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काव्य संगम परिवार

संपादक

Dr. S.P.S. Rana
NAAC Coordinator
S.M.P. Govt. Girls P.G. College
Meerut

विजय कुमार शर्मा

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हमारा परिवार ही होता है हमारे सृजन का आधार,
परिवार में ही मिलते रिश्ते, अपनापन और प्यार।

परिवार न होता तो हम जीव से मानव कैसे बनते?
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परिवार में मिलते हैं सब बड़े छोटे नाते।
हों खून या विवाह के अनुराग सब में पाते।
परिवार ने ही दिया है हमें गुस्सा और मनुहार।

परिवार बाँटता है हर दुःख और खुशी को,
परिवार है बनाता आसान जिंदगी को।
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परिवार जग धुरी है इसको सम्भाले रखना,
परिवार बिन नहीं कुछ रिश्ते बना के रखना।
ये वंश, संस्कृति–समाज सबका सर्जक है परिवार।

Dr. S.P.S. Rana
NAAC Coordinator
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डॉ० लता कुमार

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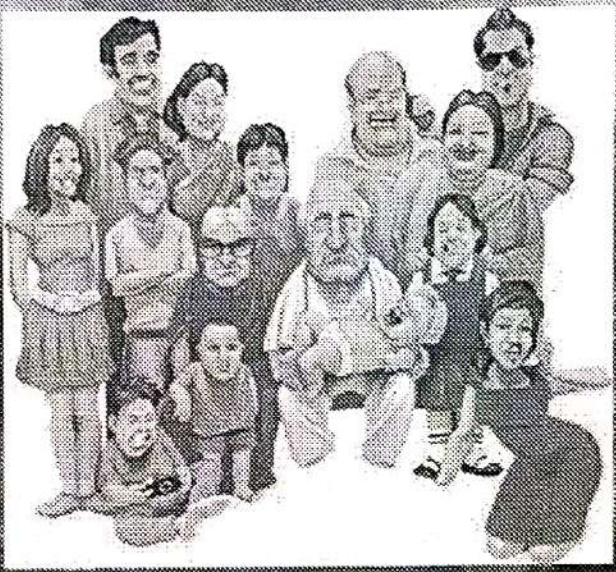

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संपादक

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डॉ.अमित कुमार दवे
लोकेश्वरी कश्यप

हरी भरी वसुंधरा

कहते और चाहते तो सब हैं कि हरी भरी धरती हो,
पर बनाने की कोशिश कितने लोग करते हैं?
कौन करता है अपना मकान छोटाकर
वृक्ष पालने की इच्छा।
सबको तो और ज्यादा जगह चाहिए
चाहे उठानी पड़े कुल्हाड़ी ही हाथ में।
कौन करता है कागजों को बचाने की जद्दोजहद।
जो खरीदने की क्षमता रखता है,
रौंदता है बेहिसाब कागज।
और भूल जाता है कि हर कागज का हिसाब
पेड़ को ही देना है।
कौन रखता है सूखते पेड़ को पानी देने की इच्छा। लोग करते हैं
इंतजार कि बारिश आए या मुझे छोड़ कोई और सींच दे वितान।
इच्छाएं और जरूरतें थमती ही नहीं इंसान की,
और कंक्रीट होती जा रही है हरी भरी वसुंधरा।।

लैफ्टिनेंट (डा.) लता कुमार

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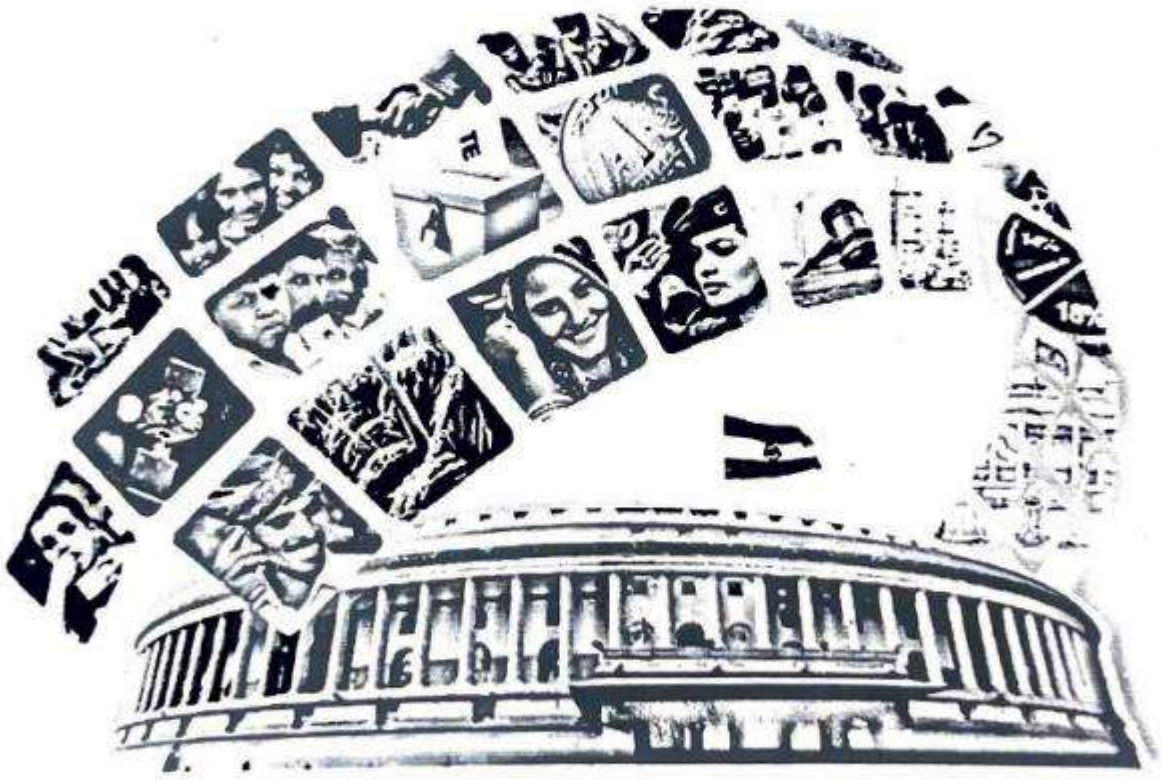
NEW ERA IN THE INDIAN POLITY



Dr. Anuja Rani Garg

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New Era in the Indian Polity

The world's largest democratic exercise, the Indian general election, has finally come to a close. The numbers are extraordinary. The most recent election was marked by less fragmentation, weaker electoral competition, yet more popular participation. If these trends persist, India may well have closed the book on twenty-five years of electoral politics and moved into a new era.

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Dr. Anuja Rani Garg working as Head & Associate Professor, Department of Political Science in S.M.P .Govt. Girls P.G. College Meerut. Her areas of specialization are Public Administration, Rural Development, Gender Studies and Human Rights. She has 20 years of teaching experience. Her various research papers has been published in various National and International Journals. she has attended many seminars and workshops and presented paper.

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IMPACT OF CHEMICAL AND BIOWEAPONS ON ENVIRONMENT

Dr. Satyapal Singh Rana

Assistant Professor- Zoology S.M.P. Govt. Girls P. G. College, Meerut, UP (India)

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Abstract

This discussion clearly elaborates the risks involved in developing chemical and biological weapons.It is apparent that nations use these as defensive measures and maintain stockpiles of chemical and biological weapons to use them against an attack. Thesebio weapons have devastating and fatal consequences and they need to be restricted.There is an immediate need of systematic studies of these to spread awareness and take control of it.Today it is necessary that all the countries of the world impose strict rules on the manufacture and use of Bio weapons so that humanity can be saved.

Key Words: Chemicals and Bioweapons, Ecosystem, Environmental Education

Introduction

The evidence of use of Chemical and biological weapons (CBWs) dates back to ancient history in many countries to win battles by spreading infectious diseases like plague and smallpox and also used these chemicals to contaminate water bodies. These chemicals are lethal and have devastating effects on entire biodiversity including human lives.

Chemical and Bioweapons

The bio weaponshave complex and a strong relation with the environment in comparison to other weapons. Through bioterrorism, attacks are often carried out with the help of new technology with viruses or bacteria, which are far more dangerous than other weapons. It is noteworthy that infectious elements such as germs, viruses or fungi, which are called biological weapons, can be used for genocide in war.It creates a difficult public health challenge and also causes a large number of deaths in a very short amount of time. Biological weapons can also be known as a germ weapon, which kills animals, plants and our environment in so many ways. As the war happens at any place in the world, increases the chance of being victim of a biological weapons. It's effects stay with us for a long time and the issues we faces in human body are shown in coming 2 to 3 generations. In the 21st century, the disastrous effects of CBWs were seen in the case of Syrian conflict in which hazardous chemicals were deployed which had a serious impact on health of public.

If CBWs continues to be used in future,then there is a need to address its dangerous effects and limit its use. The uses of CBWs have to be restricted else there is a possibility of terrorist organisation taking advantage from them.The use of CBWs during war time and testing of CBWs are believed to cause unmatched damage to environment and long-term effects on biodiversity

It is not that the use of biological and chemical weapons has started in recent years, in the olden times; the soldiers of the other enemy were being infected by some infectious disease. The article titled "Chlorine: Lung Damaging Agent" by center for disease control and preventiontells us that in 1915 the German army released 5730 cylinders of chlorine on French soldiers. During the First World War, mustard gas was used to contaminate land and water which affected civilians also. The scientific studies reveals that the environmental effects of its use are yet to be determined completely.

Japan initiated research on biological weapon in 1920s and carried out a gigantic biological attack by spreading plague,cholera bacteria etc. on various Chinese cities during the Second World War. Similarly, Germany also developed a poisonous gas named sarin nerve gas which attacks the nervous system,causing suffocation and death. Sarin is a food and water contaminant and have hazardous effects on marine life. There are uncountable examples of the lethality and immoral use of these harmful biological weapons which resulted in a great damage to environment, human life, marine life and the entire biodiversity and ecosystem. So, there is a need of constantly monitoring the use of Chemical and Biological weapons and to make strict laws against them as their effects are still not certain completely.

Bio weapons call up such strong feelings of fear in one's heart, the reason being their potentiality to kill. Either they cause brutal and inhumane death or destroy everything in the affected area. Some of these causes death for long periods,resulting in complete destruction. Even plants and animals cannot escape the brutal effects of such weapons. This puts our entire ecosystem and biodiversity at risk. These bio weapons use lethal chemicals, bacteria etc that contaminate water,food and agriculture. Some of these biological agents have capability to survive nad reproduce on its own,the places exposed to such agents take a very long time to get decontaminated. One such example is the nuclear attack of Hiroshima and Nagasaki,where survivors of the atomic bomb were exposed to the contamination from radioactive fallouts years after the attack.

The CBRN has devastating consequences which needs to be addressed by global community and take a stand on destruction of current stockpile of these weapons.There have been a number of treaties between nations to restrict the use of chemical, biological and nuclear weapons but only a few of these have proved to be truly successful. Therefore, there is a need to fix the loophole in this convention. The nations that are determined against these CBWs should regularly inspect and this inspection should be extensive. Any discovery of such lethal chemical or biological agent that can be used as a fuel to any hazardous weapon should be immediately reported by the nations and same restrictions should be imposed upon it. Strict penalties should be imposed for nations that are found being indulged in creation bio weapons due to the danger to the world's population.

Nations have accepted that the intentional spread of diseases as a method of war is an immoral way to wage war. It not only affects the combatants but the civilians, land,water and entire ecosystem as well. However, small samples of these chemicals need to be kept safe for the purpose of research of cures to the diseased induced by them.

However, nuclear weapons are the glue holding the balance of power in place. So,a complete destruction of nuclear stockpile will be unwise. There need to be accurate reporting from all countries about the capability of their nuclear weapons. Nations that plan to develop nuclear plant should be closely checked. Most importantly no country holds any exception for the international nuclear policy

In conclusion, these bio weapons have devastating and fatal consequences and they need to be restricted. For this international community needs to make strict rules to take control of it,with no exceptions. In 1970 the president of USA, Nixon made a policy that, Nobiological or chemical weapons including toxins would be developed and used. If any delay is done in taking these required steps, here is a possibility that our world goes in complete darkness.

The whole world witnesses and notices, if a child leads and takes actions for betterment of this world. An example of this is Greta Thunberg, who has raised the problems related to climate change, pollution and other its consequences.She forced the adults to think about their contribution in this suffering of our environment and also provoked them to take actions towards eliminating these problems. If a single child can do this, then think about the great changes that a majority of children can bring about if they get aware about the environment.Environmental degradation is a major threat to life. One of its major causes is lack of education. Children are our future and this is a pretty good reason for them to be educated at a young age so that they could be aware of the numerous environmental problems around them and strive to find solutions to these problems. This awareness is important for them to lead a sustainable and eco-friendly life.

Conclusion

Environment is the foundation of everything; children need to be educated at an early age in order to understand the importance of preserving environment and sustainability. Environmental education promotes critical thinking and inspires children to become more engaged towards community. It gives them knowledge about why environment is important and provides them with the building blocks they need to build an eco - friendly and sustainable lives. The curriculum in schools for primary level onwards should compulsorily have environmental class, with interesting and fun activities related to the subject so that the child could learn better. At junior level also a monthly environment related activity should be planned with involvement of parents as well. Whatever a child learns at school, if he carries it forward to his home too, then that would certainly result in establishing a stronger foundation to a healthy and sustainable environment.

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Chapter-23

BIOTECHNOLOGY AND HUMAN WELFARE

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Introduction

Biotechnology is the use of biology to develop new methods, organisms and products by using various technology, which improve human health and society. Biotechnology has applications in a wide range of fields, including agriculture, medicine, energy, and environmental conservation, among others. Which plays a very important role in human welfare and has revolutionized mankind since its existence. It contributes much towards the human welfare and their health needs.

Earlier man use biotechnology unknowing for making many products such as cheese can be considered as one of the first direct products or by-product of biotechnology, because it was prepared by adding an enzyme found in the stomach of calves, curd is possible only by exposing milk to microbes Yeast is one of the oldest microbes that have been exploited by humans for their benefit. Yeast has been widely used to make bread, vinegar production, and other fermentation products, which include production of alcoholic beverages like whiskey, wine, beer, etc. Vinegar has a significant importance because of its low pH. Vinegar is capable of preventing growth of certain microbes, and therefore, vinegar can be used successfully for food preservation. The discoveries and benefits of these observations led people to work on further improvement of the process. Fermentation was a powerful tool to improve their living conditions, even though they were ignorant about the principle behind it.

In modern time the world's scientific community had almost all the basic tools available to them for their applications, along with majority of basic concepts had been elucidated, which has fast forwarded the path for important scientific discoveries. Dr. Hargobind Khorana was able to synthesize the DNA in test tube, while Karl Mullis added value to Khorana's discovery by amplifying DNA in a test tube, thousand times more than the original amount of DNA. Using this technological advancement, other scientists were able to insert a foreign DNA into another host and were even able to monitor the transfer of a foreign DNA into the next generation. The advent of HIV / AIDS as a deadly disease has helped tremendously to improve various tools employed by life-scientist for discoveries and applications in various aspects of day-to-day life. In the meantime Ian Wilmut an Irish scientist was successful to clone an adult animal, using sheep as model, and he named the cloned sheep as 'Dolly'. Craig Venter, in 2000, was able to sequence the human genome; the first publicly available genome is from JD Watson and Craig Venter, himself. These discoveries have unlimited implications and applications. In 2010, Craig Venter has been successful in demonstrating that a synthetic genome could replicate autonomously. Which develop new possibility for creating life in a test tube, new varieties of crop in the laboratories.

Biotechnology and Agriculture

Biotechnology was able to beat conventional farming methods soon after genetically modified crops came into the limelight. Understanding genetics helped farmers in the following ways:

- They were able to obtain maximum yields from farming ground
- Genetically modified crops reduced the use of fertilizers and chemicals
- The environmental pollution is lesser.

Genetically Modified Organisms (GMOs)

The technology created Genetically Modified Organisms (GMOs), Genetically modified biopesticides, and Pest resistant plants, which have contributed to improving the quality of the plants.

GMO or genetically modified organisms comprise those fungi, plants, bacteria, and animals whose genes have been transformed. GM plants have been beneficial in the following ways:

- Crops became more resistant to environmental stresses (salt, cold, drought, heat).
- With the help of GMOs in Biotechnology, Pest-resistant crops lessened the dependence on synthetic pesticides, which impact the environment.
- It resulted in reduced losses due to post-harvest.
- The efficient usage of minerals by plants increased drastically.
- The nutritional quality of food was enhanced as there was the introduction of golden rice, i.e., Vitamin 'A' enriched rice.

In Biotechnology, genetically modified biopesticides have been quite useful in creating eco-friendly pesticides. One of the examples is Bt (Bacillus thuringiensis) toxin produced by a bacterium. Some examples of GM biopesticides are Bt cotton, Bt corn, rice, tomato, potato, soybean, etc.

- The copies of the Bt toxin gene from the bacteria were made and expressed in plants. This gene offers the plant resistance to insects without the necessity of insecticides.
- Bacillus thuringiensis strains were able to secrete proteins that kill specific insects such as armyworms, beetles, tobacco budworms, flies, and mosquitoes).

Pest-resistant plants are produced by a novel strategy based on the process of RNA interference (RNAi). RNAi is a cellular defence system in all eukaryotic cells [containing a nucleus within a nuclear envelope]. This method silences a specific mRNA due to a complementary dsRNA molecule that attaches to and prevents the making of mRNA proteins (silencing). Several nematodes parasitize a wide variety of plants and animals, including human beings. A nematode Meloidogyne incognita contaminates the roots of tobacco plants and causes a considerable decrease in yield.

Biotechnology and Human Health

In the scope of healthcare, laboratory methods of genetic recombination have made a tremendous influence. This process of Biotechnology facilitates large products of secure and more efficacious drugs. Specialized medicines made up of recombinant proteins are incapable of generating unwanted immunological reactions.

The main role of insulin is to manage the starting phase of diabetes in adults at regular intervals. Insulin comprises two polypeptide chains: A and B, interlinked by disulfide bonds. In mammals, insulin is synthesized as a hormone precursor, for example, in humans. This prohormone [having an extra stretch of C-peptide] finally becomes a completely active and mature hormone. The C-peptide is removed during the insulin maturation process. Collecting insulin into a mature form was the main complication in creating insulin using rDNA techniques.

Gene therapy is a correctional therapy to cure a person born with a congenital disease. This technology includes a bunch of strategies wherein gene correction occurs whenever a defect is analyzed in an embryo. Any genetic defect gets modified after a healthy gene is delivered into the embryo, and it takes over the part of the non-functional gene by compensating it.

ADA stands for Adenosine deaminase, an enzyme that enables the immune system to work properly. This deficiency occurs because of the gene omission that codes for the adenosine deaminase enzyme. With gene therapy, patients' lymphocytes are extracted and grown in a laboratory. An active ADA cDNA (complementary DNA) is inserted utilizing a retroviral vector that delivers genetic material into the lymphocytes and returns to the patient's body.

Early identification and diagnosis of a disease's pathophysiology are important for effective treatment. It is impossible to detect any disorder using traditional urine and serum analysis methods. Processes that help in the early diagnosis of diseases are:

- PCR – Polymerase Chain Reaction
- ELISA – Enzyme-Linked Immuno-sorbent Assay
- DNA Recombinant technology

Bacteria, viruses, or any other pathogen's presence is only seen when a symptom of a disease is sensed during the time its concentration is very high in the body. A very less concentration of any pathogen can be easily seen by amplification (creating multiple copies) of their nucleic acid. Their copies are generated using the polymerase chain reaction method, abbreviated as PCR.

PCR technique is used to diagnose HIV AIDS in patients. The method can detect mutations/changes in the genes of cancer patients. PCR is an effective procedure that can detect various genetic disorders.

How does PCR work in Biotechnology?

- s-DNA or s-RNA ("s" stands for single-stranded) is tagged with a probe (a molecule that is radioactive in nature and is able to scatter excess energy by spontaneously ejecting radiation in the form of rays).
- It is allowed to merge with its complementary DNA, and the process is detected by using a photographic method that detects radioactive materials, known as autoradiography.
- The clone bearing the transformed gene is not detectable on the film because the probe will not have a complementary bond with the mutated gene.

ELISA works on the mechanism of interaction between antigens and the antibody. Infection by a pathogen is detected either by the existence of antigens (glycoproteins, proteins, etc.) or when the number of antibodies produced against the microbe is seen.

Biotechnology and Energy Security

There has been a dramatic growth in the production of biofuels in recent times. It is logical to imagine the future contribution of biotechnology to world energy production may increase not only in the area of biofuel production, but also in petroleum production, petroleum upgrading, biogas production. However, the future contributions of biotechnology to the energy industry are not only influenced by technical advances in biotechnology, but also by the price of fossil fuels, the development of renewable energy generally, politics, global population growth, and other factors.

The contributions of biotechnology to the energy industry are not restricted to the production of biofuels, and the microbial production of methane may well be the largest contribution in the future. Microbial conversion of hydrocarbons to methane could dramatically increase the amount of energy recovered. Quantification of the relative abundance of stable isotopes of carbon and hydrogen can reveal the origin of methane in geological deposits because chemical and biochemical pathways for the formation of methane have different reactivities/preferences for different isotopes. Biotechnology can be used to upgrade petroleum and coal by removing undesirable elements/components such as sulfur, nitrogen, metals, and ash and by reducing viscosity.

Solid, liquid and gaseous wastes can be modified, either by recycling to make new products, or by purifying so that the end product is less harmful to the environment. Replacing chemical materials and processes with biological technologies can reduce environmental damage environmental protection is an integral component of sustainable development. The environment is threatened every day by the activities of man. With the continued increase in the use of chemicals, energy and non-renewable resources by an expanding global population, associated environmental problems are also increasing. Despite escalating efforts to prevent waste accumulation and to promote recycling, the amount of environmental damage caused by over-consumption, the quantities of waste generated and the degree of

unsustainable land use appear likely to continue growing. The remedy can be achieved, to some extent, by the application of environmental biotechnology techniques, which use living organisms in hazardous waste treatment and pollution control. Environmental biotechnology includes a broad range of applications such as bioremediation, prevention, detection and monitoring, genetic engineering for sustainable development and better quality of living. Bioremediation refers to the productive use of microorganisms to remove or detoxify pollutants, usually as contaminants of soils, water or sediments that otherwise intimidate human health. Bio treatment, bio reclamation and bio restoration are the other terminologies for bioremediation. Bioremediation is not a new practice. Microorganisms have been used for many years to remove organic matter and toxic chemicals from domestic and manufacturing waste discharge.

