 3. Compared to April 2019, the water quality improved by 16.8%, 21.0%, 25.2%, 32.5%, and 20.0% at Okhla barrage (after meeting Shahdara drain), ITO bridge, Agra Canal (Jaitpur), Okhla Bridge (Agra canal) and Nizamuddin Bridge respectively during April, 2020. The data clearly confirms an improvement in water quality in context to BOD level during lockdown period.

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NANOTECHNOLOGY: THE INNOVATION IN WASTE WATER TREATMENT—- A REVIEW

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Abstract

Water is the most vital substance for all life on earth, and a valuable resource for human civilization. Reliable access to clean and affordable water is regarded as the most basic humanitarian goal and continues to be a major global challenge for the 21st century. The removal of toxic metals from wastewater has gained considerable interest. There has been immense development in a wide range of treatment processes for this purpose. In this aspect, nanotechnology has been cited as the most progressive process for waste treatment. Nanotechnology and its application in wastewater treatment are becoming a prominent area of research. This article illustrates a mini-review based on the application of carbon nanotubes and nano-catalysts mainly for the removal of heavy metals present in the wastewater. The present paper aims at a treatment technique designed for special industrial wastewater treatment especially with heavy metals using carbon nanotubes and nano- catalysts.

Key Words-Nanotechnology, waste water, heavy metals, nano catalyst, carbon nanotube.

Introduction:

Before human activities increased the number of pollutants, the natural water system was naturally pure and was fit for drinking purposes, but it is observed that the natural water available nowadays is not fit for potable use. It is, therefore, necessary to subject the water to certain suitable processes of purification rendering it safe for human consumption, pleasing to the sense and suitability for ordinary domestic and industrial uses.

The self-purification mechanism of natural water systems include physical, chemical, and biological processes. The speed and completeness with which these processes occur depend on many system-specific variables. The actual treatment method depends directly on the impurities present. To ensure that the humans have reliable access to clean water, various methods have been adopted to remove potentially toxic elements from drinking water supplies. Nanotechnology is the most advanced and efficient of all the methods available for water purification.

The word nanotechnology refers to that micro technology which has a broad range of tools, techniques, and applications that simply involve particles on the approximate size scale of a few to the hundreds of nano-meters in diameter. From the past few years, nanotechnology has become one of the most significant forefront fields in Physics, Chemistry, Engineering, and Biology. It shows great promises to provide us in the near future with many breakthroughs that will alter the direction of technological advancement in a wide range of applications. It is a field of technology focused on making devices and technology out of tiny and miniature particles through manipulation and engineering of matters and structures, thereby, making matters in smaller and smaller size and with improved properties. Particles of this size have some unique physiological and surface properties that lend themselves to

novel uses. Indeed, experts of nanotechnology suggest that this area of research could possibly contribute to solutions for some major global problems, such as, lack of safe drinking water for a growing population and for agriculture purposes. Water purification using nanotechnology exploits nano materials such as carbon nanotubes and alumina fibres for nano filtration. It also utilizes the existence of nanoscopic pores in zeolite filtration membranes, as well as nano catalysts and magnetic nanoparticles.

Origin of Nanotechnology:

The American physicist and Nobel Prize winner Richard Feynman introduced the concept of nanotechnology in 1959. During the annual meeting of the American Physical Society, Feyman gave a presentation at the California Institute of technology on the topic, "There's Plenty of Room at bottom". In this presentation, Feyman made the hypothesis, "Why can't we write the entire 24 volumes of the Encyclopaedia Britannica on the head off a pin?", and illustrated a vision of using machines for the construction of smaller machines. This new idea of Feynman demonstrated that his hypothesis was correct. For the same reasons he is considered the father of modern nanotechnology.

In the year 1947 Norio Taniguchi, a Japanese scientist used and defined the term "nanotechnology" for the first time as, "nanotechnology mainly consists of the processing of separation consolidation and deformation of materials by one atom or one molecule."

From the past few years, there is massive development in nanotechnology a sis considered as the best purification method. Currently, carbon nanotubes and nano-catalysts are used as the potential composite fibres in polymers to improve the thermal, mechanical and electrical properties of the bulk products.

Carbon nanotubes:

With the discovery of carbon nanotubes, a new carbon-based adsorption material was introduced to the world. Recent years have observed remarkable revolutions towards the application of various nanomaterials such as zeolites, metal oxide nanoparticles and carbon nanoparticles for water purification. However, carbon nanotubes have gained considerable attention owing to their unique mechanical, thermal, electrical, and chemical properties.

Carbon nanotube is formed when a graphite sheet is rolled up about the axis T as shown in fig.1



In the above fig. the C_h vector is called circumferential vector, and it is at right angles to T. Three examples of nanotube structures constructed by rolling the graphite sheet about the T vector having a different orientation in the graphite sheet is shown in fig.2



Fig-2

When T is parallel to C-C bonds of the carbon hexagons, the structure shown in fig.2 (a) is obtained, and it is referred to as an armchair structure. The tubes sketched in fig.2(b) and fig.2 (c), referred as the zigzag and the chiral structures respectively, are formed by rolling about a T vector having different orientations in the graphite plane, but are not parallel to C-C bonds. These are fascinating in the controlled membrane technologies for water purification since they provide a low energy solution for water treatment. They are much more effective than the conventional activated carbon process.

Carbon nanotubes absorb a number of series of toxic agents such as Cu^{2+} , Pb^{2+} , Cd^{2+} and Zn^{2+} due to a highly accessible adsorption sites and short intraparticle diffusion distance present in carbon nanotubes. They are excellent and effective for eliminating these toxic agents in water.

Nano-catalysts:

The second class of nanomaterials is nano catalysts. A catalyst composed of nanomaterials is known as nano catalyst. In the last several years, nanomaterials have appeared as a sustainable alternative for conventional catalysts. The catalytic activity of nanomaterials represents a rich resource for chemical processes, employed in industry. Different types of nano catalysts are employed for degradation of pollutants in wastewater. Nanoform enhances the exposed surface area of the catalyst by the process of nano catalysis. Nano catalysis is one of the most exciting sub-fields to have emerged from nanoscience. Its main aim is to control the chemical reaction by changing the size, dimensions, chemical composition and morphology of the reaction centre and by altering the kinetics using nanopatterning of the reaction centres. This method gives a way to new avenues for atom-by-atom design of nano catalysts with distinct chemical activity, specificity, and selectivity.

Nano catalyst are used in several fields such as a water purification, energy storage, bio-diesel production, fuel cell, etc. and explored to reduce pollutants and oxidized contaminants in industrial waste water. They are widely used in water treatment because they increase the catalytic activity at the surface due to its special characteristic of having higher surface area (with shape dependents properties) and unique physical and chemical characteristics. Nanostructured catalysts have some other applications as exemplified below:

Silver nano catalyst $[Ag_2O]$, N-doped TiO₂ [Titania] and ZrO₂ [Zirconia] nanoparticle catalysts have been made which are highly efficient for degradation of microbial contaminants in water. Titanium based nano catalysts are used to remove mainly arsenic [As] contamination in water. Pd-based catalyst and nickel oxide [NiO] nano-catalyst has garnered momentous attention as a potential solution for heavy metals contamination in water.

CONCLUSION

Nanotechnology for waste water treatment has offered very effectual, competent, resistant, and eco-friendly approaches. It has enabled the use and implementation of nanoparticles as active phase in carbon nano tubes and catalysts. The exclusive properties of nanomaterials show great opportunities for waste water treatment because of their size and other characteristic, they have ability to act as sensors for heavy metals present in wastewater. However, there are some limitations regarding the use of nanotechnology in wastewater treatment process. Therefore, some nanomaterials need to be strongly connected to the reacted surface.

Moreover, it can be expected that this advanced technology, with careful management aimed at avoiding undesirable consequences, can make a huge contribution to this field, and establish itself as a good wastewater treatment solution.

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STUDIES ON PROTECTIVE EFFECT OF SPIRULINA IN IMPROVING ENZYME LEVELS TO TOLERATE AQUATIC POLLUTION STRESS IN HETEROPNEUSTES FOSSILIS (BLOCH.)

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ABSTRACT

Pollution of aquatic environment with metals is common worldwide and under certain conditions aquatic fauna may concentrate large amount of some metals from water in their tissues. Accumulation of toxic metals of hazardous levels in aquatic biota has become a problem of increasing concern and could lead to health hazards in man, either through drinking of water and/or consumption of fish. The present study deals with protective effect of spirulina in improving enzyme levels to tolerate aquatic pollution stress in *Heteropneustes fossilis*.

Key words: Spirulina, Acid phosphatase, Alkaline phosphatase, Heteropneustes fossilis.

INTRODUCTION

Spirulina, filamentous cyanobacterium (blue-green alga) that has a long history of use as food. Its name derives from the spiral or helical nature of its filaments. Current production of Spirulina worldwide is estimated to be about 3,000 metric tons. Sold widely in health food stores and mass-market outlets throughout the world, Spirulina's safety as food has been established through centuries of human use and through numerous and rigorous toxicological studies. Early interest in Spirulina focused mainly on its rich content of protein, vitamins, essential amino acids, minerals, and essential fatty acids. Spirulina is 60-70% protein by weight and contains a rich source of vitamins, especially vitamin B₁₂ and provitamin A (â-carotene), and minerals. The Asian stinging catfish or fossil cat, *Heteropneustes fossilis*, is a species of airsac catfish found in India, Bangladesh, Pakistan, Nepal, Sri Lanka, Thailand, and Myanmar. It is highly preferred in Assam and locally known as singhi. *H. fossilis* is found mainly in ponds, ditches, swamps, and marshes, but sometimes occurs in muddy rivers. It can tolerate slightly brackish water. It is omnivorous. This species breeds in confined waters during the monsoon months, but can breed in ponds, derelict ponds, and ditches when sufficient rain water accumulates. It is in great demand due to its medicinal

value. The stinging catfish is able to deliver a painful sting to humans. Poison from a gland on its pectoral fin spine has been known to be extremely painful. This species grows to a length of 30 cm (12 in) TL and is an important component of local commercial fisheries. It is also farmed and found in the aquarium trade. A high-quality food should contain a blend of animal and plant proteins and well as supplemental vitamins and minerals. Fisheries resources have played a dominant role in the nutrition, employment generation, culture, tradition and food habit of the people of Bangladesh, foreign exchange earnings and other areas of national economy. *Heteropneustes fossilis* are known as Asian stinging cat fish or fossil cat and in our country this fish locally called 'Singhi' fish.

Pollutants are gradually increasing in aquatic ecosystem and disturb the natural ecobalance. This results in physiological and biochemical changes in constituents of fishes which in turn affect our economy and food quality also. Many efforts have been taken by government to minimize the pollutant effect but they are insufficient. Hence a scientific approach is that to give some supplement which will help fishes to cope up with pollutant effects and maintain biochemical consistency. Keeping these points in view, the present study highlights the boosting effect of feeding Spirulina, an alga to the experimental fish Heteropneustes fossilis for specific time intervals and show improvement in glycogen and protein content comparatively.

MATERIALS AND METHODS

Experimental material: For feeding of *spirulina* was collected in form of powder from Recon Ltd., Bangalore, India. It was mixed with water and released in aquarium (10mg/25L).

Selection, rearing and maintenance of fish: Heteropneustes fossilis a catfish belongs to the family Heteropneustidae. It is commonly known as Asian Stinging catfish or fossil cat. It is found in India, Pakistan, Nepal, Srilanka, Thailand and Myanmar. In Sri Lanka, this fish is called Hunga by the Sinhala speaking community, in India it's called singhi.

Juvenile live fishes were purchased from the local fish market during September to April when the room temperature ranges from 25 to 36°C and water temperature from 20 to 25°C. The fish averaging 6-10cm standard length and average body weight of 60-70gm were used for the study. The fishes were conveyed to fisheries laboratory in the portable well aerated colourless polythene bags containing water. After examining carefully for any injury, they were kept in one percent solution of potassium permagnate for few minutes to get rid of any dermal infection. After acclimatization for 15days they were reared in large glass aquaria measuring 75 X 37.5 X37.5 cm and fed on boiled egg yolk and fish food.

Tap water stored in large aquarium for dechlorination was used as a diluent medium. The water of aquarium was changed after every two days or even earlier when it gave foul smell.

Experimental protocol: To assess the effect of spirulina the fish, *Heteropneustes fossilis* were grouped in to five sets, four acute and one control each consisting six. The *Heteropneustes fossilis* were taken live and dissected carefully and muscles were taken out for biochemical estimation.

 ED_{50} determination: Effective dose is the dose at which 50% animals show effect if known as effective dose. For ED₅₀ determination of spirulina the fishes are divided into four groups (I, II, III and IV). Each group consisting of 4 individuals. Different doses of spirulina were administered to fishes of each group. The standard solution of spirulina prepared fresh daily and prepared by diluting it with distilled water. The effectiveness was noted after 96 hours in all the groups. The dose at which 50% effectiveness occurred was noted. The doses were converted mg to μ g and then to log dose and then graph has been plotted. The calculation of ED₅₀ was done by Thompson and Weil method (1952), which is most efficient, accurate and shortest way to calculate effective dose. The doses are converted to logarithms and other values obtained from table (Biometrics, 1952) and then a graph was plotted in which concentration (first converted mg to μ g and then to log dose) is on X-axis and on Y-axis % of response. ED₅₀ was calculated by the formula—-

 $\log ED_{50} \sim \log D_{a} + d(f+1)$

$$D_{a} = lowest dose$$

 $d = \log of constant rates between dosage level = 0.30103$

f = from table (which require r, n, k)

n = number of animals at particular level

k = number of doses -1 [(i.e. 4-1) = 3]

r = number of animals affected at particular level

Experimentation and biochemical estimation: Six fishes from each set (control set and experimental sets) were sacrificed for the biochemical studies after 24, 48, 72 and 96 hrs. after feeding of Spirulina.

ESTIMATION OF ALKALINE PHOSPHATASE

The alkaline phosphatase was estimated by the Kind P.R.N. and King E.J. method (1954). Alkaline phosphatase from tissue converts phenyl phosphate to inorganic phosphate and phenol at pH 10 phenol so formed react in alkaline medium with 4-amino-antipyrin in presence of the oxidising agent potassium ferricyanide and forms an orange red colour complex. The acid phosphatase was estimated by the King's method (1959). Acid phosphatase from converts phenyl phosphate to inorganic phosphatase and phenol at pH 4.9. Phenol so formed reacts in alkaline medium with amine antipyrin in presence of oxidising agent potassium ferricyanide and forms an organo-red coloured complex.

Statistical calculations: In the present investigation, the following formulae were used for different statistical calculations after Fischer and Yates (1950).

RESULTS AND DISCUSSION

 ED_{50} value of Spirulina was $9.51 \mu g/L$. The sub-lethal dose was $1/5^{th}$ of ED_{50} i.e. $1.902 \mu g/L$. Acid and Alkaline phosphatase activities shows decreasing trend in 24hr, 48hr, 72hr and 96hr feeding of spirulina as compared to control both in liver and muscles. The decrease is more in muscles as compared to liver.

Table and Fig. 1: Alkaline phosphatase (u/l) in liver and muscle of Heteropneustes fossilis afterfeeding of Spirulina

		No. of fishes	Liver		Muscle	
S.No. D	Duration		Control	Treatment	Control	Treatment
			Mean±S.Em.	Mean±S.Em.	Mean±S.Em.	Mean±S.Em.
1.	24hrs	6	18.20 <u>+</u> 0.78	16.48 <u>+</u> 0.57*	13.15 <u>+</u> 0.70	11.40 <u>+</u> 0.54*
2.	48hrs	6	18.20 <u>+</u> 0.78	15.52 <u>+</u> 0.68*	13.15 <u>+</u> 0.70	11.02 <u>+</u> 0.65*
3.	72hrs	6	18.20 <u>+</u> 0.78	14.56 <u>+</u> 0.96*	13.15 <u>+</u> 0.70	10.16+0.95*
4.	96hrs	6	18.20 <u>+</u> 0.78	12.52 <u>+</u> 1.12**	13.15 <u>+</u> 0.70	9.44 <u>+</u> 0.65**

* Non-significant, *** Highly significant, *** Very highly significant



			Liver		Muscle	
S.No.	Duration	No. of fishes	Control	Treatment	Control	Treatment
			Mean±S.Em.	Mean±S.Em.	Mean±S.Em.	Mean±S.Em.
1.	24hrs	6	7.36 <u>+</u> 0.52	6.95 <u>+</u> 0.69*	5.30 <u>+</u> 0.50	5.00 <u>+</u> 0.60*
2.	48hrs	6	7.36 <u>+</u> 0.52	6.66 <u>+</u> 0.57*	5.30 <u>+</u> 0.50	4.62 <u>+</u> 1.07*
3.	72hrs	6	7.36 <u>+</u> 0.52	5.89 <u>+</u> 0.56*	5.30 <u>+</u> 0.50	4.09 <u>+</u> 0.54*
4.	96hrs	6	7.36 <u>+</u> 0.52	5.68 <u>+</u> 0.52*	5.30 <u>+</u> 0.50	4.10 <u>+</u> 0.58*

Table and Fig. 2: Acid phosphatase (u/l) in liver and muscle of *Heteropneustes fossilis* after feeding ofSpirulina

* Non-significant, *** Significant, *** Highly significant, **** Very highly significant



Spirulina has gained a high economic value (Cohen *et al.*, 1995) particularly because it contains some fine compounds such as essential fatty acids and amino acids, antioxidant vitamins and minerals etc. at relatively high concentrations (Roughan, 1989). Various species of cyanobacteria and algae have been known to adsorb and take up heavy metal ions (Kuyucak and Volesky, 1999). Spirulina reduced the toxicity in water and fish which in turn normalize the ALP activity. On other hand, The ACP activity normalized significantly in fish exposed to spirulina alone more than control. The obtained results showed that all the tested biochemical parameters were improved in due to Spirulina platensis 10 mg L-1 which is considered as an optimum dose could improve the health status of fish.

These alterations in acid phosphatase level may be attributed to destruction of hepatocytes and inhibition of bile as reported by Mathur and Gupta (1990) on account of alkylbenzene sulphonate toxicity. In agreement to the present findings, Rathore and Singh (1999) observed decrease in the acid phosphatase content in serum of *Channa*
punctatus due to kinadon toxicity. Phosphatase activity is of significance in pathological conditions (Reddy and Rao, 1990). Increased ALP activity (p<0.05) was marked in the group of fish fed with *Chlorella* over different days except 30 days of feeding and at 10 day post-challenge in groups B and D. Increase in phosphatase activity indicates higher breakdown of the energy reserves, which is utilised for the growth and survival of fish. ALP is the brush border enzyme, which splits various phosphorous esterases at an alkaline pH and mediates membrane transport (Goldfisher *et al.*, 1964). ALP is also involved in transport of glycogen (Gupta and Rao, 1974), protein synthesis (Pilo *et al.*, 1972) and synthesis of certain enzymes and secretary activity. Thus, any alteration in the activity of ALP may affect an animal in a variety of ways.

Increased ALP activity was reported by Sahu *et al.* (2008) while feeding rohu at various doses of turmeric for a period of 60 days following challenge with *A. hydrophila*. In the present study, similar type of observations were noticed. Bai *et al.* (2001) reported that optimum dietary *Chlorella* supplementation at 5% of diet had positive effect on growth and feed utilisation without any negative effect on blood parameters and body composition of Korean rock fish. Dietary supplementation of 2% *Chlorella* powder in the commercial diets improved growth, feed utilisation, serum cholesterol and whole-body fat contents in juveniles Japanese flounder (Kim *et al.*, 2002). Das *et al.* (2009) observed that mortality following challenge with *A. hydrophila* decreased in group of fish fed with *Euglena* incorporated diets, where fishfed on 1 g *Euglena* per kg diet showed highest rate of survival as compared to control. It can be inferred from the challenge study that the increase in different immune parameters in fish, post pathogen challenge

The alkaline phosphatase activity showed decreasing trend which may be due to less secretion from hepatocytes, inhibition of bile or decreasing of alkaline phosphatase by normalizing the secretory function of liver cell. In aquaculture, proper diet has long been recognised as a necessity for maintaining health as well as ability to resist diseases in cultured animals. Use of feed additives in aquaculture has received considerable attention in recent years. In India, most of the farmers rely on mixture of rice bran and mustard oil cake together with natural pond fauna for carp culture. Microalgae have of a broad spectrum of nutritious compounds including proteins, vitamins, essential amino acids, minerals and pigments (Becker, 2007). Among microalgae, *Chlorella* is widely distributed in nature, especially in freshwater bodies. *Chlorella* can survive by photoautotrophy as well as heterotrophy ustilising external carbon source. Hence, *Chlorella* is easily cultured in the laboratory and possesses high applied value (Yamaguchi, 1996). It has been proved that *Chlorella* has high content of proteins, lipids, polysaccharides, vitamins, minerals, and other nutritional substances, including substances of significant bioactivity (Han *et al.*, 2002; Kang *et al.*, 2004). *Chlorella* has a protein content of 51- 58% with many essential amino acids and hence could be used as protein source in human and animal diets (Becker, 2007).

Vitamin E of the Spirulina prevents toxicants induced lipid peroxidation and maintains intracellular thiols and ascorbic acid levels in dam-aged tissue by inhibiting free radical formation andoxidative damage (Duval and Poelman, 1994);Kulkarni and Bycz Kowski, 1997); Patil and Rao, 1999). According to Rao and Sharma (2001), vi-tamin E showed protective effect against toxicants through impaired absorption of mercury in the gastrointestinal tract. Rana et al. (1996) also postu-lated that vitamin E has a protective effect against mercury toxicity. Selenium component in Spirulina inducesselenium containing enzyme GSH peroxidase, proteins or compounds such as selenodiglutathione, selenocysteine and dimethylselenide, which are known to modulate the toxic effects of heavy metals (Henrikson, 1989); Lindh et al., 1996). Su-peroxide dismutase is a mitochondrial enzyme, which is found to quench free radicals and prevents tissue damage (Henrikson, 1989); Girardi and Elias, 1995)). Spirulina also induces the activity of immune system. It builds up both the cellular and humoral arms of the immune systems and thus improving their ability to function inspite of stresses from environmental toxins and infectious agents (Hayashi et al., 1994); Qureshi et al., 1995).

These results suggest that Spirulina could chelate toxic ions producing a stable complex, thus reducing the chance for toxic substance uptake. The formation of metal- chelate complex in water evidently reduced the metal

burden in tissues and thereby improved the biochemical parameters of fish exposed to polluted water. Kaoud and Mekawy (2011) found that, Lemna gibba L (weed and extract) were effective in removing Hg from water and reducing Hg bioaccumulation in liver and muscular tissues of *O. niloticus* fish. Finally, we could conclude that Spirulina provided protection against the toxic action of pollutants present in water and increased the chance of biochemical and enzymes regeneration.

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14 BIOPROSPECTING RHIZOSPHERIC BACTERIA WITH BIOCONTROL POTENTIAL AGAINST SELECTED PLANT PATHOGENIC FUNGI (*ALTERNARIA SOLANI* AND *FUSARIUM OXYSPORUM*)

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Abstract

The present was conducted to characterize the PGPR isolates and to determine their antagonistic activity against *Fusarium oxysporum* and *Alternaria solani*. Based on results it can be recommended that due to the plant growth and biocontrol properties of isolated strains, these could be very useful for farmers in field. Thus, it is required to convert the PGPR isolates in such a form that can be easily applicable at field level. In future, study can be undertaken using biotechnological tools to improve strains that have PGPR qualities in order to create transgenic strains that combine multiple mechanisms of action.

Key Words: PGPR, Plant growth promoting activities, Biochemical, Biocontrol, *Fusarium oxysporum, Alternaria solani*.

Introduction

Plant pathogens have an immense effect on the agricultural productivity, greatly reducing crop yield and sometimes causing total crop loss. The chemicals used to control these plant pathogens have the negative effects on the environment and human health. In this context, biocontrol agents are an alternative method to control plant pathogens. These are less destructive and environmentally friendly. PGPR mediated plant growth and control plant diseases by the production of secondary metabolites such as siderophore, antibiotics, volatile compounds, HCN, enzymes and phytohormones (IAA) with an alternative eco-friendly approach. The above points were taking into consideration for the present study entitled "Bioprospecting rhizospheric bacteria with biocontrol potential against selected plant pathogenic fungi (Alternaria solani and Fusarium oxysporum)" under the following objectives:

- To characterize the Plant Growth Promoting Rhizobacteria (PGPR) isolated from soil.
- To determine the antagonistic effect of Plant Growth Promoting Rhizobacteria (PGPR) against *Fusarium* oxysporum and Alternaria solani.

Materials and Methods

Place of Work

The experiments were conducted under lab in the Department of Microbiology and Fermentation Technology, Jacob School of Biotechnology and Bioengineering SHUATS, Allahabad, Uttar Pradesh (India) during the year 2015-2016.

Procurement of fungal cultures

Fungal cultures namely *Alternaria solani* (MCCB 0079) and *Fusarium oxysporum* (MCCB 0068) were procured in PDA slant from Microbial Culture Collection Bank (MCCB), Department of Microbiology and Fermentation Technology, Jacob School of Biotechnology and Bioengineering, Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh. Fungal cultures were maintained in PDA slant and routinely subcultured at 15 days interval and starved at 4°C in further use.

Collection of samples and isolation of Plant growth promoting Rhizobacteria

Soil samples were collected from different rhizospheric region of Agriculture field SHUATS, Allahabad (U.P.). PGPRs were isolated from the soil samples by serial dilution technique followed by pour plate method on nutrient agar media. Pure culture of isolates was stored in nutrient agar slant tubes.

Morphological characterization of isolates

The pure cultures from the slants were streaked on the nutrient agar plates and after incubation period, morphological characters of the colonies like the colour, shape, size, surface and gram staining etc. were recorded **(Cappuccino and Sherman, 1992).**

Screening of isolates for multiple plant growth promoting activities

Siderophore production: 24hrs old broth culture of isolates was centrifuged at 10,000 rpm for 15-20 min. 1 ml of supernatant was taken and 1ml of 2% FeCl₃ solution was added. The formation of brown color indicated the presence or production of siderophore (Atkins *et al.*, 1970).

Production of hydrogen cyanide: Hydrogen cyanide (HCN) production was evaluated by streaking the isolates on Tryptic soy agar medium amended with glycine. Picric acid dipped Whatman No.1 filter paper discs were placed in the lid of each Petri plate. The plates were then incubated at 30°C for 48 hours. Colour change from deep yellow to reddish-brown colour of filter paper was an indication of HCN production. (Bakker and Schipperes, 1987)

Phosphate solubilizing activity: A loopful of fresh culture of PGPR was streaked onto Pikovaskaya's medium amended with inorganic phosphate and plates were incubated at 28±2! for 4 days. A clear halo zone around the colonies was indicate solubilization of mineral phosphate (**Pikovskaya**, **1948**)

Production of Indole Acetic Acid: Luria Bertani broth medium amended with tryptophan was inoculated with the isolates and incubated for 24 hrs at 28°C on a rotary shaker. Supernatant of Cultures was collected by centrifuged the culture at 10,000 rpm for 15 min. 2 ml of supernatant was taken and 2 to 3 drops of orthophosphoric acid was added. 4 ml of Salkowski reagent was added followed by incubation for 25 min at room temperature. Production of IAA was interpreted by the formation of red colour (**Gordon and Weber, 1951**).

Production of ammonia: Isolates were tested for the production of ammonia in peptone water. Freshly grown cultures were inoculated in 10 ml peptone water in each tube separately and incubated for 48-72 hours at 28°C. After incubation 0.5 ml Nesseler's reagent was added in each tube. Development of brown to yellow colour was a positive test for ammonia production (Cappuccino and Sherman, 1992).

Biochemical Characterisation of isolates

The most potent PGPR isolates were biochemically characterized using following tests, oxidase, catalase, citrate utilization, Vogus-Proskaur test, methyl red test, sugars (Glucose, Sucrose, Lactose) fermentation, nitrate reduction, urease test etc. (Bhatt *et al.*, 2013).

Antagonistic activities against fungal plant pathogens

The antagonistic effect of isolates was tested against selected fungal pathogens (*Fusarium oxysporum* and *Alternaria solani*) by following agar disc diffusion method. Isolate was spread on a PDA plate. 6 mm mycelial disc from a 7 days old PDA culture of fungal pathogens was then placed on the center of the Petri dish and the plates were incubated at 28°C for 4-7 days (**Rabindran and Vidyasekaran, 1996**). Antifungal activity was estimated from the inhibition of mycelial growth of fungus in the direction of actively growing bacteria. The percent inhibition was calculated using the formula: PI=[(R-r)/R] X 100; where r is radial growth of the fungal colony opposite the bacterial colony and, R is the radial growth of the pathogen in control plate. PI is Percent inhibition. (**Idris** *et al.*, **2007**)

RESULTS

Isolation of PGPR

Total 19 bacterial isolates were isolated from the rhizospheric soils of different crops from agriculture field of SHUATS, Allahabad (U.P). The isolates were designated as PGPR1 to PGPR19.

Morphological characteristics of PGPR isolates

The morphological characteristics of PGPR isolates was determined and found widely varied. The colonies of isolates were observed from light yellow to off white. Some were yellow, orange and slightly pink. Pigmentation was observed in PGPR3, PGPR4, PGPR5 and PGPR7 on nutrient agar plates. All the isolates were Gram negative cocci, few were rods. Only three (PGPR1, PGPR16 and PGPR17) isolates were Gram positive cocci in reaction (Table 1).

PGP Characterization of isolates

Out of 19 isolates, 12 isolates were positive for Siderophore production that showed brown colour in FeCl₃ solution, in which isolate PGPR3 was high siderophore producer. Only one isolates (PGPR7) showed positive result for HCN production in Tryptic soy agar plates. No clear zone was found on Pikovaskaya's media. It indicates that the isolates were not phosphorus solubilizing bacteria. Among 19 isolates, 7 isolates (PGPR2, PGPR4, PGPR7, PGPR9, PGPR11, PGPR17 and PGPR 18) were able to produce IAA in Luria Bertani broth medium amended with tryptophan, where tryptophan act as precursor and Salkowski used as reagent. Isolate PGPR4 was high IAA producer followed by PGPR7, PGPR9, PGPR11, PGPR18 and PGPR17. Isolate PGPR2 was low IAA producer. The isolate PGPR4, PGPR7 and PGPR9 were identified as *Rhizobium sp.* and *Pseudomonas spp.* respectively. All the IAA producer isolates were Gram negative in reaction, except PGPR17. Another important trait of PGPR, that may indirectly influence the plant growth, is the production of ammonia. 5 (PGPR3, PGPR6, PGPR7, PGPR9 and PGPR11) isolates showed ammonia production in peptone water. Isolate PGPR7 was high

and isolate PGPR1 was low ammonia producer. The isolates PGPR3, PGPR7, and PGPR9 were identified as *Azotobacter, Pseudomonas* and *Pseudomonas sp.* respectively. (Table 1)

	Morphological Characteristics					Micr Obse	oscopic <u>rvation</u>	PGP Characteristics				
Isolates	Colony Colour	Elevation	Surface	Form	Pigmentation	Gram's Reaction	Shape	Siderophore production	HCN Production	Phosphate Solubilization	IAA Production	Ammonia Production
PGPR1	Creamy white	Raised	Dry	Circular	No	+Ve	Cocci	-	-	-	-	-
PGPR2	Creamy white	Raised	Dry	Circular	No	-Ve	Cocci	-	-	-	+	-
PGPR3	White	Raised	Mucoid	Irregular	Produced Pigment	-Ve	Rods	+++	-	-	-	++
PGPR4	Creamy white	Raised	Mucoid	Circular	Produced Pigment	-Ve	Rods	+++	-	-	+++	-
PGPR5	Yellow	Raised	Glisining	Circular	Produced Pigment	-Ve	Cocci	+++	-	-	-	-
PGPR6	White	Flat	Dry	Circular	No	-Ve	Cocci	-	-	-	-	++
PGPR7	Light yellow	Raised	Glisining	Circular	Produced Pigment	-Ve	Rods	++	+	-	++	+++
PGPR8	Creamy white	Slightly Raised	Glisining	Irregular	No	-Ve	Cocci	-	-	-	-	-
PGPR9	Milky white	Slightly raised	Glisining	Irregular	No	-Ve	Rods	++	-	-	++	++

Table1: Morphological, Microscopic and PGP characteristics of isolates

PGPR10	Creamy white	Flat	Mucoid	Circular	No	-Ve	Cocci	+	-	_	-	-
PGPR11	White	Slightly Raised	Glisining	Circular	No	-Ve	Cocci	+	-	-	+	+
PGPR12	Slight pink	Raised	Mucoid	Irregular	No	-Ve	Rods	+	-	-	-	-
PGPR13	Creany white	Convex	Mucoid	Circular	No	-Ve	Cocci	+	-	-	-	-
PGPR14	Milky white	Raised	Mucoid	Irregular	No	-Ve	Cocei	+	-	-	-	-
PGPR15	Creamy white	Slightly Raised	Dry	Circular	No	-Ve	Cocci	+	-	-	-	-
PGPR16	Orange	Convex	Mucoid	Irregular	No	+Ve	Cocci	+	-	-	-	-
PGPR17	Orange	Raised	Mucoid	Circular	No	+Ve	Cocci	-	-	-	+	-
					1			1				

Note: - = No production; + = weak producer; ++ = medium producer; and +++ = good producer.

-Ve

-Ve

Cocci

Cocci

-

-

-

-

-

Biochemical characterization of PGPR isolates

Glisining

Dry

Raised

Flat

Circular

Irregular

ů

ů

Creamy white

Off white

PGPR18

PGPR19

PGPR isolates (PGPR3, PGPR4, PGPR7, PGPR9 and PGPR11) which had two or more PGPR characters, selected as most potent isolates and identified by biochemical characterization by using following tests, oxidase, catalase, citrate utilization, Vogus-Proskaur test, methyl red test, sugars (Glucose, Sucrose, Lactose) fermentation, nitrate reduction, urease test as *Azotobacter sp., Rhizobium sp., Pseudomonas sp., Pseudomonas sp., and Erwinia sp.* (Table 2).

DCDD								Sugar fermentation			Idontified
strains	Oxidase	Catalase	Methyl red	Voges Proskauer	Citrate	Nitrate Reduction	Urease	Lactose	Glucose Sucrose		Strains
PGPR 3	+	+	+	+	+	+	+	-	+	+	Azotobacter sp.
PGPR 4	+	+	-	-	-	-	+	-	+	+	Rhizobium sp.
PGPR 7	+	+	-	-	+	+	-	-	+	-	Pseudomonas sp.
PGPR 9	+	+	-	-	+	+	-	-	+	-	Pseudomonas sp.
PGPR 11	-	-	-	+	+	-	-	-	+	+	Erwinia sp.

Table 2: Biochemical characteristics of PGPR isolates

Note: +=positive and -= negative

Antagonistic activity of PGPR isolates against test pathogens

The most potent identified PGPR isolates were screened for antifungal activity against *Alternaria solani* and *Fusarium oxysporum*. Three of the five PGPR isolates were able to reduce the growth of *Alternaria solani* with percentages of inhibition ranging from 37% to 48%, PGPR 7 (*Pseudomonas sp.*) showed highest growth inhibition *i.e.* 48%, followed by PGPR 11 (*Erwinia sp.*) *i.e.* 45% and PGPR 3 (*Azotobacter sp.*) *i.e.* 37%. The non-antagonistic isolates grew normally and not inhibited the fungi. Isolate PGPR 7 (*Pseudomonas sp.*) showed high inhibition against both the fungi. Two of the five isolates were able to control the growth of *Fusarium oxysporum* with percentages of inhibition ranging from 45% to 54%, in which PGPR 7 (*Pseudomonas sp.*) showed highest % growth inhibition *i.e.* 53.87%, followed by PGPR 11 (*Erwinia sp.*) *i.e.* 48% . PGPR 3 (*Azotobacter sp.*) showed no growth inhibition. PGPR 4 (*Rhizobium sp.*) and PGPR 9 (*Pseudomonas sp.*) did not show inhibition against any test pathogens. The data were analysed using completely randomized design (CRD) and was found significant at 5% level. (Table 3)

Test Pathogens	% Growth inhibition of test pathogens by PGPR isolates							
	PGPR 3	PGPR 7	PGPR 11					
Fusarium oxysporum	0	53.87	48					
Alternaria solani	37	48	45					

Table 3: Antagonistic activity of PGPR isolates against phytopathogenic fungi (dual culture method)



DISCUSSION

In this study, total 19 PGPR isolates were isolated and morphologically and microscopic characterized. Microscopic observations of isolates were performed to investigate shape and Gram's reaction. Most of the isolates were gram negative. (Cappuccino and Sherman 1992; Dhakephalkar et al., 2011 and Kaur and Sharma 2013). The rhizosphere is colonized by a predominantly gram-negative microbial community also reported earlier by Atlas et al. 1993. The isolated were able to show the multiple plant growth properties. Among 19, 12 isolates were found siderophore producer. The ability of rhizobacteria to produce siderophores has been the focus of many studies dedicated to investigating PGPR (Maheswari et al., 2001; Fernandez et al., 2007; Gupta and Gopal, 2008). Iron is essential requirement of plant and microorganism. Marschner and Romheld (1994) described that plants utilize siderophores secreted by PGPR for sequestering iron. Only one isolate showed HCN production in these present study (Chandra et al., 2007). Production of cyanide was an important trait in a PGPR in controlling fungal diseases (Deshwal and Kumar 2013) and invitro demonstration of this trait was earlier done by Cattelan et al. (1999). The role of hydrogen cyanide in disease suppression was also demonstrated by several scientists (Stutz, et al. 1986; Voisard, et al. 1989; and Defago, et al. 1990). Microbial production of HCN is important antifungal feature to control root fungi pathogen (Ramette et al., 2003 and Voisard et al., 1989). None of the isolate was physphate solubilizer. Hassan et al. (2013) also reported non-phosphorus solubilizing PGPR isolates. Among 7 IAA producing PGPR isolates, two were identified as Rhizobium sp. and Pseudomonas sp. Previously IAA production by these species was also reported by (Ahmad et al. 2008; Verma et al. 2010; Panhwar et al., 2012). Most of IAA producer were found Gram negative. Lindow et al. 1998; Datta and Basu, 2000 studies support these findings. Ammonia released by PGPR is one of the most important traits which benefits the crop (Kundu 1987). Ammonia is the only gas present in sufficient concentration in soil to inhibit soil fungus (Pavlica et al. 1978). Howell et al. (1988) also described the role of ammonia in antagonism. Among 5 ammonia producers, one isolate was identified as Azotobacter sp. while two were Pseudomonas sp. Joseph et al. (2007) reported ammonia production in 94.2% of isolates of Pseudomonas followed by Azotobacter (45%). The different isolates such as PGPR 7 and PGPR 11 were showing bio control efficacy against fungal pathogens namely Alternaria solani and Fusarium oxysporum whereas PGPR 4 and PGPR 9 did not show any efficacy against the same fungal pathogens. This may be due to the plant species and composition of root exudates that play a key role in the diversity of rhizobacterial populations and can influence the frequency of antagonistic ability of bacteria (Kremer et al., 1990). The rhizobacteria can lyse pathogenic fungal cells by synthesis of hydrolytic enzymes (Neeraja et al., 2010; Maksimov et al., 2011). The production of one or more antibiotics is the mechanism most commonly associated with the ability of plant growth-promoting bacteria to act as antagonistic agents against phytopathogens (Glick et al., 2007). PGPR 3 showed antagonistic efficacy against Alternaria solani whereas it did not show antagonism against Fusarium oxysporum. This might be due to the difference in metabolite production by isolate. Another probability may be due to strain difference or species difference of PGPR isolates. Earlier Veerasamy (1997) reported the bio control of phytopathogens by bacterial isolates. Bharathi et al. (2004) used several PGPR strains and microorganisms for the control of fungal pathogens. Yigit and Dikilitas (2007) reported the beneficial effect of PGPR to control Fusarium oxysporum and De Boer et al. (1999) enhanced the suppression of Fusarium oxysporum by PGPR isolates. Silva et al. (2004) evaluated rhizobacterial strains for biological control of Alternaria solani and observed reduced disease intensity. Earlier O'Sullivan and O'Gara (1992) and Ahmad et al. (2008) demonstrated that Pseudomonas strains was most effective in controlling the plant root pathogens including Fusarium oxysporum.

CONCLUSION

The present was conducted to characterize the PGPR isolates and to determine their antagonistic activity against *Fusarium oxysporum* and *Alternaria solani*. Based on results it was concluded that PGPR 7 (*Pseudomonas sp.*) was characterized as good plant growth promoter and for disease control caused by *Fusarium oxysporum* and *Alternaria solani*. From the above conclusion it can be recommended that due to the plant growth and

biocontrol properties of isolated strains, these could be very useful for farmers in field. Thus, it is required to convert the PGPR isolates in such a form that can be easily applicable at field level. In future, study can be undertaken using biotechnological tools to improve strains that have PGPR qualities in order to create transgenic strains that combine multiple mechanisms of action. The present study can also be conducted in vivo to observe its effect at field level.

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15 POPULATION DENSITY OF PHYTOPLANKTON IN THE ECOLOGICAL PARK OF MATHURA REFINERY

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Abstract

Phytoplankton populations in the Ecological area were observed maximum in summer season, showing their direct co relationship with physico-chemical parameters.

Key Words: Phytoplankton, Ecological, Seasonal and Physico-chemical parameters.

INTRODUCTION

The phytoplankton are essential organism to understand the basic nature and economy of water bodies. The investigations have been made to know the ecological conditions of water resources in various part of the country (Bose, 1968; Nasar and Datta Munshi, 1974 Rana and Bhati, 1982; Rana, 1991). But the relationships between physic-chemical characteristics and planktonic fauna have been studied by only few workers (Pant *et. al.*, 1985; Rana, 1996). The present communication embodies on account of the phytoplanktonic population density special reference to physico-chemical composition of Ecological Park of Mathura refinery.

MATERIALS AND METHOD

Mathura Refinery Ecological Park is famous for the migratory birds. Its Ecological Park comprises about 18000 sq.m. The samples were collected from selected sites, at monthly interval consequently for two years. Physico-chemical analysis of the water was done according to standard methods (A.P.H.A. 1986). The phytoplankton samples were collected from the selected sites by serving 20 litre of water through the plankton net (77 mesh bolting silk). It was preserved in 50% formaldehyde solution and counted by the Sedwick after counting cell in accordance to Welch (1948).

RESULTS

The seasonable fluctuations of phytoplankton population are given in table (1). The total phytoplankton showed to peaks first in summer and second in winter season probably due to high light penetration in this season; however, the phytoplankton is composed of Chlorophyceae table (2) as a dominant group, Bacillariophyceae (20.84%) as an abundant group and Myxophyceae (15.67%) a frequent group. The physico chemical parameters on which population of phytoplankton depends are given in table (3).

Se	Seasonal variations in Phytoplankton(unit/lit) at Ecological Park Lake of Mathura Refinery							
		YEAR 1			YEAR 2			
	Family	Winter	Summer	Monsoon	Winter	Summer	Monsoon	

Table 1

		YEAR 1		YEAR 2			
Family	Winter	Summer	Monsoon	Winter	Summer	Monsoon	
Chlorophyceae	39426.72	45488.32	34195.65	37298.66	46635.90	31840.91	
Bacillariophyceae	38318.33	45292.15	29192.74	36975.08	46109.24	28981.58	
Myxophyceae	40110.83	454459.16	29637.49	40146.91	44814.83	32800.49	

Table 2

Total phytoplankton (unit/lit) count at different sites at Ecological Park Lake of Mathura Refinery

Family	Site -I	Site- II	Site - III	Site -I	Site - II	Site - III
Chlorophyceae	297488.0	512153.0	619688.0	295085.0	477446.0	616781.0
Bacillariophyceae	305555.0	498161.0	549923.0	301968.0	487822.0	555001.0
Myxophyceae	302195.0	476880.0	603415.0	317253.0	479744.0	616150.0
Total	905238.0	1487194.0	1773026.0	914306.0	1445012.0	1787932.0

Table 3

Seasonal variations in the physico-chemical parameters at Ecological Park Lake of Mathura Refinery

Parameters		YEAR 1		YEAR 2			
	Winter	Summer	Monsoon	Winter	Summer	Monsoon	
Water temperature	17.78	35.32	30.47	18.71	34.81	31.72	
рН	7.56	7.95	7.31	7.52	7.78	7.27	
Turbidity	294.16	576.66	779.16	578.24	578.24	778.65	
Total alkalinity	192.49	373.08	219.99	369.25	369.25	219.55	
Dissolved Oxygen	6.87	5.69	5.42	5.68	5.68	5.28	
Carbon dioxide	1.45	6.43	12.87	5.20	5.20	12.90	
B.O.D.	22.57	39.55	40.23	39.67	39.67	40.38	
C.O.D.	51.64	74.33	82.10	75.63	75.63	83.33	

DISCUSSION & CONCLUSION

During present investigations maximum yield of phytoplankton was recorded during summer and winter season and minimum during monsoon season. This is in agreement with the finding of Philipose (1959), Laxminararayana (1965) and Pahwa and Mehrotra (1966).

In the present study high value of dissolved oxygen during winter and fairly high in summer season were due to lower temperature penetration on account of rich vegetation in park and more oxygen holding capacity of water This nature of water body is suitable for phytoplanktonic population during entire investigation period because macrophytes on decomposition supply the nutrients to the ponds, which caused formation of algal blooms in the ponds.

On the other hand, during rainy season cloudy weather and low transparency resulted in less illumination and consequently in the retardation of photosynthetic activity which in turn lowered the oxygen content (Jindal and Vashisht 1981). The excess of CO_2 present during rainy season coincided generally with the decrease in the population of phytoplankton. Similar observation has been made by Das and Srivastava (1956), Rana 1991, 1996

Ray *et al.* (1966) recorded the high value of total alkalinity coinciding with the high phytoplankton yield. During summer and winter water was alkaline which is helpful for maximum population dynamics. In rainy season water was acidic due run off water which may be responsible for low density of phytoplankton.

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16 IMPORTANCE OF AN ALGA, SPIRULINA IN IMPROVING PROTEIN AND GLYCOGEN CONTENT IN FRESH WATER FISH *HETEROPNEUSTES FOSSILIS* (BLOCH.)

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ABSTRACT

Spirulina, now named *Arthrospira*, is a microscopic and filamentous cyanobacterium (blue-green alga) that has a long history of use as food. Its name derives from the spiral or helical nature of its filaments. There are reports that it was used as food in Mexico during the Aztec civilization some 400 years ago. It is still being used as food by the Kanembu tribe in the Lake Chad area of the Republic of Chad where it is sold as dried bread called "dihe". *Spirulina* has been produced commercially for the last 20 years for food and specialty feeds. Commercial algae are normally produced in large outdoor ponds under controlled conditions. Some companies also produce directly from lakes. Current production of *Spirulina* worldwide is estimated to be about 3,000 metric tons. Sold widely in health food stores and mass-market outlets throughout the world, *Spirulina's* safety as food has been established through centuries of human use and through numerous and rigorous toxicological studies.

INTRODUCTION

Several naturally occurring dietary or non-dietary constituents, and parts of several species of edible plants having pharmacological activity, influence the antioxidant enzymes and provide protection against free radical induced damage. In recent years, Spirulina is gaining more attention from medical scientists as a neutraceutical and source of potential pharmaceuticals. It is blue green algae (mycobacterium) belonging to the family Oscillatoriaceae. The present study deals with importance of spirulina on protein content in liver and muscle of *Heteropneustes fossils* to improve fish health and combat with toxic stress.

Fisheries resources have played a dominant role in the nutrition, employment generation, culture, tradition and food habit of the people of Bangladesh, foreign exchange earnings and other areas of national economy.

Heteropneustes fossilis are known as Asian stinging cat fish or fossil cat and in our country this fish locally called 'Singhi' fish. It is commercially as well as aquaculturally an important species in many Asian countries (Akand et al., 1991) and it is an indigenous species to Indo-Pak-Bangladesh sub-continent. Fish diets must provide energy source and should be in proper balance with respect to protein, lipid, carbohydrate minerals and vitamins and other growth factors. In commercial catfish feeds, the energy, ratio ranges from 66-74 k. cal \kg for each 1% of protein (Lovell, 1977a). Proper food selection is important both from nutritional and economical point of view. A food particle should deliver the necessary nutrients and in a form that can easily be consumed by the fish offering the type and correct amount of feed will result in more efficient production and increased profits. Food quality, food type and foods cost should be of primary consideration in selecting of the best food. Food quality is primarily dictated by food composition is therefore important. A mixture of ingredients is necessary to provide a balance of required nutrients. No single ingredients can adequately serve as the total nutritive source; therefore, a high-quality food should contain a blend of animal and plant proteins and well as supplemental vitamins and minerals. Successful controlled method of culture depends on a good knowledge of nutritional requirements and food of the larvae if adequate techniques being developed regarding the nursing and rearing of shingi fry in controlled conditions, it would definitely pave the way for the fish farmers to adopt fish farming as a lucrative earning profession, so as to ensure steady availability of cheap yet good quality fish seed for augmentation commercial fish production.

MATERIALS AND METHODS

Experimental material: For feeding of *spirulina* was collected in form of powder from Recon Ltd., Bangalore, India. It was mixed with water and released in aquarium (10mg/25L).

Selection, rearing and maintenance of fish: Heteropneustes fossilis a catfish belongs to the family Heteropneustidae. It is commonly known as Asian Stinging catfish or fossil cat. It is found in India, Pakistan, Nepal, Srilanka, Thailand and Myanmar. In Sri Lanka, this fish is called Hunga by the Sinhala speaking community, in India it's called Singhi.

Juvenile live fishes were purchased from the local fish market during September to April when the room temperature ranges from 25° to 36°C and water temperature from 20° to 25°C. The fish averaging 6-10cm standard length and average body weight of 60-70gm were used for the study. The fishes were conveyed to fisheries laboratory in the portable well aerated colourless polythene bags containing water. After examining carefully for any injury, they were kept in one percent solution of potassium permagnate for few minutes to get rid of any dermal infection. After acclimatization for 15days they were reared in large glass aquaria measuring 75 X 37.5 X37.5 cm and fed on boiled egg yolk and fish food.

Tap water stored in large aquarium for dechlorination was used as a diluent medium. The water of aquarium was changed after every two days or even earlier when it gave foul smell.

Experimental protocol: To assess the effect of spirulina the fish, *Heteropneustes fossilis* were grouped in to five sets, four acute and one control each consisting six. The *Heteropneustes fossilis* were taken live and dissected carefully and muscles were taken out for biochemical estimation.

 ED_{50} determination: Effective dose is the dose at which 50% animals show effect if known as effective dose. For ED₅₀ determination of spirulina the fishes are divided into four groups (I, II, III and IV). Each group consisting of 4 individuals. Different doses of spirulina were administered to fishes of each group. The standard solution of spirulina prepared fresh daily and prepared by diluting it with distilled water. The effectiveness was noted after 96 hours in all the groups. The dose at which 50% effectiveness occurred was noted. The doses were converted mg to μ g and then to log dose and then graph has been plotted. The calculation of ED₅₀ was done by Thompson and Weil method (1952), which is most efficient, accurate and shortest way to calculate effective dose. The doses are converted to logarithms and other values obtained from table (Biometrics, 1952) and then a graph was plotted in which concentration (first converted mg to μ g and then to log dose) is on X-axis and on Y-axis % of response. ED₅₀ was calculated by the formula $log ED_{50} \sim log D_a + d (f+1)$ $D_a = lowest dose$ d = log of constant rates between dosage level = 0.30103 f = from table (which require r, n, k) n = number of animals at particular level k = number of doses -1 [(i.e. 4-1) = 3]r = number of animals affected at particular level

Experimentation and biochemical estimation: Six fishes from each set (control set and experimental sets) were sacrificed for the biochemical studies after 24, 48, 72 and 96 hrs. after feeding of Spirulina.

Total protein was estimated by Biuret method described by Henry *et al.* (1974). Proteins react with cupric ions of biuret in an alkaline medium to form a violet blue coloured complex which appears as a result of the reaction between -CO and $-NH_2$ groups of protein cupric ions. The intensity of the coloured complex so developed is proportional to the total protein concentration in the sample. The glycogen was estimated by the method of Rex-Montgommery (1957). When the tissue was digested in potassium hydroxide solution, a precipitate of glycogen was produced which was estimated with the help of anthrone reagent.

RESULTS AND DISCUSSION

 ED_{50} value of Spirulina was 9.51µg/L. The sub-lethal dose was $1/5^{th}$ of ED_{50} i.e. 1.902µg/L. The total protein shows an increasing trend with treatment. The increase in total protein following serial feeding with spirulina was non-significant after 24 hours and 48 hours, 72 hours and significant after 96 hours (Table-1, Fig. 1).

Table & Fig. – 1: Total protein (mg/dl) in liver and muscle of *Heteropneustes fossilis* after feeding of *spirulina*

			~ <u>r</u> ·				
S.No.		No. of fishes	Liver		Muscle		
	Duration		Control	Treatment	Control	Treatment	
			Mean±S.Em.	Mean±S.Em.	Mean±S.Em.	Mean±S.Em.	
1.	24hrs	6	182.15 <u>+</u> 0.96	202.50 <u>+</u> 1.12*	202.10 <u>+</u> 1.10	222.40 <u>+</u> 1.10*	
2.	48hrs	6	182.15 <u>+</u> 0.96	204.56 <u>+</u> 1.67*	202.10 <u>+</u> 1.10	244.50 <u>+</u> 1.60**	
3.	72hrs	6	182.15 <u>+</u> 0.96	205.16 <u>+</u> 2.60*	202.10 <u>+</u> 1.10	285.10 <u>+</u> 1.60***	
4.	96hrs	6	182.15 <u>+</u> 0.96	209.52 <u>+</u> 0.94**	202.10 <u>+</u> 1.10	299.51 <u>+</u> 0.92***	

* Non-significant, ** Significant, *** Highly significant, **** Very highly significant



The glycogen shows an increasing trend with treatment. The increase in glycogen following serial feeding with spirulina was non-significant after 24 hours, 48 hours, 72 hours and after 96 hours. (Table-2, Fig. 2).

Table & Fig. – 2: Glycogen content (mg/dl) in liver and muscle of <i>Heteropneustes fossilis</i> after feeding
of <i>spirulina</i>

		No of	Li	ver	Muscle		
S.No. Duration	Duration	INO. 01 fishos	Control	Treatment	Control	Treatment	
		1151105	Mean±S.Em.	Mean±S.Em.	Mean±S.Em.	Mean±S.Em.	
1.	24hrs	6	9.94 <u>+</u> 1.73	10.22 <u>+</u> 0.95*	8.55 <u>+</u> 0.70	10.12 <u>+</u> 1.05*	
2.	48hrs	6	9.94 <u>+</u> 1.73	11.00 <u>+</u> 0.49*	8.55 <u>+</u> 0.70	11.15 <u>+</u> 0.99*	
3.	72hrs	6	9.94 <u>+</u> 1.73	11.23 <u>+</u> 0.92*	8.55 <u>+</u> 0.70	11.83 <u>+</u> 0.90*	
4.	96hrs	6	9.94 <u>+</u> 1.73	12.8 <u>+</u> 1.23*	8.55 <u>+</u> 0.70	12.65+0.95**	

* Non-significant, ** Significant, *** Highly significant, **** Very highly significant



The protein level showed an increasing trend on 24hr, 48hr, 72hr and 96hr feeding of spirulina as compared to control both in liver and muscles. The increase is more in muscles as compared to liver. Microbial biomass-related technologies have also been tested for heavy metal removal from polluted water bodies as the conventional methods are expensive. Components found in the cell wall of Spirulina, such as peptydoglycan, teichuronic acid, teichoic acid, polysaccharides and proteins which display mainly carboxylic, hydroxyl and phosphate groups may give algal wall binding properties. Cell wall of *S.platensis* having lots of negative carboxyl and phosphate groups, which are the dominant binding sites of toxic and heavy metals cations. Furthermore, it has been found that microalgae to be very effective biosorbents, as they possess a large surface area and high binding affinity. This enhancement in total protein in liver and muscles may be due to formation of protein as it attributes to decline in fat deposit cell of liver following accumulation in the protein content and increased metabolism. The increase in muscle total protein may be attributed besides great energy demand but supplied by spirulina feeding and check the cellular damage that occurred in the tissue of contaminated fish.

The tissue glycogen showed increasing trend in 24hr, 48hr, 72hr and 96hr feeding of spirulina as compared to control both in liver and muscles. The increase is more in muscles as compared to liver. The slight enhancement in the glycogen content in the liver and muscle tissue indicates its rapid formation by the respective tissue as a consequence of feeding spirulina. Enhancement in the glycogen is observed by Kurde (1990) and reported hyperglycaemia condition in air breathing fishes. Spirulina has gained a high economic value (Cohen *et al.*, 1995) particularly because it contains some fine compounds such as essential fatty acids and amino acids, antioxidant

vitamins and minerals etc. at relatively high concentrations (Roughan, 1989). Various species of cyanobacteria and algae have been known to adsorb and take up heavy metal ions (Kuyucak and Volesky, 1999).

The protective efficacy of Spirulina may be due to presence of several active components. The active component found in Spirulina may provokes the activity of free radical scavenging en-zyme systems and renders protection against mercury induced liver damages. The metalloprotective role of Spirulina may be attributed to the presence of â-carotene (Prescott 1978); Seshadri et al.,1991), vitamin C, E (Mathew et al., 1995) en-zyme superoxide dismutase (Ben Amotz, 1987);Henrikson, 1989) and selenium (Henrikson,1989).

 β -Carotene acts as powerful quencher of singlet oxygen and a scavenger of free radicals (Foote et al., 1970); Krinsky and Deneke, 1982). Luxia et al. (1996) reported that â-carotene of Spirulina may reduce cell damage, especially the damage to DNA molecules, thus playing the role in the repair of re-generation process of damaged hepatocytes cells.

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17 QUANTITATIVE AND QUALITATIVE ASSESSMENT OF HINDON RIVER IN DISTRICT MUZAFFARNAGAR

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Abstract

Hindon river is one of the ancient rivers which exist since Harrapa civilization and have its origin in Shivalik ranges of Lower Himalayas. The river used to be the lifeline and main source of drinking and irrigation for the people of western Uttar Pradesh. But with the passage of time after industrialization and era of green revolution the water of river is highly polluted and turned to be a curse instead of bless to the locals. In the present study, in respect of water quality in Hindon river, wide range of variations were recorded in permissible value of pH, Total Dissolved Solids (TDS), Dissolved Oxygen (DO), Oxygen Demand (BOD), Chemical Oxygen Demand (COD), colour, odour, chloride and iron concentration. Industrial effluents have harmful effects on flora and fauna of nearby ecosystems. The high level of Total dissolved solids (TDS) is of major cause of concern due to increased incidence of cancers in last decade.

Key words: - pH, Industrial Effluents, Ecosystem, Dissolved Oxygen.

Introduction

Hindon (Harnandi) river is a tributary of Yamuna river that originates in Saharanpur district of Uttar Pradesh from upper Shivalik ranges (Lower Himalayas). It lies between latitude 28°30' to 30°15' N and longitude 77°20' to 77°50' E. It flows through six districts including Saharanpur, Muzaffarnagar, Baghpat, Meerut, and Gautam Budh Nagar in western UP. A once clean river has been reduced to a trunk sewer passing through urban towns and cities carrying a heavy load of industrial effluents, municipal wastes of Saharanpur, Muzaffarnagar, Meerut and Ghaziabad, agricultural pesticides runoff from fields. The industries of western Uttar Pradesh discharge their effluents often without treatment directly into the Hindon River. This heavy loading of effluents into the river characterizes the presence of hazardous chemicals and reduced dissolved oxygen level throughout the year which in turn harmful for the biological diversity of the river ecology.

Main ecological problems of river are water heating, acidification, increased turbidity and oxygen imbalance. One of the important reasons for ibid factors is the presence of a large number of industries which include paper factories, sugar mills, slaughter houses, distilleries and cement factories which releases their toxic wastes without proper treatment of it thereby causing high BOD, COD values causing a massive degree of water pollution. This water pollution not only making flora and fauna of river habitat getting extinct at a very fast rate but also contaminating the river and ground water that in turn becomes hazardous for drinking and irrigation purposes. In current study, it was also noticed that Rabi and Kharif Crops which are being cultivated in nearby villages of the river getting high number of toxic elements in food chain which is subsequently percolating to Human beings of the local areas and making them seriously ill. The villages of ibid six districts are getting a gradual increase no of patients who are suffering from neuro-muscular disorders, genetic defective new born babies and cancers. Not only this, it also has deleterious effect on the soil micro fauna and aquatic ecosystems. Soil is the habitable zones for microorganisms that include bacteria, fungi, algae, viruses and protozoans. Industries toxic effluents whether sugar, paper mills or fertilizer industries or chemical treatment given to fields causing problems to soil microfauna that subsequently reducing the biodiversity of an ecosystem. A no. of studies shows that sugar factory effluents are releasing various acidic and alkaline compounds and solid waste that resulted in high BOD and COD (Roy,2007; Behra and Mishra,1969).

Methodology

A total of six experimental sites were chosen for the sampling from Hindon River district Muzaffarnagar which are mentioned in the table no. 1.

No. of site	Name of the Experimental site
Ι	Hindon river at village Dhindawali
Π	Hindon river at village Kutbi
III	Hindon river at village Sarurpur
IV	Hindon river Before entering into Budhana
V	Hindon river at exit of Budhana
VI	Hindon river at village Tamela Garhi

Table no.-1 Classification of Experimental sites of District Muzaffarnagar

Water samples from above mentioned sites were collected and analyzed quantitatively for physical and chemical parameters, pH, electrical conductivity, total dissolved solids (TDS), dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD), iron concentrations and chlorides by standards methods and procedure. (APHA,1995 and Merck, 1974).

Results and Discussion

Industrial discharge causes physiochemical changes in water quality which ultimately affects the flora and fauna. In the present investigation, wide range of variations were recorded in pH, TDS, dissolved oxygen, biological oxygen demand (BOD), chemical oxygen demand (COD), colour, odour, chloride and iron etc. The samples were collected from the above mentioned sites during May 2019–Aug 2019.

Table No. – 2 Physiochemical Values of Different Parameters

S. No.	Parameter	E. Site I	E. Site II	E. Site III	E. Site IV	E. Site V	E. Site VI
1.	Colour	Dark brown	Dark brown	Blackish	Black	Black	Black
2.	Odour	No smell	No smell	No smell	Pungent smell,	Foul smell,	Pungent
					turbid	highly turbid	odour
3.	рН	8.3	8.5	8.3	8.5	9.2	8.9
4.	Electrical	0.71	0.62	1.1	1.4	2.8	2.4
	conductivity(us/cm)						
5.	Total dissolved	460	450	617	780	1250	1020
	solids(mg/L)						
6.	Alkalinity(mg/L)	680	670	830	1220	1730	1820
7.	Dissolved	3.4	3.5	3.7	2.8	1.7	1.9
	oxygen(mg/L)						
8.	Biological Oxygen	165	180	290	595	600	615
	Demand(mg/L)						
9.	Chemical oxygen	160	180	240	420	1050	1600
	demand(mg/L)						
10.	Iron(mg/L)	0.50	0.50	0.15	0.60	0.70	0.75
11.	Chlorides(mg/L)	180	188	210	245	390	410

In the ibid study, we observed that as river downstream flow from its origin, the level of contamination also increases multifold. Peak of contamination was observed at exit of tehsil Budhana of district Muzaffarnagar. Although pH usually has no direct impact on water consumption yet it is one of the key factors in deciding the quality of water. Careful control of pH is necessary at all stages of water treatment to ensure satisfactory water clarification and disinfection. Exposure to extreme pH values results in irritation in eyes, skin and mucus membrane. Exposure to low pH value can also results in similar effects (WHO, 1986). pH range in our study varies between 8.2 to 9.3 that is an alarming signal for the health concern of not only Human beings but for the aquatic life also.

All dissolved material, ions, salts, cations, anions and metals present in the water is reflected by the (TDS)Total dissolved solids. In our study (table no.- 2) the value of TDS is more than the permissible limit(500mg/L) issued by the W.H.O. This shows that water is contaminated with surface runoff, agricultural runoff, household wastes etc. which make it unfit for the drinking purpose. If such water will be used for drinking than it will cause various harmful diseases that were observed in the last decade in the nearby villages (based on our discussion with locals and media reports). Past research has shown that reducing the concentration of DO in the root zone of plants will compromise the ability of plant to absorb the nitrate and water which shows an enhancing effect on water pollution. (Flannery, RJ and Lieth, JH,2008).

A variation was observed in the conductivity of water samples from the permissible values. High electrical conductivity affects the germination of crops and much reduced yield (Srinivas et al,2000). Alkalinity is an important factor which acts as a buffer solution against rapid changes to the aquatic life. The alkalinity permissible level is 600 mg/L according to W.H.O. The alkalinity variance from the normal range reflects the pollution from industrial effluents. Dissolved oxygen level that is too high or too low can affect the water quality, harm the aquatic life not only this but also have a significant effect on plant health, root development, fertilizer and water uptake as well as yield.

BOD, a measure of quantity of oxygen required for the complete oxidation of organic matter by the organism present in the water body while the chemical oxygen demand is the measure of capacity of water to consume oxygen during the decomposition of organic as well as inorganic compounds such as ammonia and nitrate. Domestic sewage, household wastes, plant wastes, are the source for eutrophication indicating high BOD not only in lakes but in stagnant water in river also. The values of biochemical oxygen demand and chemical oxygen demand exceed the normal range in the present study which shows that river water contains both kinds of pollution organic as well as inorganic. Wastes from industries in combination with suspended solids can reduce light penetration and increase turbidity which resulted into reduced aquatic fauna. Benthic decomposition of components can decrease oxygen availability while anaerobic decomposition can produce hydrogen sulphide and release byproducts that increase BOD (Ashok et al, 1988; Baruah et al, 1993; Kaushik et al, 2013).

In our study, we observed the iron contamination value ranging from 0.15-0.75mg/L. Iron is an essential element for hemoglobin, myoglobin and a number of enzymes. Iron deficiency led to anemia and loss of well-being while its overload causes severe health problems such as liver cancer, diabetes, heart disease and infertility etc. The presence of higher concentration of iron changes colour, odour and taste of water, corrodes pipelines (Behera et al,2012).

Naturally chloride occurs in all types of water. In river water it results from agriculture runoff, industries and fluoride rich rocks. In the present study, we observed slightly higher amount of chloride content. The high chloride contents may affect the aquatic life and also of the human being who consume its water. This shows that the water is unfit for the drinking purpose

Conclusion

Industrial effluents have harmful effects on flora and fauna of nearby ecosystems. The high level of Total Dissolved Solids (TDS) is of major cause of concern due to increased incidences of cancers in last decade. As a developing nation, a fine synergy between industries and ecosystem needs to be maintained in order to attain

sustainable development. In order to revive the ancient form of river Hindon, it is required that industrial effluents from sugar, paper, textiles and other factories must be properly treated as per environmental standards as well as natural and organic farming should be promoted at the grass root level in order to ensure chemical free discharge into river and disorder free lifestyle for the locals.

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PHYTOSOCIOLOGICAL STUDIES ON TREES SPECIES OF YAMUNA RAVINES OF DISTRICT MATHURA

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Abstract

The present study was carried out at Yamuna ravines of district Mathura. Yamuna ravines of district Mathura were divided into five regions and phytosociological data were analysed for trees at all the sites. Phytosociological parameters such as frequency, density, abundance, density, relative density, relative frequency, relative dominance and importance value index were examined. Total twenty-eight species belonging to twenty-three genera and seventeen families were studied at five study point. Highest importance value index value was reported for the species *Salvadora oleoides* followed by *Anoguissus pendula*. The aim of this paper is to analyse the phytosociological characters and diversity pattern of trees in the study area.

Key words: Phytosociological studies, Yamuna ravines, quadrate

Introduction

Our lives are unimaginable without the presence of plants. They have a mutual relationship among themselves and with their environment (Mishra et al. 1997). This relationship gives rise to the outcomes of different plant communities in different areas. The quantitative relationship between rare species and abundant species is an important character of our community. Phytosociological studies are of immense importance to collect the data and describe the plant communities as well as the relationship with the environment. It is the distribution of plant communities in a given phytogeographic region. In this study, we explore the data for Ravine land. A ravine can be defined as a narrow steep-sided valley commonly eroded by running water. These ravine regions do not have the required conditions for vegetation because of a number of factors such as nutrient deficiency, extreme temperature etc.

In India, out of a total geographical area of 328.8 million hectares about 36.7 lakhs hectares land is ravine land. Out of this about 12.3 lakhs hectares of ravines are located in Uttar Pradesh. Mathura District accounts for approximately 1.06% hectares of ravine land mainly located along the river Yamuna.

Material and Methods

Yamuna ravines of Mathura district were divided into five major parts. Each part is considered as a study point. Phytosociological studies were performed using quadrate method as supported by Mishra and Puri (1954) and

Mishra (1973). Quadrats were laid down on the selected spots in different seasons such as rainy, winter and summer. Ten quadrates for trees were laid at each study point. Frequency, density and abundance have been calculated by following formula:

$$Frequency = \frac{Number \ of \ sampling \ units \ in \ which \ sps. \ occured \ X \ 100}{Total \ number \ of \ units \ studied}$$

 $Density = \frac{Number \ of \ individuals \ of \ the \ sps. \ in \ all \ quadrates}{Total \ number \ of \ quadrats \ sampled}$

$$Abundance = \frac{Total \ number \ of \ individuals \ of \ the \ sps. in \ all \ quadrats}{Total \ number \ of \ quadrats \ in \ which \ sps. occured}$$

Relative frequency, relative density and relative dominance were calculated by the following formula (Phillips, 1959, Mishra, 1973)

$$Relative Frequency = \frac{Number of quadrats of occurrence of the plant X 100}{Number of quadrats of occurrence of all the plant species}$$

 $Relative \ Density = \frac{Number \ of \ individuals \ of \ the \ sps.occured X100}{Number \ of \ individuals \ of \ all \ the species}$

 $Relative Dominance = rac{Total \ basal \ area \ of \ the \ species \ X100}{Total \ basal \ area \ of \ all \ species}$

Curtis (1956), Phillips (1959) and Mishra et al. (1966) have laid emphasis on the determination of Importance Value Index. It is utilized in expression of the dominance and ecological success of the species in an area. In this study, the importance value index of five communities was also determined and used for evaluating the dominance of the species in various communities.

Result and Discussion

Phytosociological data of five different study sites was collected at ravine of Mathura and one community was named for all the different sites of Mathura ravine. As suggested by earlier scientists (Pandaya, 1964a and 1964b, Malhotra 1968, Singh 1980) the communities were named on the basis of dominance and co-dominance species, the vegetation of Mathura district is divided into five communities i.e.

Dalbergia sissoo-Azadirachta indica Community, Anageissus pendula – Salvadora persica Community, Anogeissus pendula – Prosopis juliflora Community, Salvadora persica – Acacia nilotica Community and Salvadora oleoides – Prosopis juliflora Community. Particulars of quadrates 10(10m²) quadrate for Tree

S.No.	Name of Species	А	В	C	D	Е	F	IVI
	Delbergia sissoo-Azad	dirachta	<i>indica</i> Co	mmunity (Spo	t -I)			<u>. </u>
1.	Delbergia sisso Roxb.	5	7	3837.46	25.00	29.16	41.97	96.13
2.	Azadirachta indica A. Juss.	4	6	2751.83	20.00	25.00	30.16	75.16
3.	Acacia sylvastris Roxb.	3	3	381.97	15.00	12.00	4.17	31.17
4.	Phoenix sylvastris Roxb.	1	1	97.48	5.00	4.16	3.13	12.29
5.	Salvadora oleoides Decns	2	2	194.96	10.00	8.38	2.13	20.51
6.	Mangifera indica Linn.	1	1	286.47	5.00	4.16	3.13	12.29
7.	Mitragyna Diversifolia (Roxb.) Funth	1	1	412.53	5.00	4.16	4.51	13.67
8.	<i>Tamarix aphylla</i> Lanza	1	1	447.62	5.00	4.16	4.89	14.05
9.	Syzygium cumini (Linn.)	1	1	389.93	5.00	4.16	4.26	13.42
10.	Zizyphus mauritiana Lamk.	1	1	336.21	5.00	4.16	3.67	12.83
	Anogeissus pendula -	- Salvado	ra persic	a Community (Spot -II)		•	
1.	Anogeissus pendula Edgew	9	32	16297	21.42	30.92	51.79	104.13
2.	Salvadora persica Linn.	8	28	9414.01	19.04	26.92	29.92	75.88
3.	Prosopis juliflora DC	6	17	2739.45	14.28	16.34	8.70	39.32
4.	Acacia nilotica Del.	5	8	1018.59	11.90	7.80	1.13	20.83
5.	<i>Flacourtia indica</i> Burm.f.	3	5	358.09	7.14	4.80	1.14	13.08
6.	Acacia leucophloea Willd.		3	483.43	7.14	2.88	1.53	11.55
7.	Pongamia pinnata Piero.	2	3	309.39	4.77	2.88	0.98	8.63
8.	Holoptelea integrifolia Pianch.	2	3	381.97	4.76	2.88	1.21	8.85
9.	<i>Cordia dichotoma</i> Forst.f.	2	3	326.82	4.76	2.88	1.01	8.65
10.	Wrightia tinctoria R.Br.	1	1	71.62	2.38	0.96	0.23	3.57
11.	Grewia tenax	1	1	62.38	2.38	0.96	0.19	3.53

 Table-1

 Phytosociological attributes of different communities

Anogeissus pendula – Prosopis juliflora Community (Spot – III)									
1.	Anogeissus pendula Edgew.	10	43	23572.99	27.77	50.58	76.20	154.57	
2.	Prosopis juliflora DC.	7	15	2750.19	19.44	17.64	8.88	45.96	
3.	Salvadora persica Linn.	5	7	2141.27	13.88	8.23	6.92	29.03	
4.	<i>Acacia nilotica</i> Del.	3	5	574.54	8.33	8.88	1.86	19.07	
5.	<i>Pongamia pinnata</i> Pierre.	2	3	292.44	5.55	3.53	0.94	10.02	
6.	Holoptelea integrifolia Planch.	1	2	294.27	2.77	2.35	0.94	6.06	
7.	<i>Cordia dichotoma</i> Forst. F.	1	2	254.64	2.78	2.35	0.82	5.95	
8.	Acacia leucophloea Willd.	1	1	127.32	2.78	1.17	0.41	4.36	
9.	Grewia tenex fiori	1	1	71.62	2.78	1.17	0.23	4.18	
10.	<i>Flacourtia indica</i> Burm.f.	2	3	181.16	5.55	3.52	0.60	9.67	
11.	Dalbergia sissoo Roxb.	2	2	572.95	5.55	2.35	1.85	9.75	
12.	Albizzia lebbeck Benth	1	1	97.48	2.77	1.17	0.32	4.26	
I	Salvadora persica – A	cacia nil	<i>otica</i> Cor	nmunity (Spot	– IV)				
1.	Salvadora persica Juss.	9	30	8594.36	15.51	23.25	40.14	78.9	
2.	<i>Acacia nilotica</i> Del.	7	26	2253.15	12.06	20.15	12.63	44.84	
3.	Prosopis juliflora DC.	6	19	1548.25	10.34	14.72	8.76	33.82	
4.	Acacia leucophloea Willd.f.	5	11	789.81	8,62	8.53	4.41	21.56	
5.	Prosopis spicigera Linn.	4	7	501.33	6.89	5.44	2.80	15.13	
6.	<i>Flacourtia indica</i> Burm.f.	4	7	436.72	6.89	5.44	2.44	14.77	
7.	<i>Pongamia pinnata</i> pierre.	4	6	736.94	6.89	4.65	4.28	15.82	
8.	Holoptalea integrifolia Planch.	3	5	515.66	5.17	3.88	2.88	11.93	
9.	<i>Cordia dichotoma</i> Forst.f.	3	3	275.97	5.17	2.33	1.54	9.04	
10.	Cassia fistula Linn.	3	3	214.85	5.17	2.33	1.20	8.70	
11.	Ficus religiosa Linn.	1	1	175.78	1.72	0.78	0.98	3.48	
12.	Haplophragma adenophyllum	2	2	294.27	3.44	1.56	1.64	6.64	

13.	Delbergia sissoo Roxb.	2	3	483.43	3.44	2.34	2.70	8.48	
14.	Azadirachta indica Juss.	1	1	286.47	1.72	0.78	1.60	4.10	
15.	<i>Grewia flavescens</i> Juss.	1	1	62.38	1.72	0.78	0.34	2.84	
16.	Zizyphus maurtiana Lamk.	1	2	280.74	1.72	1.55	1.57	4.84	
17.	Dichrostachya cinarea wt. & Arn.	1	1	133.77	1.72	0.78	0.74	3.24	
18.	Mitragyna parviflora Korth.	1	1	240.72	1.72	0.78	1.34	3.84	
Salvadora oleoides – Prosopis juliflora Community (Spot – V)									
1.	Salvadora oleoides Juss.	10	28	2626.47	54.54	52.83	56.29	163.66	
2.	Prosopis juliflora DC	7	20	1432.39	31.81	37.73	33.24	102.78	
3.	<i>Tamarix apphylla</i> Lanca.	2	2	124.77	9.09	3.77	2.89	15.75	
4.	<i>Acacia nilotica</i> Del.	2	2	254.64	9.09	3.77	5.90	18.76	
5.	Salvadora persica Linn.	1	1	71.62	4.63	1.80	1.66	8.09	

No. of Quadrats of Occurrence =A, Number of Plants =B

Total Basal Area = C, Relative Frequency = D

Relative Density = E, Relative Dominance = F

Raunkiaer's law of distribution of frequencies is A > B > C >= < D < E. The general fall in the class A to E class clearly shows that the stands are heterogenous.

Total 17 families of trees are recorded in five study points of Yamuna ravines at district Mathura. Out of 17 families one family belongs to monocot i.e. Arecaceae by phoenix sylvastris and 16 belongs to dicot i.e. Fabaceae, Tiliaceae, Rhamnaceae, Meliaceae, Salvadoraceae, Anacordiaceae, Tamaricaceae, Myrtaceae, Ulmaceae, Rubiaceae, Combretaceae, Salicaceae, Boraginaceae, Apocynaceae, Moraceae and Bignoniaceae. Fabaceae is the most dominant family in this area and is represented with ten species and seven genera. According to Bhandari et al. (1999), a community is filled with different species playing a certain role and there is a definite quantitative relationship between abundant and rare species.

The community of Mathura ravine was destroyed by overexploitation due to different factors such as severe grazing by domestic animals, human interference etc. resulting into a barren land. Due to such biotic interferences, the tree species were reduced in size in the ravines. Similar observation was made earlier by Bor (1941).

Conclusion

The area of the Mathura district (Uttar Pradesh) belongs to the 'Tropical Dry Deciduous Forest' and consists of trees, shrubs, climbers and herbs. The area is dominated by trees such as Acacia nilotica Del., Capparis decidua Forsk., Capparis sepiaria Linn., Prosopis juliflora DC., Salvadora persica Linn., Zizyphus nummularia Burm.f in

different communities. The occurrence of a mixture of characteristic plants show that vegetation of the district Mathura is composed of floral elements of three abutting regions- Rajasthan, Delhi and other parts of Uttar Pradesh.

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19 DATA CENTER: LARGE BUILDINGS FOR SERVERS

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Abstract

A data center is a physical facility that organizations use to house their critical applications and data. A data center's design is based on a network of computing and storage resources that enable the delivery of shared applications and data. The key components of a data center design include routers, switches, firewalls, storage systems, servers, and application-delivery controllers. Organizations need to provide quality of services by processing business transactions, electronic exchange of data and instant data delivery to their clients, so it is the main reason why data center or data center comes to the existence. Data centers are improving the efficiency and scalability by adopting technologies including IoT (Internet of Things), Cloud computing and Virtualization applications.

Key words: Data Center Architecture, Components, Types, Standards, Tiers Rating, Availability, Consideration and Importance, IoT

INTRODUCTION

A data center is a building, dedicated space within a building, or a group of buildings used to house computer systems and associated components, such as telecommunications and storage systems.

All data centers are essentially buildings that provides space, power and cooling for network infrastructure. They centralize a business's IT operations or equipment, as well as store, share and manage data.

Businesses depend on the reliability of a data center to ensure that their daily IT operations are always functioning. As a result, security and reliability are often a data center's top priority.

DATA CENTER ARCHITECTURE

The data center is home to the computational power, storage, and applications necessary to support an enterprise business. The data center infrastructure is central to the IT architecture, from which all content is sourced or passes through. Proper planning of the data center infrastructure design is critical, and performance, resiliency, and scalability need to be carefully considered.

Another important aspect of the data center design is flexibility in quickly deploying and supporting new services. Designing a flexible architecture that has the ability to support new applications in a short time frame can

result in a significant competitive advantage. Such a design requires solid initial planning and thoughtful consideration in the areas of port density, access layer uplink bandwidth, true server capacity, and oversubscription, to name just a few.

The data center network design is based on a proven layered approach, which has been tested and improved over the past several years in some of the largest data center implementations in the world. The layered approach is the basic foundation of the data center design that seeks to improve scalability, performance, flexibility, resiliency, and maintenance. Figure1 shows the basic layered design.



Figure 1 Architecture of Data Center

The layers of the data center design are the *core, aggregation,* and *access* layers. These layers are referred to extensively throughout this guide and are briefly described as follows:

- **Core layer** provides the high-speed packet switching backplane for all flows going in and out of the data center. The core layer provides connectivity to multiple aggregation modules and provides a resilient Layer 3 routed fabric with no single point of failure. The core layer runs an interior routing protocol, such as OSPF or EIGRP, and load balances traffic between the campus core and aggregation layers using Cisco Express Forwarding-based hashing algorithms.
- Aggregation layer modules provide important functions, such as service module integration, Layer 2 domain definitions, spanning tree processing, and default gateway redundancy. Server-to-server multi-tier traffic flows through the aggregation layer and can use services, such as firewall and server load balancing, to optimize and secure applications. The smaller icons within the aggregation layer switch in Figure 1 represent the integrated service modules. These modules provide services, such as content switching, firewall, SSL offload, intrusion detection, network analysis, and more.
- Access layer is that where the servers physically attach to the network. The server components consist of 1RU servers, blade servers with integral switches, blade servers with pass-through cabling, clustered servers, and mainframes with OSA adapters. The access layer network infrastructure consists of modular switches, fixed configuration 1 or 2RU switches, and integral blade server switches. Switches provide both Layer 2 and Layer 3 topologies, fulfilling the various servers broadcast domain or administrative requirements.

COMPONENTS OF A DATA CENTER

Every data center is designed according to the needs and requirements of a particular organization in a wellconstructed and safe building having the following components:

- · Servers
- · Networking
- · Storage
- · Software
- · Cabling
- · Infrastructure
- · Cooling
- · Backup Power
- · Environment Monitoring



Data center design includes routers, switches, firewalls, storage systems, servers, and application delivery controllers. Because these components store and manage business-critical data and applications, data center security is critical in data center design. Together, they provide:

- Network infrastructure This connects servers (physical and virtualized), data center services, storage, and external connectivity to end-user locations.
- **Storage infrastructure** Data is the fuel of the modern data center. Storage systems are used to hold this valuable commodity.
- **Computing resources** Applications are the engines of a data center. These servers provide the processing, memory, local storage, and network connectivity that drive applications.

TYPES OF DATA CENTERS

Many types of data centers and service models are available. Their classification depends on whether they are owned by one or many organizations, how they fit (if they fit) into the topology of other data centers, what technologies they use for computing and storage, and even their energy efficiency.

There are four main types of data centers:

• Enterprise data centers

These are built, owned, and operated by companies and are optimized for their end users. Most often they are housed on the corporate campus.

• Managed services data centers

These data centers are managed by a third party (or a managed services provider) on behalf of a company. The company leases the equipment and infrastructure instead of buying it.

Colocation data centers

In colocation ("colo") data centers, a company rents space within a data center owned by others and located off company premises. The colocation data center hosts the infrastructure: building, cooling, bandwidth, security, etc., while the company provides and manages the components, including servers, storage, and firewalls.

Cloud data centers

In this off-premises form of data center, data and applications are hosted by a cloud services provider such as Amazon Web Services (AWS), Microsoft (Azure), or IBM Cloud or other public cloud provider.

STANDARDS FOR DATA CENTER INFRASTRUCTURE

The most widely adopted standard for data center design and data center infrastructure is ANSI/TIA-942. It includes standards for ANSI/TIA-942-ready certification, which ensures compliance with one of four categories of data center tiers rated for levels of redundancy and fault tolerance.

- Tier 1: Basic site infrastructure A Tier 1 data center offers limited protection against physical events. It has single-capacity components and a single, non-redundant distribution path.
- Tier 2: Redundant-capacity component site infrastructure This data center offers improved protection against physical events. It has redundant-capacity components and a single, non-redundant distribution path.
- **Tier 3: Concurrently maintainable site infrastructure** This data center protects against virtually all physical events, providing redundant-capacity components and multiple independent distribution paths. Each component can be removed or replaced without disrupting services to end users.
- **Tier 4: Fault-tolerant site infrastructure** This data center provides the highest levels of fault tolerance and redundancy. Redundant-capacity components and multiple independent distribution paths enable concurrent maintainability and one fault anywhere in the installation without causing downtime.

DATA CENTER TIER RATINGS

The classification levels of data centers represent a certification of design. A tier is another way of saying "level of service."

- Tier 1 data centers Tier 1 data centers can be little more than a powered warehouse. They are not required to be very sophisticated. On the other end of the spectrum is a tier 4 data center. This tier gives its clients a guarantee of uptime and 2N (two times the amount required for operation) cooling and redundant power and infrastructure. These standards will protect most companies. Level IV clients usually never even hear if there are issues at the data center infrastructures due to these redundancies. These standards show just how reliable top-tier systems are.
- **Tier 2 colocation data centers Tier 2 colocation data centers** are more robust than Tier I centers. Tier II does not have complicated performance hardware. For instance, level III and IV data centers require dual power inputs. Level II does not. Level II gives clients a customizable balance between cost management and performance.
- **Tier 3 data centers Tier 3 data centers** can perform repairs without any notable service disruption. Another way to define a level III provider is that they offer an N+1 (the amount required for operation plus a backup) availability for clients. As with any technology product, unplanned maintenance may still cause a problem in a level III provider. In short, level III is even tolerant of some faults.

• **Tier 4 data centers**— Tier 4 data centers are considered "fault tolerant." Unplanned maintenance does not stop the flow of data to a data center Tier IV. Day-to-day operations continue regardless of any support taking place.

AVAILABILITY ACCORDING TO DATA CENTER TIERS

Availability levels include data from the hardware:

- Tier 1 99.671% Guaranteed availability
- Tier 2 99.741% Guaranteed availability
- Tier 3 99.982% Guaranteed availability
- Tier 4 99.995% Guaranteed availability

Figure 3 Data Center Tiers



COMMON CONCERNS IN THE DESIGN OF A DATA CENTER

Many components and factors are taken into consideration when creating a modern data center. With proper planning, maintenance, and security, a data center is at lower risk of both downtime and data breaches.

Data center considerations include:

- **Redundancy/backup** The level of redundancy varies widely based on the quality of a data center; in high tier data centers, multiple redundancies in power and backup servers are built into the infrastructure.
- Efficiency— The amount of electricity used at a large data center rivals that of a small town. Whenever possible, data centers attempt to cut down on costs by optimizing cooling processes and using energy-efficient hardware.
- Security— Proper physical security, both in terms of electronic surveillance, access controls, and on-site security guards reduce the risk associated with bad actors attempting to gain site access.
- Environmental controls/factors— maintaining the right environmental conditions is necessary for the proper functioning of electronic hardware. Keeping both temperature and humidity within acceptable parameters requires the proper balance of air conditioning, humidity control, and airflow regulation. In areas that are vulnerable to earthquakes, properly secured servers are also a necessary concern.
- Maintenance and monitoring— On-site or on-call network engineers are needed in order stay on top of server crashes and other hardware failures. Proper response helps to ensure server uptime and eliminate reductions in quality of service.

• **Bandwidth**—A data center is incomplete without the bandwidth necessary to handle all the requisite network traffic. Bandwidth considerations are a central component in data center infrastructure, with external network connections and internal data center topology both designed around sufficient network capacity.

IMPORTANCE OF DATA CENTER

- **No Infrastructure Costs:** When the services of a Data Center are availed of, there is no need for investment in infrastructure. The Data Center provider charges the client for the services rendered. Additional equipment can be added on request and customized within short intervals. If infrastructure costs increase disproportionately when compared to total spending, saving capital on hardware can certainly be a major cost saving factor for most small and even major corporations.
- Uninterrupted Power Supply: Data Centers have a power supply system built never to fail. Usually in case of a general power outage a battery bank will provide power till the diesel generators kick in. This ensures almost no interruption in power supply! No interruptions in power supply would mean higher server uptime.
- Security: Security is one of the most essential features a client would require in a Data Center. All physical access is controlled completely. Identities may be confirmed via biometrics and all activities are video-logged. Entry to the premises is restricted each client is provided a dedicated space with the required security levels.
- **Bandwidth:** As an online business progresses the bar for requirement of bandwidth increases radically. We-based ordering, product registration, web-based marketing, video ads, audio conferencing, video and audio collaboration are all bandwidth exhaustive applications. Data Centers are well equipped to handle this need at all times.

CONCLUSION

A data center is a physical facility that organizations use to house their critical applications and data. A data center's design is based on a network of computing and storage resources that enable the delivery of shared applications and data. The key components of a data center design include routers, switches, firewalls, storage systems, servers, and application-delivery controllers. Organizations need to provide quality of services by processing business transactions, electronic exchange of data and instant data delivery to their clients, so it is the main reason why data center or data center comes to the existence. Businesses depend on the reliability of a data center to ensure that their daily IT operations are always functioning. As a result, security and reliability are often a data center's top priority. Data centers are improving the efficiency and scalability by adopting technologies including IoT (Internet of Things), Cloud computing and Virtualization applications.

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ROLE OF COMPUTERS & NETWORKING IN EDUCATION

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Abstract

The Computer is one of the most remarkable developments in the history of mankind. The quest for a teaching machine has led to the discovery of various modes of the Computer Assisted Instruction (CAI) as well as varied uses of computer networking for educational purposes. The present article is an attempt to deal with this aspect of usage of computers. The computer has played an important role in the development of mankind. With the advent of latest technologies in the sphere of computer application, a revolutionary change has come in the communication. The present article deals with the various applications of computers in ICT particularly in communication.

THE COMING OF COMPUTERS

Mankind has made tremendous advancements in every field, more so since the Industrial Revolution. The most outstanding and rapidly evolving development is undoubtedly the Computer. It is the outcome of man's search for a fast and accurate device that could be used to make detailed mathematical calculations. The use of fingers and toes by early man, pebbles by Egyptians and the Abacus used by the Babylonians in about 2200 B.C. are all ancestors of the modern computer. The other major stepping stones were the use of principles of logarithms in 1614 AD by Napier, and the Log-table by Briggs in 1624. This was the time when different mechanical calculating devices were being designed like the adding machine by Blasé Pascal in 1647, multiplication and division machine by Leibniz in 1673.

Charles Babbage (1822-48) of England and Lady Adam Lovelace designed the 'Difference Engine' and 'Analytical Engine'. In 1890, Herman Hollerith designed the census machine and started the 'Tabulating Machine Company' which later merged with other companies to form International Business Machine Corporation (IBM).

In early 1943, at the Harvard University in the U.S.A., the first machine (known as the Mark-1 Computer designed by Hoard Aiken), which could automatically perform according to preprogrammed instruction without any manual interference, was demonstrated. It was complex in design and huge in size. The addition of two numbers (up to 23 digits) took 0.3 of seconds. In February 1946, the first all electronics computer the ENIAC (Electronic Numerical Integrator Calculator) was dedicated by a team led by Prof. Eckert and Prof. Mauchley of the University of Pennsylvania. It made use of very high speed vacuum tube switching devices. Although it was fastest available machine then, yet it was huge and generated tremendous heat.

The EDVAC (Electronic Discrete Variable Automatic Computer) used acoustic delay lines was followed by the EDSAC(Electronic Delay Storage Automatic Calculator) which was the first computer capable of storing data

and instructions (Cambridge University, 1949). In 1950, UNIVAC-1 (Universal Automatic Computer), the first commercially available computer, was developed by Sperry Rand. All such machines that made use of vacuum tubes where the first generation of computers. The second generation of computers (1959-1964) made use of transistors, which were smaller, yet performed the same task as a large valve, had high speed and increased capacity. However, the basic component was a discrete of separate individual entity so the thousands of separate components had to be hand assembled into functioning circuits.

In 1964, the invention of Integrated Circuits Chips marked the onset of the Third Generation of Computer (1964-1970). The functions of a number of transistors were put together on a single chip of silicon, as the result less space and power required. Since then the computer industry has recorded a phenomenal growth worldwide. At first in 'Small Scale Integration or SSI', only about 10 components could be integrated. As a technique of IC's improved, it became possible to combine up to a 100 components known as 'Medium Scale Integration or MSI'.

Fourth Generation Computers (1970-1977) are with the entire CPU on a single chip, commonly known as the microprocessor, which make use of the 'Large Scale Integration or LSI' technology (tens of thousands of transistors on a single chip, barely 1 sq. cm in size). This has made desktop and laptop computers a reality.

Fifth generation computers are the latest generation of computers. Man made computers and God made man. God-made has capability to think, decide and possess intuitions. But manmade does not have any of these capabilities. The computers we have discussed so far are like obedient servants who do not think but performs. But fifth generation computers are the computers which will not only have the capabilities like speed, accuracy, diligence, storage and retrieval capabilities of other computers but have additional ability to think and make decisions (some time better than the human beings).

This ability of intelligence in computers has been named Artificial Intelligence (AI). Japanese have named fifth generation computers as KIPS- Knowledge Information on Processing Systems with the development of Artificial Intelligence a new era of computers have started.

COMPUTERS IN EDUCATION

During the times when the computer technology was in its infancy, the concepts of education and classroom instruction were also being revolutionized by more human concepts and principles of individualization of Instruction. The child or the learner was in focus of all educational endeavors. Educational psychologists and behaviorists such as B.F. Skinner introduced the concept of 'programmed instruction' or 'programmed learning'. Efforts were on for the quest of teaching machine which presupposed that the children could master specific academic or educational skills without the direct supervision of instructor. It was presumed that if the scope and sequence of skills was organized correctly, students would be motivated by the positive reinforcement of continual success and would proceed through each level until they had achieved mastery. The personality interactions between teacher and taught could be minimized if not totally eliminated and the process made more effective.

In the beginning very simple programs were tried out on the machines such as those designed to teach basic pattern recognition skills. On one such machine a figure appeared on a window and the choices appeared in smaller ones which the child matched. In yet another teaching machine phonograph supplied additional auditory stimuli to student who read the question on the window and wrote the answer on a strip of paper in second slot. Thus most machines printed restored question, accepted choices of multiple choice questions and judged them for correctness.

However, the limitation of the early machine technology hindered the progress of this concept. These machines not only lacked in sound technology but were cumbersome, expensive and often out of order. Most of machine based tutorial devices proved less than viable for larger scale development and the idea that they would solve a host of problems and allow each student to progress through an entire curriculum at his or her own pace without the teacher's indulgence turned out to be an elusive dream. As consequence, attention turned towards the computer.

The first pioneering attempt in computer assisted instruction sometime in the early 1960's, when a product called PLATO (Program Logic for Automatic Operations) was developed in Minnesota as a method of teaching specific skills through drill and practice and positive reinforcement found to particularly good for slow learners as they could proceed at a pace which suited them.

The second landmark was the development of tutorials in arithmetic in 1966 by Patrick Supper of Stanford University. This was a Drill and Practice program in elementary mathematics. PLATO III and PLATO IV were simulations that enabled the students to feel the experience as though they were real. Nevertheless it was only after the advent of low cost microcomputer in 1970 that Computer assisted instruction or CAI finally acquired potential for mass dissemination of knowledge as PC's became more affordable. The inherent attributes of computer such as: round the clock availability; capacity to store and process huge amounts of information; cater to a great variety of educational needs; and easily available feedback and assessment automatically made it the most preferred choice. CAI covered the whole educational spectrum and so efforts in the field of programmed learning gradually transformed into CAI.

NETWORKING AND ITS APPLICATION TO EDUCATION

Currently it is possible to use computer networks to develop courses, teach courses, have seminars, and have teachers and students interact with each other. Such interactions are possible among students and /or teacher in different states or countries. Depending on the extent or area they cater to networks can be of two types. A local area network (or LAN) is one in which computer in different rooms of a single building or different building on a separate campus (usually 3-50 nodes) is connected together. A wide area network or WAN provides connections to distant networks (global) and resources via telephone lines and satellites.

DIFFERENT TOOLS OF COMPUTERS & NETWORKING HELPFUL IN EDUCATION

The following tools of computers and networking can be used for effective communication between the sender and receiver i.e. between the trainers/teachers & trainees/students_____

• File Transfer Protocol (FTP)—

FTP involves only one user and minimum of two computers. Using FTP, an individual connects his or her computer with another computer via a computer network and transfers the file which may be computer programs, research paper, journals in "electronic form", or any other information (even very large files). Being in the electronic form all programs, what are transferred via ftp, are ready for immediate use.

• Bulletin Board Systems (BBS)—

The bulletin board system has a menu driven system and availability of massage exchange (mail box) in addition to simple files transfer. A single "host" computer acts as a collection point for the transfer of information. It stores the information and operates under the appropriate BBS software. For information retrieval, an individual must connect to the host computer which should be fast and should have a large amount of disk storage available.

• Interactive Communication—

Network does not necessarily have to use a mainframe computer system, however adding a mainframe computer system may expand the region available for communication. The mainframe computer not only allows the network to run more efficiently by being much faster and providing bigger disk space, but also allows individuals to interact through e-mail, interactive messages and joint conferences.

• Electronic Mail (E-MAIL)---

The use of electronic mail (e-mail) is one of the most common usages of computer interaction. Its main advantage is that it is active and the user is usually informed (upon logging onto the computer) that there is mail waiting. In addition to individual's exchange messages, it is usually possible to send messages to a group of person to be sent a message to group of persons. This may lead to a seminar-type information

exchange. This concept can be then expanded to a "continuous seminar" or "permanent discussion" where there are no fixed times of meetings by establishing a computer based discussion group or list.

• Listserv—

A list server (or listserv) is a software package that facilitates the communication between members of discussion group (sending of single message to group). Any mail sent to the discussion address is automatically distributed by the listserv to all members of the group. For every listserv there is at least one individual identified as the "owner" of the list, responsible for the administration and upkeep of the list. It manages the group's archive and allows an individual (member and nonmembers) to examine earlier discussions and may also provide users with the possibility of file storage and recovery. One can send a file to the list and make it available to those interested in it without having to send it to everybody.

• Electronic journals—

As the degree of control and intervention increases, moderated lists being to take the form of an electronic journal. The electronic journal, like its paper counterpart, may like two forms. An electronic newsletter, used to announce research opportunities published on a regular basis and the fully reviewed journal. (The journal of Distance Education is one such electronic journal). Any of these available methods of communication via computer networks can be utilized for educational purpose.

• Faculty Interactions—

Computer networks can be used to facilitate communication between faculty members in different localities. In North Carolina, the Micro Net allows teachers to take graduate level courses in earth science. Using the network enable the teachers to take classes without their actual presence in the classroom and provides support for classroom instruction.

In future, it would be possible for individuals to use computer networks to communicate with textbook authors and publishers about the nature of textbook for certain courses and to design unique or personalized texts and other materials for courses. There is also an observable trend to use discussion lists to locate current research topics, research results, research papers and technical reports in selected areas (there is an interaction with those currently doing research in given area rather than an examination of previously done research). It seems that with the rapid growth in published results, such a form of communication between researchers will grow and increase research productivity by eliminating duplicate efforts.

• Student Interactions—-

Computer networks can be used to allow students to communicate and interact with other students outside their immediate geographic area. Krieg described LAN use at the junior high level to help meet the school district's computer literacy requirement. Two project's KIDSNET and KIDS-91 have been developed to connect students in classrooms around the world. A course entitled "The Physics of Space and Time" was taught utilizing extended computer networks. This course was offered through the University of West Florida in 1990. It involved 51 students at 9 different universities and high schools. The test for the course was previously agreed upon and the listserv was used to synchronize the lecture phase of the course and to assign homework. The computer network allowed the students to discuss issues related to the course and ask the course instructors questions.

Faculty at the New Jersey Institute of Technology developed a course structured to utilize a computer mediated communication system keeping two objectives in mind. Firstly, to increase the number of ways students could encounter educational experiences outside the traditional classroom and secondly, to use collaborative learning processes to improve the quality and effectiveness of education. While it is not clear if an electronic classroom is better or worse than the traditional classroom. It does seem that the availability of computer based learning networks leads to increased participation between certain groups of students. It was noted that one month after the course was completed there was still interaction among members of the course. It is easy to visualize the role of the

listserv-type environment in establishing cross-cultural awareness of students (many listservs have international subscribers). Thus, teams of students from different countries could discuss problem of ecology, culture, society, politics, and other topics of interest they might come up with.

The "heart" of teaching system is the remote teacher or monitor who negotiates with and guides the learner, its "brain" is multimedia relational database and its veins and arteries are wide band telecommunications network.

Conclusion

It is well recognized that the objective of good education cannot be achieved without the use of computers & networking. It has made education particularly/specially science education simple and understanding of multidimensional picture with great clarity. Computer has changed the quality, pattern and effectiveness of teaching. The traditional blackboard classroom teaching has been replaced by electronic/virtual class room. A traditional student is changed to digital student. It is realized that each and every digital student is an active listener in the class room and is well aware about the recent research development and happening all around the world. Consequently the dream of living in global village has become true.

Computer assisted Instruction and networking has become the buzz words these days. Interaction with other students in different cities, countries, and cultures help students with the development of critical thinking and creativity based skills and appreciation for learning outside the classroom walls. Besides, it results in increased involvement and motivation for learning as teachers and students can communicate beyond the walls of the classroom making classroom learning more applicable to the needs of all the individuals involved.

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SOCIAL MEDIA AND ITS EFFECT ON YOUTH

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Abstract

Social media refers to all applications and websites or blogs that enable people around the globe to interconnect via the internet, chat, and share content, video call among much other functionality it offers to its users. Despite the fact that almost everyone in the community is connected to at least one social media platform, the youth and teenagers are the leading and most fanatic of these social platforms to the point that they even use social network while in class or even church. It is to this light that researchers have found that these social sites impact the lives of our youth in a society a great deal in terms of morals, behavior and even education-wise. An evaluation from a number of studies done by various scientists show that social isolation can cause a number of effects such as physical, emotional, mental and psychological issues in these youths. This can in turn lead to depression, anxiety and many other problems. It also leads to misspelling of words and misuse of words and tenses through the use of short forms and abbreviations. This has a high negative impact more so on students because it affects their language capabilities directly and this led to poor grades in languages. I observed that excess use of social media spoil not only the carrier but the whole life of youths.

Key Words- social media, website, blogs, worldwide, social platforms, psychological issue, depression, misspelling, abbreviations language capabilities.

Introduction-

Before starting the impact of social media on youth, first I try to explain what is social media. Social media refers to all applications and websites or blogs that enable people around the globe to interconnect via the internet, chat, and share content, video call among much other functionality it offers to its users. Social media platforms like Instagram and Face book have become ingrained in the lives of countless individuals. Social media is a great way to pass time and see whatever is happening around the world. It is very interesting and also very addictive. However, social media is eclipsed by so many challenges, because it is unregulated. Youths were never inspired by any emerging phenomena that much until social media came to the fore. The unprecedented clutch of this most vibrant trend nowadays. Although today's no one can imagine passing the life without social media. Like the coin it consists two sides positive and negative. In this paper researcher stress, more about on negative impact of it especially on youth.

Objectives-

To aware the meaning o social media.

- To differentiate the good and bad use of social media.
- To aware the youth about the danger of social media.
- To aware the parents about the negative effect of social media on their children.
- · To educate the youth about the safe use of social media.

Methodology-

This study exploratory and quantitative in nature. To analysis the problem we used secondary information and personal experiences. As a teacher my mostly time passed among youths, so I included such experiences. Except that the quotes, data, and other information I took from different research papers of scholars, sites and published book on such theme.

Effects-

Social media usage in particular has increased dramatically over the last decade and continues at an incline. Few Research Center indicates that 71% of 13- to 17-year-olds use Face book, 52% use Instagram, and 41% use Snap chat in 2015. Teenage girls are also using image-based social media platforms more frequently than their male counterparts; 61% of girls use Instagram versus 44% of boys. This increase in usage of social media, especially Face book and Instagram, may negatively affect adolescent girls and young women in regard to their self-confidence and body satisfaction. Some researchers have portrayed links between body dissatisfaction and eating disorders with exposure to fashion magazines or television shows in women. These studies examined exposure to media forms and body image to show that there may be a link between viewing images of thin bodies and personal body dissatisfaction. The study suggests that at least in this case, social networks played an important role in the relationship between media and eating pathology, which may extend to a relationship between media and body dissatisfaction. Overall, the results of the study revealed that social media environments might influence adolescent girls and young women to engage in social comparison leading to feelings of inadequacy and body dissatisfaction . Furthermore, based on the results of this study and others, negative body image concerns appear to be higher for those who internalized negative messages and images.

Instagram is one of the most popular social media platforms. It allows users to communicate solely through posting and sharing photos. Researchers have looked at the role of Instagram on body image with adolescent girls and young women, the most frequent users of the social media platform. Studies on Instagram have mostly focused on fitspiration pictures and content in the young adult population. Fitspiration is a movement that promotes a healthy lifestyle, primarily through food and exercise. Despite its good intentions, researchers have suggested dysfunctional themes in the images and messages. In other words, are certain individuals viewing a toned or thin body, comparing themselves to it, and then feeling bad about their own body? Furthermore, some researchers suggest that even the mere act of watching fitspiration on Instagram can lead to unhealthy eating and exercise behaviors in young adults. In other words, the college students who viewed fitspiration images felt worse about themselves and their bodies compared to the students who viewed neutral images. We expect humans to socially compare themselves to other humans more than they do with landscape. Future studies should consider incorporating control photos featuring attractive, but average-sized women, for example, to produce more comparable results. "social grooming" behaviors such as "liking", visiting, and commenting on friends' posts and photos were linked to body image concerns. The researchers explained this link through the notion that "social grooming" activities lead to viewing other individuals' profiles, particularly their photos. People tend to post attractive images of themselves on social media platforms, and increased exposure to these images may lead to a distorted and idealized conceptualization of body shapes.

On the flip side, the internet is an unregulated world that has no form of morals or laws to abide to. Young people are exposed to gore images of murder victims, accidents, rape cases or even video footages of gun shootings, violence, verbal outbursts, nudism and explicit sexual content. All these kinds of gore content are in the domain of young people and when consumed for a long time can lead to serious mental breakdowns. For instance, they will

start having anxiety attacks and fear of the real world. Whatever they see is registered in their minds and they believe that the world is a bad place, but that is not entirely true. More than 90% of the earth is a safe haven with so many untapped opportunities.

Too much social media also leads to addiction. Society today is full of people seating next to each other, not talking, but just staring at their phones. Youths are spending more time with their social media friends than with their families, friends and loved ones. When they wake up, the first thing they check is their social media accounts. Before they go to sleep, the last thing they check are the updates. At work, there is reduced productivity because people are busy spending working hours perusing through social media pages. With too many distractions, they cannot fully concentrate on their tasks. Take away social media for a day and the effects will start to kick in. Just like drug addicts, they will be withdrawn and stressed. Everything they do, they post them on forums to get some form of approval from strangers. Some people adopt fake personalities to show the world that they made it. They do things that they would never dare do in real life just to impress people. They work tirelessly to buy the latest outfits, eat expensive meals and visit exotic places just for a show. Since they cannot get the same love in real life like they do in social media, they dedicate their lives fully to the social networks. Everything falls apart however when their popularity wanes and they may get into serious psychological problems, such as depression.

Social platforms also pose serious health hazards for users. Staring for long at the PC may lead to eye problems. Furthermore, avid users maintain a life of inactivity and lack of movement. They are therefore likely to suffer from obesity and are exposed to obesity-related diseases, such as heart diseases, diabetes, high blood pressure and stroke. Furthermore, they become socially inept. They cannot start conversations or interact with people.

There are instances where people announce the challenges they are going through. It may be sickness or lose of a loved one or a broken relationship. We see people posting their condolences or consolation messages to make the poster feel good. The reality of the matter is that they do not feel any form of remorse. They just do it out of natural conviction and forget about the incident as soon as they move to the next post. As Albert Einstein once said, "I fear the day that technology will surpass our human interaction. The world will have a generation of idiots".

Another threat of social media is Electronic aggression (EA): Harassment caused through emails, chat rooms, instant messaging, text messages, fake websites, etc., also pose a major threat to the privacy and safety of youngsters over the social media. The report says, 9% to 35% youngster have been affected by EA at any point of their young age. While 30% of the students in middle and high school have been identified as victims or culprits, 18% of the affected students are girls as compared to 12% boys. Unfortunately, 15% of these victims attempt suicide out of depression

Conclusion-

The popularity of media, particularly social media, in youth makes it a potentially influential force. However, many studies are correlated, and the causal mechanisms behind the potential relationships are still unknown. Much of the findings may be applicable to an individual and not generalizable to the general public. Social networking has been proved to have both positive and negative effects on our youths. Individuals should make a conclusion whether to go on using the sites or stop or even moderate on their usage. Parents should guide and advise their children on current matters like the usage of social media and warn them of its negative impacts to them when misused or overused. The education curriculum also should be revised so that it can include social media studies in its disciplines so as to alert students that they need to be careful in their social media usage.

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IMPORTANCE OF ART IN TACKLING MENTAL STRESS DURING LOCKDOWN

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Abstract

This paper addresses the role of Art in battling with mental stress during lockdown. Due to the threat of COVID -19 the entire world is facing social, financial and psychological troubles. Most of the countries have imposed lockdown in their countries. People are forced to stay at home, which is causing so much stress. During lockdown mental health is at stake. Mental health is very much correlated with creativity. Art is the most well known term of creativity. Creating art can be relaxing and have other benefits too. Art can also help in acknowledging the feelings that have been lurking in our subconscious mind.

Key words: stress, COVID -19, lockdown, art, creativity.

Introduction

Since December 2019, an outbreak of a new human corona virus has spread to many countries and caused thousands of cases and deaths. COVID-19 is the disease caused by the new virus SARS-COV-2. The full form of SARS-COV-2 is severe acute respiratory syndrome corona virus 2. COVID-19 is a contagious disease. It was identified in December 2019 in Wuhan, China for the first time and has since spread globally. In the current period the whole world has been suffering from Pandemic. This Pandemic has forced us to stay at home and look inwards for self development. But this compulsion to stay indoors is causing mental stress as well. Lot of people have found the time to pursue their hobbies and figure out their hidden talent. Some indulge in cooking, some in poetry and some in singing but on the other hand some people are facing trouble to co-operate with this stressful situation. In this testing time we realise the significance of art in helping us to deal with the anxiety and frustration caused by the Pandemic. Art can be used as a tool in fighting with stress and understanding the human behaviour.

Relationship of Art and Human Brain

Art is the creative expression of our artistic ideas and imagination. There are different forms of art such as visual arts, dance, music, literature and architecture etc. Here we are talking about the visual arts and its importance in exploring the human brain. Relation of Art and human mind is very complex and there are various unexplored aspects of Art. Art can provide the possibility to experience a new dimension to know the human mind and behaviour. Art is above of all barriers of religion, caste, gender, class and language. It brings the different people together on the same page. It elicits different reactions and emotions but everyone can agree that it moves them to think, to feel and to act. Art can give an expression to unsaid emotions and also untangled the complex human emotions. There are many scientific evidences which have proved that Art enhances brain function. It has an impact on brain wave patterns and emotions, the nervous system and can raise serotonin levels. Serotonin is a chemical

which considered a natural mood stabilizer. Low serotonin level can cause mood disorders, such as anxiety or depression. In May 2011, Robert Mendick wrote an article about an experiment conducted by Professor Semir Zeki, in which he found that after seeing a beautiful painting there is a strong activity in that part of the brain related to pleasure. Now it is proved that the experience of viewing awe-inspiring art has a positive effect on the physical body and mental state. That is why artists suffer less loneliness and depression than the general population. According to many artist art turned their lives from tragedy to triumph.

Stress and Art Therapy

The whole world is in the state of stressed lockdown. There is a lot of uncertainty about the future and anxiety of social isolation. Anxiety is an emotional response to an anticipated future threat. In this Period, there are many factors which are responsible for increasing stress such as the threat of life loss, job loss, lack of social contact and the availability of livelihood supplies. In this stressful time we have to control our anxiety and the sense of helplessness. There are many ways to smarten our approach to deal with the stress. We can write our thoughts or draw on paper. Art is considered as one of the best stress buster activities. When Art is used as a therapy to treat people, it is called an Art Therapy. Art therapy is some kind of psychological therapy which uses art as a medium of therapy. Art therapy is commonly used therapy in 21st century and the combination of two disciplines: art and psychology. Rubin defines "art" as a "means to discover both the self and the world, and to establish a relation between the two", and "therapy" as "procedures designed to assist favourable changes in personality or in living that will outlast the session itself". Art therapy is a means of communication, that lets people express and explore their emotions and thoughts, through a creative medium. It also helps to solve the main root of the problem and stress. Art therapy is different from art education. It is a kind of special protected situation, where one person creates an environment, physical and psychological, in which one or more others can fully explore, expand and understand themselves through art. Therapeutic aspects make the art therapy different from art education.

Characteristics of Art therapy

- Non-verbal Communication— Sometimes words are not sufficient to convey our emotions properly or we are not able to express our emotions through words, at that time art can be the best medium of expression and communication. There are various thoughts and aspirations, we suppress in our sub conscious mind, which are responsible for our anxiety, art therapy helps the person to express his suppressed emotions. When it comes to emotions, art forms transfer our internal messages more authentically, yet diversely, than verbal means. Line, form, colour, tone and texture are the elements of art, which refers the correct emotions of human heart. Art therapy incorporating creative expression become very useful, particularly in settings where talking or writing is not possible. Art therapy provides a new language for the verbally challenged people to share their trauma and anxiety through art.
- Therapeutic Qualities— Art therapy has therapeutic qualities also which allows the psychologist to use it as a tool to heal the patient. The core of the art therapy is the belief that art making benefits the therapeutic mechanism of expression, transformation and self awareness. Art therapy does not have to be used only as a treatment but it can be used to relieve stress and as a mode of self discovery also. If we consult any art therapist, they can interpret the feelings, which we poured into that drawing and can solve our problem.

Benefits of Art Therapy

Mental health professionals and experts agree that Art therapy is very beneficial in treating anxiety, stress and other mental disorders but there are other more benefits of art therapy which are as follows—-

• Access Sub-conscious Mind and Self Discovery: Today's world is full of stress, it is very difficult to live a life completely free of stress, so we need to go inside our mind and find the reason behind the stress. Freud described a model of the mind that includes three levels of consciousness, from the deepest to greatest awareness. These three levels of awareness consist of: unconscious, sub conscious and conscious. There are so many suppressed thoughts and feelings in our sub- conscious mind, which are the reason of

our trauma and anxiety, but we are ignorant to them. When the problem is in the mind then solution should also be found there. Through Art therapy we can reveal the secrets of sub conscious mind and heal them.

- Overcome Weaknesses & Boost Self-esteem: Sometimes inferiority complex can cause stress. An art therapist may use a variety of art methods including drawing, painting, sculpture and collage. Creative expressions through these methods can help them to overcome their inferiority complex and boost self-esteem.
- Stress Relief: There are many reasons of being stressed such as physical and mental illness, addictions, physical disabilities, family and relationship problems. The use of Art therapy has been documented with a variety of populations including- children, adolescents, adults and the old people. All age groups have their own different reasons of stress. Art Therapy supports the belief that everyone has the capacity to express themselves through art and find solace after expressing their traumatic experience in art.
- Increases Social Skills: Art therapy is useful for those people, who are facing difficulty in social communication. Through Art therapy people can increase the understanding of self and others. It helps to resolve conflicts and personal differences, develop interpersonal relation, manage behaviour and increase trust.

Conclusion:

In present scenario the whole world is fighting against COVID -19 and going through a very difficult phase. To reduce the fatality impact of virus and secure the citizen's life, governments imposed lockdown in their countries. People are confined to their houses and experiencing heightened feelings of uncertainty, stress and loneliness. In this tough time Art is very helpful to cope with mental health pressure during lockdown. If we talk about the importance of art in tackling with mental stress during lockdown, Art therapy is very beneficial in that case. Art therapy is very effective with various ages and diagnoses. The goal of art therapy is to improve or maintain mental health, physical health and emotional well being through an art. The result of art therapy is very surprising and it leads to a general sense of relief and overall better mental health. It is a therapy, but completely different from other therapies. The main ingredient of this therapy is 'Art', which most people love to do.

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WORK FROM HOME AND ITS VARIOUS ASPECTS

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Abstract:

People vary a lot in their preferences about working from home. How much they want to work from home varies from an individual to individual, but at least one thing is clear one thing is clear — most of them want to do some of their paid work from home, but few of them want to work at home all the time. Also a situation has arrived when people have started getting bored working whole day and they miss working from office as in office they met with their peers and had some discussions which is not possible at home. Overall it's not a very simple story. There are enough of plus and minus. It can be easily summarized that working from home has lot of benefits for lot of people but at the same time it has some areas of concern for many. Therefore there can be generalization of it because its effects are perceived differently by different people.

Introduction:

Covid-19 and the resulting lockdown has developed a new concept of 'Work from Home'. Work from home has gained so much popularity & success that it has been still continued by most of the big companies especially the multinational companies etc.; ever after the lockdown. Both the employers and employees are feeling comfortable in this concept of work from home. Since there were travel restrictions during lockdown and the main problem was risk of being infected, so employers gave the offer to employees to work from home keeping in view their nature of work and job responsibilities.

Work From Home

During the lockdown phases and after lockdown, most of the big companies especially the multinational companies have permitted their staff to 'Work from Home'. This staff is of nature of technical, advisory & training related etc. The nature of work of these type of staff is such that they can even perform their duties, job assignments, job responsibilities from their homes. The mode of performance may be online, video call, emails, video conferencing, online meetings or through telephonic conversations etc.

Reasons for Work from Home

• The employees across the organizations are demanding Work from Home: Since there were travel restrictions during lockdown and the main problem was risk of being infected, most of the staff demanded the permissions to work from home. They also persuaded their employees that they can perform their job responsibilities from their home in the same manner as they did in their office.

The increasing demand for the flexibility of the work timings and where and how people want to work has forced the corporates to ponder over this. Even before the Covid period, the surveys showed that 80% of the workforce was willing to work from home at least some time. But post COVID-19, even the

organizations have got a clear idea that the work can be done from home without much interference. Even there are people who are ready for the option of pay cut in exchange for work from home. Most of these people are women who have to manage homes also and working from home makes it easier for them to manage work and house simultaneously.

• Work from Home helps in cost-saving for the employers: Work from Home has also been a tool of cost savings for the employers because during lockdown, corporates didn't have to manage for the conveyance to the staff for office. Besides it, all facilities & amenities provided at the time of office hrs. to staff were not needed in case of work from home. These facilities and amenities include power, electricity, internet facilities, infrastructural facilities, refreshment, lunch, meeting cost etc.

Also, since past few years, work from home was a major bait that was given by the organizations so that they could retain the talent and make it more attractive for the newcomers, so that the attrition of the company can be checked. But more important is that this pandemic has also compelled the top managements to ponder on the unnecessary real estate costs that they are bearing which could be avoided due to work from Home.

• Fear of the 'Work from Home' among managers and executives has reduced: The Times of Covid have built a level of trust among the employees. As it was said earlier that the manager's favorite was the employee who stayed till last when everyone had left the office but Covid times have positively contributed in changing the scenario because now the performance of the employees is measured on their efficiency and productivity and the efficient employees are getting their dues. This gives a clear message that in this mobile world, "managing by simply walking around" will not do. Also, If people will be forced to work at homes for extended periods, as it appears they will be then managers will have to learn that it is the result of an individual that actually matters.

The research also clearly indicates that the managers who themselves have worked at home are endorsing it more for others. Also they are happy with the fact that the teams down the line are getting aligned with the new virtual tools and it is also increasing their productivity. Also, since they do not have to spend their time being stuck at the traffic jammes, therefore their productivity increases and they see themselves much happier and can also spend some time with the family.

- Increased awareness of the potential impact of work-from-home on sustainability: Since very long, climate change was a very big challenge for all the climate experts and there seemed to be no feasible solution to that but during pandemic, with the increase of people working from homes, we saw a substantial decrease in pollution caused by the vehicles on the road and the mental stress and anxiety caused by the traffic and congestion. Also the long sustenance of the pandemic has made it a change in habits of people and this is more likely to continue even when the pandemic gets over. The fact is, there is no easier, quicker, and cheaper way to reduce your carbon footprint than by reducing commuter travel.
- **Reduced Business Travel:** Covid-19 has also made people to think of the cost that was being spent on the travel and stay expenses of the executives and the managers. All these meeting were held at expensive hotels and people used to commute through flights thus adding whooping costs to the company. All these meeting are conducted today on Zoom or Teams at a much less cost. Though it does not have the impact of face to face meetings but saving that cost outweighs everything.
- Increased pressure for work-from-home for disaster preparedness: Since Covid-19 has brought lot of work disruptions in its early phases, therefore it is difficult to be forgotten by the organizational leaders and all the stakeholders. Since, whatever ground in the business companies lost due to the suddenness of the pandemic and unpreparedness of the organizations, that is expected to be covered through extra work even if it is work from home. All the stakeholders will be covering the gaps so they are better prepared in the future .

Work from Home- Impact on the Academics

Universities across the world are made up of a very varied workforce. It is because in addition to the academic positions, there are also the administrative and professional roles which are quite similar to those in other organizations in the private and public sectors. The working policies are flexible in the university sector, but it has been found that academics experienced working from home quite differently than those who are in the administrative and the professional positions.

Unlike their corporate counter parts, the picture was not all Rosy here, because schools, Colleges and universities cannot deliver to the best of their capabilities through online modes. They got affected the most because of their sheer unpreparedness. Even the institutions are not at fault because this kind of pandemic took everyone by surprise and universities and schools, did not have the adequate means and the training of virtual tools, to quickly adapt to the new normal. A survey was done where 11,000 employees from Canadian and Australian universities took part. In both the countries, most of the universities shifted most of their work online, much earlier this year. The results that came out were a mixed picture, but it tells us a lot about the change that needs to be there and also guides us that the employees should be part of any discussion and the decision that takes place regarding this pandemic.

Work from home is more common among academics than their professional counterparts, but in general during this period, academics are typically negative about working from home, while administrative and professional employees have had more positive experiences. Most university workers prefer a mix of home and campus work.

As per the studies it has been very difficult to understand that why few people are very positive about their experiences with working from home and few are slightly negative. But keeping aside the time and the travel savings, we know that lot of people feel that they are being interrupted less when they are working from home. Around 2/3rd of people in a particular study say that the equipment at home is suitable; they receive adequate support from their university and have a space at home where they can work. For most of the people, their homes provide quite a pleasant environment.

But not everybody is happy. Isolation is a significant reason of distress, and the remote working makes communication more difficult. There is also no shortage of negative comments about equipment and the work setup at home. A more widespread negative finding regarding working hours is that about three-fifths of the people in survey ended up complaining that now they are working more and also their physical set ups do not suit them to sit for long hours .

For academics, dissatisfaction with working arrangements during the pandemic is worse when they have less experience with online teaching. But even the people who are experienced in academics do not prefer this because there are lot to topics which cannot be explained on online platforms and also there is no check on the students on online platforms which makes the teachers job even more tough. Also the experiment based courses can never be explained through online modes.

Academicians have a mixed response to work from home technique. But administrative and professional employees are much less bothered by this. Most people have less connections with the people they work with. But at the same time, there is less separation between the work and home. As per the survey, about two-fifths of the people feel that their work spills over more into their home life, and almost and many of them feel more spillover from their home life into their working day. A few of them also feel that these forms of interference have decreased post pandemic and Nearly half of the employees spend more time on domestic responsibilities .

Conclusion:

People vary a lot in their preferences about working from home. How much they want to work from home varies from an individual to individual, but at least one thing is clear one thing is clear — most of them want to do some of their paid work from home, but few of them want to work at home all the time. Also a situation has arrived when people have started getting bored working whole day and they miss working from office as in office they met

with their peers and had some discussions which is not possible at home. Also at the same time some of them feel, that while working from home, the meeting time on the virtual platforms usually gets extended which as managers assume that people are at home and therefore the liberty of extending the meetings can be taken .

Overall it's not a very simple story. There are enough of plus and minus. It can be easily summarized that working from home has lot of benefits for lot of people but at the same time it has some areas of concern for many. Therefore there can be generalization of it because its effects are perceived differently by different people. As it is, some of the problems aren't just because of working from home. Online teaching, for example, is a totally different process than face-to-face teaching — it's not just doing the same work from a different place.

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SIDBI: ITS FINANCIAL ROLE AND PERFORMANCE

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Abstract:

India is one of the fastest growing economies in the world, where around 30 percent of gross national income comes from MSME sector. SIDBI is an apex bank portrayed as a crucial part of financial system which provide financial assistance to this MSME sector at a low-cost and extends a lot of facilities & services to MSME sector. As, Finance is one of the most important aspects of a business, it is essential to search about the functions and financial performance of SIDBI.

Key words: MSME, SSIs, low-cost, finance, business, profit.

Introduction

MSMEs as the growth engine in Indian economy is that sector which cannot be ignored by any researcher, financial analyst, businessperson etc. because it holds a significant role in country's economy. MSMEs consider as a backbone of Indian economy, contributing approximately 30 percent and 50 percent respectively to GDP and overall exports. So the role of SIDBI becomes important. SIDBI i.e. Small Industries Development Bank of India is an apex bank which give financing, developing as well as promotional assistance to MSME sector.

SIDBI has infused oxygen into the financial system, as it is mandate to serve as the chief financial Institution for MSME sector. Since its inception it's aimed to develop the MSME sector through integrated, innovated and inclusive approach. The latest of SIDBI vision 2.0 is also an integrated approach for the development of MSMEs in India. The vision is dedicated to meet the credit and non-credit needs of MSMEs. Even during this challenging time of pandemic Covid-19 SIDBI sailed the economy towards a shore and accelerated the endeavor through banks, NBFCs etc.

Objectives of the study

- To study the profile of SIDBI, its mission, vision & functions.
- To have an idea of the financial performance of SIDBI.

Research Methodology

The study is purely based on the secondary data collected through various secondary sources i.e. SIDBI Annual Reports, published research papers, articles, journals, books and various Govt. & Non-Govt. websites etc.

Review of literature

S. Srivastava & D. Tiwari (2018), the paper focused on the evaluation of financial position of SIDBI from the period 2012-13 to 2016-17. In this paper they found out not so sound and stable position of SIDBI during the period of study, but the development schemes showed a positive trend.

S. kamalaveni (2019), in this research paper the author studied the growth as well as factors influencing the profitability of SIDBI. The researcher covers the five year period from 2013-14 to 2017-18 and found out that the interest had highest contribution to net profit. In this paper researcher also highlighted the role of SIDBI in the SSIs and got to know that the bank played a significant role in the development of small industry in India.

S. Jacqueline Francis (2019), the paper focused on the assessment of financial performance of SIDBI through various statistical tools and estimate that all the parameters of financial position increased from the time period of 2008 to 2018 and financial position is sound during the studied period.

SIDBI Profile

Small Industries Development Bank of India (SIDBI), set up on April 2, 1990 under an Act of Indian Parliament (SIDBI Act, 1989), presently acts as the Principle Financial Institution for the Promotion, Financing and Development of the Micro, Small and Medium Enterprise (MSME) sector and also co-ordinates the functions of the institutions engaged in similar activities.

Presently, the Bank provides refinance support through a network of eligible member lending institutions for onward lending to MSMEs and direct assistance is channelized through the Bank's branch offices. SIDBI also extends financial assistance in the form of loans, grants, equity and quasi-equity to Non-Government entities.

SIDBI has three wholly owned subsidiaries namely SIDBI Venture Capital Ltd., SIDBI Trustee Co. Ltd. and MUDRA.

Mission of SIDBI

"To facilitate and strengthen credit flow to MSMEs and address both financial and developmental gaps in the MSME eco-system."

Vision of SIDBI

"To emerge as a single window for meeting the financial and developmental needs of the MSME sector to make it strong, vibrant and globally competitive, to position SIDBI Brand as the preferred and customer - friendly institution and for enhancement of share - holder wealth and highest corporate values through modern technology platform."

Functions of SIDBI

- 1. SIDBI refinances loans extended by the primary lending institutions to small scale industrial units, and also provides resources support to them.
- 2. SIDBI discounts and rediscounts bills arising from sale of machinery to or manufactured by industrial units in the small scale sector.
- 3. To expand the channels for marketing the products of Small Scale Industries (SSI) sector in domestic and international markets.
- 4. It provides services like leasing, factoring etc. to industrial concerns in the small scale sector.
- 5. To promote employment oriented industries especially in semi-urban areas to create more employment opportunities and thereby checking migration of people to urban areas.
- 6. To initiate steps for technological up-gradation and modernisation of existing units.
- 7. SIDBI facilitates timely flow of credit for both term loans and working capital to SSI in collaboration with commercial banks.
- 8. SIDBI co-promotes state level venture funds in association with respective state government.
- 9. It grants direct assistance and refinance loans extended by primary lending institutions for financing exports of products manufactured by small scale units.

Financial Performance of SIDBI

The financial performance of SIDBI has been judged through the following tables taking data span of there years i.e. 2017-18 to 2019-20—

Financial year	Rs. (crore)	Growth over last year in %
2017-18	1,08,869	_
2018-19	1,55,861	43.16
2019-20	1,87,539	20.32

 Table 1: ASSET BASE OF SIDBI

Source: SIDBI Annual Report-various issues

Explanation: The Asset base of SIDBI has become from Rs. 1,08,869 crore in 2017-18 to Rs. 1,87,539 crore in 2019-20. CAGR of assets base of SIDBI has been 31.25%. The assets base of SIDBI has become strong and developing in a fast way.

Financial Year	Rs. (crore)	Growth over last year in %
2017-18	95,291	_
2018-19	1,36,230	42.96
2019-20	1,65,422	21.43

Table 2: LOANS & ADVANCES

Source: SIDBIAnnual Report-various issues

Explanation: The loans & advances extended by SIDBI at the end of year has become from Rs. 95,291 crore in 2017-18 to Rs. 1,65,422 crore in 2019-2020. CAGR of loans and advances by SIDBI has been 31.76%. This growth rate exhibits strong loaning performance of SIDBI.

TABLE 3: INSTITUTIONAL FINANCEE

Financial year	Rs. (crore)	Growth over last year in %
2017-18	85,614	-
2018-19	126,819	48.13
2019-20	155,429	22.56

Source: SIDBIAnnual Report-various issues

Explanation: The above chart discusses the amount of institutional finance extended by SIDBI to Banks & Financial Institutions, Micro Finance Institutions and Non-Banking Finance Companies. The amount of institutional finance extended by SIDBI was Rs. 85614 crore in 2017-18 and it increased upto Rs.155429 crore in 2019-20. CAGR of institutional finance extended by SIDBI has been 34.74% exhibiting a significant growth.

Financial year	Rs. (crore)	Growth over last year in (%)
2017-18	8775	-
2018-19	8897	1.39
2019-20	9867	10.90

TABLE 4: DIRECT LENDING

Source: SIDBI Annual Report-various issues

Explanation: Direct lending by SIDBI was Rs. 8775 crore in 2017-18 and it increased upto Rs. 9867 crore in 2019-20 showing a compound growth of 6.04%. This growth is not so good so focus on Direct Lending is highly required.

Table 5: NUMBER OF CUSTOMERS COVERED UNDER DIRECT FINANCE

Financial Year	No.	Growth over last year in %
2017-18	4750	-
2018-19	5201	9.49
2019-20	6595	26.80

Source: SIDBIAnnual Report-various issues

Explanation: The above chart discusses the widening reach of SIDBI towards customers. Number of customers covered under Direct Finance Scheme of SIDBI has increased from 4750 in 2017-18 to 6595 in 2019-20. The CAGR of no. of customers covered under direct finance scheme is 17.83% exhibiting widening reach of SIDBI towards customers.

Table 6 : TOTAL INCOME

Financial Year	Rs. (crore)	Growth over last year in %
2017-18	6600	_
2018-19	9916	50.24
2019-20	12090	21.92

Source: SIDBIAnnual Report-various issues

Explanation: The total Income of SIDBI has become from Rs. 6,600 crore in 2017-18 to Rs. 12090 crore in 2019-20. CAGR of Total Income of SIDBI has been 35.34%. This growth rate exhibits strong profitability performance of SIDBI.

Financial year	Rs. (crore)	Growth over last year in %	
2017-18	1429	-	
2018-19	1952	36.60	
2019-20	2315	18.60	

TABLE 7: OPERATING PROFIT

Explanation: The operating profit of SIDBI was Rs. 1429 crore in 2017-18 and it increased to Rs. 2315 crore in 2019-20 exhibiting CAGR 27.28%. Growth rate is quite significant.

Financial Year	Rs. (crore)	Growth over last year in %
2017-18	2,097	_
2018-19	2,579	22.99
2019-20	3,299	27.92

Table 8: NET INTEREST INCOME

Source: SIDBI Annual Report-various issues

Explanation: The net interest income is the difference between revenue generated by interest bearing assets & cost of serving liabilities. The net interest income of SIDBI has become from Rs. 2,097 crore in 2017-18 to Rs. 3,299 crore in 2019-20. CAGR of Net Interest Income of SIDBI has been 25.43%. The growth in net interest income is a good sign of profitability.

 TABLE 9: EARNING PER SHARE (EPS)

Financial year	EPS in Rs.	Growth over last year in %
2017-18	26.90	
2018-19	36.70	36.43
2019-20	43.50	18.53

Source: SIDBI Annual Report-various issues

Explanation: Earning Per Share showed by SIDBI was Rs. 26.90 in 2017-18 and it increased upto Rs. 43.50 in 2019-20 showing a CAGR of 27.17%. For shareholders' point of view this growth is quite significant.

Suggestions for Strengthening Role of SIDBI

- There is not much awareness in the industrial society about SIDBI, its activities and services. So SIDBI should advertise, about its activities, services and schemes for the development of MSME sector.
- To expand SIDBI activities, its financial resources should be made more enriched. It should be provided more infrastructural facilities.
- SIDBI should increase its branch with opening of new branches in those parts of India where MSMEs activities face obstacles in flourishing.
- SIDBI's Direct role of Financing should be increased with launch of new schemes.
- SIDBI should increase its infrastructural base.

Conclusion

The above discussion shows that overall financial performance of SIDBI is quite satisfactory but in terms of growth year 2019-20 has not been so good as 2018-19. SIDBI's role is omnipresent in MSME sector as it proved its presence in every aspect through Indirect & direct finance, loans and advances for equipment, vocational training, promotional and development. The development role of SIDBI is also quiet good and full of praise. The need of the hour is to provide SIDBI with more financial resources and infrastructural facilities so that it can expand its activities quantitatively and qualitatively. In the last, we can say that SIDBI has grown into a multifaceted organization serving the SSI sector in a very good manner by providing a wide range of direct and indirect services.

It will however have to change its operational strategy keeping in view of declining interest rates and the rapidly changing business environment. It will also have to increase its infrastructural base.

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INTEGRATED REPORTING IN INDIA: CHALLENGES AND SUGGESTIONS

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Abstract

The relation between Integrated Reporting (IR) and the composition of a firm's investor base has been examined in this paper. It has been found that firms that practice IR have a more long-term oriented investor base with more dedicated and fewer transient investors. In additional analysis, the results are robust to the inclusion of firm fixed effects, controls for the quantity of sustainability disclosure, alternative ways of measuring IR, and that change in IR lead changes in investor base. Finally, It may be concluded that investor activism on environmental and social issues leads to firms practicing more IR but this investor-induced IR does not affect the composition of a firm's investor base.

Key words: integrated reporting, sustainability, disclosure, short-termism, investor clientele, investor activism

Integrated Reporting Meaning

Integrated Reporting brings together material information about an organization's strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates. It provides a clear and concise representation of how an organization demonstrates stewardship and how it creates and sustains value now and in the future. Integrated Reporting combines the most material elements of information currently reported in separate reporting strands (financial, management commentary, governance and remuneration, and sustainability) in a coherent whole, and importantly:

- shows the connectivity between them; and
- explains how they affect the ability of an organization to create and sustain value in the short, medium and long term.

Integrated Reporting reflects what can be called "integrated thinking" – application of the collective mind of those charged with governance (the board of directors or equivalent), and the ability of management, to monitor, manage and communicate the full complexity of the value-creation process, and how this contributes to success over time. It will increasingly be through this process of "integrated thinking" that organizations are able to create and sustain value. The effective communication of this process can help investors, and other stakeholders, to understand not only an organization's past and current performance, but also its future resilience.

The main output of Integrated Reporting is an Integrated Report: a single report that the IIRC anticipates will become an organization's primary report, replacing rather than adding to existing requirements. Such a report enables evolving reporting requirements, both market-driven and regulatory, to be organized into a coherent narrative.

An Integrated Report provides a clear reference point for other communications, including any specific compliance information, such as investor presentations, detailed financial information, operational data and sustainability information. Much of this information might move to an online environment, reducing clutter in the primary report, which will focus only on the matters that the organization considers most material to long-term success.

An integrated report usually consists of the following elements:

- An annual report
- Integrated statutory financial information and sustainability information
- Sufficient information to record how the organization has affected the economic life of the community positively and negatively
- Forward-looking information _ for example on how the board feels it can enhance the positive aspects and negate the negative aspects
- Sustainability reporting should be integrated with other aspects of the business process and managed throughout the year _ Sustainability should be embedded in the organization.
- Integrated reporting should focus on substance over form.
- There have been major changes in the way business is conducted, how business creates value and the context in which business operates. These changes are interdependent and reflect trends such as: globalization, growing policy activity around the world in response to financial, governance and other crises, heightened expectations of corporate transparency and accountability, actual and prospective resource scarcity, population growth, and environmental concerns.
- Against this background, the type of information that is needed to assess the past and current performance of organizations and their future resilience is much wider than is provided for by the existing business reporting model.

STRUCTURE OF THE REPORT

To create a well structured integrated report, the following guiding principles must underpin the preparation of the integrated report:

- Strategic focus
- Connectivity of information
- Future orientation
- Responsiveness and stakeholder inclusiveness
- Conciseness, reliability and materiality

The suggested elements that should be included in the framework of the integrated report are:

- A description of the scope and boundary of the integrated report
- A brief overview of the company and its activities, a statement of its business model describing how it currently creates value, and an overview of its governance structure
- A description of the risks and opportunities that are material (this will be based on a review of financial, social, environmental, economic and governance issues and trends)
- A description of the company's strategic objectives related to the risks and opportunities identified and an indication to realize the strategic objectives with reference to a list of key performance indicators (KPIs) and key risk indicators (KRIs) that will track the performance against the objectives and targets. This should cover short-, medium- and long term periods.
- An account of the performance in terms of the objectives, the significant social, environmental, economic and financial impacts in terms of the KPI's and KRI's
- A statement of anticipated activities and future performance objectives

- An overview of how employees and senior executives are remunerated, including factors that could influence future remuneration
- A brief analytical commentary that reflects the understanding of the company's current and anticipated performance in line with the strategic objectives.
- A statement from the most senior decision maker of the company (e.g. CEO) can accompany the integrated report about the significance of sustainability to the company as well as the company's approach with regards to sustainability. This statement should present the overall vision and strategy for the short term, medium-term (e.g. 3 5 years), and long term, particularly with regard to managing the key challenges associated with economic, environmental and social performance. Independent assurance lends credibility to the company's activities and reporting with regard to accuracy, completeness and reliability of disclosure in the integrated report.

Need of Integrated Reporting

Since the current business reporting model was designed, there have been major changes in the way business is conducted, how business creates value and the context in which business operates. These changes are interdependent and reflect trends such as:

- globalization,
- growing policy activity around the world in response to financial, governance and other crises,
- heightened expectations of corporate transparency and accountability,
- actual and prospective resource scarcity,
- population growth, and
- environmental concerns.

Against this background, the type of information that is needed to assess the past and current performance of organizations and their future resilience is much wider than is provided for by the existing business reporting model. While there has been an increase in the information provided, key disclosure gaps remain.

Reports are already long and are getting longer. But, because reporting has evolved in separate, disconnected strands, critical interdependencies between strategy, governance, operations and financial and non-financial performance are not made clear. To provide for the growing demand for a broad information set from markets, regulators and civil society, a framework is needed that can support the future development of reporting, reflecting this growing complexity. Such a framework needs to bring together the diverse but currently disconnected strands of reporting into a coherent, integrated whole, and demonstrate an organization's ability to create value now and in the future.

International differences in reporting

Reporting requirements have evolved separately, and differently, in various jurisdictions. This has significantly increased the compliance burden for the growing number of organizations that report in more than one jurisdiction and makes it difficult to compare the performance of organizations across jurisdictions.

Purpose and users of an integrated report

The purpose of this Framework is to establish Guiding Principles and Content Elements that govern the overall content of an integrated report, and to explain the fundamental concepts that underpin them. The Framework may be written primarily in the context of private sector, for-profit companies of any size but it can also be applied, adapted as necessary, by public sector and not-for-profit organizations. The Framework should identify information to be included in an integrated report for use in assessing an organization's ability to create value; it does not set benchmarks for such things as the quality of an organization's strategy or the level of its performance.

Benefits and Challenges

IR offers various benefits, such as giving organisations a more holistic view of information relevant to their strategy, business model and ability to create and sustain value in the short, medium and long term. More specifically, potential benefits are:

- greater access to and transparency of information from a wide range of both internal and external information sources, through integrated processes and the standardisation of information;
- streamlined reporting through more reuse of reporting elements, transparency and collaboration on reporting, and analytical concepts used by both internal and external analysts;
- more relevant and understandable information available for management and stakeholders to enable better decision-making;
- better allocation of capital and other resources;
- better access to capital markets and business partners;
- competitive advantage through cost savings, operational efficiencies and differentiation.

However, the roadmap to realising such benefits is not necessarily a simple one. It requires a comprehensive approach: understanding the company's strategy drivers, identifying key stakeholders and their specific expectations, and implementing processes to obtain the information necessary for an integrated approach to managing the business.

Although integrated reporting is still in its infancy, it is possible to identify three classes of benefits. The first is internal benefits, including better internal resource allocation decisions, greater engagement with shareholders and other stakeholders, and lower reputational risk. The second is external market benefits, including meeting the needs of mainstream investors who want ESG information, appearing on sustainability indices, and ensuring that data vendors report accurate nonfinancial information on the company. The third is managing regulatory risk, including being prepared for a likely wave of global regulation, responding to requests from stock exchanges, and having a seat at the table as frameworks and standards are developed.

Of course, integrated reporting is not a panacea for improving resource allocation decisions or a silver bullet for solving contemporary problems with financial and nonfinancial reporting, particularly as it is so young. Companies interested in implementing integrated reporting face a number of challenges, beginning with the fact that no globally accepted framework specifying what goes into an integrated report exists. But there are a growing number of examples of integrated reports from which companies can learn.

Users of integrated reports also face constraints that limit the value of integrated reporting to them today. The lack of a framework and standards for nonfinancial information makes it difficult to compare the performance of different companies, a core feature of investment analysis. Another limitation is the small number of companies practicing integrated reporting, and the fact that it will likely be adopted across industries and countries to varying degrees. Questions exist about the reliability of the information reported by companies. For the most part, having any type of third-party assurance on nonfinancial information in the report, let alone on the entire integrated report, is voluntary. And even when assurance is provided, it is not done with the same degree of rigor as the audit of a financial report. Although these challenges are significant, they can and must be overcome, and quickly.

SUGGESTED ELEMENTS THAT MUST BE ADDRESSED IN AN INTEGRATED REPORT

- The reporting cycle and period covered by the report
- The reporting boundary: Geographic scope, entities presented in the report (subsidiaries, franchisees), nature of information provided for each entity (operation performance, management performance)
- Organisational overview: name, size, location of operations and activities,
- principal activities, primary brands/products/services, operational structure (subsidiaries/associates/divisions)
- Business model: describing the manner in which the company currently creates value
- Specific limitations on the scope of the boundary of the report

- 'Where do we want to go and how do we intend to get there'
- Indication of the company's competencies (internal systems, personnel and culture) required to realize objectives (can include trends analysis, data management, stakeholder relationships, risk management)
- Process used for identifying the reporting boundary
- Brief description of the issues and trends relevant to the company's activities (i.e. the sector, products/ services, markets)
- Brief statement of significant impacts (positive and negative) on the company's decisions and activities
- Relationships with stakeholders and how relationships will impact ability to create and sustain value
- Policy and practice relating to seeking assurance, qualifications of assurance providers, nature of relationship with assurance providers
- Significant restatements of prior reporting periods
- Significant changes from previous reporting periods in scope, boundary, measurement methods
- Governance structure: diagram, noting committees, outline of general governance aspects, key policies, ethical approaches
- Describe process of identifying above issues, impacts and relationships and how it was determined which is material, also explain why certain factors has been seen as not material
- Identifying the principal risks and opportunities
- 'How have we done over the reporting period'
- Brief overview of activities taken in terms of the strategic objectives and a review of the outcome of these activities
- Outcome must include successes AND failures
- A forward-looking statement of anticipated activities and performance objectives
- Include specific performance targets where possible
- How they have been remunerated in current period and factors that will influence future remuneration
- Current remuneration should indicate extent to which remuneration is fixed and variable and factors that influence variable element
- Judgment on how different levels of employees are grouped into categories
- Disclosure on major components of employment costs, i.e. salaries, wages, housing benefits, postemployment benefits
- 'What are the views of the leadership about the organization'
- Include how it can improve its positive material impacts
- Include how it can eliminate its negative material impacts
- Include possible ratios and summarized historic information to support views

CONCLUSION

So, we may conclude on the basis of above description that Integrated Reporting is a challenge to conventional reporting in two ways: (1) it calls into question the efficiency of markets based on current reporting standards and (2) it calls into a question the fundamental efficiency of markets in serving society.