Conclusion

Biotechnology has been playing a dynamic role in improving the challenges regarding human health and welfare. There are many more research and investigation processes carried out for improving future technologies.

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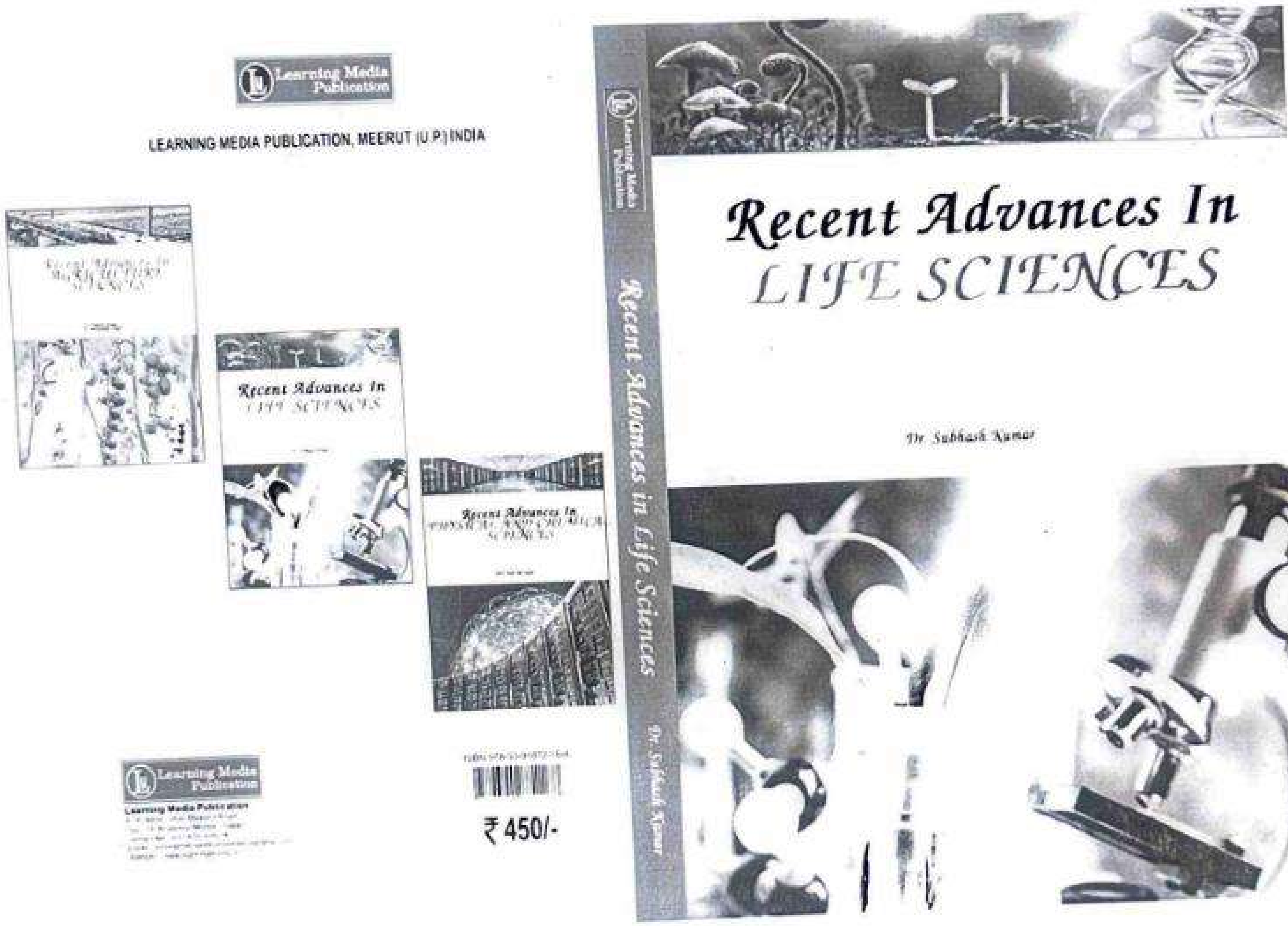

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Chapter-9

IMPACT OF PANDEMIC COVID-19 ON EDUCATION IN INDIA

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Introduction

The pandemic Covid-19 has spread over whole world and compelled the human society to maintain social distancing. It has significantly disrupted the education sector which is a critical determinant of a country's economic future. February 11, 2020, the World Health Organization (WHO) proposed an official name of the virus as COVID acronym for Coronavirus disease 2019. It was first identified in Wuhan, China on December 31, 2019. First death by COVID 19 was the 61-year old man in Wuhan, China 2020. WHO declared COVID-19 as a pandemic on 2020. The first case of the COVID-19 pandemic reported on 30 January 2020 in the state of Kerala and the affected had a travel history from Wuhan, China. The first death due to COVID-19 was reported in India on March 12, 2020. It has affected more than 4.5 million peoples worldwide (WHO). According to the UNESCO report, it had affected more than 90% of total world's student population during mid April 2020 which is now reduced to nearly 67% during June 2020. Outbreak of COVI-19 has impacted more than 120 crores of students and youths across the planet. In India, more than 32 crores of students have been affected by the various restrictions and the nationwide lockdown for COVI-19. As per the UNESCO report, about 14 crores of primary and 13 crores of secondary students are affected which are two mostly affected levels in India.

After observing the corona virus pandemic situation the WHO advised to maintain social distancing as the first prevention step. So, every country started the action of lockdown to separate the contaminated people. The education sect including schools, colleges and universities became closed. Classes suspended and all examinations of schools, colleges and universities including entrance tests were postponed indefinitely. Thus, the lockdown destroyed the schedules of every student though it is an exceptional situation in the history of education, COVID opportunities to come out of the rigorous classroom teaching model to a new era of digital model. The lockdown has compelled many educational institutions to cancel their classes, examinations, internships etc. and to choose the online modes. Initially, the educators and the students were quite confused and didn't understand how to cope up with the situation of this sudden crisis that compelled closure of the educational activities. But latter on all realized that the lockdown has taught so many lessons to manage with the emergence of such pandemics. Thus, COVID created many challenges and opportunities for the educational institutes to strengthen their infrastructure. The lockdown has given them a ray of hope for teachers and students to continue their educational activities through online. The teachers assigned work to students via internet, delivered lectures video conferencing using different Apps like Zoom, Google meet, Facebook, Youtube, and Skype etc. The education sectors of India as well as world are badly affected by this. It has enforced the world wide lock down dents' life. Around 32 crore learners stopped to move schools/colleges and all educational activities halted in India. The outbreak of COVID-19 has taught us that change is inevitable. It has worked as a catalyst for the educational institutions to grow and opt for platforms with technologies, which have not been used before. The education sector has been fighting to survive the crises with a different approach and digitizing the challenges to wash away the measures taken by Govt. of India to provide seamless education in the country. Both the positive and negative impacts of

COVID-19 on education are discussed and some fruitful suggestions are also pointed to carry out educational activities during License, which permits unrestricted use. After observing the corona virus pandemic situation the WHO advised to maintain social distancing as the first prevention step. So, every country started the action of lockdown to separate the contaminated people. The education sectors including schools, colleges and universities became closed. all examinations of schools, colleges and universities including entrance tests were postponed he lockdown destroyed the schedules of Though it is an exceptional situation in the history of education. COVID-19 has created many opportunities to come out of the rigorous classroom teaching model to a new era of digital model. The lockdown has compelled many educational institutions to cancel their classes, examinations, internships etc. and to choose the online modes. Initially, the educators and the students were quite confused and didn't understand how to cope up with the situation of this sudden crisis that compelled educational activities. But latter on all realized that the lockdown has taught so many lessons to manage with the emergence of such pandemics. Thus, COVID-19 has challenges and opportunities for the educational institutes to strengthen their technological knowledge and the lockdown has given them a ray of hope for teachers and students to continue their educational activities through online. The teachers assigned work to students via internet, delivered lectures through live video conferencing using different Apps like Zoom, Google meet, Facebook, Youtube, and Skype etc. In a nation like China that practices a considerably more centralization system, a change to digital learning may be simpler. Even in a nation like the U.S.A. there are some low pay students who don't approach broad bands and unable to use computerized learning arrangement. The same is the situation that happens with India where not every student is well equipped with the high-speed internet and digital gadgets and are along these lines of suffer. Numerous advanced educational institutions in India are not also equipped with digital facilities right now to cope up with sudden change from traditional education set up to the online education system. To prevent spread of pandemic COVID-19, the Government of India has taken number of preventive measures. The union government declared a countrywide lock-down of all educational institutions on 16 March 2020. Central Board of Secondary Education (CBSE) postponed all examinations of secondary and higher secondary schools on March 18, 2020 throughout India. CBSE released revised guidelines for examination centres to conduct examinations by maintaining a distance of at least 1 meter between the students taking the exam with a class not having more than 24 students. If the rooms of the examination centres are small then the students should be divided into different rooms accordingly. Similarly the most of the state Governments and other educational boards postponed examinations due to outbreak of COVID-19. Govt. of India has observed one day nationwide Janta-curfew on March 22 and implement lockdown from March 25, 2020 onwards in different phases. Govt. of India has been extending lockdown periods from time to time adopting different strategies to fight with the pandemic but educational institutions remained closed continuously. Almost all state government ministries have taken measures to ensure that the academic activities of schools and colleges do not hamper during the lockdown period. They have instructed the schools to hold all their classes online. The lockdown has accelerated adoption of digital technology. It has provided a chance to develop new and improved professional skills/knowledge through online learning in more efficient and productive way. Online learning is the best solution during this pandemic Covid-19 situation. So, the digital India vision of the government is emerging as a vital tool for solving the present crisis due to Covid-19. It is a fact that technology-based education is more transparent with all respect. Looking at this challenge of colleges and schools being shut, government of India, as well as state governments and private players have undertaken proper initiatives. The Ministry of Human Resource Development (MHRD) has made several arrangements, including online portals and educational channels through Direct to Home TV, Radios for students to continue learning. During lockdown, students are using popular social media tools like WhatsApp, Zoom, Google meet, Telegram, Youtube live, Facebook live etc. for online teaching learning system. ICT initiative of MHRD (eBroucher- https://mhrd.gov.in/ict-initiatives) is a unique platform which combines all digital resources for online education. The digital initiatives of MHRD for secondary as well as higher education during COVID-19 are listed as below:

Secondary education Diksha portal contains e-Learning content for students, teachers, and parents aligned to the curriculum, including video lessons, worksheets, textbooks and assessments. Under the guidance of its national boards of education (CBSE) and NCERT, the content has been created by more than 250 teachers who teach in multiple languages. The app is available to use offline. It has more than 80,000 e-Books for classes 1 to 12 created by CBSE, NCERT in multiple languages. The contents can also be viewed through QR codes on textbooks. Website: https://swayamprabha.gov.in/ e-PG Pathshala is for postgraduate students. Postgraduate students can access this platform for eBooks, online courses and study materials during this lockdown period. The importance of this platform is that students can access these facilities without having internet for the whole day. Website: https://epgp.inflibnet.ac.in/ Positive impact of COVID-19 on education Though the outbreak of COVID-19 has created many negative impacts on education, educational institutions of India have accepted the challenges and trying their best to provide seamless support services to the students during the pandemic. Indian education system got the opportunity for transformation from traditional system to a new era. The following points may be considered as the positive impacts. Move towards Blended Learning: COVID-19 has accelerated adoption of digital technologies to deliver education. Educational institutions moved towards blended mode of learning. It encouraged all teachers and students to become more technology savvy. New ways of delivery and assessments of learning opened immense opportunities for a major transformation in the area of curriculum development and pedagogy. It also gives access to large pools of learners at a time. Rise in use of Learning Management Systems: Use of learning management systems by educational institutions became a great demand. It opened a great opportunity for the companies those have been developing and strengthening learning management systems for use educational institutions. Enhance the use of soft copy of learning material:

In lockdown situation students were not able to collect the hard copies of study materials and hence most of the students used of soft copies materials for reference. Improvement in collaborative work- There is a new opportunity where collaborative teaching and learning can take on new forms. Collaborations can also happen among faculty/teachers across the world to benefit from each other. Rise in online meetings- The pandemic has created a massive rise in teleconferencing, virtual meetings, webinars and e-conferencing opportunities Enhanced Digital Literacy: The pandemic situation induced people to learn and use digital technology and resulted in increasing the digital literacy mproved the use of electronic media for sharing information: Learning materials are shared among the students easily and the related queries are resolved through e-mail, SMS, phone calls and using different social Medias like WhatsApp or Facebook.

World wide exposure Educators and learners are getting opportunities to interact with peers from around the world. Learners adapted to an international community. Better time management: Students are able to manage their time more efficiently in online education during pandemics. Demand for Open and Distance Learning (ODL). During the pandemic situation most of the students preferred ODL mode as it encourages self-learning providing opportunities to learn from diverse resources and customized learning as per their needs.

Negative impact of COVID-19 on education Education sector has suffered a lot due to the outbreak of COVID-19. Educational activity hampered Classes have been suspended and exams at different levels postponed. Different boards have already postponed the annual examinations and entrance tests. Admission process got delayed. Due to continuity in lockdown, student suffered a loss of nearly 3 months of the full academic year of 2020-21 which is going to further deteriorate the situation of continuity in education and the as students would face much difficulty in resuming schooling again after a huge gap. Impact on employment Most of the recruitment got postponed due to COVID-19 Placements for students may also be affected with companies delaying the on board of students. Unemployment rate is expected to be increased due to this pandemic. In India, there is no recruitment in Govt. sector and fresh graduates fear withdrawal of their job offers from private sectors because of the current situation. When the unemployment increases then the education gradually decreases as people struggle for food rather than education.

Conclusion COVID-19 has impacted immensely to the education sector of India. Though it has created many challenges, various opportunities are also evolved. The Indian Govt. and different stakeholders of education have explored the possibility of Open and Distance learning (ODL) by adopting different digital technologies to cope up with the present crisis of COVID-19. India is not fully equipped to make education reach all corners of the nation via digital platforms. The students who aren't privileged like the others will suffer due to the present choice of digital platforms. But universities and the government of India are relentlessly trying to come up with a solution to resolve this problem. The priority should be to utilise digital technology to create an advantageous position for millions of young students in India. It is need of the hour for the educational institutions to strengthen their knowledge and Information Technology infrastructure to be ready for facing COVID-19 like situations. Even if the COVID-19 crisis stretches longer, there is an urgent need to take efforts on maximum utilisation of online platforms so that students not only complete their degree in this academic year but also to get ready for the future digital oriented environment. The concept of "work from home" has greater relevance in such pandemic situation to reduce spread of COVID-19. India should develop creative strategies to ensure that all children must have sustainable access to learning during pandemic COVID-19. The Indian policies must include various individuals from diverse backgrounds including remote regions, marginalised and minority groups for effective delivery of education. As online practice is benefitting the students immensely, it should be continued after the lockdown.

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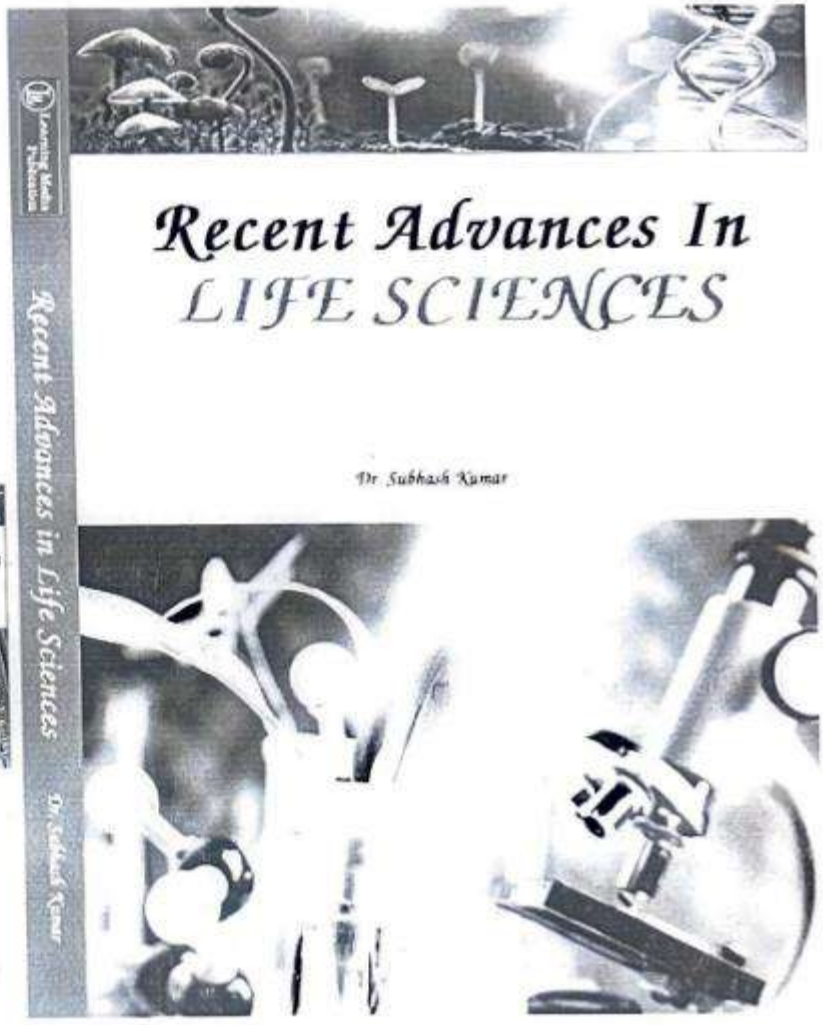

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Chapter-11

POST COVID -19 CONDITIONS : HEALTH PERSPECTIVE

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Past almost two years time was an entirely different era for all the people around due to occurrence of covid-19. Suddenly emergence of new strain of virus leads to a fast-spreadinginfectious disease. Many people died but most people who develop COVID-19 fully recovered. some people may experience varied symptoms after they suffered with COVID-19 like fatigue, breathlessness and cognitive dysfunction for example, confusion, forgetfulness, or a lack of mental focus and claritywhile others may have serious health problems. These symptoms might persist from their initial illness or develop after their recovery. Post COVID-19 condition is defined as the illness that occurs in people who have a history of probable or confirmed SARS-CoV-2 infection; usually within three months from the onset of COVID-19, with symptoms and effects that last for at least two months. The symptoms and effects of post COVID-19 condition cannot be explained by an alternative diagnosis.

Anyone who becomes ill with COVID-19 can develop post COVID-19 condition. Post COVID-19 condition is being studied by many experts around the world and our knowledge and understanding of post COVID-19 condition is growing. Recent review by Nalbandian and colleagues has summarized the effects of Long COVID, which they have termed 'post-acute COVID-19, by organ system and presentation[1].Conditions like Pulmonary, hematologic, cardiovascular, neuropsychiatric, renal, endocrine, gastrointestinal, hepatobiliary, dermatologic, and MIS-C groups with distinct presentations highlights the requirement for a multidisciplinary approach to managing patients with long COVID.

Post covid infection research studies suggest that approximately 10%-20% of people experience a variety of mid- and long-term effects after they recover from their initial illness. These mid- and long-term effects are collectively known as post COVID-19 condition or "long COVID."During 2020, increasing numbers of case reports, case series, and small observational studies reported long-term complications of coronavirus disease 2019 (COVID-19) in recovered people[2]. Researchers are working with patients who develop post COVID-19 condition to better understand more about its cause, symptoms and effects. Long COVID, or post-COVID syndrome, has been described in patients who had recovered from acute infection with severe acute respiratory syndrome corona virus.

There have been recent hypotheses regarding the cause of cognitive impairment associated with long COVID. However, the prevalence of the systemic effects of long COVID is now emerging from the analysis of global patient electronic records and registries, including in the USA and the UK. As recently as April 2021, clinical guidelines have been proposed by public health and primary care physicians for the definition, diagnosis, and management of long COVID. Long COVID occurs in patients who continue to have signs and symptoms of illness four weeks after the initial diagnosis of SARS-CoV-2 infection, which are not explained by other causes.

There does not appear to be a relationship between the initial severity of COVID-19 infection and the likelihood of developing post COVID-19 condition.Preliminary data have recently been published from the community-based COVERSCAN clinical trial[3]. This study included 201 individuals population which was at low risk of mortality from COVID-19, and only 19% were hospitalized[3]. However, four months after initial SARS-CoV-2 infection, 42% of individuals had ten or more long COVID symptoms, and 60% had severe long COVID symptoms, which included breathlessness (88%), headache (83%),

fatigue (98%), and myalgia (87%)[5]. Mild cardiac impairment was present in 26%, impaired lung function in 11%, and impaired liver function tests were present in 28%, renal failure in 4%, single-organ impairment in 70%, and multiorgan impairment in 29%[5]. The preliminary analysis of data from this trial showed that in individuals at low risk of mortality from COVID-19 mortality but with long COVID symptoms, 70% had impairment in one or more organs four months later.

In May 2021, Daugherty and colleagues published the findings from a retrospective analysis of three US patient databases to evaluate the prevalence of persistent symptoms after the acute phase of SARS-CoV-2 infection in 193,113 adults between 18-65 years of age[6]. About 14% of adults had at least one new type of clinical condition that required medical management[6]. In this study, long COVID included chronic respiratory failure, hypercoagulation states, cardiac arrhythmia, myocarditis, peripheral neuropathy, encephalopathy, cognitive impairment, hyperglycemia, abnormal liver function tests, fatigue, and anxiety[6]. Long COVID was more common in older individuals, patients with pre-existing conditions, and patients who had required hospital admission for acute SARS-CoV-2 infection[6]. Also, all ages and previously healthy individuals who were not initially hospitalized also developed long COVID.

Multisystem inflammatory syndrome in children (MIS-C) can present acutely following SARS-CoV-2 infection but is also a form of long COVID in children and adolescents[7]. A recently reported cross-sectional study from Italy included 129 children.During acute COVID-19, 25.6% were asymptomatic, and 4.7% were hospitalized, with 2.3% requiring admission to the pediatric intensive care unit[8]. Following acute infection with SARS-CoV-2, 2.3% developed MIS-C, and 1.6% developed myocarditis. 35.7% had one or two symptoms, 22.5% had three or more symptoms of long COVID, and 41.8% completely recovered.

Another study was performed to determine the relative risk of a lethal outcome associated with chronic degenerative conditions in patients with COVID-19. In patients with COVID-19, the relative risk of a lethal outcome is 4.17 for those with diabetes, 4.13 for those with hypertension, and 3.96 for those with obesity. For two chronic conditions combined, the relative risk doubles or triples. The relative risk of a lethal outcome is 14.27 for diabetes plus hypertension; 9.73 for diabetes plus obesity, and 7.43 for obesity plus hypertension.