Integrated Reporting must demonstrate the linkages between an organization's strategy, governance and financial performance and the social, environmental and economic context within which it operates. Integrated Reporting can help businesses take more sustainable decisions and enable investors and other stakeholders to understand how an organization is really performing. Integrated Reporting will have an impact on various stakeholders, such as Investors, Civil Society, Employees, Assurance Providers, Researchers and Educators etc.

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ENVIRONMENTAL DETERMINISM REVISITED: TRENDS OF COVID -19

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Abstract

The Geocentric paradigms of Geography investigate the classical philosophy of *'Environmental Determinism'*. This maxim was solely based upon 'lesser intervention and minimal encroachment' of Human Beings. Thereby, acknowledging the influential force of physical environment in shaping the contours of earth's landscape. Initially, driving force was the 'Doctrine of Environmental Influence on Human Ecology' which had strengthened its progressive development. In the due course of time the classical paradigms were replaced by neo –paradigms with some relaxation and modification. Exactly after 170 years, the classical philosophy is perhaps revisiting. Thus, probably due to the spread of the so-called pandemic COVID -19. The sole reason for its revisit was the application of its maxim in every sphere of earth's surface.

Key words: Geocentric, Human Ecology and Covid-19.

INTRODUCTION

The physical environment and the cultural environment of earth system are directly proportional to eachother. They are functionally interrelated. This functional relationship culminates with natural unity or the *'Prakritik Ekta'*. Somehow, the 'environmental determinism' is closely associated with the natural unity of physical environment.

The Geocentric Philosophy of Geography which is often called 'Environmental Determinism' and even 'Geocentric Determinism' in geographical literature is perhaps a Hellenic legacy. Since, most of the Greek philosophers conceived earth as a creation of nature and not a matter of chance. This philosophy denied man's independence and regarded him as the fragment or part of the universe. Moreover, he was expected to subordinate his will to the 'Will of the God'. The philosophy of geocentricism advocates that the human ecology of man is rigidly controlled by natural forces.

The Modern Geocentric Determinism was developed in the 1850's in Germany. The literary compendium of German the Geographer Alexander Von Humboldt (1845) initiated its development having geocentric methodological viewpoint. The revolutionary British Scientist and Botanist Sir Charles Robert Darwin (1859) work on *species* has had paramount effect on the scientific and theoretical emergence of naturalist theoretical orientation.

However, the major issue of investigation is that; How environmental determinism revisited? The probable answer to this is the COVID -19 health hazard (pandemic) is one of the recent addition in the field of systematic geographical research which had gained importance in Medical Geography. Therefore, the interaction between environmental determinism and COVID -19 is of the nature of promoting geocentric philosophy and health deteriorating (as far as virus carrier and virus spreader) were concern.

The Medical Geography was first conceptualized by American Geographer J.M. May in 1950. He was perhaps the first Medical Geographer who's monumental work was published in the American Geographical Society in 1950 entitled: "Medical Geography – Its Methods and Objectives".

During the decade 2011 -2020, the human population over the globe was seriously affected by several health hazard of the magnitude of epidemics and pandemics which were usually carried from animals like pigs, fish, and hens into human beings. Quite recently, the deadliest biological virus named COVID-19 carried from bats has severely affected the human population of the World; and, more specifically in Asia, Europe, North America, Australia, Africa and South America. The spread of the virus COVID-19 was from the consumption of bats by the human beings in Wuhan, Hubei Province of China in December 2019. The full form of the abbreviation COVID-19 is the Novel Corona Virus Disease- 2019(W.H.O Guidelines).

METHODOLOGY AND DATA - BASE

The present study was primarily conducted on the basis of secondary data and reports of Indian Daily Newspapers and News Channels. The approach which is adopted for the accomplishment of the present study is largely based on Inductive and Deductive approach. The whole study is purposive in nature; and specific indicators were selected on the basis of personal observation; and, reports of News Channels. The selected *specific indicators* for the interpretation of the results of the study are River Water, Air Pollution and Ecological Balance.

PERIOD OF STUDY

The period of the study for the analysis of current research theme, specifically pertains to the stages of COVID -19. As of now, there are three stages of progress of COVID-19; and, they are as under the followings:-

- 1. Pre Stage of COVID -19 (30th Jan. to 22nd March 2020),
- 2. Transmission Stage of COVID -19 (14 Apr. to 24th May2020);and,
- 3. Post-Stage of COVID -19 (In near future this stage is still illusive).

EXPLANATIONAL ASPECTS AND DISCUSSION

Under this segment, for the purpose of explanation the whole study will be divided into three broad sections. These broad sections will corroborate the core areas of discussion. They are as followings:-

[I]. Section – A: What is the nexus between Classical Philosophy and COVID-19.

[II]. Section – B: How far Geographical Space reacted.

[III] Section – C: Spatio – Temporal Trends of COVD -19.

[I] SECTION - A

THE NEXUS BETWEEN CLASSICAL PHILOSOPHY AND COVID -19

The early theory of environmental determinism was based on 'Doctrine of Environmental Influence', was specifically recognized in Ancient China, Ancient Greece, Ancient Rome and in Ancient India; suggested that, environmental features completely determined the physical and intellectual qualities of the societies. Thus, therefore environmental determinism was geocentric in nature.

On the other hand, the structural and physiological orientations of its nomenclature 'Corona virus' (1968) is derived from Latin word 'corona' meaning 'crown' or 'wreath'. The name Corona was coined by *Jule Almieda and David Tyrrell*. The (COVID -19) Corona virus are a group of (orthocoronevirinea) related R.N.A virusures that causes disease in mammals and birds. In humans, the virus causes respiratory tract infections that can range to mild to lethal. The Corona Virus is thus, biological in nature.

S.nos.	Biological base	Biological name	
1	Realm	Riboviria	
2	Kingdom	Orthornavirae	
3	Phylum	Pisuiviricota	
4	Class	Pisoniviricetes	
5	Order	Niodvirates	
6	Family	Coronaviridaer	
7	Sub - family	Orthocoronavirinae	

TABLE-1:-CLASSIFICATION OF VIRUS OF COVID-19

Source: Journal of Nature, London

Moreover, in a recent study by Chinese Virologists, **Meng Wang and Jingtao Qi** (2020) has propounded a 'Deterministic Epidemic Model' in order to track the emergence of Covid -19 in China. But, the all important research findings and recommendations by the Chinese virologists had been strategically censored by the Chinese government.

The comparative assessment of the Classical Philosophy and Covid-19 in the form of comparative table will make the nexus crystal clear.

TABLE - 2:- COMPARISION BETWEEN CLASSICAL PHILOSOPHY AND COVID-19

S.NOS	CLASSICAL PHILOSOPHY	COVID -19
1	<i>Emerged</i> in Ancient China and in Modern Germany in XIXth Century.	The Covid – 19 emerged in Wuhan, China in December 2019.
2	German Geographer Friedrich Ratzel was chief exponent of the Classical Philosophy.	The Scottish Virologist Jule Almeida was the discoverer of Corona virus in 1964.
3	It is Geocentric in nature.	Covid -19 was biological and virological in nature.
4	The Classical Philosophy was predominantly concentrated in Germany and U.S.A.	The Covid-19 is concentrated in the whole world.
5	It was Bi-linear in direction.	It is Multi- directional.
6	It was deterministic in its operation.	It is also studied on the basis of Deterministic Model.
7	Classical Philosophy was Hellenic Legacy.	The legacy of Covid –19 is Omnivore.

Source: Compiled by Author

The major core areas of the nexus between the Classical Philosophy and Covid –19 which emerged from the contextual discussion is appended below:-

[1]. *Deterministic Orientation:*-The regional expansion of the Classical Philosophy and Covid-19 is having deterministic orientation; meaning thereby is that, the both have had deterministic application in space. The Geo – centric determinism had the influenced and control over the development of human ecology (i.e. cultural environment). Similarly, the Covid-19's spread and expansion over the globe has somewhat controlled and dictated the terms for global economic development resulting in decrease of (Gross Domestic Product) economic growth rate.

[2]. *Source of Emergence*:-The source of the origin of both the points in contention were in China. The Classical Philosophy was emerged in Ancient China in 700B.C. Where as the Covid -19 too were emerged in the Giant China in December 2019 to be precise. They spread from their area of origin to other macro landmasses of the earth surface.

[3]. *Minimum Intervention and Encroachment:*-The well established maxim or the golden rule which were responsible for its spatial development Classical Philosophy and Covid-19 were the maxim of 'Lesser Intervention and Minimal Encroachment'. In case of Geo –Centric determinism there was lesser or at least no human interference into the physical environment of the earth because the natural environment was the controller, director and influencer of human ecology.

Likewise, in case of Covid – 19 the physical environment of the earth surface was under the direct control of the above mentioned maxim. Here, in case of Covid -19 the procedural instrument of the government like for example *Lockdown, Janta Curfew and Social Isolation* and their strict implementation by the district administration has maintain the maxim up to a great extent. This have had a far reaching impact on the growth of flora and fauna of the physical environment.

[4]. *Progressive Stages of Development*:-In the context of the progressive stages of development of classical philosophy and Covid -19 they exhibits close nexus with each other. As far as, the stages of development of classical philosophy was concerned; it had three well developed progressive stages of development. They are as follows:-

- (I) Development of Classical Philosophy in Ancient Period,
- (II) Development of Classical Philosophy in Medieval Period; and,
- (III) Development of Classical Philosophy in Modern Period.

Likewise, the COVID-19 - 19 has three stages of development; and they are:-

(I) Pre-Development Stage of Covid-19,

(II) Development or Community Transmission Stage of Covid-19;and,

(III) Post- Development Stage of Covid-19. The third stage of its progress is hypothetical.

Both, the Classical Philosophy and Covid-19 has had the '*Revisit Stage*'. In the case of Classical Philosophy the 'Environmental Determinism Revisited 'or the return of the geocentric determinism. Often termed as, *Clusters of geocentric determinism*. Similarly, in the context of Covid -19 the corona virus revisited again (As Per the Reports of W.H.O) in China and in the Bareilly district of Uttar Pradesh state of India.

[II]. SECTION - B

HOW FAR GEOGRAPHICAL SPACE REACTED?

Under this segment, the analysis of the reaction of geographical space has taken into consideration. In order to fulfill the objective three specific indicators were taken into consideration. The reaction of geographical space may be positive or negative or it may be for the limited period. The description follows—-

[A] *River Water*: The assessment of first specific indicator of river water and its quality is very significant during the lockdown period of the Covid -19. In order to assess the river water and its quality the national River Ganga were taken into account.

Over the month period of lockdown the water quality have been appreciably improved in the national river Ganga. The water pollution level has shrunk and the aquatic and wildlife is fine. As per the Central Pollution Control Board, out of the 36 monitoring units placed in the river Ganga; the water quality of at 27 points was found suitable for bathing and propagation of wildlife and fisheries during the lockdown period. Zero industrial pollution increases the quality of the water in the river Ganga.

S.nos.	Monitoring station	Parameter	Value
1	Upper stream of ganga barrage	Dissolved oxygen	8 m.g/ltr.
2	As above	Biological oxygen demand	2.1m.g/ltr.
3	As above	Ph	7.9
4	As above	Ammonia	0.49m.g/ltr.

TABLE - 3: RIVER GANGA WATER QUALITY

Source: central pollution control board, new delhi, march-april, 2020.

TABLE – 4: RIVER GANGA WATER QUALITY

S.Nos.	Monitoring station	Parameters	Value	
1	Down stream of ganga barrage	Dissolved oxygen	7.9m.g/ltr.	
2	As above	Biological oxygen demand	1.21m.g/ltr.	
3	As above	Ph	7.91	
4	As above	Ammonia	1.1m.g/ltr.	

Source: Central pollution control board, New Delhi, March - April, 2020

As per the inferences drawn from Table 3 and 4, what it is assumed is that, the water quality of river Ganga on certain parameters has improved appreciably in both upstream and down stream cases of river Ganga. This situation was definitely emerged from the lockdown; and will be of temporary tendency probably due to the stoppage of industrial production and output along the 2500 kilometers stretch of river Ganga.

Before, lockdown period the total effluent dumped into the Ganga was around 6500 -7000 Millions liters /Day in the Uttar Pradesh stretch of Ganga. Now it has been reduced to 700Millions Liters/Day.

As per the Table 5, the real time water quality monitoring data of Central Pollution Control Board pertaining to 30th April 2020; reveals the following facts.

TABLE - 5: THE RIVE GANGA - MONITORING OF WATER QUALITY

S.nos.	Parameters	Value		
1	Biological oxygen demand	Less than 3 m.g/ltr.		
2	Dissolved oxygen	Greater than 4 m.g/ltr.		
3	Ph	6 to 8		
4	Ammonia	More than 1 m.g/ltr.		

Source: Central Polution Control Board, New Delhi, 30 April 2020.

What scenario had emerged from the above statistical data is that, we have inadvertently been cruel to nature. The Corona Virus is *the 'Earth Vaccine'*. Infact, we are the virus. The water quality in the river Ganga has improved remarkably during the lock down period .The 2500 kms. stretch of the river has been the lifeline of Nation's identity and belief.

[B] Air Pollution: The second selected specific indicator signifies the presence in the ambient atmosphere of substances (e.g. gases, mixture of gases and particulate matters) generated by the activities of man.

Therefore, the quality of air and their human interaction may be either health – promoting or health - deteriorating. But, the trends of quality of air across country shows a positive effect on the quality of air. The lockdown imposed by the government to restrict the spread of corona virus is proving blessing in disguise. According to a report by the European Space Agency (E.S.A), Mumbai and Delhi have witnessed a significant reduction of around 40 to 50% of nitrogen oxide (NO2) compared to the same period last year.

Nitrogen oxide (NO2) is usually emitted into the atmosphere from power plants, industrial facilities, and vehicles. High level of NO2 in the atmosphere increases the possibility of developing respiratory diseases. According to Central Pollution Control Board, the analysis of national air quality index at Delhi's ITO area was satisfactory at 53 on 31 March 2020. A reduction of about 70% from the previous year's figure of 176 recorded on the same day. A below 50 reading indicates good air quality, 51 -100 satisfactory, 101 -200 is moderate, 201 -300 is poor and while reading above 400 is severe.

S.nos.	Area	15jan19	15feb19	15march19	15jan20	15feb20	15march20
1	Ito	225	282	166	227	112	117
2	R.k puram	248	223	148	169	184	100
3	Anand vihar	242	268	162	247	170	140
4	Shadipur	439	245	190	168	115	74

TABLE – 6: DELHI - AIR QUALITY INDEX

Source: Central Pollution Control Board, New Delhi, 30 March 2020.

The air quality index in New Delhi, as per table -6 figures has shown remarkable quality improvement. Here in case of capital this reduction is largely due to fall in vehicular emissions as a result of lockdown. Public transports such as metro trains, buses, flights have been shutdown due to enforcement of lockdown. The drop in the air pollution levels may currently be saving a significant amount of lives, not only by reducing individual's susceptibility to Covid – 19, but also by preventing some of about 1.25 lakh annual deaths due to air pollution exposure (*World Economic Forum*, 2020). There is a positive correlation between air quality and incidence of visibility, thus due to nationwide lockdown; the snow – covered Pir- Panjal mountain range is now visible from a residential area in Jammu, India and the Dhauladar range is clearly visible during lockdown in Dharamshala, India.

[C] Ecological Balance: The Ecological balance or the ecological equilibrium is a term used to describe the state of equilibrium between living organisms such as human beings, plants, animals as well as their physical environment [the habitat] in which they lives.

The sudden thaw that has occurred due to outbreak of the Covid -19 has led to the closure of all global institutions, transactions, holiday celebrations and shutting of all public places. This led to the revival of nature and natural processes, where nature is claiming its genuine position that was had been held hostage by man's continued alterations on nature. This complex '*Nature – Human Paradigm*' is back in public discourse. It is assumed that, the post-pandemic is going to be interesting to watch how the new paradigm of nature and human structures itself.

The Corona pandemic may have positive effects on the mechanism of ecological balance, but only for a short period of time. During the lockdown phase it has been found that, the Covid -19 could halt the world emissions growth and will be the largest annual contributor to reduce emission levels. According to the United Nations Environment Program (U.N.E.P) report the Covid – 19 has very a positive impact on the environment and its various ecosystems. The emission of CO2 had appreciably reduced to 17% during April 2020. In absolute terms, it amounts to the decrease of about 17 million tones of CO2 emission during lock down period of April 2020. The reduction in emission of CO2 was solely due to the shut down of all types of surface and air transport.

There has been a definite improvement in the ecological balance of natural environment of the earth during the lockdown period of the pandemic. The followings were the determinants of ecological balance:-

- 1. Firstly, with the water quality of various rivers has improved appreciably, due to this the aquatic life and habitat of various fishes and other water animals has direct impact on their population, growth and breeding as well.
- 2. Secondly, with the reduction of CO2 emission, the recent trends of the temperature indicate that, the temperatures were 3 to 6 degree below normal and as a result of this the heat waves of May has been considerably reduced.
- 3. Thirdly, due to improved air quality the natural forests and the various animals of forest have thrive on it. The process of food chain is altogether revived.

Therefore, our health is one health which is deeply rooted in the ecological interconnections, biodiversity, ecological restoration and in the perfect harmony of physical environment.

[III]. SECTION - C

SPATIO - TEMPORAL TRENDS OF COVID -19

The spatio – temporal trends which thus, emerged from the transmission dynamics of Covid -19 with respect to India has have the followings patterns:-

- 1. The spatial spread of Covid -19 has in the initial stage has been quite slow in pace due to the effective implementation of lock down, social distancing, wearing of protective masks, hand wash (personal hygiene) and the tools like self isolation and community/medical quarantine.
- 2. The transmission of Covid -19 as per I.C.M.R Medical Bulletin is concentrated in urban areas of the country. The share of urban India is about 85% (as per reported cases). On the other hand rural India accounts for mere 15% cases of corona positive.
- 3. In terms of characteristics of the Corona Virus spread rate two categories were emerged in the country in the first week of May 2020; they are '*Super Spreader Cities and Super Spreader Citizens*'.
- 4. The high densities mega cities of the country had been emerged as the leading growth nuclei of Covid -19. For example, Mumbai, Delhi, Ahmadabad, Chennai, Jaipur; and, Dharavi. Every third corona positive patient is from Mumbai alone.
- 5. Another, peculiar spatio temporal trend of Covid -19 is that spread of Corona Virus is concentrated in 18 major cities of India which amounts to 68% cases of Corona Virus.
- 6. The Tabhlihgi Jamat and Migrant laborers were responsible for the emergence of *Community Transmission Stage* 'of Covid -19 in the country. The pace of Corona positive cases increases rapidly in the country probably during second week of May 2020.
- 7. As per the statistical data released by the World Health Organisation and the Indian Council of Medical Research, the World has had 62,96,180 is the figure of corona virus patients, 28,64, 911 were recovered after medical assistance and 3,74, 451 patients died due to the corona virus. Likewise, India has 1, 90, 535 patients of corona virus, 91,819 recovered after treatment; and, while 5394 patients died due to the corona virus (02 June 2020).
- 8. With respect to the global mortality rate it has been 4.1 for the world, Belgium on top of the chart with 79.3. India's mortality rate is lowest in the world which is 0.7.
- 9. The whole country is administratively divided into 03 zones on the basis of intensity of the spread of Covid-19. They are Red Zone, Orange Zone; and, Green Zone. While with in Red and Orange Zones there are Containment Zone and Hot Spots (where gravity of the situation is very critical and in state of medical emergency). In medical terminology it is known as *'Disease Cluster'*. Covid 19 is a sort of disease cluster with a usually high incidence of a particular disease occurring in close proximity in terms of both time and space, typically when the cluster is recognized. They are reported to public health department of the local area. If cluster are of sufficient size and importance, they may be re –evaluated as outbreaks.
- At National level, the Indian states of Maharashtra, Tamil Nadu, Delhi, Gujarat, Rajasthan and Madhya Pradesh are the top five super spreader states of India which accounts for about 75% reported case in India.

END NOTES AND RECOMMENDATIONS

Throughout the entire discussion in this article an effort has been made to focus on the assessment of revisit of geocentric philosophy within the ambit of Corona Virus. The followings findings has had been observed during the entire interpretation:-

- As far as the nexus between environmental determinism and Covid 19 is concerned they directly correlated with each other. Their association markedly is determined by their determinants like, deterministic orientation, sources of emergence, the application of minimum intervention and minimal encroachment; and, their progressive stages of development.
- The reaction of geographical space has been investigated with the aid of selected specific indicators. From its very character and features the river water, air quality and ecological balance has been modified and transformed in terms of their qualitative improvement. Their qualitative change has been closely associated with the implementation of features and measures of geocentric philosophy and Covid -19 in terms of administrative action and strict monitoring of the changes in the above geographical space. It has been found that, the values of the different parameters had been qualitatively improved during the lockdown and study period.
- With respect to the Spatio Temporal trends of Covid 19, it had been observed that the patterns and transmission of Covid -19 has severely affected the developed and developing countries of the world. The virus had been more active and concentrated in high density population regions of the world. The trends and patterns also shows that, the Indian State of Uttar Pradesh have lesser Corona Virus patients than the most advanced nations of the world.
- We need to strengthen independent research on bio safety, food safety, health safety; and, epidemiology and the ecology of virus.
- Solution to our most of the problem is in nature. The Corona virus is 'Earth Vaccine'.

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GREENHOUSE EFFECT: AN ENVIRONMENTAL CHALLENGE

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ABSTRACT

Greenhouse effect is one of the important environmental issue in the present scenario of air pollution. Increasing population has cause expansion of industries, vehicular traffic & also there is increase in thermal power generation, rapid urbanization and deforestation etc. these factors all together elevate the level of particles and gaseous pollutants in the atmosphere, which are causing threat to life & causing adverse health effects. Concentration of greenhouse gases like carbon dioxide, nitrous oxide, ozone, chlorofluorocarbons, methane, water vapor etc. are increasing due to rapid rate of air pollution. These GHG are responsible for global warming thus creating other changes related to climate change. This paper deals with some important aspects related to greenhouse effect.

KEY WORDS: Greenhouse Effect, Gases, Global warming, Radiation.

INTRODUCTION

The gases mantle around the earth permit considerable number of solar radiations to enter which reach the surface of earth. Surface absorbs it & radiate back infra-red & heat waves. These long wave length radiations are absorbed by the green house gases present in the atmosphere. This heat/energy is radiated back to the earth which keep it warm. This way GHG act as blanket around the earth & control the escape of heat from the surface of earth to the outer atmosphere. This is called as greenhouse effect. Mean annual temperature of earth is about 15°C, in absence of GHG in atmosphere the temperature of earth would be -20°C. This natural occurrence warms the atmosphere & make life possible on earth [1].

Over the past 10,000 years, the amount of GHG in the atmosphere was relatively stable. Then a few centuries ago, their amount began to increase. The reason for this increase is industrialization, increased number of automobiles and increasing populations. Human activities mainly the burning of fossil fuels and deforestation, have accelerated the rate of greenhouse effect and caused global warming [2].

GREENHOUSE GASES

These GHG include water vapor, CO_2 , CH_4 , N_2O & other gases. The Industrial Revolution in the early 1800s, the use of fossil fuels like coal, oil, & gasoline have increased the concentration of greenhouse gases in the air. Cutting of forest [deforestation] is one of important [2nd largest] anthropogenic basis of CO_2 to the atmosphere ranging between 6% &17% [3,4].

The most abundant greenhouse gases in the atmosphere are:

Water vapor (H_2O)

Carbon dioxide (CO_2)

Methane (CH_{4})

Nitrous oxide (N_2O)

Chlorofluorocarbons (CFCs)

Ozone $[O_3]$

SOURCES OF GREENHOUSE GASES:-

 CH_4 : Methane is emitted from the decomposition of organic wastes of agriculture, municipal [solid waste], flooded rice fields, enteric fermentation in cattle and biomass burning.

N,O: It is produced by burning of biomass, livestock waste, break down of nitrogen rich fertilizers in soil.

 CO_2 : Carbon dioxide is emitted by the burning fossil fuels like coal, natural gas and oil, solid waste, wood products & also as a result of certain chemical reactions.

CFCs: Leaking of air conditioners, refrigerator units, evaporation of industrial solvents etc. are the sources of CFCs in atmosphere.

 O_3 : Ozone is a secondary pollutant is not emitted as such by any specific source, it is formed during the atmospheric photochemical reactions involving oxides of nitrogen & reactive hydrocarbons emitted from vehicles [5].

By their percentage contribution to the greenhouse effect on earth the four major gases are [6, 7] following. Atmospheric gases only absorb some wavelengths of energy but are transparent to others. CO2 is not as strong a greenhouse gas as H2O vapor, but it absorbs energy of long wavelengths (12–15 micrometers) that water vapor does not. (Illustration NASA, Robert Rohde) [8].

- water vapor 36–70%
- carbon dioxide 9–26%
- methane 4–9%
- ozone 3–7%

Actually, it is not possible to assign a specific % to the GHG because the absorption & emission bands of the gases overlap. Clouds also absorb and emit infrared radiation [IR] & thus affect the radiative properties of the atmosphere.[7]. The capacity of GHG to capture heat is responsible for the greenhouse effect [9]. Greenhouse gases consist of three or more atoms. The molecular structure of GHG makes it possible for these gases to capture heat in the atmosphere & then transfer it to the earth surface which further warms it [10]. The procedure is very similar to the working of green house.

Carbon dioxide $[CO_2]$ is a GHG. It has one carbon atom with an oxygen atom bonded to each side. As soon as its atoms are bonded tightly together, the CO2 molecule can absorb infrared radiation & the molecule starts vibrating. Then the vibrating molecule will emit the radiation again & these radiations are likely be absorbed by yet other GHG molecule. This process of absorption-emission-absorption serves to keep the heat near the surface of earth, thus effectively insulating the surface from the cold of space [11]. Water vapor [H₂O], carbon dioxide [CO2], methane [CH4], nitrous oxide [N2O] are GHG. Molecules of these gases are made up of more than two constituents atoms & are bound loosely enough together to be able to vibrate with the absorption of heat radiations.

STEPS OF GREEN HOUSE EFFECT: [Fig.1 & 2]

Energy that is propagated in the form of electromagnetic waves called as radiation.

1. Solar energy coming from the sun is called solar radiations.

- 2. Solar radiation heats up the earth.
- 3. The warmed earth radiates heat which are in the form of infrared radiation. They are of long wave length radiations.
- 4. The warm earth surface emits infrared radiation (IR), GHG absorb these IR radiations.
- 5. Green house gases are energized, then emits more radiation (IR).
- 6. Some of these IR returns to the earth surface, warm it further.
- 7. This process is called as the "Greenhouse Effect".



Figure 2



IMPACT OF GREENHOUSE EFFECT

Global Warming

Elevation of GHG concentration causes a reduction in outgoing IR, as a result the earth's climate must change somehow to restore the balance between incoming & outgoing radiation. This will cause global warming. Global mean surface temperature will rise by 1.4! to 5.8! by the end of 2100. If global warming undergoes unimpeded, it will cause noteworthy changes in climate, rise in sea levels, increase in ocean acidification, life threatening weather events & other severe natural & societal affects, according to NASA, the Environmental Protection Agency (EPA) & other scientific and governmental bodies [12, 13, 14].

Rise in sea level

Due to global warming sea level will rise due to two different reasons/processes. First reason is-warmer temperature cause sea level to rise due to the thermal expansion of seawater. Second reason is- water from melting glaciers & the ice sheets of the Antarctica & Greenland would also add water to the ocean. It is estimated that the

earth's average sea level will rise by 0.09 to 0.88 m between 1990 & 2100. Due to this world's many coastal areas will come under the threat of flood as well as many low- laying islands will be submerged. Not only this it will have adverse impact on human settlement, fresh water supply & wetland etc.

Effect on distribution of species

If the climatic belt shift away from equator towards the poles, vegetation will shift towards favorable climatic conditions. Only resistant & hardy forms will survive. There will be losses on large scale.

Effects on hydrological [H2O] cycle

As there in change in global temperature, it will affect the precipitation pattern. Global precipitation is supposed to increase. Some regions may have more rainfall & some will receive less. Higher temperatures would probably increase rate of evaporation. These changes would probably create new stresses for many water management systems.

Effect on economy

Changes in global climate will have enormous consequences for living nature as well as the economy. Even a small rise in mean annual temperature will have large impact on ecology & biological diversity of the region [15]. Biodiversity is very important for the stability of ecosystems and also for human health [16]. The economic impact of climate change like drought, floods & other effects will become quite substantial.

STEPS FOR REDUCING GREENHOUSE EFFECT/ GLOBAL WARMING

- 1. More and more plantation.
- 2. Reduction in burning of fossil fuel.
- 3. Use of renewable sources of energy.
- 4. CO2 capture & sequestration,
- 5. Bioremediation technique can be useful for decreasing GHG emission from the earth atmosphere. In bioremediation technique microbial metabolism is used to remove pollutants. A Phytoremediation enhanced by endophytic micro-organisms can be used to remove waste including greenhouse gases from the biosphere [17]. Methanotrophic endophytes inhabiting Sphagnum Spp. can act as a natural methane filter, thus can reduce methane & carbon dioxide emission from peat lands by about 50% [18, 19].
- 6. International efforts to bring down the emission of greenhouse gases [Kyoto Protocol, 1997] [20].

CONCULSION

Due to greenhouse effect global warming is increasing. And these two are directly proportional to each other. Greenhouse effect is also necessary for the survival of life on earth but it should not be in excess, otherwise it will become threat to the environment as well as life. So, steps should be taken to balance greenhouse effect.

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CLIMATE CHANGE AND INDIA

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Abstract

Nations of the world, together with international organisation like United Nation Framework Conservation on Climate Change have one main goal-to improve the standard of living of the world population while a large number of population still gets bare minimum in the name of human development. Humanity is at cross roads, faced with the first of its kind challenge- the challenge of Climate change. The dilemma is, whatever we do for our development, there is bound to be a reprecussion on nature and it ultimately effects climate. If we go through the research findings of the environmental scientists and activities by all logic, the very human species is under threat of extinction. Climate change is impacting the natural ecosystem, agriculture, Himalayan glaciers, Coastline and Habitations, Human Health, Water Resources and causes and increased frequency of extreme events, of such as Flood and Droughts. This article explains about reasons of Climate Change, its effects on various fields and efforts made by Government of India to mitigate the bad effects of Global Warming and Climate Change.

Key words:- Climate Change, Conservation, Development, Global Warming.

Although whole world is suffering from problem of Global Warming, but India is highly vulnerable to Climate Change. As per record observation India has seen an increase of 0.4 degree centigrade in mean surface temperature. Air temperature over past century has made changes in mean temperature and mean precipitation & it will require change in cropping patterns, productivity of animal and milk. Climate Change is also expected to raise sea levels, which could submerge Coastal land in some areas, there by threatening Coastal cities and habitation. Increase in sea and river water temperature is likely to affect fish, breading mitigation and harvest.

Main Causes of Global Warming & Climate Change:-

- The rapid increase in production of pollutants particularly by industrial units has led to dramatic increase in the level of concentration of number of green house and ozone depleting gases. The inevitable result has been global warming.
- The burning of fossil fuel by auto-mobiles and industries are major sources of green house gases.
- Other sources include deforestation, animal husbandry, decomposition of waste and Coal mining.
- A number of gases including Chloro-fluoro Carbon, Carbon-di-oxide, Methane, Sulpher-di-oxide and nitrous oxide, contribute significantly to the stock of green house gases.
- Some other factors are also responsible for this problem, like:
 - i) Poor implementation and enforcement mechanism
 - ii) High degree of corruption in the system.

- iii) Vested interest of industrialists, bureaucracy or politicians are hard to make and do not get implemented.
- iv) Lack of financial sources & political will to control pollution.
- v) Violation of environmental laws with impurity to serve various industrial and commercial interest.

Effects of Climate Change on different areas in India:-

India is highly vulnerable to Climate Change as its economy is heavily reliant on climate sensitive sector like Agriculture and forestry. Our country is among the 27 countries that are most vulnerable to sea level rise and also figure among the top 10 contributor of green house gas emissions. The energy sector is the biggest contributors of Carbon dioxide emmission in India followed by the agriculture sector and industrial process.

I) Agriculture Sector:-

65 percent net sown area of Indian agriculture is dependant on rain fall. It provides employment to 70 percent of the total work force and account for 20 percent of total exports. There is direct effect on agriculture production from change in the temperature, precipitation or carbon dioxide concentration and indirect effects through change in soils. distribution and frequency of infestation by pests, insects, diseased or weeds.

II) Forest Areas:-

Climate change could alter the configuration of the forest ecosystems, which may affect traditional livelihood, industry, biodiversity, soil water resource etc. It also effects the geographical distribution, composition and productivity of forests.

III) Coastline:-

India has a low-lying densely populated coastline extending about 6500 kms. Coastal infrastructure, industries, tourists' activities and onshore oil exploration are also at risk.

IV) Monsoon:-

Climate change increase temperature of land over the adjoining ocean, the land sea thermal contrast that drives the monsoon mechanism; could positively decline.

V) Sea level Rise:-

With the warmer climate the sea level may rise due to thermal expansion of sea level and meting of snow and ice of arctic regions, this will bring disastrous effect on the low-lying coastal areas.

VI) Health:-

There are many potential health impacts arising from climate change like cases of heat waves death, coronary disease and stroke, skin cancer and asthma etc..

VII) Migration:-

Shore line erosion, river and coastal flooding and severe droughts could displace millions of people. There will be 1.5 crore additional refugees in 2050 as a result of climate change.

VIII) Air and Water Pollution:-

A higher water temperature may affect water quality through a reduction in the level of dissolved oxygen. A warmer climate could aggravate some urban pollution problems.

IX) Other Effects:- So ultimately global warming is at the root of climate change which can cause sea level rising, threatening coastal system, increase in floods, Tsunami, droughts. The last but not least the poor are disproportionately affected by disasters caused by climate change.

Conclusion:-

Growth and developments need to be having limited objectives. It cannot be stretched up to an unlimited extent. How can the 'finite earth' support 'mankind's infinite physical needs'? As Gandhi has said that earth provide enough to satisfy every man's need, but not for every man's greed. Mankind need to introspect not only

about its present needs but also the way those needs are being met. Besides, we also need to differentiate between our 'need' and 'aspirations'. Our physical needs have direct link; with the natural resources we have at our disposal to meet them. For mankind to survive, we need to account for the various resources provided by the nature.

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OPPORTUNITIES OF WOMAN ENTREPRENEURSHIP IN INDIA

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Abstract

In India, male dominated tradition is in the roots of sociological setup. In this society educated Indian woman have to go long way to achieve equal rights and position. To develop a country we know it is necessary to empower its woman potential those who are future entrepreneurs. It is a time period when we should have to accept that women, unignorable potential of our country, are not only be seen as house-caring gender, teachers, tutors etc. But it is very essential to transform them as business managers, supervisors, doctors, engineers, software developers, IPS officers, police officers and entrepreneurs etc. So that our country could use whole human resource power and compete with other countries and successfully stood up with them in every field and direction. But it is not possible without sufficient finance facility. But many skilled women are facing finance scarcity in the way of starting innovative productions. The present paper endeavors to study the concept of women entrepreneur and reasons behind women become entrepreneurs and reasons for slow progress of women entrepreneurs in India. The suggestions for the growth of women entrepreneurs with some government schemes for promotion & development of women entrepreneurship in India are also discussed.

Key Words: Entrepreneurship, Women, Business, Finance, Gender.

Introduction

Entrepreneurship is not a male-dominated phenomenon since last decade, time has changed situations found women as today's most inspirational and innovative entrepreneurs. It is assumed by recent statistics that women entrepreneurs presently comprise near about 10% of the total number of entrepreneurs in India. Entrepreneurship is not limited to any particular gender. Now by cause of multi-faceted economic pressures women have realized that the survival of their families & their own potential lies only in working side by side with men.

As we already know that an educated women never want to limit her life in the four walls of the home. They demand equal respect from their partners and family members. However, Indian women have to go a long way to achieve equal rights and position because traditions are deep rooted in Indian society where the sociological set up has been a male dominated one. Women are considered as weaker human gender and always made to depend on men throughout their life. The Indian culture made them only the executors of the decisions made by other male members, in the basic family structure. Women remain perhaps the world's most underutilized resource. Despite all the social barriers, India is progressing with the success stories of women. They stand tall from the rest of the crowd. Indian Women has competed with man and successfully stood up with them in every walk of life and

business . These women leaders are innovative, enthusiastic and willing to take risks. They are participating to survive and succeed in this cut throat competition with their hard work, intelligence and perseverance. Indian govt is providing many opportunities by which they could be able to start new business, education, employement reservations. So that they could survive in making India a developed nation.

Review of Literature

Bowen & Hisrich (1986) compared & evaluated various research studies done on entrepreneurship including women entrepreneurship. It summaries various studies in this way that female entrepreneurs are relatively well educated in general but perhaps not in management skills, high in internal locus of control, more masculine, or instrumental than other women in their values likely to have had entrepreneurial fathers, relatively likely to have first born or only children, unlikely to start business in traditionally male dominated industries & experiencing a need of additional managerial training.

Damwad (2007) describes the experiences, initiatives & obstacles faced at five Nordic countries like Finland, Denmark, Iceland, Norway & Sweden towards women entrepreneurship. It broadly identifies few obstacles like financing, lack of knowledge & skills in business life, markets & entrepreneurial activity, work life balance including lack of growth & wishes to grow and most importantly women as other groups are heterogeneous. The study compares early stage entrepreneurial male & female activity among Nordiccountries with the same of USA. It also compares various programme & schemes developed by Nordic countries & agencies that provide support to them.

Lall & Sahai (2008) conduct a comparative assessment of multi-dimensional issues & challenges of women entrepreneurship & family business. The study identified Psychographic variables like degree of commitment, entrepreneurial challenges and future plan for expansion, based on demographic variables. Through stratified random sampling & convenience sampling the data have been collected from women entrepreneurs working in urban area of Lucknow. The study identified business owner's characteristics as self perception self esteem, Entrepreneurial intensity and operational problem for future plans for growth & expansion

Papisetty Rama & Mohana Rao (2004) found in the research study that Inadequate infrastructure, high labour mobility, shortage of electricity and delayed realization of debtors were the main problems faced by women entrepreneurs.

Objectives of the Study

The paperis planned with the following objectives:

- To understand the concept and categories of women entrepreneurship in India.
- To explore the challenges in women entrepreneurship in India.
- To explore appropriate government programs and schemes through which women could be able to become a successful entrepreneur.

Research Methodology

This study is based on secondary data which is collected from the research papers/articles of different scholars and researchers, different journals, periodicals, conference papers, working paper, blogs and websites etc.

Who Are Woman Entrepreneurs?

Women Entrepreneurs can be defined as the women who initiate, organize and operate any business or enterprise. The Government of India has defined women entrepreneurs as ⁻ "An enterprise owned and controlled by women having a minimum financial interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated in the enterprise to women".

Under the influence of some factors the women entrepreneurs selects a profession as a challenge and as an urge to do some thing new. Such a situation is described as pull factors. While in push factors women engaged in business activities due to family compulsion and the responsibility is thrust upon them.

Categories of women entrepreneurs in practice in India 1st category

- 1. Established in big cities
- 2. Having higher level technical and professional qualifications.

2nd Category

1. Established in cities and towns

- 2. Having sufficient education
- 3. Undertaking women services kindergarten, crèches, beauty parlours, health clinic

3rd Category

1. Illiterate women

2. Financially weak

3. Involved in family business such as agriculture, horticulture, general stores, canteen, animal husbandry, dairy, fisheries, agro forestry, handloom, power loom etc.

Data given by World Bank Doing Business in India 2009, states that the women work participation in India is 31.6 percent, USA 45 percent, UK 43 percent, Indonesia 40 percent, Sri Lanka 45 percent and Brazil 35 percent. After studying these statistics we understand that there is more need to indulge talented and skilled women in every stream of progress.



What are Push Factors?

Push factors are factors of necessity such as insufficient income, dissatisfaction with job's salary. Problems in finding needed work, flexible work schedule etc. These arise by virtue of family responsibilities. These factors may have more faced by women in comparison of men.

What are Pull Factors?

Pull Factors function as entrepreneurial drive factors related to independence, entrepreneurial drive and desire for wealth, power and social status, co-operation and support of family members and a strong network of contacts. The most effective factor is self achievement expressed in terms of challenge which helps women to start, run their own business and turn it into a profitable venture. When a strong need for achievement could not be satisfied by a salaried position or when there is a desire to transform a desired opportunity into a marketable idea, then these factors lead a woman to start their own venture.

Challenges Faced by Women in Entrepreneurship

Even though entrepreneurship has its own benefits, it is not free of problems or issues. In India women entrepreneurship is supported but due to many work load on women of their domestic works, they sometimes are unable to take action to change the situation of herself too.

Various challenges faced by women in the path of entrepreneurship are-----

1. Balance between family and career- Women are very emotionally by nature and they are attached to their home and families. They have no time to develop their hidden potentials, some time they remained busy in to looking after the children and other family members. In such situation, it is very difficult to concentrate and run an organization successfully and efficiently.

- 2. Limited access to finance Access to finance is a main issue for women. Accessing credit, especially for those women, who want to start their own work for starting an enterprise, is one of the major constraints faced by women entrepreneurs.
- **3.** Inadequate Marketing skills -To enter into new markets needs expertise, knowledge and social connections. Women often lack access to training and experience, for its solution they have to participate in the market place and are therefore unable to market goods and services.
- 4. Illiteracy or low level of Education- Indians Women are far behind in the field of education till this age of innnovation and inventions. By reason of lack of proper education, most women remain behind about the development of new technology, marketing, and other governmental support which will encourage them to progress in the field of entrepreneurship.

Successful Women Entrepreneurs in India

Among all these challenges or barriers ahead women in the way of entrepreneurship women in India have proved their strength by great success stories and records. they can do their best if they would be provided good credit facilities and a kind motivation by identifying their needs, pull factors, hidden talents, and potential etc.

Following are some of the most progressive, effective women in Indian developing trade and business environment. They are not only producing product with own idea, but in marketing and exporting product they are securing top position. They are participating in activities which could break the stereotyped thoughts of our society to make men leader and manager in every field. The list follows—-

- 1. Vandana Luthra The founder of VLCC
- 2. Kiran Mazumdar Shaw The founder of Biocon Limited
- 3. Priya Paul- The chairperson of Park Hotel
- 4. Ritu Kumar The Fashion designer
- 5. Suchi Mukherjee Founder & CEO of Limeroad
- 6. Indra Nooyi The board member of Amazon
- 7. Aditi Gupta The Co-founder of Menstrupedia

Opportunities for Woman Entrepreneurs through the steps taken by the Government

Women entrepreneurship has been a policy objective of our government since independence. After independence, in the 80s India adopted a multi-disciplinary approach with woman empowerment and entrepreneurship with objectives on three core areas of health, education and employment. Women were given priorities in all the sectors in these days of development programs. Government and non government sectors have paid more attention to women's economic contribution by self employment and free or easy loan finance facilities. Some efforts of Govt. are——

- Working Women's Forum Indira Mahila Yojana-This plan is started by government to make Indian woman self-dependent. State government provide Rs.50 lakh to women and Rs.1 crore to women groups as financial assistance.
- Indira Mahila Kendra-It is a center where oppressed women will be given maternity counselling, police, entrepreneurship skills, training facilities and many court/legal facilities.
- Mahila Vikas Nidhi-This plan has been started by Punjab National Bank under guidance of Govt. In this plan woman who participate in short and medium trades will be given easy rates loans that is easily repayable in 10 years. Maximum amount of this loan is 1 lakh.

- **Micro Credit Scheme** Micro credit scheme are run by NABARD in the field of agriculture and by SIDBI in the field of industry & service.
- **Rashtriya Mahila Kosh-**Rashtriya Mahila Kosh was established in 1993 as a National level organization under the aegis of the ministry of women and child development, for social and economic development of women.RMK provides loan indirectly through various NGOs and self help groups.
- **Mahila E Haat** It is a new initiative by which govt. is providing market to small handicraft work and unique items produced by women entrepreneurs.
- **SIDBI's Mahila Udhyam Nidhi-**Under the plan 'Mahila Udhyam Nidhi', small and medium women entrepreneurs are given loan upto Rs.10 lakhs. Main object of this scheme is to increase the number of women entrepreneurs in our country.
- **SBI's Stree Shakti Scheme-**This loan is given by State Bank of India to strengthen and making the Indian women self-dependent. Under this scheme any woman can avail loan to start her own business.
- **Priyadarshini Project-** 'Priyadarshini Yojna' is a programme for Rural Women Empowerment and Livelihood in Mid Gangetic Plains. This plan has focus on to empower women who are living in rural areas to provide them shelter and providing easy rates loans.
- Marketing of Non-Farm Products of Rural Women (MAHIMA)
- Assistance to Rural Women in Non-Farm Development (ARWIND)
- Trade Related Entrepreneurship Assistance and Development (TREAD)
- · Mahila Samriddhi Yojana

CONCLUSION

Today we are in a better position wherein women participation in the field of entrepreneurship is increasing at a progressing rate. But unfortunately, the government sponsored development activities have benefited only a small section of women i.e. the urban middle class women. Women sector occupies nearly 45% of the Indian population. At this situation, effective steps are needed to provide entrepreneurial awareness, orientation and skill development programs to women. The role of Women entrepreneur in economic development is also being recognized and steps are being taken to promote women entrepreneurship. Government is taking several steps to empower a woman and make them beneficial entrepreneurs so that those women who have no access to manufacturing activities could be able to to start new business by easy loans. The government and its different agencies are supplemented by NGOs that are playing an important role in facilitating women empowerment. Despite concerted efforts of governments and NGOs there are certain gaps. Of course we have come a long way in empowering women yet the future journey is difficult and demanding. All of us have to change our mentality when we discuss about a nation's development because women are not only a supportive part of country but main potential of our country. If every citizen works with an attitude towards respecting the important position occupied by women in our society and understanding their important role in the modern business field too, then very soon we can preestimate our chances of out removing our own conservative and rigid thought which is the biggest barrier in our country's development process.

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INDIA'S RESPONSE TO COVID-19 PANDEMIC

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Abstract

India reported the first confirmed case of the coronavirus infection on 30 January 2020. The outbreak had been declared an epidemic in many states and union territories, where provisions of the Epidemic Diseases Act, 1897 had been invoked, and educational institutions and many commercial establishments had been shut down. India has suspended all tourist visas, as a majority of the confirmed cases were associated with other countries. On the request of prime minister Narendra Modi, India observed a 14-hour voluntary Janta (public) curfew on 22 March 2020. Moreover, on 24 March, the Prime Minister ordered a nationwide lockdown for 21 days. From 1 June, the government started "unlocking" the country (barring "containment zones"). Michael Ryan, chief executive director of the World Health Organisation's health emergencies programme, said that India had "tremendous capacity" to deal with the coronavirus outbreak and, as the second most populous country, will have enormous impact on the world's ability to deal with it. The Oxford COVID-19 Government Response Tracker (OxCGRT) reports that the Indian Government has responded more stringently than other countries in tackling the pandemic.

Key words : coronavirus, epidemic, lockdown, janta curfew, pandemic

INTRODUCTION

India reported the first confirmed case of the coronavirus infection on 30 January 2020 in the state of Kerala. The affected had a travel history from Wuhan, China. As of 15 May 2020, the Ministry of Health and Family Welfare have confirmed a total of 81,970 cases, 27,920 recoveries and 2,649 deaths in the country.

The outbreak had been declared an epidemic in more than a dozen states and union territories, where provisions of the Epidemic Diseases Act, 1897 had been invoked, and educational institutions and many commercial establishments had been shut down. India has suspended all tourist visas, as a majority of the confirmed cases were associated with other countries.

On the request of prime minister Narendra Modi, India observed a 14-hour voluntary Janta (public) curfew on 22 March 2020. Moreover, on 24 March, the prime minister ordered a nationwide lockdown for 21 days. On 14 April, the prime minister extended the ongoing nationwide lockdown till 3 May. On 1 May, lockdown across the country was further extended by two more weeks till 17 May. From 1 June, the government started "unlocking" the country (barring "containment zones") in various unlock phases.

Michael Ryan, chief executive director of the World Health Organisation's health emergencies programme, said that India had "tremendous capacity" to deal with the coronavirus outbreak and, as the second most populous country, will have enormous impact on the world's ability to deal with it. The Oxford COVID-19 Government Response Tracker (OxCGRT), in its report based on data from 73 countries, reports that the Indian Government

has responded more stringently than other countries in tackling the pandemic. It noted the government's swift action, emergency investment in healthcare, fiscal measures, investment in vaccine research and active response to the situation, and scored India with a "100" for its strictness. This paper focuses on the various measures taken by Govt. of India for tackling the menace of coronavirus pandemic.

METHODOLOGY

Data and information presented in current paper are collected from various reports prepared by national and international agencies on COVID-19 pandemic. Information are collected from various authentic websites. Some journals and newspapers are also referred.

BRIEF TIMELINE OF COVID-19 PANDEMIC IN INDIA

On 30 January, India reported its first case of COVID-19 in Kerala, which rose to three cases by 3 February; all were students who had returned from Wuhan, China. No significant rise in cases was seen in the rest of February. On 4 March 22 new cases came to light, including those of an Italian tourist group with 14 infected members.

The transmission escalated during March, after several cases were reported all over the country, most of which were linked to people with a travel history to affected countries. A Sikh preacher that returned from travel to Italy and Germany, carrying the virus, turned into "super spreader" by attending a Sikh festival in Anandpur Sahib during 10–12 March. On 31 March, a Tablighi Jamaat religious congregation event that took place in Delhi in early March emerged as a new virus hotspot after numerous cases across the country were traced back to the event. On 6 April 2020, in Mumbai's Wockhardt Hospital, 26 nurses and 3 doctors were found to have been infected with the virus. As of 27 April the states of Goa, Sikkim, Nagaland, Arunachal Pradesh, Manipur and Tripura have been declared as "Covid-19 Free" with zero active cases by the Government of India. On 2 May 2020, in Punjab, Around 4000 stranded pilgrims returned from Hazur Sahib in Nanded, Maharashtra. Many of them tested positive. 27 bus drivers and conductors who took stranded pilgrims back to the state also tested positive. As of 13 May, 1,225 pilgrims have tested positive taking the state tally to 1,924. As of 15 May 2020, the Ministry of Health and Family Welfare have confirmed a total of 81,970 cases, 27,920 recoveries and 2,649 deaths in the country.

GOVERNMENT' S RESPONSE

Protective measures were first applied in January. India began thermal screening of passengers arriving from China on 21 January. During February, the screening was extended to passengers from Thailand, Singapore, Hong Kong, Japan and South Korea. Nepal, Vietnam, Indonesia and Malaysia were added to the list towards the end of February.

Very few new cases were discovered during February, but Shashi Tharoor pointed out that asymptomatic, infectious persons could still slip through the screening. He worried that no comprehensive nationwide surveillance system was in place, testing infrastructure was inadequate, and the public awareness was minimal. In fact, the Indian Council of Medical Research (ICMR) scientists knew that airport screening alone was not enough.

On 17 March, the Government of India issued an advisory, urging to all Indian states to take social distancing measures as a preventive strategy for implementation till 31 March. A government directive was issued asking all Central Armed Police Forces to get into battle mode; all non-essential leave was cancelled. A COVID-19 Economic Response Task Force was also formed.

On 29 April, The Ministry of Home Affairs issued guidelines for the states to allow inter-state movement of the stranded persons. States have been asked to designate nodal authorities and form protocols to receive and send such persons. States have also been asked to screen the people, quarantine them and to do periodic health

TRAVEL AND ENTRY RESTRICTIONS

On 3 March 2020, the Indian government stopped issuing of new visas. Previously issued visas for the nationals of Italy, Iran, South Korea, and Japan were suspended. All visas were suspended on 13 March, except for

diplomatic and other official visas, as well as the visa-free travel for Overseas Citizens of India. Indians returning from COVID-affected countries were asked to be quarantined for 14 days.

SCREENING

On 4 March 2020, the Minister of Health and Family Welfare, Dr. Harsh Vardhan, announced compulsory screening of all international passengers arriving in India.

LOCKDOWN

On 22 March, the Government of India decided to completely lockdown 82 districts in 22 states and Union Territories of country where confirmed cases have been reported till 31 March. At 6 am on 23 March Delhi was put under lockdown till at least 31 March. Essential services and commodities were to continue.80 cities including major cities such as Bengaluru, Chennai, Mumbai, Chandigarh and Kolkata were also put under lockdown. Interstate movements are allowed during the lockdown period. However some states have closed their borders. On 23 March, union and state governments announced the lockdown of 75 districts where cases were reported.

On 24 March, PM Narendra Modi announced a complete nationwide lockdown, starting from midnight for 21 days. By 6 April, the growth rate of the pandemic had slowed to one of doubling every six days, from a rate of doubling every three days earlier. On 14 April, PM Narendra Modi extended nationwide lockdown till 3 May, with a conditional relaxation from 20 April for the areas that have been able to contain the spread.

On 29 April, Punjab government announced for extension of curfew till 17 May. On 1 May, the Government of India extended nationwide lockdown further by two weeks until 17 May.

On 5 May, Telangana government announced for extension of lockdown till 29 May in their state.

ZONAL CLASSIFICATION

The Government Divided the entire nation into three zones – Green Zone, Red Zone, Orange Zone, relaxation will be allowed accordingly.

Red zone (Hotspots) - districts with high doubling rate and high number of active cases

Orange zone (Non-hotspots) - districts with fewer cases

Green zone - districts without confirmed cases or without new cases in last 21 days

COMMUNICATION AND ECONOMIC STIMULUS

On 19 March, Indian Prime Minister Narendra Modi asked all citizens to observe 'Janata Curfew' (people's curfew) from 7 am to 9 pm on 22 March. During this curfew he asked everyone, except those involved in essential services, to stay at home. Modi announced a nationwide lockdown from midnight of that day, for a period of 21 days. He also announced a ¹ 150 billion aid for the healthcare sector. This money would be used for developing testing facilities, PPEs, ICUs, Ventilators and for training medical workers.

In an address on 14 April PM Modi asked the citizens to follow seven steps to help in the fight against coronavirus, "Use homemade masks, take care of elderly people, Protect jobs, Help the poor and needy, follow the guidelines set by Ministry of AYUSH to improve immunity and Download the Aarogya Setu app to track your health."

On 12 May Prime Minister Narendra Modi announced the Atma-nirbhar Bharat Abhiyan (or Self-reliant India Mission) and the Finance Minister, Nirmala Sitharaman subsequently unveiled the details of an economic package — worth Rs 20 lakh crore or 10% of India's GDP in 2019-20 — aimed towards achieving this mission.

INTERNATIONAL RELATIONS

On 26 February, India sent 15 tons of masks, gloves and other emergency medical equipment by an Indian Air Force jet to China. The medical supplies sent to China include one hundred thousand masks, five hundred thousand pairs of gloves, 75 infusion pumps, and 30 internal feeding pumps.

On 13 March, PM Narendra Modi proposed that SAARC nations jointly fight the pandemic, an idea that was welcomed by the leaders of Nepal, Maldives, Sri Lanka, Bhutan, Bangladesh, and Afghanistan. On 15 March, after a video conference of SAARC leaders, he allocated ¹74 crore (US\$10 million) of funds classified as COVID-19 Emergency Fund for the SAARC countries.

On 4 April, the Government of India banned the export of hydroxychloroquine "without any exception", in order to stockpile supplies for domestic use. The United States, which imports half its supply of the drug from India and expects to use it for treating COVID-19 patients, grew concerned. The US President Donald Trump called Prime Minister Modi the next day, and India agreed to allow its export on "humanitarian grounds". Apart from the US, India had outstanding orders for Hydroxychloroquine from some 30 countries, including Brazil, Spain, France, UK, Germany, Australia, the Gulf countries and the SAARC neighbours.

AAROGYA SETU

The Ministry of Electronics and Information Technology launched a smart phone application called Aarogya Setu to help in "contact tracing and containing the spread" of COVID-19 pandemic in the nation. The World Bank lauded the early deployment of such technology to combat the pandemic.

CURRENT STATE OF AFFAIRS

India's capacity for treating suspected and confirmed COVID-19 cases has expanded to include a total of 2033 dedicated COVID facilities with over 19,000 isolation beds, over 24,000 ICU beds, and over 12,000 ventilators. Seven months after the outbreak of pandemic, India opened the largest COVID facility in the country, "The Sardar Patel COVID Care Centre", with a bed capacity of 10,000 located in New Delhi. It is important to highlight that, even with the implementation of more than four months of strict national lockdown and the public health measures , the cases in India continue to rise and a clear path to exit the lockdown remains uncertain. Even though many states are proposing widespread testing to create a safe exit from the lockdown, while some even propose to extend the lockdown further, widespread confusion remains. To complicate the affairs, the pandemic has resulted in a tremendous economic crisis affecting millions of daily wage workers, migrant workers, and small businesses across the nation, with more than 100 million people having lost their jobs in the month of April.

CONCLUSION

India's response to the pandemic is similar to the responses of other countries in many ways. However, differences include the early and extended implementation of a national lockdown, rather than few travel restrictions, and the strict national policies developed to constrain the advancement of the virus. Whether these early interventions effectively helped to curb the spread of the virus is debatable, but these interventions were undoubtedly impeded considering the challenges unique to India including its large population size (with a sizeable migrant population), large geography, overcrowded cities, dwindling rural population, poverty, its fragmented and often mistrusted healthcare system, healthcare disparities and even violence against healthcare workers. Only time will testify whether India will take advantage of current events and turn the challenge into an opportunity to create health awareness among masses. improve the healthcare system, and create the infrastructure needed to combat such an unprecedented pandemic in future. These challenges can be best overcome by world leaders coming together to formulate effective healthcare and socioeconomic support systems for all. The bottom line is that India has to have a robust action plan when a pandemic strikes – a plan that is creative, disciplined and, above all, sensitive.

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IMPACT OF COVID-19 ON INDIAN ECONOMY

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Abstract

The banking sector in India has played a major and important role in socio-economic progress and this has been evident since independence. The banking sector is the heart and soul of an economy for any country. It is the most important pillar for any financial sector and plays a major role in the economic development of the country. This paper focuses on the Indian economy and the major steps taken by the Government of India during the lockdown due to COVID-19. This paper also analyzes the impact of the COVID-19 epidemic on the banking sector.

Key words:- Banking Sector, COVID-19, GOI, NPAs

Introduction

The economic impact of the COVID-19 virus epidemic in India has been largely disruptive. According to the MOS (Ministry of Statistics), India's growth rate declined to 3.1% in the fourth quarter of FY 2020. The CEA (Chief Economic Advisor) to the GOI stated that this decline is mainly due to the corona virus epidemic on the Indian economy. Remarkably, India had also been a witness to a pre-epidemic recession, and according to the World Bank, the present epidemic has "increased pre-existing risks to India's economic position".

The World Bank and rating agencies had initially revised India's growth for FY 2020-21, the lowest figure that India had seen in the three decades since economic liberalization in the 1990s. However, after the declaration of the economic package in mid-May, Over 30 countries have their ratings downgraded during this period. India's GDP estimates were even more skewed by negative figures, indicating a deep recession.

On 26 May, CRISIL announced that it would be India's worst recession since independence. State Bank of India research estimates that there will be a contraction of over 40% in GDP in Q1. On 1 September 2020, the Ministry of Statistics released GDP figures for Q1 (April to June) FY21, which showed a contraction of 24% compared to the same period a year earlier.

Objectives of the study

- To understand the impact of COVID-19 on Indian Economy especially on Banking System.
- To analyze Economic packages announced by GOI.
- · Analysis of Atmanirbhar Bharat Abhiyan

Research Methodology

The research methodology is descriptive in nature. This study is entirely based on secondary data source which has been collected from government official websites, journals, newspapers and related studies. Data of Economic packages announced during lockdown is also being used.

Economic package 1.0 announcements (12-17 May)

- On May 12, the Prime Minister announced an overall economic package of Rs. 20 lakh crore (US \$ 280 billion). This Rs 20 lakh crore includes the previous government package (Rs 1.7 lakh crore) as well as the RBI decision (Rs 5-6 lakh crore). They make up about 40% of the package.
- On 13 May, the definition of MSMEs was revised, which allows more companies to avail the benefits of MSME schemes. The announcements on the first day include collateral-free loans and bank guarantees that will allow work to resume for many MSMEs. A liquidity scheme and partial loan guarantee scheme for non-bank lenders. Tax deadline extended.
- On 14 May, the Finance Minister, for the second day, announced the details of the economic package. Migrants, farmers, street vendors among others were included in the package and emphasized the "One Nation One Ration Card" scheme.
- On 15 May, Operation Greens was expanded from tomatoes, onions and potatoes (TOP) to all fruits and vegetables. Cereals, edible oils, oil seeds, potatoes and onions were deregulated (except in exceptional circumstances) and no stock limit would apply for storage as an amendment to the Essential Commodities Act (1958) was proposed. Fisheries Estimates Scheme was announced for fisheries and Animal Husbandry Infrastructure Fund. Agri-infrastructure funds, agricultural marketing reforms for farmers and fair price legal framework support for farmers were among other things.
- On 16 May, a fund for farm-gate infrastructure was announced, amending the Essential Commodities Act, as well as the inauguration of the defense sector, power sector and space sector for privatization.
- On 17 May, the Finance Minister announced the economic package.

Unlock 1

- On 1 June Govt. permitted the reopening of all industries and markets including barber shops and salons; The time of curfew was changed from 9 am to 5 am, while educational institutions were kept closed. To keep many public utilities, businesses and gymnasiums, cinema halls and activities like Delhi Metro closed.
- On June 2, mobile manufacturing incentives were offered to mobile manufacturers by the government. Five Indian firms will also be selected for the scheme.
- On 8 June religious sites, malls and restaurants were allowed to open across India, hopefully in the region.
- Poor Kalyan Rozgar Abhiyan was launched on 20 June to combat the impact of COVID-19 on migrant workers in India. It is a rural public works plan with an initial fund of Rs. 50,000 crore (US \$ 7.0 billion) covering 116 districts in 6 states.

Unlock 2

- On July 1, new guidelines related to the lockdown had certain comforts; Schools, colleges, gyms, movie halls, metros etc. will be closed.
- On 29 July, the Cabinet of India passed the National Educational Policy 2020 with the aim of strengthening India's education sector and turning the economy.

Unlock 3

- Gym and yoga centers can start from August 5.
- On 11 August, in a video-conference between the Prime Minister and the states, the states asked for more funds to fight COVID-19.

- On 23 August, the government announced economic measures to combat the impact of COVID-19.
- On 30 August, the government announced more economic measures.

Unlock 4

- On September 1, new guidelines were announced by the Center as well as states for the gradual reopening of the economy and society.
- On 11 September, Delhi Metro resumed normal operations with pre-COVID timing.

Unlock 5

- In October, Unlock 5 started opening up society and the economy.
- In October, Cinema 5 reopens as part of Unlock as India bends the Kovind epidemic curve.
- On October 12, the government announced (73,000 crore (US \$ 10 billion) for the economic stimulus package, called Atmanirbhar Bharat Abhiyan 2.0.

November

• On 12 November, the government announced 122.65 lakh crores (US \$ 37 billion) for the economic stimulus package, called Atmanibhar Bharat Abhiyan 3.0.

Atmanirbhar Bharat Abhiyan

On 12 May, the Prime Minister said in an address to the nation that the coronavirus crisis should be seen as an opportunity, emphasizing domestic products and "economic self-sufficiency", an Atmanirbhar Bharat (Self-sufficient India). Explaining this, the Finance Minister said that its objective was to "promote development" and "self-reliance", adding that, "self-sufficient India does not mean disconnect from the rest of the world". Law and IT Minister Ravi Shankar Prasad also said that self-reliance does not mean "isolation from the world. FDI is welcome, technology is welcome. Self-reliant India translates to the global economy." Shashi Tharoor called the Self-Reliant India Mission an aborted version of Make in India.

Economic package (Atmanirbhar Bharat Abhiyan 1.0)

India's overall economic package was declared as Rs. 20 lakh crore (US \$ 280 billion), 10% of India's GDP. The package, although announced by the Prime Minister on 12 May, included previous government actions, including RBI announcements. Previous RBI announcements included liquidity of Rs. 8 lakh crore (US \$ 110 billion). The economic package also included the Finance Minister's announcement of a package of Rs. 170,000 crore (US \$ 24 billion) on 26 March. The strategy of combining fiscal and monetary liquidity measures was defended by the government. Sitharaman said that other countries had done the same. The size of India's fiscal stimulus as a percentage of GDP is estimated between 0.75% and 1.3%. The Finance Minister held a five-day press conference between May 13 and 17, which explained the economic package.

The economic package included improvements, construction of infrastructure, assistance to stressed businesses and a fixed amount of direct cash assistance. "Collateral-free loans" that offer packages that aim to "resume business activity and protect jobs". Changes in FDI policy, privatization of power sector, provident fund contribution and ease of carrying out trade measures were also announced.

Atmanirbhar Bharat Abhiyan 2.0

On 12 October 2020, the Finance Minister announced another economic stimulus package. This package has been launched keeping in mind the upcoming festive season. The package includes allowances for the central government. During the festive season, consumers spend a lot of capital on durables and for both the Center and the states.

Atmanirbhar Bharat Abhiyan 3.0

Change in FDI policy

On 18 April 2020, according to the Department of Industry and Internal Trade Promotion, India changed its Foreign Direct Investment (FDI) policy to prevent "opportunistic takeover" of Indian companies due to the current epidemic. With global share prices falling, there is concern that China may take advantage of the situation, leading to hostile takeover. Although the new FDI policy does not restrict markets, the policy ensures that all FDIs from countries that share land borders with India will now be subject to scrutiny by the Ministry of Commerce and Industry.

Alternative to China

The Indian government wants to attract companies that wish to move out of China or are looking for an alternative to China. The PM's office is asking the government central and state machinery to prepare a proinvestment strategy. As reported by Economic Times, at least 461,589 hectares of land has been kept for this purpose. The government has been looking at the 'China plus one' strategy for several months. The Indian media has reported on 'China Plus One' as a strategy in which Indian businesses are also looking at, with many Indian companies shifting the manufacturing sector partially or completely out of China. The Karnataka government is also following a "competition with China" cluster strategy, predicting "large-scale construction". In mid-May, the German footwear brand, von Velux, decided to move its entire operations outside of China and India.

However, by August 2020, due to various government measures and public and international support, Chinese exports to India had fallen by 25%. In September, Union Minister Piyush Goyal informed Parliament that India's imports from China declined by 27.63% during April to August.

Economic recovery

In early May, former RBI Governor, Duvvuri Subbarao said that India is ready for a V-shaped recovery. Arthur D., an international consulting firm. Little suggests that India will likely see the most W-shaped recovery. Mythili Bhusanurmath wrote in The Economic Times that U-shaped recovery is most likely followed by L-shaped recovery. The Chief Economist of CRISIL states that if things go well, that if the virus is contained, we can expect V-recovery, otherwise it will end up as U-recovery.

On 24 July 2020, India's Finance Secretary Ajay Bhushan Pandey said that "the Indian economy can revive as fast as we expect", while Economic Affairs Secretary Tarun Bajaj said he was a V-shaped Let's hope for recovery. On 29 July 2020, the Cabinet of India passed the National Educational Policy 2020 aimed at strengthening the economy. As of 13 September 2020, Nomura India's business resumption index showed that economic activity had returned to pre-lockdown levels. On 24 September 2020, the Economic Times reported that, speaking at the Global Summit, McKinsey & Company's global managing partner Kevin Snyder stated that, "many economists talk about the 'V', 'U' and 'K' shape." Have been recovery so far since the COVID-19 pandemic began. Nevertheless, in all likelihood, there may be an 'X' size recovery for global economies including India. "

Effects of COVID-19 on Banking Sector

• **Profitability and credit management/cost of risk**—The low interest rate scenario, along with the significant impact of the COVID-19, is reducing the core banking profitability in mature markets. Financial institutions are thus shifting towards commission-based income from the likes of payments and tech businesses. NPAs rose due to COVID-19.

One of the immediate effects of the health emergency on the real global economy is the increased credit risk of corporate and retail clients of the banks. In order to continue financing the real economy and support its recovery, banks are called to distinguish between purely temporary phenomena, destined to be reabsorbed in a short time, and longer lasting impacts which would require actions of management and reclassification.

The primary aspects to be considered are:

- The forward-looking information update in particular, the way in which new information must be incorporated into risk parameters needs to be carefully analyzed, given the peculiar nature of COVID-19. This may last for a lesser time than cyclical downturns induced by economic -financial causes;
- The update of the 'default rates' which needs to take into account any waivers granted by the authorities in relation to only temporary phenomena of expiry of the creditworthiness;
- The definition of the most appropriate timescales for updating the 'recovery rates' in order to be able to factor in the positive effects albeit inevitably in the medium term deriving from the credit recovery policies which could introduce forms of deferred payments or agreements on longer maturities (restructuring debt, etc.);

The contraction in economic activity is having adverse consequences on credit quality as banks are increasing loan loss provisions. A few European banks, have already posted significant losses in Q1'20 (Jan-Mar) to face a potential surge in bad loans.

Securitization landscape

- o The corrective actions of governments aims to mitigate the risk profiles through further incentives for disposals.
- o It is likely that the future market of synthetic securitizations may require a revitalization after recent developments and important economic impacts that could come as a result.
- o Over the past few years, several European banks have finalized important disposal operations of impaired loans, contributing to a significant reduction of the NPA ratio. Among the prominent evolutionary trends in the market, it is possible to identify the strong interest on the unlikely-to- pay (UTP) loans, the birth of a fervent secondary market for bad debts and the amalgamation of homogeneous large-ticket asset classes in the construction of portfolios intended for the market i.e., so-called single names.

Customer relationship and commercial models

- o Although COVID-19 may lead to a crisis in the real economy, the impact on the banking system and on the bank -customer relationship can also be defined as a 'positive discontinuity' for the purpose of digitization of the sector and the ability to offer an excellent customer experience.
- o Banks, even the most territorial and branch-centric ones, are forced to encourage the use of channels that have never been their strategic priority. This phase would be particularly complex, which banks need to address by demonstrating real proximity with their customers.
- o The clear understanding by banking operators of their gap in the provision of services, becoming more tangible than ever before with COVID-19, could make them even more inclined to accelerate the digital transformation path through partnerships and collaborations within the fin tech community.

Operational resilience and business continuity management

- o The provision of technological innovation can play an important role in guaranteeing the business continuity of the banks: the activation and enhancement of robotics solutions or artificial intelligence (e.g., Advanced BOTs that support the processes of adoption of the technologies displayed on the channels direct) and mobility (e.g., platforms for the management of promoters and systems authorizations), if applied to critical processes, would allow for an easier protection in case of absence of staff.
- o Given the necessity to have an unpredictable availability of infrastructural resources, there is a clear opportunity also for the financial sector to evaluate the benefits of applicable Cloud technologies.
- **High volatility in stock markets depressed banks' valuation-** COVID-19 has generated significant instability and high volatility in global capital markets. The financial sector has been one of the most affected, with bank valuations dropping in all countries around the world (P/NAV multiple experienced a severe downfall

from 1.00x on 31 December 2019 to 0.69x on 30 April 2020). At the regional level, North American banks are still trading at P/NAV equal to an average 1.15x, while Asian and European banks (with the exception of the Nordics) are currently trading at significant discount levels (with average P/NAV at 0.56x and 0.52x, respectively).

Banking stocks were impacted during COVID-19. In the period from 01 December 2019 to 30 April 2020, most banks saw a price slump in mid-March. European banks were adversely impacted as the Euro STOXX banks index saw a massive decline of 40.18 percent followed by STOXX North America 600 banks index (31.23 percent) and STOXX Asia/Pacific 600 Banks Index (26.09 percent) for the given period.

Conclusion

The corona virus epidemic has crippled the Indian economy to a great extent, affecting almost all macro variables of the economy negatively. While we do not know the exact impact of the virus on the Indian economy until the epidemic is over, it is certain that the country will face a deep recession supplemented with a steep decline in GDP and growth. The Government of India announced various economic packages for different sectors of the economy.

We are all allowed to rethink, redesign, and reorganize everything. If we are involved in doing the right things, we may be able to face challenges in new platforms that may face the environmental harm to mankind, selfcentered development or inequality or concentration of wealth. NPAs have increased over the years. In India, it has not yet started in a systematic way and needs to be prioritized with steps to tackle the health crisis. It is high time to reset everything as the world has been unstable for a few months due to the outbreak of COVID-19.

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MACRO ECONOMIC IMPACT OF COVID-19 IN INDIA

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Abstract

The outbreak of corona virus named COVID-19 has disrupted the Indian economy and is spreading globally. The evolution of the disease and its economic impact is highly uncertain which makes it difficult for policymakers to formulate an appropriate macroeconomic policy response. In this study the focus is on assessing the impact of COVID-19 on affected sectors.

Introduction-

The economic impact of the 2020 corona virus pandemic in India has been largely disruptive. India's growth in the fourth quarter of the fiscal year 2020 went down to 3.1% according to the Ministry of statistics. The chief economic Adviser to the Government of India said that this drop is mainly due to the corona virus pandemic effect on the Indian economy. Notably India has also been witnessing a pre-pandemic slowdown, and according to the World Bank, the current pandemic has magnified pre-existing risks to India's economic outlook. Rupee is continuously depreciating MSMEs will undergo a serve cash crunch. The crisis witnessed a horrifying mass exodus of such floating population of migrants on foot, amidst country wide lockdown. Their worries primarily were loss of job daily ration and absence of a social security net. India must rethink on her development paradigm and make it more inclusive. COVID-19 has also provided some unique opportunities to India. There is an opportunity to participate in global supply chains. Multinationals are losing trust in china. To 'Make in India' some reforms are needed, labour reforms being one of them.

Economic Situation-

In India the life versus livelihood debate also played out, with the government first announcing that life would be prioritized over livelihood, which later changed to an equal importance being given to life and livelihood, By mid-may the center was keen to resume economic activities, while the chief ministers has mixed reactions. The pandemic has had a huge effect on the supply chains, as more than 60% of the respondents claim their supply chains have been impacted. Although the job of home proposal presents obstacles for certain industries. It has a strong impact on market activities. It is valid in particular in the industrial industries.

In India 53% of businesses have specified a certain amount of impact of shutdowns caused due to COVID-19 disruptions. According to the centre for monitoring Indian economy around (14 crore) India lost employment during the lockdown, various business such as hotels and airlines cut salaries and laid off employees. Revenue of transport companies such as Ola Cabs went down nearly 95% in March-April resulting in 1400 layoffs. It was estimated that the loss to the tourism industry will be Rs 15000 crore for March and April alone.

A number of young startups have been impacted as funding has fallen. It shows a 45% decrease in the total growth-stage funding as compared to $Q_4 2019$. According to a KPMG report venture capital in Indian startups has fallen over 50% in $Q_1 2020$ from $Q_4 2019$. Electricity consumption was nearly 30 percent below normal levels. A unit of additional economic activity in India has been associated with 1.3 units' additional electricity consumption. The economic impact has already between \$160 billion (5.6% of GDP) and \$175 billion (6.0% of GDP) The Indian Economy was expected to lose over Rs 32000 crore every day during the first 21 days of the lockdown.

Micro, small and medium enterprises, which have created more than 90% of the jobs in India, employing over 114 million people and contributing 30% of the GDP, are at the risk of having a serve cash crunch if the lockdown is extended to 8 weeks. Many of these MSMEs have loan obligations are monthly EMIs to pay. Many of them might just disappear if their cash cycle is disturbed because of the lockdown, with fixed costs dangling over them in such a situation. They need a moratorium for loan repayments. RBI has released funds to non-banking financial corporations: some of them provide finance to MSMEs. In addition to that movement of perishable goods is hampered and thus these businesses stare at huge losses. India cannot have a real and sustainable growth without having a thriving MSME Sector. The COVID-19 crisis will also test the resilience of start-ups in India. Start-ups have to rely on cross-border fund raising several founders are seeing their businesses grinding to a halt.

Government Actions-

Prime minister Modi announced the first 21 days of India's lock down on 24 March. During this address to the nation he said, "Jaan hai toh jahaan hai" On April, in a meeting with the chief Ministers of India, the Prime Minister said "Ours mantra earlier was Jaan hai toh jahaan hai but now it is "Jaan bhi jahan bhi". During the meeting Modi Said "Jan se lekar jag tak" would be the new principal and way of life. On May, he addressed the nation saying that the corona virus pandemic was an opportunity for India to increase self-reliance. He proposed the Atmanirbhar Bharat Abhiyan Economic package.

Atmanirbhar Bharat Abhiyan 1.0-

India's overall economic package was announced as Rs. 20 Lakh crore, 10% of India's GDP. The package, though announced on 12 May by the Prime Minister, included previous government actions, including the RBI announcements. The previous RBI announcements included around Rs. 8 Lakh crore liquidity. The economic package also included the Finance Minister announcement of a package totaling Rs. 170,000 crore on 26 March. The strategy of combining fiscal and Monetary, liquidity measures was defended by the government. In December 2020, a Right to information petition revealed that less than 10% of the package had been actually disbursed, chiefly in the form of emergency credit.

Atmanirbhar Bharat Abhiyan 2.0-

On 12 October 2020 the Finance Minister announced another economic stimulus package. This package has been launched keeping in mind the upcoming festive season. The package includes perks for central govt. employees to spend more on consumer durables during the festive season and a much higher capital expenditure for both the centre and states.

There are some more action plans from government in various sectors-

1. Food related

- About two thirds of population will be Covered under the Pradhan Mantri Garib Kalyan Anna Yojana (food scheme)
- Everyone under this scheme will het 5 kg of wheat and rice for free in addition to the current 5 kg allocation for the next 3 months.
- In addition, 1 kg of preferred pulse will be given for free to each household under this food scheme for the next three months.
- This distribution will be done through Public Distribution Scheme (PDS) and can be availed in two instalments.

2. Direct benefit transfer related

- Farmers currently receive INR 6,000/- every year through the PM- KISAN scheme in three equal instalments.
- MNREGA workers wage increase from INR 182/- to INR- 202/-, such increase will benefit 50 million families. The wage increase will amount into an additional income of INR 2,000/- Per workers.
- 30 million senior citizens, widows, disabled to get one- time ex-gratia amount of INR 1,000 in two instalments over the next 3 months.
- 200 million woman Jan Dhan account holders to be given ex-gratia amount of INR 500 per month for the next 3 months, to run the affairs of their household.
- Women in 83 million families below poverty line covered under Ujwala scheme will get free LPG cylinders for 3 months.
- For 630,000 Self Help Groups (SHGS) which help 70 million households, the government is doubling collateral- free loans to Rs 200,000.
- State governments have been directed to use the welfare fund for building and construction workers. The District Mineral fund, worth about INR 310 billion, will be used to help those who are facing economic disruptions.

3 Organized Sector related- Social Security

- The Employees provident Fund organization (EPFO) has announced employees who contribute the EPF can withdraw up to 75 percent of the account balance or 3 months basic salary and dearness allowance, whichever is lower.
- New employees under the Employees provident Fund organization (EPFO)-registered organizations will enjoy benefits, including subsidy support by way of EPF contributions. The Scheme is expected to cover 65% of employees and 95% of establishments in the formal sector.
- Establishments which employ up to 100 employees and if 90 percent of whom earn up to INR 15000 per month, the government will pay the employee provident fund contribution both of the employer and the employee (12% each) for March 2020 to May 2020. This support is extended for another 3 months i.e. June to August 2020.
- Non-refundable advances may be granted to a member of a provident fund, subject to certain conditions.
- EPFO issued the circular which states that no proceedings should be initiated on establishment covered under the EPF Act for levy of penal damages on account of any delay in the payment of any contributions or administrative charges due for any period during the lockdown.
- In view of the government's decision declaring COVID-19 as a pandemic, the pension Fund Regulatory and Development Authority (PFRDA) allowed partial withdrawals from the NPS to fulfill financial needs towards treatment of the COVID-19 illness of a member, his/her spouse, children (including adopted child), or dependent parents. The following documents must be provided to claim a partial withdrawal:
 - 1. Medical Certificate and
 - 2. Formal request for partial withdraw

The crisis emerging from the coronavirus spread will pull down investment and consumption demand. Conventionally, the demand side components of GDP account for 72.1% consumption out of which govt. consumption is barely 11.9%. The govt of India announced a variety of measures to tackle the situation, from food security and extra funds for healthcare and for the states, to sector related incentives and tax deadline extensions. On 26 March a number of economic relief measures for the poor were announced totaling over Rs 170000 crore. The next day Reserve Bank of India also announced a number of measures which would make available Rs

374000 crore to the country's financial system. The World Bank and Asian Development Bank approved support to India to tackle the coronavirus pandemic

Conclusion-

The crisis witnessed a horrifying mass exodus of huge floating population of migrants on foot amidst the countrywide lockdown. Their worries primarily emanating from loss of job and absence of a social safety net. Despite assurance from the government they continued to walk back to their homes. It is a saga of inequality, poverty and social exclusion of vulnerable populations struggling to overcome this sudden crisis. In the manufacturing industry, migration or migrant labourers are the engine of growth, In COVID-19 or Post COVID world there would always be demand of manufacturing goods. Therefore, the government has to work on the mechanism of how these migrant labourers are brought back to their respective Jobs.

The localization of industries and employment can release pressure from the agricultural sector. There should be a comprehensive plan for structural transformation from the primary to the modern sector. Agricultural reforms such as competitive credits, modern farm inputs and better producer price to be taken to make agriculture profitable. On the other side testing of COVID-19 should be increased to contain and community spread. In short-run, measures such as cash incentives should be given to a migrant labourers, and marginal farmers to save them from poverty and starvation.

Similarly, wage subsidy should be given to informal sector. Above all, mass corruption in the system is the biggest challenge in the effective implementation of the various plans of Govt. In the long-run to reduce inequalities of income, regional imbalance and share of migrant workers, localization of industries and employment is the need of the hour. Apart from providing credits, there is also a need to work on institutional factors such as law and order, corruption etc., for effective implementation of the policies.

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EFFECT OF COVID-19 ON THE ECONOMY OF LABOURERS

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ABSTRACT

The pandemic not only affected the health but global lockdown of livelihood in respect of daily wages workers. The impact of pandemic and lockdown measures lead to a severe collapse in economic activities as many individuals were unable to go out for their daily employment activities. As compared to European Countries and other affected countries, India took many landmark initiatives in order to relieve the stress of labourers as affected by the pandemic. Women are more likely to be hit in daily labourers as compared to men in unorganized sector. The assessment recovery from the COVID-19 pandemic likely to be uncertain, it highlighted that damage will persist across the whole economy especially in un-organized sector.

Key words: COVID-19, Labour, Pandemic and economic activities.

INTRODUCTION

The unprecedented crisis of the latest pandemic of COVID-19 has not only deteriorated the health of global population but also has put the risk of losing jobs and incomes of millions of people around the globe. The pandemic after originating in China in last quarter of 2019 has spreaded exponentially initially in Europe, America and in many countries of South East Asia including Iran, Russia and India. The pandemic not only affected the health but global lockdown of livelihood in respect of daily wager. As compared to European Countries and other affected countries, India took many landmark initiatives in order to relieve the stress of labourers as affected by the pandemic.

The strict lockdown measures as implemented by many countries in first and second quarter of 2020 though helped to contain the spread of pandemic yet it carried a wave of losing jobs of daily bread earners, labourers and low income class people. This collapsing of jobs and income of labourers has not been even seen during recession of 1990s. After ease of lockdown at the second quarter of 2020, although various countries have opened their economies yet the gravity of sustainability of life in respect of labourers was not at ease. In the subsequent column, crisis of the daily workers as faced globally will be discussed in following heads—-

1. Development of an unexpected health crisis to a grave economic crisis—-

COVID-19 pandemic after initial outbreak in Wuhan city of China during last quarter of 2019 rapidly became a pandemic as it spread to various nations across the globe. As per the data of International Labour Organization

(ILO) at the end of August 2020, around 25 million confirmed cases and 8.4 Lakhs of deaths reported. By the end of July, many European countries including Italy, France and Germany had suffered heavy loss of human life due to this Novel coronavirus. The spread of pandemic subsequently spread to US, UK and in India, with a total of more than 1.75 lakhs death in US and more than 1.25 lakhs in India. Timely implementation of lockdown had contained the spread of coronavirus in India as contrary to other developed countries viz. Italy, France, UK and US. However, employment with respect to daily workers was hit hard by the pandemic. The impact of pandemic and lockdown measures lead to a severe collapse in economic activities as many individuals were unable to go out for their daily employment activities. Industrial production went down on an average by around in past two months between February and April 2020. Major decline between 40 to 60 percent were reported in India, Italy and South Africa while relatively small decline reported in Russia and Korea.

2. How the COVID-19 put a heavy toll on labour world across the pandemic affected countries?

The lockdown measures have taken by various pandemic affected nations had resulted in an unprecedented and sudden fall in employment across the world between December 2019 and April 2020. These declines reached till 40 percent in Mexico to around 12 percent in Japan and Korea. In the US, the employment falls by 22 percent between March and April 2020 whereas in India more than 2 million labourers lost their livelihood due to pandemic (as per data of International Labour Organization and Asian Development Bank). Overall, it was developing countries who have faced more disruptions in business and supply chain management as compared to developed countries during pandemic which subsequently had a negative impact in the poor condition of labourers.

During March 2020, due to COVID-19 it was estimated sharp increase in unemployment between 5-24 million cases as per the first observation report of ILO. Subsequent report by the organization which was released at the end of second quarter of 2020 suggested that the recovery in labour market will be uncertain. The loss in work hour for daily wage labourers could range between 150-350 million in the last quarter of the 2020 depending upon the rate of infection of Coronavirus and availability of vaccine. In India, the containment measures coupled with global economic crisis delivered a massive low to the economy.

As per International Monetary Fund (IMF) 2020, the estimated GDP growth of emerging markets and developing economies remained at -3.3% while for the advanced economies it was -5.8% and -4.4% overall across the globe. For India, IMF estimates GDP growth of 1.9 percent, the lowest rate since 1991 economic crisis. It shows the significance of MSME sector in emerging economies like in India, primarily in informal sector. As per the ILO rapid assessment of the impact of pandemic on employment, strongly indicates that self-employed as well as daily wagers are the most likely to lose their jobs and incomes due to the current pandemic. As per the PLFS-2017-18, 77 percent of employment in India is non-organized i.e. daily wagers or self-employed individuals. Women are more likely to be hit in daily labourers as compared to men in un-organized sector. The participation of women in labour activities were less even before the current crisis as a greater number of women were involved in domestic duties which was not been classified as work. The rapid assessment data of ILO suggests that more than 180 million people in household in which mostly are women engaged in domestic work or unpaid domestic business are bearing the toll of increased work burden.

3. Remedial measures to assist Labourers and labour market---

ILO has framed certain policies with the help pandemic affected countries in order to revive the economy especially the conditions of labourers. The organization was proactive to identify the priorities specific to nations and framed the policies by keeping the guidelines of International Labour standards. It guides the affected countries to help raising the economy without compromising the health protection measures. ILOs policy framework addresses at—

(a) Reducing labourers exposure to COVID-19 pandemic in workplace---

One of the key measures that were implemented by various countries affected due to pandemic is to encourage workers who can telework from their homes. In order to ensure teleworking for all operations, many nations

initiated a service of wages to simplify use of teleworking including through financial and non-financial support to companies. For example, Russia introduced amendments to its labour laws on online working while other countries like Japan and Korea offered a subsidy on the cost of introducing flexible work arrangements. Many e commerce companies like Amazon and Alibaba introduced contact less delivery of items thus ensuring livelihood for the daily workers as well as the essential service supply to the consumers.

(b) Securing Jobs, saving firms, ensuring essential services, providing income security---

Job retention schemes and provisions of job insurance by various governments have been one the main policy tools in many developed and developing countries like India in order to protect income as well as motivate the frontline health workers. For example, India in organized sector, Government will pay provident fund contribution to both the employer and employee put together at 24 percent for a quarter of 2020. For women, Jan Dhan account holder, a one-time ex-gratia of INR 500 per month was provided instantly for three months which benefitted more than 20 crores women of the country.

In addition, a number of countries introduced a new job scheme that combine elements of short time work (STW) schemes with components of wages subsidies. Australia and Canada are among those countries that have chosen for initiating short term wages subsidy plans. In parallel to national policy response the European Union reacted to the employment and social emergency with a multi-dimensional plan to support the labourers and firms in its member states. Through the corona response investment initiative (CRII) and CRII+, the European commission mobilized 37.8 billion Euros of unallocated cohesion and solidarity fund.

(c) Using communication between employers, labourers and Governments---

Since the initiation of lockdown in various pandemic affected countries, the government of states have not only unleashed the unlocking guidelines for gradual opening of economic corridors especially for the daily employers but also assisted them to work in safe environment zone. For example in India, the central government in collaboration with state governments has introduced various welfare schemes for the workers of organized and un-organized sector. With the help of country office of ILO, government of Odisha and Uttar Pradesh have developed responses for assisting small scale business owners and daily wagers in order to motivate them to work from their native place only. Start and improve your business programme of ILO is also proved to be a guiding tool for livelihood recovery efforts of the states such as Kerala. Women and youths of rural areas are also encouraged to start their own business using the programme tools. Under Vande Bharat with the help of ministry of External affairs and Samudra Setu scheme with the help of Indian Navy, Government is also facilitated the safe back to home programme for more than two million overseas Indian labourers working in Gulf and other pandemic affected countries and exploring the feasibilities of reintegration of them in country itself.

4. Future ahead: special context to India---

Government of India initiated unlocking the economy in a phased manner since May 2020, in a bid to push for the better governance at the time of global pandemic outbreak. The Government announced the initial INR 1.7 lakhs crore package in March 2020 and with a total of US\$25 billion i.e. around 0.8 percent of GDP. The Reserve Bank of India has also taken proactive steps to released liquidity of about US\$18 billion into the banking system. In addition to it, a self-reliant mission (Atmanirbhar Bharat) costing to INR 20 trillion (approximately 10 percent of GDP) was also announced which mainly focus on vocal for Local and native small scale industries to be self-reliant. The assessment of ILO predicts recovery from the COVID-19 pandemic to be uncertain. It highlighted that damage will persist across the whole economy especially in un-organized sector.

CONCLUSION

COVID-19 proved to be one of deadliest disease in the history of mankind which had targeted the entire globe including developed and developing countries. Due to this pandemic not only human race has suffered loss of life but it has also forced the suspension of wheel of economy. A kind of concerted effort taken by various pandemic affected countries including India have helped the low revival of the livelihood of economy including low income

group in a phased manner. It is the requirement of time that the whole world must unite together to fight against COVID-19 and come out as victorious as it always used to be.

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SKILL DEVELOPMENT PROGRAMMES AND EMPLOYMENT OPPORTUNITIES: PERSPECTIVES FOR EMERGING INDIA

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Abstract

There is an urgent need to replace old Industrial training Institutes in the new model ITIs. All ITIs put together have twenty lakes seats per annum, Just a fourth of the requirement of training one crore youth a year. The correction should be made with immediate effect. There is a need of collaboration with various National and International stakeholders including the government, industrial bodies, corporate, educational institutes as well as foreign investors and international agencies for improving skill quality, as well as providing placement opportunities. Skill development programmes will reduce the problem of unemployment and improve the quality of life of people, and Mudra Bank Yojana will provide financial assistance. Make In India will encourage companies to manufacture their products in India and also increase their investment. These initiatives taken by the government will increase entrepreneur and create employment opportunities in the emerging India.

I.INTRODUCTION

Present paper is prepared to describe the Current status of skill development programmes & Employment opportunities and its impact on emerging India. Skills development is the driving force of economic growth and social development for any country. Launching the National Skill Development Mission in New Delhi, the Prime Minister said: "If China is recognized as the 'manufacturing factory of the world, India can become the 'Human Resource Capital'". Making his mission and objectives clear he stressed further, "there is a need for mapping job requirements for both domestic and global markets and then planning the skill development targets accordingly".

The convergence of Skill India and Make in India schemes will create fresh employment opportunities for young Indians. Make in India will boost manufacturing sector in India and they create more jobs. Skill India will provide skill workforce to the industry to increase productivity and ultimately, they get employment and lastly the country will boost. The status of skill workforce in India, if compared with the world, is very poor. Only around 4 per cent of the Indian workforces are skilled, whereas China is 47 percent, in Germany it is 74 Percent in Japan it is 80 per cent and, in South Korea it is 96 percent.

There is a huge requirement for skilled manpower in new India. India is a youngest country in the world; around 1.2 billion people are under age of 26 years by 2020. The growth of working age population needs to create more jobs. Every year around 5-7 million youth join in the workforce in India. National Skill Development Corporation (NSDC) is targeting for skilling 400 million people in India by 2022. Prime Minister launched the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), and Skill Loan Scheme for fulfilling the employment mission.

Explaining the importance of skill development, the World Bank says: "Developing skilled workers enhances the efficiency and flexibility of the labor market; reduces skills bottlenecks, enables absorption of skilled workers more easily into the economy and improves their job mobility. It is crucial to invest in quality secondary and tertiary education and in Vocational Education and Training (VET) if India's economy is to develop and remain competitive in world markets" (The World Bank, 2008).

II. EMPLOYMENT AND UNEMPLOYMENT SCENARIO OF WORLD

According to International Labour Organization's Report on World Employment Social Outlook 2018, unemployment level in the India is remaining low relative to world average. The world unemployment rate is 5.7 per cent in 2017, whereas India in the same period is 3.4 per cent. The ILO's report highlights that in India, the share of informal employment has risen within almost all manufacturing industries, partly as a result of labour market rigidities preventing modern manufacturing from creating employment opportunities. While talking about strong job creation in some ICT-intensive services, the report states that in India's significant portion of the jobs created in the services sector. International Labour Organization Report's-2017 (World Employment and Social Outlook Report) said that Global unemployment levels and rates are expected to remain high in the short term, as the global labour force continues to grow. Unemployment rates of major countries and global youth unemployment rate can be seen in table-1 and table-2 respectively.

Years	India	China	UK	France	Japan	Pakistan	Russia	USA	Canada	Iraq
2012	3.62	4.10	8.00	9.80	4.30	6.00	5.50	8.10	7.30	15.30
2013	3.57	4.10	7.60	10.30	4.00	6.00	5.50	7.40	7.10	15.10
2014	3.53	4.10	6.20	10.30	3.60	6.00	5.20	6.20	6.90	15.00
2015	3.49	4.10	5.40	10.40	3.40	5.90	5.60	5.30	6.90	15.50
2016	3.46	4.10	4.90	10.00	3.10	5.90	5.50	4.90	7.00	16.10
2017	3.40	4.60	4.90	9.80	3.00	5.90	5.80	4.90	7.10	15.10
2018	3.40	4.60	5.00	9.80	3.00	5.90	5.70	5.00	7.10	14.80

Table 1
Trends of Global Unemployment Rate

Sources: World Employment Social Outlook 2017, ILO.

Table 2
Trends of Global Youth Unemployment Rate

	Youth Unemplo	bloyment Rate(%)			Unemployed Youth (Millions)			
	2015	2016	2017		2015	2016	2017	
World	12.9	13.1	13.1		70.5	71.0	71.0	
Developed Countries	15.0	14.5	14.3		10.2	9.8	9.6	
Emerging Countries	13.3	13.6	13.7		52.9	53.5	53.5	
Developing Countries	9.4	9.5	9.4		7.4	7.7	7.9	

III. EMPLOYMENT AND UNEMPLOYMENT SCENARIO OF INDIA

Unemployment in India is projected to witness marginal increase between 2017 and 2018, signaling stagnation in job creation in the country, according to a UN labour report. Job creation in India is not expected to pick up pace in 2017 and 2018 as unemployment rises slightly, representing a near stagnation in percentage terms. Unemployment in India is projected to increase from 17.7 million last year to 17.8 million in 2017 and 2018 million next year. In percentage terms, unemployment rate will remain at 3.4 per cent in 2017-18, the report added.

As per Fifth Annual Employment-Unemployment Survey Report 2015-16 conducted by Labour Bureau shows that about 24 per cent households benefitted from employment generating schemes like MGNREGA, PMEGP, SGSY and SJSRY etc. At the All India level, about 77 per cent of the households were reported to be having no regular wage/salaried person. 60.6 per cent of the persons aged 15 years and above who were available for work for all the 12 months during the reference period were able to get work throughout the year, at the All India level.

In rural areas, 52.7 per cent of the persons aged 15 years and above who were available for work for all the 12 months during the reference period were able to get work throughout the year at the All India level, whereas the corresponding figure for urban areas was 82.1 per cent. Unemployment rate in India has shot up to a five-year high of 5 per cent in 2015-16, with the figure significantly higher at 8.7 per cent for women as compared to 4.3 per cent for men, says a report by Labour Bureau.

Sr.	Month	Unem	Urban –		
No.		India	Urban	Rural	Rural
					Gap
1	June-2018	5.67	6.66	5.15	1.51
2	May-2018	5.29	6.25	4.79	1.46
3	April-2018	5.64	6.31	5.29	1.02
4	March-2018	6.03	6.2	5.94	0.26
5	February-2018	5.93	6.72	5.52	1.20
6	January-2018	5.07	6.35	4.41	1.94
7	December-201	4.78	5.49	4.42	1.07
8	November-2017	4.76	5.52	4.38	1.14
9	October-2017	5.04	6.09	4.49	1.60
10	September-2017	4.66	5.72	4.12	1.60
11	August-2017	4.11	5.13	3.58	1.55
12	July-2017	3.39	4.21	2.98	1.23

Table 3: Monthly Unemployment Rate of India July 2017 to June 2018

Sources- Centre for Monitoring Indian Economy (CMIE), Unemployment in India: A Statistical Profit January April -2018, http://unemplyomentinindia.cmie.com/

IV. TYPE OF EMPLOYMENT

Employed persons are classified into four broad into four broad activity groups according to their status of employment-self employee, regular employee, contract employee and casual employee. Report on Fifth Annual Employment Unemployment Survey (2015-16) shows that the percentage of workers with no written jobs contracts was higher in urban areas for both regular wages/salaried and contract workers.

Fig-1 shows that 32.80 percent casual workers, 3.70 percent contract workers, 17.00 percent regular employees and 46.60 percent self- employed persons were there in the total work force in India.

Fig 1: Percentage Workforce in Type of Employment 2015-16



Table-4 shows that, among all 8 sectors, manufacturing sector was the largest employer providing employment to 101.17 lakh workers constituting 49 per cent. This was followed by education sector employing 49.98 lakh persons (24.35%). trade employing 14.45 lakh persons (7.04%), health 12.05 lakh persons (5.87%), IT/BPO 10.36 lakh persons (5.05%), Accommodation & Restaurants 7.74 lakh persons (3.77%), transport 5.80 lakh persons (2.83%) and construction employing 3.67 lakh persons (1.79%) at all India level.
Sr. No.	Sector	Self-	Nature of Jobs				% Share of
		Employed	Regular	Contract	Casual	Total	Employee
1	Manufacturing	2.79	76.58	15.57	6.23	98.38	49.3
		(2.76%)	(77.84%)	(15.83%)	(6.33%)	(100%)	
2	Construction	0.10	2.30	0.59	0.68	3.57	1.79
		(2.72%)	(64.42%)	(16.53%)	(19.05%)	(100%)	
3	Trade	0.77	11.64	1.32	0.72	13.68	7.04
		(5.33%)	(85.09%)	(9.65%)	(5.26%)	(100%)	
4	Transport	0.09	4.65	0.75	0.31	5.71	2.83
	_	(1.55%)	(81.40%)	(13.13%)	(5.43%)	(100%)	
5	Accommodation	0.50	6.03	0.86	0.35	7.24	3.77
	& Restaurant	(6.46%)	(83.29%)	(11.88%)	(4.83%)	(100%)	
6	IT/BPO	0.05	9.23	0.83	0.25	10.3	5.05
		(0.48%)	(89.53%)	(8.05%)	(2.42%)	(100%)	
7	Education	0.95	42.80	5.05	1.18	11.74	24.35
		(1.90%)	(87.29%)	(10.30%)	(2.41%)	(100%)	
8	Health	0.31	9.73%	1.63	0.38	199.66	5.87
		(2.57%)	(82.88%)	(13.83%)	(3.24%)	(100%)	
			, , , , , , , , , , , , , , , , , , ,	· · · · ·			
Total		5.56	162.96	26.60	10.10		100
Employees		(2.71%)	(81.62%)	(13.32%)	(5.06%)		

Table 4: Estimated Employee in 8 Organized Sectors by Nature of Job in September2016 (in Lakh)

Sources: Quarterly Report on Employment Scenario -2016 New Series, Government of India, Ministry of labour & Employment Labour Bureau, Chandigarh

Fig-2 presents the distribution of Total employees of around 199.66 lakh by nature of job i.e. Regular, Contractual and Casual. It is seen that Regular Employees of around 162.96 lakh had the highest share of 81.62 percent followed by Contractual Employees 26.60 lakh (13.32%) and Casual Employees 10.10 lakh (5.06%).

Fig. 2: Total Employees in 8 Organized Sectors by Nature of Job



Table 5: Employed Workers	Salaried Accordingly to	Average Monthly	Earnings (%)
1 0	01	0 1	0 ()

Sr. No	Salaried in Rs.	Self Employed	Regular	Contract Worker	Casual Labour
1	Up to Rs. 5000	41.30	18.70	38.50	59.30
2	5001-17500	26.20	19.40	27.90	25.00
3	7501-10000	17.40	19.00	20.30	12.00
4	10001-2000	11.10	23.60	11.00	3.50
5	20001-50000	3.50	17.70	2.10	0.30
6	50001-100000	0.40	1.40	0.00	0.00
7	Above-100000	0.10	0.20	0.00	0.00
8	Persons in Labour Force	46.6	17.0	3.7	32.08

Sources- Centre for Monitoring Indian Economy (CMIE), Unemployment in India: A Statistical Profit January April -2018, http://unemplyomentinindia.cmie.com/

V. INDUSTRIAL TRAINING INSTITUTES AND SKILL DEVELOPEMENT

There are a log of skill development resources centers like ITI's, Polytechnics and ITCs. Apart from the government owned and operated skill centers, there are a few good private sector skill centers also available, even the private sector skill centers are also being funded by the government in some or the other way. Out of them resources Industrial Training Institutes play an important role in economy of the country especially in terms of providing skilled workforce. At present, there are 13,105 ITIs which cater to about 18,65,629 students at any given point of time. While 2,293 are government-run, 10,812 are operated by the private sector. India has more than 13,105 ITIs, of which 85 per cent are run by the private sector and 15 per cent are government-funded. The top states with the biggest number of ITI are Uttar Pradesh (2,185), Rajasthan (1,769), Karnataka (1,481), Madhya Pradesh (886), Bihar (873), Maharashtra (863) and Tamil Nadu (722). (The Hindustan Times, July 16, 2018). ITI trades and courses focus on skill development in students. All ITIs put together have 25 lakh seats per annum, just a fourth of the requirement of training one crore youth a year. While the capacity of ITIs is very low compared to the demand, the quality of training imparted is pretty low, as a result of which even the employability is extremely poor. Skill India initiative has been stated off to address this crisis. Through this program, the Government is highlighting the importance of acquiring useful skills. Unemployment can be reduced if the masses are trained in various trades. ITIs can help train and educate youngsters in India. They can help churn out skilled work force in India. Now a day it is difficult to find out the skilled workers like plumbers, carpenters, electrician, construction workers, agricultural workers etc. Existing Government it is process to converted in the old ITIs in the modern ITIs.

Regions-wise Number of Industrial Training Institutes (ITIs) in India

The number of Industrial Training Institutes (ITIs) in Northern Region as on April 2016 was 5129. Out of these, the number of Government ITIs was 818, while the number of private ITIs was 4311. Thus, the percentage of Government ITIs was 15.95 per cent, while the percentage of private ITIs was 84.05 per cent. Northern Region had the maximum number of Industrial Training Institutes (ITIs) amongst the various regions of India as on April 2016.

The number of Industrial training Institutes (ITIs) in Southern Region as on April 2016 was 3522. Out of these, the number of Government ITIs was 438, while the number of private ITIs was 3084. Thus, the percentage of Government ITIs was 12.44 per cent, while the private ITIs was 1726. Thus the Government percentage ITI was 10.89 percent

The number of Industrial Training Institutes (ITIs) in Eastern Region as on April 2016 was 1937. Out of these, the number of Government ITIs was 211, while the number of the percentage of private ITIs was 89.11 per cent.

The number of Industrial training Institutes (ITIs) in Western Region as on April 2016 was 2517. Out of these, the number of Government ITIs was 826, while the number of private ITIs was 1691. Thus, the percentage of Government ITIs was 32.82 per cent, while the percentage of private ITIs was 1961. Thus, the percentage of Government ITIs was 67.18 per cent. Western Region had the maximum percentage of Government Industrial training Institutes (ITIs) amongst the various regions of India as on April 2016. (Rajya Sabha Session – 239 Starred Question No. 51)(MSDE,2016).

WHERE IS EMPLOYMENT?

Manufacturing sector plays an important role in absorbing surplus agriculture labor and providing jobs opportunity in India. This sector has a big potential for jobs creation in the services sector. According to National Manufacturing Policy 2011. Every jobs created in the manufacturing sector creates two-three additional jobs in related activities. The Micro, Small and Medium Enterprises (MSMEs) have witnessed the highest growth rate in manufacturing sector employment. The sector also offers maximum opportunities for both self-employment and jobs in India,

after the agriculture sector. Government of India launched the 'Make in India' program to place India on the world map as a manufacturing hub and give global recognition to the Indian economy. India is expected to become the fifth largest manufacturing country in the world by the end of year 2020. As per Labour Bureau's Quarterly Report on Employment Scenario, manufacturing sector added an estimated 89,000 jobs in the second quarter of 2017-18.

The government of India is in talks with stakeholders to further ease foreign direct investment (FDI) in defence under the automatic route to 51 per cent from the current 49 per cent, in order to give a boost to the Make in India initiative and to generate employment. Government of India's 'Make in India' policy, the first step was taken, both the leaders (South Korean President & PM Modi) will visit Samsung's manufacturing site which will be producing 10 million units of mobile phones per month by 2020. India's Smartphone market grew14 per cent with total shipments of 124 million units in 2017, the fastest pace of growth among the top 20 markets, according to International Data Corp. Demand for new phones is surging in India, helped in part by Reliance Jio's cheap phones, free voice services and cheap data plans. Employment visualized in following sectors:-Fast Moving Consumer Goods (FMCG), Industries, Multinational Companies (MNCs), Transport, Storage and Communication Sectors, Finance, Insurance and Real Estate, Hotel & Fashion Industries, Agro Products, Health Care Services, Information Technology, Food Processing, Tourism sector, Packaging etc.

VI. CHALLENGES

The challenge is particularly acute in India, where a large number of young people in the labour market are without a job.

- Youth face many challenges in the labour market. While finding employment is a major concern, the quality of jobs is just as prominent a challenge.
- Majority of employed youth are in the informal economy:- More than three-quarters (76.7 per cent) of working youth of developing countries are in informal jobs.
- India's executives consider corruption to be the most problematic factor they face when doing business within the country. Corruption and red-tapism constitute major segment for relatively lesser investment, thus hampering the smooth passage of make in India programme.
- Availability of jobs is increasing day by day only in metropolitan cities. There is a significant increasing inequality of wealth and income in rural and urban areas.
- Low Female Labour Force Participation Rates is a challenge for both equity and efficiency in new India.
- Lack of inclusiveness in workforce market is another issue to be addressed with upliftment of subdued and depressed section in the economic ladder.
- Increasing population is also a bigger challenge for the new India. Rapid population increase is exerting pressure on existing limited resources that also affects the quality of education particularly in skill development program. Over population is the major cause to make many policy and infrastructural plans ineffective by creating difficulties to implement the sill development programs.
- It has been observed that many organizations are slow to adopt the industry standards and continue to follow their own selection and training processes despite being the advocates of sector skills councils. (Ganesh-2014)

VII. GOVERNMENT INITIATIVES

In last few years several steps have been taken by the government to create employment opportunities for work force. Mudra Yojana is implemented with more focus on employment generation through empowerment of weaker sections. Skill development is an important programme to increase employability and earning capacity of youths in new India.

- MUDRA BANK YOJANA: (Micro Unit Development And Refinance Agency Bank), 2015.
- Skill India (July 2015)
- Pradhan Mantri Kaushal Vikas Yojana (PMKVY)(April2015)
- Make in India (To Promote India a Manufacturing Hub).(Sept. 2014)
- Hunar Se Rozgaar Tak (Ministry of tourism, December, 2016)
- National Career Service (NCS) (2015)
- Standup India (2016)
- Swarna Jayanti Shahari Rozgar Yojana (SJSRY) 1997
- Swarna Jayanti Gram Swarozgar Yojana (SJSRY) 1997
- National Rural Employment Guarantee Scheme 2006
- Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)2005
- Prime Minister's Employment Generation Programme (PMEGP) 2008

VIII. SUMMING UP

Creating need base, respectful, technical, professional and meaningful employment opportunities is the only challenge which deserves attention from every industry and service sector. The human resources of India are the asset, which need a proper, meaningful, scientific, strategic management and policy to make India happy, prosperous and super power in the world. Need of the hour is to adopt the Planning approach to make optimum utilization of India's vast human resources. Instead of being liability our workforce should become asset. Industrial Training Institutes and Industrial Training Centers need significant expansion and change in transmutation. There is an urgent need to replace old Industrial Training Institutes in the new model ITIs. All ITIs put together have 25 lakh seats per annum, just a fourth of the requirement of training one crore youth a year. While the capacity of ITIs is very low compared to the demand, the quality of training imparted is pretty low, as a result of which even the employability is extremely poor. This correction should be made with immediate effect. Curriculum for skill development has to be reoriented on a continuing basis to meet the demand of the employers and align it with the available selfemployment opportunities. There is a need of collaboration with various national and international stakeholders including the government, industry bodies, corporates, educational institutes as well as foreign investors and international agencies for improving skill quality, as well as providing placement opportunities. Manufacturing sector and agricultural sectors including agro products and food processing should be treated seriously and appropriate measures should be taken to assure that the jobs are created in these sectors. Skill Development programmes will reduce the problem of unemployment and improve the quality of life of people, and Mudra Bank Yojana will provide financial assistance. Make in India will encourage companies to manufacture their products in India and also increase their investment. These initiatives taken by the government will increase entrepreneur and create employment opportunities in the emerging India. There is need for youth to develop relevant sills and capabilities according to his aspirations.

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SKILL DEVELOPMENT INITIATIVES AND STRATEGIES IN INDIA

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Abstract

There are two main driving forces i.e. skill and knowledge which are responsible for economic growth and social development of any country in the world. Due to increasing globalization and technological changes, skill and knowledge has become more important in every country's sustainable development. The countries that have the higher and better level of skills and knowledge are able to face the challenges and opportunities of globalisation effectively and easily. Hence, suitable policies for skill and knowledge development may play a major and dominating role in development of Indian economy. Various aggressive goals for sustainable and overall economic growth of Indian economy have been set in the five year plans. Indeed, skill development has become national priority so various measures have been taken for skill and knowledge development and various are being taken for the same. The present paper points out the present skill capacity, various challenges to be faced in implementation of skill development initiatives in India along with their solutions.

Key-words: Skill, Capacity, India, Challenges, skill development initiatives

Introduction

Slowly–slowly India is moving towards a knowledge-based economy because of huge capable, flexible and qualified human capital. In spite of having distinctive position in the world, India needs to develop and empower more and more to its human capital to face the global competitiveness easily. Due to increased competition in the globalised economy, workers are required to have higher levels of knowledge and skills to enable them so that they may complete their tasks with efficiency and with required quality standards. Now jobs are becoming skill-intensive due to the rapid technological changes and increasing complexity in economic activities. Hence there is needed to make changes in the training and education system to upgrade the skills of the Indian to enable them as per the requirement of new technology.

Skills may be broadly classified into hard skills and soft skills. Hard skills are the technical abilities to easily observe, quantify and measure the methodically taught. Technical abilities include operating machinery, financial procedures, computer protocols, safety standards, and sales administration of an enterprise. Soft skills include the personal skills or abilities which may not be quantified but they are relating to an individual and required in daily life and its works. Soft skills may also be defined as communicating, listening, giving feedback, problem solving, resolving conflicts etc. Hence it must be the main priority of Indian Government to develop skills among working population i.e. around 65% of below 35 years. It is estimated that around 70% of Population may be as working age by 2025. Maximum population must be employed, trained and productive for overall and sustainable

development and to capitalize the merits of demographic dividend. In absence of this, demographic dividend will become the demographic liability.

Objectives of the Study

- To understand and analyse present status of skill development in India
- To understand the challenges to be faced to develop skill in India in relation with financial resources
- To analyse the impact of skill development initiatives and strategies
- To find out and suggest the possible solutions or ways forward

Research Design and Methodology

We have tried to examine the dynamics of Indian skill development along with the various initiatives taken by the government in order to enhance the individual skill. The research design for the present study is descriptive in nature based on secondary data and information which has been collected from various sources such as magazines, books, journals, articles, documents of different ministries and department and organisations, articles, papers and web-sites etc. as per the need and requirement of the research.

Objectives of 'Skill India'

The basic objectives of "Skill India" are not only to generate and find out the opportunities, scope and space for the development of the talents of the Indian young generation but also to develop those sectors which have been selected for skill development from long times along with identifying new and innovative sector for skill development. New Skill Development Programme Launched by Prime Minister Narendra Modi is to provide training and develop the skill among 500 million young Indian including each village by 2020.

Present Scenario of Skill Capacity of India

There is a huge gap between quantity and quality of skilled workforce in India because demographic profile seems more daydream instead of reality to recover the benefits of such profile. It has been estimated that there will be a demand for 500 million workers by 2022 in India. But the fact is that India will not be able to fill up such huge demand because only 2% of total Indian workforce has undergone for skill training because a large portion of Indian workforce has been employed in unorganised or informal sector which remain unsupported by a framed skilled development system. There is also lack of training on employable skill for young generation to provide them an employment opportunity according to existing education system. Indeed, Indian skill development programme is very heterogeneous. In –nutshell, it may be said that high prevalence of illiteracy is paralyzing Indian workforce in spite of sufficient achievement in the literacy rate of Indian. So, this fact may be a mile stone in converting the demographic dividend into the demographic hallucination if we will be able to provide the skill for new and existing Indian workforce. Hence, it is necessary for India to increase not only the capacity but also the capability of skill development programme.

For the same, various measures and initiatives has been taken for adequate implementation of Indian skill development system by the government along with its partner institutions. But there is need to pay proper and full attention of policy makers towards the various unresolved issues and challenges.

Characteristics of Skill India Programme

- To skill Indian youth in such a manner to get the employment easily and to help in starting up a new venture.
- To provide the training, support and guidance for all Indian traditional types of occupations such as cobbles, masons, carpenters, tailors, blacksmiths, nurses, welders etc.
- To provide maximum emphasis on new areas such as transportation, real estate, jewellery designing, gems industry, tourism, banking and constructions etc. where there is a need of skill development due to absence of it

- To train Indian youths in such a manner so that they may not only be able to fulfil the domestic demand but also may be able to meet out the demand of other countries
- To create a hallmark which may be called "Rural India Skill" to standardize and certify the training process.
- Tailor-made, need-based programmes would be initiated for specific age groups which can be like language and communication skills, life and positive thinking skills, personality development skills, management skills, behavioural skills, including job and employability skills.
- To make the course methodology innovative which includes practical sessions, group discussions, case studies, games and brainstorming sessions etc.

Polices under Skill India Programme

- National Policy for Skill Development and Entrepreneurship 2015
- Pradhan Mantri Kaushal Vikas Yojana (PMKVY)
- Recognition of Prior Learning (RPL)
- Skill Loan I (2016-17 to 2020-21) scheme aimed at Aims of UDYAMITA (2016-17 to 20-21) Plan
 - o Educate and equip potential and early stage entrepreneurs
 - o Connect entrepreneurs through a Mentor Network
 - o Coordinate and support Government Schemes
 - o Catalyse a culture
 - o 2200 colleges, 300 schools, 500 Government ITIs and 50 Vocational Training Centers (VTCs)
 - o Entrepreneurship Resources and Coordination Hubs
 - o Massive Open Online Courses (MOOCs) facilitated by faculty
 - o National E-Hub, 6 Regional E-Hub, 50 Nodal E-Hubs and E-Hubs (colleges, schools, ITIs and VTCs)

Advantages of Skill India Programmes

- It will not only increase the confidence level along with the production but also give the direction through proper skill development programme.
- It will enable the Indian youths to acquire the blue collar jobs.
- It will channelize the Indian youths for proper job opportunities because in this programme development of skill will be at a young age at the school level i.e. beginning of life and thinking
- It will be able to reach in the rural and remote areas
- Corporate educational institutions non-govt organization govt academic institution and society will help to develop the skill in Indian youths to achieve better results in short run.
- It will be helpful in balanced growth in all the sectors of Indian economy
- All jobs will be given equal importance because in this programme every job postulant will be given training in soft skills for leading proper and decent life.

Challenges before Skill Development Initiatives in India

In spite of various and saviour efforts, it is not easy to fulfil the mission of skill development because of the various serious challenges in the way of completion of mission successfully. We have tried to point out some of these challenges along with the possible solutions for them as under:

• Inadequate and insufficient Infrastructure

An incremental requirement of 347 million skilled personnel in India has been predicted up to 2022 by NSDC but India is facing significant challenge relating to skill development in coming decades because approximately 12 million people are joining the workforce every year but India is able to train around 4.3

million people every year. Hence around 64% of new comers remain deprived every year to get the training of skill development. Therefore, it is a great challenge of devising such huge infrastructure setup to bridge this gap.

• Industry Interface is Low

Industry-interface normally helps the educational institutions as well as training institute not only to assess the demand for skill in the relevant region or area but also to update the content of course. It builds a strong picture in the mind of students and ensures them that the course curriculum of skill development is in relevance with the practical which is required by the industries. Since various training institution have weaker industry interface hence the performance of skill development sector is very poor in relation with the records along with the salaries offered.

• Mobilization of students is very low

Vocational training education is not considered suitable by the students in comparison to a regular degree, if other things remain equal, due to legitimate thinking, relaxant to migrate and low salary at the beginning or starting level. Hence the enrolment of students in comparison to their enrolment capacity in skill institutes like ITIs and Polytechnics.

Admission without matching the Interest and abilities of the students

One the major cause for the challenges in the path of skill development and quality of education is because of the direct admission of students i.e. a large portion of admission is taken in the skill training centres without pre-assessment or proper and sustainable entrance tests of students. Hence quality of training does not remain fruitful because choosing training courses does not have match between the interest of students and abilities of students.

• Inadequate standardization

To compare the skill courses across the different training institute is not easy and possible due to lack of standardisation of the curriculum or delivery systems of delivery. It creates ambiguity among various skills which will be imparted under a particular course at some training institute. Also, there is lack of adequate standardized approach for measuring and evaluating the competence conclusion.

Mismatching the Demand and Supply

Various Curriculums of course relating to skill institute does not provide any training that may enhance the ability of students because regular updating the course and the upgrading training infrastructure is basically not only complex but also expensive. Therefore, whole poor skill development and education programme remains bombastic and lead to excessive supply in comparison to demand of specific skills.

Lack of Proper Career Counselling

Due to skimpy placement statistics and unproductive industries linkage of skill development training institutes, the students are unable to acquire the sufficient and proper guidance in relation with their career.

High and unaffordable cost of skill enhancement training

Due to high cost of training, many inspired students are not able to afford the fees to acquire the training. As per estimation of planning commission almost 80% of jobseekers who acquire the jobs do not have the opportunities for training. Hence the high training cost does not appeal to the target population because of unsatisfactory placement records and low salary which is offered and received by them after completing the training.

Paucity of Formal Skill Training assessment

There is a serious insufficiency for formal skill training in the backward districts because mostly institutes in these areas emphasize only on the basic livelihood skills as a social development programme of NGO and Other Agencies. Due to lack of formal assessment of these types of skills, they are not recognised by the industrial sectors for employment.

Gap between skill development and local employment

This type of gap is created due to sub-optional planning of skill development initiatives. It means there is lack of block level mapping of employment demand along with local economic activities, youth population and social demographic profile etc.

High Drop Out ratio of educational institutions

There are high drop-out ratios in Indian educational institutions mostly after the age of 15 years and above especially the female students due the orthodox thinking and obsolete curriculum of various skills course which unable the students to finds the jobs as per their inspirations, and also poor quality of education in which students are not being able to find and absorb the basic skills also. There is also not any coordination between government and industry for systematic updating curriculum of skills programme to enhance the coordination between the job aspirants and employers. Therefore, there is lack of actually high educated workforce or actually skilled and trained workforce.

Steps taken by Indian Government

Indian Government is not only trying to search the solutions for challenges which is being faced in India but also has established National Skill Development Corporation Board (NSDCB) and Prime Minister's National Skill Development Council to face the challenges successfully. Indeed, NSDCB is a PPP model which is regulated by the Deputy Chairman of the Planning Commission who will be treated the chairman of NSDCB. It also formulates various strategies as per decisions of NSDA which was approved on 9th May, 2013 and established to enhance the harmonisation not only among state and central government but also among private and public enterprises to develop various skill efforts. In spite of this, it is needed to take initiatives by Indian government to deliver through the sufficient delivery approach e.g. training by mobile, delivery by decentralisation, distance and e-learning along with web-based learning and capacity expansion. Various special courses are being offered by the Indian ITIs to develop various multiple skills. Indian government also implemented an Apprentice Act which make compulsory for every company to hire apprentices from each ITIs to learn work and to train them to fulfil the requirement of practical training needed for acquiring the jobs. However, government must establish training centres in the backward areas which are remain untouched by the private sector due to less profitability.

Conclusion

In real sense, Skill India is a very good initiative of Prime Minister Mr. Narendra Modi although the picture and image about the impact of skill development on Indian Economy is not very clear. Hence there is need of skilled workforce so that India may be able to face the competition globally. Therefore, government must take necessary actions to improve the mental and physical development of Indian youths along with reducing the Indian unemployment problems. Indeed, an idle and irresponsible youth are a Burden on any economy. So, it is needed that Indian government must concentrate to create the jobs along with Social Security Scheme. Therefore, to fulfil the enthusiastic skilling target, it is necessary to have a comprehensive elucidation of the various challenges instead of fragmentary arbitrations. India will certainly be able to move ahead to get the acquired results if it implements the new skill development approach.

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SKILL DEVELOPMENT AND EDUCATION

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Abstract

The growth of start-ups and skills among the youth population in India is of serious concern to educators and curriculum developers. Ironically, the country that has the privilege of becoming a young nation has an overwhelming number of students who drop out at different levels of school education and are typically robbed of employable skills and abilities at the same time. With a history of four decades, the Indian experience of vocationalization of education lacks success in its growth and successful implementation. The Government of India's recent policies have prioritised skill development programmes with job opportunities and immediate usefulness in existence. To meet the future technical needs of society, the prominent among them are setting up the National Skill Development Council and National Vocational Educational Qualifications System.

Introduction

In educational research the study of entrepreneurship has evolved dramatically and is now becoming a priority, both in terms of courses taught and, the number of studies performed. In the process of founding its own this area of research has relied on other disciplines for many of its limits. The substance therein. Science, management studies, sociology and more recently, cognitive psychology have played a major role in shaping the dominant in entrepreneurship studies, methodologies. Academic analysis of these areas, important information has been given by areas to understand the causes of Propensity for entrepreneurs. Theories focused on objective quantitative analysis inconsistently show the essence of an entrepreneur. And its Impact on the growth of economics.

There is nevertheless, an urgent need to establish a qualitative research area and develop coherent hypotheses about how and why entrepreneurial activity takes place in order to obtain the outcomes of entrepreneurial studies. For instance, whether entrepreneurial intent is primarily determined by steady characteristics of personality or whether it is possible to cultivate a propensity for self-employment via a curriculum for pragmatic education.

Policy, Practices and Skill Development Initiatives

The National Education Conference, held in 1937 under the leadership of Mahatma Gandhi, was held in Wardha, now in Maharashtra, India. Call for a nationwide debate on the 'conceptual clarity' of an alternative paradigm of education to form the national education system Independent India. On Gandhiji's 'basic education' idea, the Conference deliberated to make meaningful work the pedagogical basis for Learning in classrooms. Visualizing schools as active learning groups The main characteristics of the Original proposal were the development and making schools self-reliant through the revenue of productive work and regarded as a way of change of culture.

In 1947, after independence from Britain, India experienced a number of National commissions and committee deliberations to revisit educational issues articulated throughout the struggle for independence. These commissions elaborated on the topics that arose from Mahatma Gandhi's views. In the changed socio-political sense of educational theory, with an emphasis on growth at the national level.

Under the chairmanship of Dr. D.S. Kothari, the University Chairman, The Indian Education Commission (Grants Commission) was founded in 1964. This was the first commission, the first commission instead a thorough summary of the entire education system they focused on the relationship between education and national growth, as well as specific sectors. It was recommended that experience at work be the "participation in productive work in school, at home, in the workshop, on a farm, in a factory or in any other productive situation" (Education Commission 1964..66: sec. 1.25) was introduced as an integral part of all education and established work experience. When making a distinction between work Educational experience and vocationalization of schooling, the Commission Indicates:

The need to have any such remedies for the excessively academic disposition is of formal schooling. It could make young people join the world of Easier jobs and job. It could lead to

growing national competitiveness both by helping students gain insights into productive processes and by using science to build a habit for them. Hard and responsible work by strengthening the relationships between the individual and the community.

Ishwar Bhai Patel Committee was set up in 1977 to review the ten-year school curriculum. The research made some suggestions and noted that the programme should be able to closely link learning to socially efficient manual work and to the socio-economic condition of manual labour. A nation in such a way that it is often possible to mix working and learning.

As suggested by the Ishwar Bhai Patel Committee, the notion of SUPW, The National Review Committee on Higher Secondary Education (1978) was fully endorsed, with special reference to the vocationalization of higher secondary education. (Adiseshiah Committee report, 1978).

Concerned with the admission of students into the workplace, the National Policy on At the higher secondary level, Schooling, 1986, emphasized vocational education. In this policy, however the reason for work experience was to Instead of developing the workforce and reinforcing vocational courses, providing an effective platform for obtaining socially relevant knowledge to build innovative and purposeful people and to build awareness.

Dr. A.P.J. Abdul Kalam (2004), the former President of India, also emphasised the need to incorporate entrepreneurship education into education. Settings, particularly in the programme for school education:

"In a nation such as India, the position of education is to build and improve the capacity of our human resources and its eventual transformation into an opportunity Society of Knowledge. At the earliest, the education system should realign itself to meet the needs of today's challenges and be completely adapted to Participate in changing society. The method of education should be Proactively develop students' entrepreneurial and vocational capacities. He should have the educational institutions as they come back, they should have the Trust in starting small businesses and also getting the skills to do it. The education system must, above all, impart a spirit: we can do it."

Start-up/Entrepreneurship

As mentioned above the national policy planners found School Training is key to gaining the skills and competencies required for students to enter the world of work. Vocational education, as a distinct type of education, Stream, intends to prepare students for vocations spanning described multiple areas of activity. The realistic course for vocational education is in which One acquires abilities and experiences specifically associated with a specific vocation. It provides professional training and offers better opportunities for jobs. The 1986 National Policy on Education set the goal of covering 10% of higher secondary students in vocational courses by 1990 and by 1990. By 1995, 25 per cent. However the Plan of Action, 1992, reset the goals Student diversification of vocational

streams at +2 levels to 10% through diversification 1995, and by 2000, 25 per cent. Yet an enrolment in vocational training of just about 5 percent at present, the flow has been reached.

The National Capacity Growth Mission, headed by the Honourable Prime Minister of India, A target of 500 million eligible people is set to be prepared by 2022. On the other hand, approximately 75 to 80 million jobs are projected to be generated in India over the next five years; 75 percent of these new jobs will need training to increase employability prospects. There is a major 'ability gap' in terms of both quality and quantity; and existing 'skill gap' The infrastructure for vocational education and training is not built to meet industry requirements. This is a contradiction of situations such as the mismatch of supply demand on the one side, and on the other, the growing population of skilled unemployed citizens. Currently, only 2% of the population has received formal vocational training in the 15-29 age group and 8% have had non-formal vocational training, Skills and developments.

International Perspective

Entrepreneurship, integral to the inculcation system, is now widely accepted across the globe. In the current ecumenical economy, the nations are looking forward towards entrepreneurship edification. It is viewed as a holistic and integrative process rather than a functional subdivision of modern business edification. A shift is now visually perceived that mundane denizens have to feel less helpless and more potentiated. Whether it is solving unemployment crisis or far reaching socio-economic changes, people must need to be enterprising. Thus, it signifies more than a business adeptness. It signifies survival (AECID-1994).

To plenarily capture and understand the entrepreneurship phenomenon in an edifying setting and thereby draw the further lines of inquiry, we require to take a broad and inclusive view of advancing entrepreneurship inculcation internationally. It is surprising to note that albeit the consequentiality of entrepreneurship in context of economic development is over stressed, this area of study has remained relatively untested.

The United Nations Millennium Development Goals (MGD-2000) accentuation on entrepreneurship edification and skills to all students in edifying institutions, as one of the quantifications to tackle the challenges of abbreviating penuriousness, achieving macrocosmic elementary inculcation, promoting gender equipollence and potentiation etc. Addressing the current economic crisis, The World Economic Forum, Geneva, (2009) brought out a report Inculcating the Next Wave of Entrepreneurs Unlocking entrepreneurial capabilities to meet the ecumenical challenges of 21st century, which recommends entrepreneurship inculcation as a conveyance for economic magnification and consequently consummating achieving the millennium development goals. The report lays accentuation on developing innovative implements, approaches and distribution methods for advancing

entrepreneurship edification by consolidating the scattered inculcative programmes across the globe. It envisages paramount recommendations for all the key players in the promotion of entrepreneurship development among general population for bridging the gap between theory and practice by evolving congruous pedagogical approaches for the distribution of efficacious edification programmes for entrepreneurship. Entrepreneurship needs to be visually perceived in a broader perspective and the attributes like ingenuity, autonomy, initiative, team spirit etc., should find the congruous No index ingresses found. place in the school curriculum. It is paramount for inculcative educators and community to understand that entrepreneurship is a key competence for all. It does not aim to turn all pupils into businessmen (The Oslo Agenda for Entrepreneurship Edification in Europe, 2006).

Conclusion

We believe that work centered inculcation offers an incipient way of optically canvassing learning: that learning about a conception is not identically tantamount to living with that conception. We view entrepreneurship as an expedient to feel and contemplate a way of life, and we optate our children to make the best of their lives. As such, we require to nurture individuals who are independent-minded and zealous about what they do. The intention is to lead students to cerebrate beyond the 'right answer' and learn to visually perceive opportunities in an evertransmuting environment. Optically discerned in this light, entrepreneurship development (or enterprise inculcation) becomes an intimate and inseparable aspect of human resource. It is not just confined only to industrial and economic development or is not denoted for any personal mazuma making. It relinquishes cyclopean latent potentials of people, utilizable for their own and for the community's good. A paramount goal of enterprise inculcation is indeed the development of individuals who are active, purposeful, ingenious, self-confident and capable of amending their quality of life. The acquisition of such competencies fortifies individuals for active esse throughout life; perennial learning is the potential scope of enterprise inculcation. It is thus, accentuated that entrepreneurial proficiencies must be cast in a conscious and responsible framework of convivial and moral obligation, as an integral component of general school edification.

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IMPACT OF COVID-19 ON MULTIPLE SECTORS OF ECONOMY

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Abstract

India is one of the most affected countries from the coronavirus pandemic. The government imposed nationwide lockdown on 24 March to combat the spread of the novel coronavirus disease (COVID-19). After six months of lockdown India has the second highest number of cases in the world with more than 5.73 million positive cases. The government lifted lockdown restrictions in a phased manner. However, the shutdown took a toll on the country's economy. The lockdown resulted in the loss of jobs for millions of people and loss of revenue too. The government took precautionary measures to control the spread of the virus by restricting the movement but the virus wreaked havoc in the country. The virus killed many, including those who were fighting the battle against it to safeguard others' life. This paper intends to take a look at the impact of COVID-19 on various sectors of economy during the six months since the lockdown.

Key words: COVID-19, Pandemic, lockdown, economic activities, revenue, precautionary measures, sectors, safeguard

Introduction:

India reported the first confirmed case of the coronavirus infection on 30 January 2020 in the state of Kerala. The outbreak had been declared an epidemic in more than a dozen states and union territories, where provisions of the Epidemic Diseases Act, 1897 had been invoked, and educational institutions and many commercial establishments had been shut down. India has suspended all tourist visas, as a majority of the confirmed cases were associated with other countries. On the request of prime minister Narendra Modi, India observed a 14-hour voluntary Janta (public) curfew on 22 March 2020. The government followed it up with lockdowns in 75 districts where COVID-19 cases had occurred as well as all major cities. Moreover, on 24 March, the prime minister ordered a nationwide lockdown for 21 days. On 14 April, the prime minister extended the ongoing nationwide lockdown till 3 May. On 1 May, lockdown across the country was further extended by two more weeks till 17 May. After six months of lockdown India has the second highest number of cases in the world with more than 5.73 million positive cases. The government lifted lockdown restrictions in a phased manner. However, the shutdown took a toll on the country's economy.

The lockdown restriction disrupted most of the economic activities. This resulted in the loss of jobs for millions of people and loss of revenue too. The government took many precautionary measures to curtail the spread of the virus by restricting the movement but the virus wreaked havoc in the country. The virus killed many, including those who were fighting the battle against it to safeguard others' life. This paper intends to take a look at the impact of COVID-19 on various sectors of economy during the six months since the imposition of lockdown in the country.

Data and Methodology:

The study is based on the secondary data. The required data is collected from databases such as CMIE database, and various newspapers, articles and journals.

In this paper we present an analysis of how the novel coronavirus is affecting the various sectors of Indian economy.

(a) Healthcare Sector:

The healthcare sector in India, which was already in a fragile financial state during the pre-COVID times, has been adversely affected by the outbreak of the coronavirus pandemic. The private healthcare sector, that has served as the bedrock of capacity and capability in the last few decades, accounting for nearly 60 percent of all inpatient care, has been perturbed with multi-faceted challenges related to frequently changing regulation, irrational price caps, rising costs of human resources and other requisites for delivering care as well as dwindling financial viability. Despite being preferred over government hospitals for healthcare by a large section of the population, the private healthcare sector had been witnessing worsening performance in terms of both profitability and return on capital employed. These challenges and the uncertainty have been further accentuated due to COVID-19 pandemic and the subsequent lockdown. Most private healthcare facilities activated their epidemic plans that required huge investments in making facilities prepared for infection control and prevention, creating infrastructure for isolation and COVID treatment, as well as equipping them with appropriate medical supplies and additional healthcare workforce. The OPDs had also been discontinued following the advisory released by the government.

Beyond the economic challenges, the private healthcare facilities have also been facing the confusion and uncertainty on matters of testing for COVID-19 whether it was the testing criteria, allowing private labs to test for COVID-19, or disallowing private hospitals to perform pre-operative screening for the virus. Through the entire outbreak, India has been facing the challenge of shortage of healthcare workers whether it was due to travel restrictions imposed under the lockdown, workers being infected with the virus or quarantined due to the exposure, or setting-in of fear psychosis that has led to many frontline workers now returning to their home town.

Further, the working group also suggested that protecting healthcare workers who are at the forefront for fighting COVID-19 must be seen as a national priority and should be provided with adequate protection from infection along with appropriate facilities. Following these recommendations, the government had initiated mapping of healthcare workers across the country through various medical associations and networks. They also notified specific guidelines for quarantine of healthcare workers post their duty in COVID-19 wards/facilities to protect them as well as their families from infection.

(b) Gross Domestic Product (GDP) Collapsed:

India had already been witnessing a pre-pandemic slowdown, and according to the World Bank, the current pandemic has "magnified pre-existing risks to India's economic outlook". The World Bank and rating agencies had initially revised India's growth for FY2021 with the lowest figures India has seen in three decades since India's economic liberalization in the 1990s. However, after the announcement of the economic package in mid-May, India's GDP estimates were downgraded even more to negative figures, signaling a deep recession. (The ratings of over 30 countries have been downgraded during this period.)

On 26 May, CRISIL announced that this will perhaps be India's worst recession since independence. State Bank of India research estimates a contraction of over 40% in the GDP in Q1 the contraction will not be uniform, rather it will differ according to various parameters such as state and sector. On 1 September 2020, the Ministry of Statistics released the GDP figures for Q1 (April to June) FY21, which showed a contraction of 24% as compared to the same period the year before. The pandemic has led to an unprecedented shutdown of various sections of economy including business, industries and services. From manufacturing to real estate, hospitality to mining, has been badly affected as the economy records its sharpest drop in the last 40 years.

(c) Job Loss:

The pandemic has impacted badly on the job scenario in India. According to the Centre for Monitoring Indian Economy (CMIE) about 21 million salaried employees lost their jobs during April-August. There were about 86 million salaried jobs in India during 2019-20. In August 2020, the salaried jobs reduced to 65 million after 3.3 million jobs were gone in the particular month, mostly among the industrial workers and white-collar workers, as per the CMIE.

People between the ages of 20 and 44 were most impacted by the coronavirus (COVID-19) lockdown in India during April 2020 based on job loss. Over 14 percent of people between ages 40 and 44 lost their jobs in April. Naturally, this period proved most challenging for young Indians aspiring to be a part of the job market.

(d) Income Loss for Disadvantaged Section:

The lockdown has impacted the disadvantaged groups with a greater magnitude. According to an analysis by Scroll, during the first two months of the lockdown, India's vulnerable section lost incomes amounting to as much as Rs 4 lakh crores, or nearly 2 percent of the country's annual GDP.

(e) Suicide Rate:

The pandemic has adversely affected people's mental health. According to the data compiled by a group of researchers at Jindal Global School of Law, suicide was the leading cause of over 300 non-coronavirus deaths reported in India from March 19 till May 2 due to the distress triggered by the nationwide lockdown. The three states of Maharashtra, Tamil Nadu and West Bengal are where the pain is most acute, but it is worth noting that this may simply be because reporting of suicides is higher within them.

(f) Travel & Tourism Industry:

Indian travel and tourism industry are one of the worst-impacted sectors by the coronavirus pandemic. According to the Confederation of Indian Industry (CII) and Hotelivate, a hospitality consultancy, the entire value chain linked to Travel & Tourism is likely to lose around 5 lakh crore or US \$65.57 billion, with the organized sector alone likely to lose US \$25 billion.

(g) Hospitality Industry:

The CII-Hotelivate report says that the shutdown has resulted in only 30 percent of occupancy in hotels till the start of 2021. Currently hotels are seeing an 80 percent-85 percent erosion in revenue streams. The hospitality industry, including branded and unbranded hotels, will incur a revenue loss of \$19.31 billion, as per the CII-Hotelivate research.

(h) Indian Railways:

The country has been witnessing lockdown since March 25 due to the outbreak of novel coronavirus, imposing severe restrictions on activities and travel across the country. Ever since then the Railways had also suspended all passenger services from March till May 3. During a web conference on July 28, Railway Board chairman VK Yadav said that the Indian Railways expects to incur revenue loss of up to Rs 35,000 from passenger train segment during the FY21 due to a fallout of train travel following the restriction to prevent the spread of COVID-19.

(i) Metro Rail Services:

Amid the coronavirus crisis and subsequent lockdown, the metro rail service was also suspended nationwide till the government lifted the restrictions and allowed the metro trains to resume services from September 7. While the services were shut, the metro incurred huge revenue loss. On September 17, Union Housing and Urban Affairs Minister Hardeep Singh Puri told Lok Sabha that the Delhi, Bengaluru, Lucknow, Chennai and Kochi Metro Rail Corporation reported a combined loss of almost Rs 2,000 crore while the services were suspended during the lockdown.

(j) Education Sector:

The education sector is also hit hard by the pandemic as people are forced to stay at home. The schools and colleges remain shut down ever since the nationwide lockdown was imposed. Many children are struggling to keep up with the challenges of online classes due to lack of facilities and otherwise also. Students and teachers in cities, towns and villages struggle to cope with the demands of the times. From September 21, students of class 9-12 were allowed to attend schools physically on a voluntary basis as per the government's Unlock 4 guidelines.

(k) Impact on Street Vendors:

Livelihoods of street vendors which depend largely on being in public places have been hit hard by the unprecedented lockdown due to coronavirus outbreak. With the absence of people during the lockdown, the city's vendors lost their source of income. Many were unable to feed their families, which led to starvation and deprivation. Few of them shifted temporarily to vegetable and fruit selling considering the need of the hour. Even after the lockdown restrictions were lifted, many street vendors reported a drastic reduction in income as compared to the pre- pandemic outbreak times.

Conclusion:

- 1. The lockdown restriction halted the most economic activities and led to job loss for millions of people and loss of revenue streams too.
- 2. The government took many precautionary measures to curtail the virus spread by restricting the movement but the virus wreaked havoc in the country.
- 3. Along with developing frontline vaccines, the lesson that COVID-19 has taught is the need to have millions of testing kits. This is because, when a pandemic strike, the only way to check community spread is testing.
- 4. The bottom line is that India has to have a robust action plan when a pandemic strike a plan that is creative, disciplined and, above all, sensitive.

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NEW EDUCATION POLICY OF INDIA 2020

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Abstract

A National Education Policy is a comprehensive framework to guide the development of education in the country. The need for a policy was first felt in 1964 when Congress MP Siddheshwar Prasad criticised the then government for lacking a vision and philosophy for education. The same year, a 17-member Education Commission, headed by then UGC Chairperson D S Kothari, was constituted to draft a national and coordinated policy on education. Based on the suggestions of this Commission, Parliament passed the first education policy in 1968. A new National Education Policy usually comes along every few decades. India has had three to date. The first came in 1968 and the second in 1986, under Indira Gandhi and Rajiv Gandhi respectively; the National Education Policy of 1986 was revised in 1992 when P V Narasimha Rao was Prime Minister. The third is the National Education Policy released under the Prime Ministership of Narendra Modi.

Key words: NEP, Central Advisory Board of Education and National Testing Agency, multidisciplinary

The key takeaways

The NEP proposes sweeping changes including opening up of Indian higher education to foreign universities, dismantling of the UGC and the All India Council for Technical Education (AICTE), introduction of a four-year multidisciplinary undergraduate programme with multiple exit options, and discontinuation of the M Phil programme.

In school education, the policy focuses on overhauling the curriculum, "easier" Board exams, a reduction in the syllabus to retain "core essentials" and thrust on "experiential learning and critical thinking".

In a significant shift from the 1986 policy, which pushed for a 10+2 structure of school education, the new NEP pitches for a "5+3+3+4" design corresponding to the age groups 3-8 years (foundational stage), 8-11 (preparatory), 11-14 (middle), and 14-18 (secondary). This brings early childhood education (also known as pre-school education for children of ages 3 to 5) under the ambit of formal schooling. The mid-day meal programme will be extended to pre-school children. The NEP says students until Class 5 should be taught in their mother tongue or regional language.

The policy also proposes phasing out of all institutions offering single streams and that all universities and colleges must aim to become multidisciplinary by 2040.

Implementation of these reforms:

The NEP only provides a broad direction and is not mandatory to follow. Since education is a concurrent subject (both the Centre and the state governments can make laws on it), the reforms proposed can only be implemented collaboratively by the Centre and the states. This will not happen immediately. The incumbent government has set a target of 2040 to implement the entire policy. Sufficient funding is also crucial; the 1968 NEP was hamstrung by a shortage of funds.

The government plans to set up subject-wise committees with members from relevant ministries at both the central and state levels to develop implementation plans for each aspect of the NEP. The plans will list out actions to be taken by multiple bodies, including the HRD Ministry, state Education Departments, school Boards, NCERT, Central Advisory Board of Education and National Testing Agency, among others. Planning will be followed by a yearly joint review of progress against targets set.

Emphasis on mother tongue/regional language

Much emphasis is not new: Most government schools in the country are doing this already. As for private schools, it's unlikely that they will be asked to change their medium of instruction. The provision on mother tongue as medium of instruction was not compulsory for states. Education is a concurrent subject. Which is why the policy clearly states that kids will be taught in their mother tongue or regional language 'wherever possible'.

People in transferable jobs, or children of multilingual parents

The NEP doesn't say anything specifically on children of parents with transferable jobs, but acknowledges children living in multilingual families: "Teachers will be encouraged to use a bilingual approach, including bilingual teaching-learning materials, with those students whose home language may be different from the medium of instruction."

The government plans to open up higher education to foreign players

The document states universities from among the top 100 in the world will be able to set up campuses in India. While it doesn't elaborate the parameters to define the top 100, the incumbent government may use the 'QS World University Rankings' as it has relied on these in the past while selecting universities for the 'Institute of Eminence' status. However, none of this can start unless the HRD Ministry brings in a new law that includes details of how foreign universities will operate in India.

It is not clear if a new law would enthuse the best universities abroad to set up campuses in India. In 2013, at the time the UPA-II was trying to push a similar Bill, The Indian Express had reported that the top 20 global universities, including Yale, Cambridge, MIT and Stanford, University of Edinburgh and Bristol, had shown no interest in entering the Indian market.

Participation of foreign universities in India is currently limited to them entering into collaborative twinning programmes, sharing faculty with partnering institutions and offering distance education. Over 650 foreign education providers have such arrangements in India.

The four-year multidisciplinary Bachelor's programme

This pitch, interestingly, comes six years after Delhi University was forced to scrap such a four-year undergraduate programme at the incumbent government's behest. Under the four-year programme proposed in the new NEP, students can exit after one year with a certificate, after two years with a diploma, and after three years with a bachelor's degree.