In the past 18 months, the global pandemic of acute cases of COVID-19, early mortality, and the vaccine development program have detracted from the lasting health, social, and economic burden of long COVID. A recent US population study reported that 1 in 10 people hospitalized with COVID-19 had a new and disabling clinical condition following hospital discharge and 12 weeks after a positive test for SARS-CoV-2.

Long-term health resource planning for the consequences of long COVID is starting to affect healthcare delivery services. Longitudinal studies should be implemented to assess the health effects and long-term economic impacts of living with chronic diseases of long COVID[11]. The pathogenesis, risk factors, and treatment of the many clinical components of the long COVID syndrome should be studied in parallel with their effects on society and health economics[11,12,13].

Conclusion

The medicalindications of long COVID and its occurrence in all age groups who primarily seem to have recovered from acute SARS-CoV-2 infection are now recognized. However, the impacts on society, the economy, and healthcare obligation have yet to be understood. There is also point that in older adults, the indications of long COVID are less reported and may be assumed to be due to age-related comorbidities. Now that SARS-CoV-2 virus and its variants are endemic, and vaccination plans may or may not be completely effective then diagnosis and management of long COVID is expected to become a universal public health priority.

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संपादक

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प्रथम संस्करण- 2021

अक्षर सयोंजक
दीपिका शर्मा, दिल्ली-94

Dakshin Asia Me Rajnitik Isthirta Evam Vikas Me Bharat Ki Bhumika
By - Dr. Nishu Kumar

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21वीं सदी में भारत और नेपाल के सम्बन्धों का एक विश्लेषणात्मक अध्ययन

डॉ. रामचन्द्र सिंह*
जगतार सिंह**

इतिहास तथा भूगोल के जुड़े हुए और कभी इसी से अलग हुए भारत और नेपाल दोनों एक-दूसरे की संस्कृति, धर्म और बहुत लंबे काल से सामाजिक एकता की दृष्टि से संधिपूर्वक जुड़ने के लिए बाध्य थे। यहाँ तक हिमालय पर्वत श्रृंखला भी उनकी संयुक्त पुराकथा और ऐतिहासिक भावनाओं की साझेदारी की सबूत है। एक देश सीमा क्षेत्र से ही एक-दूसरे से अलग नहीं हो पाता है (वास्तव में एक देश की सामाजिक, सांस्कृतिक, मजहबी, राजनीतिक भावनाएँ, आकांक्षाएँ केवल यहीं समाप्त नहीं हो जाती हैं जहाँ दूसरे देश की प्रभुता शुरू होती है)। दोनों देश एक-दूसरे में विस्तृत रूप लेते हैं। यहाँ हिमालय ही दोनों देशों की प्राकृतिक सीमा का निर्धारक है। कब से ऐसा शुरू हुआ होगा, यह कहना मुश्किल है। कभी-कभी एक-दूसरे को रोमांचित कर देने वाले संबंधों में भी खटास आई लेकिन चूँकि मेल-जोल से रहकर पारस्परिक विकास करने के अलावा कोई और व्यावहारिक और मैत्रीपूर्ण तरीका भी उनके पास नहीं था।

प्रजातंत्र की हवा

लेकिन इस बार काठमांडू में सत्ता के पुराने ढांचे की योजना को बे-असर और अस्त-व्यस्त करने वाली चुनौतियों का एक नया तत्व मौजूद था। नीचे से एकाएक उभार उठा, बहुत भारी

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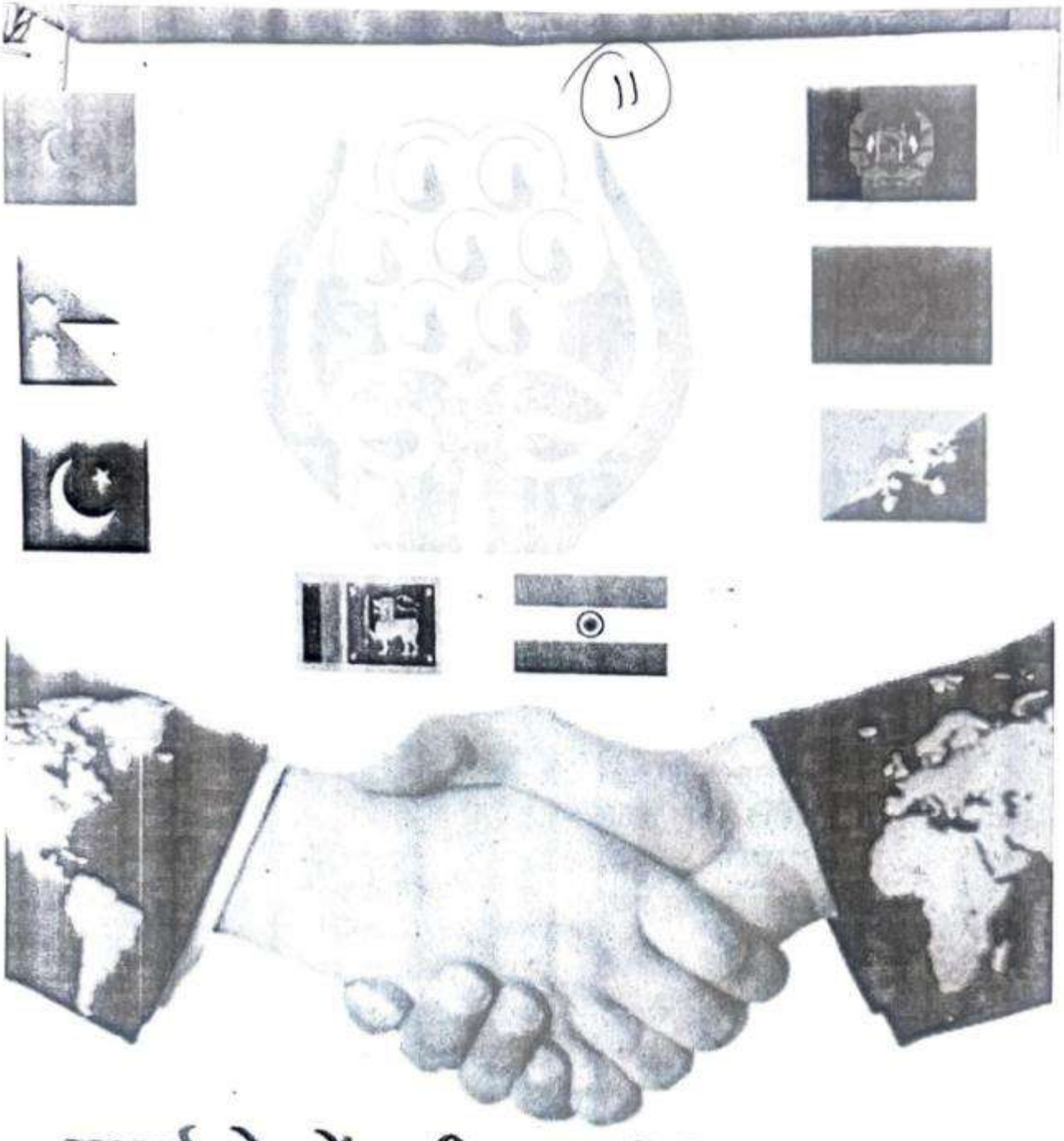

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मुद्रक
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Saarc Deshon Ki Raajnitik Aarthik Evam Samajik Sanskriti Mein Bharat Ka Yoagdaan
by Dr. Virendar Singh
Dr. Tirth Parkash

भूमण्डलीकरण के युग में भारत और पड़ोसी राष्ट्र

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माधवपुरम, मेरठ, उत्तर–प्रदेश

सारांश

स्वतंत्रता के पश्चात् भारत की प्रत्येक सरकार ने अपनी विदेश नीति में पड़ोस के महत्त्व को स्वीकार किया है। लेकिन चीन और पाकिस्तान के साथ लगातार संघर्ष ने भारत की विदेश नीति पर प्रश्नचिन्ह लगाया है। पाकिस्तान के परमाणु कार्यक्रम तथा चीन के साथ घनिष्ठता ने भारत को चिंतित किया हुआ है। नेपाल तथा श्रीलंका में आंतरिक संघर्षों में भारतीय भूमिका पर संदेह किया जा रहा है। सन् 2005 में भारत ने 'पड़ोस प्रथम' नीति के द्वारा पड़ोसी सरकारों के साथ कामकाजी संबंध बनाने तक सीमित होना, लेकिन इन देशों में लोकतांत्रिक आकांक्षाओं को प्रोत्साहित करने की घोषणा की। विदेश मंत्रालय की वार्षिक रिपोर्ट 2010–11 में कहा गया कि "हमारी विदेशी नीति के उद्देश्यों को प्राप्त करने की दिशा में प्रथम कदम एक शांतिपूर्ण, सुरक्षित एवं स्थिर पड़ोस सुनिश्चित करना है। भारत अपने पड़ोसी देशों के साथ पारस्परिक रूप से लाभकारी संबंधों का विकास कर रहा है। भारत ने अपने पड़ोस की विचारधारा को ऐसी विचारधारा के रूप में परिभाषित किया है जिसके क्षेत्र का ऐतिहासिक एवं सांस्कृतिक समानताओं की मध्य धूरी के इर्द–गिर्द निरन्तर विकास हो।

परिचय

वैश्वीकरण का शाब्दिक अर्थ है विश्व का एकीकरण। एकीकरण का आशय आर्थिक, राजनीतिक, सामाजिक और सांस्कृतिक घटनाओं से है जहां निर्बाध रूप से वस्तु, विचार, श्रम, मूल्य आदि एक देश से अन्य देशों में आदान–प्रदान होते हैं। यह एक ऐसी प्रक्रिया है जिसके द्वारा समस्त विश्व के लोग मिलकर एक समाज का निर्माण कर एक साथ कार्य करते हैं। आर्थिक प्रक्रिया के रूप वैश्वीकरण के साथ ही उदारीकरण व निजिकरण से देशों के राजनीतिक संबंधों में आर्थिक पक्ष ज्यादा प्रभावशाली है। भारत की विदेश नीति स्वतंत्रता, समानता एवं बंधुत्व के लोकतांत्रिक सिद्धांतों पर आधारित है। विदेश नीति निर्धारण का लक्ष्य अपने पड़ोसियों तथा शेष विश्व के साथ शांतिपूर्ण संबंधों को सुनिश्चित करना है। पंचशील तथा गुटनिरपेक्षता भारतीय विदेश नीति के मूल सिद्धांतों में प्रमुख है जिनका पालन भारत ने अपनी विदेश नीति में वैश्विक संबंधों के साथ–साथ पड़ोसी देशों के साथ भी किया है। चीन, पाकिस्तान, बांग्लादेश, नेपाल, भूटान से साथ हमारी भू–सीमा है जबकि श्रीलंका, मालदीव के साथ समुद्री सीमा साझा करता है। भारत में क्षेत्रीय स्तर पर पड़ोसियों के साथ सदैव मधुर

अनुक्रमणिका

संबंध स्थापित करने का प्रयास किया है। उदारवाद, निजिकरण और वैश्वीकरण जैसी गतिशील प्रक्रियाओं ने भारत तथा उसके पड़ोसी राष्ट्रों के संबंधों को नया रूप देने का प्रयास किया है। क्षेत्रीय एकीकरण की अंतर्राष्ट्रीय राजनीति में आवश्यकता को महसूस करते हुए भारत ने सन् 2005 में 'नेबरहुड फर्स्ट' (पड़ोस प्रथम) नीति को प्रारंभ किया। इसका आशय पड़ोसी देशों को प्राथमिकता देने से है।

भारत–चीन सम्बन्ध

अंतर्राष्ट्रीय राजनीति में सत्ता के नये केंद्र के रूप में चीन ने अपनी मजबूत उपस्थिति दर्ज करायी है। ऐसा अनुमान लगाया जा रहा है कि 2040 तक चीन विकास के क्षेत्र में सबसे आगे होगा। भारत भी विश्व की उभरती हुई शक्तियों में से एक है। भारत और चीन के बीच लम्बी सीमा रेखा है। दोनों देशों के मध्य प्राचीन काल से ही सांस्कृतिक तथा आर्थिक संबंध रहे हैं, भारत से बौद्ध धर्म का प्रचार चीन की भूमि पर हुआ है। चीन के लोगों ने प्राचीन काल से ही बौद्ध धर्म की शिक्षा ग्रहण करने के लिये भारत के नालन्दा तथा तक्षशिला विश्वविद्यालयों की तरफ रूख किया था। 1949 में चीन की स्थापना के साथ ही भारत ने चीन के साथ राजनयिक सम्बन्ध स्थापित किये। 1954 में चीन, भारत और म्यनमार ने शांतिपूर्ण क्षेत्रीय सहअस्तित्व के लिये पंचशील के सिद्धांतों को मान्यता दी। दोनों देशों में 'हिन्दी–चीनी भाई–भाई' का नारा भी लोकप्रिय हुआ। सीमा विवाद तथा चीन की तिब्बत को हड़पवने की नीति तथा सीमा पर बस्तियां बसाने के फैसले से दोनों देशों के मध्य सम्बन्ध बिगड़ने लगे। अरूणाचल प्रदेश के कुछ इलाकों और अक्र्साइचिन क्षेत्र पर प्रतिस्पर्धी दावों के चलते 1962 में युद्ध हुआ। चीन के राष्ट्रपति जियांग जोमिन ने 1966 में भारत यात्रा के दौरान नियंत्रण रेखा पर शान्ति बहाली तथा अनाक्रमण की नीति का पालन करने का फैसला किया। सन 1961 में भारत–चीन के मध्य तेल एवं गैस प्राप्ति की भागीदारी के लिए समझौता हुआ। सन् 1970 के दशक में भारत चीन सम्बन्ध शीतकाल से निकलकर घनिष्ठ हुए। अपनी अर्थव्यवस्था के विकास के साथ ही 1980 के दशक में चीन ने भारत के साथ सम्बन्धों में सुधार किया।

वैश्वीकरण के प्रारंभिक दौर तथा 1990 के दशक में भारत के परमाणु परीक्षण मई 1998 के कारण चीन की मानसिकता में बदलाव आया। चीन ने अमरीका एवं अन्य देशों के साथ मिलकर NPT तथा CTBT पर हस्ताक्षर कराने के लिये संयुक्त राष्ट्र सुरक्षा परिषद के प्रस्ताव पास कराया। भारत और चीन के मध्य परस्पर आर्थिक, सामाजिक और सांस्कृतिक सम्बन्ध बढ़ाने के लिये उच्चस्तरीय वार्तालाप हुआ। विश्व व्यापार संगठन की सदस्यता के लिये भारत ने चीन का समर्थन किया। मई 2000 में 'राष्ट्रपति के आर नारायणन ने चीन की यात्रा की जिसमें दोनों देशों ने द्विपक्षीय आर्थिक व व्यापार सम्बन्धों में वृद्धि के लिए प्रयास की प्रतिबद्धता प्रकट की। सन् 2003 में भारत के तत्कालीन प्रधानमंत्री अटल बिहारी वाजपेयी ने चीन की यात्रा की।

चीनी प्रधानमंत्री वन चा पाओ के साथ भारत चीन सम्बन्धों के सिद्धान्त और चतुर्मुखी सहयोग पत्र पर हस्ताक्षर किये। चीन के प्रधानमंत्री ने 2005 व 2010 में भारत यात्रा की। चीनी राष्ट्रपति हु जिंताओं 2006 में भारत यात्रा पर आये। भारतीय प्रधानमंत्री डॉ. मनमोहन सिंह ने 2011 में सान्या, चीन का दौरा किया। 2014 में नरेन्द्र मोदी भारत के प्रधानमंत्री बने तो उन्होंने शुरूआत में सभी पड़ोसी देशों के साथ बेहतर संबंध बनाने के प्रयास किये। सितम्बर 2014 में मोदी के निमंत्रण पर चीनी राष्ट्रपति अहमदाबाद आये। इस यात्रा के दौरान कैलाश मानसरोवर यात्रा के नये मार्ग और रेलवे में सहयोग सहित 12 समझौतों पर हस्ताक्षर किये गए। इसी दौरान चीनी आर्मी (पी.एल.ए.) के हजारों जवान जम्मु कश्मीर के चुमार क्षेत्र में घुस आये।

डोकलाम को लेकर 2017 से वर्तमान तक भारत चीन संबंधों में तनाव है। सिक्किम से सटे हुए डोकलाम पठार पर चीन सड़क बनाना चाहता है। वैश्विक महामारी के दौर में सन् 2020 में भी पेंगाग झील के पास भारत चीन के सैनिक आमने सामने हुए लेकिन कुछ झड़पों के बाद विवाद शान्त है। अक्साई चिन की गलवान घाटी में भारत चीन सैनिक आमने सामने हुए। पाकिस्तान को चीन का समर्थन तथा पाकिस्तान–चीन आर्थिक गलियारा पर भी भारत चीन के मध्य विवाद है।

भारत और चीन के मध्य अरबों डालर का व्यापार होता है। 2008 में भारत चीन का सबसे बड़ा व्यावसायी सहयोगी बना। भारत चीन के लिये उभरता हुआ बाजार है। भारत चीन से इलेक्ट्रिक उपकरण, मैकेनिकल सामान तथा कार्बनिक रसायन आयात करता है जबकि खनिज इंधन तथा कपास निर्यात करता है। भारत चीन के मध्य साफ्टवेचर क्षेत्र में सूचना प्रौद्योगिकी गलियारा प्रारंभ हुआ है।

वैश्वीकरण के दौर में भारत–चीन संबंध गरम–नरम दोनों प्रकार के रहे हैं। भारत भी अमरीका, फ्रांस, जापान तथा आस्ट्रेलिया से मजबूत संबंध के चलते चीन का दबदबा कम करने का प्रयास किया जा रहा है।

भारत पाकिस्तान संबंध

ऐतिहासिक और राजनीतिक मुद्दों के कारण भारत और पाकिस्तान के संबंध सदैव तनावपूर्ण रहे हैं। दोनों देशों में इन संबंधों का मूल कारण 1947 के भारत विभाजन में है। स्वतंत्रता के कुछ महीनों बाद ही कश्मीर को लेकर भारत–पाकिस्तान में युद्ध हुआ। जम्मू–कश्मीर के भारत में विलय को पाकिस्तान ने कभी स्वीकार नहीं किया है। इस विवाद को लेकर दोनों देशों के मध्य सैनिक समझौते व युद्ध हो चुके हैं। साल 1965 में अप्रैल से सितम्बर तक लगातार मुठभेड़ हुई जिसे 1965 का भारत पाक युद्ध कहा जाता है। पाकिस्तान ने जम्मू–कश्मीर में आपरेशन जिब्राल्टर के द्वारा अपने सैनिक घुसपैठिये भेजे तथा कश्मीर की जनता से विद्रोह कराना चाहा। इस युद्ध में दोनों पक्षों के हजारों लोगों की जान गयी। संयुक्त

राष्ट्र संघ के द्वारा इस युद्ध पर विराम लगा और 'ताशकंद समझौता' हुआ। पूर्वी पाकिस्तान ने बांग्लादेश के निर्माण के लिए भारत और पाकिस्तान के मध्य तीसरा युद्ध हुआ जिसमें भारत ने 94000 पाकिस्तानी सैनिकों को बंदी बनाया। इसके साथ ही विश्व पटल पर एक देश 'बांग्ला देश' का जन्म हुआ।

1999 में भारत–पाकिस्तान के मध्य कारगिल युद्ध हुआ। पाकिस्तान सैनिकों और घुसपैठियों की मदद से कारगिल क्षेत्र पर कब्जा करना चाहता था जिसे भारतीय सेना ने नाकाम कर दिया।

जम्मु–कश्मीर के उरी सेक्टर में भारतीय सेना के स्थानीय मुख्यालय तथा पंजाब के पठानकोट में भारतीय सेना पर आतंकवादी हमले से पाकिस्तान संबंधों में तनाव पैदा हुआ। भारत ने नवंबर 2016 में इस्लामाबाद में होने वाले दक्षेस (SAARC) शिखर सम्मेलन का बहिष्कार किया। बांग्लादेश, अफगानिस्तान व भूटान ने भी भारत का समर्थन किया। भारत ने पाकिस्तान को दिये गये 'मोस्ट फेवर्ड नेशन' के दर्जे पर पुनर्विचार की घोषणा की। सिंधु जल संधि (1960) के बावजूद भी भारत–पाकिस्तान के मध्य इस संधि पर पानी के बंटवारे को लेकर लगातार तनाव रहता है। चीन–पाक आर्थिक गलियारा पाकिस्तान अधिकृत कश्मीर से होकर गुजर रहा है, जो ग्वादर पतन से जुड़ा है, और वैधानिक रूप से भारत का हिस्सा है। यह गलियारा सुरक्षा के लिये खतरा है।

पाकिस्तान द्वारा समर्थित कश्मीर में आतंकवाद भारत में अलगाववादी ताकतों को बढ़ावा, खालिस्तान की मांग का समर्थन, सन् 2001 में भारतीय संसद पर हमला, 2008 में 26/11 का मुंबई हमला आदि मुद्दों ने भारत–पाकिस्तान के मध्य तनाव बरकरार रखा है। 1999 में भारत–पाक के मध्य सम्बन्धों को सुधारने के लिये तत्कालीन प्रधानमंत्री वाजपेयी और शरीफ ने सदा–ए–सरहद (दिल्ली–लाहौर बस सेवा) प्रारंभ की। परवेज मुशर्रफ के साथ आगरा शिखर वार्ता (2001) असफल हो गयी।

भारतीय सिख तीर्थ यात्रियों के लिये करतारपुर साहिब की ओर जाने वाला कोरिडोर खोलने की दिशा में पहल भारत–पाक के ऐतिहासिक, सांस्कृतिक एवं सामाजिक संबंधों में एक शुभ एवं आशा भरा प्रयास है। लेकिन पाकिस्तान करतारपुर साहिब कोरिडोर के साथ अन्य मुद्दों को उठाना चाहता है।

उपरोक्त विश्लेषण के आधार पर स्पष्ट है कि भारत–पाक के मध्य वैश्वीकरण के दौर में भी अनेक कोशिशों के बावजूद सम्बन्ध तनावूपर्ण बने हुए हैं।

भारत श्रीलंका सम्बन्ध

श्रीलंका भारत के दक्षिण में स्थित द्वीपीय पडोसी देश है। दोनों देशों के मध्य ऐतिहासिक जुड़ाव रहा है। दोनों देश कॉमनवेल्थ, सार्क के सदस्य हैं। सैन्य गुटों का विरोध,