"Four-year bachelor's programmes generally include a certain amount of research work and the student will get deeper knowledge in the subject he or she decides to major in. After four years, a BA student should be able to enter a research degree programme directly depending on how well he or she has performed... However, master's degree programmes will continue to function as they do, following which student may choose to carry on for a Ph.D. programme," said scientist and former UGC chairman V S Chauhan.

Impact on M. Phil. programme

Chauhan said this should not affect the higher education trajectory at all. "In normal course, after a master's degree a student can register for a PhD programme. This is the current practice almost all over the world. In most universities, including those in the UK (Oxford, Cambridge and others), M Phil was a middle research degree between a master's and a PhD. Those who have entered MPhil, more often than not ended their studies with a PhD degree. MPhil degrees have slowly been phased out in favour of a direct PhD programme." — https://indianexpress.com

School complexes to be used for adult education courses after school hours

Use of schools/ school complexes beyond school hours and public library spaces for adult education courses which will be ICT-equipped when possible and for other community engagement and enrichment activities.

More focus on vocational studies in school- level

Every child to learn at least one vocation and exposed to several more.

Sampling of important vocational crafts, such as carpentry, electric work, metal work, gardening, pottery making, etc., as decided by States and local communities during Grades 6-8.

By 2025, at least 50% of learners through the school and higher education system shall have exposure to vocational education

A 10-day bagless period sometime during Grades 6-8 to intern with local vocational experts such as carpenters, gardeners, potters, artists, etc.

Similar internship opportunities to learn vocational subjects to students throughout Grades 6-12, including holiday periods.

Vocational courses through online mode will also be made available.

NIOS to develop high quality modules for Indian Sign Language

NIOS will develop high-quality modules to teach Indian Sign Language, and to teach other basic subjects using Indian Sign Language.

Pre- school section in Kendriya Vidyalayas

Pre-school sections covering at least one year of early childhood care and education will be added to Kendriya Vidyalayas and other primary schools around the nation, particularly in disadvantaged areas.

NCC wings in secondary and higher secondary schools under Ministry of Defence

Under the aegis of the Ministry of Defence, State Governments may encourage opening NCC wings in their secondary and higher secondary schools, including those located in tribal dominated areas

Free boarding facilities in JNV

Free boarding facilities will be built - matching the standard of Jawahar Navodaya Vidyalayas particularly for students who from socio-economically disadvantaged backgrounds

Dedicated unit for digital and online learning.

A dedicated unit for the purpose of orchestrating the building of digital infrastructure, digital content and capacity building will be created in the MHRD to look after the e-education needs of both school and higher education. A comprehensive set of recommendations for promoting online education consequent to the recent rise in epidemics and pandemics in order to ensure preparedness with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible, has been covered

National Scholarship portal for SC, ST, OBC, SEDGs students to be expanded

Efforts will be made to incentivize the merit of students belonging to SC, ST, OBC, and other SEDGs. The National Scholarship Portal will be expanded to support, foster, and track the progress of students receiving scholarships. Private HEIs will be encouraged to offer larger numbers of free ships and scholarships to their students.

Minimum qualification for teaching - 4-year integrated B.Ed. degree

A new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated by the NCTE in consultation with NCERT. By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree. Stringent action will be taken against substandard stand-alone Teacher Education Institutions (TEIs).

HECI- Common regulatory body for entire higher education

Higher Education Commission of India (HECI) will be set up as a single overarching umbrella body the for entire higher education, excluding medical and legal education. HECI to have four independent verticals - National Higher Education Regulatory Council (NHERC) for regulation, General Education Council (GEC) for standard setting, Higher Education Grants Council (HEGC) for funding, and National Accreditation Council (NAC) for accreditation.

Various new provisions for children with disabilities

Children with disabilities will be enabled to fully participate in the regular schooling process from the foundational stage to higher education, with support of educators with cross disability training, resource centres, accommodations, assistive devices, appropriate technology-based tools and other support mechanisms tailored to suit their needs. Every state/district will be encouraged to establish "Bal Bhavans" as a special daytime boarding school, to participate in art-related, career-related, and play-related activities. Free school infrastructure can be used as Samajik Chetna Kendras

Education sector to get 6% of GDP

Rajya Sabha MP, Subramanian Swamy tweeted, "I welcome the new Education Policy of the Modi government. I had a discussion with the MoHD earlier which I had tweeted. My suggestion was the Education must get 6% of GDP not the present 1.7%. This has been accepted in the new Policy. My congrats."

Bag- less days encouraged

Bagless days will be encouraged throughout the year for various types of enrichment activities involving arts, quizzes, sports, and vocational crafts.

Three language learned by children will be the choice of state, regions and students

The three-language learned by children will be the choices of States, regions, and of the students, so long as at least two of the three languages are native to India.

Medium of instruction will be the local/ regional language

Wherever possible, the medium of instruction until at least Grade 5, but preferably till Grade 8 and beyond, will be the home language/mother tongue/local language/regional language.

Indian Sign Language to be standardised across the country

Indian Sign Language (ISL) will be standardized across the country, and National and State curriculum materials developed, for use by students with hearing impairment

No hard separation of streams for students

Students will be given increased flexibility and choice of subjects to study, particularly in secondary school - including subjects in physical education, the arts and crafts, and vocational skills

There will be no hard separation among 'curricular', 'extracurricular', or 'co-curricular', among 'arts', 'humanities', and 'sciences', or between 'vocational' or 'academic' streams.

Subjects such as physical education, the arts and crafts, and vocational skills, in addition to science, humanities, and mathematics, will be incorporated throughout the school curriculum.

Experiential learning in all stages

Experiential learning will include hands-on learning, arts-integrated and sports-integrated education, storytelling-based pedagogy, among others, as standard pedagogy. Classroom transactions will shift, towards competency-based learning and education

Content will focus on idea, application, problem- solving

The mandated content will focus on key concepts, ideas, applications, and problem-solving. Teaching and learning will be conducted in a more interactive manner.

Conclusion

New educational policy is dedicated to facilitate reforms in Indian education practices. It is a much demanded but long awaited policy. This policy is focused not only on the theoretical aspect but also provides a focal point for vocational education too. In new educational policy; the problem of unemployment in the nation has also been kept in mind.

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NEW EDUCATION POLICY OF INDIA—ITS VARIOUS CHARACTERISTICS AND PROS- CONS

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Abstract

In the 20th year of the 21st century, there has been a new education policy in India. The first new education policy was formulated in India in 1968 and then in 1986, after which the new education policy was revised in 1992. Nearly 34 years later in 2020, significant changes have been made about the new education policy. The Ministry of Human Resource Management has recently changed the name of its ministry along with the change in education policy, the Ministry of Human Resource Management will now be known as Ministry of Education.

National Education Policy (NEP) 2020 is a big revolution replacing the 34-year-old policy idea and envisioning to bring about the much-needed modification in the Indian Education System. The Policy has maintained a delicate balance between the traditions and the interdisciplinary approach, which is the need of the 21st century. NEP has the potential to revamp the skills of the youth of our country and has all the right tools that are needed to be competitive at the global level. Needless to say, the New Education Policy is undoubtedly a progressive and ambitious policy that India is waiting for.

Key Words-Indian ethos, Transforming Bharat, Sustainability, Knowledge, Society, Global, Superpower

The new education policy 2020 is India's education policy, announced by the Government of India on 29 July 2020. This is the first new change in the education policy of India after the new education policy released in 1986. This policy has been made by space scientist K.K. Kasturirangan.

In the Directive Principles of Policy of the Indian Constitution, it has been said that mandatory and free education should be made for children from 6 to 14 years. The University Education Commission was formed in 1948 under the chairmanship of Dr. Radhakrishnan. Since then, the formulation of the National Education Policy also started. Based on the recommendations of the Kothari Commission (1964–1966), a proposal for significant change was first passed during Indira Gandhi's Prime Minister's term in 1968. In August 1985, a document named 'Challenge of Education' was prepared in which various sections of India (intellectual, social, political, professional, administrative etc.) gave their education comments and in 1986 the Government of India drafted the 'New Education Policy 1986' got ready. The most important feature of this policy was that it accepted a uniform educational structure for the entire country and most states adopted the 10+2+3 structure. It was released under the Prime Ministership of Rajiv Gandhi. This policy was amended in 1992. The Bharatiya Janata Party's election manifesto in the 2014 general election included the topic of formulating a new education policy. In 2019, the Ministry of Human Resource Development started seeking advice from the public for a new education policy.

In this new policy, it has been decided to rename the Ministry of Human Resources as "Ministry of Education". It has a provision to set up the Higher Education Commission of India as a single body for all higher education

(except legal and medical education). Music, sports, yoga etc. as core courses instead of auxiliary courses or additional courses Will be added to There is a target of spending 6 percent of the total GDP on the education system, which is currently 4.43%. M. Phil. will be abolished. Now to go into research, after a three-year bachelor's degree, one year post-graduation can be admitted to Ph.D. Special emphasis has been laid on the training of teachers in the policy. For comprehensive reform, it has been recommended to include teacher training and all education programs at the level of universities or colleges. Attempts will also be made to prevent arbitrary fees and increases in private schools. Earlier subjects were selected according to 'group', but now they have also been changed. Students who are doing engineering can also study music along with their subject. The National Research Foundation will be brought on the lines of the National Science Foundation, which will include science as well as social science in the curriculum. The policy calls for emphasis on mathematics and language in the first and second grades and the writing of children in fourth and fifth grades. In schools, 5+3+3+4 formats will be replaced instead of 10+2 formats. The first five years will include three years of pre-primary school and foundation stage including class one and class two. Whereas government schools used to start from class one, now class one will start after three years of pre-primary. This is followed by three years of classes 3-5. After this, the middle stage of 3 years will come i.e. Class 6 to 8. The fourth stage (classes 9 to 12) will be 4 years old. Previously, where there was freedom to choose subjects from 11th standard, the same will now be from class 9th. Mother tongue will be used as a medium of instruction from first to fifth. It has also tried to end the Ratta Vidya which is considered to be a major flaw in the existing system. For some reason, students leave the course in the middle of higher education. After doing this, they get nothing and they have to start afresh for a degree. The new policy provides for the certificate of leaving the course in the first year, the diploma for leaving the second year and the degree for leaving the last year.

This is a policy document in which there is a discussion of what is the vision of the government in the coming days regarding education. It determines the condition and direction of the country in the field of education. In the opinion of the experts, such a policy should be made every ten to fifteen years, but this time it took 34 years to form. The BJP also promised a new education policy in its manifesto. Till now the country has got three education policy. The things stated in this policy are neither a legal obligation nor are they immediately applicable.

This time the Centre has set a target of 2030 to implement the new education policy. Since education is the subject of a concurrent list in the constitution, in which both the state and the central government have authority, it is not necessary for the state governments to fully consider it. Wherever there is a conflict situation, both sides have been suggested to resolve it by consensus.

Let us start with the changes made in school education. The tradition of 10+2, which was earlier in the new education policy, will end now. Now the government is talking about 5+3+3+4 in its place. 5 in 5+3+3+4 means - three years of pre-school and classes 1 and 2 followed by 3 means classes 3, 4 and 5 after 3 means classes 6, 7 and 8 And finally 4 means class 9, 10, 11 and 12. That is, children will start attending formal school at the age of 3 instead of 6 years. Till now, children used to go to the first class in 6 years, then even after the implementation of the new education policy, the child will be in the first class in 6 years, but the first 3 years will also be of formal education.

This means that now Right to Education will be expanded. Earlier RTE was implemented for children from 6 years to 14 years. Now it has been implemented for children from 3 years to 18 years. This formula will be applicable to all government and private schools.

Apart from this, another important thing in school education is the language level. In the new education policy, 3 language formulas have been talked about, in which the education of mother tongue / local language up to class five has been talked about.

It has also been said that this process should be adopted up to class 8 where possible. Along with Sanskrit, emphasis has also been placed on studying in Indian languages like Tamil, Telugu and Kannada. Schools in the

secondary section will be able to offer foreign languages as an option. The third thing in school education is the change in board exam. In the last 10 years, many changes were made in the board exam. Sometimes the 10th exam was optional, sometimes grades were talked about instead of numbers. But now the change in exam pattern has been done in the new education policy. There will be board exams, and now there will be twice. But coaching will not be required to pass them. The format of the exam will be changed to 'assess the abilities' of the students and not their memory. The Centre argues that the pressure on numbers will end. The intention is to implement this change from the session 2022-23.

In addition to these board exams, state governments will also take examinations in class 3, 5 and 8. To get these examinations done, the work of making guide lines will be entrusted to the new agency, which will work only under the Ministry of Education. National Education Policy (NEP) 2020 is a big revolution replacing the 34-yearold policy idea and envisioning to bring about the much-needed modification in the Indian Education System. The Policy has maintained a delicate balance between the traditions and the interdisciplinary approach, which is the need of the 21st century. NEP has the potential to revamp the skills of the youth of our country and has all the right tools that are needed to be competitive at the global level. Needless to say, the New Education Policy is undoubtedly a progressive and ambitious policy that India is waiting for.

Positives of NEP 2020

With the help of the new education policy devised by the Government of India, education will be made available to everyone in the country from the pre-school to the secondary school level. NEP 2020 is beneficial as it will help about two crore school students to come back to educational institutions. The existing 10+2 structure will be replaced by 5+3+3+4 structure which will focus on the formative years of learning of a student. The structure corresponds to the age groups as follow:

3 to 8 years,

8 to 11 years,

11 to 14 years and

14 to 18 years.

This constitutes 12 years in school and 2 years in pre-school for each student.

NCERT has been given the job to design and develop the National Curricular and Pedagogical Framework for Early Childhood Care and Education (NCPFECCE). This will be for children within eight years of age. There will be a formation of National Book promotion Policy in India. Under this new education policy, National Mission on Foundational Literacy and Numeracy by the Education Ministry will be set up soon. The states in India will be responsible for the successful implementation for achieving the foundation numeracy and literacy for all students. This is applicable for student till class three and this has to be done by 2025. There will be board examinations like before in class 10 and class 12. But they will have lesser stakes and more stress will be given on the holistic upgrading of the student. School examinations will be only be held in classes 3, 5 and 8, and the other classes will be assessed by the school authorities. It has been announced that PARAKH will be set up soon. This will be a National Assessment Centre set up by the Government under the new education policy. Emphasis has been given on setting up Gender Inclusion Fund and Special Education Zones. This will be beneficial for underprivileged people. Bal Bhavans will be established in every state. This will be a boarding school where the students can take part in art, play or career-related activities. It has also been announced that a National Professional Standards for Teachers (NPST) will be formulated by the National Council for Teacher Education by the year 2022. This will be done after consulting with SCERTs, NCERT, teachers and institutions. There will be an establishment of an Academic Bank of Credit where the credits earned by the students will be stored so that it can be later on counted when the final degree is completed. Multidisciplinary Education and Research Universities (MERUs) will be set up in the country. These institutions will be at par with the existing IITs and IIMs and will aim to showcase multidisciplinary education for the Indian students. The public and private academic bodies will be guided by the same list of accreditation and regulation rules. The college affiliation will be phased out and colleges will be granted autonomy. A four year B. Ed. degree will be recognised as a minimal degree for teaching by the year 2030. Online education will be promoted so that the students can be prepared for pandemic situations. This will also prepare the system while imparting quality education during such difficult times.

Negatives of NEP 2020

Language seems to be a negative factor in the National Education Policy 2020. India has the problem of a disturbing teacher and student ratio. So introducing mother languages in academic institutions for each subject is a problem. This is simply because finding a competent teacher is a challenge at times. And now the challenge is to bring study material in mother languages. The Indian Government wanted to follow in the steps of other countries like China, Germany, France where the foreign student needs to learn the language of the country to understand the country better. And India has 22 active languages and not one national language like in the other countries. Education Policy 2020 will further increase the differences between the sections of the society. While the students in the government schools will be taught in their respective regional language, the students in private institutions will be introduced to the subject about seven years later than the students in private schools. Under the new system, one has to study for four years to complete their graduation. However, the question arises as to why the student will continue with the program if he/she can get the diploma in two years? If he/she left the program mid-way after two years, then he/she could easily have two years of experience of work which will be valuable in the long run.

Conclusion

National Education Policy (NEP) 2020 is a big revolution replacing the 34-year-old policy idea and envisioning to bring about the much-needed modification in the Indian Education System. The Policy has maintained a delicate balance between the traditions and the interdisciplinary approach, which is the need of the 21st century. NEP has the potential to revamp the skills of the youth of our country and has all the right tools that are needed to be competitive at the global level. Needless to say, the New Education Policy is undoubtedly a progressive and ambitious policy that India is waiting for. National Education Policy has more positives than negatives. However, it is only after the execution that the people will finally be able to judge its effectiveness.

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40 NATIONAL EDUCATION POLICY 2020: MAJOR REFORMS TOWARDS REVAMPING INDIAN EDUCATION

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Abstract

The NEP-2020 report was prepared by eminent scholars under chairmanship of Dr. K. Kasturirangan. This NEP 2020 envision India centered education system that contributes directly to transforming our nation sustainably into an adequate and vibrant knowledgeable society by providing high quality Education to all. The Draft covers very large canvas with 24 themes/objectives and addressing plethora of issues with guiding Goals such as access, equity, quality, affordability, accountability faced by current Education system. It is the first Education policy of the 21st century, which is framed nearly after 34 years of the last policy of 1986.

This paper aims at highlighting the major reforms at all levels of education from pre primary to higher education and teacher education.

Introduction

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice and equality. scientific advancement, national integration, and cultural preservation. Universal high-quality education is the best way forward for developing and maximizing our country's rich talents and resources for the good of the individual, the society, the country, and the world. India will have the highest population of young people in the world over the next decade, and our ability to provide high-quality educational opportunities to them will determine the future of our country.

The global education development agenda reflected in the Goal 4 (SDG4) of the 2030 Agenda for Sustainable Development, adopted by India in 2015 - seeks to "ensure inclusive and equitable quality education and promote lifelong learning opportunity. for all" by 2030. Such a lofty goal will require the entire education system to be reconfigured to support and foster teaming, so that all of the critical targets and goals (SDGs) of the 2030 Agenda for Sustainable Development can be achieved.

Indeed, with the quickly changing employment landscape and global ecosystem, it is becoming increasingly critical that children not only learn, but more importantly learn how to learn. Education thus, must move towards less content, and more towards learning about how to think critically and solve problems, how to be creative and multidisciplinary, and how to innovate, adapt, and absorb new material in novel and changing fields. Pedagogy must evolve to make education more experiential, holistic, integrated, inquiry-driven, discovery-oriented, learner-

centered, discussion-based, flexible, and, of course, enjoyable. The curriculum must include basic arts, crafts, humanities, games, sports and fitness, languages, literature, culture, and value., in addition to science and mathematics, to develop all aspects and capabilities of learners; and make education more well-rounded. useful, and fulfilling to the learner. Education must build character, enable learners to be ethical, emotional, compassionate, and caring. While at the same time prepare them for gainful & fulfilling employment.

The gap between the current state of learning outcomes and what is required must be bridged through undertaking major reforms that bring the highest quality, equity, and integrity into the system, from early childhood care and education through higher education.

The aim must be for India to have an education system by 2040 that is second to none. with equitable access to the highest-quality education for all learners regardless of social or economic background.

This National Education Policy 2020 is the first education policy of the 21st century and aims to address the many growing developmental imperatives of our country. This Policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirational goals of 21st century education, including SDG4, while building upon India's traditions and value systems.

The Vision of Policy

The National education policy envisions an education system rooted in Indian Ethos that contribute or transforming India sustainably into equitable and vibrant society by providing quality education to all .The vision of the policy is to instill among the learners, deep routed tribe in being Indian, not only in thoughts but also in spirit intellect and deeds as well as to develop knowledge, skills, values and disposition that support responsible commitments to human rights, sustainable development and living and global well-being, thereby reflecting a truly global citizen.

1. Reforms in school education

10+2 structure is modified with a new pedagogical and curricular restructuring of 5+3+3+4 covering ages 3 to 18 currently children in the age group of 3 to 6 are not covered in 10+2 structure as class 1 begins at age 6 and right to education encompasses children 6 to 14 years but in new 5+3+3+4 structure strong base of ECCE from age 3 is included and guaranteeing RTE from 3 to 18 years.

The curricular and pedagogical structure of school education will be reconfigured to make a responsive and relevant to the development needs and interest of learners at different stages corresponding to the age ranges of 3 to 8, 8 to 11, 11 to 14 and 14 to 18 years which is guided by 5+3+3+4 design consisting of foundational stage (in two parts that is 3 years of Anganwadi / preschool + 2 years of class 1 and 2; preparatory stage covering 8 to 11 years and class 3,4,5; middle stage covering ages 11 to 14 and classes 6,7,8 and Secondary stage covering grades 9 to 12 and age 14 to 18.

2. Holistic development of learners

The key thrust of curricular and pedagogical reforms across all stages will be to move the education system towards real understanding and critical thinking away from rote learning culture NCERT will identify reorient and revamp the curriculum frame work. Vocational integration by the age of 12 years and 3 language formulas will be employed as a medium of instruction that is mother tongue, regional language and National / International language. At secondary level no rigid streaming will be there in choosing subjects.

Minimum 6% of GDP will be spent on education (currently 2.6% is spent)

3. National Assessment System

It is proposed to setup a national assessment centre, PARAKH (Performance, Assessment, Review and Analysis of Knowledge for holistic development) as a standard setting body under MHRD this central will

advise school boards regarding new assessment pattern, latest researches, promote collaboration between school boards for ensuring equivalence of academic standards among learners.

4. National Testing Agency

NTA will offer high quality Common Aptitude Test (CAT) as University entrance exam. NTA will serve as a premier expert, autonomous testing organization to conduct entrance examination for undergraduate post graduate admissions and fellowships in higher education institutions.

5. Promoting Libraries

A National Book Promotion Policy will be formulated, and extensive initiatives will be undertaken to ensure the availability, accessibility, quality, and readership of books across geographies, languages, levels, and genres.

6. Creating Baal Bhawans

In every district, special day time boarding schools will be established for play related career activities.

7. Academic Bank of Credit

This is to be established for digitally storing Academic Credits earned from different HEIs so that these can be transferred and counted further final degree. Credits stored in digital locker will be like a bank credit which a student will be able to resume education after a break as specified by the Higher Education Commission.

8. Multiple Entry and Multiple Exit Points in Higher Education

The new policy will have multiple entry and exit points under the 4 years program students can exit after 1 year with a certificate, after 2 years with diploma and a Bachelor's degree after 3 years and Bachelor's with research after 4 years and this will be done through academic bank of credit.

9. Graded Autonomy to Colleges

Affination of colleges will be phased out in 15 years and a stage wise mechanism will be established for granting graded autonomy to colleges.

10. By 2030, minimum degree qualification for teaching will be a 4 year integrated B.Ed. degree.

11. Easing of Board Exams

The board exams for class 10 and 12 will continue but there will be a semester system apart they will primarily test core capacities, competencies, critical thinking and reflective level of thinking rather than rote memory.

12. Changes in Report Cards

The progress card of students will be redesigned. It will be holistic, 360 degree, multidimensional report card which will reflect the progress and uniqueness of each learner in the cognitive, affective and psychomotor domains. The progress card will include self-assessment, peer assessment and teacher assessment.

13. National Educational Technology Forum

An Autonomous body NETF will provide a platform for free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration.

14. Teacher Eligibility Test (TETs)

TET will cover teachers across all stages foundational, preparatory, middle, secondary levels of school education for subject teachers suitable TET or NTA test score in the concern subject will be taken in account of recruitment. Teachers in private schools must also have TET qualification, a demonstration/ interview will be the criteria for recruitment.

15. Continuous Professional Development (CPD)

Teachers will be given continuous opportunities for self- improvement and to learn the latest innovations and advances in their professions each teacher will have to undergo 50 hours of CPD every year for their professional development besides workshops, seminars and online Moodle courses. School principals will have similar modular leadership/Management workshops to improve their leadership and management skills with participation in 50 hours CPD modules per year.

16. Career Management and Progression (CMP)

Teachers doing outstanding work will be recognized and promoted and given salary raises, revised incentives for the best works and after assessment of performance and contributions while "Tenure Track" refers to the period of extending tenure and career growth. Vertical mobility of teachers based on merits will also be trained to take leadership positions in school, school complexes, BRCs, DIETs and other government departments.

17. National Professional Standards for Teachers (NPST)

A common guiding set of NPST will be developed by 2022, by the NCTE in its restructured new forms as professional standard setting body (PSSB) under the General Education Council in consultation with NCERT and SCERTs.

18. New Approach to Teacher Education

The minimum degree qualification for teaching will be 4 years integrated B.Ed. degree that teaches a range of innovative knowledge content and pedagogy. The 2 years B.Ed. program will also be offered in the same institution for those who have already obtained Bachelor's degree in other specialized subjects and 1 year B.Ed. program may also be adapted for master degree holders.

19. National Curriculum Frame work for Teacher Education (NCFTE)

By 2021 a new comprehensive NCFTE 2021 will be formulated by NCTE in consultation with NCERT of teacher education curricula. It will be revised once every 5-10 years.

20. Equitable and Inclusive Education: Learning for All

Education is a single greatest tool for achieving social justice and equality and in equitable society where every citizen has equal opportunity to dream, thrive and contribute to the nation. This draft reaffirms towards bridging gender and social category gaps in all levels of school education particularly for Socio-Economically Disadvantaged Groups (SEDGs) under the single group broadly categorized based on gender, transgender, individuals; socio-cultural identities such as SCs, STs, OBCs and Minorities; Geographical identities (students from villages, remotes, small towns and aspirational districts) differently abled identities, children victims of trafficking, orphans, child beggars, children in vulnerable situations, migrant communities, nomadic tribes and low income households will be covered in a brief status of SEDGs.

21. Institutional Restructuring and Consolidation

By 2040, the main thrust of this policy is to end up the fragmentation of Higher Education by transforming HEIs into large multidisciplinary Universities, Colleges with the aim to have 3000 or more students thereby, breaking harmful silos and building vibrant communities of scholars and peers. Moving to large multidisciplinary Universities and HEIs aims at following and revamping the ancient Indian Universities Model – Takshashila, Nalanda, Vallabhi and Vikramshila which have thousands of students from India and world studying in vibrant multidisciplinary environment and achieved great success. India urgently needs to bring back this great Indian tradition to create well rounded and innovative individuals.

22. Gross Enrolment Ratio

The aim of policy is to increase GRE in Higher Education including vocational education from 26.3% (2018) to 50% by 2035.

23. Integrated Higher Education System

Regulation of Higher Education has been heavy handed for decades concentration of power within few bodies; conflicts of interest among them and resulting lack of accountability demands are complete overhaul in order to reenergize the higher Education centre via means of single regulatory system. This regulatory system will ensure distinct functions of regulations, accreditation, funding and setting of academic standards by the distinct independent and empowered bodies. To ensure the 4 institutional structures carrying out these four essential functions work independently yet at the same time work in synergy towards common goals. These four structures will be setup as four independent verticals within one umbrella institution, the Higher Education Commission of India (HECI). The first vertical of HECI will be the National Higher Education Regulatory council (NHERC). The second vertical will be National Accreditation Council (NAC). The third vertical will be the Higher Education Grant Council (HEGC) for providing funds and finance. The fourth vertical will be General Education Council (GEC) which will frame expected learning outcomes for Higher Education Programs.

24. Overcoming Technical Glitches

Online education has become a vogue of a day. There are numerous challenges to conducting online examinations transparently at massive scale. This can be resolved with innovative measures, enriching infrastructure and thorough training. Steep hike in use of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education this policy recommends the following initiatives -

Content creation, Digital repository and dissemination of e-content. Creating Virtual Labs by using existing e-platforms like SWAYAM, SWAYAMPRABHA & DIKSHA.

25. Addressing the Digital Divide

As a matter of fact, there is still a substantial section of the population whose digital access is highly limited. There is a problem of connectivity, good wi-fi network and technical devices. Tools such as tow way video, two-way audio interface for holding online classes and exams are a real necessity in each and every hand so there is a need to invest in creation of open interoperable evolvable public digital infrastructure in the education sector.

Conclusion

Any policy's effectiveness depends on its implementation. Such implementation will require multiple initiatives and actions by the multiple bodies in synchronized and systematic manner, therefore various bodies including MHRD, CABE, Union and State Governments, Education ministries, Boards, NTA, NCERT, SCERTs, schools and HEIs will work in their spirit and intent through coherent planning. Implementation will be guided by the following principles: first implementation of the spirit and intent of the policy. Second phase wise implementation of policy initiatives. Third priority will be important in ensuring optimal sequencing of the policy point with the strong base. Fourth comprehensiveness in implementation will be a key as this policy is interconnected and holistic, only a full-fledged implementation between the centre and the states is needed as education is a concurrent subject. Sixth, timely infusion of requisite resources-human, infrastructural and financial at the analysis and review of the linkages between multiple parallel steps will be utmost necessary to ensure effective working and smooth progression for all subsequent programmes and actions.

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NEW EDUCATION POLICY-2020: A NEW DAWN OF INDIAN EDUCATION SYSTEM

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Abstract

A good education system is deemed to be one which recognises, identifies the unique capabilities of each student and educates them in such a way that they choose their own path of life according to their own talents and interests. NEP-2020 stresses over creativity and critical thinking rather than 'rattafication' to encourage logical decision-making and innovation. Ethics, Moral and human values which were absent in the existing education system is emphasized in NEP-2020. Recognizing the power of mother tongue for better understanding of subject NEP made mother tongue compulsory for study upto preparatory stage and also promoting multi language afterword for understanding other region culture too. NEP -2020 packed with such a wonderful merit is open for show. Policy makers have done their job well, now it is on the shoulder of stakeholders how effectively they perform their part.

Key Words- Education Policy, New Education Policy-2020, Caliber of teachers, Multi Language

Introduction

If you want to make any major change in any nation, you have to change the nation's education policy. With this point of view, India has changed its education policy after a long span of 34 Years on 29, July 2020 on the recommendation of a committee headed by Shri Kastori Ranjan. New Education Policy-2020 has changed the existing education system as a whole. The good education system is deemed to be one which recognises, identifies the unique capabilities of each student and educates them in such a way that they choose their own paths in life according to their talents and interests. NEP-2020 stresses over creativity and critical thinking rather than 'rattafication' to encourage logical decision-making and innovation.

Aim of Paper

Present paper is a humble attempt to look into new education policy -2020 and critically evaluate the different provisions of it so that different stakeholders will be in a situation that they can better understand their roles that they will have to play to achieve the targets of NEP-2020.

Different Stages of Education under NEP-2020

New Education System now will be 5+3+3+4 instant of 10+2 System it means now state government will take responsibility of any student up to 12+2 starting from the age of 16 years after that student will be shifted to university for further higher education but under new education policy state government will take care the student up to the age of 15 years starting from the age of 3 years under. The different stages under NEP-2020 are-

1. Foundation Stage

Under this stage the student has to stay in school for a period of five years starting from the age of three years. In this foundation stage first three years a child will stay at school without any burden of bag, classes and examination. He will be allowed to play, paint and enjoy the school so that he will stand himself in the position to stay in school premises. During this stage the child will be in class 1 after the expiry of three years automatically and subsequently in class two without any examination.

2. Preparatory stage

Under this Preparatory stage of 5+3+3+4 a student will stay for three years and will study class 3, 4, 5. In this stage student will have an option to keep his study in his mother/regional tongue. It is the key focus point of this preparatory stage with the exception that schools have the option for study English as a study language. The effect of study in regional/local language will make the study easy and understandable on the one hand while distance from internationally accepted language i.e. English may be harmful for his future on the other hand. In this stage examination burden will be upon the shoulder of students.

3. Middle Stage

Under this middle stage student will enter in class 6 and will stay for three years studying in class 6,7 and 8. In this stage students will have to study computer coding, maths, science, arts along with a choice to take any vocational/ Technical Skills like Cooking, Sewing, Gardening etc. In addition students have to take any Indian language as subject like Hindi, Urdu, Punjabi, Tamil etc. it will help him to better understand other regional cultures easily.

4. Secondary Stage

Under this stage a child will enter in class 9 and will stay for four years studying in class 9, 10, 11, 12. In secondary stage students have to appear in exam on semester basis to keep the students updated always about subject knowledge. In this stage a student has to opt one foreign language except Chinese. It is due to the Indo-China LAC Conflict that has Prompted Government to do so.

5. Graduation Stage

Keeping in mind the requirement of the hour New Education Policy-2020 has introduced four yearly graduation courses in place of existing three years graduation courses. Students need not to complete his graduation in one run. In the existing structure of the higher education system if one has to leave his study in between the course due to any reason, study done/ completed by him so far is of "no worth". Now he will be provided a "certificate" on completion of one year of graduation course and will be provided a "diploma" on successful completion of 2 years of course. A "degree" of graduation will be provided after completion of 3 years of course that will be equivalent to existing UG Degree and will be valid for appearing in all Jobs and Competitive Exams like UPSC. If anybody wants to continue his study further for research and higher study, he has to complete his fourth year of graduation.

Main attraction of New Education Policy-2020 is re-entry in graduation course whereby anybody can reenter in course again any at any time after any span if he has left his study due to any personal reason. Now he can re-enter in next upper level of class where he dropped the study. It is a very important characteristic of New Education Policy-2020 as it saves the time, labour of a student while he has done in passing previous examinations. Under the old pattern of UG Courses Previously passed examinations by any student were become "null and void".

6. Post-Graduation

Post-Graduation under New Education Policy-2020 will provide one year for two years of course depending upon the duration of UG. If a student has passed three years of graduation course, he has to complete his PG Course for two years and a person who has completed his UG course for four years under New Education Policy-2020 have to complete his PG Course in one year.
7. Research under New Education Policy

New Education Policy-2020 has eliminated masters of philosophy (M.Phil.) course entirely. Research course will continue as usual for 4 years. Now a central vigilance centre will control the research conducted at different colleges and universities.

Positive Aspects of New Education Policy-2020

- In New Education Policy-2020 6% of GDP is provided to be spent on education in India from its existing level of approximate of 3%.
- School fees will be fixed by the government for private schools according to their level of infrastructure and other facilities. Now schools will not be able to charge higher fees at all.
- Vocational Studies are introduced in New Education Policy-2020 that will help to visualize the real world scenario and thereby to prepare them as per requirement of market.
- Under New Education Policy-2020 the result of students will not be based only on marks obtained by him in his examination rather overall assessment will be based on four criteria viz marks obtained of course, self-assessment by his friends and last by his teacher who will assess him on examination result basis. This assessment system will definitely generate self-confidence, regular attendance in class, active involvement in departmental activities and assessment by his friends will lead him to be cooperative in his social life.
- Foreign universities are also allowed to open their branches in India. Now top 50 international players in the field of education will impart higher education in India. This concept was also brought in consideration in the regime of Congress Government with the caution money of 50 Crores. But none foreign university showed interest in opening its branch in India. Under New Education Policy-2020 this caution money condition is removed that will encourage foreign HEIs to open their branches in India. This will provide a better competitive environment to Indian university, Colleges to fight with.
- Under New Education Policy-2020 four different departments will be established and will carry out different activities for school/college. It will provide a check over syllabus determination, students-teacher monitoring, scholarship-salary for colleges etc.
- A teacher training is the key focus of New Education Policy-2020 as quality of education basically depends upon the caliber of teachers. Therefore it is necessary that all teachers must be fully trained and be given such facilities and emoluments that give them mental peace for fulfilling their existing and future needs.

Challenges under New Education Policy-2020

- Neglecting English language in NEP-2020 will affect our international acceptance to a great extent. But this drawback is not of much worry since adoption of language is not made mandatory therefore English Medium School may continue on existing pattern after implementation of NEP-2020.
- Centralization of activities-in NEP-2020 major drawback is of centralization all academic activities whether it is syllabus determination, teachers' training or Fees fixation. Under NEP-2020 state government has to follow central government guideline. It will be against the soul of "Sanghiye Vaivastha" of our constitution whereby centre & state enjoys equal rights to take decisions.
- Abolishing the controlling body of higher education like UGC, AICTE and NCTE and establishment of a new controlling body will be a tough task as all work of three different bodies has to be done by a single one.

Conclusion -the ways to be covered

Education is a pious and vast field and we all stakeholders are concerned with it. As a Parent, we want our ward to be more safe, prosperous and successful in their respective life. To achieve this, target union government has introduced NEP-2020 to impart such an education that will provide more practical, dynamic, qualitative and

full of morality, which will ultimately help to become good citizens to make India stand equal with developed countries. NEP-2020 is a result of collective efforts of government, policy makers, experts and different ground level people right from the district level to tehsil, gram panchayat. To make NEP more effective there should also be teachers' assessment by students. There should be such a mechanism whereby students must have a right to evaluate the teacher on the basis of his way of teaching, how he possesses helping nature, taking extra class/ tutorials of the students. This will motivate teachers to be updated in every respect. There must also be a uniform dress code for teachers. Most of the teachers wear costly, branded clothes which may adversely affect the mind of students as they may feel inferior regarding clothing because most of the students come from rural backgrounds and they cannot afford costly clothes. Hence there must be a simple, sober uniform dress code for teachers too just like students. To make effective implementation of NEP-2020 there must be a proper student-teacher ratio. To achieve this target, Government has to fill all vacancies and must create new posts for the same. A large education sector is now in the hands of the private sector where "Lala Ji" exploits the working staff paying very low amounts of salary on one hand and to parents charging high fees on the other hands. There must be a check over this. When we talk about the success of New Education Policy-2020 we cannot ignore the key stakeholder "The Teacher". He is the real person that will play a vital role in achieving the targets of New Education Policy-2020.

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DRAFT NEW EDUCATION POLICY-2019: SOME SUGGESTIVE MEASURES

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ABSTRACT:

Education undoubtedly plays a wonderful role in the life of every individual. And for persistent growth of any nation, educational planning is pre-requisite for national planning. The New Education Policy 2019 (draft) is comprehensive, elaborated, very well-conceived policy document at improving entire education system. The Draft covers a large canvas with 24 diverse themes/objectives and addressing a plethora of issues with guiding goals such as access, equity, quality, affordability, accountability. At this crucial time when the country is dwindling in the dichotomy of what should be the policy for restructuring and revamping the education system of country, the Government of India came out with the draft of New Education Policy 2019 submitted by the committee chaired by Dr. K. Kasturirangan. The current Draft has incorporated a plethora of new strategies. Few of these are innovative and may be acceptable by all and few appears to be non-supportive. There are various pros and cons of the Draft Policy.

Key words: Draft New Education Policy, Reforms, Higher Education Liberal education, Teacher Education, Rashtriya Shiksha Aayog.

Introduction:

A close pursual with rapt attention of the draft National Education Policy (NEP) 2019 developed in 23 chapters of 484 pages reveals that the provisions therein were necessary but not adequate for the real education as Proper, Productive and Practical (3P) use of Hand, Head and Heart (3H). The committee for Draft National Education Policy constituted by MHRD in the chairmanship of Dr. K. Kasturirangan in June 2017 submitted its report on May 31, 2019. NEP seeks to address the challenges faced by present system of education which deserves a word of appreciation. Policy aims at restructuring governance and regulation system with greater transparency, autonomy and accountability to ensure more effective role of facilitator by getting rid of affiliation system, improving quality of academics, promoting liberal education to accommodate global outlook and introducing critical thinking, experimental learning, skill development are the major changes which policy tends to bring about in Education system. NEP provides for reforms at all levels from school to Higher education and restructuring regulatory framework. Increased focus on vocational and adult education by strengthening the use of technology. The Policy focuses on improving quality and quantity of research and innovation through an independent funding agency with separate funds. Proposal to create Rashtriya Shiksha Aayog, an apex body of Higher Education to be chaired by the prime minister shows

the importance, education system is going to get in future. Implementation and execution of the policy will of course, be big challenge.

Salient Features of Draft National Education Policy - 2019

The NEP 2019 report prepared by eminent scholars is indeed worthy of appreciation. It's a very comprehensive document with 4 parts and addendum. The committee express its concern about quality of education, industry – connect & vocalization and use of Indian languages. Part-1 deals with school education; part-2 deals with Higher Education; part–3 with additional focus areas; part-4 with transforming education. Addendum includes chapters on Financing and Policy implementation. The NEP document mainly various reforms to education system in India. Mechanism and roadmap for reform. Transform and Perform need to worked out.

There is a focus on developing Type-1, 2 & 3 multidisciplinary universities and institutions. Transformation of State Technical Universities into multidisciplinary universities and what would be the mechanism for their transformation. The renaming of the Ministry of Human Resources Development (MHRD) as the Ministry of Education. The Draft identified lack of access as a major reason behind low intake of higher education in India, it aims to increase GER to 50% by 2035 from the current level of about 25.8% which calls for strengthening infrastructure in all dimensions.

It has been observed by committee that the current higher education system has multiple regulators with the overlapping mandates reducing the autonomy of Higher Educational Institutions (HEIs) and create an environment of dependency and centralized decision making. Therefore, it proposes setting up the National Higher Education Regulatory Authority (NHERA). Meaning thereby, UGC, AICTE and BCI have limited or no role.

NAAC in its new role will function as the top-level accreditor, and will issue licenses to different accreditation institutions, which will assess HEIs once every 5 to 7 years. All existing HEIs must receive accreditation as mandated by NHERA within 5 years of being established. Further HEIs will be reconstructed into 3 types: (i) Research universities focusing equally on research and teaching; (ii) Teaching universities focusing primarily in teaching; and (iii) Colleges focusing on only at teaching at undergraduate levels. All such institutions will gradually move towards full autonomy – academic, administrative and financial.

The Draft NEP recommends establishing a National Research Foundation, an autonomous body, for funding, mentoring and building the capacity for quality research in India. The Foundation will consist of major divisions: sciences, technology, social sciences and arts and humanities. The Foundation will be provided with annual grant of Rs. 20,000 crores (0.1 % of GDP). NEP recommends making undergraduate programmes interdisciplinary: (a) core curriculum and (b)one/two area of specialization (major and minor optional area of specialization. The Draft recommends Continuous Professional Development Programme and introduction of permanent employment (tenure) track system for Faculty in all HEIs by2030 is welcome. All HEIs must have complete autonomy on curricular, pedagogical and resource related matters.

The creation of National Education Commission or Rashtriya Shiksha Aayog (RSA) as an apex body for education, to be headed by Prime Minister. RSA will be accountable for developing, implementing, evaluating and revising the vision of education in India on continuous and sustained basis and look after the functioning and proper implementation of several bodies including NCERT, the proposed National Higher Education Regulatory Authority (NHERA), National Research Foundation.

The Draft reaffirmed the commitment of spending 6% of GDP as public investment in education. The structural replacement of education system from 10+2 with 5+3+3+4 and launching Graduation courses 3-4 years degree program. By 2030, minimum degree qualification for teaching will be 4 years integrated B.Ed. degree will be compulsory. Till 2030, there will be a provision of 1 year, 2 year and 4 year B.Ed. degree programme .A new comprehensive National Framework for Teachers Education NCFTE 2021 will be formulated by the NCTE in consultation with NCERT. By2030 para teachers will not be appointed. So, drastic changes are going to take place in the teacher's education programme.

E teaching and learning under MOOC are fine but cannot be the substitute of classroom teaching. Education without ethics is like eyes without sight so we need to develop innovative ideas for improving capabilities, capacities and competencies as human capital spiritual economics is the idea behind education with ethics, moral and human values.

Empowered Governance as SMART (Simple, Moral, Action-oriented, responsive and Transparent) and SIMPLE (SQ development, Intuition development, Mental level development, Physical development and EQ development) models Development in the book 'Economics of Human Resource Development in India (2012)' are to be adopted for effective leadership at all levels. We need Glocalization as a development strategy as a pivotal idea of India to achieve SDGs 2030.

Some Suggestive Measures and Corrections for Draft National Education Policy (DNEP)

DNEP abounds in innumerable beneficial schemes and changes which are proposed to be Implemented in present education system. A great concern has been voiced in the DNEP towards utterly poor employability, shortage of well qualified teachers, lack of research culture and poor connect with industries, which are urgently required to be dealt effectively and shortly with effective regulatory system by the New Education Policy. In Higher Education Segment, following are some of the points which the policy need review to provide concrete solution:

- 1. The DNEP indicates a long-time frame for implementation (2030) which appears to be high period. New policy should be fully implemented by 2022-23 max.
- 2. The policy calls for discontinuation of standalone universities of professional education like Agriculture by 2030. 11 years period is quite large, it should be reduced to 2022.
- 3. Introduction of permanent employment track for faculty by2030 us good feature but 10-11 years delay dilutes the seriousness of the problem.
- 4. Dearth of qualified faculty is the big reason of poor quality education, for years institutes are operating with less faculties. The new policy as well does not provide any effective remedy to overcome the shortcomings. Filling up all Academic and Non-academic posts by 2023 in HEIs is long period. This should be done within 15-18 months including all the private universities. One good option to address shortage of faculty is by relaxing age limit from 65 to 75 subject to medical fitness for faculty.
- 5. In government institutions, faculty is over secured and in private totally insecure. Policy is not addressing the issue of accountability, financial assurance, security and stability of faculty.
- 6. Teaching is last choice for job with the youth these days, resulting in poor material, unwilling people and temporary job seekers only taking up teaching profession in higher education sector. This is a well-known fact and must be addressed effectively in the policy.
- 7. With current pace of technology change, teachers need frequent upgradation training and developmental programmes. For the kind of teacher's strength in higher education, formal institutes to provide staff training/faculty development and new knowledge are highly inadequate.
- 8. Empowerment of faculty with academic autonomy has been considered in the policy. But what is needed is to ensure financial stability and job security which is not there currently with almost 60% of the faculty. Five years' probation period (extendable) for faculty appears too high and can be exploited by employers. Probation period of 1 or 2 years could be reasonable.

Curriculum and Research:

The policy calls for multidisciplinary and liberal education and CBCS based, semester system by specific date in all institutions (by 2021). Liberal UG programme of two types of varying durations i.e. three years and four years is the striking feature of this policy. One-year Certification course; Two years Diploma course; Three years Degree course and Four years integrated course with research. This will improve research orientation, research environment and research facilities at the same time Research Oriented candidates can be identified this way.

Examination:

Examination is another big problem for all the institutions, most of the time and energy of institutions goes into conducting examinations evaluating papers and declaring results. There is need of equal emphasis on learning experience and learning environment which is not needed to be assessed through written exam. Terms and examination should reduce to less than 50% subjects. The policy should make efforts to reduce burden of examination by introducing and implementing effective continuous evaluation system.

Provision of employing retired faculty with no age limit as Research mentors for State universities should be extended to private universities.

There is no provision of formal training for non-teaching staff in higher education. The policy talks of leadership training of faculty, formal training centers for training Registrars, Examination Controllers and other non-teaching staff in governing body, Divisional Council and subject committee members in rotation from private institutions and industries should be included to make the bodies more effective.

Establishment of NRF is a very good feature of the policy. However, private institutions which provide for more than 60% of student strength will need due share and initial hand holding to establish good research facility. At policy level this fact needs to be included and after implementation/execution a system be introduced to monitor ground reality every year in order to make corrections.

The policy proposes to encourage institutes to put up proposals that help build research capacity at State Universities. All Private Universities also should be included in this.

Since the new policy considers all institutions including private at par, the new HEGC should take this into account for allotment of developmental funds and include private institutions also for developmental funding. This should be implicitly indicated in the policy.

A very good initiative in the policy is to treat all private institutions. However, discrimination remains as policy says that except for research, expenditure on all other developmental and academic activities of private institutions will be borne by themselves whereas government institutions will continue getting government grants for such activities. This needs reconsideration.

Funding by Ministries and Departments to institutions now should treat private universities. This should be implicitly indicated here in the policy and included in policy addendum.

Present system is also lagging behind in the area of Internationalization. It is absolutely essential that the universities and organizations both within as well as abroad to support internationalization in Indian institutions by having MOUs with foreign universities that encourage student and faculty exchanges. Joint research efforts should be promoted.

Regulations should be made as such that universities should be truly autonomous and accountable in all respects. Rider should be implemented to universities to encourage becoming accountable by creating their own corpus fund for research, innovation and entrepreneurship.

Conclusion:

Formulating a policy is a herculean task for which although 27 years have passed since we have not been able to formulate new policy. The NEP released on 29 July 2020 intend a holistic reformation of Indian Education system. Today there is need to revive Indian education taxonomically, right from roots. Right to Food should precede the Right to Education. There is an evident tussle between communism and socio-capitalism. The identity of our education is at stake as our education is being governed by neo-liberalism, neo-capitalism and neo-imperialism. Education ought to revive its identity at all levels in all forms. There is an added focus on learning outcome indicators. But we are evidently indifferent towards the input, process and throughout parameters. There is added focus on information and communication technology, but technology is not advanced to the extent that we can realize technological de-schooling. Unless we revive the culture of the orient, faith in each other, no biometrics and tablets

would help us. To sum up, the above are few suggestions to be scoped for implementation on prior basis along with we require to resolve the public and private dichotomy in education. Niti and Niyojan should go hand in hand.

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वैश्विक विकास- समस्याएं, संभावनाएं एवं चुनौतियां

डा० अभय कुमार मीतल एसोसिऐट प्रोफेसर एवं विभागाध्यक्ष, वाणिज्य विभाग साहू जैन महाविद्यालय, नजीबाबाद

सार

सम्पूर्ण विश्व में विभिन्न क्षेत्रों में पिछले कुछ दशकों में क्रान्तिकारी परिवर्तन हुए हैं। प्रत्येक क्षेत्र में विकास, आविष्कार, नवोन्मेष के नवीन आयाम स्थापित हुए हैं। शिक्षा, तकनीक, इलैक्ट्रनिक्स, अंतरिक्ष, सुरक्षा, चिकित्सा, उद्योग आदि कोई भी क्षेत्र इस विकास प्रक्रिया से अछूता नहीं है। परन्तु यह भी दृष्टिगोचर हो रहा है कि विकास की इस दौड़ एवं होड़ में हमनें विकासजनित विनाशकारी तथ्यों की अनदेखी की है जिससे वैश्विक स्तर पर अनेकों समस्याओं का जन्म हुआ है। इन समस्याओं में पर्यावरण प्रदूषण, राजनीतिक हस्तक्षेप, साइबर क्राइम, आतंकवाद, आर्थिक विषमताएं एवं असमानताएं, भ्रष्टाचार, सकारात्मक सोच का अभाव , उपलब्ध आविष्कारों एवं संसाधनों का दुरुपयोग, इलेक्ट्रानिक्स के कबाड़ की निस्तारण समस्या; अनेकों ऐसी बुराइयां एवं समस्याएं इस विकास की दौड़ के कारण उत्पन्न हुई हैं जिन्होंने मानवजाति के समक्ष अस्तित्व का संकट उत्पन्न कर दिया है। विकासजनित इन विनाशकारी समस्याओं का समाधान तथा इनकी रोकथाम अति आवश्यक है। पर्यावरण प्रदूषण, वायु प्रदूषण, जल प्रदूषण आदि में तात्कालिक सुधार अति आवश्यक है। राजनीतिक हस्तक्षेप एवं भ्रष्टाचार पर पूर्णतः अंकुश लगाया जाना चाहिए। विकास की इस प्रक्रिया में जहां सर्वाधिक प्रसार इलेक्ट्रोनिक्स एवं इन्टरनेट का हुआ है, वहीं बढ़ते हुए साइबर क्राइम से विश्व के प्रत्येक देश में जनमानस त्रस्त हुआ है। हम विकास के लाभों का समुचित प्रयोग कर पाएं, विकास की श्रुंखला का सकारात्मक एवं सार्थक उपयोग हो सके; इसके लिए इन समस्याओं का निदान अति आवश्यक है वरना आगामी और भावी पीढ़ी हमारी इन कमियों के लिए हमें शायद कभी माफ नहीं कर पाएगी और उनका जीवन इन विकासजनित समस्याओं से नकारात्मक रूप से प्रभावित होगा। हम सब वैश्विक स्तर पर इन समस्याओं के निराकरण और समाधान के लिए संयुक्त नीति बनाएं और संयुक्त प्रयास करें; तभी विकास के मायने सार्थक हो पाएंगे।

मुख्य शब्द– इलेक्ट्रोनिक्स, इन्टरनेट, विकासजनित, राजनीतिक हस्तक्षेप, भ्रष्टाचार, प्रदूषण

यदि हम पिछले कुछ दशकों का वैश्विक स्तर पर अवलोकन करें तो हमें चरम विकास और चरम विनाश दोनों के ही अनेकों उदाहरण मिल जाएंगें। मानवीय महत्वाकांक्षाएं अंतहीन हैं और यही वो कारण है जो जहां चरम विकास का कारण है, वहीं इसी कारण से महाविनाश की गाथा भी लिखी जाती है। यदि हम विश्लेषणात्मक दृष्टि से अवलोकन करें तो शिक्षा, तकनीक, इलैक्ट्रोनिक्स, अंतरिक्ष, सुरक्षा, चिकित्सा उद्योग आदि अनेकों क्षेत्रों में विकास के नवीन आयाम स्थापित हुए हैं, आविष्कारों एवं नवोन्मेष की बाढ़ सी दिखायी देती है, हर क्षेत्र में प्रगति एवं विकास की नवीन बयार दृष्टिगोचर होती है। हर क्षेत्र में नित नवीन प्रयोग किए जा रहे हैं, मनुष्य शोध एवं अनुसंधान के माध्यम से नवीनतम कीर्तिमान स्थापित करने में जुटा है और यह सारी क्रियाएं किसी देश, क्षेत्र तक सीमित न होकर वैश्विक स्तर पर व्याप्त है। विकास और प्रगति की इस दौड़ में कोई देश पिछड़ना नहीं चाहता, हर कोई विकास की इस अंधी दौड़ का हिस्सा है बिना भविष्य पर विचार किए, बिना भावी दुष्परिणामों की चिन्ता किए, सब एक दूसरे से आगे निकलने की होड़ में लगे हुए हैं। यह विकास की अंतहीन दौड़ हमें भविष्य की किन संभावनाओं को ओर लेकर जा रही है, इसके दूरगामी दुष्परिणाम क्या हो सकते हैं, पर्यावरण पर इसका क्या दुष्परिणाम होगा, क्या हमारी भावी पीढी निष्क्रिय और संवेदनाशून्य तो नहीं हो जाएगी, भावनाओं का दरिया सूख तो नहीं जाएगा, इस सब पर विचार करने का शायद न तो किसी के पास समय है और न ही शायद इसकी कोई आवश्यकता अनुभव की जा रही है। नवोन्मेष एवं विकास एक स्वाभाविक प्रक्रिया है और मानव एवं मानवता के विकास के लिए आवश्यक भी, इस विकास प्रक्रिया के दूरगामी परिणामों एवं दुष्परिणामों पर भी विचार किया जाना परम आवश्यक है। इन दूरगामी दुष्परिणामों अथवा विकास जनित समस्याओं पर भी शोध एवं अनुसंधान की नितांत आवश्यकता है। यदि हम इन्हें समाप्त नहीं कर सकते तो न्यूनतम करने की दिशा में प्रयत्न अवश्य करने चाहिए तभी वस्तुस्थिति में सुधार संभव होगा और विकास के सार्थक एवं सुखद परिणाम प्राप्त हो सकेंगें। विकास की प्रक्रिया अवश्यमभावी है, इस सत्य से मुख नहीं मोड़ा जा सकता न ही इस सत्य को कोई भी नकार सकता है परन्तु इस वैश्विक विकास प्रक्रिया की होड़ में यह अवश्य दृष्टिगत रखा जाना चाहिये कि इस विकास से पर्यावरण नकारात्मक रूप से प्रभावित न हो, मानव मूल्यों का क्षरण न हो। यदि हम विकासजनित दोषों को पूर्णतः समाप्त नहीं कर सकते तो विभिन्न प्रयासों के माध्यम से उनका भी सकारात्मक समाधान अवश्य तलाश किया जाना चाहिए तभी इस विकास का वास्तविक लाभ मानव जाति को प्राप्त हो सकेंगा यह भी एक निर्विवादित सत्य है। हम अगर विभिन्न आविष्कारों, नवोन्मेषों एवं विकास प्रक्रियाओं का विश्लेषणात्मक अध्य्यन करें तो यह सुगमता से ज्ञात हो सकता है कि हमनें क्या पाया और अर्जित किया, साथ ही क्या खोया और क्या—क्या डानियां उठायी। इस प्रकार के ईमानदार एवं सार्थक आत्मविश्लेषण के सम्बन्ध में गहन शोध की आवश्यकता ही। ही है वरन् उससे प्राप्त परिणामों के आधार पर गहन चिंतन कर उपयोगी सुझावों को अंगीकार किए जाने की आवश्यकता है।

विकास प्रक्रियाः–

यदि हम सम्पूर्ण विश्व को अपने अध्ययन का केन्द्र मानें तो लगभग प्रत्येक राष्ट्र ने अपनी—अपनी क्षमताओं के अनुसार विभिन्न क्षेत्रों में पिछले कुछ दशकों में विकास के नवीन आयाम एवं कीर्तिमान स्थापित किए हैं। शिक्षा जगत में तख्ती एवं ब्लेकबोर्ड से लॉग टेबिल, कैलकुलेटर, पी.सी., आधुनिक कम्प्यूटर से लेकर ऑनलाइन शिक्षा तक का सफर हमने तय किया है। Classroom Teaching से Virtual Education तक हम आ गए हैं। कोचिंग प्रक्रियाओं में जमीन आसमान का परिवर्तन हुआ है। जहां एक ओर शिक्षकों की शैक्षिक पद्धतियों में क्रान्तिकारी परिवर्तन हुए हैं, वहीं दूसरी ओर विद्यार्थियों के दृष्टिकोण में भी रचनात्मक परिवर्तन हुए हैं। ज्ञान अर्जित करने की विधाओं में भी परिवर्तन उल्लेखनीय है। जहां पहले शिक्षा एवं ज्ञान अर्जित करने का माध्यम मात्र शैक्षणिक संस्थान एवं शिक्षक ही थे वहीं अब शिक्षकों एवं इन शैक्षणिक संस्थानों के अतिरिक्त Net & Google जैसे अस्त्र विद्यार्थियों को सर्वसुलभ हैं जिनसे वह आवश्यक एवं अतिरिक्त ज्ञान अर्जित कर सकते हैं। शिक्षा के इस परिवर्तित होते स्वरूप को शैक्षणिक संस्थानों ने भी स्वीकार कर अपनी संरचनाओं में सामायिक परिवर्तन किए हैं। Smart Classes से Virtual Classes तक की सारी प्रक्रियाओं को विभिन्न शैक्षणिक संस्थानों द्वारा अपने पाठ्यक्रम के रूप में सम्मिलित कर इन नवीनताओं और नवोन्भेष का स्वागत किया गया है। इन शैक्षिक पद्धतियों ने विद्यार्थियों के अध्ययन के क्षेत्र और स्वरूप को विस्तृत किया है तथा संभावनाओं एवं विकास के एक नवीन पथ को प्रशस्त किया है।

तकनीकः–

यदि मानव ने सर्वाधिक विकास की यात्रा तय की है और वह भी अत्यन्त तीव्र गति से, तो वह तकनीकी क्षेत्र में है। तकनीकी विधा प्रत्येक क्षेत्र एवं प्रत्येक कार्य में सम्मिलित है। शिक्षा, उद्योग, चिकित्सा, इंजीनियरिंग, अंतरिक्ष, सुरक्षा, पेड़–पौधे, पर्यावरण, परिवहन आदि अनगिनत क्षेत्रों का उल्लेख किया जा सकता है जहां पर मानव ने उन्नत तकनीक के प्रयोग से नित नवीन कीर्तिमान स्थापित किए हैं। तकनीकों को दिन प्रतिदिन और अधिक उन्नत बनाने के लिए शोध एवं अनुसंधान निरन्तर किए जाते हैं और विकास क्रम में उसके परिणाम भी दृष्टिगोचर होते हैं। वैश्विक स्तर पर नवीन से नवीन तकनीक प्रत्येक क्षेत्र में अपनायी जा रही है। मानव एक प्रकार से इन तकनीकों पर पूर्ण रूप से निर्भर हो गया है। हर दिन तकनीक के क्षेत्र में नवीन आयाम स्थापित हो रहे हैं। आज की नवीनतम तकनीक शीघ्र ही आगामी नवीन तकनीक से प्रतिस्थापित हो जाती है। नित नवीन शोध, अनुसंधान, आविष्कार, नवोन्मेष सब तकनीकी विकास के कारण ही संभव हुआ है। प्रत्येक क्षेत्र में नवीनतम अध्य्यन एवं नवीनाओं की खोज आधुनिकतम तकनीक का ही परिणाम है।

चिकित्साः–

वैश्विक स्तर पर प्राचीनकाल में चिकित्सा हकीम, वैद्यों द्वारा जड़ी–बूटियों अथवा परम्परागत तरीकों से सम्पन्न की जाती थी। यूनानी, आयुर्वेदिक अथवा दादी–नानी के नुस्खे चिकित्सा का आधार थे। परन्तु क्रमिक विकास के चलते चिकित्सा की नवीनतम पद्धतियों की खोज हुई, शल्य चिकित्सा के माध्यम से अनेकों बीमारियों का निदान संभव होना लगा। अब तो वर्तमान चिकित्सा पद्धति को वैश्विक स्तर पर इतना विकसित कर लिया गया है कि किसी भी अंग का प्रत्यारोपण तक एक सामान्य बात है। चिकित्सा के माध्यम से विभिन्न अपंग व्यक्तियों को एक उल्लेखनीय स्तर तक स्वस्थ कर दिया जाना, नेत्रहीनों को दृष्टि प्रदान करना जैसे कार्य चिकित्सा क्षेत्र में सामान्य रूप से किए जाने लगे हैं। यह चिकित्सा के क्षेत्र में व्यापक विकास का परिणाम ही है कि हम आज विभिन्न चिकित्सा पद्धतियों के माध्यम से असाध्य रोगों का भी निदान प्राप्त करने में सक्षम हुए हैं। चिकित्सक रोज नवीन शोध एवं अनुसंधान कर चिकित्सा की प्रक्रियाओं को नवीन ऊंचाइयों पर ले जा रहे हैं और वर्तमान में प्रत्येक असाध्य से असाध्य रोग का भी किसी न किसी रूप में या तकनीक से इलाज एवं निदान संभव हो गया है। भारत में भी चिकित्सा पद्धतियाँ वैश्विक स्तर पर प्रतियोगी दृष्टि से अत्यन्त उन्नत हुई हैं और हमारे लिए यह गौरव का विषय है कि उनकी गुणवत्ता अधिक एवं लागत अपेक्षाकृत कम होने के कारण अन्य देशों के व्यक्ति भी चिकित्सा के लिए भारत में आने को प्राथमिकता देने लगे हैं।

उद्योगः–

औद्योगिक जगत का वैश्विक परिदृश्य पिछले कुछ समय में विकास की दृष्टि से अत्यन्त ही अनूठा कहा जा सकता है। हस्तक्रियाओं से मशीनीकरण, मशीनीकरण से कम्प्यूटरीकरण और कम्प्यूटरीकरण से स्वचालित पद्धतियों तक औद्योगिक विकास की अनवरत यात्रा चलती रही है और चलती रहेगी। पहले अनेकों वस्तुओं के लिए कुछ देश दूसरे देशों पर पूर्ण रूप से निर्भर रहते थे परन्तु संसाधनों की व्यापकता एवं औद्योगिकीरण के क्रान्तिकारी विकास ने इस निर्भरता को अपेक्षाकृत कम किया है। अब केवल कुछ एकाधिकारी मदों को छोड़कर प्रत्येक देश उत्पादन में आत्मनिर्भर हुआ हैं, आयात घटे हैं और निर्यातों में वृद्धि हुई है। विभिन्न उद्योगों ने उत्पादन के क्षेत्र में स्वस्थ परम्पराओं, साफ–सफाई, चिकित्सकीय सावधानियों, पर्यावरण संरक्षण आदि को अंगीकृत किया है। आधुनिकतम तकनीकों के माध्यम से न केवल उत्पादन में वृद्धि हुई है वरन् उत्पादन लागत में भी उल्लेखनीय कमी हुई है। अगर हम परम्परागत उद्योगों से तुलनात्मक अध्ययन की दृष्टि से देखें तो वर्तमान औद्योगिक जगत एक क्रान्तिकारी परिवर्तन के साथ पूर्णतः परिवर्तित एवं नवीन स्वरूप में दृष्टिगोचर होता है। विभिन्न राष्ट्रों ने उद्योगों के विभिन्न विशिष्ट क्षेत्रों में अपनी विशिष्टताएं स्थापित की हैं।

अंतरिक्षः–

चांद तारों को दूर से निहार कर खुश होने वाली मानव जाति आज विभिन्न ग्रहों पर आवासीय कालोनियों को बनाने का स्वप्न संजोने लगी है। चन्दा मामा दूर के की कल्पना से इतर न जाने कितने ही देशों ने चन्द्रमा पर अपना ध्वज फहराया है। मंगल और शुक्र जैसे ग्रह भी अब मानव की पहुंच से दूर नहीं। वैश्विक परिदृश्य का अवलोकन करें तो न जाने कितने राष्ट्रों ने अंतरिक्ष के अनसुलझे रहस्यों की परतों को उजागर करने के लिए न जाने कितने उपग्रह अंतरिक्ष में स्थापित किए हुए हैं। अनेकों वैज्ञानिकों के दल इन अनबूझ रहस्यों को सुलझाने के लिए दिन—रात परिश्रम कर रहे हैं। अब इस क्षेत्र में भी पूर्व की भांति मात्र अमेरिका या रूस का वर्चस्व नहीं रहा है। जहां भारत ने सर्वप्रथम मंगल अभियान चला कर सम्पूर्ण विश्व को अचम्भे में डाल दिया वहीं विश्व के अनेकों देश अंतरिक्ष सम्बन्धी नवीन अध्य्यन और कीर्तिमानों को स्थापित करने में जुटे हुए हैं। कुल मिलाकर यदि वैश्विक विकास की दृष्टि से हम अंतरिक्ष क्षेत्र का समग्र अवलोकन करें तो विकास की एक ऐसी दौड़ दिखायी पड़ती है जिसमें कोई भी देश पीछे नहीं रहना चाहता, जब तक सृष्टि का अस्तित्व रहेगा तब तक अंतरिक्ष क्षेत्र में नवीनतम खोज निरन्तर की जाती रहेगी और यह विकास क्रम अनवरत चलता रहेगा।

सुरक्षाः–

जहां जीवन के अन्य विभिन्न क्षेत्रों में मानव ने विकास के नवीन आयाम एवं कीर्तिमान स्थापित किए हैं वहीं पारस्परिक प्रतिस्पर्धाओं ने उसे सुरक्षा के प्रति सजग होने को भी विवश किया है। तीर कमान, ढाल तलवार, हाथी, घोड़े से प्रारम्भ हुई यात्रा वर्तमान में विध्वंसकारी बमों, जेट, राफेल, पनडुब्बियों, ए.के. 47, ए.के. 56 या और भी न जाने कितने आधुनिक अस्त्र—शस्त्रों तक पहुंच चुकी है। प्रत्येक देश अपने अपने राष्ट्र की सुरक्षा के लिए आधुनिकतम तकनीकों को संजोने में जुटा हुआ है। रासायनिक बम अब बीते कल की बात हो चुके । थल, जल एवं वायु प्रत्येक क्षेत्र की सुरक्षा आवश्यकतानुसार आधुनिकतम स्वचालित संयंत्रों द्वारा की जाने लगी है। हर देश अपनी श्रेष्टता प्रमाणित करने में लगा हुआ है। हर देश मारक हथियारों की इस दौड़ में नित नवीन शोध एवं अनुसंधान कर रहा है और अपने आपको सुरक्षा की इस दौड़ में अग्रणी स्थापित करने के लिए अग्रसर है। सुरक्षा अत्यन्त आवश्यक भी है। प्रत्येक राष्ट्र को अपनी सुरक्षा के प्रति जागरूक होना भी चाहिए परन्तु चिन्ताजनक यह है कि मानव की यह सुरक्षा जागरूकता उसके अस्तित्व के लिए ही खतरा न बन जाए। विकास प्रक्रिया जब विध्वंस करती है तो कल्पना भी अत्यन्त भयावह होती है। विकास संयंत्रों का विनाश के लिए प्रयोग मानव जाति के अस्तित्व को भी संकट में डाल सकता है, इस पर गम्भीरता पूर्वक विचार किए जाने की आवश्यकता है और किसी न किसी स्तर पर वैश्विक अंकुश भी आवश्यक है।

विकास की समस्याएं–

विकास एक अवश्यमभावी प्रक्रिया है, इस स्थापित सत्य को नकारा नहीं जा सकता । प्रत्येक क्षेत्र में वैश्विक विकास की अवधारणा भी निश्चय ही स्वागत योग्य है। परन्तु विकास की यह अंधी दौड़ हमें कहां ले जा रही है, इसके दुष्परिणाम क्या हो रहे हैं, क्या हो सकते हैं, किन बिन्दुओं पर विकास हमें विनाश की ओर ले जा सकता है। विकास का अन्धानुक्रम कितना घातक हो सकता है, विकास प्रक्रिया का दुरूपयोग मानव जाति को किस प्रकार नकारात्मक रूप से प्रभावित कर रहा है या भविष्य के लिए भयावह खतरे उत्पन्न कर सकता है, यह सब अत्यन्त गम्भीर विषय है जिन पर चर्चा की जानी आवश्यक है। वैश्विक स्तर पर इन विषयों पर गहन मनन एवं चिन्तन किए जाने की आवश्कता है वरना विकास की यह प्रक्रिया मानव जाति के सूत्रधार के रूप में मानव जाति की आने वाली पीढ़ी के लिए अनेकों समस्याएं उत्पन्न कर सकती है। विकास के परिणाम स्वरूप जहां अनेकों सुखद अनुभूतियां हैं वहीं एक ओर नकारात्मक विचारधारा के लोग इसका दुरुपयोग करते हैं तथा दूसरी ओर इस विकास प्रक्रिया के कुछ स्वभाविक दुष्परिणाम भी होते हैं जिनसे सम्पूर्ण मानव जाति पर दुषप्रभाव होते हैं और स्वतः विनाश की प्रक्रिया का उदय हो जाता है। विकास जनित दुष्परिणामों को निम्न प्रकार संक्षेपित किया जा सकता है:—

- 1. आतंकवादः— आज सम्पूर्ण विश्व आतंकवाद की समस्या से जूझ रहा है। आतंकवाद विकास के दुष्परिणाम के रूप में ही उदय हुआ है। कुछ विकृत मानसिकता के लोग इस वैश्विक विकास की धारा में आतंकवाद का अवरोध उत्पन्न करते हैं और लाचार, गरीब या अपनी तरह के ही विकृत मानसिकता वाले लोगों को ही विभिन्न लालच देकर अथवा उनकी मजबूरी का लाभ उठाकर संगठित कर लेते हैं और विनाशकारी एवं विध्वंसकारी क्रियाओं को निष्पादित करते हैं जिससे न जाने कितनी ही निर्दोष जानें जाती हैं और वैश्विक सम्पदा की हानि होती है। अमेरिका, रूस, जर्मनी, भारत, अरब देश, हांगकांग आदि सभी देशों में किसी न किसी न जिल्ती ही निर्दोष जानें जाती हैं और वैश्विक सम्पदा की हानि होती है। अमेरिका, रूस, जर्मनी, भारत, अरब देश, हांगकांग आदि सभी देशों में किसी न किसी रूप में आतंकवाद विद्यमान है और मानवजाति के विकास में बहुत बडा अवरोध है। यह मानवजाति के लिए मानव जनित एक ऐसी समस्या है जिसका समूल नाश किया जाना अतिआवश्यक है। आतंकवाद हमारी आधुनिकता एवं विकास का विध्वंसात्मक स्वरूप है। विकास के लिए किए गए आविष्कारों का प्रयोग आतंकवादी मनोवृत्ति के व्यक्ति विनाश के लिए करते हैं और समूची मानव जाति को अपने कुकृत्यों से न केवल हानि पहुंचाते हैं वरन् अपनी दूषित मानसिकता से कलंकित भी करते हैं।
- 2. दूषित पर्यावरण:- जैसै जैसे वैश्विक विकास का रथ द्रुत गति से अग्रसर हो रहा है वैसै-वैसे वैश्विक स्तर पर पर्यावरण सम्बन्धी समस्याएं भी गहन हो रही हैं। मशीनीकरण, आटोमेशन, परिवहन साधनों का विकास, अंतरिक्ष सम्बन्धी अनुसंधान, कल-कारखानों का विस्तार, औद्योगिकरण यह सभी वर्तमान में किसी भी देश के विकास का पैमाना हैं परन्तु यह भी एक निर्विवादित सत्य है कि इस भौतिकवादी विस्तार के साथ हमारे पर्यावरण की हानि और दूषित होना भी सुनिश्चित होता जाता है। विकास के इस चक्र के साथ-साथ यदि हम सजग न हुए तो मानवता के विनाश की दास्तान स्वतः लिखती चली जाएगी और आगामी पीढ़ी को सामान्य जीवन व्यतीत करने के लिए अनेकों कठिनाइयों एवं बाधाओं का सामना करना पड़ेगा। बढ़ती हुई आबादी और विस्तृत होती रिहाइशी बस्तियां, वनों एवं पेड़ों के कटान का पर्याय बन रही हैं और स्वच्छ पर्यावरण के दूषित होने का कारण भी। पर्यावरण को हानि न जाने कितनी ही समस्याओं बीमारियों को जन्म देती है जो कि सम्पूर्ण मानव जाति के सुखद भविष्य के लिए एक बहुत बड़ा खतरा है। प्रकृति के साथ की जाने वाली यह अतिवादी एवं अनावश्यक छेड़छाड़ भूकंप, बाढ़, अतिवृष्टि, सूखा और न जाने कितनी ऐसी आपदाओं का जन्म दे सकती है जो सम्पूर्ण मानव जति के लिए एक भयावह स्थिति उत्पन्न कर सकती हैं।
- 3. साइबर फ्रॉड एवं अपराध— पिछले दो दशकों में अगर सर्वाधिक तीव्र गति से यदि विकास का पहिया किसी क्षेत्र में घूमा है तो वह इलैक्ट्रोनिक्स के क्षेत्र में। सम्पूर्ण विश्व में इन्टरनेट, कम्प्यूटर, Cashless Transactions & Remote Based Electronics का इतना तीव्र प्रचार—प्रसार हुआ है कि वैश्विक परिदृश्य पूर्ण रूप से परिवर्तित और इन सबसे ओतप्रोत दिखायी देता है। विश्व का हर देश बढ़—चढ़ कर इस इलैक्ट्रोनिक्स क्रान्ति में हिस्सा ले रहा है। नित नवीन आविष्कार एवं अनुसंधान इस क्षेत्र में दृष्टिगोचर हो रहे हैं। परंतु हर सकारात्मकता के साथ नकारात्मकता स्वतः ही उत्पन्न हो जाती है। हर सदुपयोग किए जाने वाले साधन का विनाशात्मक एवं दोषपूर्ण उपयोग मानव अपने स्वार्थ के लिए करने को तत्पर हो जाता है। यदि सम्पूर्ण विश्व के परिदृश्य का अवलोकन करें तो इस इन्टरनेट क्रान्ति के साथ साइबर क्राइम की भी बाढ़ सी आ गयी है, व्यक्ति हजारों किलोमीटर दूर बैठकर भी धोखाधड़ी करने में सक्षम हो गया है। आपके आंकड़े, गोपनीय सूचनाएं अब किसी भी प्रकार से सुरक्षित नहीं रह गयीं हैं, डिजिटल सुविधाओं के साथ डिजिटल अपराधों ने सम्पूर्ण विश्व को त्रत्ततः खोज ही लिया जाना संभव था वहीं साइबर क्राइम को खोजना एवं अपराधी को सजा देश जो तत्पर हो जाता है। वहां हो। जहां साधारण अपराधों को अन्ततः खोज ही लिया जाना संभव था वहीं साइबर क्राइम को खोजना एवं अपराधी का सजा ही। जाता देना एक अत्यन्त दुष्कर कृत्य है क्योंकि यह आवश्यक नहीं कि अपराध करने वाला उसी देश में बैठकर यह कृत्य कर रखा हो। विकासशील देशों एवं अविकसित देशों में जहां जनसंख्या ज्यादा है, संसाधनों की अल्पता और ज्ञान का अभाव है, वहाँ इस प्रकार के अपराधों की संख्या और भी अधिक है।

- 4. आर्थिक असमानता:— स्वचालित उद्योगों के प्रसार, मशीनीकरण आदि अनेकों ऐसी विधाएं हैं जिनमें सम्पूर्ण विश्व में नवीन कीर्तिमान स्थापित हो रहे हैं। न केवल सरकारी क्षेत्र में वरन् निजी क्षेत्र में भी इस औद्योगिक क्रान्ति के फलस्वरूप रोजगार के अवसर तथा पारिश्रमिक की दरों में अभूतपूर्व उछाल परिलक्षित हुआ है। परन्तु इसका दूसरा पक्ष जिसकी चर्चा इस विकास प्रक्रिया में गौण हो जाती है वह यह है कि श्रमिक और मजदूरों के लिए रोजगार एवं कार्य के अवसर कम हुए हैं, मशीनीकरण एंव स्वचालन के कारण बेरोजगारी में वृद्धि हुई है। सम्पूर्ण विश्व में जहाँ धनी और अधिक धनी हुआ है वहीं एक निर्धारित वर्ग को अपनी रोजी रोटी चलाना और दैनिक आवश्यकताएं पूरी करना भी अत्यन्त कठिन हो रहा है। यह बढ़ रही आर्थिक असमानता आक्रोश एवं क्रोध को जन्म देती है जिसका परिणाम विभिन्न अपराधों के रूप में परिवर्तित होने लगता है। यह आर्थिक विषमताएं हमारे पूरे विकास तंत्र को नकारात्मक रूप से प्रभावित करती हैं और विकास की दर को नकारात्मक रूप से प्रभावित करती हैं।
- 5. भ्रष्टाचार- भ्रष्टाचार के जन्म का मूल निहित व्यक्तिगत स्वार्थ होता है। सम्पूर्ण विश्व में प्रत्येक देश में यह भ्रष्टाचार का पेड़ किसी न किसी रूप में फल-फूल रहा है। किसी भी राष्ट्र की विकास प्रक्रिया की सबसे बड़ी बाधा यह भ्रष्टाचार है। आधिकारिक तौर पर, निजी तौर पर भ्रष्टाचार में संलिप्त व्यक्ति निहित व्यक्तिगत स्वार्थों के कारण सार्वजनिक हितों की बलि चढ़ा देते हैं और उनके इन कृत्यों से सम्पूर्ण विकास प्रक्रिया ही बाधित नहीं होती वरन ईमानदारी के कार्य करने वाले वर्ग का मनोबल भी कमजोर होता है और नकारात्मक ऊर्जा सकारात्मक ऊर्जा को नष्ट करने लगती है। भ्रष्टाचार की जड़ें इतनी गहरी हैं कि हमें बड़े-बड़े फ्रॉड, स्कैम आदि की गूंज बार-बार सुनाई पड़ती रहती है। भ्रष्टाचार एक ऐसी भयानक संक्रामक बीमारी है जिसकी रोकथाम के बिना विकास क्रिया का निर्बाध रूप से चलना अत्यन्त कठिन एवं दुष्कर है। भ्रष्टाचार का सर्वाधिक बड़ा खतरा यह है कि यह एक व्यक्ति से दूसरे तक तीव्र गति से विस्तार करता है और कम समय में अधिक धनार्जन की मनुष्य की स्वाभाविक प्रवृत्ति उसे इस ओर आकृष्ट करके भ्रष्टाचार के दलदल में खींच लेती है। सरकारी एवं आधिकारिक तंत्र में बैठे लोग अनुचित लाभ प्रदान करने के नाम पर और निजी क्षेत्र मे कार्य कर रहे लोग कम-श्रम, अल्प समय में धनी होने के नाम पर भ्रष्टाचार को तत्र में बैठे लोग अन-श्रम, अल्प समय में धनी होने के नाम पर भ्रष्टाचार को ही ने लाभ पर भ्रष्टाचार की तत्र में बने लाम पर भ्रष्टाचार की प्रवृत्ति उसे इस ओर आकृष्ट करके भ्रष्टाचार के दलदल में खींच लेती है। सरकारी एवं आधिकारिक तंत्र में बैठे लोग अनुचित लाभ प्रदान करने के नाम पर और निजी क्षेत्र मे कार्य कर रहे लोग कम-श्रम, अल्प समय में धनी होने के नाम पर भ्रष्टाचार की प्रक्रिया का हिस्सा बनते चले जाते हैं और स्वस्थ विकास एवं सार्वजनिक हित की मूल भावना का धीरे-धीरे अस्तित्व कमजोर होता चला जाता है।
- 6. राजनीतिक हस्तक्षेपः– विश्व के विभिन्न राष्ट्रों में व्यवस्था संचालन के लिए विभिन्न राजनीतिक व्यवस्थायें लागू हैं। कहीं राजतंत्र, कहीं प्रजातंत्र अथवा कहीं मिलीजुली व्यवस्थाएं देखने को मिलती हैं। सम्पूर्ण विश्व में सत्ता में बैठे ये लोग भी किसी न किसी रूप में निहित व्यक्तित्व स्वार्थों के लिए सत्ता का दुरूपयोग एवं शक्ति का दुरुपयोग करते हैं। यह भी आज एक सार्वजनिक सत्य बन चुका है। सत्ता हथियाने के लिए सम्पूर्ण विश्व में तरह–तरह के प्रपंच रचे जाते हैं । अमेरिका, नेपाल, भारत न जाने कितने ऐसे उदाहरण हैं जहां सत्ता को हथियाने के लिए साम–दाम , दंड–भेद के अतिरिक्त न्यायपालिका का भी दुरुपयोग किसी न किसी रूप में हमें देखने को मिलता है। जो लोग सरकार चलाते हैं वह अपने व्यक्तिगत हितों को पोषित करने के लिए सार्वजनिक हितों को दरकिनार करने लगते हैं। आपने नाते–रिश्तेदारों, सगे–सम्बन्धियों को अनुचित लाभ पहुंचाने के लिए यह सत्ताधारी लोग विभिन्न प्रकार के भ्रष्टाचार करते हैं, जनता के धन का दुरुपयोग करते हैं, उनको मिली हुई शक्ति का दुरुपयोग करते हैं जिससे न केवल राष्ट्रीय हितों की अनदेखी की जाती है वरन् वे विरिक्त स्तर पर भी हमारे देश की छवि पर विपरीत प्रभाव पड़ता है। विकास की प्रक्रिया राष्ट्रीय एवं अन्तर्राष्ट्रीय स्तर पर बाधित होती है, राजनीतिक अस्थिरता उत्पन्न होती है और सम्पूर्ण सामाजिक, राष्ट्रीय प्रकरत्त रिख्रेया जत्य होती है । आज के प्रतियोगिता के इस युग में किसी भी देश के लिए राजनीतिक स्थितता सबसे महत्वपूर्ण अवयव है और यह तभी संभव है जब शीर्ष पर बेठे लोग राष्ट्रीय रिखे और निजी हितों और स्वार्थों का परित्याग करें।

समस्या समाधान के लिए आवश्यक सुझाव–

विकास एक स्वाभाविक प्रक्रिया है और मानव की सामान्य प्रकृति भी, सृष्टि के सृजन से यह विकास प्रक्रिया सतत् जारी है और रहेगी भी, इस सत्यता से भी इन्कार नहीं किया जा सकता । परन्तु विकास की यह प्रक्रिया एवं होड़ मानव जाति के अस्तित्व को ही हानि न पहुंचाने लगे, इस तथ्य को संज्ञान में रखना भी अति आवश्यक है। विकास हो, आविष्कार एवं सृजन प्रक्रिया बरकरार रहे, मानव जाति नित नए कीर्तिमान विकास हेतु स्थापित करे परन्तु इसके नकारात्मक पक्षों को ध्यान में अवश्य रखा जाए। यह भी सत्य है कि इस प्रकार की विकास जनित हानियों को पूर्णतः समाप्त नहीं किया जा सकता परन्तु उनको न्यूनतम करने के प्रयास अवश्य किये जाने चाहियें। वैश्विक स्तर पर विकास जनित हानियों को समाप्त अथवा न्यूनतम स्तर पर लाने के समवेत प्रयास किये जाने आज की त्वरित आवश्यकता है वरना विकास से होने वाला विनाश विकास की महत्ता को नगण्य कर देगा और आगामी पीढ़ी का जीवन अपेक्षाकृत कठिनाइयों भरा होगा। संक्षेप में इन विकासजनित समस्याओं को दूर करने के लिए निम्न सुझावों के आधार पर हम कुछ सार्थक एवं व्यवहारिक प्रयास कर सकते हैं जिससे इन्हें न्यूनतम सीमा तक ले जाने में हम सफल हो सकते हैं——

- 1. आतंकवाद, कट्टरता के विरुद्ध एकजुटता:-- आतंकवाद आज एक ऐसी विकट समस्या बन गयी है जो विश्व के प्रत्येक देश में किसी न किसी रूप में विद्यमान है। आज आवश्यकता इस बात की है कि वैश्विक स्तर पर सभी राष्ट्र इस ओर मिले जुले प्रयास करें और अपने-अपने देश से इसका जड़ से सफाया करें। जो कोई भी देश आतंकवाद को पोषित करने में संलिप्त हो, उसका प्रत्येक प्रकार से तिरस्कार हो, उसके व्यापार एवं आर्थिक तंत्र को हर प्रकार से बाधित और अवरूद्ध किया जाए। यहां यह भी ध्यान रखना आवश्यक है कि आतंकवाद का मूल; धार्मिक कट्टरता और अन्धविश्वास है, आतंकवाद की समाप्ति के लिए यह आवश्यक है कि प्रत्येक देश अपने नागरिकों को इस ओर जागरूक करे और अपने देश में फैली धार्मिक कट्टरता, अज्ञान और अंधविश्वासों को दूर करने के लिए रचनात्मक एवं सार्थक प्रयास करे। इस सम्बन्ध में स्पष्टतया दोषी व्यक्तियों के लिए त्वरित कठोरतम दंड के प्रावधान हो जिससे कोई भी व्यक्ति न्यायिक शिथिलताओं के कारण पुनः इस ओर उत्प्रेरित होने का दुस्साहस न करे।
- 2. पर्यावरण संरक्षण:- विकास प्रक्रियाओं के कारण शहरों का फैलाव, रिहाइशी बस्तियों का निर्माण विभिन्न कल-कारखानों, इलेक्ट्रोनिक्स विधाओं का विस्तार, कम्प्यूटर, इन्टरनेट का प्रसार, परिवहन साधनों का आधुनिकीकरण आदि विकास की ऐसी श्रृंखला है जिनसे विभिन्न गैसों का उत्सर्जन, वनों का कटान, जल एवं नदियों का प्रदूषित होना आदि अनेकों ऐसी हानियां हैं जिन्होंने न केवल पर्यावरण को दूषित किया है वरन् मानवजाति के समक्ष अस्तित्व का संकट उत्पन्न कर दिया है। यद्यपि सम्पूर्ण विश्व इस ओर काफी हद तक जागरूक हुआ है परन्तु प्रयास अभी अपर्याप्त हैं। इलेक्ट्रानिक्स, कारखानों से निकलने वाली गैसों पर नियंत्रण और कचरे और कबाड़ को पुनः चक्रित किए जाने की आवश्यकता है। पैट्रोल और डीजल से संचालित परिवहन साधनों से चलने वाले उपकरणों एवं परिवहन साधनों के प्रदूषित किए जाने और वैकल्पिक साधनों के उपयोग के प्रचार–प्रसार की संभावनाओं को तलाश किया जाना आवश्यक है। जल प्रदूषण को नियंत्रित किए जाने के लिए जनमें के उपयोग के प्रचार–प्रसार की संभावनाओं को तलाश किया जाना आवश्यक है। जल प्रदूषण को नियंत्रित किए जाने के लिए जनमें के उपयोग के प्रचार–प्रसार की संभावनाओं को तलाश किया जाना आवश्यक है। जल प्रदूषण को नियंत्रित किए जाने के लिए जनमें विकसित हों। वृक्षारोपण को हर राष्ट्र द्वारा प्राथमिकता प्रदान की जाए। पर्यावरण संरक्षण के लिए जो भी प्रयास किय जाने हों वो वैश्विक स्तर पर पारस्परिक संयोजन से यदि संयुक्त नीति के माध्यम से करने के प्रयास किए जाएं तो हम निश्चित ही सकारात्मक एवं साधक एवं साधनों को विकारत हो।
- 3. भ्रष्टाचार उन्मूलन:- विश्व के प्रत्येक राष्ट्र में आज के समय में भ्रष्टाचार किसी न किसी रूप में न केवल विद्यमान है वरन् राष्ट्र के विकास की जड़ों को खोखला कर रहा है। यह समस्या तब और गम्भीर रूप धारण कर लेती है। जब सत्ताधारी और सरकारी व्यक्ति इसमें संलग्न हो जाते हैं। इस समस्या के समूल नाश की आवश्यकता है। प्रत्येक स्तर पर लागू होने वाली योजनाओं, निर्णयों को यथासंभव पारदर्शी बनाया जाए विशेषकर जहां आर्थिक एवं मौद्रिक पक्ष संलग्न हो वहां न केवल पारदर्शिता का ध्यान रखा जाए वरन् स्पष्ट जवाबदेही सुनिश्चित की जानी चाहिए। भ्रष्टाचार की स्थिति में समयबद्ध विधि से कार्यवाही करके कड़े दण्ड का प्रावधान हो जिससे भ्रष्टाचारी व्यक्ति के मन में ऐसा करने से पूर्व ही भय उत्पन्न हो और वह ऐसी क्रियाओं में संलग्न न हो। विभिन्न देशों में न्यायिक शिथिलता के कारण इस प्रकार के मामले वर्षों तक लम्बित रहते हैं, इसके अतिरिक्त अपना देश छोड़कर अन्य किसी देश में भ्रष्टाचारियों का शरण ले लेना भी एक अन्तर्राष्ट्रीय समस्या है। इस समस्या है। इस समस्या है। इस समस्या है। इस समस्या है। जब सत्तार्था वह ऐसी क्रियाओं में संलग्न न हो। विभिन्न देशों में न्यायिक शिथिलता के कारण इस प्रकार के मामले वर्षों तक लम्बित रहते हैं, इसके अतिरिक्त अपना देश छोड़कर अन्य किसी देश में भ्रष्टाचारियों का शरण ले लेना भी एक अन्तर्राष्ट्रीय समस्या है। इस समस्या के समाधान के लिए वैश्विक एवं अन्तर्राष्ट्रीय स्तर पर एक संयुक्त नीति बनाए जाने की आवश्यकता है जिसके अन्तर्गत एक देश के अपराधी को किसी अन्य देश में शरण लेने पर स्पष्ट प्रतिबंध हो। भ्रष्टाचार उन्मूलन के बिना किसी भी राष्ट्र के विकास की निर्बाध कत्पना अत्यन्त दुष्कर है, अतः इसे समाप्त करने के वैश्विक स्तर पर संयुक्त सार्थक एवं सकारात्मक प्रयास किए जाने चाहियें।
- 4. साइबर अपराध पर अंकुशः वर्तमान में साइबर अपराध वैश्विक स्तर पर भयावह समस्या बनकर उभरें हैं। यदि इस समस्या के मूल में हम विश्लेष्णात्मक तरीके से अध्य्यन करें तो हमें ज्ञात होगा कि प्रक्रिया का अज्ञान, अपूर्ण ज्ञान मुख्यतः इस प्रकार के अपराधों का जनक होता है। साइबर क्राइम के कुचक्र में सामान्यतः कम पढ़े–लिखे लोग जो कम्प्यूटरीकृत कार्यों और इन्टरनेट सेवाओं से पूर्णतः परिचित नहीं होते हैं तथा जिनको नित नवीन घट रहे घटनाक्रमों का संज्ञान नहीं मिल पाता, वही फंसते हैं परन्तु अनेकों बार व्यक्तिगत हित एवं स्वार्थ के लालच में पढ़े–लिखे लोग भी इस कुचक्र में फंसने से नहीं बच पाते। इस समस्या के समाधान के लिए सर्वप्रथम हमें डेटा चोरी से बचने के लिए कोई ठोस समाधान ढूंढना होगा, इसके अतिरिक्त साइबर क्राइम में फंसने से जहीं का साइबर क्राइम में का साइबर क्राहम में फरात के लालच के लिए कोई ठोस समाधान ढूंढना होगा, इसके अतिरिक्त साइबर क्राइम में फंसने से बचने के लिए कोई ठोस समाधान ढूंढना होगा, इसके अतिरिक्त साइबर क्राइम में फंसने से बचने के समाधानों का भी उचित प्रचार आवश्यक है जिससे लोग अपनी गोपनीय जानकारी किसी

भी परिस्थिति में किसी के साथ साझा न करें और इस प्रकार के अपराधों का शिकार होने से बच सकें। इसके अतिरिक्त राष्ट्रीय स्तर पर ही नहीं वैश्विक स्तर पर भी एक संयुक्त नीति इस प्रकार के अपराधों की रोकथाम और इन पर अंकुश लगाने के लिए बनाए जाने की आवश्कता है। इसके अतिरिक्त इस प्रकार के अपराधों में संलग्न व्यक्तियों के लिए कठोरतम दंड का प्रावधान भी किया जाना इन अपराधों पर अंकुश लगाने में सहायक सिद्ध हो सकता है।

उपरोक्त के अतिरिक्त विभिन्न नीतियों के क्रियान्वयन में होने वाले राजनीतिक हस्तक्षेप को समाप्त किया जाना चाहिए, बढ़ती हुई आर्थिक असमानता या विषमता को दूर करने के लिए ठोस एवं सुदृढ़ प्रयास किए जाने की आवश्यकता है। सामान्य जनमानस को पूर्ण रूप से शिक्षित किया जाना इस दिशा में महत्वपूर्ण कदम हो सकता है। इलैक्ट्रोनिक्स के कबाड़ का समुचित निस्तारण, तकनीकों का लाभकारी प्रयोग, सकारात्मक औद्योगीकरण, स्वस्थ—मानसिकता, ईमानदार प्रयास, नीतियों का निष्ठा से लागू किया जाना आदि प्रयास प्रत्येक स्तर पर संयुक्त रूप से किए जाने अति आवश्यक हैं।

निष्कर्षः–

यदि हमें वैश्विक विकास की श्रृंखला, जो कि ने केवल परम आवश्यक है वरन् समय की मांग भी है, को निर्बाध जारी रखना है तो उपरोक्त सभी समस्याओं के सार्थक एवं सकारात्मक समाधान तलाशने और उन पर अमल किया जाना अवश्यमभावी है। यदि शीघ्र ही इन गम्भीर समस्याओं को दूर नहीं किया गया तो विकास प्रक्रिया का समुचित लाभ हमें नहीं मिल पाएगा और विकास से प्राप्त होने वाले वास्तविक लाभों से हम वंचित हो जाएंगें। विकास से विनाश का प्रारम्भ न हो, भावी पीढ़ी का जीवन इन विकास जनित समस्याओं से दूभर न हो जाए; इसके लिए यह परम आवश्यक है कि इन समस्याओं का समाधान खोजा जाए, और यदि उन्हें पूर्णतः समाप्त करना संभव न हो तो कम से कम उन्हें न्यूनतम स्तर पर अवश्य ले जाने के सार्थक प्रयास किए जाने चाहियें अन्यथा यह विकास की ब्यार अर्थहीन हो जाएगी और आने वाली भावी पीढ़ी हमें कभी भी क्षमा नहीं कर पायेगी। विकास प्रक्रिया तभी सार्थक और सकारात्मक हो सकती है जब उससे उत्पन्न होने वाली समस्त बुराइयों की यथासंभव रोकथाम हो और उन पर अंकुश लगाने की व्यवस्था हो, तभी विकास सही अर्थों में विकास होगा और सम्पूर्ण विश्व में आम जनमानस इस विकास के लाभों का सदुपयोग कर पाएगा।

ਜ਼ੱदर्भ−

- दैनिक अमर उजाला—– विभिन्न अंक
- इंडिया टुडे— विभिन्न अंक
- प्रतियोगिता दर्पण—– विभिन्न अंक
- विभिन्न वेबसाईटों उपलब्ध विभिन्न लेख, शोधपत्र एवं जानकारियां



भारत में औद्योगिक श्रम संबंधों के क्षेत्र में केन्द्रीय औद्योगिक संबंध तंत्र की भूमिका

डॉ० मनीष कुमार गुप्ता एसोसिऐट प्रोफेसर, वाणिज्य संकाय साहू जैन महाविद्यालय, नजीबाबाद

सारांश

भारत जैसे एक विशाल एवं विकासशील देश में जहां औद्योगीकरण नित नए आयाम स्थापित कर रहा है, ऐसे देश में औद्योगिक विवादों का होना स्वभाविक ही है परंतु फर्म के स्तर पर, कानूनी स्तर पर तथा सरकारी स्तर पर इन औद्योगिक विवादों को सुलझाने के लिए आवश्यक प्रावधान भी किए गए हैं । इसी क्रम में सरकार ने केंद्रीय औद्योगिक संबंध तंत्र अर्थात् मुख्य श्रम आयुक्त केंद्र की स्थापना की जो समझौतों एवं मध्यस्थता के माध्यम से, अपने अधिकार क्षेत्र में विभिन्न कानूनों एवं नियमों के क्रियान्वयन के द्वारा, विभिन्न प्रकार की अर्द्ध–न्यायिक भूमिकाएं निभाकर, श्रम संगठनों की सदस्यता के सत्यापन के द्वारा एवं उनका विधिक सत्यापन कर, आरटीआई अधिनियम के अंतर्गत विभिन्न सेवाएं प्रदान करके तथा अन्य असंख्य सलाहकारी, सहायक, मार्गदर्शक, अन्वेषक, समन्वयक एवं प्रशिक्षक इत्यादि भूमिकाओं का निर्वहन कर रहा है तथा भारत में औद्योगिक संबंधों को मधुर बनाए रखने में सहायक साबित हुआ है। सरकार को विभिन्न श्रम कानूनों–नियमों का समुचित क्रियान्वयन, नवीनीकरण इत्यादि के माध्यम से इस बात को सुनिश्चित करना चाहिए कि औद्योगिक प्रतिष्ठान संबंधी कोई भी पक्ष चाहे वह प्रबंधक हो या नियोक्ता या श्रमिक या ट्रेड यूनियन या राजनीतिक स्तर, कोई भी औद्योगिक विवाद को बढ़ावा ना दे पाये। विभिन्न सरकारी एवं गेर सरकारी प्रयासों के माध्यम से भारतीय उद्योग एवं औद्योगिक वातावरण एक औद्योगिक रामराज की ओर अग्रसर हो रहा है। इस संबंध में भारत में विभिन्न सरकारी प्रयासों के साथ–साथ प्रतिष्ठान स्तर पर प्रयास तथा गैर सरकारी प्रयास भी सराहनीय हैं।

भारत सरकार का रोजगार एवं श्रम मंत्रालय "उत्तम काम की दशाएं और श्रमिकों के जीवन की गुणवत्ता में सुधार, खतरनाक क्षेत्रों में बाल श्रम के बिना उत्पादन को सुनिश्चित करने और स्थायी आधार पर रोजगार सेवाओं और कौशल विकास के माध्यम से रोजगार बढ़ाने की" दूरदृष्टि के साथ काम कर रहा है।

साथ ही रोजगार एवं श्रम मंत्रालय के उद्देश्यों में "काम की परिस्थितियों को निर्धारित करने और, सामाजिक सुरक्षा और कल्याण के उपायों को उपलब्ध कराने के काम, व्यावसायिक स्वास्थ्य और श्रमिकों की सुरक्षा की शर्तों को विनियमित करने, खतरनाक व्यवसायों से बाल श्रम को नष्ट करने के लिए नीतियों, कार्यक्रमों, योजनाओं एवं परियोजनाओं को लागू करने के माध्यम से श्रमिकों के जीवन की गुणवत्ता में सुधार और प्रक्रियाओं, श्रम कानूनों के प्रवर्तन को मजबूत बनाने और कौशल विकास और रोजगार सेवाओं को बढ़ावा देने" के कार्य शामिल हैं।

उपरोक्त सोच एवं उद्दश्यों को देखते हुए भारत सरकार की यह मंशा स्पष्ट है कि सरकार मधुर औद्योगिक संबंधों को पूर्ण प्राथमिकता दे रही है। मधुर औद्योगिक संबंधों के माध्यम से सरकार अर्थव्यवस्था की वृद्धि की दर को उच्च रखने की दिशा मे निरंतर कायम है। मधुर औद्योगिक संबंधों की दिशा में श्रम एवं रोजगार मंत्रालय ने अनेकों संस्थाएं एवं संगठनों का निर्माण किया है जिनके अंतर्गत विभिन्न अधिकारी एवं कार्मिक निरंतर मधुर औद्योगिक सम्बन्ध बनाये रखने के कार्य मे संलग्न हैं। किसी भी प्रकार का औद्योगिक विवाद उत्पन्न होने की दशा में ये संगठन एवं कार्मिक सक्रिय एवं सकारात्मक भूमिका निभाते हुआ इन विवादों का विधिसंवत हल निकालते हैं।

ऐसा ही एक प्रावधान सरकार ने केंद्रीय औद्योगिक सम्बन्ध तंत्र अर्थात् मुख्य श्रम आयुक्त (केन्द्रीय) की स्थापना करके किया है। प्रस्तुत शोध पत्र "भारत में औद्योगिक श्रम संबंधों के क्षेत्र में केन्द्रीय औद्योगिक सम्बन्ध तंत्र की भूमिका" में हम निम्नलिखित बिंदुओं पर चर्चा करेंगें—–

- औद्योगिक संबंध एवं इसकी परिभाषा,
- औद्योगिक विवाद एवं इसके प्रकार,
- केंद्रीय औद्योगिक संबंध तंत्र अर्थात् मुख्य श्रम आयुक्त (केंद्रीय) की स्थापना एवं कार्य,
- केंद्रीय औद्योगिक संबंध तंत्र द्वारा किए गए कार्यों का संख्यात्मक निरूपण,
- निष्कर्ष एवं सुझाव

औद्योगिक सम्बन्धों का आशय एवं परिभाषाएँ

सामान्यतः औद्योगिक संबंधों से आशय श्रमिक एवं नियोक्ता, नियोक्ता एवं श्रम संगठनों, नियोक्ता एवं सरकार, सरकार एवं श्रम संगठनों के बीच पारस्परिक संबंधों से है। ये सम्बन्ध वेतन एवं मजदूरी, कार्य दशाओं , भर्ती, प्रोन्नति, पदानवती, सेवा मुक्ति, सरकारी नीतियाँ, राजनैतिक समीकरण इत्यादि से सम्बंधित होते हैं।

"औद्योगिक सम्बन्धों की अवधारणा राज्य तथा नियोक्ता के सम्बन्धों, श्रमिकों एवं उनके संगठनों का विस्तृत वर्णन है । इसलिए इस विषय के अन्तर्गत व्यक्तिगत सम्बन्ध, श्रमिकों एवं नियोक्ता के बीच कार्य—स्थल पर सामूहिक विचार—विमर्श, नियोक्ता एवं उनके संगठनों तथा श्रम—संघों के बीच सामूहिक—सम्बन्धों तथा इन सम्बन्धों के नियन्त्रण में सरकार की भूमिका शामिल हैं।"

डेल योडर के अनुसार–

"औद्योगिक सम्बन्धों से आशय प्रबन्ध एव कर्मचारियों अथवा कर्मचारियों एवं उनके संगठनों के बीच उन सम्बन्धों से है जो रोजगार से उत्पन्न होते हैं।"

टीड एवं मेटकाफ के अनुसार-

"औद्योगिक सम्बन्ध, नियोक्ताओं और कर्मचारियों की पारस्परिक अभिवृत्तियों एवं विचारधाराओं का संयुक्त परिणाम है, जिसे संगठन की क्रियाओं में न्यूनतम मानवीय प्रयत्नों व मतभेद, सहयोग की तीव्र—भावना से, संगठन के सभी सदस्यों के उचित हितों को ध्यान में रखते हुए नियोजन, पर्यवेक्षण, निर्देशन और समन्वय हेतु अपनाया जाता है।"

बीथल, स्मिथ एवं अन्य के अनुसार-

"औद्योगिक सम्बन्ध प्रबन्ध का वह अंग है जो कि संगठन की मानव—शक्ति से सम्बन्धित है, चाहे वह मानव—शक्ति मशीन को चलाने वाली हो अथवा कुशल श्रमिक अथवा प्रबन्धक।"

जॉन टी. डनलप के अनुसार–

"औद्योगिक सम्बन्ध श्रमिकों, प्रबन्धकों तथा राज्य के बीच पारस्परिक सम्बन्धों की जटिलता को कहते हैं।"

"बढ़ती हुई मजदूरी की दरें, श्रमिकों के रहन—सहन के स्तर में वृद्धि के कारण श्रमिक वर्ग अच्छी शिक्षा तथा अधिक गतिशीलता प्राप्त करना चाहता है । श्रमिक आधुनिकतम मशीनों पर कार्य करते—करते मशीन का हिस्सा बनकर रह गया है, इसलिए उसमें आत्मगौरव और आत्म संतोष की भावना समाप्त हो गई है। आज वह औद्योगिक तनावों के बीच अपना जीवन व्यतीत कर रहा है, अपने अधिकारों, आत्म—सम्मान एवं गौरव को प्राप्त करने के लिए वह पूँजीपति, सेवायोजकों से सघर्ष कर रहा है । इसलिए वर्तमान युग में अधिक औद्योगिक संघर्ष दिखाई देते हैं। इन सब समस्याओं का समाधान मधुर औद्योगिक सम्बन्धों के द्वारा ही किया जा सकता है।"1

प्रबन्ध एवं श्रम के बीच खराब सम्बन्धों का मुख्य कारण कम मजदूरी एवं खराब कार्य दशाओं का होना है । आर्थिक कारणों में मजदूरी से अनाधिकृत कटौती, सुविधाओं की कमी, पदोन्नति के अवसरों की कमी, प्रेरणात्मक मजदूरी का न होना इत्यादि शामिल हैं । दोषपूर्ण संचार व्यवस्था, ट्रेड यूनियन को मान्यता न देना, अनुचित व्यवहार, श्रम कानूनों का उल्लंघन आदि ऐसे संगठनात्मक कारण हैं, जिनके कारण औद्योगिक सम्बन्ध खराब होते हैं । सामाजिक कारण जैसे कार्य के प्रति असन्तुष्टता, मान–सम्मान में कमी, समाज मे संघर्ष, संयुक्त परिवार में दरार आदि ऐसे कारण हैं, जो खराब औद्योगिक सम्बन्धों को बढ़ावा देते हैं । कार्य के प्रति असुरक्षा की भावना, योग्यता को महत्व न देना, कार्य निष्पादन को महत्व न देना इत्यादि कुछ ऐसे मनोवैज्ञानिक कारण हैं जिनसे औद्योगिक सम्बन्ध खराब होते हैं । ट्रेड यूनियनों की राजनीतिक प्रकृति, बहु–संघों का होना, ट्रेड यूनियनों में आपसी दुश्मनी आदि ट्रेड यूनियन आन्दोलन को कमजोर करते हैं । मजबूत यूनियन की अनुपस्थिति में सामूहिक सौदेबाजी कमजोर पड़ जाती है, जिसके कारण नियोक्ता एवं प्रबन्ध कर्मचारियों को दबाते हैं, जिसके कारण प्रबन्ध एवं श्रम में सम्बन्ध खराब होते हैं ।

औद्योगिक विवादों का आशय एवं परिभाषाएँ

सामन्यतया औद्योगिक विवादों में हड़ताल, तालाबंदी , काम बंदी , कार्य देने में असमर्थता , छँटनी इत्यादि को शामिल किया जाता है। औद्योगिक विवाद अधिनियम 1947 में इन सभी शब्दों की समुचित परिभाषा दी गयी है। औद्योगिक विवादों के कारण आर्थिक होने के साथ साथ सामाजिक, राजनीतिक एवं प्रबंधकीय भी हो सकते हैं ।

औद्योगिक विवाद अधिनियम की धारा 2 (के) के अनुसार—

"औद्योगिक विवाद से आशय नियोक्ताओं एवं नियोक्ताओं के बीच, अथवा नियोक्ताओं एवं श्रमिकों के बीच, अथवा श्रमिकों एवं श्रमिकों के बीच हुए किसी विवाद अथवा मतभेद से है जो किसी व्यक्ति की नियुक्ति अथवा सेवा—मुक्ति अथवा रोजगार की शर्तों या श्रम की दशाओं से सम्बन्धित हो।"

औद्योगिक विवाद अधिनियम की धारा 2 (केकेके) के अनुसार—

"कार्य से अलग रखने का आशय कोयले, शक्ति या कच्चे पदार्थों की कमी के कारण या माल संग्रह हो जाने के कारण या यन्त्र—भंग हो जाने के कारण या प्राकृतिक विपदा या अन्य किसी सम्बंधित कारण से, नियोक्ता द्वारा किसी ऐसे श्रमिक को रोजगार देने में असफलता, इन्कारी या असमर्थता से है जिसका नाम उसके औद्योगिक संस्थान के मस्टर रोल में है तथा जिसकी छँटनी नहीं की गई है ।"

औद्योगिक विवाद अधिनियम की धारा 2 (1) के अनुसार—

"तालाबंदी से आशय नियोक्ता द्वारा नियुक्त कर्मचारियों की किसी भी संख्या को जारी न रखने के लिए——

(अ)रोजगार के स्थान को अस्थायी रूप से बन्द करने अथवा

(ब) कार्य को स्थगित करने अथवा

(स) कार्य देने से इंकार करने से है।"

औद्योगिक विवाद अधिनियम की धारा 2 (ओओ) के अनुसार—

"छँटनी से आशय अनुशासन सम्बन्धी दण्ड के अतिरिक्त अन्य किसी भी कारण से नियोक्ता द्वारा श्रमिक की सेवा समाप्त करने से है। परन्तु निम्न छँटनी में सम्मिलित नहीं है ——

(अ) किसी श्रमिक का स्वेच्छा से सेवा-मुक्त होना तथा

(ब) उच्चतम आयु होने पर श्रमिक की सेवा—मुक्ति यदि नियोक्ता तथा श्रमिक के बीच अनुबंध में इस सम्बन्ध में उल्लेख है अथवा नियोक्ता तथा श्रमिक के बीच सेवा के अनुबंध को पुनः जारी न करने के परिणामस्वरूप सेवा—समाप्ति अथवा

(स) किसी श्रमिक के लगातार बीमार रहने पर उसकी सेवा समाप्ति ।"

औद्योगिक विवाद अधिनियम की धारा 2 (क्यू) के अनुसार-

"हड़ताल से आशय–

(अ) किसी उद्योग में नियुक्त कार्य करने वाले श्रमिकों के संघ द्वारा सामूहिक रूप से कार्य बंद कर देने अथवा

(आ) उद्योग में कार्य करने के अभिप्राय से नियुक्त व्यक्तियों की किसी संस्था द्वारा निश्चित रूप से अथवा साधारण समझौते के अन्तर्गत कार्य करने से इन्कार करने, अथवा

(इ) कार्य को अस्वीकार करने से है ।"

औद्योगिक विवाद अधिनियम की धारा 2(एल) के अनुसार----

"तालाबंदी से आशय नियोक्ता द्वारा नियुक्त कर्मचारियों की किसी भी संख्या को जारी न रखने के लिए निम्न कार्यों में से कोई भी कार्य करना सम्मिलित है–

- (1) रोजगार के स्थान को बंद करना, अथवा
- (2) कार्य को स्थगित करना, अथवा
- (3) कार्य देने से इन्कार करना।"

तालिका —1

भारत मे औद्योगिक विवाद

विवरण	हडतालों की	तालाबंदी की	श्रम दिवसों की
	संख्या	संख्या	हानि
2015	112	29	4014559
2016	104	26	4619868
2017	84	22	3544156
2018	62	14	1292695
2019	59	9	1044269

स्रोत-श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

तालिका –2

भारत में औद्योगिक विवाद

विवरण	कामबंदी		अस्थायी छँट	अस्थायी छँटनी		स्थायी छँटनी	
	संख्या	प्रभावित श्रमिक	संख्या	प्रभावित श्रमिक	संख्या	प्रभावित श्रमिक	
2015	21	1496	51	3654	12	533	
2016	26	2079	29	4200	5	3654	
2017	20	2569	38	6449	4	87	
2018	8	537	20	3556	6	71	
2019	1	45	12	2646	1	-	

स्रोत-श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

केंद्रीय औद्योगिक संबंध तंत्र अर्थात् मुख्य श्रम आयुक्त (केंद्रीय) की स्थापना

केंद्रीय औद्योगिक संबंध तंत्र अर्थात् मुख्य श्रम आयुक्त (केंद्रीय) की स्थापना अप्रैल 1945 में रॉयल कमीशन ऑन लेबर की सिफारिशों के आधार पर हुई । इसकी स्थापना निम्न के संयोजन के माध्यम से हुई—

- सुलह अधिकारी (रेलवे) के पूर्व संगठनों,
- रेलवे श्रम के पर्यवेक्षक
- श्रम कल्याण सलाहकार ।

मुख्य श्रम आयुक्त (केंद्रीय) का मुख्य कार्यालय नयी दिल्ली में है। मुख्य श्रम आयुक्त (केंद्रीय) के क्षेत्रीय कार्यालय अहमदाबाद, चंडीगढ़, धनबाद, कोलकाता, अजमेर, चेन्नई, गुवाहाटी, मुंबई, आसनसोल, कोचिन, हैदराबाद, नागपुर, बैंगलोर, दिल्ली, जबलपुर, पटना, भुबनेश्वर, देहरादून, कानपुर और रायपुर में है।

मुख्य श्रम आयुक्त (केंद्रीय) के कार्य

- 1. समझौता एवं मध्यस्थता के माध्यम से औद्योगिक विवादों का निवारण और निपटान— मुख्य श्रम आयुक्त(केंद्रीय) केंद्र सरकार के अधिकार क्षेत्र मे आने वाले औद्योगिक प्रतिष्ठानों में औद्योगिक विवादों में हस्तक्षेप, मध्यस्थता और सुलह के माध्यम से विवादों का निपटारा करता है। सुलह समझौते के निर्णयों को क्रियान्वित भी करता है। हड़ताल, तालाबंदी एवं छँटनी इत्यादि की स्थितियों में यह तंत्र उन्हें टालने का प्रयास करता है तथा सुलह समझौते से विवादों का समाप्त करवाता है। है तथा सुलह समझौते से विवादों को समाप्त करवाता है।
- 2. केंद्रीय क्षेत्र में श्रम कानूनों और नियमों को लागू करना— केंद्रीय क्षेत्र में श्रम कानूनों और नियमों को लागू करना सीएलसी (सी) के संगठन का एक महत्वपूर्ण कार्य है। केंद्रीय क्षेत्र के अंतर्गत आने वाले प्रमुख प्रतिष्ठानों में रेलवे, खान, बैंक, बीमा, प्रमुख बंदरगाह, छावनी बोर्ड, ONGC, इंडियन ऑयल, BPCL, HPCL, FCI और अन्य केंद्रीय सार्वजनिक क्षेत्र के उपक्रम इत्यादि भी शामिल हैं।

केंद्रीय क्षेत्र में लागू होने वाले निम्न अधिनियमों का अनुपालन कराना भी मुख्य श्रम आयुक्त (केंद्रीय) के मुख्य कार्यों में से एक है–

- औद्योगिक विवाद अधिनियम 1947
- मजदूरी भुगतान अधिनियम 1936 और प्रमुख बंदरगाहों, खान, रेलवे, वायु परिवहन सेवाओं और डॉक्स, घाटियों और जेटी के तहत बनाए गए नियम
- न्यूनतम मजदूरी अधिनियम, 1948
- मजदूरी (विनियमन) उन्मूलन) अधिनियम 1970
- समान पारिश्रमिक अधिनियम 1976
- राज्य प्रवासी कामगार (आरई और सीएस) अधिनियम 1979
- बोनस अधिनियम 1965
- बाल एवं किशोर श्रम (रोकथाम एवं नियमन) अधिनियम 1986
- श्रम कानून अधिनियम (कुछ प्रतिष्ठानों द्वारा रिटर्न भरने से छूट और रजिस्टरों को बनाए रखना) 1988
- भवन और अन्य निर्माण श्रमिक (आरई और सीएस) अधिनियम 1996
- भारतीय रेलवे अधिनियम के अध्याय 6–ए 1989, रेलवे कर्मचारियों के लिए रोजगार विनियमन के घंटे
- औद्योगिक रोजगार (स्थायी आदेश) अधिनियम 1946
- मातृत्व लाभ अधिनियम 1961 एवं खान और सर्कस नियम 1963 इत्यादि।
- 3. अर्द्ध-न्यायिक कार्य --- केन्द्रीय औद्योगिक सम्बन्ध तंत्र के अंतर्गत स्वयं मुख्य श्रम आयुक्त (केंद्रीय) तथा उसके तहत आने वाले उप मुख्य श्रम आयुक्त, अतिरिक्त श्रम आयुक्त, सहायक श्रम आयुक्त, क्षेत्रीय श्रम आयुक्त इत्यादि भारत के विभिन्न श्रम अधिनियमों के तहत अपीलीय अधिकारी, अपीलीय प्राधिकरण, पंजीकरण और लाइसेंसिंग अधिकारी, नियंत्रण प्राधिकरण, प्रमाणन अधिकारी इत्यादि के रूप में अर्द्ध-न्यायिक कार्य भी करते हैं।
- 4. श्रम संघ सदस्यता का सत्यापन— केन्द्रीय औद्योगिक सम्बन्ध तंत्र के अंतर्गत अधिकारियों को विभिन्न अधिनियमों एवं आदेशों के विभिन्न प्रावधानों के अनुसार श्रम संघों की सदस्यता का सत्यापन का कार्य भी करना होता है। ये अधिनियम हैं——
- "अ) श्रम और रोजगार मंत्रालय द्वारा निर्देशित या उच्च न्यायालय, सुप्रीम कोर्ट के आदेश के अनुसार अनुशासन संहिता के तहत मान्यता के लिए श्रम संघ सदस्यता का सत्यापन,

- भारतीय स्टेट बैंक और उसकी सहायक कंपनियों (कर्मचारी निदेशकों की नियुक्ति) नियम, 1947 के तहत राष्ट्रीयकृत और राज्य बैंकों में कार्यपालक निदेशक की नियुक्ति के लिए सांविधिक सत्यापन
 - राष्ट्रीयकृत बैंक (प्रबंधन और विविध विभाग) योजना, 1980
 - रिकॉर्ड्स और सैंपलिंग की जाँच करके केंद्रीय व्यापार संघ संगठन का सामान्य सत्यापन"
- 5- सूचना का अधिकार अधिनियम, 2005 के अंतर्गत कार्य-सूचना का अधिकार अधिनियम, 2005 के अंतर्गत केंद्रीय क्षेत्र के सभी क्षेत्रीय श्रम आयुक्तों को केंद्रीय सार्वजनिक सूचना अधिकारी घोषित किया गया है। केंद्रीय क्षेत्र में उप मुख्य श्रम आयुक्तों को क्षेत्रीय अपीलीय प्राधिकरण के रूप में घोषित किया गया है। मुख्यालय में उप मुख्य श्रम आयुक्तों को केंद्रीय सोत्र के रूप में घोषित किया गया है। मुख्यालय में उप मुख्य श्रम आयुक्तों को केंद्रीय सार्वजनिक सूचना अधिकारी घोषित किया गया है। केंद्रीय क्षेत्र में उप मुख्य श्रम आयुक्तों को केंद्रीय सार्वजनिक सूचना अधिकारी घोषित किया गया है। मुख्यालय में उप मुख्य श्रम आयुक्तों को केंद्रीय सार्वजनिक सूचना अधिकारी घोषित किया गया है। मुख्यालय में उप मुख्य श्रम आयुक्तों को केंद्रीय सार्वजनिक सूचना अधिकारी घोषित किया गया है और मुख्य श्रम आयुक्त को अपीलीय प्राधिकरण का काम करना है।
- 6- विविध कार्य-उपरोक्त मुख्य कार्यों के अलावा, केन्द्रीय औद्योगिक सम्बन्ध तंत्र अन्य कई सलाहकारी, सहायक, मार्गदर्शक, अन्वेषक, समन्वयक, प्रशिक्षक इत्यादि की भूमिकाएं भी निर्वहन करता है जैसे विभिन्न उच्च न्यायालयों में श्रम एवं रोजगार मंत्रालय के खिलाफ दायर रिट याचिकाओं में मंत्रालय का बचाव करना, विभिन्न नौकरियों में अनुबंध श्रम प्रणाली के उन्मूलन हेतु विभिन्न उप-समितियों के संयोजक के रूप में केंद्रीय सलाहकार अनुबंध श्रम बोर्ड की सहायता करना, अंतर्राष्ट्रीय श्रम संघटन को प्रस्तुत की जाने वाली विभिन्न रिपोर्टों को तैयार करने में मंत्रालय की सहायता करना, न्यूनतम मजदूरी सलाहकार बोर्ड की बैठकें आयोजित करना, अखिल भारतीय प्रकृति के औद्योगिक विवादों की स्थिति में अन्य रोजगार मंत्रालयों,राज्य सरकारों, नियोक्ताओं व कामगारों द्वारा उठाये गए जटिल कानूनी मुद्दों का निर्वचन एवं स्पष्टीकरण में तथा अन्य विभिन्न मामलों में श्रम एवं रोजगार मंत्रालय को सलाह एवं सूचनाएँ प्रदान करना,अखिल भारतीय प्रकृति के औद्योगिक विवादों की स्थिति में अन्य रोजगार मंत्रालयों,राज्य सरकारों, नियोक्ताओं व कामगारों द्वारा उठाये गए जटिल कानूनी मुद्दों का निर्वचन एवं स्पष्टीकरण में तथा अन्य विभिन्न मामलों में श्रम एवं रोजगार मंत्रालय को सलाह एवं सूचनाएँ प्रदान करना,अखिल भारतीय प्रकृति के औद्योगिक विवादों की स्थिति में मंत्रालय को सलाह देना, मंत्रालय के निर्दशानुसार सूचना के संग्रह के लिए राज्य सरकार के श्रम विभागों के साथ संपर्क रखना एवं संसदीय समितियों और अन्य महत्वपूर्ण प्रतिनिधिमंडलों में भाग लेना, श्रम अधिकारियों के प्रशिक्षण में सहायता एवं केंद्र सरकार के नियंत्रण में औद्योगिक और अन्य प्रतिचिधानंडलों में तैनात विभिन्न अधिकारियों के काम की निगरानी करना और उन्हें मार्गदर्शन प्रदान करना इत्यादि ।

केंद्रीय औद्योगिक संबंध तंत्र द्वारा किए गए कार्यों का संख्यात्मक निरूपण

तालिका –3

विवरण	2016—17	2017—18	2018—19	2019—20
विवाद प्राप्त	12235	12450	12427	9823
निस्तारित विवाद	7333	7774	7976	5006
हड़तालें टाली गयीं	845	475	461	283

केंद्रीय औद्योगिक सम्बन्ध तंत्र द्वारा नियंत्रित औद्योगिक विवाद

स्रोत-श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

तालिका –4

केंद्रीय औद्योगिक सम्बन्ध तंत्र द्वारा हस्तक्षेप के कारण श्रमिकों को लाभ

विवरण	2016—17	2017—18	2018—19	2019—20
लाभान्वित श्रमिकों की संख्या	30873	88086	127577	98613
लाभान्वित श्रमिकों को राहत राशि	89.81	1290.63	1323	682
पुनः नियमित एवं बहाल श्रमिक	1359	542	2693	243

स्रोत-श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

			तालि	का—5					
केंद्रीय औद्योगिक	सम्बन्ध	तंत्र	द्वारा	विभिन्न	कानूनों	के	अंतर्गत	निरीक्षण	

विवरण	2016—17	2017—18	2018—19	2019—20
कुल निरीक्षणों की संख्या	35441	38336	36470	22735
पायी गयी अनियमितताएं	205478	237629	210697	127253
दूर करी गयी अनियमितताएं	141182	106129	113119	53616
अभियोजन दायर किये गए	6499	6333	6613	3512
दोष सिद्ध हुए	2630	4326	2433	918

स्रोत-श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

तालिका –6

केंद्रीय औद्योगिक सम्बन्ध तंत्र द्वारा पंचाट अवार्ड लागू करे गए

विवरण	2016—17	2017—18	2018—19	2019—20
कुल प्राप्त अवार्ड की संख्या	2806	2898	2755	2154
कार्यान्वित अवार्ड	959	947	946	348
न्यायालय द्वारा स्थगित अवार्ड	813	1092	1073	1014
न्यायालय में दायर मामले	_	_	224	200
प्रक्रियाधीन अवार्ड	1034	859	512	592

स्रोत-श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

तालिका –7

विभिन्न अधिनियमों के तहत दावों का निपटान

विवरण	2016—17	2017—18	2018—19	2019—20
कुल प्राप्त दावे	15044	18370	19937	19513
निर्णित दावे	5543	7877	8066	4199
लंबित दावे	9501	11558	11871	15314
भुगतान राशि करोड़ रू.	72.65	132.01	215	66

स्रोत-श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

तालिका– 8

सूचना के अधिकार के अंतर्गत निस्तारित आवेदन

विवरण	2016—17	2017—18	2018—19	2019—20
ऑनलाइन आवेदन	314	282	922	650
ऑफलाइन आवेदन	576	554	321	291
कुल	890	836	1243	941

स्रोत- श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

विवरण		2016—17	2017—18	2018—19	2019—20
ऑनलाइन आवेदन	प्रारंभिक शेष	118	678	320	288
	शिकायतें प्राप्त	11588	11255	11016	8384
	कुल शिकायतें	11706	11933	11336	8672
	निस्तारित शिकायतें	11028	11613	11048	8531
	लंबित	678	320	288	141
ऑफलाइन आवेदन	प्रारंभिक शेष	576	163	107	209
	शिकायतें प्राप्त	2874	3888	4207	189
	कुल शिकायतें	3450	4051	4314	398
	निस्तारित शिकायतें	3287	3944	4105	304
	लंबित	163	107	209	94

तालिका –9 जन शिकायतें निस्तारित

स्रोत- श्रम एवं रोजगार मंत्रालय की वार्षिक रिपोर्ट- विभिन्न अंक

निष्कर्ष एवं सुझाव

उपरोक्त विवेचना से स्पष्ट है कि भारत जैसे एक विशाल एवं विकासशील देश में जहां औद्योगीकरण नित नए आयाम स्थापित कर रहा है, ऐसे देश में औद्योगिक विवादों का होना स्वभाविक ही है परंतु फर्म के स्तर पर, कानूनी स्तर पर तथा सरकारी स्तर पर इन औद्योगिक विवादों को सुलझाने के लिए आवश्यक प्रावधान भी किए गए हैं । उपरोक्त अध्ययन में प्रदर्शित तालिकाएं एक एवं दो यह दर्शाती हैं कि प्रत्येक प्रकार के औद्योगिक विवादों की संख्या में घटने की प्रवृत्ति है । इसी क्रम में सरकार ने केंद्रीय औद्योगिक संबंध तंत्र अर्थात् मुख्य श्रम आयुक्त केंद्र की स्थापना की जो समझौतों एवं मध्यस्थता के माध्यम से, अपने अधिकार क्षेत्र में विभिन्न कानूनों एवं नियमों के क्रियान्वयन के द्वारा, विभिन्न प्रकार की अर्द्ध—न्यायिक भूमिकाएं निभाकर, श्रम संगठनों की सदस्यता के सत्यापन के द्वारा एवं उनका विधिक सत्यापन कर, आरटीआई अधिनियम के अंतर्गत विभिन्न सेवाएं प्रदान करके तथा अन्य असंख्य सलाहकारी, सहायक, मार्गदर्शक, अन्वेषक, समन्वयक एवं प्रशिक्षक इत्यादि भूमिकाओं का निर्वहन कर रहा है तथा भारत में औद्योगिक संबंधों को मधुर बनाए रखने में सहायक साबित हुआ है। मुख्य श्रम आयुक्त केंद्रीय द्वारा किए गए निष्पादन की कुछ झलकियां उपरोक्त अध्ययन में तालिका 4 से तालिका 9 में प्रदर्शित की गई हैं।

सरकारी प्रयासों के अतिरिक्त फर्म स्तर पर, समाज के स्तर पर तथा सामाजिक संस्थाओं के स्तर पर भी मधुर औद्योगिक संबंध बनाए रखने हेतु विभिन्न प्रयास सतत् रूप से होते रहने चाहिए। फर्म के स्तर पर नियोक्ताओं एवं प्रबंधकों को श्रमिकों को कार्य अनुसार उचित मजदूरी, उत्तम सुविधाएं, उत्तम कार्य दशाएं, समुचित कल्याणकारी, स्वास्थ्य एवं सुरक्षा सुविधाएं, समाज—संस्था स्तर पर समुचित मान—सम्मान, निर्णय सहभागिता इत्यादि के माध्यम से मधुर औद्यौगिक संबंध बनाए रखने में निरंतर प्रयत्नशील रहना चाहिए । सरकार को विभिन्न श्रम कानूनों—नियमों का समुचित क्रियान्वयन, नवीनीकरण इत्यादि के माध्यम से इस बात को सुनिश्चित करना चाहिए कि औद्योगिक प्रतिष्ठान संबंधी कोई भी पक्ष चाहे वह प्रबंधक हो या नियोक्ता या श्रमिक या ट्रेड यूनियन या राजनीतिक स्तर; कोई भी औद्योगिक विवाद को बढ़ावा ना दे पाये। इस हेतु कडे प्रावधान समय की मांग है। सरकारी एवं गैर सरकारी संस्थाओं को भी श्रमिकों की बस्ती, झुग्गियों इत्यादि में रहने वाले श्रमिकों की समस्याओं और असुविधाओं इत्यादि को हर स्तर पर हल करने का प्रयास करते रहना चाहिए। केंद्रीय औद्योगिक संबंध तंत्र तथा क्षेत्रीय श्रम आयुक्त के कार्यों और अधिकारों में और अधिक विस्तार की जरुरत है । विभिन्न सरकारी एवं गैर सरकारी प्रयासों के माध्यम से भारतीय उद्योग एवं औद्योगिक वातावरण एक औद्योगिक रामराज की ओर अग्रसर हो रहा है। मधुर औद्योगिक संबंध तीव्र औद्योगीकरण के माध्यम से देश को औद्योगिक प्रगति एवं आर्थिक विकास की राह पर द्रुत—गति से ले जाने में सक्षम है। अतः भारत में मधुर औद्योगिक संबंध एक आवश्यकता है। इस संबंध में भारत में विभिन्न सरकारी प्रयासों के साथ—साथ प्रतिष्ठान स्तर पर प्रयास तथा गैर सरकारी प्रयास भी सराहनीय हैं।

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कोविड १९ का बाजार व्यवस्था पर प्रभाव



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सारांश

मिलावटखोरी वर्तमान समय में देश के अन्दर बड़ी तेजी से बढ़ रही है। मांग को समायोजित करने के लिए मिलावटखोर गलत तरीकों को अपना कर उपभोक्ता के जीवन के साथ खिलवाड़ कर रहे हैं, जो उचित नहीं है। उपभोक्ताओं को वस्तु की सही जानकारी नहीं होने के कारण भी वह मिलावटी वस्तुओं का उपभोग कर रहा है। मिलावट आज के समय में ग्राहकों के साथ खुले आम धोखा है, जो कार्यशील जनसंख्या के स्वास्थ्य पर प्रतिकूल प्रभाव डालती है, जिससे समाज में भ्रष्टाचार को बढावा मिल रहा है। प्रत्येक व्यक्ति मुनाफे के कारण मिलावटखोरी कर रहा है जिससे वस्तु की गुणवत्ता कम होती जा रही है। जीवन की दिशा और दशा दोनों ही व्यक्ति की कार्य क्षमता के द्वारा निर्धारित होती है। मानव की कर्मठता उसको उस दिशा की ओर ले जाती है, जहां उसके मार्ग में अवरोध आने पर भी सहजता से वह कठिनाइयों को स्वतः ही निरस्त कर सकता है।

प्रस्तावना

बाजार ; उपभोक्ताओं को उनकी रूचि के अनुकूल वे सभी वस्तुएं उपलब्ध करातें हैं जिनकी उन्हें आवश्यकता होती है। रूचिकर वस्तुओं के प्रति आकर्षण उपभोक्ताओं की मनोदशा एवं उनकी क्रयशक्ति क्षमता पर निर्भर करती है। क्रयशक्ति क्षमता के अनुसार उपभोक्ता बाजार में वस्तुओं का चयन करता है। चयन की प्रक्रिया उपभोक्ता की पहली प्राथमिकता होती है जिसके बिना व्यापारिक गतिविधियां पूर्ण नहीं मानी जाती हैं। बाजार में व्यापार तभी सम्भव है जब दोनों पक्षों को लाभ होता है। बाजार में सभी आय वर्गों को ध्यान में रखकर वस्तुओं का निर्माण कम से कम लागत पर करने का प्रयास किया जाता है, ताकि उपभोक्ताओं को सस्ते मूल्यों पर वस्तुएं उपलब्ध हो सकें। धनी एवं निर्धन वगों को ध्यान में रखकर वस्तुओं का निर्माण किया जाता है। किन्तु गरीब व्यक्ति के पास चयन हेत् मुद्रा की मात्रा में कमी के कारण अपनी आवश्यक वस्तुओं का ही चयन करना पड़ता है और उदर पूर्ति हेतु सीमित साधनों से ही सन्तोष करना पडता है। जबकि धनिक वर्ग रूचिकर वस्तुओं के लिए अधिक मुद्रा का त्याग करने के लिये तत्पर रहता है। किन्तु इस समय बाजार की स्थितियां पहले की तुलना में कुछ कमजोर स्थिति से गुजर रही हैं। अल्पविकसित अर्थव्यवस्थाओं की अधिकतर समस्याओं का समाधान उनके विकास के बिना सम्भव नहीं है।1 आज विश्व में चारों ओर भय एवं निराशा का वातावरण व्याप्त है। औद्योगिक जगत धराशाही हो गया है। राष्ट्रीय आय अपने निम्नतम स्तर पर पहुंच गई है। सभी देशों में सामाजिक दूरियों के कारण उनके बीच व्यापारिक गतिविधियां भी कम हुई हैं। कोरोना के कारण सहकारी क्षेत्र एवं निजी क्षेत्र दोनों के पहिये थम से गये हैं। निजी क्षेत्र के अधिकतर कर्मचारी बेरोजगार हो चुके हैं। श्रमिकों की गतिशीलता पूर्णतः रूक गई है। यह स्थिति लम्बे समय तक रहती है तो आवश्यक वस्तुओं की भारी कमी हो जायेगी। उपभोक्ताओं को आवश्यक वस्तुओं हेतू पहले की तुलना में काफी अधिक मूल्य चुकाना पड़ेगा। भारत में अब महंगाई चरम पर होगी, क्योंकि एक ओर कोरोना और दूसरी ओर चीन आक्रमण की तैयारी में है। जिसका प्रभाव अर्थव्यवस्था पर पड़ना स्वाभाविक है। जहां एक ओर युद्ध सामाग्री का क्रय तो दूसरी ओर कोरोना के प्रकोप से अपने लोगों की सुरक्षा करना, स्वास्थ्य सुविधाओं को और अधिक विकसित करना प्रमुख चुनौतियां हैं, वहीं आत्म निर्भर भारत बनाने का प्रयास सदैव ही देश हित में रहा है, जो हम सबके लिए बहुत जरूरी है। आगे भारतीय अर्थव्यवस्था में तीव्र बदलाव देखने को मिलेंगें, क्योंकि कम अवधि में यदि अचानक वस्तू की मॉग बढ़ती है तो उत्पादन को तूरन्त मॉग के अनुरुप समायोजित नहीं किया जा सकता है। यही स्थिति कीमतों में वृद्धि कर मिलावटखोरी को जन्म देगी। इस प्रकार की मिलावटखोरी देश के नागरिकों के लिए घातक है, देश के नागरिकों के जीवन के साथ इस प्रकार का घोर अपराध कानूनी तौर पर दण्डनीय है।

बाजार व्यवस्था में मिलावटखोरी –

वर्तमान समय में भारत में महंगाई चरम पर है, उत्पादन गतिविधियां तीव्र गति से आगे नहीं बढ़ पा रहीं हैं। वस्तुओं की मांग जिस गति से बढ़ रही है, उस गति से उत्पादन बढाना सम्भव नहीं हो पा रहा है। श्रमिकों की गतिशीलता में कमी के कारण उत्पादकों को व्यापारियों की मांग के अनुरूप वस्तुओं की पूर्ति को बढाना काफी मुश्किल हो रहा है। वस्तुओं की पूर्ति समय पर न होने के कारण यही मांग बाजार में वस्तुओं की कीमतों में वृद्धि करने में बहुत सहायक है। वस्तुओं के मूल्य में लगातार वृद्धि मुद्रा के मूल्य में गिरावट कर रही है जिसका असर उपभोक्ताओं की जेबों पर पड रहा है। व्यापारिक गतिविधियों में तेजी नहीं होने के कारण भी वस्तुएं समय पर उद्योगों से व्यापारियों तक नहीं पहुच पा रही हैं। यही कारण है कि वस्तु की आपूर्ति कम होने के कारण मिलावटखोर नकली वस्तुओं का उत्पादन कर उपभोक्ताओं को नकली वस्तुएं उपलब्ध करा रहे हैं। मटर, पनीर, तेल, दालें, चावल, आटा, अण्डे, सब्जियां, दवाइयां सभी वस्तुओं में मिलावटखोरी चरम पर है। इसका कारण मुद्रा स्फीति का बढ़ना तथा वास्तविक वस्तुओं के उत्पादन में कमी होना है। कृषि भूमि का सीमित होना है।

जब आर्थिक क्रिया में व्यापक ह्रास होता है तो सुस्ती मन्दी में विलीन हो जाती है। वस्तुओं तथा सेवाओं के उत्पादन, रोजगार, आय, मांग तथा कीमतों में पर्याप्त कमी हो जाती है। आर्थिक क्रिया में व्यापक ह्रास के परिणामस्वरूप बैंक जमा गिर जाती है। साख विस्तार रूक जाता है, क्योंकि व्यापारी लोग उधार लेने के लिए तैयार नहीं होते।2 तेजी काल में बाजार में उद्यमियों में आशा की भावना जागृत होती है। व्यापारी वर्ग उत्साहित रहता है, यही उत्साह उनके व्यापार को गति देता है, जो वस्तुओं के स्टाक में लगातार वृद्धि करने के लिए व्यापारियों को प्रोत्साहित करता है। लेकिन इस समय स्थितियां बाजार के पक्ष में नहीं हैं। इस समय भारतीय रिजर्व बैंक ने ब्याज दरों को कम कर दिया है, कारण मंदी की स्थिति में सुधार करने का प्रयास किया जा रहा है, ताकि अर्थव्यस्था में मुद्रा चलन में रह सके। कम ब्याज दर पर लोंगों द्वारा बैंकों में बचत कम की जायेगी। ब्याज दरों में कटौती का सीधा प्रभाव उन लोगों पर पड़ेगा जिनकी बचत प्रवृत्ति अधिक है। जनता बैंक से नकद मुद्रा की निकासी कर उसको अन्य कार्यों हेतू प्रयोग में लायेगी, जो मुद्रास्फीति में अत्याधिक वृद्धि कर गरीब व्यक्ति के लिए उसको उपभोग्य वस्तुओं की कुछ मात्रा से वंचित कर देगा क्योंकि अधिक महंगाई के कारण उन्हें उतनी ही वस्तू के लिए अधिक मुद्रा का त्याग करना पडेगा। समाज में इस समय निराशा की भावना व्याप्त है, उद्योगपति उत्पादन बढ़ाने से घबरा रहे हैं। उद्योगपतियों को उत्पादन बढ़ाने के लिए श्रमिक उपलब्ध नहीं हो पा रहे हैं। श्रमिकों की गतिशीलता पूर्णतः ठप हो गयी है। कोविड़ 19 का सबसे बड़ा प्रभाव महिलाओं पर पड़ा है। परिवार के सदस्यों की उदर पूर्ति हेतू भोजन व्यवस्था, बच्चों की देख भाल के साथ साथ महिलाओं की मानसिक एवं शारीरिक क्षमता को भी कारोना ने प्रभावित किया है। सामान्यतः यह देखा गया है कि समाज में कम जोखिम एवं कम प्रभावशीलता के कारण कोविड 19 ने जो प्रभाव दिखाया है, उससे समाज में आत्महत्या जैसी घटनाएं बढ़ी हैं, जो मानसिक तनाव को और अधिक बढ़ा रही हैं। मिलावटी वस्तूओं की सही पहचान नहीं होने के कारण नकली वस्तुओं का उपभोग उपभोक्ताओं द्वारा किया जाता रहा है। मुनाफाखोरों के मिलावट करने के तरीकों एवं गलत प्रवृत्तियों के कारण वस्तुओं में मिलावट करना सम्पूर्ण उपभोक्ता जगत के लिए घातक सिद्ध हो रहा है। अधिक मांग एवं कम पूर्ति के कारण नकली वस्तुओं का उत्पादन भी चरम पर है। उन्हें नकली वस्तुओं का उत्पादन करने से रोकने का प्रयास नहीं किया जा रहा है। यदि किया भी जा रहा है तो उन्हें मोटी रकम दे कर शान्त कर दिया जाता है। यही गलत नीतियां मिलवटखोरों के हौसले और बुलंद करती हैं जिसका खामियाजा उपभोक्ता वर्ग को झेलना पड रहा है। उद्योग धन्धों को कोरोना वायरस ने पूर्ण रूप से प्रभावित किया है, जिसके कारण औद्योगिक क्षेत्र उत्पादन गतिविधियों को बढाने में पिछड़ गये हैं। उद्योगों में उत्पादन कार्य थम सा गया है। श्रमिक उत्पादन का एक सक्रिय साधन है, जिसके बिना उत्पादन की कल्पना करना निराधार है, जो किसी भी अर्थव्यवस्था की रीढ कहलाती है। श्रमिक वर्ग कोविड़ 19 के कारण सबसे अधिक प्रभावित हुआ है। उद्योगों में उत्पादन कार्य न होने के कारण उन्हें रोजगार से वंचित होना पड़ा है। वहीं कृषक देश को शुद्ध उत्पादन उपभोग हेतू उपलब्ध कराता है, किन्तू वह भी कोविड़ 19 के प्रभाव से अछूता नहीं है। क्योंकि कृषि फसलों की कटाई, बुआई हेतू श्रमिक उपलब्ध नहीं हो पाये, अधिकतर कृषि श्रमिक अपने घरों की ओर लौट चुके हैं। इसी कारण फसलों की कटाई में बाधा उत्पन्न हुई है। बैंकिंग कार्य पद्धति भी इस महामारी से काफी प्रभावित हुई है। नकद मुद्रा के चलन में कोरोना का प्रभाव कागजी मुद्रा पर भी देखने को मिला है। रिजर्व बैंक द्वारा व्यापारिक बैंकों को अपने ग्राहकों को ई–बैंकिंग प्रणाली को बढावा देने हेतु प्रोत्साहित किया जा रहा है। कोविड 19 के कारण सेवा क्षेत्र में कार्य करने वाले व्यक्तियों पर बहुत बुरा प्रभाव पड़ा है। इस क्षेत्र में कार्य करने वाले व्यक्तियों की मनोदशा काफी प्रभावित हुई है। भारतीय अर्थव्यवस्था में तृतीयक क्षेत्र की अहम भूमिका को बाधित करने का कार्य कोरोना वायरस ने किया है। विकास कार्यों की गति पर कोविड़ 19

के कारण ब्रेक लग गया है। एक तरफ कोरोना तो दूसरी तरफ चीन द्वारा उत्पन्न युद्ध की स्थिति ने विकास की गति को अवरूद्ध कर दिया है। विद्यार्थियों के लिए यह बहुत दुःख है, उन्हें अपने भविष्य के प्रति चिन्ता सता रही है। मेधावी छात्रों के लिए यह काफी कष्टकारी है। ये सब भारत के भविष्य हैं जो काफी कठिन दौर से गुजर रहें हैं जिनकी उत्कृष्ट कार्य क्षमता, बुद्धि एवं विवेक पर देश भविष्य में उन्नति के मार्ग पर अग्रसर होगा। वहीं महिलाएं अपने परिवार की देखभाल की सम्पूर्ण जिम्मेदारी अपने कन्धों पर लेती हैं इसी कारण महिलाओं के मानसिक स्तर पर लगातार दबाव बढ़ता ही चला जाता है। घर की सम्पूर्ण जिम्मेदारियां उन पर हरपल बनी रहती हैं। कोरोना वायरस के कारण उनकी चिन्ता और भी बढ़ गयी है। बीमार व्यक्तियों के लिये यह महामारी काल बनकर आई है। उन्हें ऐसे समय में कठिन परिस्थितियों से गुजरना पड़ रहा है। जनसंख्या में लगातार वृद्धि होने के कारण वस्तुओं की मांग में भी लगातार वृद्धि होना स्वभाविक है। वस्तुओं की बढ़ती मांग भी मूल्य वृद्धि में सहायक होती है। वस्तुओं की लागतों में लगातार वृद्धि होने के कारण लोग मिलावटखोरी के नये नये तरीकों को अपना रहे हैं। मुनाफाखोरी एवं बिचौलियों के कारण भी बाजार में वस्तुओं की साख धुमिल हुई है। उत्पादन में नई तकनीकों का प्रयोग, अधिकाधिक रासायनिक खादों का उपयोग खेती की उर्वरा शक्ति को समाप्त कर रहा है। भले ही उत्पादन में वृद्धि हो रही हो। छोटी अवधि की प्राथमिक वस्तुओं की पूर्ति बेलोच होती है।3 क्योंकि छोटी अवधि में पूर्ति को मांग के अनरूप समायोजित नहीं किया जा सकता है। केवल कीमतों में वृद्धि कर या वस्तुओं में मिलावट कर मांग के अनुरूप समायोजित किया जाता है।