निःशस्त्रीकरण एवं हिन्द महासागर को शांतिपूर्ण क्षेत्र रखने के प्रयास संबंधी मुद्दों पर सहमत है। लेकिन तमिल मुद्दा दोनों देशों के मध्य विवाद का विषय है। 1980 के दशक में श्रीलंका में अलगाववादी बल लिट्टे के विरूद्ध भारतीय शांति सेना ने सीधे हस्तक्षेप किया। क्योंकि श्रीलंका के जातीय संघर्ष और गृहयुद्ध ने भारत की राष्ट्रीय एकता हितों और अखंडता को खतरे में डाल दिया। भारतीय शांति सेना पर मानव अधिकारों के उल्लंघन के आरोप लगे। इस संघर्ष में हजारों नागरिकों की जान गयी। नवनिर्वाचित श्रीलंकाई राष्ट्रपति रणसिंघे प्रेमदास ने भारतीय सेना की वापसी की मांग की जिसे 1990 में वापिस बुला लिया गया। मई 1991 में भारत के पूर्व प्रधानमंत्री राजीव गंधी की LTTE ने हत्या कर दी।

दोनों देशों के मध्य समान नस्लीय और सांस्कृतिक संबंध है। श्रीलंका से सिंहली समुदाय को भारतीय इंडो आर्यन परिवार से माना जाता है जबकि तमिल समुदाय को भारतीय द्रविड़ परिवार का माना जाता है जो खेती करने श्रीलंका गये थे।

भारत और श्रीलंका बहुपक्षीय संगठन सार्क, दक्षिण एशियाई आर्थिक संघ तथा BIMSTEC के माध्यम से आर्थिक और वाणिज्यिक संबंधों को बढ़ाने का काम कर रहे हैं तथा द्विपक्षीय मुक्त व्यापार समझौते का हिस्सा है। दोनों देश साफ्टा (SAFTA) के हस्ताक्षरकर्ता है। भारत श्रीलंका के वैश्विक आयात में 14% निर्यातक है जबकि 4% आयातक है। भारत के NTPC के 500 मेगावाट का प्लांट संपूर में बनाने का प्रयास भारत–श्रीलंका के संबंधों को नये आयाम प्रदान करेगा।

समुद्री सीमा में भारतीय मछुआरों पर श्रीलंका सेना द्वारा लगातार हमला भारत–श्रीलंका संबंधों में तनाव पैदा करता है। साथ ही श्रीलंका–चीन के मध्य बंदरगाह समझौता तथा सार्वजनिक परियोजनाओं में चीन की हिस्सेदारी ने भारत–श्रीलंका के मध्य अविश्वास पैदा किया है।

भू–राजनीतिक दृष्टि से भारत–श्रीलंका संबंध अत्यन्त महत्वपूर्ण है। हिंद महासागर की सुरक्षा के लिये श्रीलंका को विशेष स्थान प्राप्त है।

भारत–बांग्लादेश सम्बन्ध

बांग्लादेश के निर्माण में भारत की महत्वपूर्ण भूमिका रही है। पूर्वी पाकिस्तान से बांग्लादेश का निर्माण भारत–पाक युद्ध के दौरान हुआ। भारत ने 6 दिसम्बर 1971 को बांग्लादेश को सर्वप्रथम मान्यता दी। भारतीय सेनाओं ने बांग्लादेश की मुक्तिवाहिनी से मिलकर 16 दिसम्बर 1971 को स्वतंत्र बांग्लादेश की स्थापना करायी। बांग्लादेश ने भारत की तरह अपने को लोकतांत्रिक, धर्मनिरपेक्ष, पंचशील और गुटनिरपेक्षता की नीति में विश्वास व्यक्त किया। अपनी स्वतंत्रता और 1980 के दशक में भारत और बांग्लादेश ने मैत्री, व्यापारिक, आर्थिक और सांस्कृतिक समझौतों से रिश्तों को मजबूत किया। सन् 1980 के दशक में भारत–बांग्लादेश के

मध्य 'फरक्का समस्या' ने सम्बन्धों को प्रभावित किया। जिसे बांग्लादेश ने अन्तर्राष्ट्रीय मंचों व संयुक्त राष्ट्र संघ में उछालने का प्रयास किया। भारत ने 'फरक्का समझौता' के तहत इसे अन्तर्राष्ट्रीय रूप में परिवर्तन नहीं होने दिया जिसे 1982 में रद्द कर दिया गया। साथ ही गंगा नदी के जल बंटावारा, अल्पसंख्यकों की समस्या, चकमा शरणार्थी दोनों देशों के विदेश संबंधों को प्रभावित करते रहे हैं।

1991 में नई दिल्ली में भारत–बांग्लादेश संयुक्त आर्थिक आयोग की बैठक में बांग्लादेश के लिये ऋण की घोषणा हुई तथा नदी जल बटवारे का स्थायी समाधान के लिये विचार विमर्श हुआ। बांग्लादेश में संसदीय शासन प्रणाली की पुनःस्थापना (1991) से संबंधों में मधुरता के अवसर बढ़े। दोनों देश 1992 में 50 हजार चकमा शरणार्थियों की वापसी और अवैध आवागमन की समस्या से निपटने के लिये कार्यदल बनाने पर सहमत हुए। भारत ने 1992 में तीन बीघा क्षेत्र बांग्लादेश को हस्तान्तरित कर दिया। दिसम्बर 1996 में गंगाजल बंटवारे को लेकर ऐतिहासिक संधि हुई। भारत की पहल पर 1999 में कोलकत्ता–ढाका बस सेवा प्रारम्भ की। जनवरी 2010 में बांग्लादेश की प्रधानमंत्री शेख हसीना को शांति, निरस्त्रीकरण और विकास के लिये 'इंदिरा गांधी पुरस्कार' से सम्मानित किया गया। मार्च 2010 में ढाका में इंदिरा गांधी सांस्कृतिक केन्द्र की स्थापना से दोनों देशों के मध्य सांस्कृतिक संबंध मजबूत हुए हैं। सितम्बर 2011 में भारत–बांग्लादेश ने ऐतिहासिक सीमा–विवाद को हल करने के लिये सीमांकन समझौता हुआ। सन् 2013 में भारत–बांग्लादेश ने फैशन प्रौद्योगिकी कौशल आदान–प्रदान और वस्त्र विकास में सहयोग हेतु समझौता किया गया। बांग्लादेश वर्तमान में सार्क देशों के मध्य भारत का सबसे बड़ा व्यापारिक भागीदार है। ONGC ने बंगाल की खाड़ी में तेल और गैस उत्पादन समझौते पर हस्ताक्षर किये हैं। प्रधानमंत्री नरेन्द्र मोदी ने जून 2015 में बंगाल की मुख्यमंत्री ममता बनर्जी के साथ बांग्लादेश यात्रा की जिसमें दोनों देशों के मध्य चार दशकों से चले आ रहे सीमा विवाद का समाधान किया। सितम्बर 2015 में संयुक्त नदी समिति की बैठक का आयोजन किया गया।

इन समझौतों के बाद भी गंगा–ब्रह्मपुत्र नहर बनाने के प्रश्न पर मतभेद है। भारत बांग्लादेश की 3200 किलोमीटर लम्बी सीमा से बांग्लादेशी शरणार्थी अवैध रूप से प्रवेश करके भारत के उत्तर पूर्व राज्यों विशेषतः असम के लिये समस्या बने हुए हैं। दोनों देशों के मध्य NRC को लेकर संदेह की स्थिति है। असम में 19 लाख लोगों को NRC के अंतिम चरण से अलग किया गया है जिससे बांग्लादेश की चिंता बढ़ गयी है।

भारत–नेपाल संबंध

भारत के उत्तर–पूर्व में हिमालय की श्रृंखला में तिब्बत पर चीन के आधिपत्य के बाद भारत व चीन के मध्य एक 'बफर स्टेट' का कार्य करता है। सामरिक दृष्टि से अत्यन्त महत्वपूर्ण

नेपाल की सुरक्षा पर भारत की सुरक्षा निर्भर करती है। भारत ने संयुक्त राष्ट्र संघ में नेपाल की सदस्यता की वकालत की और 1955 में UNO का सदस्य बनने पर नेपाल ने किसी भी स्थिति में भारत के विरूद्ध न जाने की घोषणा की। अनेक कारणों से 1950 के दशक में नेपाल की जनता में भारत के प्रति आक्रोश उभरा। भारत का नेपाल के आन्तरिक मामलों में हस्तक्षेप का सन्देह, नेपाल भूमि पर बंधा कोसी बांध, भारतीय सेना की नेपाल में उपस्थिति तथा व्यापार समझौते के कुछ प्रतिबंध इसका प्रमुख कारण थे। नेपाल ने भारत को खतरा मानते हुए चीन के साथ अधिक झुकाव हुआ तथा नेपाल–चीन ने एवरेस्ट पर्वत शिखर के बारे में समझौता हुआ। 1960 और 1970 के दशक में नेपाल के साथ संबंध मधुर हुए जिनमें सीमावर्ती क्षेत्रों में सड़क निर्माण तथा कोसी योजना के माध्यम से नेपाल को बाढ़ से बचाना, बिजली पूर्ति एवं सिंचाई में लाभ आदि कारण थे। भारत ने नेपाल की पंचवर्षीय योजनाओं में सहयोग दिया। वैश्वीकरण के दौर में भारत–नेपाल सम्बन्ध उतार चढ़ाव भरे रहे हैं। सन् 1989 में भारत नेपाल के बीच व्यापार तथा पारगमन संधि समाप्त हो जाने से दोनों देशों के मध्य कटुता का वातावरण बना।

1950 की शान्ति व मैत्री संधि के आधार पर भारत–नेपाल सम्बन्धों की नींव है। नेपाल में संवैधानिक राजतन्त्र अर्थात राजशाही के कारण 21वीं सदी के प्रारंभ में चले लोकतंत्र समर्थक आंदोलन कारण आपातकाल घोषित हुआ। माओवादी समूह, लोकतंत्र समर्थक समूह तथा नेपाली सेना के त्रिकोणीय संघर्ष ने नेपाल में लोकतंत्र पूरी तरह स्थापित नहीं हो पाया। जिससे भारत को राजशाही व लोकतंत्र समर्थक के द्वन्द्व में नेपाल नीति जारी रखने में मुश्किल आयी। सन् 2008 में राजशाही व्यवस्था का नेपाल में अंत हो गया। भारत ने नेपाल में बहुदलीय लोकतंत्र को सुदृढ़ करने तथा संविधान प्रारूप में सहयोग का आश्वासन दिया।

'पड़ोस प्रथम' नीति के तहत भारतीय प्रधानमंत्री नरेन्द्र मोदी ने नेपाल यात्रा (2014) में नेपाल को आर्थिक सहायता, सड़क, दूरसंचार तथा पनबिजली योजना का आश्वासन दिया। सन् 2015 में 'पैट्रो चाइना' के साथ पैट्रोलियम उत्पादों तथा गैसोलिन आपूर्ति समझौते हुए। भारत ने संयुक्त राष्ट्र मानवाधिकार संगठन में नेपाल में बढ़ती हिंसा, राजनीतिक अस्थिरता और आंतरिक भेदभाव की शिकायत की। नये संविधान के विरोध में हिंसा तथा मधेशी विरोध के बाद नेपाल–भारत सीमा पर ट्रकों की आवाजाही बंदी के लिये भारत पर आरोप लगाया। नेपाल ने नये संविधान में मधेशियों को उचित प्रतिनिधित्व नहीं दिया तथा भेदभाव किया।

नेपाल भारत के सन्दर्भ में पड़ोसी के आधिपत्य की शंका से पीड़ित है। नेपाल, भारत और चीन के साथ समान दूरी सिद्धान्त पर संबंध विकसित करना चाहता है जबकि भारत नेपाल के साथ विशिष्ट सम्बन्ध चाहता है क्योंकि नेपाल एक आन्तरिक देश है।

भारत–भूटान संबंध

भारत के उत्तर–पूर्व में पूर्वी हिमालय में स्थित भूटान की सीमा तिब्बत तथा भारत में

असम से मिलती है। नेपाल में अधिकतर भूटिया जाति के लोग बौद्ध धर्मावलम्बी है।

भारत की प्रतिरक्षा में भूटान का महत्व अत्याधिक है। उत्तरी प्रतिरक्षा में भूटान को भेधांग की संज्ञा दी जाती है। भूटान 1971 में संयुक्त राष्ट्र संघ 1973 में गुटनिरपेक्ष के साथ सार्क का भी सदस्य है। सौभाग्य से भारत–भूटान संबंध मित्रतापूर्ण तथा समस्याहीन रहे हैं। भारत ने भूटान में सड़क निर्माण हवाई पट्टियां, विद्यालय, अस्पताल निर्माण तथा नगर विकास में योगदान दिया है। सन् 1990 के दशक में भारत–भूटान के मध्य पनबिजली और जलाशय योजना पर समझौता हुआ। सन् 2000 में डाक सेवा तथा रेल सम्पर्क स्थापित करने के समझौते हुए। आर्थिक क्षेत्र में भारत ने भूटान की कृषि, सिंचाई सीमेन्ट आदि क्षेत्रों में मदद की। व्यापार के क्षेत्र में भूटान भारत का बड़ा भागीदार है।

भारत और भूटान के मध्य कुछ मतभेद 1949 की भारत–भूटान मैत्री की धारा 2 की व्याख्या को लेकर है जिसमें भूटान भारत की सलाह से विदेशी मामलों को तय करेगा। भूटान इस पर पुनर्विचार चाहता है। साथ ही भारत–भूटान आयात निर्यात पर भारतीय कानूनों का लागू होना तथा पर्यटकों के लिये परमिट व्यवस्था जैसे मामूली विवाद है।

अन्तर्राष्ट्रीय मुद्दों पर भी भूटान ने भारतीय दृष्टिकोण से भिन्न नीति अपनायी है।

मूल्यांकन

पड़ोसी देशों के साथ भारत के सम्बन्धों के विश्लेषण से स्पष्ट है कि सभी राष्ट्रों के साथ भारत के कटु विवाद रहे हैं। चीन, पाकिस्तान और श्रीलंका के सन्दर्भ में बल प्रयोग की आवश्यकता हुई है। वैश्वीकरण के दौर में भारत को सार्क जैसे संगठनों के माध्यम से अपनी विदेश नीति को राजनीतिक, आर्थिक एवं सामाजिक–सांस्कृतिक क्षेत्रों में सफल बनाने का प्रयास करना होगा जिससे पड़ोसियों के साथ घनिष्ठ और गतिशील सम्बन्ध स्थापित हो सके। किन्तु पाकिस्तान और नेपाल में अस्थायी लोकतन्त्र, चीन की विस्तारवादी वर्चस्व की नीति, श्रीलंका के जातीय संघर्ष ने भारत की विदेश नीति 'पड़ोसी प्रथम' के उद्देश्य को अवरूद्ध करने का कार्य किया है।

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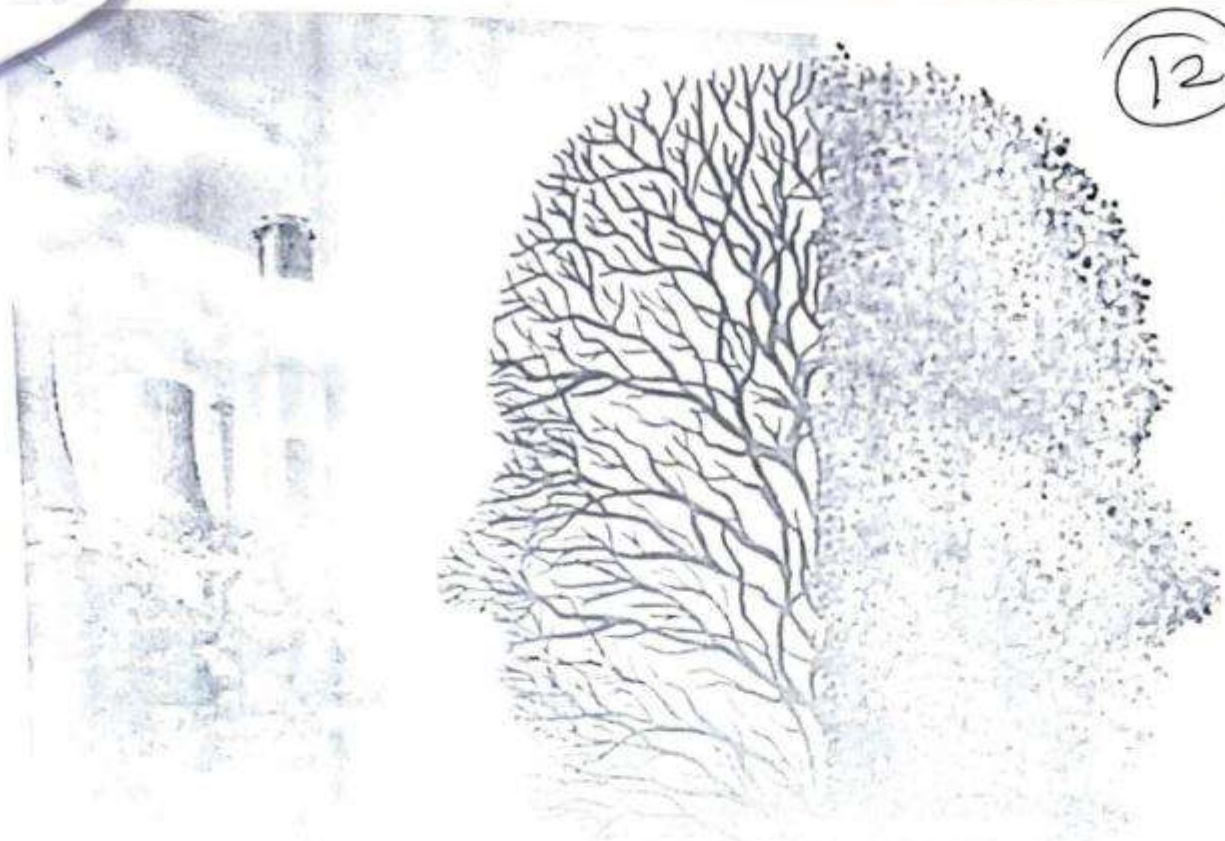

ENVIRONMENT AND HUMAN HEALTH IN INDIA

Prof. (Dr.) Anju Singh
Dr. Satya Pal Singh Rana

Environment and Human Health in India

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Impacts of Environmental Pollution on Human Health

Dr. Vaibhav Sharma
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INTRODUCTION

Today, environmental pollution is worldwide worrying problem it is one of the most significant challenges that the humankind is facing within todays' world. Pollution in fact is an undesirable change in the physical, chemical, and biological characteristics of surrounding air, water, and land that affects human life and its environment like living conditions and cultural assets. This pollution is anyhow or other is supposed to be associated with urbanization, industrialization along with development and increasing human population. In addition to this deforestation, profit oriented capitalism and technological advancement has also originated pollution crisis on earth. In fact in countries which are highly advanced in technology, there is worst condition of pollution. In such developed nations citizens consumes more food, use more pesticides, fertilizers, fuels and other manufactured products of all kinds vehicles which add more pollutants in our environment create more pollution. Thus the pollution is a necessary evil of all developments.

India stands among first 10 industrialized countries of the world and has good industrial infrastructure in core industries like fertilizers, chemicals, metals, petroleum, plastics, detergents solvents, paints and so on. Moreover due to progress in atomic energy there has been a great

increase in radioactive particles in the environment. In addition to this there are number of industrial effluents and emissions of poisonous gases in the atmosphere.

HEALTH IMPACTS OF ENVIRONMENTAL POLLUTION

Besides many other problems environmental issues are one of the most significant challenges of the world that human kind is facing. There are several types of environmental pollutions that surround the environment however a few important are air, water, land, noise, radioactive, and thermal pollutions. Some of them have trivial impact while others have severe effect on human population. For years researchers have focused and studied the influence of the pollution on human health. High level of studies around the world has resulted that this is the highly severe problem of present world. Environmental pollutants have various health effects from early life some of most important harmful effects are perinatal disorders, infant mortality, respiratory disorders, allergy, malignancies, cardiovascular disorders, and mental and emotional disorders. However studies have exposed that pollutants have been linked to increase risk of morbidity and mortality from many diseases, organ disturbances, cancers and other chronic diseases.

Air Pollution

Air Pollution is one of the environmental pollution that is caused mainly by releasing of harmful gaseous pollutants into the atmosphere. Atmosphere is an insulating blanket around the earth. It is source of essential gases that provide a medium for long distance communication and acts as a shield around the earth against ultraviolet radiations. When in this atmosphere due to some natural or human activities the amount of undesirable concentration of gases or solid waste percolate in the air it is said to be polluted and this phenomenon is called as air pollution. Air pollution results from gaseous emissions mainly industries, thermal power stations, automobile, and domestic combustions etc. From these different sources of air pollutions a variety of pollutants are released in the atmosphere. The main air pollutants emitted from different sources are carbon compounds in the form of mainly Co_2 and CO, sulphur compounds in the form of So_2 and H_2S, nitrogen oxides, ozone, hydrocarbons, fluorocarbons, particulate matter, metals and photochemical products.

Toxic Effects of Air Pollution: Chemical or gaseous compounds emitted in the atmosphere with the result of human activity or as by-

product of interaction of chemical emissions have been shown to have adverse effect on human health. These noxious health effects can be classified as due to acute or chronic exposure.

Health Effect Due to Acute Exposure to Air Pollution: The most studied toxic effect due to acute exposure to environmental pollutants is mortality associated mainly with exposure to particulate matter, ozone and sulphates. A great number of studies reports describe an increase in mortality due to respiratory complications. Even some reports also claim an increase in death due to cardiovascular ailments, which would implicate a mechanism with an indirect effect from air pollution. It has been noted that certain population groups are more susceptible than others to the effects of pollution. Individuals at the extremes of the life cycle, the elderly and infant show increase mortality showing less efficient biological defence mechanism than in the rest of the populations. Smoking is one of the reasons of increased mortality. It has been noted that smokers have a 30% decreased lung capacity as compared to the non-smokers of the same age.

Besides mortality a great number of acute conditions have been reported associated to exposure to air pollutants. Among these are diseases of respiratory tract, bronchitis, pneumonia, chronic obstructive pulmonary disease, and cough with phlegm.

Health Effect Due to Chronic Exposure: Many reports have focused on establishing the effect of chronic exposure over prolongs periods. The synthesis of all available information concerning chronic exposure is a complex task since enormous number of factors is associated with the same type of symptoms as that of acute exposure. In this exposure there are several reports of increased mortality, respiratory and cardiovascular problems which are principal cause of death. The beast documented chronic effect of exposure to air pollution is cancer. Approximately 70-80% of all cancer types have been reported as due to exposure to environmental pollutants. The mutagenic properties of different pollutants have shown that mutation of normal cell to cancerous cell is transformed in due course by over activation or inhibition of regulatory enzymes. However a chronic inflammatory state can also lead to cancer development. Probably it is done by exposure to some transition metals in the environment that can result in a chronic inflammatory state due alter secretion of reactive intermediaries of oxygen.