निष्कर्ष–

बाजार व्यवस्था में मिलावटखोरी अभिशाप है। मिलावटखोर उपभोक्ताओं के जीवन के साथ घोर अपराध कर उन्हें बीमारियों की ओर धकेल रहे हैं। उपभोक्ता मिलावट वाली वस्तुओं पर विश्वास कर उन्हें क्रय कर रहें हैं। आम जनमानस इस बात से अनभिज्ञ है कि वह जिस वस्तु का कय कर रहा है वह उसके लिए घातक है। रोजमर्रा की उपयोगी वस्तुओं में दूध, दही, घी, आटा, चावल, दवाइयां, आदि सभी वस्तुओं में मिलावट की जा रही है। इसके लिये यह आवश्यक है कि बाजार तंत्र को सुदृढ़ किया जाय । व्यापार जगत में नकली उत्पाद बेचने वालों को कठोर दण्ड़ दिया जाय। कोरोना वायरस का फायदा उठाते हुए व्यापारी वर्ग द्वारा वस्तुओं में खूब मिलावटखोरी की गई, क्योंकि वस्तुओं की पूर्ति कम होने के कारण कोरोना के दौरान मिलावटखोरों को बेहतरीन मौका मिला था। कोरोना के संक्रमण को रोकने के लिए सरकार ने हर सम्भव प्रयास किया है, किन्तु इस महामारी का जिस प्रकार से आगाज हुआ वह बहुत घातक था। सरकार का प्रथम उद्देश्य अपने नागरिकों की सुरक्षा करने के साथ साथ उन्हें खाद्य सामग्री भी उपलब्ध कराना एक बडी चुनौती थी। किन्तु सरकार की जिम्मेदारी के साथ साथ प्रत्येक व्यक्ति का उत्तरदायित्व भी बनता है कि वे सरकार के नियमों का पालन कर्त्तव्यनिष्ठा के साथ करें तो महामारी पर आसानी से विजय प्राप्त की जा सकती है। मिलावटखोरी वर्तमान समय में देश के अन्दर बड़ी तेजी से बढ़ रही है। मांग को समायोजित करने के लिए मिलावटखोर गलत तरीकों को अपना कर उपभोक्ता के जीवन के साथ खिलवाड़ कर रहे हैं, जो उचित नहीं है। उपभोक्ताओं को वस्तु की सही जानकारी नहीं होने के कारण भी वह मिलावटी वस्तुओं का उपभोग कर रहा है ।

सन्दर्भ∽

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कोरोना संकट (कोविड–19) का भारत के वस्त्र उद्योग पर प्रभाव

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शोध छात्र, वाणिज्य एवं प्रशासन संकाय एन.आर.ई.सी. कालिज, खुर्जा, जिला बुलन्दशहर *डा0 संजय कुमार बंसल शोध निर्देशक एवं एसोसिएट प्रोफेसर, वाणिज्य एवं प्रशासन संकाय एन.आर.ई.सी. कालिज, खुर्जा, जिला बुलन्दशहर

सारांश

प्रस्तुत शोध पत्र भारत में वस्त्र उद्योग की विशेषताओं का वर्णन करता है, साथ ही देश में कहाँ—कहाँ वस्त्र उद्योग स्थापित हैं, उन स्थानों के बारे में भी बताता है। साथ ही वस्त्र उद्योग की बाधाओं के साथ—साथ कोरोना के कारण उत्पन्न हुई मुख्य चार समस्याओं; भुगतान की समस्या, मांग पक्ष की समस्या, पूर्ति पक्ष की समस्या एवं बेरोजगारी की समस्या का विस्तार से वर्णन करता है। शोध पत्र बताता है कि जिस प्रकार कोरोना संकट के चलते भारत का चीन तथा अन्य यूरोपीय देशों को होने वाला निर्यात एकदम बन्द सा हो गया है। साथ ही किस प्रकार आयात बंद होने से प्रोसेसिंग खर्च में वृद्धि हुयी है। शोध पत्र तिरूपुर की फैक्ट्रियों के संकट के बारे में भी संक्षेप में बताता है, साथ ही यह भी वर्णन करता है कि किस प्रकार बनारस साड़ी उद्योग पर भी कोरोना के कारण संकट के बादल छा गये हैं। शोध पत्र का मुख्य विषय कोरोना संकट का वस्त्र उद्योग पर प्रभाव है। **मुख्य शब्द**— वस्त्र, कपास, रुई, मजदूर, सामाजिक दूरी, आयात, निर्यात

आधुनिक वस्त्र उद्योग की उत्पत्ति एवं विकास सर्वप्रथम ब्रिटेन में हुआ था, जहाँ सबसे पहले रूई से धागा तैयार करने वाली मशीन का आविष्कार हुआ तथा ब्रिटेन से ही निर्यात होकर मशीनें यूरोप के अन्य देशों चीन, जापान, भारत तथा संयुक्त राज्य अमेरिका में पहुँचीं। भारत में सूती वस्त्र उद्योग प्राचीनतम उद्योगों में से एक है। प्राचीन समय में ढाके की मलमल पूरे विश्व में अपनी गुणवत्ता के लिये काफी प्रसिद्ध रही है। भारत में सूत्री वस्त्र का आधुनिक कारखाना 1818 में कलकत्ता के निकट फोर्ट गलोस्टर नामक स्थान पर लगाया गया था, परन्तु यह कारखाना सफल रूप से उत्पादन नहीं कर सका। उसके बाद 1851 में मुंबई में सूत्री वस्त्र का कारखाना लगाया गया तथा उसके बाद मुंबई, अहमदाबाद, पुणे, शोलापुर, कोल्हापुर, कानपुर, नागपुर, मद्रास, कोयम्बटूर, कोची, त्रिचुट आदि स्थानों पर भी अनेक कारखाने लगाये गये।1

कपड़ा वस्त्र उद्योग में सूती, ऊनी, रेशमी तथा कृत्रिम वस्त्र उद्योग शामिल हैं। इस उद्योग में शुद्ध कच्चे माल का उपयोग होता है, कपड़े उद्योग पर परिवहन भाड़े का भारी प्रभाव पड़ता है। वस्त्र उद्योग का देश की अर्थव्यवस्था में महत्वपूर्ण स्थान है, इस उद्योग में तीन क्षेत्र शामिल हैं–

1– मिल क्षेत्र, 2– हथकरघा, 3– पावरलूम (विद्युत करघा)।

भारत में अधिकांश सूती वस्त्र मिलें अभी भी सिन्धु—गंगा—ब्रहमपुत्र के मैदान और प्रायद्वीपीय भारत के क्षेत्रों में ही स्थित हैं। भारत में प्रमुख रूप से महाराष्ट्र देश में सूत्री वस्त्रों का प्रमुख उत्पादक है तथा मुम्बई कपड़ा मिलों का प्रमुख केन्द्र है। महाराष्ट्र में इसके अतिरिक्त शोलापुर, कोल्हापुर, नागपुर, पुणे, औरंगाबाद और जलगांव भी प्रमुख केन्द्रों में शामिल हैं। गुजरात में सूती वस्त्र उत्पादन दूसरे स्थान पर आता है। इसके प्रमुख केन्द्रों में अहमदाबाद, सूरत, भरूच, बड़ोदरा, भावनगर और राजकोट शामिल हैं। तमिलनाडु भी सूती वस्त्रों के उत्पादन में मुख्य भूमिका अदा करता है, इसमें कोयम्बटूर, तिरूनलवेली, चेन्नई, मुदरै, तिरूचिरापल्ली, तंजावुर आदि शामिल है। 2 कर्नाटक के मुख्य केन्द्रों में बंगलूर, मैसूर, बेलगाम और गुलबर्ग शामिल हैं। उत्तर प्रदेश में मुख्य रूप से कानपुर, इटावा, मोदीनगर, वाराणसी और हाथरस मुख्य केन्द्र हैं। मध्य प्रदेश में इन्दौर और ग्वालियर में कपड़ा उद्योग केन्द्रित है। पश्चिम बंगाल में हावड़ा से रामपुर और मुर्शिदाबाद सूत्री वस्त्र केन्द्र हैं। इसके अलावा भारत में पंजाब, हरियाणा, आन्ध्र प्रदेश तथा राजस्थान में भी सूत्री वस्त्र मिलें बड़े पैमाने पर स्थित हैं।

वर्तमान समय में भारत का विश्व में कपड़ा निर्यात में दूसरा स्थान है। भारत से कपड़ा आयात करने वाले देशों में प्रमुख रूप से फ्रांस, जर्मनी, ब्रिटेन, इटली, संयुक्त राज्य अमेरिका, स्वीडन, नार्वे, आस्ट्रेलिया, नेपाल, इथोपिया, केन्या, सऊदी अरब तथा अन्य खाड़ी देश शामिल हैं। साथ—ही भारत चीन को भी रूई बड़ी मात्रा में निर्यात करता है। भारत का वस्त्र उद्योग प्राचीन होने पर भी आज भी अनेक समस्यायें झेल रहा है। इन समस्याओं में प्रमुख ; भारत में उत्तम प्रकार की कपास का अभाव है। इसलिये भारत लम्बे रेशे वाले कपास का आयात मिश्र, सूडान, पाकिस्तान तथा संयुक्त राज्य अमेरिका से करता है। साथ ही भारत में लगे कारखानों की मशीनें भी पुरानी हैं, जिनसे अच्छी क्वालिटी का उत्पादन नहीं हो पाता है। पूँजी की कमी के चलते इन मशीनों को बदलना भी छोटे उद्योगपतियों के लिये संभव नहीं है। भारत में अभी भी कारखानों को प्रचुर मात्रा में बिजली नहीं मिल पाती है, जिससे उत्पादन प्रभावित होता है। भारत में सौ से अधिक कपड़े के कारखाने घाटे में चल रहे हैं, जिनको तुरन्त तकनीकी, आर्थिक तथा बाजार उपलब्धता जैसी सहायता की आवश्यकता है, साथ ही देश में अनेक बार श्रम संगठनों तथा उद्योगपतियों के बीच संघर्ष की समस्या सामने आती रहती है, जिसमे इड़ताल तथा तालाबंदी की समस्यायें प्रमुख हैं।3

अब देश में कोरोना वायरस के आने से भारत का कपड़ा उद्योग पूरी तरह से तबाह हो गया है, जिसका सबसे बड़ा प्रभाव मजदूर वर्ग पर पड़ा है। इस वायरस ने मुख्य रूप से चार समस्याओं को जन्म दिया है।

1– भुगतान की समस्या	2– मांग पक्ष की समस्या
3– पूर्ति पक्ष की समस्या	4– बेरोजगारी की समस्या।

भुगतान की समस्याः-

भारत में पूंजी की कमी के चलते छोटे व्यापारी बड़े व्यापारी से उधार माल खरीदते हैं और समय—समय पर भुगतान के साथ नये आर्डर देते रहते हैं। कोरोना काल में महीनों तक भारत बंद रहने के कारण व्यापारिक गतिविधियां रूक गयीं जिससे छोटे व्यापारी कोई लाभ अर्जित नहीं कर सके परन्तु जीविका चलाने के लिये अपनी पूंजी से निजी खर्च पूरा किया, जिससे अधिकांश छोटे व्यापारी अपनी पूंजी नष्ट कर चुके हैं। इस कारण वे आपूर्तिकर्ता को पिछला भुगतान नहीं कर पाये, जिसके चलते बड़े बड़े व्यापारियों ने उनका उधार खाता बंद कर दिया हैजिससे उनका व्यापार बुरी तरह प्रभावित हुआ है। उधर महाराष्ट्र जैसे बड़े राज्यों से जो श्रमिक पलायन कर गये हैं, वे श्रमिक अभी तक अपने कार्यस्थल पर वापिस नहीं पहुंचे हैं।

मांग पक्ष की समस्यायें:-

कोरोना वायरस ने पूरी अर्थव्यवस्था को हिलाकर रख दिया है, जिससे लगभग सभी व्यक्ति आर्थिक, मानसिक व सामाजिक सभी प्रकार से प्रभावित हुए हैं। अगर हम केवल आर्थिक पहलू की बात करते हैं, तो लगभग सभी व्यक्तियों की आय में भारी कमी आयी हैं तथा एक बड़ा वर्ग तो बेरोजगारी का दंश झेल रहा है। इसके चलते लोगों की क्रय शक्ति बेहद कम हो चुकी है, अब जनता केवल बेहद आवश्यक वस्तुओं पर ही खर्च करना चाहती है। अतः देश भर में वस्त्रों की मांग में भारी कमी आयी है। सरकार द्वारा शादी—समारोह में सीमित लोगों की उपस्थिति अनिवार्य सी कर दी गयी है। जहाँ देश में पहले 500 से 1000 लोगों तक शादी में शामिल होते थे, अब वह संख्या घटकर 100 से 200 लोगों तक ही रह गयी है। इसके चलते भी वस्त्रों की मांग बाजार में कम हो गयी है।

पूर्ति पक्ष की समस्याः–

क्योंकि भुगतान प्रणाली पूरी तरह से तहस—नहस हो चुकी है तथा छोटा व्यापारी भुगतान करने में अपने को असमर्थ महसूस कर रहा है। अतः बड़े व्यापारियों के पास भुगतान न पहुँचने के कारण सारी साख व्यवस्था धराशायी हो गयी है। अधिकतर व्यापारी नकद में ही अपना माल बेचना चाहता है। दूसरी ओर इकाईयों की उत्पादन क्षमता श्रमिक उपलब्ध न होने के कारण भी कम हो गयी है। व्यापारी धागे (यार्न) में 30 प्रतिशत की तेजी के चलते अनुमान लगा रहे हैं कि जनवरी, फरवरी 2021 तक कपड़े की कीमत में भारी वृद्धि हो जायेगी। बड़े उद्योगों के पास भी अब तैयार कपड़े का स्टाक नहीं है तथा मांग आने पर वे केवल नकद वाले व्यापारी को माल देना पसन्द कर रहे हैं, जिससे उधार खरीदने वाले व्यापारियों को माल मिलना लगभग बंद सा ही हो गया है।

बेरोजगारी की समस्याः–

भारत का कपड़ा उद्योग कुल मिलाकर प्रत्यक्ष तथा अप्रत्यक्ष रूप से 5 करोड़ से ज्यादा लोगों को रोजगार देता है। कपड़ा उद्योग भारत के कुल निर्यात में 13.5 प्रतिशत योगदान देता है। परन्तु कोरोना वायरस के चलते यह उद्योग बहुत ज्यादा सिकुड़ गया है, जिससे करीब 1.5 करोड़ लोग अकेले कपड़ा उद्योग में बेरोजगार हुए हैं, इस कारण उनकी आय बेहद कम हो गयी है। कपड़े पर प्राप्त वस्तु एवं सेवा कर में, अप्रैल, मई, जून 2020 के दौरान भारी कमी आयी है। प्रदेश में अनेक स्थानों पर यह केवल 10 प्रतिशत तक ही रह गया था। सितम्बर, अक्टूबर 2020 में वस्तु एवं सेवा कर का संकलन सुधरा है, परन्तु फिर भी यह पिछले वर्षो के मुकाबले काफी कम रहा है।

भारतीय कपड़ा उद्योग का वैश्विक कपड़ा बाजार में लगभग 4 प्रतिशत का योगदान रहता है तथा भारत की राष्ट्रीय आय में कपड़ा उद्योग 2 प्रतिशत का योगदान देता है। भारत उन 15 देशों की सूची में शामिल है, जो चीन में विनिर्माण मंदी के कारण सर्वाधिक प्रभावित हुए हैं। चीनी कपड़ा मिलों ने कोरोना वायरस से महामारी फैलने के बाद से उत्पादन बन्द कर दिया था।3

भारत चीन को एक महीने में 200–250 लाख किलोग्राम सूती धागे का निर्यात करता है। वहीं इस महामारी के चलते भारत के सूती धागे के निर्यात पर काफी विपरीत असर पड़ा है। भारत प्रतिवर्ष 460 मिलियन डालर के कृत्रिम धागे और 360 मिलियन डॉलर मूल्य के कृत्रिम कपड़े का भी आयात करता है तथा बटन, जिपर, सुई, खूंटी आदि सामानों का भी 140 मिलियन डालर से अधिक का आयात किया जाता है। इसके अतिरिक्त यूरोप, ब्रिटेन और अमेरिका में कोरोना वायरस के प्रसार के कारण कपड़ा निर्यात बड़े पैमाने पर प्रभावित हुआ है, क्योंकि ये सभी भारतीय परिधानों के मुख्य बाजार है। अनेक विदेशी खरीदारों द्वारा अपनी खरीद में कमी या रोक के कारण उत्पादित वस्त्रों का स्टाक फैक्ट्रियों में रखा हुआ है तथा जिन्हें पहले ही आर्डर भेजा जा चुका है, वे भुगतान नहीं कर रहे हैं, जिसके कारण उत्पादन में कटौती की गयी है और नौकरियाँ जा रही है और बेरोजगारी तीव्र गति से बढ रही है।

कोरोना वायरस ने भारतीय अर्थव्यवस्था के सभी उद्योग धन्धों को भारी नुकसान पहुँचाया है। भारत का वस्त्र उद्योग भी इससे अछूता नहीं रहा, क्योंकि भारत, चीन को रूई और धागे का निर्यात करता है, जिससे उसे अच्छी विदेशी मुद्रा प्राप्त होती है। दूसरी ओर कपड़ा उद्योग में प्रयोग होने वाला रसायनिक पदार्थ व एसेसरीज आइटम का भी आयात नहीं हो रहा है जिससे भारत में कपड़ा उद्योग की लागत बढ़ गयी है। घरेलू कपड़ा उद्योग में उत्पादन लागत में 10 से 15 प्रतिशत तक की वृद्धि हो गयी है, जिससे गर्म कपड़ों के दामों में 15 से 20 प्रतिशत की बढ़ोत्तरी हुई है।4

चीन दुनिया में रूई का बड़ा खरीदार है। लेकिन कोरोना वायरस के कारण वहां परिवहन व उद्योग धन्धों पर असर पड़ने के कारण रूई का आयात कम हो गया है। विदेशी बाजारों में भारतीय रूई की मांग ज्यादा रहती है, क्योंकि यह अन्य देशों से सस्ती पड़ती है। देश के सबसे बड़े टैक्सटाइल केन्द्रों में से एक तिरूपुर की फैक्ट्रियों में 6 लाख से ज्यादा काम करने वाले कारीगर थे। यहां से लगभग 25000 करोड़ का निर्यात किया जाता था तथा करीब 25000 करोड़ का देशी व्यापार भी होता था। यहां कुल मिलाकर 10000 फैक्ट्रियों में कामकाज प्रभावित हुआ है, जहां कोविड—19 महामारी से उत्पादन बेहद प्रभावित हुआ है, वहीं नये आर्डर मिलने में भी भारी कमी आयी है। कोरोना वायरस यूरोप, अमेरिका और अन्य प्रमुख बाजारों में तेजी से फैला है, जिससे रिटेलरों से नये आर्डर नहीं आ रहे हैं। रेटिंग एजेन्सी का मानना है कि भारत का निर्यात अमेरिका—चीन व्यापारिक टकराव की वजह से जनवरी 2020 तक पहले से ही 40 प्रतिशत तक घट चुका है तथा वित्त वर्ष 2021 की पहली छमाही तक प्रभावित रहेगा। एजेन्सी के अनुसार पूरे टैक्सटाइल पोर्टफोलियो में कम से कम 15 प्रतिशत की कमी आयेगी।5

बड़ी कम्पनियों के पास बुरे समय से निपटने के लिये पर्याप्त नकदी मौजूद है, परन्तु छोटी कम्पनियां भारी नुकसान की ओर अग्रसर हैं तथा घरेलू बिक्री के साथ—साथ निर्यात भी घटा है। रिटेल के जरिये निर्माण सहित पूरे गारमेन्ट उद्योग में करीब 2.5 करोड़ लोग काम करते हैं। सी.एम.ए.आई. का मानना है कि हालात पूरी तरह से सुधरने में कम से कम 10 महीने से लेकर 1 साल तक का वक्त लगेगा। संगठन का यह भी मानना है कि बिना सरकारी मदद के इस संकट से उबर पाना अत्यन्त कठिन है।6

राजस्थान के भीलवाड़ा से लगभग 35000 करोड़ रूपये का व्यापार होता हैं। राजस्थान का कुल निर्यात लगभग 10000 करोड़ रूपये का है। बनारस वस्त्र उद्योग जो प्रतिमाह लगभग 200 करोड़ का कारोबार करता है तथा प्रत्यक्ष–अप्रत्यक्ष रूप से 7 लाख लोगों को रोजगार देता है। कोरोना वायरस के कारण चीन से सिल्क की सप्लाई प्रभावित हुयी है जिस कारण से बनारस का साड़ी उद्योग भी संकट में आ चुका है। जिले में करीब 40 हजार हथकरघा पर बनारसी साड़ी करीब 1 लाख बुनकरों द्वारा बनाई जाती है।7 कोरोना वायरस के चलते उत्पादन कार्य घट गया है, फैक्टरी मालिकों को मजदूरों की मजदूरी देना बेहद मुश्किल हो रहा है। व्यापार घटकर 30 प्रतिशत तक ही रह गया है। बैंकों ने छोटे व्यापारियों पर कोई ब्याज नहीं छोड़ा है अपितु ब्याज की रकम भी उनके खाते में डेबिट (नाम) कर दी गयी है, जिससे छोटे उद्योगों पर कर्ज का भार बढ़ गया है।8

सामाजिक दूरी का पालन करने के कारण मजदूर भी काम पर आना नहीं चाहते तथा बाहर से आयात बिल्कुल बन्द होने से भी उद्योग चलाना बहुत मुश्किल हो रहा है। व्यापारी तथा मजदूर सभी गहरी चिन्ता में डूबे हुए हैं। घरेलू बाजार मांग भी काफी कम हो गयी है और सभी सामान भारत में तैयार न होने के कारण भी उत्पादन करने में परेशानी का सामना करना पड रहा है।

परन्तु इन सभी विपरीत परिस्थितियों में केवल एक उम्मीद की किरण वैक्सीन को लेकर नजर आ रही है। व्यापारी वर्ग आशा कर रहा है कि जल्द ही कोरोना वैक्सीन देश में आ जायेगी और उससे आर्थिक स्थिति शनै:–शनैः सुधरनी प्रारम्भ हो जायेगी। उत्पादन फिर से पटरी पर लौटेगा, और कोरोना जनित बेरोजगारी नष्ट हो जायेगी तथा लोगों की क्रय शक्ति में सुधार आने से बाजारों की रौनक फिर लौट सकेगी। धीमी गति से चल रही अर्थव्यवस्था फिर से पटरी पर लौट सकेगी। दूसरी ओर व्यापारी तथा सरकार दोनों आत्मनिर्भरता को ध्यान में रखते हुए चीन से होने वाला आयातित माल का उत्पादन करने की ओर अग्रसर है, जिससे देश की विदेशी मुद्रा तो बचेगी ही, साथ ही देश के उद्योगों को जीवन भी मिलेगा और साथ ही बेरोजगारी भी घटेगी। अगर भारत अपनी उत्पादन लागत कम करने में सफल हो सका तो भारत का निर्यात काफी बढ जायेगा।

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सारांश

भारतीय—मनोविज्ञान का स्वरूप बहुत ही अद्भुत है। सनातन धर्म के दो प्रमुख वाहकों— 'रामायण' और 'महाभारत' को वह बिल्कुल ही भिन्न प्रकार से व्यवहार में लाता है। वह रामायण को बड़े प्रसन्न होकर उदात्त मन से स्वीकार करता है, उसकी चर्चा में बढ़ चढ़कर हिस्सा लेता है, उसके उदाहरणों और प्रसंगों को वह बार—बार दोहराया करता है। उसके कथा—विन्यास और चरित्रों की व्यूह रचना में वह संस्कृति के आदर्श गुणों को ढूंढता है। सम्बन्ध निभाने के आदर्श प्रतिमानों (Role Models) के उदाहरण प्रायः इस कथानक के लिये जाते हैं और हम सचमुच में यह चाहते हैं कि हमारे परिवार में, हमारे समाज में, इसमें वर्णित चरित्रों की बहुलता हो; वैसे ही लोग हमारे जीवन से जुड़े रहें।

महाभारत के प्रति अवधारणा–

महाभारत का विषय क्षेत्र और कथानक कहीं ज्यादा ही व्यापक है। स्वयं वेदव्यास की भी इस ग्रंथ के प्रति की गई उद्घोषणा है—

''धर्मे चार्थे च कामे च मोक्षे च भरतर्षभ।

यदिहास्ति तदन्यत्र यन्नेहास्ति न तत् क्वचित्।"

विश्व में जो कुछ भी विद्यमान है, उसकी व्याख्या और प्रसंग इस ग्रंथ में उद्धृत है और जो कुछ भी इस ग्रंथ में नहीं है, विश्व में कहीं भी नहीं पाया जा सकता।

फिर भी भारतीय जनमानस में महाभारत के कथानक और उसके चरित्रों को लेकर व्यापक स्वीकार्यता नहीं है और हमारी अंतश्चेतना समाज के आदर्श प्रतिमानों (Role Models) के लिए उन्हें उदात्त भाव से स्वीकार नहीं करती। हम सहजता से उन चरित्रों का उदाहरण नहीं देते और न ही यह चाहते हैं कि हमारे इर्द–गिर्द उस चरित्र के लोग रहें।

एक ही परिवार में सम्पत्ति के लिये भाइयों के बीच हो रहे झगड़े– 'महाभारत का युद्ध' है। हमारे श्वेत– श्याम स्वरूप में चित्रित (black and white pattern में designed) मानसिकता को इतनी सारी विसंगतियां (inconsistencies) रास नहीं आतीं। न वह उसे समझना चाहता है और न ही किसी को समझाना; शायद यह थोड़ा मुश्किल काम भी है।

और शायद इसलिए जाने–अनजाने में हमारे अवचेतन मस्तिष्क (sub-conscious mind) ने 'महाभारत' और उसमें वर्णित 'गीता' को वर्जनाओं के क्षेत्र (taboo zone) में धकेल दिया है। हम अपने बच्चों से इनकी कहानियां थोड़ी सी सहम–सहम कर सुनाते हैं या सही मायनों में सुनाने से बचते हैं।

'महाभारत' के एक प्रसिद्ध चरित्र 'कर्ण' को लेकर भारतीयमानस में बहुत सारी भ्रान्तियाँ प्रसृत हैं। जिसका कारण संस्कृतेतर कवियों की कविताएं और टी.वी. सीरियल्स में दिखाई गयी कहानियां और बातें हैं।

लेकिन इन भ्रान्तियों का निराकरण करने से पूर्व हमारे लिए 'महाभारत' का संक्षिप्त परिचय देना आवश्यक हो जाता है।

महाभारत हिन्दुओं का एक प्रमुख काव्य—ग्रंथ है, जो स्मृति के इतिहास वर्ग में आता है। कभी— कभी इसे केवल 'भारत' कहा जाता है। यह काव्यग्रंथ भारत का अनुपम धार्मिक, पौराणिक, ऐतिहासिक और दार्शनिक ग्रंथ है। विश्व का सबसे लम्बा यह साहित्यिक ग्रंथ और महाकाव्य, हिन्दू धर्म के मुख्यतम ग्रंथो में से एक है। इस ग्रंथ को हिन्दू धर्म में पंचम वेद माना जाता है। इसे साहित्य की सबसे अनुपम कृतियों में से एक माना जाता है। आज भी यह ग्रंथ प्रत्येक भारतीय के लिये एक अनुकरणीय स्रोत है। यह कृति प्राचीन भारत के इतिहास की एक गाथा है। इसी में हिन्दू धर्म का पवित्रतम ग्रंथ श्रीमद्भगवद्गीता सन्निहित है। पूरे महाभारत में लगभग 1,10,000 श्लोक हैं।

परंपरागत रूप से, महाभारत की रचना का श्रेय वेदव्यास को दिया जाता है। इसकी हिन्दू मान्यताओं, पौराणिक संदर्भों एवं स्वयं महाभारत के अनुसार इस काव्य का रचनाकार वेदव्यास जी को माना जाता है। इस काव्य के रचयिता वेदव्यास जी ने अपने इस अनुपम काव्य में वेदों, वेदांगों और उपनिषदों के गुहयतम रहस्यों का निरूपण किया है। इसके अतिरिक्त इस काव्य में न्याय, शिक्षा, चिकित्सा, ज्योतिष, युद्धनीति, योगशास्त्र, अर्थशास्त्र, वास्तुशास्त्र, शिल्पशास्त्र, कामशास्त्र, खगोलविद्या तथा धर्मशास्त्र का भी विस्तार से वर्णन किया गया है।

यह महाकाव्य 'जयसंहिता', 'भारत' और 'महाभारत' इन तीन नामों से प्रसिद्ध है। वास्तव में वेदव्यास जी ने सबसे पहले 1,10,000 श्लोकों के परिमाण के 'भारत' नामक ग्रंथ की रचना की थी, इसमें उन्होने भारतवंशियों के चरित्रों के साथ—साथ अन्य कई महान ऋषियों, चन्द्रवंशी—सूर्यवंशी राजाओं के उपाख्यानों सहित कई अन्य धार्मिक उपाख्यान भी डाले। इसके बाद व्यासजी ने 24,000 श्लोको को केवल भारतवंशियों को केन्द्रित करके 'भारत' काव्य बनाया। इन दोनों रचनाओं में धर्म की अधर्म पर विजय होने के कारण इसे 'जय' भी कहा जाने लगा। महाभारत में एक कथा आती है कि जब देवताओं ने तराजू के एक पलड़े में चारों ''वेदों'' को रखा और दूसरे पर 'भारत ग्रंथ' को रखा, तो 'भारत ग्रंथ' सभी वेदों की तुलना में सबसे अधिक भारी सिद्ध हुआ। अतः 'भारत ग्रंथ' की इस महत्ता (महानता) को देखकर देवताओं और ऋषियों ने इसे 'महाभारत' नाम दिया और इस कथा के कारण मनुष्यों में भी यह काव्य 'महाभारत' के नाम से सबसे अधिक प्रसिद्ध हुआ।

कर्ण को लेकर भारतीयमानस में बहुत सारी भ्रान्तियाँ प्रसृत हैं। जिसका कारण संस्कृतेतर कवियों की कविताएं और टीवी सीरियल्स में दिखाई गई कहानियां और बातें हैं। हिंदी के महान कवि श्री रामधारी सिंह 'दिनकर' जी की रश्मिरथी में भी बहुत सारी बातें उनकी अपनी कल्पना की उपज हैं, जो कि एक काव्य में आवश्यक भी हैं, और यह कवि का स्वातंत्र्य भी है। यही शिवाजी सावंत की स्थिति भी है। वास्तव में भारतीय समाज की सबसे बड़ी समस्या यही है कि उसे उस भाषा का ज्ञान ही नहीं है जिसमें उसकी मूल बातें और प्रचीन इतिहास है, इसलिये वो उन्हीं बातों को मान लेता है, जो धारावाहिकों में दिखाई जाती हैं और विभिन्न लेखक किसी कृति में लिख देते हैं। इससे बड़ी विडम्बना क्या होगी कि आजकल हम किसी के लिखे उपन्यास या कहानी में लिखी बातों को ऐतिहासिक तथ्यों के रूप में स्वीकार कर लेते हैं। हमारी परम्परा महाभारत (वेदव्यास) और रामायण (वाल्मीकि) को इतिहास कहती है, काव्यग्रंथ नहीं। इनको उपजीव्य मानकर जो अन्य काव्य, नाटक, गद्य ग्रंथ लिखे गये वो काव्य–तत्व के अधीन हैं। किन्तु हम आज कहाँ महाभारत पढ़ते हैं? किसी ने भ्रान्ति फैला दी कि महाभारत पढ़ने से घर में लड़ाई होती है, तो हम भोले लोगों ने मान लिया। खैर, तो महाभारत के आधार पर कर्ण की वास्तविकता को लेकर यहां कुछ वर्णन करना अभिप्रेत है जो कि अधोलिखित बिंदुओं पर होगा:–

1. कर्ण किसी तिरस्कृत, गरीब निम्न–जाति का नहीं था और ''सूत'' शब्द का अर्थ क्या है?

- 2. कर्ण को धनुर्विद्या, शिक्षा के लिए द्रोणाचार्य ने कभी इंकार नहीं किया और न कभी भगाया, बल्कि उसको शिक्षा दी।
- 3. कर्ण ने द्रौपदी स्वयंवर में बाकायदा भाग लिया था।
- 4. प्रायः पांडवों का अपमान करना।
- 5. द्रौपदी को निर्वस्त्र करने की आज्ञा कर्ण द्वारा देना।
- 6. द्रौपदी को खींचा जाता देख हँसना और उसे दासी कहकर मजाक उड़ाना, उसको अनुचित शब्द कहना।
- 7. कवच–कुंडल दान नहीं बल्कि लेनदेन की तरह हुआ।
- 8. शोकाकुल पांडवो पर हमला करने का षड्यंत्र।
- 9. कई लोगों से कई बार उसकी पराजय।

अब इन सभी बिंदुओं पर क्रमवार आते हैं:-

1. कर्ण किसी तिरस्कृत, गरीब निम्न–जाति का नहीं था। ''सूत'' शब्द का अर्थः–

महाभारत में स्पष्ट उल्लेख है कि कर्ण के पिता ''अधिरथ'' जो सम्राट ''धृतराष्ट्र'' के मित्र थे, वे कोई तिरस्कृत, छोटे, गरीब, शोषित, पीड़ित व्यक्ति नहीं थे, उनका तथा उनकी पत्नी राधा (कर्ण की पालनकर्त्री माँ, जिसके कारण कर्ण राधेय कहलाया) वो भी बहुत प्रसिद्ध और सम्मानित महिला थीं, उनके लिए महाभारतकार ने ''महाभागा'' जैसा भारीभरकम शब्द रखा है:–

एतस्मिन्नेव काले तु धृतराष्ट्रस्य वै सखा।

सूतोऽधिरथ इत्येव सदारो जाहनवीं ययौ।।

तस्य भार्याऽभवद्राजन् रूपेणासहशी भुवि।

राधा नाम महाभागा न सा पुत्रमविन्दत।।1 – आरण्यक पर्व

इसका भावार्थ है –सम्राट धृतराष्ट्र के प्रियमित्र सूत–अधिरथ अपनी पत्नी के साथ गड्गा–तट पर गए, राधा नामक उनकी महान ऐश्वर्यशालिनी पत्नी के समान धरती पर कोई दूसरी रूपमती नहीं थी, लेकिन उनको पुत्रप्राप्ति नहीं हुई थी। इससे स्पष्ट है कि अधिरथ और राधा कोई दास या दासी नहीं थे, वे सम्माननीय थे, तत्कालीन ''राजा के मित्र'' थे।

अब इसमें जो ''सूत'' शब्द का प्रयोग मिलता है, उसको लेकर बोलने वाले ये समझें कि सूत शब्द का एक अर्थ सूर्य होता है, दूसरा जो कि यहां ध्यातव्य है; वह है– ''क्षत्त्रियात् विप्रकन्यायां सूतो भवति जातितः अश्वसारथ्यमेवैतेषां जीविका।''2

(इसके प्रमाण के लिये अमरकोश, शब्दकल्पद्रुम, वाचस्पत्यम आदि ग्रंथ द्रष्टव्य हैं) अर्थात क्षत्रिय पुरूष और ब्राहमण स्त्री से जो पुत्र उत्पन्न होता है वह ''सूत'' कहलाता है, और वह घोड़ों के व्यापार, उनसे सम्बन्धित कार्य करता है, तथा युद्ध में वीरों की भांति रथों के संचालन का कार्य करता है। तो इस प्रकार यह एक कौशल (स्किल), रोजगार–परक श्रेणी थी, कोई जाति आदि नहीं, और इसका सम्मान और पद एक योद्धा की तरह होता था। सूत को तो वैश्य से ऊँचा माना जाता थाः–

ब्राह्मण्यां क्षत्रियांजातः सूतो भवति पार्थिव।

प्रातिलोम्येन जातानां स हयेको द्विज एव तु।।

रथकारमितीमं हि क्रियायुक्तं द्विजन्मनाम्।

क्षत्रियादवरो वैश्याद्विशिष्ट इति चक्षते । 13 (विराट पर्व)

जहाँ के (विराट पर्व) ये पद्य हैं वही आगे लिखा भी है कि सूत लोग तो राजा भी होते थे, देखिये:--

सूतानामधिपो राजा केकयो नाम विश्रुतः।

राजकन्यासमुद्भूतः सारथ्येऽनुपमोऽभवत् । 14 (विराट पर्व)

(सूतों का केकय नाम का प्रसिद्ध राजा हुआ)

और तो और जो भी प्रतिलोम जातियां (संकर वर्ण) हैं उनमें सूत को सर्वाधिक उत्तम द्विज (ब्राह्मण) तक कहा गया है।सारथी तो ब्रह्मा भी बने, कैकेयी भी बनी, कृष्ण भी बने, स्वयं कर्ण के सारथी मद्रराजजी थे, आदि आदि उदाहरण हैं। तो यह बात बिल्कुल ही भ्रांत है कि कर्ण किसी दासी का पुत्र, अपमानित जाति का गरीब व्यक्ति था। उसके माता–पिता सम्राट के मित्र और सम्मानित व्यक्तित्व थे। किन्तु संस्कृत से दूर सीरियल और कहानी से अपना इतिहास पढ़ने वाले भारतीय जनमानस के प्रति खेद है!

2. कर्ण को धनुर्विद्या, शिक्षा के लिए द्रोणाचार्य ने कभी नहीं भगाया, बल्कि उसको शिक्षा दी:--

कुछ क्रांतिकारी जन यह विलाप करते हैं कि कर्ण को आचार्य द्रोण ने नीची जाति के कारण भगा दिया, उसको शिक्षा नहीं दी, इस पर देखें कि कर्ण को अन्य सभी राजकुमारों की तरह ही आचार्य द्रोण के पास शिक्षा के लिए ले जाया गया और वहां उसने आचार्य द्रोण से शिक्षा प्राप्त की:--

स बालस्तेजसा युक्तः सूतपुत्रत्वमागतः

चकाराड्गिरसां श्रेष्ठे धनुर्वेदं गुरौ तव।।५ –(शांतिपर्व)

अर्थात वही तेजस्वी बालक सूतपुत्र के रूप में प्रसिद्ध हुआ उसने अड्गिरागोत्र के श्रेष्ठ ब्राह्मण आचार्य द्रोण से ''धनुर्वेद'' की शिक्षा प्राप्त की। और देखियेः–

राजपुत्रास्तथा चान्ये समेत्य भरतर्षभ।

अभिजग्मुस्ततो द्रोणमस्त्रार्थे द्विजसत्तमम्।।

वृष्णयश्चान्धकाश्चैव नानादेश्याश्च पार्थिवाः।

सूतपुत्रश्च राधेयो गुरूं द्रोणमियात्तदा।।6

—–महाभारत आदिपर्व (131 / 110–11)

अर्थात् राजकुमार लोग और अन्य सभी युवा भी अस्त्र–शिक्षा लेने आचार्य द्रोण के पास आये। वृष्णिवंशी, अंधकवंशी बहुत से देशों के राजकुमार और राधा के पुत्र कर्ण भी द्रोण के पास शिक्षा लेने के लिए आये।

और तो और कर्ण ने वेद आदि सभी शास्त्रों की विधिवत शिक्षा ली हुई थी श्रीकृष्ण उसके ज्ञान की प्रशंसा करते हुए कहते हैं–

उपासितास्ते राधेय ब्राहमणा वेदपारगाः।

तत्त्वार्थ परिपृष्टाश्च नियतेनानसूयया।।

त्वमेव कर्ण जानासि वेदवादान्सनातनान्।

त्वमेव धर्मशास्त्रेषु सूक्ष्मेषु परिनिष्ठितः । ।७ – उद्योगपर्व १४०

इन पद्यों से स्पष्ट उल्लेख मिलता है कि कर्ण को वेद,शास्त्र, अस्त्र आदि सारी विद्याओं की स्पष्ट शिक्षा दी गयी थी। कृष्ण कहते हैं कि कर्ण तुम सनातन वेदादि शास्त्रों को धर्मशास्त्रों को विधिवत् पढ़े हुए हो।

और जो आचार्य द्रोण से परशुराम जी के पास जाने की कथा है या जो लोग कहते है कि उसको भगा दिया गया था उनकी कपोलकल्पना का निराकरण यह है कि:– वह यह है कि अपने से छोटे अर्जुन से ईर्ष्या, पांडवों से लगातार ईर्ष्या करते रहने के कारण वह प्रायः पांडवों का अपमान दुर्योधन के साथ मिलकर करता रहता था:–

स्पर्धमानस्तु पार्थेन सूतपुत्रोऽत्यमर्षणः।

दुर्योधनं समाश्रित्य सोऽवमन्यत पाण्डवान् । ।८ —–आदिपर्व

और एक दिनः–

विद्याधिकमथालक्ष्य धनुर्वेदे धनंजयम्। द्रोणं रहस्युपागम्य कर्णो वचनमब्रवीत्।। ब्रहमास्त्रं वेत्तुमिच्छामि सरहस्यनिवर्तनम्। अर्जुनेन समो युद्धे भवेयमिति मे मतिः।। समः पुत्रेषु च स्नेहः शिष्येषु च तव ध्रुवम्। त्वत्प्रसादान्न मा ब्रूयुरकृतास्त्रं विचक्षणाः।। द्रोणस्तथोक्तः कर्णन सापेक्षः फल्गुनं प्रति। दौरात्म्यं चैव कर्णस्य विदित्वा तमुवाच ह।। ब्रहमास्त्रं ब्राहमणो विद्याद्यथावच्चरितव्रतः। क्षत्रियो वा तपस्वी यो नान्यो विद्यात्कथंचन।। इत्युक्तोऽड्गिरसां श्रेष्टमामन्त्रय प्रतिपूज्य च।। जगाम सहसा राजन्महेन्द्रं पर्वतं प्रति।।9 ——शांतिपर्व

अर्थात् एक दिन अर्जुन को धनुर्वेद में अधिक सक्षम देखकर कर्ण ने एकांत में जाकर आचार्य द्रोण से कहा—मैं ब्रहमास्त्र को छोड़ने और लौटाने के रहस्य को जानना चाहता हूं। मेरी इच्छा है कि मैं अर्जुन के साथ युद्ध करूँ। आप तो हम सभी शिष्यों और पुत्रों को समान रूप से मानते हैं, अतः कोई ये न कहे कि आपका शिष्य सभी अस्त्रों को नहीं जानता । तो द्रोणाचार्य ने उसके अंदर छुपे हुए क्रूर ईर्ष्या भाव को पहचान लिया और कहा कि इसे ब्रहमचर्य का पालन करने वाला ही सीख सकता है तो द्रोण ने ब्रहमचर्य की शर्त रखी,जिससे क्षुब्ध होकर कर्ण स्वयं सहसा महेंद्र पर्वत पर परशुराम जी के पास चला गया।

और भी बहुत है और लेख लम्बा न हो, इसलिए इस बिंदु पर इतना ही।

इसीतरह कर्ण दुर्योधन के द्वारा अंग देश का राजा नहीं बना था बल्कि जरासन्ध के अंगों की सन्धि चीरने पर कर्ण को जरासन्ध ने अपने अंग देश की मालिनी नगरी उसको दे दी थी। दरअस्ल अंग कभी हस्तिनापुर का अंग नहीं था। इसके बाद वह दुर्योधन के कहने पर चम्पानगरी में राज करने लगा।

3. कर्ण ने द्रोपदी के स्वयंवर में बकायदा भाग लिया था किंतु, धनुष पर प्रत्यंचा ही नहीं चढ़ा सका था:–

ततस्तु ते राजगणाः क्रमेण कृष्णानिमित्तं कृतविक्रमाश्च।

सकर्णदुर्योधनशाल्वशल्य द्रौणायनिक्राथसुनीथवक्राः ।१० – आदिपर्व (स्वयंवर प्रसड्ग)

कृष्णा (द्रौपदी) के निमित्त आने वालों में कर्ण भी था।

जब यह लोग धनुष की डोर नहीं चढ़ा पाये, तो अर्जुन को जाता देख लोग बोल उठे कि जब कर्ण, शल्य आदि बलवान धनुष की प्रत्यंचा नहीं उठा पाए तो यह बालक कैसे उठाएगा?

यत् कर्णशल्यप्रमुखैः क्षत्रियैर्लोकविश्रुतैः।

नानतं बलवद्भिर्हि धनुर्वेदपारायणैः।।

तत् कथं त्वतास्त्रेण प्राणतो दुर्बलीयसा।

वटुमात्रेण शक्यं हि सज्यं कर्तुं धनुर्द्विजाः।।11 – आदिपर्व (187/4–5)

ऐसे हीः–

यत् पार्थिवै रूक्मसुनीथवक्रैः राधेयदुर्योधनशल्यशाल्वैः।। तदा धनुर्वेदपरेर्न सिहैः कृतं न सज्यं महतोऽपि यत्नात्।। तदर्जुनो वीर्यवतां सदर्पस्तदैन्द्रिरिन्द्रावरजप्रभावः।

राज्यं च चक्रे निमिषान्तरेण शरांश्च जग्राह दशार्धसंख्यान्।।12 –(आदि पर्व 187 / 19–20)

'रूक्म, सुनीथ, वक्र, कर्ण, दुर्योधन, शल्य तथा शाल्व आदि धनुर्वेद के पारंगत, विद्वान, पुरूषसिंह राजालोग महान प्रयत्न करके भी जिस धनुष पर डोरी न चढ़ा सके, उसी धनुष पर विष्णु के समान प्रभावशाली एवं पराक्रमी वीरों में श्रेष्ठता का अभिमान रखने वाले इन्द्रकुमार अजुर्न ने पलक झपकते ही प्रत्यंचा चढ़ा दी। इसके बाद पाँच वाण भी अपने हाथ में लिये। इसी तरह इन्द्रप्रस्थ में जो घटना बताई जाती है कि द्रौपदी ने दुर्योधन को अंधे का बेटा अंधा कहा था, वो भी असत्य है, पर आज हमारा प्रतिपादय कर्ण है।

तो इस प्रकार आपने देखा कि कर्ण बड़े घर के आदमी थे, उनको वेद,शास्त्र, शस्त्र सब पढ़ाया गया था। द्रौपदी के स्वयंवर में भी मौका दिया गया था। कर्ण अर्जुन से 6 बार, भीम से 6 बार, गंधर्वो से और अभिमन्यु से और कई राजाओं से हारे थे, एक स्थान पर भीष्म ने डांटा भी था–तुम्हारे युद्ध कौशल की बस बातें ही बातें सुनी जाती हैं, तुम्हारा पराक्रम कभी दिखता नहीं है।

पांडवों का हमेशा अपमान करना हुआ शौक था। द्रोण ने इस बात के लिए उसके डांटा भी था, विदुर ने भी उसे दुरात्मा कहा था। इन सबके भी स्पष्ट प्रमाण है।

 द्रौपदी को खींचे जाते देख उसका प्रसन्न होना, द्रौपदी को अनुचित शब्द कहना, द्रौपदी को निर्वस्त्र करने का आदेश देनाः–

आजकल प्रगतिवादी क्रांतिकारी लोग कर्ण की अच्छाई करते नहीं थकते, क्या वे यह जानकर भी उसको क्रांतिकारी मानेंगे कि उसने एक अकेली मासिकधर्म से युक्त स्त्री को भरी सभा में निर्वस्त्र करने का आदेश दिया था, उसको अनुचित शब्द कहा था, उसके अपमान पर हंसा था?

देखियेः–

दुःशासनश्चापि समीक्ष्य कृष्णामवेक्षमाणां कृपणान्पतींस्तान् । आधूय वेगेन विसंज्ञकल्पामुवाच दासीति हसन् सशब्दम् कर्णस्तु तद्वाक्यमतीव हृष्टः । । संपूजयामास हसन्सशब्दम गान्धारराजः सुबलस्य पुत्रस्तथैव दुःशासनमभ्यनन्दत् । सभ्यास्तु ये तत्र बभूवुरन्ये; ताभ्यामृते धार्तराष्ट्रेण चैव तेषामभूददुः खमतीव कृष्णां दृष्टवा सभायां परिकृष्यमाणाम् । । 13 –सभापर्व (द्यूत प्रसड्ग) अर्थात् द्रौपदी की अपने बेचारे दीन पतियों की ओर देखती हुई देख दुःशासन उसे बहुत तेजी से खींचकर, झिटक कर बड़ी हंसी हंसते हुए ''दासी–दासी'' कहकर बोलने लगा। उस समय वह बेचारी विसंज्ञकल्पा (बेहोश) हो रही थी, इससे कर्ण को बड़ी प्रसन्नता हुई, उसने जोर जोर से हंसते हुए दुःशासन के कथन की खूब प्रशंसा की, सुबल के बेटे गान्धार के राजा शकुनि ने भी दुःशासन की सराहना की। उस समय वहां जितने भी सभा के लोग थे, उनमें से कर्ण, शकुनि और दुर्योधन को छोड़कर अन्य सभी को द्रौपदी की दुर्दशा देखकर बहुत दुख हुआ।

बताइये! यह था कर्ण का चरित्र!

ऐसे ही द्रौपदी को निर्वस्त्र करने का आदेश कर्ण ने दिया:--

दुःशासन सुबालोऽयं विकर्णः प्राज्ञवादिकः।

पाण्डवानां च वासांसि द्रौपद्यास्चाप्युपाहर।।

तच्छुत्वा पाण्डवाः सर्वे स्वानि वासांसि भारत।

अवकीर्योत्तरीयाणि सभायां समुपाविशन्।।

ततो दुःशासनो राजन्द्रौपद्या वसनं बलात्।

सभामध्ये समाक्षिप्य व्यपक्रष्टुं प्रचक्रमे। 14 ---सभापर्व (द्यूत प्रसड्ग)

अर्थात कर्ण कहता है– हे दुःशासन! ये विकर्ण बहुत मूर्ख है, लेकिन फिर भी विद्वानों जैसा बनता है, तुम पांडवों और इस द्रौपदी के कपड़े खींच कर उतार दो।

कर्ण की बात सुनकर सभी पांडव अपने उत्तरीय उतार कर बैठ गए, फिर दुःशासन ने भरी सभा में द्रौपदी के कपड़े खींचने शुरू किये।

द्रौपदी खुद वनपर्व में इस बात की गवाही देती है कि सभा में कर्ण ने उसकी हंसी उड़ाई थी:--

ये मां विप्रकृता क्षुद्रैरूपेक्षध्वं विशोकवत्।

न च मे शाम्यते दुःखं कर्णो यत् प्रहसत् तदा। 15 --- (वनपर्व)

अर्थात द्रौपदी कहती है:– क्योंकि आप सब लोग दुष्ट, नीच लोगों द्वारा किये गए मेरे अपमान की उपेक्षा कर रहे हैं, मानो आपको कोई दु:ख ही नहीं, उस समय कर्ण ने जो मेरी हँसी उड़ायी थी, उससे जो दु:ख मुझे हुआ है वह मेरे दिल से दूर नहीं होता।

इसी तरह कर्ण ने शकुनि के साथ मिलकर, दुःखी पांडवों पर हमले की योजना बनायी और वनवास के दौरान द्रौपदी और पांडवों को कष्ट में देखकर उसने बहुत से खुशी वाले उद्गार व्यक्त किये हैं, ये सारे श्लोक आप महाभारत में पढ़ सकते हैं; पर भारतीय जनमानस नये—नये कल्पनाशील उपन्यासकारों और टी.वी. धारावाहिक से तुरंत प्रभावित हो जाता है।

5. कवच-कुंडल के दान की कथा एक लेनदेन है:--

पहली बात तो यह कि वह कवच—कुंडल कुंती ने उसकी सुरक्षा के लिए दिया था, जो कि उसके (कुंती) के पास था, ताकि वो बचा रह सके और जब उसने कवच—कुंडल निकाला तो उसके शरीर से खून बहा, या कष्ट हुआ, ऐसा भी नहीं था; क्योंकि उसने पहले ही इंद्र से कहा कि कवच—कुडंल तब ही दूंगा, जब ऐसा करोगे कि कवच—कुंडल निकालने में मेरा शरीर कुरूप न हो जाये और न कोई अंग कटे, तो इंद्र ने कहा ऐसा ही होगा, और उसी तरह हुआः—

उत्कृत्य तु प्रदास्यामि कुण्डले कवचं च ते। निकृत्तेषु तु गात्रेषु न मे बीभत्सता भवेत्।। इन्द्र उवाच। ते बीभत्सता कर्ण भविष्यति कथंचन। ब्रणश्चैव न गाात्रेषु यस्त्वं नानृतमिच्छसि।।16 — वनपर्व (कुण्डलहरण) और इसके पहले ही वह कह चुका था कि मुझे वह अमोघ शक्ति दीजिये जिससे मैं अपने प्रतापी शत्रु (अजुर्न) को मार सकूँ:–

एवमप्यस्तु भगवन्नेकवीरवधे मम।

अमोघां देहि मे शक्तिं यथा हन्यां प्रतापिनम्। । 17 – वनपर्व (कुण्डलहरण)
बहुत सी बातें हैं; महाभारत एक अथाह सागर है। कर्ण प्रारम्भ से ही पांडवों का बहुत मजाक बनाता था, और अर्जुन से धनुर्वेद में प्रतिस्पर्धा की जलन और द्रौपदी स्वयंवर में धनुष न चढ़ा पाना आदि उसको कुंठित कर चुके थे। पर दिनकर जी और शिवाजी सावंत ने अपने कविगत स्वातंत्रय का प्रयोग करते हुए उसे महान बनाया। इसके लिए वे दोषी नहीं, क्योंकि साहित्यिक रचना में यह स्वतंत्रता होती है। दोषी हम जैसे पाठक हैं, जोकि अपने देश, अपनी सभ्यता, अपने इतिहास को पढ़ते नहीं हैं, और जिस भाषा मे उसके ग्रंथ हैं उसे हीन समझते हैं, इसीलिए गलत जानकारियों के गहन अंधकार में यूरोप की मिमिक्री करते हुये मिथ्याभिमान में डूबे हैं। जागिए, संस्कृत पढ़िए, ताकि आपको कोई भ्रमित न कर सके।

विशेष-सप्रमाण वैचारिक मतवैभिन्नय का सदा अभिनन्दन है।

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ताल का संगीत में महत्वपूर्ण स्थान



डॉ० प्रतिभा सक्सेना

असिस्टेण्ट प्रोफेसर, संगीत विभाग एस०एस० (पी०जी०) कालेज, शाहजहॉपुर

सार

भारतीय संगीत में ताल का स्थान श्रेष्ठ माना गया है। यह सत्य है जिसे ताल का ज्ञान न हो वह गायक व वादक कहलाने योग्य नहीं है। गायन, वादन या नृत्य में लगने वाले समय को नापने के साधन को ही ताल कहते हैं। ताल संगीत में लय को नींव प्रदान करता है, संगीत ताल के प्रमाण में बद्ध होकर सुनने योग्य हो जाता है। संगीत से यदि ताल का बंधन निकाल दिया जाये तो स्वर केवल बिखरे हुये पुष्पों के समान हो जायेगा। संगीत का ताल में वही स्थान है जो शरीर में प्राण का है।

स्वर और लय संगीत रूपी भवन के दो आधार स्तम्भ माने जाते हैं। स्वर से राग की उत्पत्ति हुई और लय से ताल की। लय नापने के लिये मात्रा की कल्पना की गई। साधारण तौर पर दो तालियों के बीच के समय को एक मात्रा कहते हैं। लय के अनंत प्रवाह में असंख्य मात्रायें हो सकती हैं। प्रत्येक ताल के कुछ हिस्से किये गये जिन्हें विभाग कहा गया। तबला अथवा पखावज पर बजाने के लिये प्रत्येक ताल के कुछ निश्चित बोल भी स्वीकार किये गये। इससे यह सुविधा हुई कि गायक यह जान सके कि किसी भी समय ताल के किस मात्रा पर है।

विद्वानों से कहते सुना है कि स्वर और संगीत ; संगीत विद्या के दो पैर हैं और एक के ही अभाव में वह लॅंगड़ी रहती है। इस वाक्य पर विचार करने से यह स्पष्ट होता है कि वास्तव में संगीत के अभिन्न अंग ताल की उत्पत्ति के कारण ही रागों की रंजकता को बढ़ाता है। राग की रंजकता तो राग का प्रथम गुण है अतः ताल का योग जो रंजकता की वृद्धि करता है, उसे हम भुला नहीं सकते हैं। संगीत का मुख्य उद्देश्य आनन्द की सृष्टि करना है। इस उद्देश्य की पूर्ति में ताल बड़ी महत्वपूर्ण भूमिका निभाती है। जो गीत लय प्रधान होते हैं, वे जनता को सरलता से प्रभावित कर लेते हैं इसलिये लोकगीतों के साथ अधितकर ढ़ोलक का प्रयोग होता है।

समय का ज्ञान जितना मनुष्य के लिये आवश्यक है, उतना ही संगीत के लिये भी आवश्यक है । जब गायन नियमित और उचित ठहराव के साथ किया जाता है तो उसमें मधुरता और रंजकता आती है। प्राचीन काल के अभ्यास और निपुण गायक अपने संगीत में ताल अथवा सामाजिक ठहराव का विशेष ध्यान रखते थे। ताल और लय संसार की प्रत्येक वस्तु से जुड़े हुये हैं। यहॉ अनिवार्य मेल संगीत के विषय में अति आवश्यक है।

''गीतं, बाध्यं, तथा नृत्यं यत स्ताले प्रतिष्ठतम्ः'' अर्थात् गीत, बाद्य और नृत्य को प्रतिष्ठ करने वाली अथवा एक सूत्र में बॉधकर उसका सम्पादन करनी वाली क्रिया को ताल कहते हैं।

ताल के दस प्राण हैं :-- काल, मार्ग, क्रिया, अंग, गृह, जाति, कला, लय, यति एवं प्रस्तार ; ये दस ताल के अंग अथवा प्राण कहे जाते हैं।

भारतीय संगीत में ताल का स्थान श्रेष्ठ माना गया है। यह सत्य है जिसे ताल का ज्ञान न हो वह गायक व वादक कहलाने योग्य नहीं है। गायन, वादन या नृत्य में लगने वाले समय को नापने के साधन को ही ताल कहते हैं। ताल संगीत में लय को नींव प्रदान करता है, संगीत ताल के प्रमाण में बद्ध होकर सुनने योग्य हो जाता है। संगीत से यदि ताल का बंधन निकाल दिया जाये तो स्वर केवल बिखरे हुये पुष्पों के समान हो जायेगा। किसी ने ठीक ही कहा है कि ''स्वर अलंकार रूपी पुष्पों को ताल रूपी धागे में बॉध कर एवं पिरो कर संगीतज्ञ अपने श्रोताओं के लिये संगीत रूपी सुन्दर हार तैयार करता है।'' संगीत में ताल का वही स्थान है जो शरीर

में प्राण का है। ताल विहीन संगीत निर्जीव हो जाता है। लय के अथाह सागर में खो जाने से बचाने वाला तत्व है तो वह है ताल। गायन वादन तथा नृत्य तीनों में ताल का महत्व स्वीकार किया गया है, यदि किसी संगीतज्ञ को ताल का ज्ञान नहीं है तो वह किसी भी क्षेत्र में सफलता प्राप्त नही कर सकता है। ताल ही वह साधन है जो संगीत में आनन्द का श्रोत दूसरों तक पहुँचाता है। संगीत में ताल का मुख्य उददेश्य ही लय कायम करना एवं ताल दिखलाना है। यदि गायक को ताल का ज्ञान नहीं तो वह गीत का मुखडा पकडने में असमर्थ रहेगा और इस तरह वह अपने गायन को प्रभावशाली नहीं बना सकता। इसके विपरीत यदि उसको ताल का ज्ञान है तो वह किसी भी तरह से गायन का मुखड़ा पकड़कर गायन को प्रभावशाली बना सकता है, वह उतना ही उच्चकोटि का कलाकार समझा जाता है। एक अच्छे कलाकार के लिये ताल में कुशल होना आवश्यक है। आलाप के अतिरिक्त संगीत की सभी चीजें ताल बद्ध होती हैं, इसलिये आलाप के समाप्त होते ही ताल शुरू हो जाता है और जब तक गायन समाप्त नहीं होता, ताल अपनी नियमित लय में चलता रहता है। स्थाई अन्तरा, बोल–तान, तान, सरगम आदि सभी ताल में रहते हैं। गीत के प्रकारों के आधार पर विभिन्न प्रकार के तालों की रचना हुई। ख्याल के लिये तीनताल, एकताल, झपताल, झुमरा, तिलबाड़ा, रूपक आदि, ध्रुपद के लिये चारताल, सूलताल, तीवरा आदि, उुमरी के लिये दीपचन्दी, जत आदि तालों की रचना की गई। इन तालों के बोल गीत की प्रकृति के अनुसार चुने गये। इसलिये जब गायन अथवा वादन के साथ तबला अथवा पखावज बजाया जाता है तो अधिक आनन्द आता है। साधारणतया श्रोताओं को वो गीत अधिक पसन्द आते हैं जो लय प्रधान होते हैं। इसलिये आम जनता में चित्रपट गीतों का अधिक प्रचार है। गायन–वादन में स्वर और लय के माध्यम से और नृत्य के अंग–प्रदर्शन और लय के माध्यम से भावों को प्रकट किया जाता है। इतना ही नही, तबला के बोलों और टुकड़ों को भी नृत्य द्वारा प्रदर्शित किया जाता है। तबले द्वारा जितनी अच्छी संगति होती है, आनन्द उतना अधिक आता है। हिन्दुस्तानी शास्त्रीय संगीत की विशेषता यह है कि समान मात्रा के कई ताल और गीत के प्रकार बनाये गये।

प्रकृति और मनुष्य में लय में महान अन्तर है। सूर्य, चन्द्र, नक्षत्र, मौसम आदि में एक निरन्तर गति है जो अनन्त है। इनके न तो प्रारम्भ का पता है और न अन्त का। इनकी गति हमेशा एक सी रहती है। मनुष्य द्वारा निर्मित गति आवश्यकतानुसार घटाई–बढ़ाई जाती है। इसलिये लय के तीन मुख्य प्रकार माने जाते हैं– बिलम्बित, मध्य, द्रुत। मनुष्य अपनी लय हमेशा एक सी रखना चाहे तो भी सम्भव नहीं है। एक ही गीत विभिन्न समय पर गाये जाने पर उसकी लय भिन्न होगी, चाहे लय मे सुक्ष्म अन्तर क्यों न हो। मनुष्य द्वारा निर्मित लय की विशेषता एक और है कि वह लय को आधार मानकर विभिन्न प्रकार की लय कारियों से खेलता है और फिर जितनी कुशलतापूर्वक मुखड़े से मिलता है, वह उतना ही लयकार समझा जाता है। लयकारी द्वारा केवल चमत्कार प्रदर्शन नहीं होता, बल्कि आनन्द की वृद्धि भी होती है। लय से स्वर में गति पैदा होती है। गति ही जीवन है, प्रवाह है, चैतन्य शक्ति है।

हमारे सामाजिक जीवन में संगीत पग—पग पर हमारा इसी कारण साथी है क्योंकि वह हमारे आनन्द से प्रफुल्लित होता है और दुःख में दुःखी होता है। दोनों विरोधी परिस्थितियों को समयानुकूल उत्पन्न करने की शक्ति राग के समक्ष ताल को ही है। जिस प्रकार निर्गुण निराकार ब्रहम लीला करने हेतु माया पर आश्रित होता है, उसी प्रकार स्वर की लीला करने हेतु ताल का आश्रय लेना पड़ता है। इसी नियम को भंग करने से संगीत अपूर्ण और अरूचिकर हो जाता है।

निष्कर्ष

जिस तरह चॉदनी के बिना चॉद अधूरा लगता है, जिस तरह जल के बिना नदी अधूरी रहती है; उसी तरह ताल और लय के बिना संगीत अधूरा है। जिस तरह एक पैर के बिना मनुष्य अधूरा है उसी प्रकार संगीत विद्या के दो पैर हैं और संगीत ; स्वर और ताल के बिना अधूरा है। इस बात से यह स्पष्ट होता है कि वास्तव में संगीत के अभिन्न अंग ताल की उत्पत्ति के कारण ही रागों की रंजकता बढ़ती है। राग की रंजकता राग का प्रथम गुण है अतः ताल का योग जो रंजकता की वृद्धि करता है उसे हम भुला नही सकते हैं।

संगीत का मुख्य उद्देश्य आनन्द की सृष्टि करना है। इस उद्देश्य की पूर्ति में ताल बड़ा सहायक होता है। जो गीत लय प्रधान होते हैं, वे आम जनता को सरलता से प्रभावित कर लेते हैं। इसलिये लोकगीतों के साथ ढोलक का प्रयोग किया जाता है।

भारतीय संगीत में ताल का स्थान श्रेष्ठ माना गया है। यह सत्य है जिसे ताल का ज्ञान न हो वह गायक वादक कहलाने योग्य नहीं है। गायन, वादन या नृत्य में लगने वाले समय को नापने के साधन को ही ताल कहते है। ताल संगीत में लय को नींव प्रदान करती है। संगीत का ताल में वही स्थान है जो शरीर में प्राण का है।

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भारत की भावात्मक एकता और हिन्दी साहित्य

डॉ. रंजना अग्रवाल

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सार

भक्तिकालीन कवियों ने भारत में भावात्मक एकता स्थापित करने का जो स्तुत्य प्रयास किया, जिसकी नींव उन्होंने रखी, उसकी अजस्र धारा किसी ने किसी रूप में आज भी प्रवाहित हो रही है। मध्यकाल में जनभाषा हिन्दी के द्वारा संत एवं भक्त कवियों ने भारतीय संस्कृति के आधारस्तम्भ समन्वय साधना के संदेश को देश के जनमानस तक पहुँचाया था, उसी से प्रेरणा ग्रहण कर आधुनिक युग में गांधी जी ने हिन्दी को भारत की भाषा मानकर स्वतत्रंता आन्दोलन को जनता की वस्तु बनाया। आधुनिक युग राजनीति का युग है। राजनीतिज्ञों द्वारा प्रवर्तित विघटनकारी शक्तियों की पूर्ण सफलता में इन कवियों की वाणियाँ अवरोध बनी हुई हैं। गांधी जी ने राजनीति में नैतिकता को समाविष्ट करने के लिए यह आवश्यक समझा था कि जनता संतों की वाणियों और भक्तों के पदों का पारायण करती रहे। वर्तमान में भी भारत की भावात्मक एकता को बद्धमूल करने के लिये यह आवश्यक है कि इन कवियों के सिद्धान्तों का अधिक से अधिक प्रचार—प्रसार किया जाये।

मुख्य शब्द– भक्तिकालीन कवि, मध्यकाल, जनभाषा, भावात्मक एकता

प्राचीन भारतीय नीति विशारदों का कहना है —''यादृशौ भावना यस्मिन बुद्धिर्भवति तादृशी'' अर्थात् व्यक्ति की भावना जैसी होती है, वह उसी प्रकार बुद्धि से विचार करता है। सम्भवतः इन्हीं विचारों एवं आदर्शों को ध्यान में रखकर महात्मा गांधी ने भी कहा था, ''यदि भारत ने हिंसा को धर्म के रूप में स्वीकार कर सम्प्रदाय, जाति—वर्ण में विभक्त होकर एक—दूसरे पर प्रहार करना अपना लक्ष्य बना लिया तो मैं ऐसे भारत में नहीं रहना चाहूँगा। मेरा देश प्रेम धार्मिक सद्भाव द्वारा नियंत्रित है, जिसमें धृति, क्षमा और इन्द्रिय निग्रह के भाव परिलक्षित होते हैं।''

किसी देश की सीमा पर्वतों, समुद्रों अथवा नदियों द्वारा निर्धारित नहीं की जा सकती है और न ही किसी धर्म—जाति, समुदाय अथवा वर्ग के वर्चस्व को राष्ट्र की भावात्मक गतिविधियों पर प्रहार कर गौरवान्वित किया जा सकता है। हमारे देश में धर्म और संस्कृति का उद्गम अथवा विकसित होने का क्षेत्र अरण्य और पावन नदियों की बालुकामयी भूमि रही है, जहाँ ऋषिगण स्वस्थ मस्तिष्क से संस्कृति और राष्ट्र की ऊर्ध्वगामी आचारों एवं विचारों की अनुभवी श्रृंखला का निर्माण करते गये। हमारी वैदिक संस्कृति में यौज्य राज्य और ऐक्य राष्ट्र का उल्लेख मिलता है, जिनके मूल में नैतिक गुणों की कसौटी ही वर्णित है।

भावात्मक एकता और भारत –

एकत्व में अनेकत्व अथवा अभिन्नत्व में भिन्नत्व की बात करना विघटन का परिचायक है तथा अनेकत्व में एकत्व अथवा भिन्नत्व में अभिन्नत्व का प्रतिपादन एकता या सामंजस्य की स्थापना का प्रयास है। संश्लेषणात्मक बुद्धि प्रसूत इसी पारस्परिक ऐक्य स्थापन को भावात्मक एकता कहते हैं।

भारतीय परम्परा सदैव भावात्मक ऐक्योन्मुख रही है। भारतीय मनीषा ने कट्टर राष्ट्रीयता को कभी महत्त्व प्रदान नहीं किया। वह सदैव ''अयं निजः परोवेत्ति गणना लघु चेतसाम्'' कहकर ''वसुधैव कुटुम्बकम्'' एवं ''सर्वे भवन्तु सुखिनः सर्वे सन्तु निरामयाः'' का उपदेश देती आई है। भारतीय चिन्तनधारा मनुष्य—मात्र ही नहीं, पशु मात्र भी नहीं, जीवमात्र की एकता की परिकल्पना कर समस्त दृश्यमान जगत की कल्याण कामना करती आई है। भारतीय ऋषि चाहे हम उन्हें संत कहें या भक्त, लोक—कल्याण की कामना में लीन रहकर ही ज्ञानोपदेश करते रहे हैं। हमारी भावात्मक एकता का उत्स हमारी प्राचीन संस्कृति, धार्मिक मान्यतायें और साहित्यिक रिक्थ हैं। देश के चारों कोनों पर चार धामों की स्थापना, सप्तपुरियों एवं सप्त नदियों के नामों का मन्त्र रूप उच्चारण, पंच देवोपासना, समस्त धर्मावलम्बियों को निज धर्म पालन की समान स्वतन्त्रता, समस्त दार्शनिक सिद्धान्तों की समन्वयशीलता आदि अनेक तत्त्व भारत की भावात्मक एकता के ही बाह्य विधान हैं। यह भावात्मक एकता ही है, जो हमें जाति—धर्म की संकीर्ण मनोवृत्ति से उबारकर मात्र भारतीय बनाये हुए हैं और हमें किसी भी देश में रहते हुए यह अनुभव कराती है कि हम भारतीय हैं, हमारी जड़े भारत में ही हैं। हम चाहे बौद्ध हों या जैन, शैव हों या शाक्त, सिक्ख हों या सनातनधर्मी अन्ततः सब हैं मानव ही और यही भावात्मकता हमारी विषमता को एकता प्रदान करती है।

हिन्दी साहित्य में भावात्मक एकता की पृष्ठभूमि –

मैथ्यू आर्नोल्ड का कथन है कि ''साहित्य और समाज एक दूसरे को प्रभावित करते हैं। जगज्जीवन में जो कुछ घटित होता है, उसकी अभिव्यक्ति साहित्य में होती है।'' डॉ. शिवदान सिंह चौहान के शब्दों में ''साहित्य में किसी न किसी रूप में जीवन सत्य की ही अभिव्यक्ति होती है।'' आचार्य रामचन्द्र शुक्ल ने कहा है, ''प्रत्येक देश का साहित्य वहाँ की जनता की चित्तवृत्ति का संचित प्रतिबिम्ब होता है।''

विश्व वाङ्मय का अध्ययन करने पर हमें देश—विदेश की सामाजिक स्थिति का यथार्थ पता चल जाता है। वैदिक वाङ्मय से उस युग की बहुदेवोपासना और प्रकृति पूजा का परिचय मिलता है। बौद्ध एवं जैन साहित्य से उस युग विशेष की यथार्थ जानकारी मिलती है। इसी प्रकार विभिन्न कालखण्डों के साहित्य का अध्ययन करने पर ज्ञात होता है कि हमारे साहित्यकारों विशेष रूप से कवियों को कविता के माध्यम से भारत में भावात्मक एकता स्थापित करने की आवश्यकता पड़ी, तो कहीं न कहीं इसकी पृष्ठभूमि में हमारे देश की तत्कालीन राजनैतिक, सामाजिक, धार्मिक एवं सांस्कृतिक परिस्थितियाँ – कार्य कर रही थीं।

साहित्य के विभिन्न कालखण्डों का अध्ययन करने पर ज्ञात होता है कि आदिकाल में देश अनेक छोटे—बड़े राज्यों में बँटा हुआ था। राजा महाराजा नारी के लिये लड़ना वीरता समझते थे। इस काल के हिन्दी प्रदेश और उसकी सीमाओं के आस—पास जैन धर्म, बौद्ध धर्म के वज्रयानी रूप, तान्त्रिक मत, उमा—महेश्वर योग साधना, सोम सिद्धान्त वामाचार, सिद्ध और नाथ मत, वैष्णव मत, शाक्त मत आदि विभिन्न मत प्रचलित थे। इन राजनैतिक और धार्मिक परिस्थितियों से सामाजिक जीवन प्रभावित हो रहा था। वर्णाश्रम धर्म की प्राचीन परिपाटी छिन्न—भिन्न हो रही थी और कर्मणा के स्थान पर जन्मना जातिवाद प्रमुख होने लगा था। नारी की स्थिति क्रमशः दयनीय होती जा रही थी। योद्धा होने के कारण क्षत्रियों का उत्थान चरम सीमा पर था, और ब्राह्मण जाति श्रेष्ठता के बल पर पुजने लगी थी। स्पष्टतः समाज पतनोन्मुख था।

हिन्दी साहित्य के आदिकाल में ही भारत की राजनैतिक एकता पूरी तरह विच्छिन्न हो गयी थी। राजागण परस्पर लड़ा करते थे। ऐसे ही समय में मुस्लिम आक्रान्ताओं ने भारत पर अपनी दृष्टि जमायी। संवत् 1375 में भक्तिकाल प्रारम्भ होने तक भारत वर्ष में मुस्लिम शासन प्रतिष्ठित हो चुका था। मुस्लिम आक्रमणकारियों के समक्ष हिन्दू नरेश एक—एक करके घुटने टेक चुके थे और उनमें प्रायः निराशा की भावना व्याप्त हो चुकी थी। धार्मिक परिस्थितियाँ भी विशेष उत्साहवर्धक नहीं थी। धर्म के क्षेत्र में सामान्य स्थिति यह थी कि वज्रयानी सिद्धों, कापालिकों तथा नाथपंथी योगियों के प्रभाव एवं मुसलमानों के अत्याचारों के समक्ष सामान्य जनता की धर्म भावना बहुत कुछ तिरोहित हो गयी थी। सिद्ध और योगी जनता को कार्यक्षेत्र से दूर हटा रहे थे और मुस्लिम आततायी देव—मन्दिर नष्ट करके अनीश्वरवादिता के लिए उचित वातावरण की सृष्टि कर रहे थे।

उन दिनों भारतीय समाज की सांस्कृतिक परिस्थितियाँ भी विघटनकारी थीं। हिन्दू और मुस्लिम इन दो संस्कृतियों के टकराव अथवा सम्मिश्रण से जो प्रतिक्रियायें हुई, वे उच्चवर्गीय समाज तक ही सीमित थीं। निम्नवर्गो की चेतना के स्वरूप, जीवन के प्रति दृष्टिकोण अथवा आस्था के स्वरूप में विशेष अन्तर नहीं आया, वह प्रायः ज्यों—का—त्यों बना रहा। शनैः शनैः हिन्दू व मुस्लिम शासकों के अपने—अपने राज्य सुव्यवस्थित हो गये तो विलासिता एवं राग—रंग की प्रवृत्ति बढ़ी, जिसको अभिव्यक्ति मिली रीतिकालीन हिन्दी कविता में। आधुनिक काल में अंग्रेजी सत्ता स्थापित होने पर जागरण की नई चेतना उद्बुद्ध हुई और भारतीय मनीषा ने नये स्वप्न देखने शुरू कर दिये। स्वाधीनता की मशाल जली और अन्ततः देश स्वाधीन हुआ। अतः स्पष्ट है कि धार्मिक संकीर्णता, जातिभेद, वर्ण भेद, अस्पृश्यता, ऊँच—नीच की भावना आदि अनेक ऐसे कारण हैं, जिन्होंने भारत की भावात्मक एकता की भावना को क्षति पहुँचाई।

हिन्दी साहित्य और भारत की भावात्मक एकता –

यद्यपि हिन्दी साहित्य के आदिकाल में पर्याप्त मात्रा में साहित्य की रचना हुई, लेकिन इस युग की कृतियों में राष्ट्रीय चेतना का प्रायः अभाव मिलता है। इस युग के कवि अपने आश्रयदाता राजा का गुणगान करना, अपना एकमात्र उद्देश्य समझते थे। ठीक यही स्थिति रीतिकालीन साहित्य में भी दृष्टिगोचर होती है, उस समय के कवियों का भी कविता करने का एकमात्र उद्देश्य अपने आश्रयदाता राजा का मनोरंजन करना था, जिसके लिए उन्होंने श्रृंगार को अपना माध्यम बनाया।

हिन्दी साहित्य में भारत की भावात्मक एकता के सन्दर्भ में विचार करें तो इस दृष्टि से भक्तिकालीन साहित्य में न केवल हमें भावात्मक स्तर पर एकता के बीजों का प्रस्फुटन दिखाई देता है, वरन् वह चरम सीमा पर पहुँचकर पल्लवित एवं पुष्पित होता हुआ भी दिखाई देता है। हिन्दी के सन्त और भक्त कवियों ने इस दिशा में विशेष योगदान दिया है। भावात्मक एकता का नाम लेकर उन्होंने कभी भी भावात्मक एकता के स्थापन की चर्चा नहीं की। भावात्मक एकता तो मानों उनके निकट एक सहज स्वाभाविक वृत्ति थी। इन कवियों ने समाज की विघटनशील परम्पराओं की, भेदीकरणपरक व्यवस्थाओं की सदैव उपेक्षा की है और यह नारा बुलन्द किया कि हरिजनों की कोई जाति नहीं होती –

जे पहुँचे ते पूछिए तिनकी एके जात।

सब साधो का एक सत बिचके बारहबाट।।

क्योंकि –

जाति-पांति पूछे नहिं कोय, हरि को भजै सो हरि का होई।।--(कबीर)

एवं–

पुरुष नपुंसक नारि वा जीव चराचर कोई।

सर्व भाव भज कपट तजि मोहि परम प्रिय सोई। ––(तुलसीदास)

संत और भक्त कवियों ने समाज में भावात्मक एकता की प्रतिष्ठा के लिये यह आवश्यक समझा कि समाज में भेदभाव को बढ़ावा देने वाली एवं पारस्परिक सौहार्द को कम करने वाली जितनी भी शक्तियाँ हैं, जितने भी कुचक्र हैं, उन सबका विरोध किया जाये। इसके लिये उन्होंने कभी तो मत—मतान्तरों का विरोध किया —

श्रुति सम्मत हरि भक्त पथ संजुत विरति – विवेक।

जे परहरहिं विमोह बस कल्पहिं पंथ अनेक।।

एवं –

कोउ कह सत्य झूठ कह कोउ युगल प्रबल कोउ मानै। तुलसिदास परिहरै तीनि भ्रम सो आपन पहिचाने।।—–(तुलसीदास)

तो कभी बाह्याचारों का विरोध किया, कभी वर्ण—व्यवस्था और जातिवाद का विरोध किया और कभी साम्प्रदायिकता पर तीव्रतम एवं कठोरतम प्रहार किये।

इन कवियों ने सर्वप्रथम समाज की रक्षा हेतु एवं जन—जीवन को सम्बल प्रदान करने के लिये प्रेमस्वरूप ईश्वर को जन—जन के हृदय तक पहुँचाने का प्रयास किया। हिन्दू और मुसलमान दोनों को इस ओर आकर्षित किया, परिणामस्वरूप उनके पारस्परिक भेदभाव बहुत कुछ कम हो गये। एकतापरक दृष्टिकोण को उन्होंने अत्यन्त शक्तिशाली शब्दों में जनता के समक्ष प्रस्तुत किया। कबीर ने कहा कि हिन्दू और मुसलमान एक भी सच्चे परमात्मा को नहीं जानते —

हिन्दू कहै मोहि राम पियारा तुरुक कहै रहिमाना।

आपस में दोउ लड़ि लड़ि मुए मरम न कोई जाना।।

जबकि वस्तुस्थिति यह है कि –

'खालिकु खलक, खलक महि खालिकु, पूर रहो बस ठाई।'

परमेश्वर की एकता का प्रतिपादन करने के उपरान्त इन कवियों ने समस्त समाज से प्रश्न किया कि जब 'सरजनहारा' एक है तो यह जातीय भेदभाव कहाँ से आया? उनके रूप, गुण, शील की कोटियों में अन्तर तो सम्भव है, परन्तु उनकी जाति में भेद असम्भव है –

पाणी पवन संजोग करि, कीया है उतपाति।

सुनि में सबद समाइगा, तब कासनि कहिए जाति।।

बाह्याचारों के कारण ही पारस्परिक भेद—भाव एवं वैमनस्य में वृद्धि होती है, इसीलिए मध्यकालीन कवियों ने बाह्याचारों का डटकर विरोध किया – मथुरा जावै, द्वारिका जावै भावै जावै जगन्नाथ। साथ संगति हरि भगति बिनु कहु न आवै हाथ।।

एवं –

रोजा किया नमाज गुजारी, बंग दे लोग बुलावा।

हिरदे कपट मिलै क्यूं साई, क्या हज जावे काबा।।––(कबीर)

कबीर जैन साधुओं से पूछते हैं कि क्या सिर के केश नोचने पर सिद्धि प्राप्त हो जाती है – "लुंचित मुंडित मौन जटाधर ऐजु कहे सिद्धि पाई।" इन कवियों ने मूर्ति पूजा, नमाज आदि बाह्य आडम्बरों का भी खूब विरोध किया, जिससे परस्पर संघर्ष के उपादान मन्दिर–मस्जिद उपेक्षणीय बन जायें –

''बुत पूज पूज हिन्दू मुए तुरक मुए सिर नाई।''

एकत्व स्थापना, पारस्परिक विरोध एवं वैमनस्य समाप्त करने के उद्देश्य से ही इन कवियों ने वर्ण–व्यवस्था एवं जातिवाद की भर्त्सना की।

मध्यकालीन कवि लोक—कल्याण की भावना से कवि कर्म में प्रवृत्त हुए थे। किसी एक व्यक्ति को सुधारने के लिये नहीं, वरन् सम्पूर्ण समाज को पतन से बचाने के लिये। लोक—कल्याण हेतु उनके विचार से सदाचार का मार्ग ही सर्वश्रेष्ठ था। कबीर कहते हैं कि नैतिक बल जीवन की सर्वश्रेष्ठ सम्पत्ति है —

''सीलवन्त सबसे बड़ा, सर्व रतन की खानि। तीन लोक की संपदा, रही सील की आनि।।'' तुलसीदास ने तो काव्य रचना का उद्देश्य ही लोक कल्याण बताया — 'कीरति भनिति भूति भलि सोई।

सुरसारि सम करि सब कहँ हित होई।।

इन कवियों के द्वारा समाज को जीवन एवं जगत के प्रति आस्था प्राप्त हुई और वह कर्मक्षेत्र के प्रति उन्मुख हुआ। इस प्रकार इन कवियों का व्यापक मानवतावाद विश्वमानवतावाद के रूप में प्रकट हुआ। गांधीवाद जिसका व्यापक रूप है। इनकी सामाजिक चेतना मानवतावाद के व्यापक एवं उदात्त सिद्धान्त द्वारा अनुप्राणित थी, जो आज भी मानव को मानव से भावात्मक स्तर पर जोड़ती हुई दिखाई देती है। इन्होंने समान रूप से परपीड़न का विरोध और परहित साधन का समर्थन किया। उनकी इस अहिंसा मूलक धर्म—भावना का पूर्ण विकास हमें वैष्णव संत महात्मा गांधी में दिखाई दिया जो ''वैष्णव जन तो तैंण कहिए जो पीर पराई जाणें रे'' सदृश भजनों द्वारा प्रेरणा ग्रहण करके सत्य—अहिंसा के मार्ग को प्रशस्त किया करते थे। ये कवि जानते थे कि यदि भारतीयों को भावनात्मक स्तर पर एक करना है तो उन्हें आध्यात्मिक स्तर पर भी एक करना होगा। इसके लिये उन्होंने मानव मात्र में समान रूप से व्याप्त ब्रह्म तत्त्व का प्रचार किया, जिससे काल क्रम से सीमायें मिटती गयीं और पारस्परिक आदान—प्रदान की सम्भावनायें बढ़ती गयीं।

उपर्युक्त विवेचन से स्पष्ट है कि भक्तिकालीन कवियों ने भारत में भावात्मक एकता स्थापित करने का जो स्तुत्य प्रयास किया, जिसकी नींव उन्होंने रखी, उसकी अजम्र धारा किसी ने किसी रूप में आज भी प्रवाहित हो रही है। मध्यकाल में जनभाषा हिन्दी के द्वारा संत एवं भक्त कवियों ने भारतीय संस्कृति के आधारस्तम्भ समन्वय साधना के संदेश को देश के जनमानस तक पहुँचाया था, उसी से प्रेरणा ग्रहण कर आधुनिक युग में गांधी जी ने हिन्दी को भारत की भाषा मानकर स्वतत्रंता आन्दोलन को जनता की वस्तु बनाया। आधुनिक युग राजनीति का युग है। राजनीति की भाषा विघटन एवं पृथक्करण की भाषा है। राजनीतिज्ञों द्वारा प्रवर्तित विघटनकारी शक्तियों की पूर्ण सफलता में इन कवियों की वाणियाँ अवरोध बनी हुई हैं। गांधीजी ने राजनीति में नैतिकता को समाविष्ट करने के लिए यह आवश्यक समझा था कि जनता संतों की वाणियों और भक्तों के पदों का पारायण करती रहे क्योंकि इन्हीं के द्वारा वह भारत की भावात्मक एकता को अक्षुण्ण रख सके थे और वर्तमान में भी भारत की भावात्मक एकता को बद्धमूल करने के लिये यह आवश्यक है कि इन कवियों के सिद्धान्तों का अधिक से अधिक प्रचार—प्रसार किया जाये।

संदर्भ –

1. 'चिन्तामणि' निबन्ध संग्रह – आचार्य रामचन्द्र शुक्ल

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- गांधी : जीवन और चिन्तन जे.बी. कृपलानी
- गांधी : जीवन और चिन्त
 मेरे सपनों का भारत
- 4. विनय पत्रिका
- 5. रामचरित मानस
- 6. कबीर ग्रन्थावली
- 7. भारतीय सांस्कृतिक एकता के स्तम्भ
- हमारी सांस्कृतिक एकता
- 9. संस्कृति और साहित्य

रामधारी सिंह 'दिनकर'

महात्मा गांधी

गोस्वामी तुलसीदास

गोस्वामी तुलसीदास

सम्पादक–श्याम सुन्दर दास

पंडित रूपनारायण पाण्डेय

– रामविलास शर्मा



कला के विकास में कलाकार की यात्रा का संक्षिप्त अध्ययन

रंजन कुमार

असिस्टेण्ट प्रोफेसर (चित्रकला) श0म0प0 राज0 महिला स्नातकोत्तर महाविद्यालय, मेरठ

सारांश

कला, कलाकार व समाज परस्पर एक ऐसा संघटक रहा है जिनके बीच की भूमिका को चिन्हित करने का प्रयास मानव—विकास पथ काल के आरम्भ से ही होता रहा है।

कला क्या है ? कला के माध्यम से हम किन चीजों की प्राप्ति करना चाहते हैं ? क्या सभ्य होने की दिशा में कला कर्म की आवश्यकता नितान्तारम्भ है ? कला का सरोकार सामाजिक संगठन के विभिन्न अभिकरणों को एक सूत्र में पिरोकर समाज को नित्य नव विकास पथ पर अग्रसर कराने से है, या फिर समाज द्वारा मान्यता प्राप्त विविध प्रकार के उद्यमों में से यह भी सिर्फ एक सामाजिक उद्यम मात्र है ! सवाल यह भी उठता है कि कला मानव सभ्यता के उद्देश्य निर्धारित लक्ष्य पथ पर नित्य कदम बढ़ाते समाज के पाद का सहचर है या अनुचर, या फिर अग्रचर ? इस तरह के प्रश्न समसामयिक विद्वानों द्वारा उठाये जाते रहे हैं व इसके प्रत्यूत्तर में समाधान के साथ—साथ अनेक नये—नये प्रश्न प्रकाश में आते रहे हैं।

मुख्य शब्दः नितान्तारम्भ, उद्यम, सहचर, अनुचर, समसामयिक।

वास्तव में कला आत्मिक अभिव्यक्ति को संप्रेषित करने का एक सशक्त माध्यम है। लेकिन तब सवाल उठता है कि कलाकार कला के माध्यम से क्या अभिव्यक्त करता है। अभिव्यक्ति के लिये वह कहाँ से प्रेरणा ग्रहण करता है। इसे समझने के लिए हमें कला, कलाकार व समाज के ताने–बाने को समझना होगा।

कला व समाज एक दूसरे से सह—सम्बद्ध हैं व इन दोनों के बीच की एक महत्वपूर्ण कड़ी के रूप में कलाकार की भूमिका चिन्हित है। इनके बीच का संगठन इतना गहरा व मजबूत है जिसे एक—दूसरे से विरक्त नहीं किया जा सकता। कला व समाज के स्व में इतनी प्रभावी शक्ति होती है कि वे एक दूसरे को सतत रूप से प्रभावित करते रहते हैं। प्रभावित करने की शक्ति के कारण ही एक दूसरे का अपना निज स्वरूप अस्तित्वमान है।

प्रायः कहा जाता है कि कला समाज का दर्पण होता है व इसके पीछे की दलील होती है कि जैसा समाज होगा वैसी उसकी कला होगी। यहाँ कलाकार को समाज का एक अभिन्न अंग मान लिया जाता है जो समाज में रहकर अपने कला कर्म हेतु संकलित प्रेरणा से उत्प्रेरित होकर कला की रचना करता है। वह अपनी कला–रचना के लिए सामाजिक बिंबों का आश्रय लेता है। उदाहरण के लिए आधुनिक कला से पूर्व की किसी भी कला शैलियों को लिया जा सकता है, चाहे वह पूर्व की हो या पश्चिम की।

प्राचीन यूनान का विचार था– एक आदर्श राज्य के निर्माण में प्रजा का स्वस्थ होना आवश्यक है। क्योंकि जब तन स्वस्थ होगा तभी मन स्वस्थ होगा और जब मन स्वस्थ होगा तभी सोच स्वस्थ होगी। कहने का आशय है कि मानसिक स्वस्थता का बीज स्वस्थ शरीर में निहीत होता है। इस विचार के समर्थन में ओलम्पिक खेल की शुरूआत यूनान में होती है। यूनानी कला इसकी गवाह है। प्राचीन भारतीय कला के सन्दर्भ में मौर्य कालीन या गुप्त कालीन कला कृतियों को उदाहरण के रूप में लेकर देखें तो वह भी

उस समय के समाज का ही प्रतिबिंब है। उपरी सतह से अजंता के चित्र विषयक रूप से बौद्ध धर्म के प्रतीत होते हैं लेकिन वहाँ भी धर्म के बहाने कलाकारों ने उस समय के समाज में घटित घटनाओं को ही चित्रित किया है। जैसे – जुलूस, महामाया का स्वप्न, माता–पुत्र आदि के चित्र। लेकिन जब हम प्राचीन कला की बात करते हैं तो कला का प्रभाव दोनों ही जगहों पर सामाजिक होते हुए भी कलाकार के ऐतिहासिक दस्तावेजीकरण हिस्सेदारी में अन्तर रहा है। प्राचीन यूनानी कलाकारों के नाम उनके द्वारा रचित कृतियों से कुंजित रूप में प्राप्त होता है। लेकिन जब बात अशोक स्तंभ या अजंता आदि की कृतियों के रचनाकार के नाम पता करने की आती है तो हमारे सामने अन्धकार सा छा जाता है। शासकों के नाम से इन कृतियों को कुंजित किया जाता है। हम माइरन को तो जान पाते हैं लेकिन सारनाथ से प्राप्त सिंह स्तम्भ या दीदारगंज से प्राप्त यक्षिणी शिल्प को साकार रूप प्रदान करने वाले उन अद्वितीय रचनाकारों की पहचान से वंचित रह जाते हैं। प्राचीन भारत में कलाकारों को उनके नाम को प्रकाशित करने की स्वतंत्रता से वंचित रखा गया जो समाज में कलाकार के अहम की दयनीय स्थिति को बयां करती है।

सही मायने में कला एक दर्पण के जैसा है जो वास्तविक बिंब को प्रतिबिंबित करती है। वास्तविक बिंब व्यक्तिगत या सामूहिक, दोनों में से कोई भी हो सकता है। मध्यकाल काल तक स्पष्टतः कला में सामूहिक / सामाजिक बिम्बों को ही प्रदर्शित करने की मनोदशा प्रचलित रही। दोनों ही जगह। पश्चिम में भी और पूरब में भी। आखिर ऐसा क्यों था ! कारण दूध का दूध और पानी का पानी की तरह स्पष्ट है – समाज पर पहरेदारी के रूप में धार्मिक नियंत्रण। मध्यकाल में समाज का कोई भी ऐसा अभिकरण नहीं था जो धार्मिक नियंत्रण से मूक्त रहा हो। इसका प्रतिफल कला में भी हमें देखने को मिला। समाज के सभी अभिकरण धर्म से अनुप्रेरित थे। कलाकार किसी धार्मिक संस्थाान या राज्य की सत्ता की आकांक्षाओं को आदेशानुरूप कला–वस्तु के रूप में फलीभूत करने को विवश था। पूरी तरह से धार्मिक प्रभाव का बोलबाला था। यही कारण है कि उस समय की रचित कृतियों में धार्मिक विषयों को ही चित्रित किया गया है या फिर उच्च या शासक वर्गों के ढाट–बाट को। कलाकार को अपने मन की बात कहने की आजादी नहीं थी। आजादी थी भी तो सिर्फ सुनने की, जिसे किसी भी रूप में कला के विकास की एक स्वस्थ परंपरा नहीं कही जा सकती। इस प्रवृति ने कला के विकास में एक मायने में जड़ता दी तो दूसरे मायने में एक सकारात्मक पहलू भी, जो कलाकारों के हिस्से में उभरकर आया– कल्पना प्रवीणता के रूप में। यथार्थ से वास्ता नहीं था। इसलिए कलाकारों को कल्पना का ओट लेना पड़ा। ऐसी उचाट भरी कला–विकास–वातावरण में कल्पना कला के लिए सदुपयोग के रूप में काम आयी जिसके प्रतिफलन के रूप में हमें आज बनी–टनी जैसी कालजयी कृतियां प्राप्त होती हैं।

मध्यकालीन कला—कृतियों का अर्थसार सामूहिक था और जब कला का प्रभाव सामूहिक होता है तो ऐसे में व्यक्तिगत अर्थसार के विषयों के अंकन निषिद्ध होते हैं। पश्चिम में मध्यकाल की समाप्ति हमारे यहाँ से पहले हो जाती है। गोथिक के साथ ही कला में आध्यात्मवादी दृष्टिकोण से मानवाकृतियों को अंकित करने की परम्परा को विराम देते हुए रिनिसॉ के साथ मानवतावादी दृष्टिकोण अपनाये जाने की वकालत शुरू हो जाती है। हालांकि विषयों का अर्थसार अभी भी प्रायः सामूहिक ही बना रहा। लेकिन यहाँ पर चित्रित ईसा की रूपाकृति को देखकर किसी अप्रमाणिक स्वर्गाकृति का आभास नहीं होता है। रिनिसॉ के ईसा का दर्शक पर ऐसा प्रभाव पड़ता है जैसे दर्शकों के बीच का ही कोई व्यक्ति चित्र—धरातल में स्थान पा गया हो ! यथार्थ को स्वीकार कर वैज्ञानिकता के समावेशन से अब कलाकार मानवतावादी दृष्टिकोण की ओर उन्मुख हो चला था। बहुत फर्क है—गोथिक और रिनिसॉ के ईसा में। यहाँ से कलाकार अब अपनी दृष्टि से बिंबों को देखने की शुरूआत कर देता है, जो शनै—शनै आधुनिकता की दूरी को मापने की ओर अग्रसर हो जाता है। समाज में कलाकार को मजबूती के साथ अपनी उपस्थिति दर्ज कराने की हिस्सेदारी के लिए प्रबल मार्ग प्रशस्त होने लगता है।

कला क्या है ? कला एक दृष्टि है – चीजों को सुघर रूप से देखने की, दिखाने की। एक कलाकार का यही प्रयास रहता है कि अपने समाज, अपने भीतर के संसार की निश्छलता को प्रकाशित करे। सौन्दर्य के प्रति सचेत रहे। कला समाज में सौन्दर्य के प्रति जागरूकता का नाम है। कला समाज के सौन्दर्यात्मक द्ष्टिकोण को नव उर्जा से उत्साहित करती है, संपुन्जन का आग्रह करती है। कला एक विशिष्ट दृष्टि है। इसका वरण सौन्दर्य है। सौन्दर्य की उपस्थिति सिर्फ और सिर्फ कला में सम्भव है। सौन्दर्य का निहितार्थ कला में है व कला का निहितार्थ सौन्दर्य में है। ये एक दूसरे के योगात्मक हैं।

रोजमर्रा के जीवन में हम नित्य ऐसे चेहरे, वस्तुओं, स्थलों आदि को देखते हैं जो हमें आकर्षक या खास नहीं लगते या उसके प्रतिबिंब हमारे मनोमस्तिष्क में चिरस्थायी नहीं रहते। हमारे इर्द–गिर्द अनेक ऐसे रूपाकार बिखरे पड़े रहते हैं जिनसे हम भली–भॉति विज्ञ होते हुए भी अनभिज्ञ रहते हैं। हमारा रोज उनसे सामना होता है, रोज उनसे मुठभेड़ होती है बावजूद हम उसके प्रति निष्क्रिय रहते हैं। लेकिन एक कलाकार की नजरें जब उन रूपाकारो पर पड़ती हैं तो वही रूपाकार सौन्दर्य को उदघाटित करते हुए आकर्षण का केन्द्र बिन्दु बनकर सामाजिक सौन्दर्यबोध के कदम को दो कदम आगे बढ़ा देती है। समाज की नजरों से जो चीजें ओझल या तिरष्कृत रहती हैं, कलाकार उसे आम से खास बना देता है। उसमें नव जीवन का संचरण कर उसे सौन्दर्य से ओत–प्रोत कर देता है। उसे समाज की निगाहों के नेपथ्य से बाहर निकालकर समाज में उसके अस्तित्व के महत्व को प्रसारित कर देता है। एक कलाकार की पहल से अब समाज की वही निगाहें, जिसने अब तक उसे नजरंदाज कर रखा था; तिरष्कृत कर रखा था, करवटें लेकर उसे आश्चर्य के भाव से सम्मानपूर्वक देखने लगता है। तिरष्कृत करने वाली निगाहें 'काश' का आह भरकर बेचैन हो उठती हैं उसकी सौन्दर्यमयी काया को देखकर। ओझल सत्ता की वास्तविकता को उजागर करने वाले उस कलाकार को अब वही समाज प्लेटो की तरह निंदा नही करता बल्कि– लाख–लाख धन्यवाद ज्ञापित करता है।

लेकिन ऐसा तब होता है जब कलाकार धर्म सत्ता या राज सत्ता से स्वतंत्र होता है। जब वह अपनी दृष्टि से कला—सृजन करता है। उसकी कूँची पर किसी भी तरह के बाहृय प्रभाव का नियुत्रण नहीं होता। और यहीं से कला का अर्थसार सामूहिक से व्यक्तिगत में परिणत हो जाता है। कला का अर्थसार बदलते ही कलाकार की अन्तर्दृष्टि जागृत हो जाती है। इस जागृत अन्तर्दृष्टि का परिणाम आधुनिक कला —स्वरूप में निखरकर आता है।

विद्वानों के अनुसार संसार के नक्शे में आधुनिक कला की शुरूआत फ्रांस में प्रभाववाद के माध्यम से होती है। हम पीछे से कूँची लेकर आए हैं, बंगाल शैली का परिचय देते हुए।

आधुनिक काल में कला व कलाकार दोनों का एक साथ युगान्तर विकास हुआ है। आधुनिक समाज में व्यक्तिवादिता को बढ़ावा मिला। कलाकार भी इस बढ़ावे के साथ आगे बढ़ता चला आया है। कलाकार अब पहले से ज्यादा स्वतंत्र हो गये। सही मायने में यही वो सामयिक मैदान है जहॉ कलाकारों ने कला का भरपूर लुत्फ उठाया है। कला की विधाएँ जो पहले अलग—अलग मार्ग पर चल रही थीं अब एक दुसरे के करीब आ जाती हैं। न जाने कब से ये सामुहिक नृत्य करने को आतुर थे। अब एक ही मंच पर कला की विविध विधाओं को एक साथ जड़ देने का साहस कलाकारों ने कर लिया है। अब एक ही चौखटे के अन्दर शब्द, रंग व कंकीट को आपस में आजादी के साथ सहजता से वार्तालाप करते देखा—गुना जा सकता है।

आज आधुनिक कला प्रयोग—धर्मिता का अर्थ धारित कर चुका है। कला—क्षेत्र में नित्य अभिनव प्रयोग किये जा रहे हैं। कलाकार अपनी—अपनी अभिरूचि के अनुसार विषय से लेकर किसी भी सामग्री के प्रयोग को अपने चौखटे में साहसपूर्वक आत्मबल के साथ युग्मित कर रहे हैं। अब कैनवास अपने उपर सिर्फ रंगों को ही ओढ़ लेने के लिए आकांक्षित नहीं है। कैनवास की भी आकांक्षा बढ़ी है। अब वह रेत, कागज की कतरनें, रस्सी—तार आदि से बनी किसी भी प्रकार की चादरों को अपने उपर तान सकती है। उसे अब कोई हिचकिचाहट नहीं है। आज की सभी मूर्तियां सिर्फ बैठने की आदि नहीं है। उनमें से कुछ चल—फिर कर दिखा सकती है। सरपट दौड़ लगा सकती है। जडता की परिपाटी को चलत मूर्तियों ने समाप्त करके दिखा दिया है।

सन्दर्भः

- 1. भारतीय चित्रकला और मूर्तिकला का इतिहास डॉ० रीता प्रताप आईएस०बी०एन०–978–93–5131–219–2
- 2. कला, संस्कृति एवं समाज, आईएस0बी0एन0–978–81–923100–3–9



रामायण व अन्य धार्मिक ग्रन्थों के दृष्टांत चित्रों के रचयिता व उनका कलात्मक भाव और समाज पर पड़ने वाला प्रभाव (गीता–प्रेस के सन्दर्भ में)

प्रदीप राजौरिया

सहायक आचार्य (चित्रकला), ललित कला एवं संगीत विभाग दीनदयाल उपाध्याय गोरखपुर विश्वविद्यालय, गोरखपुर

हम सभी रामायण और रामायण के अनेक प्रसंगों के विषय में बचपन से ही बहुत कुछ सुनते आये हैं, रामायण की कहानियाँ प्रेरणादायक तो हैं ही उसके साथ—साथ रामायण के प्रसंगों का प्रस्तुतीकरण अपने आप में एक अनोखा सौन्दर्य समाहित किये हुए है। प्रत्येक प्रसंग में भाव का प्रभाव इतना है कि वह वाक्य और श्लोकों को दृश्य में परिवर्तित करता प्रतीत होता है। यह प्रभाव ऐसा है जो वास्तव में समाज को जड़ से सिंचने, संस्कृति और सभ्यता में संतुलन बनाये रखने में प्राचीन काल से ही सफल रहा है। मानव समाज के उच्च मूल्यों के लिए एक सफल जीवन के समस्त आवश्यक मूल्यों को रामायण में सौन्दर्यात्मक ढ़ंग से प्रस्तुत किया गया है। इन मूल्यों को जन—जन तक पहुंचाने का कार्य गीता—प्रेस, गोरखपुर ने किया, जो आज विश्व की सर्वाधिक धार्मिक पुस्तकों, प्रकाशित करने वाली एक प्रतिष्ठित भारतीय संस्था है। यह विशुद्ध आध्यात्मिक संस्था सन् 1923 से लगातार आज भी धार्मिक पुस्तकों, ग्रन्थों और पत्रिकाओं को जन—मानस तक पहुंचा रही है। रामचरितमानस और भगवदगीता को घर—घर तक पहुंचाने का श्रेय गीता—प्रेस को ही जाता है। यह दुर्भाग्यपूर्ण ही है कि रामायण जैसे धार्मिक ग्रन्थों को चित्रात्मक स्वरूप देने वाले मूर्धन्य चित्रकारों को कम ही लोग जानते हैं, कम ही लोग इन चित्रकारों के कलात्मक—भाव से परिचित हैं। कम ही लोग जानते हैं कि जिस चित्र को देख वह अपने पुरूषोत्तम राम की छवि मस्तिष्क में बना रहे हैं उस राम का चित्र बनाते समय बी0 के0 मित्रा और अन्य महत्वपूर्ण चित्रकारों का क्या भाव रहा होगा और आज उनका समाज पर क्या प्रभाव है ?

गोरखपुर से वैसे तो भारतीय आधुनिक चित्रकला को एक नई दिशा देनी वाली, व अन्तर्राष्ट्रीय ख्याति प्राप्त कला साधिका अमृता शेरगिल का नाम जुड़ा है परन्तु उनकी परम्परा का यहाँ आज निर्वहन न हो पाना भी एक दुर्भाग्य ही है। गोरखपुर की कला–साधना को मुख्य रूप से चार धाराओं में विभाजित करके देखा जा सकता है। एक गीता–प्रेस के चित्रकारों की, दूसरी धारा पूर्वोत्तर रेलवे के शौकिया चित्रकारों की, तीसरी धारा का सम्बन्ध विश्व–प्रसिद्ध टेरोकोटा शिल्पकला से है और चौथी व अन्तिम धारा उन कलाकारों की है जो अपने शैक्षणिक दायित्वों को पूरा करते रहे, फिर स्वतंत्र रूप से कला–साधना करते रहे।

ee.

गीता-प्रेस से सम्बन्धित धार्मिक चित्रों के प्रमुख चित्रकार व उनका प्रभाव

बिनय कुमार मित्रा (बीo केo मित्रा) — बिनय कुमार मित्रा का जन्म जुलाई 1884 में वाराणसी में हुआ था। आपके पिता स्व. अक्षय कुमार मित्रा काशी नरेश के निजी सचिव थे। बीo केo मित्रा का अपने दो बड़े भाईयों द्वारा बने चित्रों को देख धार्मिक चित्रों के प्रति रूझान जागृत हुआ। बचपन से ही वे लकड़ी के कोयले से दीवारों पर चित्र बनाया करते व रेखाओं द्वारा उनमें उभार लाने का सफल प्रयास करते। यही अभ्यास बढ़ता चला गया और वह धार्मिक चित्रों को बनाने में निपुण हो गये। इन्होंने अपनी कला यात्रा में किसी को गुरू नहीं बनाया। आपके इसी रूझान के कारण झूँसी (प्रयागराज तत्कालीन इलाहाबाद) के ब्रह्मचारी प्रभू दत्त जी ने आपको अपने पास बुलाया व वही पर आपकी मुलाकात भक्त

हनुमान प्रसाद पोद्दार जी से हुई। पोददार जी के आग्रह पर आप गोरखपुर आये और गीता—प्रेस के लिए गीता वाटिका में रहते हुए लगभग 4500 धार्मिक चित्रों का निर्माण किया जो रामायण, श्रीमद्भागवत् गीता, और कल्याण में मुख्य रूप से प्रकाशित हुए। आपने कई बड़े—बड़े चित्रों का भी निर्माण किया जिनमें तैल व कुछ जल रंग में चित्रित हैं। आपने भगवान राम व कृष्ण के बाल जीवन से लेकर उनके युवावस्था तक के चित्र बनाये हैं। आपने चित्रों के निर्माण में इग्लैण्ड़ का केण्ट व वाट्समैन पेपर का प्रयोग सर्वाधिक किया है। बीo केo मित्रा ने वाश पद्धति में चित्रों का निर्माण किया और पोस्टर रंगों का प्रयोग किया है। चित्र संयोजन की आकृतियों में विषय अनुरूप भाव, भंगिमाओं व मुद्राओं का स्पष्ट समावेश किया है।

जगन्नाथ जी – जगन्नाथ जी का जन्म 1909 ई0 में अलीनगर, गोरखपुर में हुआ। आपके चित्र से भारत की मासिक पत्रिकाओं जैसे– कल्याण, गीता, धर्म, सरिता, संगीत आरोग्य आदि सुशोभित होती रहीं। सन् 1936 से 1953 तक आपने भारत के कई बड़े नगरों जैसे– दिल्ली, मुम्बई, जयपुर, रतनगढ़, मथुरा में रहते हुए अपनी चित्रकला का विकास किया। गीता–प्रेस में बनाये गए धार्मिक चित्र आज भी लीला चित्र मंदिर भवन में सुरक्षित व प्रदर्शित हैं। स्व. हनुमान प्रसाद पोद्दार जी के अनुरोध को स्वीकार कर भारत के विभिन्न मंदिरो की निर्माण शैली का समावेश कर गीता–प्रेस के मुख्य द्वार की अद्भुत संरचना तैयार की जो आज सभी के सामने कला का उत्तम नमूना बनकर खड़ा है। यह वास्तुकला का एक अनुपम उदाहरण है जिसमें देश की संस्कृति व सभ्यता की झलक देखने को मिलती है। तत्कालीन राष्ट्रपति डॉ0 राजेन्द्र प्रसाद ने इसका उद्घाटन किया। गीता प्रेस के विभिन्न मंदिरों, स्तूपों व देवालायों

के अंशों का समावेश कर एक भव्य द्वार का निर्माण किया गया है। द्वार की इसी संरचना से प्रभावित होकर, तत्कालीन पीठाधीश्वर महन्त दिग्विजय नाथ ने गोरखनाथ मंदिर की संरचना का प्रारूप तैयार करने का कार्यभार भी आपको दिया। राधा—माधव के अनेक आदम कद तैल चित्रों को अग्रवाल भवन अलीनगर के मुख्य हॉल में देखा जा सकता है। इन चित्रों से जगन्नाथ जी की कला प्रतिभा का पता चलता है।

श्री भगवान दास – भगवान दास जी का जन्म 10 मई 1917 को गोरखपुर के हुमायुँपुर में हुआ। आप पूर्वी उत्तर प्रदेश के उन कलाकारों में से थे जो देश के कोने–कोने में प्रसिद्ध थे। आरम्भिक दौर में आपने स्वयं ही चित्रकला के विभिन्न आयामों का अभ्यास किया। बी0 के0 मित्रा के सम्पर्क में आने के बाद आपने उनसे चित्रकला की अन्य महत्वपूर्ण बारीकियाँ सीखी और फिर आपने भी धार्मिक चित्रों का निर्माण प्रारम्भ किया व धार्मिक चित्रों के निर्माण में महारत हासिल की। गीता–प्रेस में आपने रामचरित–मानस, कल्याण, महापुराण, श्रीमद्भागवत, व हनुमान चालीसा के साथ–साथ अन्य धार्मिक पुस्तकों के लिए चित्रों का निर्माण किया। इसके अलावे आपने बहुत से रेखाचित्र भी बनाये। 1950 के दशक में आपने प्रसिद्ध अभिनेता पृथ्वीराज कपूर का आदम कद का चित्र बनाया। उस चित्र से मंत्र मुग्ध होकर पृथ्वीराज कपूर आपको अपने साथ मुम्बई ले जाना चाहते थे पर आपने अपनी भक्ति–रचना के

चलते गोरखपुर में ही रहकर कार्य करना उचित समझा। आप सदैव अपने साधारण और मधुर स्वभाव के लिए जाने गए।

प्रभाव :-

गीता प्रेस का उद्देश्य मुनाफा कमाना कभी नहीं रहा। इसके प्रचारक प्रख्यात व्यापारी वर्ग से संबंध रखने वाले मारवाड़ी थे। पॉल अर्ने ने गीता प्रेस को बीसवीं शताब्दी के प्रिंट हिन्दुवाद का शीर्ष वाहक कहा। रामचरितमानस को नए अर्थ देते हुए उनकी कथाओं को केन्द्र में रख कर उन्हें नाटकों और गीतों में ढ़ाला। रामचरितमानस का लोकप्रिय धुन / छंद / पद्य में आम जन के बीच आना ही रामलीला के प्रदर्शन का आधार बना। रामायण का चित्रात्मक स्वरूप आ जाने के बाद रामायण का प्रचार–प्रसार पूर्व की अपेक्षा और अधिक हो गया। नये स्वरूप ने पाठकों में रामायण के अध्ययन के प्रति रूझान और उनकी रूचि को बढा दिया।

वर्तमान में गीता—प्रेस किसी पहचान की मोहताज नहीं है और आज गीता—प्रेस का नाम ही अपने आप में सम्पूर्ण पता बन गया है। गीता—प्रेस द्वारा प्रकाशित धार्मिक ग्रन्थों के अनेक प्रसंगों को प्रभुलीन होकर, विषय—वस्तु की वास्तविक संवेदना को समझ, स्वयं की कल्पना के आधार पर एक—एक पात्र को आवश्यकता अनुरूप इस प्रकार चित्रित किया जैसे मानों उनमें प्राण भर दिए हों। ऐसा कर पाना यकीनन हर चित्रकार के लिए संभव न था पर हम बी0 के0 मित्रा, जगन्नाथ व भगवान जैसे सिद्ध—हस्त चित्रकारों के चित्रों को देखते हैं तो ऐसा प्रतीत होता है कि इन चित्रों की रचना करने के लिए ही स्वयं प्रभु ने इन चित्रकारों को भेजा हो। इन चित्रों के कारण ही रामायण व अन्य धार्मिक ग्रन्थों के प्रसंग लोक जन तक इतने अधिक जीवन्त हो गये हैं कि पाठक को घटना स्वयं समक्ष घटित होती हुई प्रतीत होती है। इन चित्रकारों के ये चित्र आज बडे—बडे आकारों में कैलेण्डर रूप में छपते हैं। विश्वभर में लाखों





लोग इन चित्रों के प्रंशसक हैं। इन धार्मिक चित्रों का प्रभाव इतना अधिक है कि देवी—देवताओं का ध्यान आते ही इन चित्रों में अंकित छवियाँ ही सर्वप्रथम उभरकर आती हैं।

गीता-प्रेस के संस्थापक सेठ जी जयदयाल गोयन्दका मारवाड़ी गृहस्थ संत थे, आप बहुत ही साधारण स्वभाव के व्यक्ति थे। वे सदैव यही कहा करते कि लोग आपके काम को जाने और उसकी प्रशंसा हो। आपने अपने जीवन का एक मात्र उददेश्य यही निर्धारित कर लिया था कि वे गीता का प्रचार–प्रसार आजीवन देश–विदेश तक करते रहेंगें। सेठ जी की इच्छा थी कि साधारण मनुष्य भी ईश्वर की माया, रहस्यमय रूपों और उनकी लीलाओं को साधारण ढंग से समझ सके व इसी विचार से चित्रों को भगवान के प्रचार का माध्यम बनाया गया। सेठ जी का मानना था कि भारतवर्ष में ऐसा कोई स्थान नहीं है जहाँ श्रीराम व श्रीकृष्ण की लीलाओं व अन्य धार्मिक चित्रों के चित्र संग्रहित न हों। इसी विचार की प्रबल इच्छा से कई वर्षों उपरान्त, चित्र–विथिका जिसे लीला–चित्र–मंदिर के नाम से भी जाना जाता है, की स्थापना गीता–प्रेस में हुई, जहाँ भगवान श्री राम व श्री कृष्ण की लीलाओं के सर्वश्रेष्ठ चित्र संग्रहित हैं। प्राचीन काल से ही भारत की कला संस्कृति व परम्परा की वाहक रही है। कलाकार भी इसी उददेशय को लेकर वर्षों तक अपनी कला साधना करते रहे। भारत में अनेक कला विथिकाएं व संग्रहालय हैं जो बहुमूल्य कला सम्पदा से सुसज्जित हैं। केवल और केवल कला की दृष्टि से चित्रों को देखने वालों के लिए इस चित्र मंदिर का बहुत महत्व हो न हो पर यह चित्र भवन निश्चित ही भक्तिभाव से प्रधान है। ये चित्र अपने प्रकार की एक अलग कला शैली का निर्वहन करते हैं, जिनमें कला पद्धति से अधिक भावना और भक्ति का समावेश सर्वोपरि है। इसी कारण ये चित्र साधरण जन के लिए भी ईश्वर की भक्ति के समतूल्य स्थान रखते हैं। इन चित्रों के निर्माण व संग्रह का उददेश्य इसी दुष्टि से किया गया कि जिससे दर्शकों को अपने–अपने इष्ट की लीलाओं के दर्शन हों और उनसे प्रेरणा प्राप्त करके वे अपने जीवन में सफलता की ओर अग्रसर हों। इस भवन में भगवान विष्णु, राम, कृष्ण, शिव और अन्य देवी–देवताओं के साथ—साथ भगवान बुद्ध, महावीर, ईसा—मसीह, आदि के भी चित्र हैं जो अपने—अपने विश्वास व प्रेम के अनुसार प्रिय हैं। इस प्रकार यह चित्र मंदिर न सिर्फ हिन्दू देवी–देवताओं के लिए बल्कि सभी धर्म जाति वर्ग के लिए दर्शनीय है। इस भवन में श्रीमद्भागवत्गीता के पूरे 18 अध्याय, संगमरमर पर खुदवाकर क्रमशः भवन के चारों ओर लगे हैं। भवन में साधु—संतों के बहुत से दोहे व चौपाई दीवारों पर लिखे गये हैं। इस चित्र–विथिका को सम्पन्न बनाने में विनय कुमार मित्रा, जगन्नाथ और भगवान का सर्वाधिक योगदान है। इन्होंने देवी-देवताओं से जुडे प्रसंगों के लगभग दस हजार से भी अधिक चित्रों की रचना की है। इन कलाकारों के विषय में ऐसे बहुत से प्रसंग सुनने को मिले जो यह सिद्ध करते हैं कि इन सभी ने स्वयं को संसार की तत्कालीन आधुनिकता से वंचित रखा, दुनिया की चमक से अलग रखा। कई बार इन चित्रकारों को अन्य जगह से अच्छे वेतन का भी प्रस्ताव मिला पर आध्यात्म और प्रभु के प्रति गहरी आस्था के चलते सब कुछ अस्वीकार कर दिया।

प्रसिद्ध निर्माता व निर्देशक रामानंद सागर अपने धार्मिक धारावाहिक रामायण के निर्माण से पूर्व धारावाहिक में पात्रों के उचित परिधानों के चयन की खोज में गीता—प्रेस गोरखपुर आये और चित्रों का सूक्ष्मता से अध्ययन कर प्रेरणा ली व उसी आधार पर सैट की रचना की।

बीo केo मित्रा, जगन्नाथ, व भगवान दास जैसे कलाकारों ने अपने अतुलनीय योगदान से रामायण, अन्य धार्मिक ग्रन्थों, गीता प्रेस, व तत्कालीन समाज को नई रचनात्मक उर्जा प्रदान की जिसका प्रभाव आज भी व्याप्त है। गीता प्रेस में बहुत से चित्रकार जैसे मधुवन, ब्रजेन्द्र, देवलाकर, घासीराम, धनुष, व पीo रॉव इत्यादि जिन्होने हनुमान प्रसाद पोद्दार जी के विशेष आग्रह पर गीता प्रेस के लिए धार्मिक चित्र बनाये। इन कलाकारों का योगदान, त्याग और निष्ठा कभी भी भुलाई नही जा सकती है, जिन्होने अपने चित्रों और अपने व्यक्तित से समाज पर एक गहरा सकारात्मक प्रभाव छोड़ा।

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जल, जीवन और संस्कृत साहित्य

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सार

जीवन और प्रकृति का सम्पूर्ण सौंदर्य जल पर ही निर्भर है। इसलिए जल को जीवन कहा गया है। यह सत्य है कि प्राणी भोजन के बिना कई दिन जीवित रह सकता है; पर जल के बिना नहीं। जल के बिना जीवन की कल्पना करना असंभव है। कहा जाता है– जल है तो कल है, जल नहीं तो कल नहीं। रहीमदासजी ने पहले ही कह दिया था–'बिन पानी सब सून'। एक अमेरिकी विज्ञान लेखक ने कहा था– 'हमारी पृथ्वी पर यदि कोई जादू है, तो वह जल है।'

मनुष्य जब प्रकृति का स्वामी बन जाता है तो वह उसके साथ कसाई जैसा व्यवहार करने लग जाता है। प्रकृति के भण्डार सीमित हैं और यदि उनका दोहन पुनर्जनन की क्षमता से अधिकमात्रा में किया जाएगा तो ये भण्डार खाली हो जाएगे। जल, जंगल और जमीन का एक—दूसरे से घनिष्ट संबंध है। भोगवादी सभ्यता जंगलों को उद्योग व निर्माण सामग्री का भण्डार मानती है। वास्तव में वन तो जिंदा प्राणियों का एक समुदाय है, जिसमें पेड़—पौधे, लताएं, कन्द—मूल, पशु—पक्षी और कई जीवधारी शामिल हैं। इनका अस्तित्व एक—दूसरे पर निर्भर है। औदयोगिक सभ्यता ने इस समुदाय को नष्ट कर दिया, वन लुप्त हो गए। इसका प्रभाव जल—स्त्रोतों पर पड़ा। वन, वर्षा की बूंदों की मार अपने हरित कवच के ऊपर झेलकर एक ओर तो मिट्टी का कटाव रोकते हैं और उसका संरक्षण करते हैं,पत्तियों को सड़ाकर नई मिट्टी का निर्माण करते हैं और दूसरी ओर स्पंज की तरह पानी को चूसकर जड़ों में पहुंचाते हैं, वहीं पानी का शुद्धिकरण और संचय करते हैं, फिर धीरे—धीरे इस पानी को छोड़कर नदियों के प्रवाह को सुस्थिर रखते हैं। पंचभूतमयी इस देह में पृथ्वी तत्व के पश्चात् जल तत्व की मात्रा अन्य भूतों की अपेक्षा अधिक होती है। मानव मात्र की समस्त प्राणी जगत् की समस्त सांसारिक गातिविधियों एवं जीवनचर्या के सम्यक् संचालन हेतु जल की आवश्यकता सर्वोपरि है।

जल, जंगल और जमीन का एक–दूसरे से घनिष्ठ संबंध है। भोगवादी सभ्यता जंगलों को उद्योग व निर्माण सामग्री का भण्डार मानती है। वास्तव में वन तो जिंदा प्राणियों का एक समुदाय है, जिसमें पेड़–पौधे, लताएं, कन्द–मूल, पशु–पक्षी और कई जीवधारी शामिल हैं। इनका अस्तित्व एक–दूसरे पर निर्भर है। औद्योगिक सभ्यता ने इस समुदाय को नष्ट कर दिया, वन लुप्त हो गए। इसका प्रभाव जल–स्त्रोतों पर पड़ा। वन, वर्षा की बूंदों की मार अपने हरित कवच के ऊपर झेलकर एक ओर तो मिट्टी का कटाव रोकते हैं और उसका संरक्षण करते हैं,पत्तियों को सड़ाकर नई मिट्टी का निर्माण करते हैं और दूसरी ओर स्पंज की तरह पानी को चूसकर जड़ों में पहुंचाते हैं, वहीं पानी का शुद्धिकरण और संचय करते हैं, फिर धीरे–धीरे इस पानी को छोड़कर नदियों के प्रवाह को सुस्थिर रखते हैं; इसीलिए मुहावरा बना है कि जंगल नदियों की मॉ है।

पृथ्वी पर जल की स्थिति–

जल मण्डल पृथ्वी का वह भाग है, जो भू–भाग के चारों ओर पानी और बर्फ के रूप में लगा हुआ है।1

पृथ्वी का लगभग तीन चौथाई भाग महासागरों से ढका हुआ है जो, पृथ्वी पर उपस्थित सम्पूर्ण भू—जल का लगभग 97.5 प्रतिशत है और यह अत्यंत ही लवणीय और खारेपन की स्थिति में है। शेष 2.5 प्रतिशत अलवणीय या मृदु जल है,जो मानव उपयोग के लिए प्रत्यक्ष रूप में उपलब्ध नहीं है।2 अलवणीय जल का एक विशाल भाग ध्रुवों तथा ग्लैशियरों पर बर्फ के रूप में जमा हुआ है (लगभग 1.97 प्रतिशत), शेष 0.5 प्रतिशत भाग भूमिगत जल के रूप में तथा 0.02 प्रतिशत भाग झीलों व नदियों में, 0.01 प्रतिशत भाग मिट्टी में तथा 0.0001 प्रतिशत भाग वातावरण में उपलब्ध है।3

जल पृथ्वी पर उपलब्ध एक बहुमूल्य संसाधन है। पृथ्वी का तीन चौथाई यानि लगभग 75 फीसदी हिस्सा जल से भरा है, लेकिन दुर्भाग्यवश इसका बहुत कम अंश ही पीने योग्य है।

जल संसाधन सभी सजीवों के जीवन का आधार है। जल के बिना सुनहरे कल की कल्पना नहीं की जा सकती है। नगरीकरण,औद्योगिकीकरण की तीव्र रफ्तार,बढ़ता प्रदूषण तथा जनसंख्या में विस्फोटक वृद्धि के साथ प्रत्येक व्यक्ति के लिए पेयजल की उपलब्धता सुनिश्चित करना एक बड़ी चुनौती है। विश्व आर्थिक मंच की एक रिपोर्ट के अनुसार आगामी दस वर्षो में जल—संकट की समस्या और अधिक विकराल हो जाएगी। इसी संस्था की रिपोर्ट में आगे कहा गया है कि दुनियाभर में 75 फीसदी से ज्यादा लोग पानी की कमी के संकट से जूझ रहे हैं। वैश्विक तापमान में निरंतर होती वृद्धि और घटते भूजल स्तर से आने वाले दिनों में उत्पन्न स्थिति बेकाबू होने वाली है। भारत भी जल—संकट की ओर तेजी से बढ़ता जा रहा है और स्पष्टतया इसके आसार दिखाई भी देने लगे हैं। नदियां, ताल—तलैया एवं जल के अन्य स्त्रोत स्वयं ही सूखते जा रहे हैं। इधर, संयुक्त राष्ट्र ने भी इस बात पर मुहर लगा दी है कि वर्ष 2025 तक भारत में जल—त्रासदी उत्पन्न होगी।

एक तरफ,उच्च तापमान पर पूरा देश उबल रहा है, तो दूसरी गहराता जल संकट, प्राणियों के जीवन पर पूर्ण विराम लगाने को उतावला नजर आ रहा है। ऐसे में जल संरक्षण के आसान तरीकों को अपनाकर असमय दस्तक दे रही, इस आपदा से जूझने की तैयारी कर उसके प्रभाव को कम से कम करने का प्रयास किया जाना ही मानवता के हित में है।

संयुक्त राष्ट्र ने 1992 में रियो डि जेनेरियो के अपने अधिवेशन में प्रतिवर्ष 22 मार्च को 'विश्व–जल–दिवस' के रूप में मनाने का निश्चय किया था जिसके बाद, सर्वप्रथम 1993 में पहली बार 22 मार्च के दिन पूरे विश्व में जल दिवस के अवसर पर जल के संरक्षण और रख–रखाव पर जागरूकता फैलाने का कार्य प्रारंभ किया गया। तब से, प्रत्येक वर्ष यह दिवस अंतर्राष्ट्रीय स्तर से लेकर ग्राम स्तर तक आयोजित कर, जल–संरक्षण के प्रति लोगों को जागरूक करने के प्रयास किए जाते हैं। प्रतिवर्ष जल–दिवस मनाने का उद्देश्य जल के निर्ममतापूर्वक दोहन के प्रति लोगों को जागरूक करना है। विडंबना यह है कि जल–संरक्षण के तमाम तरीके केवल कागजों पर ही सिमट जाते हैं। शुद्ध पेयजल की अनुपलब्धता और संबंधित ढेरों समस्याओं को जानने के बावजूद देश की बड़ी आबादी जल-संरक्षण के प्रति सचेत नहीं है। जहां लोगों को मुश्किल से पानी मिलता है, वहां लोग जल की महत्ता को समझ रहे हैं लेकिन जिसे अबाध व बिना किसी परेशानी के जल मिल रहा है, वे ही लापरवाह नजर आ रहे हैं। आज भी शहरों में फर्श चमकाने, गाडी धोने और गैर जरूरी कार्यो में पानी को निर्ममतापूर्वक बहाया जाता है। पढ़े लिखे लोगों से आशा की जाती है कि कम से कम वे इस संदर्भ में समाज में एक मानक स्थापित करें, लेकिन विडंबना यह है कि वे ही अपने दायित्वों से बेपरवाह नजर आते हैं। बढ़ती गर्मी के कारण देश के विभिन्न भागों से जल स्त्रोतों के सूखने की खबरें आ रही हैं। नदी, तालाब, कुंआ सहित चापानल के जलस्तर में बड़े अंतर का गिरावट देखा गया है। इसकी पुष्टि इस तथ्य से होती है कि एक दशक पहले चापानल हेतू केवल 50 से 60 फीट की खुदाई से पानी प्राप्त हो जाता था, लेकिन आज 150 से 200 फीट की खुदाई के बाद भी पानी का स्त्रोत बमुश्किल ही मिलता है। पेयजल के असमान वितरण के कारण कुछ जगहों पर लोगों को दूषित जल पीने की विवशता भी है। प्रदूषित जल में लौहांश आदि जल तत्वों की मात्रा अधिक होती है,जिसे पीने से तमाम तरह की स्वास्थ्य संबंधी व्याधियां उत्पन्न हो जाती हैं। विश्व स्वास्थ्य संगठन के एक अध्ययन के अनुसार दुनियाभर में 86 फीसदी से अधिक बीमारियों का कारण असुरक्षित व दूषित पेयजल है। वर्तमान में 1600 जलीय प्रजातियाँ जल प्रदूषण के कारण लुप्त होने के कगार पर हैं, जबकि विश्व में 1.10 अरब लोग दूषित पेयजल पीने को मजबूर हैं और साफ पानी के बगैर अपना गुजारा कर रहे हैं। शुद्ध पेयजल के अभाव के कारण बोतलबंद पानी का व्यापार भी धड़ल्ले से चल रहा है। उपभोक्ताओं की आवश्यकता की आड़ में प्यूरीफाइड जल की जगह नकली बोतलबंद पानी भी खूब बेचे जा रहे हैं और बिक भी रहे हैं। जल संकट की ओर इशारा करने वाली ये खबरें देशवासियों को बेचैन करती हैं। ऐसी स्थिति सरकार और आम जनता, दोनों के लिए चिंता का विषय है। इस दिशा में यदि सार्थक पहल की जाए तो स्थिति बहुत हद तक नियंत्रण में रखी जा सकती है, अन्यथा अगले कुछ वर्ष हम सबके लिए चुनौती पूर्ण होंगे। दुर्भाग्य यह है कि पानी का महत्व हम तभी समझते हैं जब लम्बे समय तक पानी की सप्लाई नहीं होती या 25 रू0 देकर एक बोतल पानी लेने की जरूरत पडती है। उस समय,जल की एक—एक बूंद महत्वपूर्ण लगने लगती है,लेकिन फिर यह वैचारिकी तब धूमिल पड़ने लगती है, जब पुनः हमें बड़ी मात्रा में पानी मिलने लगता है।

उपलब्ध जल की मात्रा को प्रदूषण ने सर्वाधिक प्रभावित किया है। औद्योगिक कचरों का नदियों में अशोधित निस्तारण, मुहल्ले के अवशिष्ट का नालों के सहारे नदियों में मिलना तथा लोगों द्वारा नदियों तथा तालाबों में कपड़े की धुलाई आदि कृत्यों ने जलस्त्रोतों की गुणवत्ता को प्रभावित किया है। देश की अधिकांश नदियां,प्रदूषण के मानक से ऊपर जा रही है। इसके जिम्मेदार हम मनुष्यों का स्वार्थयुक्त व्यवहार ही है। निश्चय ही,इन नदियों का प्रदूषित जल न केवल जलीय जीवों के लिए प्राणघातक सिद्ध होगा, बल्कि यह भूजल के माध्यम से मानव शरीर में प्रवेश कर मनुष्यों को अस्वस्थ बना रहा है। नदियों का सामाजिक,आर्थिक, सांस्कृतिक और धार्मिक महत्व है। इसने तमाम नवजात सभ्यताओं का पालन पोषण किया है। हर मानवीय आवश्यकताओं पर उसने यथासंभव मदद भी की है। यही कारण है कि भारतीयों के लिए नदी मां के समान पूजनीय है।

दूसरी तरफ, संकटापन्न नदियों की सफाई की दिशा में सभी स्तरों पर दृष्टि का अभाव दिखता है। यदि हर व्यक्ति नदियों के भविष्य की चिंता करते हुए यथासंभव सहयोग करे तो स्वच्छ नदियां फिर से हमारे पास हो सकती हैं। लेकिन ध्यान रहे, बात सिर्फ नदियों को साफ करने की नहीं, उसे गंदा न होने देने की भी है।

जल–संरक्षण के उपाय–

कई तरीकों से हम जल का संरक्षण कर सकते हैं। वर्षा–जल–संग्रहण के मामले में दक्षिण भारत के तमिलनाडु ने एक मानक स्थापित किया है। तमिलनाडु के हर घर में छत वर्षा–जल–संग्रहण को अनिवार्य बना दिया गया है। व्यर्थ हो रहे वर्षा–जल का संग्रहण कर उसका प्रयोग कई तरह के कार्यो में किया जा सकता है। यह भू–जल–स्तर को रिचार्ज करने का एक अच्छा विकल्प भी है। इससे इतर छोटे–छोटे प्रयासों से जल की बूंदों को सहेज सकते हैं। यह बताने की जरूरत नहीं, बस अमल में लाने की जरूरत है। साथ ही अपने घर के आसपास बड़ा गड्ढा बना देने से, उसमें जल जमा होने के बाद भूमिगत जल की मात्रा बढ़ाई जा सकती है। वृक्षारोपण पर भी ध्यान देना हितकारी है। पर्यावरण संबंधी अधिकांश समस्याओं की जड़ वनोन्मूलन है। ग्लोबल–वार्मिंग, बाढ़,सूखा जैसी समस्याएं वनों के हास के कारण ही उत्पन्न हुई हैं। महत्वपूर्ण बात यह है कि इसका समाधान भी वृक्षारोपण ही है। पौधे बड़े पैमाने पर लगाएं जाने चाहिए;हालांकि बोलना आसान है, जबकि पौधे लगाकर उसकी रक्षा करना कठिन। फिर भी,हर एक परिवार से छोटी–सी शुरूआत की जाती है तो बहुत हद तक जल की बर्बादी को रोका जा सकता है। मनुष्य प्रकृति की सर्वश्रेष्ठ रचना है, जिसके पास बुद्धि–विवेक और सब कुछ करने की क्षमता है, लेकिन हमारा मूर्खतापूर्ण प्राकृतिक जैवमंडल में अकारण हस्तक्षेप,मानव के लिए काल के गाल में समाने के लिए खींची गयी लक्ष्मण रेखा पार करने के बराबर है। मनुष्य खुद सृष्टि समाप्ति के लिए निमंत्रण दे रहा है। हम सबको पता है कि 'जल है तो कल है', बावजूद इसके जल की बूंदो को बेवजह बर्बाद करना जारी है। हमें यह नहीं भूलना चाहिए कि जल संकट का समाधान जल के संरक्षण से ही है।

संस्कृत साहित्य में जल का महत्व–

समस्त जीवों की जैविक क्रियाओं के लिए मृदा की उर्वरता तथा जलवायविक कारकों के सुचारू संचालन के लिए जल अनिवार्य तत्व है। जलचर जीवों का यह वास स्थान है। अथर्ववेद में जल के सभी स्त्रोतों की अनुकूलता की प्रार्थना विशेषतः उल्लेखनीय है–

शं त आपो हैमवतीःशमु ते सन्तूत्स्याः । शं ते सानिष्यदा आपः शमु ते सन्तु वर्ष्या । ।

शं त आपो धन्वन्याः शं ते सन्त्वनूप्या। शं ते खनिमित्रा आपः शं याः कुम्मेभिरावृता।।4

अर्थात् हिमाच्छादित पर्वतों, निर्झरों, वेगमय प्रवाहों, वर्षाजल, मरूदेशीय जलभूमि से खनिज कूपों का जल,घट में संग्रहीत जल शन्तिदायक हो।

जल को कवि ने आदि सृष्टि कहा है। वस्तुतः जल में ही सर्वप्रथम जीवन आरंभ हुआ, यह तथ्य प्राचीन एवं अर्वाचीन विद्वानों के द्वारा सर्वमान्य है।

ऋग्वेद के हिरण्यगर्भ सूक्त में सर्वव्यापी जल में सगर्भता का कथन करके बीजरूप में जीवन की संभावना व्यक्त की गई है।5 महाभारत में भी सर्वप्रथम जल की सृष्टि तथा महत्तव का प्रतिपादन किया गया है—

> प्रजाविसर्ग विविधं मानसो मनसा सृजत्। संरक्षणार्थं भूतानां सृष्टं प्रथमतो जलम्। यत् प्राणः सर्वभूतानां वर्धन्ते य च प्रजाः। परित्यक्ताश्च नश्यन्ति तेनेदं सर्वमावृतम्।। पृथ्वी पर्वता मेघा मूर्त्तिमन्तश्च ये परे। सर्वं तद् वारूणं ज्ञेयमापस्तंभिरे यत्।।6

जल सृष्टिकर्ता ब्रहमा की सर्वप्रथम सृष्टि है। जीवन के प्रारंभिक मूलाधार स्वरूप जल को शिवमूर्ति कहा गया है–

या सृष्टिः स्रष्टुराद्या,- प्रत्यक्षाभिः प्रपन्नस्तनुभिरवतु वस्ताभिरष्टाभिरीशः।।।७

आपः तत्व सृष्टि–सर्जना–क्रम में चतुर्थ स्थान पर माना जाता है। तैत्तिरीय तथा छान्दोग्य उपनिषद् में वर्णित है कि तेज अर्थात् अग्नि से जल की उत्पत्ति हुई है।

तस्माद् वा एतस्मादातमन आकाश सम्भूत । आकाशाद् वायुः । वायोरग्निः । अग्नेरापः ।

अद्भ्या पृथ्वी8......तदैक्षत बहुस्यां प्रजायेयेति तेतेजोऽसृजत्।

तत्तेज ऐक्षत बहुस्यां। प्रजायेयेतितदपोऽसृजत ।९

जल महाभूत में सभी देव सन्निहित हैं। विदित है कि मूल आदि शक्ति में सभी देवों का समावेश है।10

शतपथ ब्राहमण के अनुसार आपः का उपमान सलिल है।

आपो ह व इदमग्रे सलिलमेवास । 11

आपः अर्थ में मनुस्मृति में कहा गया है कि अप् सर्वप्रथम तत्व है जो पुरूष की देहभूत उपादान कारण अदिति से प्रादूर्भूत हुआ। यही आगामी भौतिक द्रव्य सृष्टि का बीजवत् कारण हुआ।

अप एव सप्तर्जादा तासु बीजमवासृजत् ।12

सृष्टि उत्पत्ति अव्यक्त कारण से होती है।

सूक्ष्मातिसूक्ष्म अवस्था से क्रमशः अपेक्षाकृत स्थूल अवस्थाएं उद्भूत होती हैं।13

मुण्डकोपनिषद् के अनुसार जल महाभूत है, जल की उत्पत्ति अन्तिम चरण में होती है।

खम् वायुर्ज्योतिरापःपृथ्वी विश्वस्य धारिणी ।14

महाभूतों की उत्पत्ति के क्रम में भी जल की उत्पत्ति बाद में हुई है।

सर्वप्रथम प्रकृति में अत्यन्त सूक्ष्म सर्वव्यापी आकाश उत्पन्न हुआ है।

"All the energy of the universe was in the form of Radiation."15

आकाश से वायु, उससे प्रज्वलित अग्नि पिण्ड और इसके बाद तरल अवस्था आयी और इसप्रकार जल (द्रव अवस्था) की उत्पत्ति हुई।

आपः सर्वप्रथम उत्पन्न तत्व है। आपः मूल शक्ति की क्रियात्मक अवस्था का द्योतक है जो सृष्टि में नियोजित किया गया है।16 ऋग्वेद के अनुसार आकाश में स्थित ज्योतिर्पिण्डों के संतुलन का कारण आपः का गतिशील होना है।¹⁷

जल तत्व की महत्ता इस तथ्य से प्रतिपादित हो जाती है कि सम्पूर्ण ब्रहमाण्ड में जिस–जिस ग्रह अथवा उपग्रह पर जल पाया जाता है,वहीं पर प्राणी और जीवन पाया जाता है।

जलं हि जीवनं प्रोक्तम् । 18

अर्थात् जल ही जीवन है–यह सूक्ति सर्वथा प्रसिद्ध है।

शतपथ तथा तैत्तिरीय आदि ब्राहमण ग्रंथों में भी जल को प्राण रूप में प्रतिष्ठित किया गया है।

आपौ वै प्राणाः | 19 प्राणा वा आपः | 20

ऐतरेयोपनिषद् में जल की व्यापकता को उद्धाटित करते हुए कहा गया है कि अप तत्व चार अवस्थाओं में चार लोकों में व्याप्त है–

अम्भः,मरीचि, भर व अप्। अम्भः सूर्य मण्डल से भी ऊर्ध्व महःजनः आदि लोकों में व्याप्त है। पृथ्वी के उपादान में अग्रसर जल भर् है। मरीचि रूपी जल अन्तरिक्ष में व्याप्त है। पृथ्वी पर प्रभावित जल आपः नाम से प्रसिद्ध है।

स इमॉल्लोकानसृज । अम्भो मरीचिर्भस्मापोऽदोऽम्भः परेण द्विवं द्यौः प्रतिष्ठारन्तरिक्षं मरीचयः भरो या अधस्तात्ताः आपः 121 वैशेषिक दर्शन में जल का लक्षण करते हुए कहा गया है कि शीतस्पर्शवत्य आपः 122

अर्थात् जल शीतल स्पर्श वाला होता है। जल में रूप रस और स्पर्श तीनों गुणों की विद्यमानता रहती है। जल का स्वाभाविक स्पर्श शीतल होता है किन्तु उपाधि के संयोग से जल उष्णता आदि धर्मों को ग्रहण कर लेता है, यथा—सूर्य किरणों या अग्नि तत्व के संयोग से उत्पन्न उष्णता। जल में स्वभावतः माधुर्य रस विद्यमान होता है। जल में कटुता, लवणता, तिक्तता आदि धर्मो की प्रतीति प्रायः पार्थिव तत्वों के संयोग से दृष्टिगोचर होती है। साथ ही द्रवत्व और स्निग्धत्व जल के स्वाभाविक एवं विशिष्ट लक्षण हैं।

रूपरसस्पर्शवत्य आपो द्रवाः स्निग्धाः ।23

जल के कारण पृथ्वी का वातावरण नम बना रहता है तथा पृथ्वी के तापमान को जीवन के अनुकूल बनाए रखता है।

जल के रूपों में सतही जल, समूद्री जल एवं भूमिगत तत्व है,जो वाष्प तरल एवं ठोस रूप में है। मानव तथा अन्य जीवों के लिए सतही जल ही अधिक उपयोगी है, किन्तु पृथ्वी की सतह पर आने वाले कुल जल का 15 प्रतिशत भाग भूमि द्वारा सोख लिया जाता है। भूमि में गया जल,जल सतह का निर्माण करता है। भूमिगत जल वनस्पति को प्रभावित करता है तथा समुद्रीजल तापमान एवं आर्द्रता की मात्रा को प्रभावित करता है। मानव की क्रियाएं सभी प्रकार के जलों से जुड़ी हुई हैं। तर्क संग्रह के अनुसार जल महाभूत से स्पर्श गूण अभिव्यक्त होता है–

शीतस्पर्शवत्य आपः ।24

अथर्ववेद में जल को पोषण प्रदान करने वाला, वेगवान् व बलवान् बनाने वाला बताया गया है-

अपामंह दिव्यानामपां स्त्रोतस्यानाम्।

अपामहं प्रणेजनेऽश्ता भवथवाजिनः । 125

इसप्रकार जल को मंगलकारी, निरोग करने वाला,भय जीतने वाला और सब प्रकार से सुख प्रदान करने वाला कहा गया है।

ता आपः शिवा अपोऽयक्ष्यं करणीरपः।

यथैव तृप्तये भयास्तास्य आ दत्त भेषणी। 126

ऋग्वेद में जल को माता के समान पूज्य माना गया है।,जो सबको शक्ति प्रदान करता है।

आपौ अस्मान्मातरः शुन्धयन्तु धृतेन नो धृतव्यःपुनन्तु ।27

ऋग्वेद में जल से रक्षा करनेकी कामना की गई है। अतएव जल की महत्ता तो सर्वविदित ही है। पंचभूतमयी इस देह में पृथ्वी तत्व के पश्चात् जल तत्व की मात्रा अन्य भूतों की अपेक्षा अधिक होती है। मानव मात्र की समस्त प्राणी जगत् की समस्त सांसारिक गातिविधियों एवं जीवनचर्या के सम्यक् संचालन हेतु जल की आवश्यकता सर्वोपरि है।

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