Water Pollution

Water is a universal solvent as it dissolves more substances than any other liquid because of this quality water is easily prone

to pollution. The addition of any substance to water or changing of physical and chemical characteristics of water to interfere its use for legitimate purposes is supposed to called water pollution. The chief sources of water pollution are sewage and other waste, Industrial effluents, agricultural discharges, industrial waste from chemical industries, thermal plants, and nuclear power plants. From all these sources several fatal pollutants enter into the water bodies.

Water Pollution and Human Health: Some inorganic and organic toxicants of sewage are highly toxic to human health and cause death or sub-lethal pathology of liver, kidneys, reproductive systems, respiratory systems and even nervous system.

Contaminated water can harbour bacteria of different types which can cause diarrhoea, cholera, dysentery, typhoid, and hepatitis A. It has been reported that nitrates dissolved in water is converted to nitrites in human digestive tracts by certain bacteria. These nitrites reacts with haemoglobin forming methaemoglobin which is enable to take up oxygen resulting suffocation in breathing of human beings. Studies have shown that the presence of microplastic in drinking water may cause oxidative stress, inflammatory reactions and metabolic disorders in humans.

Chemical pollutants such as pesticides, fertilizers, and heavy metals can cause severe health problems and their intake can be at risk of cancer, hormone disruption, and altered brain function, damage to reproductive system, cardiovascular diseases, and kidney problems.

Swimming in contaminated water can also cause rashes on body, pink eye disease, and respiratory infections.

Noise Pollution

Noise is usually defined as unwanted or unpleasant sound that causes discomfort when this unwanted sound is dumped into the atmosphere it is called noise pollution. There is a long list of sources of noise pollution including numerous industries, factories, mills, motor vehicles, autos, cars, tempos, trucks, tractors, loudspeakers, DJs, aircrafts and loud pop music etc. The noise can be majored by a sound meter and is expressed in a unit called the disable (dB). The sound in normal conversation is 35 to 60 dB, heavy street traffic is about 80 dB the loudest sound a person can stand is about 60-80 dB. Sound beyond 80dB can be regarded as pollutants as it harms hearing systems. WHO has fixed 45 dB as the safe noise level for a city. Noise level up to 65 dB is considered as tolerant in international standards. However, in Indian metropolitan cities usually noise is massacred as about 80-90 dB as usual.

Health Hazards of Noise Pollution

Noise is a chief man maid source of environmental pollution. It causes disturbances in the atmosphere which in turn interferes with the systems of human beings. Some important health hazards commonly noted are given below:

1. **Impact on Mental Health:** The brain is always monitoring sounds of sign of danger, even during sleep with the result of frequent or loud noise one can trigger anxiety or stress. People living with noise pollution may feel irritable, on edge, frustrated, or angry. If a person feels they cannot control the amount of noise in his environment, its impact intensifies on his mental health and peace of mind.
2. **Auditory Effects:** if continuous sound more than 90 dB persists in the surroundings of a population it causes severe auditory effect. Sudden loud can cause acute damage to the eardrum and tinny hair cells in the internal ear results loss of hearing processes. Even deafness can be caused due to continuous noise exposure.
3. **Impact of Physical Health:** It has been reported that acute exposure to noise pollution can temporarily raise blood pressure and increase blood viscosity. Even there is also an association between long term exposure to noise and higher rates of cardiovascular diseases. The review authors suggest that this may occur due to the impact of noise pollution on stress hormone levels and the nervous system. Continuous stress may contribute the development of several other diseases. Noise at high frequency is known to flush the skin, constrict stomach muscles, and produce ulcers. Continuous noise causes an increase in cholesterol level resulting in the constriction of blood vessels, making the person prone to heart attack and strokes.
4. **Impact on Children:** Some trusted sources found that chronic exposure to noise for continues 8 hours a day could cause permanent hearing changes in children, including inability to hear certain frequencies. Noise pollution can affect a child's hearing at any stage of development including foetal, infancy, and adolescence. Additionally, unwanted or loud noise at school or home may experience the children more difficulty with concentration, communication, and speech development. This may affect a child's behaviour, their ability to form relationship, and their confidence. They can also develop high blood pressure due to chronic exposure to sound.

Radioactive Pollution

Radioactive substances are the main cause of such pollution as these are the most toxic isotopes with unstable atomic nuclei and that easily decompose with ionizing radiation in the form of alpha and beta particles and gamma rays. The main source of radioactive pollution are nuclear war materials, test explosions, mad rush for power plants, and radio isotope use in medicine, industry and research.

Effects on Human Health

When a high energy nuclear particle or a gamma ray passes through any material, it ionizes the atoms and encounters the complex organic molecules which further lead to the disruption of the functioning of biological systems. The effect of radioactive pollutants depends on rate of diffusion, the duration of time, half life period of pollutants and environmental conditions. The damage caused to human body by penetrating radiations usually depends on the dose of radiation in the part of the body exposed. In high doses radiation can cause instant death of the person, whereas in lower doses it can impair the functioning of the body organ. Sometimes hand and feet are injured more severely in comparison to the other parts of the body.

Genetic changes can also occur when nuclear radiations and x-ray passes through genetic cells. They affect the chromosomes causing severe changes in genes sequences resulting mutations in chromosomes. The mutations are generally transmitted from generation to generation resulting severe damage to the progeny. Tumors, cancers, and developmental changes are other long range of radiation pollution. It has been noted that children are more vulnerable to the injury by radiation. The actively growing cells, bone marrow, cells of skin, intestine, reproductive cells, and embryo are more prone to the radiations.

A very high dose of radiation administered over a brief period of time can sometimes result in mortality during the following days or weeks in addition to symptoms like nausea and vomiting within hours after exposure. This condition is referred to as acute radiation syndrome, or radiation sickness. Acute radiation syndrome that lasts longer than 0.75 grey (75 rad) requires an extremely high radiation exposure (minutes to hours). This amount of radiation is equivalent to having your entire body exposed to the radiation from 18,000 chest x-rays during the course of this brief time. Acute radiation syndrome is rare, and comes from extreme events like a nuclear explosion or accidental handling or rupture of a highly radioactive source.

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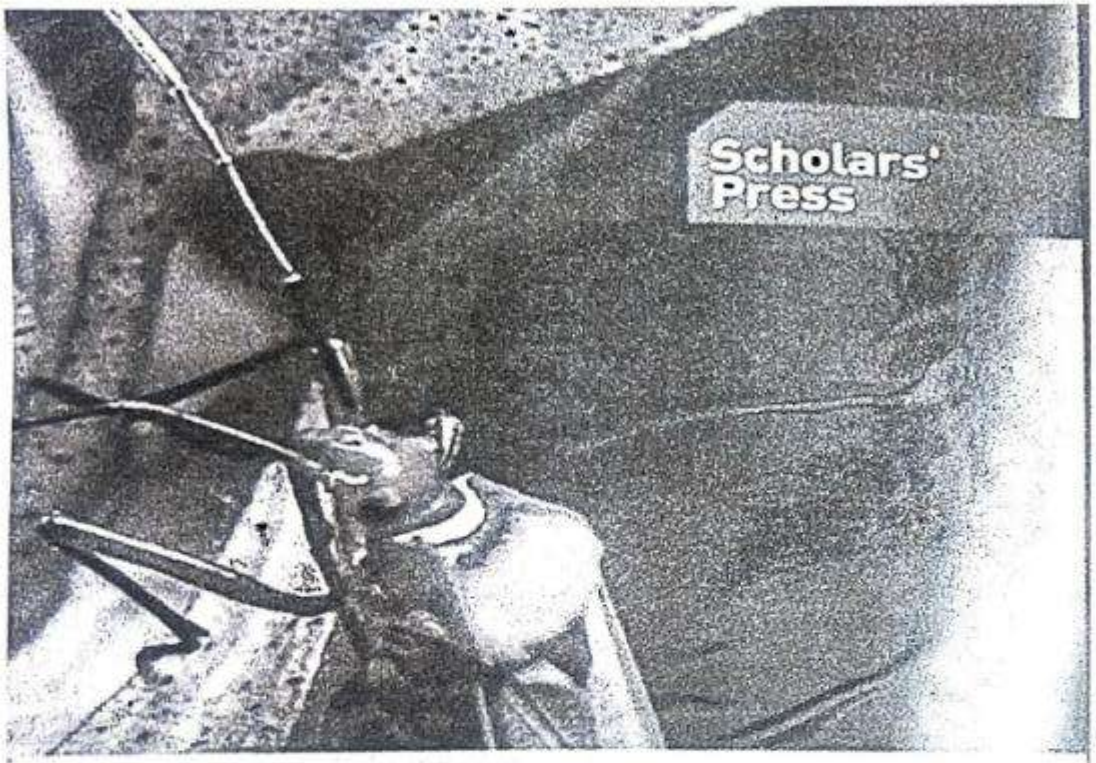

Dr. Kumkum

An Enfomophilic Nematode, *Hexamermis SP.*, a biocontrol agent

Hexamermis Vishwakarma Dhiman, Mermithid Nematode of Kusum Bug, *Leptocoris Augur* (a pest of *Schleichera Oleosa*)

Principal
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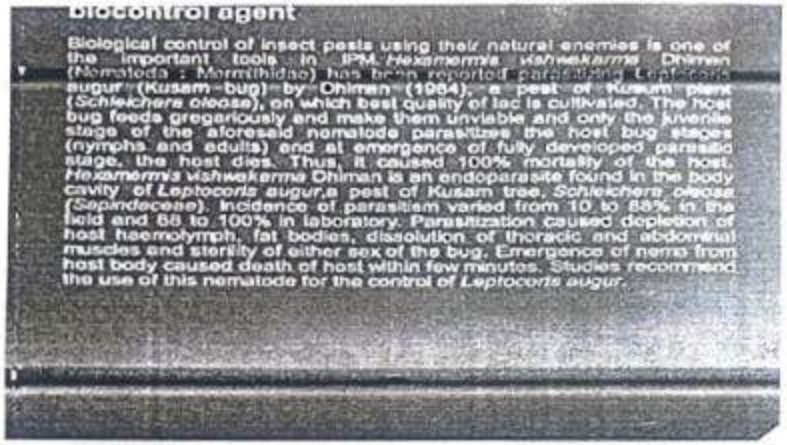

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French Edition

UN NÉMATODE ENTOMOPHILE, *HEXAMERMIS SP.*, UN AGENT DE BIOCONTRÔLE

La lutte biologique contre les insectes nuisibles en utilisant leurs ennemis naturels est l'un des outils importants de la lutte intégrée. *Hexamermis vishwakarma* Dhiman (Nematoda : Mermithidae) a été signalé comme parasite de Leptocoris augur (punaise Kusam) par Dhiman (1984), un ravageur de la plante Kusum(*Schleichera oleosa*), sur laquelle la meilleure qualité de lac est cultivée. La punaise hôte se nourrit de manière grégaire et la rend non viable. Seul le stade juvénile du nématode susmentionné parasite les stades de la punaise hôte (nymphes et adultes) et à l'émergence du stade parasitaire pleinement développé, l'hôte meurt. Ainsi, il a causé une mortalité de 100% de l'hôte. *Hexamermis vishwakarma* Dhiman est un endoparasite trouvé dans la cavité corporelle de *Leptocoris augur*, un parasite de l'arbre Kusam, *Schleichera oleosa (Sapindaceae)*. L'incidence du parasitisme variait de 30 à 88% sur le terrain et de 88 à 100% en laboratoire. Le parasitisme a provoqué l'épuisement de l'hémolymphe de l'hôte, des corps gras, la dissolution des muscles thoraciques et abdominaux et la stérilité des deux sexes de la punaise. L'émergence du nématode du corps de l'hôte a provoqué la mort de ce dernier en quelques minutes. Les études recommandent l'utilisation de ce nématode pour le contrôle de *Leptocoris augur*.

Dr Kumkum, MSc, MPhil, Ph.D. en (Zoologie) avec une spécialisation en Entomologie, a étudié à l'Université CCS, Meerut. L'auteur a un intérêt profond pour l'entomologie et la nématologie. Elle est l'auteur de nombreux articles de recherche et chapitres de livres dans des revues et des livres. Elle a reçu le prix du jeune scientifique à la conférence AZRA de l'Institut central de recherche sur le riz de Cuttack.

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EDITIONS NOTRE SAVOIR

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UN NÉMATODE ENTOMOPHILE, *HEXAMERMIS SP.*, UN AGENT DE BIOCONTRÔLE

HEXAMERMIS VISHWAKARMA DHIMAN, NÉMATODE MERMITHIQUE DE LA PUNAISE DU KUSUM, LEPTOCORIS AUGUR (UN RAVAGEUR DE SCHLEICHERA OLEOSA)

Dr. Kumkum

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Italian Edition

UN NEMATODE ENTOMOFILO, *HEXAMERMIS SP.*, UN AGENTE DI BIOCONTROLLO

Il controllo biologico degli insetti nocivi utilizzando i loro nemici naturali è uno degli strumenti importanti nella gestione integrata delle malattie. *Hexamermis vishwakarma* Dhiman (Nematoda: Mermithidae) è stato segnalato da Dhiman (1984) come parassita di Leptocoris augur (cimice Kusam), un parassita della pianta Kusum(*Schleichera oleosa*), sulla quale si coltiva la migliore qualità di lac. L'insetto ospite si nutre in modo gregario e li rende non vitali e solo lo stadio giovanile del suddetto nematode parassita gli stadi dell'insetto ospite (ninfe e adulti) e alla comparsa dello stadio parassitario completamente sviluppato, l'ospite muore. Così, ha causato il 100% di mortalità dell'ospite. *Hexamermis vishwakarma* Dhiman è un endoparassita trovato nella cavità del corpo di *Leptocoris augur*, un parassita dell'albero Kusam, *Schleichera oleosa* (*Sapindaceae*). L'incidenza del parassitismo variava dal 10 all'88% nel campo e dall'88 al 100% in laboratorio. La parassitizzazione ha causato l'esaurimento dell'emolinfa dell'ospite, dei corpi grassi, la dissoluzione dei muscoli toracici e addominali e la sterilità di entrambi i sessi dell'insetto. L'emergere del nema dal corpo dell'ospite ha causato la morte dell'ospite in pochi minuti. Gli studi raccomandano l'uso di questo nematode per il controllo di *Leptocoris augur*.

Dr Kumkum, MSc, MPhil, Ph.D. in (Zoologia) con specializzazione in Entomologia, ha studiato all'Università CCS, Meerut. L'autore ha un profondo interesse per l'Entomologia e la Nematologia. Ha la paternità di molti articoli di ricerca e capitoli di libri in riviste e libri. Premiata con il premio di giovane scienziato in AZRA Conf. da Central Rice Res. Institute Cuttack.

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UN NEMATODE ENTOMOFILO, *HEXAMERMIS SP.*, UN AGENTE DI BIOCONTROLLO

HEXAMERMIS VISHWAKARMA DHIMAN, NEMATODE MERMITHID DI KUSUM BUG, LEPTOCORIS AUGUR (UN PARASSITA DI SCHLEICHERA OLEOSA)

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German Edition

EIN ENTOMOPHILER NEMATODE, *HEXAMERMIS SP.*, EIN BIOLOGISCHER SCHÄDLINGSBEKÄMPFER

Die biologische Bekämpfung von Schadinsekten mit Hilfe ihrer natürlichen Feinde ist eines der wichtigsten Instrumente des IPM. *Hexamermis vishwakarma* Dhiman (Nematoda : Mermithidae) wurde von Dhiman (1984) als Parasit von Leptocoris augur (Kusamwanze) beschrieben, einem Schädling der Kusum-Pflanze(*Schleichera oleosa*), auf der die beste Qualität von Lack angebaut wird. Die Wirtswanze ernährt sich gesellig und macht sie lebensunfähig, und nur das juvenile Stadium des genannten Nematoden parasitiert die Stadien der Wirtswanze (Nymphen und Adulte), und beim Auftreten des voll entwickelten parasitären Stadiums stirbt der Wirt. Somit verursacht er eine 100%ige Mortalität des Wirts. *Hexamermis vishwakarma* Dhiman ist ein Endoparasit, der in der Körperhöhle von *Leptocoris augur*, einem Schädling des Kusam-Baums, *Schleichera oleosa (Sapindaceae)*, gefunden wurde. Die Häufigkeit des Parasitismus schwankte zwischen 10 und 85 % auf dem Feld und 88 bis 100 % im Labor. Die Parasitierung führte zu einer Verarmung der Hämolymphe und der Fettkörper des Wirts, zur Auflösung der Brust- und Bauchmuskeln und zur Sterilität beider Geschlechter der Wanze. Der Austritt der Nematoden aus dem Wirtskörper führte innerhalb weniger Minuten zum Tod des Wirts. Studien empfehlen die Verwendung dieses Nematoden zur Bekämpfung von *Leptocoris augur*.

Dr. Kumkum, MSc., MPhil., Ph.D. in (Zoologie) mit Spezialisierung auf Entomologie, studierte an der CCS Universität, Meerut. Die Autorin hat ein tiefes Interesse an Entomologie und Nematologie. Sie ist Autorin zahlreicher Forschungsarbeiten und Buchkapitel in Fachzeitschriften und Büchern. Ausgezeichnet mit dem Young Scientist Award der AZRA-Konferenz des Central Rice Res. Institute Cuttack.

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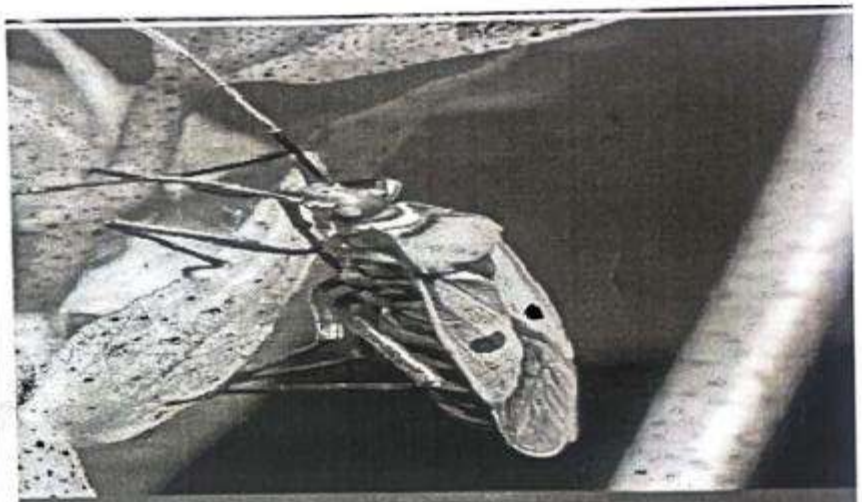

Dr. Kumkum

EIN ENTOMOPHILER NEMATODE, *HEXAMERMIS SP.*, EIN BIOLOGISCHER SCHÄDLINGSBEKÄMPFER

HEXAMERMIS VISHWAKARMA DHIMAN, MERMITHIDER NEMATODE DER KUSUMWANZE, LEPTOCORIS AUGUR (SCHÄDLING VON SCHLEICHERA OLEOSA)

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Inhaltsübersicht

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Portuguese Edition

UM NEMÁTODO ENTOMÓFILO, *HEXAMERMIS SP.*, UM AGENTE BIOCONTROLADOR

O controle biológico de pragas de insetos usando seus inimigos naturais é uma das ferramentas importantes no MIP. *Hexamermis vishwakarma* Dhiman (Nematoda : Mermithidae) tem sido relatado como parasita Leptocoris augur (Kusam bugi por Dhiman (1984), uma praga da planta kusum (*Schleichera oleosa*), sobre a qual se cultiva a melhor qualidade de lactação. O insecto hospedeiro alimenta-se gregários e torna-os inviáveis e apenas a fase juvenil do referido nemátodo parasita a fase hospedeira (ninfas e adultos) e, no aparecimento de uma fase parasitária totalmente desenvolvida, o hospedeiro morre. Assim, causa 100% de mortalidade do hospedeiro. *Hexamermis vishwakarma* Dhiman é um endoparasita encontrado na cavidade corporal de *Leptocoris augur*, uma praga da árvore Kusam, *Schleichera oleosa* (*Sapindaceae*). A incidência de parasitismo variou de 10 a 88% no campo e de 88 a 100% em laboratório. A parasitismo causou o esgotamento da hemolinfa hospedeira, corpos gordos, dissolução dos músculos torácico e abdominal e esterilidade de ambos os sexos do insecto. O aparecimento de nema do corpo do hospedeiro causou a morte do hospedeiro em poucos minutos. Estudos recomendam o uso deste nemátodo para o controle do *Leptocoris augur*.

Dr. Kumkum, MSc., MPhil., Ph.D. em (Zoologia) com Especialização em Entomologia. Estudou na Universidade CCS, Meerut. Autor tem profundo interesse em Entomologia e Nematologia. É autora de vários artigos de pesquisa e capítulos de livros em revistas e livros. Premiada por Jovem Cientista no AZRA Conf. pelo Instituto Central Rice Res. Cuttack.

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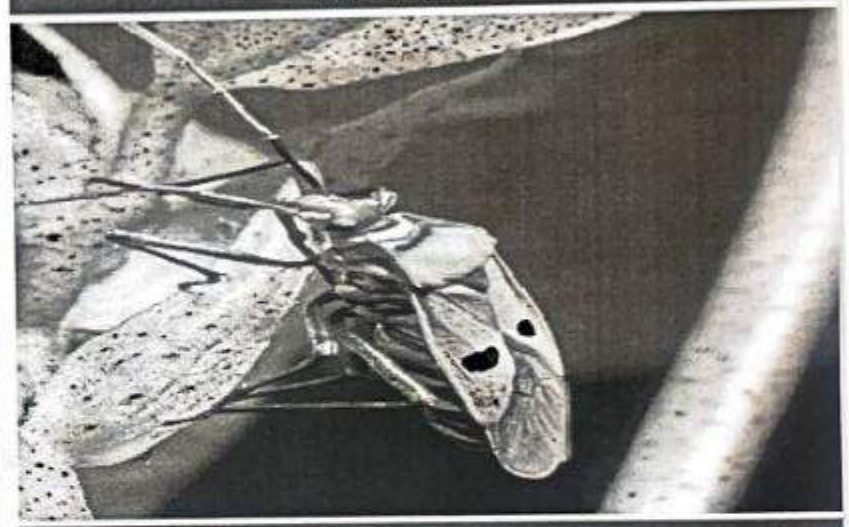

UM NEMÁTODO ENTOMÓFILO, *HEXAMERMIS SP.*, UM AGENTE BIOCONTROLADOR

HEXAMERMIS VISHWAKARMA DHIMAN, NEMATÓDEO DE MERMITHID DE KUSUM BUG, LEPTOCORIS AUGUR (UMA PRAGA DE SCHLEICHERA OLEOSA)

Dr. Kumkum

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Tabela de Conteúdos

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Russian Edition

ЭНТОМОФИЛЬНАЯ НЕМАТОДА, *HEXAMERMIS SP.*, АГЕНТ БИОКОНТРОЛЯ

Биологический контроль насекомых-вредителей с использованием их естественных врагов является одним из важных инструментов в IPM. *Hexamermis vishwakarma* Dhiman (Nematoda : Mermithidae) был паразитирован на Leptocoris augur (кусамский клоп) Dhiman (1984), вредителе растения кусум(*Schleichera oleosa*), на котором выращивается лак лучшего качества. Клоп-хозяин питается стайно и делает их нежизнеспособными, и только ювенильная стадия вышеупомянутой нематоды паразитирует на стадиях клопа-хозяина (нимфы и имаго), а при появлении полностью развитой паразитической стадии хозяин погибает. Таким образом, она вызывает 100% гибель хозяина. *Hexamermis vishwakarma* Dhiman - эндопаразит, обнаруженный в полости тела *Leptocoris augur*, вредителя дерева Кусам, *Schleichera oleosa (Sapindaceae)*. Частота паразитизма варьировала от 10 до 88% в полевых условиях и от 88 до 100% в лаборатории. Паразитирование вызывало истощение гемолимфы хозяина, жировых тел, растворение грудных и брюшных мышц и стерильность обоих полов жука. Появление нематоды из тела хозяина вызывало смерть хозяина в течение нескольких минут. Исследования рекомендуют использовать эту нематоду для борьбы с *Leptocoris augur*.

Доктор Кумкум, магистр наук, магистр философии, доктор философии в области зоологии со специализацией энтомологии, училась в университете CCS, Меерут. Автор глубоко интересуется энтомологией и нематодологией. Она является автором многих научных статей и книжных глав в журналах и книгах. Награждена премией молодого ученого на конференции AZRA Центрального института рисовых исследований в Каттаке.

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SCIENCIA SCRIPTS

ЭНТОМОФИЛЬНАЯ НЕМАТОДА, *HEXAMERMIS SP.*, АГЕНТ БИОКОНТРОЛЯ

HEXAMERMIS VISHWAKARMA DHIMAN, МЕРМИТИДНАЯ НЕМАТОДА КУСУМНОГО КЛОПА, LEPTOCORIS AUGUR (ВРЕДИТЕЛЬ SCHLEICHERA OLEOSA)

Др. Кумкум

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Оглавление

(19)

Spanish Edition

UN NEMATODO ENTOMÓFILO, *HEXAMERMIS SP.*, UN AGENTE DE CONTROL BIOLÓGICO

El control biológico de las plagas de insectos mediante el uso de sus enemigos naturales es una de las herramientas importantes de la G.P. Dhiman (1984) informó de que *Hexamermis vishwakarma* (Nematoda : Mermithidae) parasita a Leptocoris augur (chinche de Kusum), una plaga de la planta de Kusum/*Schleichera oleosa*), en la que se cultiva la mejor calidad de laca. El chinche anfitrión se alimenta de forma gregaria y os hace inviables, y sólo la fase juveni del citado nematoda parasita as fases del chinche anfitrión (ninfas y adultos) y al emerger la fase parasitaria completamente desarrollada, el anfitrión muere. Por lo tanto, causó el 100% de la mortalidad del huésped. Hexamermis vishwakarma Dhiman es un endoparásito que se encuentra en a cavidad corporal d c *Leptocoris augur*, una plaga del árbol Kusum, *Schleichera oleosa* (Sapindaceae). La incidencia del parasitismo varió de 10 al 88% en el campo y del 88 al 100% en el laboratoric. La parasitación causó el agotamiento de la hemolinfa del hospedador, los cuerpos grasos, la disolución de los músculos torácicos y abdominales y la esterilidad de cualquiera de los sexos del insecto. La salida del nematodo del cuerpo del huésped causó le muerte del mismo en pocos minutos. Los estudios recomiendan el uso de este nematodo para el control de *Leptocoris augur*

Dr. Kumkum, MSc., MPhil., Ph.D. en (Zoología) con especialización en Entomología, estudió en la Universidad CCS, Meerut. La autora tiene un profundo interés en Entomología y Nematología. Es autora de muchos artículos de investigación y capítulos de libros en revistas y libros. Ha sido galardonada con el premio al joven científico en la Conferencia AZRA por el Instituto Central de Investigación del Arroz de Cuttack.

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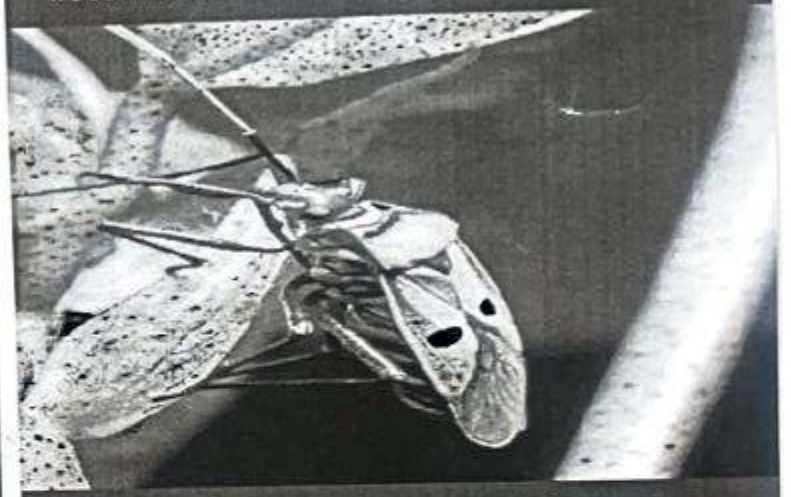

UN NEMATODO ENTOMÓFILO, *HEXAMERMIS SP.*, UN AGENTE DE CONTROL BIOLÓGICO

HEXAMERMIS VISHWAKARMA DHIMAN, NEMATODO MERMÍFERO DE LA CHINCHE KUSUM, LEPTOCORIS AUGUR (UNA PLAGA DE LA SCHLEICHERA OLEOSA)

Dr. Kumkum

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NEP 2020

A Road Map to Future Higher Education

Editors
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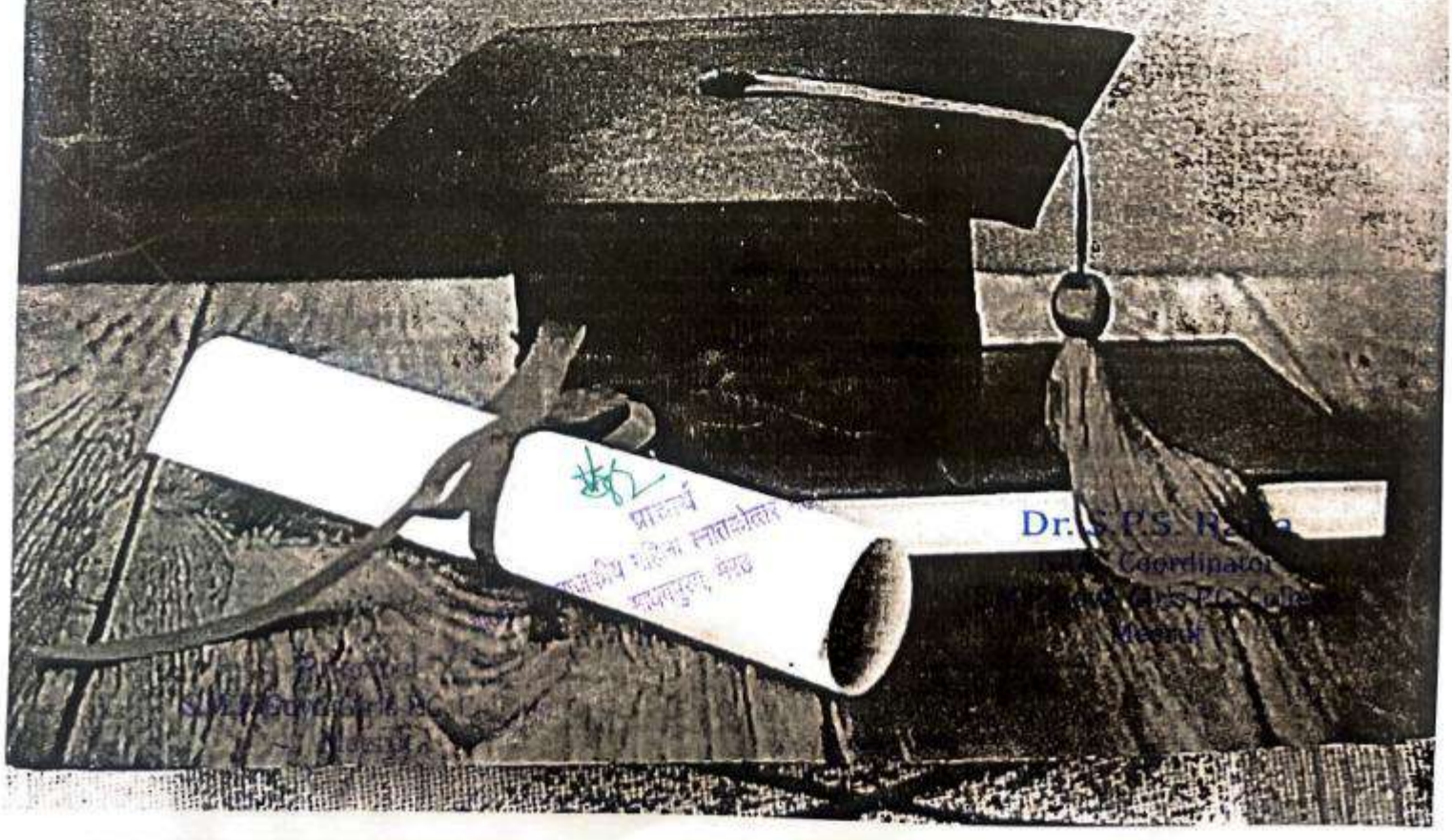
Dr. Dhiraj Singh



NEP 2020

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CONTENT

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"NEP 2020 : Empowering The Teachers"

Mrs. Amar Jyoti

"Democracy can't succeedUnless those who express their choice wisely,The real safeguard of democracy therefore is education".....

Fronklin D. Roosevelt

Government of India had reviewed new education policy on May 1, 2020 for which draft was prepared by a panel of experts lead by former ISRO chief K. Kasturirangan. New Education Policy was launched on Wednesday July 29- 2020, the Union Cabinet approved the policy that aims to overhaul the country's education system. Recommendations of new education policy which differentiate the NEP 2020 from current existing system of education are as follows...

- RTE from preschool (Age 3 onwards) till class 12th.
- Integrated Primary School Framework from the age 3 to 8.
- Anganwadies, preschool to be linked to local primary schools.
- Education sector to get 6% of GDP, earlier it was 1.7% .
- The higher Educational Institute now will have the option of offering one year masters degree under the new education policy 2020.
- Government to discontinue M. Phil. (Mastery in Philosophy) program.

- Focus on play and Discovery based learning.
- MHRD to Overseas educational aspects, HRD ministry to be renamed as Education Ministry.

Thus, NEP 2020 aims at making India a global knowledge superpower.

Improving teacher education

- All teacher education programs to be conducted within composite multi-disciplinary institutions.
- New and comprehensive National curriculum Framework for teacher education by 2021.
- NTA testing for admission to B.Ed.
- National Higher education regulatory counselling (NHERC) function as single point regulator for higher education sector including teacher education.
- Only educationally sound, multi-disciplinary and integrated teacher education programme to be made available.
- Setting up of national mission for mentoring with a large pool of outstanding senior retired faculty.
- Teacher Eligibility test (TET) all stages will be strengthened.
- Merit based scholarship for 4 year B.Ed integrated programme.

Keywords: National Education Policy, Teacher Educaion, Teacher education Programme, Nationsal Curriculum Framework.

National Education Policy 2020

The New Education Policy was announced by the Ministry of Human Resource Development team to be called the Ministry Of Education the policy is aimed at transforming the Indian education system to meet the needs of the 21st century the national education policy 2020 replaces the national policy of education 1986 it has been introduced at the right time to implement the process and vision of

creation of quality institutions a culture of innovation and a high skilled workforce.

The NEP approved by the Union Cabinet has made Revolutionary reforms in the Indian education paradigm the national education policy 2020 and visions and India central education system that contribute directly to transforming our nation neighbourly into an equitable and vibrant knowledge society by providing high quality education to all.

The new policy fix rectification of poor literacy and numeracy outcomes associated with primary schools reduction in dropout level in middle and secondary schools and adopting the multi-disciplinary approach in the higher education system in stating a single regulatory for higher education Institutions the scheme of multiple entry and exit option in degree courses the loss takes board exams and common entrance exams for Universities are some of the key to takeaways from this existing new policies on early childhood care and reforming assessments and exam and investing in teacher training and abroad basing their appraisal not just changed in the ways education is imparted at both schools and college levels and NEP also suggested policies in TET and B.Ed courses and for teachers who have already been hired including mandatory courses setting up of national professional standards no transfer policy and Digital management off hiring and vacancies in schools across the country. A common guiding Set of national professional standards for teachers and PPS will be developed by 2022 by the National Council for teacher education the professional standards will reviewed every 10 years the NEP 2020 team for national education is to ensure that all student at all level of school education are taught by motivated highly qualified professionally trained and well-equipped teachers.

Principles of National Education Policy (NEP) 2020

The foundational principles of NEP 2020 are Access, Equity, Quality, Affordability, and Accountability. The Policy believes that the education system should develop good human beings with rational thinking, compassion, empathy, courage, resilience, scientific temper, creative imagination, and ethical values.

The fundamental principles of the Policy are

- Recognizing, Identifying, and Strengthening the unique capabilities of each student
- Promoting each student's holistic development in both academic and non-academic spheres
- Achieving Foundational Literacy and Numeracy in all students by Grade 3
- Flexibility for learners to choose their learning trajectories and programs, and thereby choose their paths as per their talents and interests
- No hard separations between arts and sciences, curricular and extra-curricular activities, vocational and academic streams, among others to eliminate harmful hierarchies and silos in areas of learning
- Multi-disciplinary and a holistic education across the sciences, social sciences, arts, humanities, and sports to ensure the unity and integrity of all knowledge
- Promotion of Multilingualism and the Power of Language in learning and teaching
- Life Skills such as communication, teamwork, cooperation, and resilience
- Regular Formative Assessment for learning instead of summative assessment
- Full Equity and Inclusion as the basis of all educational decisions
- Teachers and Faculty as the heart of the learning process
- 'Light but Tight' regulatory framework to promote integrity, transparency and resource efficiency of the educational system
- Encouraging innovation and out-of-the-box ideas through Autonomy, Good Governance and Empowerment

The NEP 2020 paves for numerous significant changes in the Indian education system. The changes in the field of higher education and teacher education of NEP 2020 are as follows.....

Higher Education

- Holistic and Multi-disciplinary education in an undergraduate program with multiple exit options where the bachelor's degree can be 3 or 4 years.
- Phil. (Master of Philosophy) courses to be discontinued.
- PG programs can be 1 or 2 years.
- The National Testing Agency will conduct entrance examinations for admissions to universities across the country, apart from the JEE Main and NEET.
- Establishment of Academic Bank of Credits to facilitate Transfer of Credits.
- Setting up Multidisciplinary Education and Research Universities (MERUs) as models of best multi-disciplinary education of global standards.
- Establishment of National Research Foundation, an apex body for fostering a strong research culture and building research capacity across higher education.
- Establishment of Higher Education Council of India (HECI) to regulate higher education by preparing the same set of regulations, accreditation and academic standards for private and public institutions. The HECI will have four independent verticals, namely-
- National Higher Education Regulatory Council (NHERC) for the regulation of higher education, except medical and legal education.
- General Education Council (GEC) for setting standards.
- Higher Education Grants Council (HEGC) for funding and financing of colleges and universities.
- National Accreditation Council (NAC) for accreditation.
- The HECI will replace the existing National Council for Teacher Education (NCTE), All India Council for Technical Education (AICTE) and the University Grants Commission (UGC).
- Phasing out the 'Affiliation System' at university level over a period of 15 years.

- Increasing Gross Enrolment Ratio (GER) in higher education from the current 26.3% to 50% by 2035.
- Adding 3.5 crore seats in higher education.

Teacher Education

- By 2023, the minimum qualification for teachers will be 4-year integrated B.Ed. degree.
- Emphasis on strengthening and transparency of the teacher recruitment process.
- NCTE to formulate a new and comprehensive National Curriculum Framework for Teacher Education (NCFTE) 2021.
- NCTE to frame National Professional Standards for Teachers (NPST) 2022.

Other Major Changes

- Establishment of National Education Commission.
- Establishment of Special Education Zones (SEZs) to improve education among underrepresented groups in disadvantaged regions.
- Gender Inclusion Fund, for improving and providing education for female and transgender children.
- Establishment of National Educational Technology Forum (NETF), a platform to facilitate the free exchange of ideas on technology usage in education.
- National Assessment Centre- 'PARAKH' will assess the students.
- Establishment of new language institutions such as the Indian Institute of Translation and Interpretation and the National Institute/ Institutes for Pali, Persian and Prakrit.
- Establishment of National Mission for Mentoring, National Book Promotion Policy, National Mission on Foundational Literacy and Numeracy.
- Increasing the education expenditure from the current 4.6% to 6% of the GDP at the earliest.

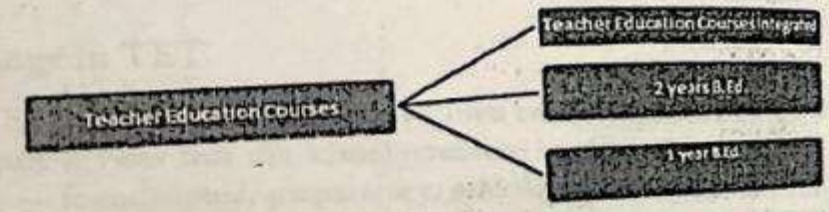
- Massive usage of technology in education planning, teaching, learning and assessment.

Teacher Recruitment in India

The National Education Policy 2020 released on Wednesday will aim for robust teacher recruitment and career path. The Union Cabinet today approved the new policy which has proposed several changes to change the face of education in India. As per the new policy, teachers will be recruited through robust and transparent processes. The promotions of teachers will be based on merit and there will a mechanism for multi-source periodic performance appraisals and available progression paths to become educational administrators or teacher educators.

The National Council for Teacher Education will develop a common National Professional Standards for Teachers (NPST) by 2022. The will be done in consultation with NCERT, SCERTs, teachers and expert organizations from across levels and regions.

Pre-Service Teacher Education



NCFTE 2021

The National Education Policy 2020 also says that a new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated by the NCTE in consultation with NCERT.

The NCFTE will thereafter be revised once every 5-10 years by reflecting the changes in revised NCFs as well as emerging needs in teacher education.

Compulsory Integrated B.Ed.

By the year 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree. An official release of the government today said that stringent action will be taken against substandard stand-alone Teacher Education Institutions (TEIs).

"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," the release said.

The government will also aim for "Appropriate integration of technology into all levels of education will be done to improve classroom processes, support teacher professional development, enhance educational access for disadvantaged groups and streamline educational planning, administration and management." The new policy says that schools can be organized into complexes or clusters which will be the basic unit of governance. This will "ensure availability of all resources including infrastructure, academic libraries and a strong professional teacher community."

Changes in B.Ed.

Since schools will need teachers who can teach in multiple languages and have knowledge of new-age courses like computational thinking, coding etc., introduced at the school level under the NEP, BEd course will also be changed accordingly. The BEd courses will be of four-year duration. Dual BEd degrees with a focus on one language and having bilingual lectures will be offered too. BEd programmes will allow specialisation in the education of 'gifted children'.

One and two-year BEd options will also be available. Two-year-BEd will be for candidates having a Bachelor's degree, and one-year BEd programmes will be offered only to those who have completed the equivalent of four-year multidisciplinary Bachelor's degree or who have obtained a Master's degree. These candidates will be later hired as subject teachers in the area of speciality (or the subject pursued at UG or PG level).

Additionally, shorter post-B.Ed. certification courses will also be made widely available, at multidisciplinary colleges and universities.

A common guiding set of National Professional Standards for Teachers (NPST) will be developed by 2022, by the National Council for Teacher Education. The professional standards will be reviewed every 10 years.

Teacher transfers will be halted, as per NEP 2020. Transfers will be allowed in "very special circumstances". Furthermore, transfers will be conducted through an online computerized system that ensures transparency."In order to fully restore the integrity of the teacher education system, stringent action will be taken against substandard stand-alone Teacher Education Institutions (TEIs) running in the country, including shutting them down, if required," as per NEP.

Change in TET

Earlier, the TET was divided into two components — part 1 and part 2. Now that the school structure has been divided into four parts — foundational, preparatory, middle, and secondary — TET will also be developed accordingly. For subject teachers, suitable TET or the National Testing Agency (NTA) test scores in the corresponding subjects will also be taken into account for recruitment. The NTA will hold exams for all subjects and a common aptitude test.

Those who qualify TET will have to give a demonstration or appear in an interview, and show their knowledge of the local language, as per the new policy. As per the NEP, "Interview will become an integral

part of teacher hiring". These interviews would also assess comfort and proficiency in teaching in the local language. It would be a must for teachers in private schools as well to qualify TET.

The hiring and vacancies in schools will be managed digitally. A technology-based comprehensive teacher-requirement planning forecasting exercise will be conducted by each state to assess expected subject-wise teacher vacancies over the next two decade.

Recognition And Promotion Of Teachers

Robust merit-based structure of tenure, promotion, and salary structure will be developed, with multiple levels within each teacher stage. Further, it will be ensured that career growth is available to teacher. National Professional Standards for Teachers (NPST) by 2022.

Promotions and salary increases will not occur based on the length of tenure or seniority, but only on the basis of appraisal. Assessment of performance of teachers will be based on peer reviews, attendance, commitment, hours of CPD, and other forms of service to the school and the community developed by State/UT or based on National Professional Standard for Teachers (NPST) developed by NCTE.

Empowering Teachers

NEP2020 focuses on Teacher Professional Development as follows..

- Merit based tenure track system.
- Min. 50 hours of Continuous Professional Development (CPD) Assessment of performance of teachers will be based on peer reviews, attendance, commitment, hours of CPD, and other forms of service to the school and the community developed by State/UT or based on National Professional Standard for Teachers (NPST) developed by NCTE.

Epilogue

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.

The NEP 2020 to bring a Holistic change in the educational system of India its success depends on the will and way in which it will be implemented the new education policy 2020 is a good policy as it aims at making the education system Holistic flexible multi-disciplinary aligned to the needs of the 21st century and the 2030 sustainable development goals the intent of policy seems to be ideal in many ways but it is the implementation realise the key to success as Morris Chang (CEO of TSMC) says-

"Without strategy education is aimless,

Without education strategy is useless"

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नई शिक्षा नीति 2020

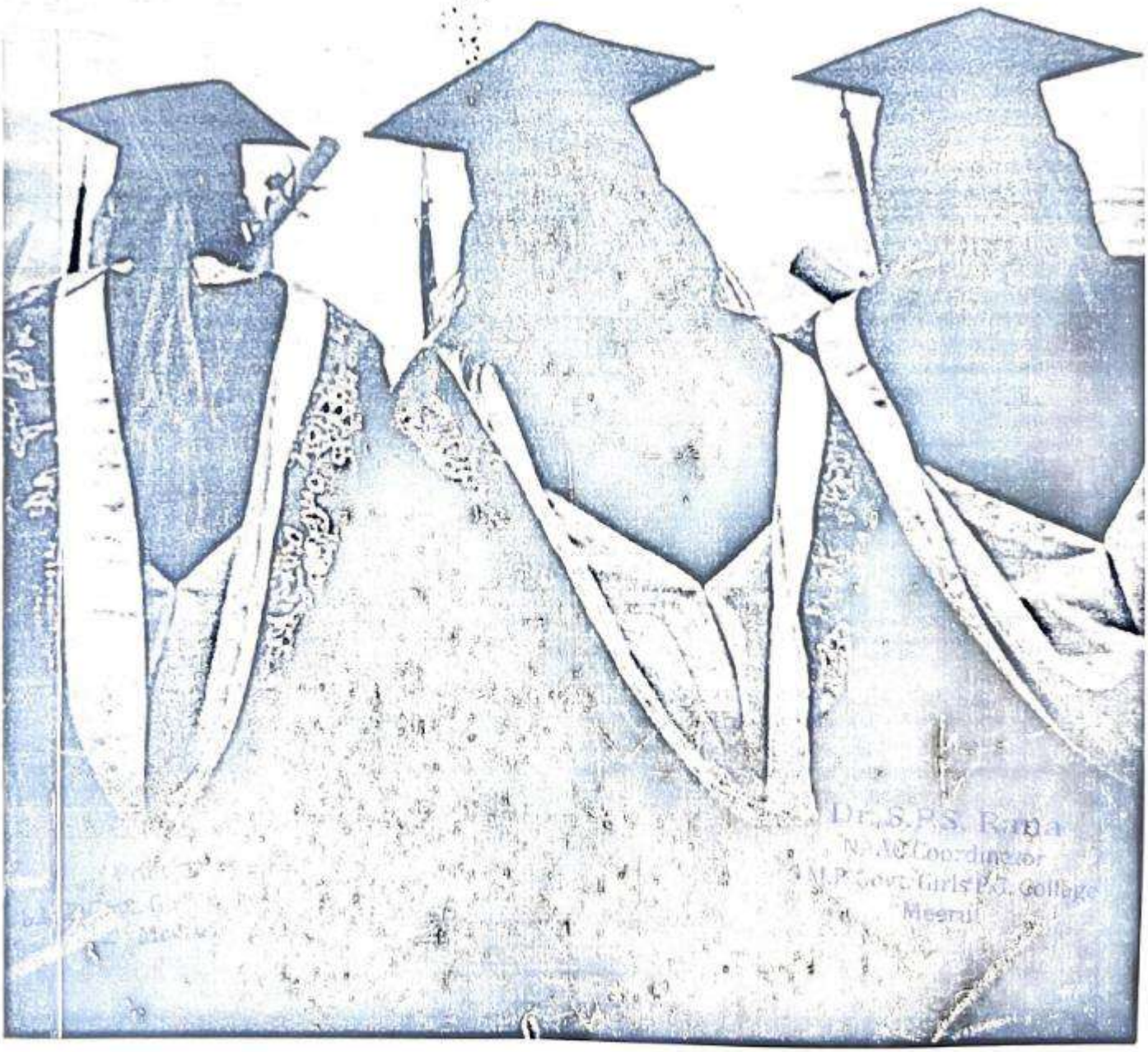
आधुनिक भारत की शैक्षिक रूपरेखा

प्रधान सम्पादक

डॉ0 धीरज सिंह

सम्पादक

सचिन कुमार वर्मा



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प्रधान सम्पादक

डॉ0 धीरज सिंह

विभागाध्यक्ष, शिक्षा शास्त्र विभाग,
मॉडर्न कॉलेज ऑफ प्रोफेशनल स्टडीज,
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सम्पादक

सचिन कुमार वर्मा

सहायक प्राध्यापक, बी.एड. विभाग
डी. एस, कॉलेज, अलीगढ़, उत्तर प्रदेश।

ADHYAYA

अध्याय पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स

दिल्ली (भारत)

प्रकाशक

अध्याय पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स

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नई शिक्षा नीति 2020:
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भारत में प्रकाशित

वीरेन्द्र कुमार यादव 'अध्याय पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स' के द्वारा प्रकाशित। वी.एम. ग्राफिक, दिल्ली द्वारा कवर डिजाइन व शब्द संयोजन तथा आरना इंटरप्राइजेज, दिल्ली में मुद्रित।

विषय–सूची

अध्याय
22

नई शिक्षा नीति 2020: नए बदलाव, सकारात्मक पहल

श्रीमती अमर ज्योति

वर्तमान प्रधान मंत्री श्री नरेन्द्र मोदी जी की अध्यक्षता मे 29 जुलाई 2020 को राष्ट्रीय शिक्षा नीति 2020 को मंजूरी दे दी गई है। यह शिक्षा नीति 21 वीं शताब्दी की प्रथम शिक्षा नीति होगी तथा स्वतंत्रता प्राप्ति के बाद लागू तृतीय शिक्षा नीति होगी। यह शिक्षा नीति 1986 मे लागू शिक्षा नीति की जगह लेगी। अब 34 वर्ष बाद आई इस नई शिक्षा नीति मे वर्तमान समय की मांग के अनुरूप तथा वर्तमान भारतीय छात्रों व युवाओं को शिक्षा व रोजगार के नये अवसरों की सर्वसुलभता व उपलब्धता को ध्यान में रखते हुए, शिक्षा व्यवस्था में परिवर्तन के साथ ही साथ भारत के छात्रों व युवाओं को शैक्षिक विकास के उन्नत पथ पर अग्रसर करने हेतु मील का पत्थर साबित होगें।

ISRO प्रमुख डॉ0 के0 कंस्तूरी रंगन जी की अध्यक्षता मे गठित समीति द्वारा मई 2019 में राष्ट्रीय शिक्षा नीति का मसौदा प्रस्तुत किया गया। इस शिक्षा नीति द्वारा शिक्षा के समग्र विकास व उन्नयन हेतु कई महत्पपूर्ण बिन्दु प्रस्तावित किए गए हैं जो शिक्षा के क्षेत्र मे पूर्व प्राथामिक स्तर, प्राथमिक स्तर से उच्च शिक्षा तक प्रत्येक स्तर पर बहुत महत्वूपर्ण बदलाव लाएगी। यह सभी बंदलाव वर्तमान समय की मांग के अनुरूप शिक्षा मे

लाए जाने अति आवश्यक हैं जिससे वर्तमान भारतीय छात्र, युवा तथा सभी नागरिक अपनी रूचि व क्षमता के अनुरूप व्यावहारिक व उपयोगी शिक्षा प्राप्त कर, समाजोपयोगी कार्य कर सकेंगे तथा अपना जीविकोपार्जन भी कर पाएंगे। जिससे देश की बहुत बड़ी समस्या बेरोजगारी व अशिक्षा में कमी आएंगी।

राष्ट्रीय शिक्षा नीति के कुछ मुख्य बिन्दु निम्नवत है –

1. जी ई0 आर (Gross Envolinum Routio)

इस शिक्षा नीति द्वारा वर्ष 2030 तक स्कूली शिक्षा मे 100 प्रतिशत जी ई0 आर (Gross Envolinum Routio) लक्ष्य प्राप्ति की जाएगी। तथा 2035 तक उच्च शिक्षा में जी0 ई0 आर0 को 50 प्रतिशत बढाया जाएगा उच्च शिक्षा मे 3.5 करोड़ नई सिरे जोड़ी जाएगी।

2. 5+3+3+4 संरचना (Education Frame)

राष्ट्रीय शिक्षा नीति 2020 द्वारा शिक्षा संरचना 10+2+3 के स्थान पर 5+3+3+4 की जाएगी, जिसमें शिक्षा की मुख्य 4 स्टेज का प्रावधान निम्नवत है.....

i. फाउन्डेशन स्टेज (3+2=5 साल) (बुनियादी स्टेज)

जिसमे प्रथम पाँच वर्ष फाडन्डेशन स्टेज के होगें, उनमे भी प्रथम 3 वर्ष आंगनबाड़ी, प्री स्कूल बाल वाटिका मे आयु वर्ग 3 से 6 वर्ष के बालकों की शिक्षा का प्रावधान है। उसके बाद के 2 वर्ष में, कक्षा 1 व कक्षा 2 की शिक्षा हेतु आयु वर्ग 7 से 8 वर्ष की शिक्षा का प्रावधान है।

- इसके पीछे की अवधारणा यह है कि बच्चे की शिक्षा प्राप्ति हेतु नींव मजबूत हो सकेगी, फाउन्डेशन स्टेज के लिए सरकार के द्वारा सभी विद्यालयों के लिए समान व नवीन पाठ्यक्रम लागू किया जाएगा। इस स्टेज मे बालकों को मल्टीलेवल प्ले, एक्टिविटी आधारित

अधिगम कराया जाएगा। कम से कम कक्षा 5 तक मातृभाषा/क्षेत्रीय भाषा मे पढाई कराई जाएगी।

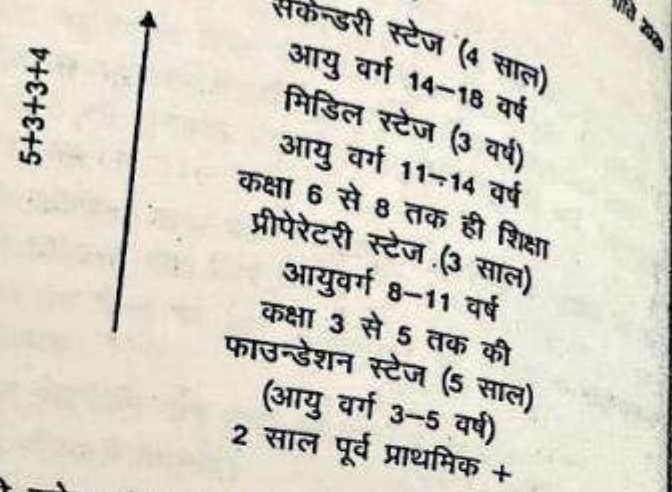
ii. प्रीपेरेटरी स्टेज (3 साल)

इस स्टेज मे कक्षा 3 से कक्षा 5 तक की शिक्षा देने का प्रावधान है, जिसमें आयु वर्ग 8 से 11 वर्ष का बालक प्रवेश लेगा। इस स्टेज में भी बालक को खेल, खोज तथा क्रिया आधारित, अधिगम पर बल दिया जाएगा तथा कक्षा का वातावरण इंटरोक्टिव (अन्तःक्रिया प्रधान) रखा जाएगा, जिससे बालक को भविष्य के लिए तैयार किया जा सके, बालक अपनी प्रतिभाओं व क्षमताआं के अनुरूप स्वयं को प्रदर्शित कर सकें। चूँकि कक्षा 5 के बाद बालक अपनी रूचि अनुरूप प्रोफेशनल शि स्किल को शिक्षा ले सकेगा तथा उसे इसके लिए स्थानीय इन्टर्नशिप की व्यवस्था भी सरकार/विद्यालय द्वारा करायी जाएगी।

iii. मिडिल स्टेज (3 साल)

इस स्टेज मे कक्षा 6 से कक्षा 8 तक के बालको की शिक्षा का प्रावधान है जिसमे आयु वर्ग 11 से 14 वर्ष का बालक प्रवेश लेगा व शिक्षा ग्रहण करेगा। इस स्टेज में बालक को विज्ञान, गणित, सोशल साइंस, तथा मानविकी में अनुभवजन्य विधियों से व्यावहारिक ज्ञान दिया जाएगा। रटे-रटाए ज्ञान से कुछ नहीं होगा क्योंकि शिक्षा में बोर्ड व मूल्यांकन प्रक्रिया में भी बहुत बदलाव किए जाएंगे। जिससे बच्चे केवल पास होने के लिए रटी–रटाई पाठ्यवस्तु न सीखें बल्कि वास्तविक व व्यावहारिक ज्ञान को आत्मसात करें। पढने–लिखने और गणना करने जैसी बुनियादी योग्यताओं पर बल दिया जाएगा, शिक्षणेत्तर क्रियाओं को पाठ्यक्रम का हिस्सा बनाया जाएगा। कक्षा 6 से ही इन्टर्नशिप के साथ व्यावसायिक शिक्षा का प्रारम्भ हो जाएगा।

भावी शिक्षा की संरचना (5+3+3+4)



iv. सेकेन्डरी स्टेज (4 साल)

इस स्टेज मे आयु वर्ग 14 से 18 वर्ष का बालक प्रवेश लेगा तथा कक्षा 9 से कक्षा 12 तक की शिक्षा प्राप्त कर सकेगा। इन कक्षाओं मे बहुविषयक अध्ययन, व्यापक व समालोची सोंच, लचीलापन तथा छात्र की रूचि सम्बन्धी विषय पढाए जाएंगे। छम्द 2020 के तहत स्कूल से दूर रहे लगभग 2 करोड़ बच्चों को मुख्यधारा मे वापस लाया जाएगा।

3. उच्च शिक्षा में बदलाव

उच्च शिक्षा मे मल्टिपल एग्जिट व मल्टिपल एन्ट्री की सुविधा होगी, अर्थात् यदि कोई छात्र 4 साल के किसी डिग्री कोर्स मे प्रवेश लेता है तथा किसी कारण वर्ष उसे 1 या 2 साल बाद पढाई बीच मे ही छोड़नी पड़ती है तो उसकी पूर्व मे की गई 1 या 2 साल की पढाई व्यर्थ नहीं जाएगी।

- छात्र को एक साल की पढाई पूरी करने पर –सर्टिफिकेट प्रदान किया जाएगा।
- दो साल की पढाई पूरी करने पर –डिप्लोमा प्रदान किया जाएगा
- तीन या 4 साल की पढाई पूरी करने पर –डिग्री प्रदान की जाएगी

इस प्रकार उच्च शिक्षा मे उपयुक्त प्रमाणीकरण के साथ पाठ्यक्रम के बीच मे ही नामांकन व निकास की अनुमति होगी।

- छात्र के हित मे ट्रान्सफर ऑफ क्रेडिट की सुविधा देने के लिए एकेडेमिक बैंक ऑफ क्रेडिट की स्थापना की जाएगी, जिसमे छात्र का शिक्षा सम्बन्धी सारा रिकार्ड रहेगा। यदि कोई छात्र किसी कारण वश बीच मे पढाई छोड़ता है तो वह उसके एकाउन्ट में, डिप्लोमा, डिग्री या सर्टिफिकेट के रूप मे जमा हो जाएगा।
- उच्च शिक्षा मे पाठ्यक्रम मे विषयों की विविधता होगी। उच्च शिक्षा मे प्रवेश हेतु कॉमन प्रवेश परीक्षा करायी जाएगी।
- 2030 तक हर जिले या उसके आस पास उच्च शिक्षण संस्थान होगा, जिनमें तकनीकी व व्यावहारिक कौशलों के विकास पर बल दिया जाएगा।
- उच्च शिक्षण संस्थाओं का डिजिटलीकरण होगा तथा संस्थानों को डिजिटल संसाधनों से युक्त बनाया जाएगा, जिसमें वर्चुअल लैब, डिजिटल लाइब्रेरी, म.बवदजमदज आदि की उपलब्धता होगी।
- उच्च शिक्षा से M.Phil. की डिग्री को निरस्त किया जाएगा।
- U.G.C.,NCTE व AICTE को समाप्त कर एक ही रेंगुलेटरी बाडी बनाई जाएगी अर्थात् चिकित्सा व कानूनी शिक्षा को छोड़कर समस्त उच्च शिक्षा आयोग (HECI) का गठन किया जाएगा।

➢ इस उच्च शिक्षा आयोग के चार स्वंतत्र वर्टिक्ल (माध्यम) होगे।

i. राष्ट्रीय उच्चतर शिक्षा नियायकीय परिषद (NHIRC) – विनिमय के लिए
ii. सामान्य शिक्षा परिषद (GEC) – मानक निर्धारण के लिए
iii. उच्चतर शिक्षा अनुदान परिषद (HIGC) – वित्त पोषण के लिए
iv. राष्ट्रीय प्रत्यायन परिषद (NAC)

इन नियमों व मानको का अनुपालन न करने को दण्डित करने का प्रावधान भी होगा।

- **समग्र बहुविशयक शिक्षा–** स्नातक स्तर पर बहुविषयक व समग्र शिक्षा की परिकल्पना की गई है। देश मे वैश्विक मानको के सर्वश्रेष्ठ बहुविषयक शिक्षा मॉडल के रूप मे IIT, IIM के समकक्ष बहुशिक्षा व अनुसंधान विश्वविद्यालय (MERU) स्थापित किए जाएगे। अनुसंधान को गुणवत्ता परक बनाए जाने हेतु भी कई महत्वपूर्ण सुधार किए जाएगे।

इसके अतिरिक्त अन्य बड़े व महत्वूपर्ण बदलाव व सुझाव जो नई शिक्षा नीति 2020 के द्वारा किए गए है।

1. ऑनलाइन शिक्षा पर बल (e-content को क्षेत्रीय व मातृभाषा मे उपलब्धता)
2. स्कूल पाठ्यक्रम तथा अध्यापक कला मे सुधार।
3. बोर्ड परीक्षा में बदलाव।
4. बहुभाषावाद व मातृभाषा को बढाया।
5. आंकलन में सुधार हेतु नया राष्ट्रीय आकलन केन्द परख (समग्र विकास के लिए कार्य प्रदर्शन, आकलन, समीक्षा और ज्ञान–विश्लेषण) एक मानक–निर्धारण निकाय के रूप मे स्थापित किया जाएगा।
6. समान–समावेशी शिक्षा के विकास हेतु बालक–बालिका समावेशी कोष व विशेष शिक्षा जोन की स्थापना की जाएगी।
7. बालभवन व सामाजिक चेतना केन्द्रो की स्थापना।
8. शिक्षको के लिए राष्ट्रीय प्रोफेशनल मानक (NPST) राष्ट्रीय अध्यापक शिक्षा परिषद द्वारा वर्ष 2022 तक विकासित किया जाएगा।

अध्यापक शिक्षा हेतु नवीन राष्ट्रीय पाठ्यक्रम 2021 तैयार किया जाएगा।

9. ओपन व दूरस्थ शिक्षा का विकास।
10. व्यावसायिक, व्यावहारिक व तकनीकी शिक्षा पर बल।

इस प्रकार नई शिक्षा नीति 2020 शिक्षा व्यवस्था की वर्तमान खामियों को दूर कर आत्मनिर्भर भारत का संकल्प को साकार करने की तैयारी के

रूप मे दृष्टिगत हो रही है। किन्तु इसका सही प्रकार क्रियान्वयन सरकार के समक्ष एक बड़ी चुनौती है। इस शिक्षा नीति में प्रस्तावित नीतियाँ व नए नियम कागजों पर तो अत्यधिक उपयुक्त व प्रभावशाली दिखते हैं। अब देखना यह है कि किस प्रकार इन्हें लागू किया जाएगा? तथा यह नए परिवर्तन शिक्षा व्यवस्था में सुधार हेतु कितने फलदायी होंगे? क्योंकि हमारे देश की जनसंख्या व संसधानो की कमी ऐसी समस्या है जो किसी भी नीति को लागू करने व उसके मनचाहे परिणाम प्राप्ति होने पर प्रश्न चिन्ह लगा देती है। किन्तु इस बात में कोई शंका नही है कि इस नई शिक्षा नीति 2020 के सभी सुझाव व प्रस्ताव अत्यधिक महत्वूपर्ण व वर्तमान समय की मांग के अनुरूप हैं। सरकार की यह नीति निसंदेह शिक्षा के क्षेत्र में नए बदलाव के साथ सकारात्मक पहल है।

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झपसू यादव द्वारा 'अखण्ड पब्लिशिंग हाऊस' के लिए प्रकाशित। वी.एम. ग्राफिक, दिल्ली द्वारा कवर डिजाइन व शब्द संयोजन तथा आरना इंटरप्राइजेज, दिल्ली से मुद्रित।

भूमिका

विश्व की अनेक संस्कृतियों में भारतीय संस्कृति की एक ऐसी संस्कृति है, जो अत्यन्त प्राचीन भी है और प्रत्येक समय के प्रत्येक क्षेत्र में प्रासंगिक एवं नवीन भी है। परम्परा को नैरन्तर्य में स्वीकार करते हुए, सृष्टि की नूतन उपलब्धियों एवं विकास को आत्मसात करने के कारण यह संस्कृति चिरनवीनता को प्राप्त है। इसमें मानवीय जीवन का सम्पूर्ण चिन्तन एवं विकास समाहित है। यह राष्ट्रीय और वैश्विक परिवेश में अपना समन्वयात्मक स्वरूप धारण करती है। व्यापक दर्शन और अपरिमित ग्राह्यशक्ति के कारण यह विश्व की सभी संस्कृतियों में विशिष्ट और पृथक है।

भारतीय संस्कृति में व्यक्तिगत स्तर पर, त्यागमय शुद्ध चरित्र पर, सामाजिक स्तर पर सत्याचरण, सेवा और सहयोग भावना पर तथा शैक्षिक स्तर पर मूल्य शिक्षा पर बल दिया जाता है। इसका सम्बन्ध सम्पूर्ण प्रकृति के जीवन एवं विकास से है। सम्पूर्ण वसुधा को एक परिवार मानने वाली इस संस्कृति के मूल और प्रमुख प्रयोजन है– सम्पूर्ण पर्यावरण की शुद्धता एवं विश्व शान्ति। बाह्य प्रकृति एवं आन्तरिक प्रकृति दोनों की शुद्धता, दोनों के समन्वय और सामंजस्य पर यह संस्कृति बल देती है। हमारे आर्ष ग्रन्थों में प्रमुखता से माना जाता रहा है कि भारत की संस्कृति केवल भारत के लिए ही नहीं, सम्पूर्ण सृष्टि के कल्याण से सम्बन्धित है। हम भारतवासी प्रार्थना किया करते हैं और कामना करते हैं कि सभी सुखी हों व सभी नीरोग हों। परिवर्तनशीलता होते हुए भी इसकी मूल धारा एक है, वह मूल धारा एकात्मबोध की है, समन्वय

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विषय–सूची

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भारतीय सांस्कृतिक मूल्य के संचारण में अध्यापक शिक्षा की भूमिका

डॉ0 भावना सिंह

भारतीय ऋषि एवं मनीषियों ने 'मूल्यो' की व्याख्या मानव कल्याण की कामना से की है। मुस्लिम व अंग्रजों के शासन काल के पूर्व भारतवर्ष की शिक्षा व्यवस्था सांस्कृतिक मूल्यो पर आधारित थी। परन्तु मुस्लिम शासनकाल में शिक्षा का स्वरूप बदल गया व शिक्षा मुस्लिम संस्कृति व इस्लाम धर्म का प्रचार के एक माध्यम बन गई। तत्पश्चात अंगेजो ने शिक्षा को अपनी आवश्यकतानुसार परिवर्तित किया और इनका उद्देश्य भी अपनी संस्कृति व भाषा का प्रचार करना था। उसी समय भारतीय विचारकों के मन मस्तिष्क में एक समस्या ने जन्म लिया कि कहीं आने वाले वर्षो में भारतीय मूल्य व संस्कृति अपना अस्तित्व न खो दे। स्वतंत्रता के उपरान्त विभिन्न आयोगों ने 'मूल्य परक शिक्षा' के प्रति ध्यान आकर्षित किया

आज की नई पीढ़ी पाश्चात्य संस्कृति के कुप्रभाव से ग्रस्त हैं भारतीय जीवन मूल्य ध्वस्त हो रहे है। वर्तमान परिस्थितियों के संदर्भ में मूल्यो की रचना नहीं हुई है ऐसी परिस्थिति में 'मूल्य परक शिक्षा' की अनिवार्यता अपरिहार्य है। इस कार्य को अध्यापक ही उत्तम रूप से

सम्पन्न करा सकता है अतः आवश्यकता इस बात की है कि अध्यापको को शिक्षा में मूल्य संरक्षण एवं संचारण हेतु उनके प्रशिक्षण काल में ही प्रशिक्षित किया जाये। इसके लिये अध्यापक शिक्षा में मूल्य सन्दर्भित शिक्षा पाठ्यक्रम एवं मूल्यों को छात्रो में विकसित करने हेतु प्रशिक्षित किया जाना चाहिए।

प्रस्तावना

मूल्यपरक शिक्षा से तात्पर्य उस शिक्षा से है जिससे हमारे नैतिक सामाजिक सांस्कृतिक एवं अध्यात्मिक मूल्य समाहित हों। इसमे विभिन्न विषयों को मूल्यपरक बनाकर उसके माध्यम से विभिन्न मूल्यों को छात्रो के व्यक्तित्व मे समाहित करने पर बल दिया जाता है जिससे उनका सन्तुलित एवं सर्वतोन्मुखी विकास हो सके। 'Valus' शब्द की उत्पत्ति लैटिन भाषा के 'Valere' शब्द से मानी जाती है जो किसी वस्तु की कीमत या उपयोगिता को व्यक्त करता है भावात्मक दृष्टि से मानव के गुण को भी अभिव्यक्त करता है।

प्रोफेसर अर्बन ने अपनी पुस्तक 'फण्डामेण्डल ऑफ ऐथिक्स' मे लिखा है कि "मूल्य वह है जो मानव इन्छा की तृप्ति करे, जो व्यक्ति तथा उसकी जाति के संरक्षण में सहायक हो।" इस प्रकार मूल्य सत्य है जिसके लिए व्यक्ति जीता है और आवश्यकता पड़ने पर वह संघर्ष करने, दुख सहने तथा मृत्यु को भी स्वीकार करने के लिए तत्पर रहता है "मूल्य ऐसी आचरण संहिता या सद्गुण है, जिसमें व्यक्ति अपने निश्चित लक्ष्यों की प्राप्ति हेतु अपनी जीवन पद्धति का निर्माण करता है। तथा अपने व्यक्तिव का विकास करता है। इससें मनुष्य की धारणाएँ, विचार, विश्वास, मनोवृत्ति, आस्था आदि समाहित है। ये मानव मूल्य एक ओर व्यक्ति के अन्तःकरण द्वारा नियन्त्रित होते है तो दूसरी ओर उसकी संस्कृति एवं परम्परा द्वारा क्रमशः निस्सृत एवं परिपोषित होते है।

वैयक्तिक सन्दर्भ में मूल्यों का सम्बन्ध हमारी भावनाओं एवं संवेगों, पसन्द एवं नापसन्द से होता है ई० एस० ब्राइटमेन के अनुसार

"प्रारम्भिक अर्थ में मूल्य से अभिप्राय है जो व्यक्ति वास्तव में पसन्द करता है, स्वीकृत करता है तथा उसका आनन्द उठाता है। इस दृष्टि से यदि हम देखें तो मूल्य हमारी इच्छाओं व भावनाओं को सन्तुष्ट करने का माध्यम है इनका सम्बन्ध तर्क से नही होता। डिक्शनरी ऑफ एजूकेशन गुड (Good) के अनुसार "मूल्य एक एसी विशेषता है जिसे मनोवैज्ञानिक, सामाजिक, नैतिक या सौन्दर्यात्मक विचारों के परिप्रेक्ष्य में उत्कृष्ट एवं महत्वपूर्ण समझ जाता है। तथा ये उस व्यक्ति में अन्तर्निहित होते है। जो उसके विश्वास के अनुसार सुरक्षा व नैतिक सहायता प्रदान करते है।

समाज शास्त्रीय विचारधारा मूल्यों को सामाजिक विचारों, मान्यताओं, परम्पराओ व विश्वासों पर आधारित मानते हैं। वास्तव में यदि देखा जाये तो मूल्य वह है जो सभी बातों का निर्धारण करते हैं। वास्तव में यह मूल्य ही है जो इस जगत को अर्थ प्रदान करते हैं। साथ ही प्रत्येक व्यक्ति, घटना क्रिया को अर्थ प्रदान करते हैं। प्राचीन काल से ही मूल्य शिक्षा परक शिक्षा संचारण अध्यापकों द्वारा किया गया है। भारतीय ऋषि अथवा मनीषियों ने मूल्यों की व्याख्या 'मानव कल्याण' की कामना से की है।

सर्वे भद्राणि पश्यन्तु मा करिचददुःख भाग्यवेत।
सर्वे भवन्तु सुखिनः सर्वे सनतु निरामयाः।।

अर्थात सबके सुख की कामना भारतीय जीवन का आदर्श है। मुस्लिम व अंग्रेजो के शासनकाल के पूर्व भारतवर्ष की शिक्षा व्यवस्था सांस्कृतिक मूल्यों पर आधारित थी परन्तु मुस्लिम शासनकाल में शिक्षा का स्वरूप बदल गया व शिक्षा मुस्लिम संस्कृति व इस्लाम धर्म का प्रचार का एक माध्यम बन गई। तत्पश्चात अंग्रजों ने शिक्षा को अपनी आवश्यकतानुसार परिवर्तित किया और इनका उद्देश्य भी अपनी संस्कृति व भाषा का प्रचार करना था। उसी समय भारतीय विचारकों के मन मस्तिक में एक समस्या ने जन्म लिया कि कहीं आने वाले वर्षों में भारतीय मूल्य व संस्कृति अपना अस्तित्व न खों दें इसी कारण 1937 में महात्मा गाँधी ने 'इण्डियन एजुकेशन कान्फ्रेन्स' बुलाई और शिक्षा

के माध्यम से मानवीय मूल्यों को पुनः स्थापित करने पर बल दिया।

स्वतंत्रता के उपरान्त विभिन्न आयोगों ने 'मूल्य परक शिक्षा' के प्रति ध्यान आकर्षित किया है। भारतीय संविधान में भारतीय मूल्यों की चर्चा की गई है। संविधान में धर्म निरपेक्ष भारत की कल्पना भी की गई है परन्तु भारतीय संविधान में कुछ प्रजातान्त्रिक मूल्य बताये गये है। और इनका विकास करना आवश्यक बताया गया है।

डॉ० राधाकृष्णन आयोग (1948–49) ने पाठ्यक्रम में संशोधन के माध्यम से मूल्य शिक्षा देने का सुझाव दिया जिसमें– सभी शिक्षण संस्थाओं का प्रारम्भ प्रार्थना सभाओं द्वारा हो जिसमें छात्र दो मिनट का मौन रखे। स्नातक वर्ष के प्रथम वर्ष, द्वितीय वर्ष व तृतीय वर्ष में छात्रों को क्रमशः भारत के विभिन्न धर्मों के प्रमुख नेताओं विश्व के विभिन्न धर्मों के नेताओं व साहित्य तथा धार्मिक समस्याओं व दर्शन का ज्ञान छात्रों को कराया जाये। ये सुझाव अप्रत्यक्ष रूप से मूल्य शिक्षा देने पर बल देते हैं। इसके पश्चात् **डॉ० श्री प्रकाश (1959)** की अध्यक्षता में एक समिति का गठन हुआ जिसे धार्मिक नैतिक शिक्षा समिति कहा गया। इन्होंने छात्रों में उचित आचरण की शिक्षा हेतु सुझाव दिये शिक्षा के प्रत्येक कार्यक्रम में परिवार को उचित महत्व दिया जाये व उसके दोषों का उन्मूलन किया जाये। विश्वविद्यालय का प्रारम्भ ईश्वर विनय से किया जाये। प्राथमिक स्तर से विश्वविद्यालय स्तर तक पाठ्यक्रम में कुछ ऐसे ग्रन्थ रखे जायें जो छात्रों को धार्मिक मूल्यों का ज्ञान दें। शिक्षा द्वारा अच्छे आचरण की बातों पर प्रबलता दी जाये व इसी आधार पर छात्रों का मूल्यांकन हों। समाज सेवा पाठ्यक्रम सहगामी क्रियाओं का अभिन्न अंग हो। छात्रों में वाद–विवाद, स्वतन्त्र चिन्तन एवं आलोचनात्मक चिन्तन के गुण का विकास किया जाये। विश्वविद्यालय में विभिन्न धर्मो के उत्सवों का सामूहिक आयोजन हो जिसके द्वारा छात्रों में वांछनीय नैतिक व आध्यात्मिक मूल्य विकसित हो सकें।

तत्पश्चात् **कोठारी शिक्षा आयोग (1964–66)** ने इस बात पर बल दिया कि शिक्षा के द्वारा छात्रों में सामाजिक उत्तरदायित्व की भावना का विकास किया जाना चाहिए और छात्रों को इस योग्य बनाना चाहिए

कि वह नैतिक व अध्यात्मिक मूल्यों के प्रति प्रशंसात्मक दृष्टिकोण रख सकें। अयोग ने यह भी कहा कि आज के युवकों में सामाजिक व नैतिक मूल्यों के प्रति जो अवहेलनात्मक दृष्टिकोंण है उसके कारण सामाजिक व नैतिक संघर्ष उत्पन्न हो रहे हैं। इसी के कारण हमारे लिए यह आवश्यक है कि हम शिक्षा व्यवस्था को मूल्य परख बनाने हेतु सुझाव दिये केन्द्र व राज्य सरकार के अधीन सभी विद्यालयों में नैतिक सामाजिक व अध्यात्मिक मूल्यों पर आधारित शिक्षा की जाये व निजी संस्थाओं से भी इसका अनुपालन करने की अपेक्षा की जाए। समय तालिका में इन मूल्यों से सम्बन्धित शिक्षा के कुछ कालांश निर्धारित किये जाये जो किसी विशिष्ट व्यक्तियों द्वारा न लिये जाये वरन् विद्यालय के सामान्य अध्यापक इस उत्तरदायित्व का निर्वाह करें। विश्वविद्यालय स्तर पर धर्म शिक्षा से सम्बन्धित जो विभाग है वह छात्रों व अध्यापकों की दृष्टि से विशिष्ट साहित्य तैयार करे जिनके द्वारा इन मूल्यों का सकारात्मक विकास हो सके। सभी धर्मो के छात्रों के लिए ऐसी पाठ्य–पुस्तकों की व्यवस्था की जाये जो विभिन्न धर्मो के अध्यात्मिक व नैतिक मूल्यों का तुलनात्मक ज्ञान करा सकें।

मूल्य निर्धारित शिक्षा के सम्बन्ध में एक वर्किंग ग्रुप (1980) ने शिक्षकों के प्रशिक्षण के सम्बन्ध में अपनी रिपोर्ट प्रस्तुत की। यह वर्किंग ग्रुप शिक्षा मंत्रालय द्वारा श्री कीरत जोशी की अध्यक्षता में नियुक्त हुआ था। इसके अनुसार मूल्य निर्धारित शिक्षा को अनिवार्य रूप से ऐसी शिक्षा समझना चाहिए जो शोभनीय तथा आत्म उन्नति की ओर होगी। यह न केवल मूल्यों के सम्बन्ध में विद्यार्थियों को सूचना प्रदान करेंगी वरन् उनकी हस्ती विकसित करने की ओर भी होगी तथा संकीर्णता, स्वार्थता तथा अधकचरे विचारों एवं अभिवृत्तियों से ऊपर उठायेगी। रिपोर्ट के अनुसार सीखने की प्रक्रिया का अपने आप में बहुत बड़ा प्रभाव बालकों के मूल्य निरूपण पर पड़ता है। विद्यालय की सभी क्रियाओं, पाठ्यक्रम निर्माण, शिक्षण विधियों एवं मूल्यांकन इत्यादि की इस प्रकार से संरचना होनी चाहिए कि वह स्वतः वांछित मूल्यों के विकास की ओर ले जाये। ऐसे साहित्य के सृजन की आवश्यकता है जो विशेष रूप से शिक्षा में

मूल्य निरूपण के लिए हो। मूल्य शिक्षा के कार्यक्रम में एकीकरण कृत उपागम को अपनाना चाहिए। माध्यमिक विद्यालयों तथा विश्वविद्यालयों दोनों में आधारभूत पाठ्यक्रम होने चाहिए जिनका उद्देश्य बालकों को भारतवर्ष इसके निवासी तथा सांस्कृतिक परम्पराओं का ज्ञान कराना होना चाहिए। विशिष्ट विद्यालय मूल्य निर्धारित शिक्षा के लिए स्थापित किये जाने चाहिए। प्रत्येक राज्य में कम से कम एक ऐसा विद्यालय होना चाहिए जो कि नर्सरी स्तर से पोस्ट ग्रेजुएट स्तर तक मूल्य निर्धारित शिक्षा प्रदान करें। राज्य स्तर पर विशेष शिक्षक उन्मुख कार्यक्रमों का शिक्षकों को प्रभावशाली मूल्यों के विकास की विधियों को सिखाने के वास्ते बनाकर शिक्षकों को प्रशिक्षित करना चाहिए। एक राष्ट्रीय अनुशासन समिति होनी चाहिए जिसमें ऐसे व्यक्ति हों जो अपने स्वयं की प्रतिष्ठा के कारण नैतिक प्रभुत्व रखते हो तथा जो मूल्य शिक्षा सम्बन्धी कार्यक्रमों के विकास का पथ प्रदर्शन कर सके।

राष्ट्रीय शिक्षा नीति (1986) में भी मूल्य शिक्षा के सम्बन्ध में विचार व्यक्त किये गये। यह विचार थे–

पैरा 8.4– मौलिक मूल्यों के क्षरण के सम्बन्ध में बढ़ती हुई चिन्ता ने तथा समाज में बढ़ती हुई निर्दयता ने पाठ्यक्रम के पुनसंगठन की आवश्यकता को हमारे ध्यान का केन्द्र बना दिया है ताकि शिक्षा एक शक्तिशाली, सामाजिक तथा नैतिक मूल्यों के पोषण का यन्त्र बन सकें।

पैरा 8.5– हमारे बहुरूपी सांस्कृतिक समाज में शिक्षा को सार्वभौमिक तथा शाश्वत मूल्यों को पोषित करना चाहिए। इसकी दिशा एकता तथा अपने देशवासियों के समन्वय की होनी चाहिए। इस मूल्य शिक्षा को रूढ़िवादिता, धार्मिक कट्टरता, हिंसा, अन्धविश्वास तथा भाग्यवादिता को समाप्त करने में सहायता करनी चाहिए।

पैरा 8.6– इस प्रकार के द्वन्द्वात्मक भूमिका के अतिरिक्त मूल्य शिक्षा का एक बड़ा सकारात्मक पक्ष भी है जो हमारी परम्परा, राष्ट्रीय उद्देश्यों एवं सर्वमान्य प्रत्यक्षीकरणों पर केन्द्रित है। मूल्य शिक्षा को

प्राथमिक रूप से इस पक्ष पर बल देना चाहिए।

आचार्य राममूर्ति समिति ने राष्ट्रीय शिक्षा नीति का पुनरावलोकन करते हुए कहा कि "विश्व व्यापी स्तर पर बुनियादी नैतिक मूल्यों का पतन दृष्टिगोचर हो रहा है" यह दृश्य भारतीय संदर्भ में और अधिक मार्मिक तथा चिंताजनक है क्योंकि हम एक महान सभ्यता और उच्च सांस्कृतिक धरोहर के उत्तराधिकारी रहे है। मूल्य क्षरण व नैतिक पतन का प्रभाव शैक्षिक परिवेश पर सबसे अधिक पड़ा है अतः शैक्षिक संस्थाओं का यह विशिष्ट दायित्व है। कि वे इस परिस्थिति से अपने बुद्धिमतापूर्ण प्रयासों के द्वारा निपटने की चेष्टा करें। शैक्षिक संस्थाओं को 'मूल्य परक शिक्षा' के प्रावधान में अपनी अहं भूमिका निभानी चाहिए। 'मूल्य' समस्त शैक्षिक प्रक्रिया व विद्यालयी वातावरण का अविच्छिन्न अंग होना चाहिए।"

अतः आज हम गर्व के साथ यह कह सकते हैं कि भारतवर्ष में यातायात संचार व चिकित्सा तथा अन्य क्षेत्रों में सन्तोषजनक उपलब्धियाँ की हैं परन्तु इसके साथ ही दूसरी ओर जब हम अपनी संस्कृति व मूल्यों पर विचार करते हैं तो हमें बहंत ही शर्म का अनुभव होता है चूंकि मूल्यों की दृष्टि से हमारा दिन–प्रतिदिन पतन होता जा रहा है। आज हमारे सामने बहुत विषम परिस्थितियाँ हैं। एक तो यह कि हमें यह पता ही नहीं कि हमारे भारतीय मूल्य क्या है? और इस कारण हम मूल्य अनभिज्ञ होकर व्यवहार करते जा रहे हैं। दूसरे हमें भारतीय मूल्यों का ज्ञान तो है परन्तु हम उनके प्रति आस्था नहीं रखते और मूल्यविहीन व्यवहार का प्रदर्शन करते हैं। तीसरे हमें मूल्यों का ज्ञान है और उस पर चलना पिछड़ेपन का प्रतीक समझते है और आधुनिकता की दौड़ में हम इतने तीव्र गति से चलना चाहते है कि हमारे मूल्य उस दौड़ में कहीं लुप्त हो जाते है। मूल्य परख व्यवहार न करने के लिए हमें आत्मग्लानि तो अवश्य होती है परन्तु आधुनिक बनने की ललक के आगे हम घुटने टेक देते है। यह तीनों ही वह परिस्थितियाँ है जिन्हें हम मूल्य अन्तर्द्वन्द की संज्ञा दे सकते हैं। इस कारण आज हमारे लिए बहुत ही आवश्यक है कि हम मूल्य शिक्षा के

द्वारा छात्रों को सही मूल्यों का ज्ञान करायें।

आज शैक्षिक परिवेश में चारों ओर से 'मूल्य परक शिक्षा' की मांग आ रही है। कारण हमारे समाज में मूल्यों की अवधारणा में बदलाव और मूल्यों का क्षरण है। यह 'वीरभोग्या वसुंधरा' आंतरिक कलह, दुव्यव. स्था, साम्प्रदायिक भेदभाव, जातिवाद, आर्थिक विषमता आदि संकीर्णता की अग्नि में जल रही है। यह भारत भूमि राम, कृष्ण, भीष्म पितामह, बुद्ध, महावीर, विवेकानन्द और गाँधी की जन्मदात्री है जो आज संघर्ष आपाधापी, आधुनिकीकरण, अभाव, लोकतांत्रिक राजनैतिक मूल्यों का क्षरण अशान्ति शोषण और भय से ग्रस्त है कारण समाज का औद्योगिकरण विज्ञान और तकनीकी का अभूतपूर्व विकास है जिससे भावात्मक विकास के बीच कोई तालमेल नहीं रह गया है। आज की नई पीढ़ी पाश्चात्य संस्कृति के कुप्रभाव से ग्रस्त हैं भारतीय जीवन मूल्य ध्वस्त हो रहे हैं। वर्तमान परिस्थितियों के संदर्भ में मूल्यों की रचना नहीं हुई है। ऐसी परिस्थिति में 'मूल्य परक शिक्षा' की अनिवार्यता अपरिहार्य हैं इस कार्य को अध्यापक ही उत्तम रूप से सम्पन्न करा सकता है। अतः आवश्यकता इस बात की है कि अध्यापकें को शिक्षा में मूल्य संरक्षण एवं संचारण हेतु उनके प्रशिक्षण काल में ही प्रशिक्षित किया जाये। इसके लिये अध्यापक शिक्षा में मूल्य सन्दर्भित शिक्षा पाठ्यक्रम एवं मूल्यों को छात्रों में विकसित करने हेतु प्रशिक्षित किया जाना चाहिए। जिससे वे शैक्षिक एवं विकासात्मक दायित्वों को ग्रहण एवं वहन करने में सक्षम हो सकें तथा उनमें तकनीकी कुशलता, वैज्ञानिक चेतना, संसाधन सम्पन्नता, के साथ मानव बोध का समन्वयात्मक विकास करना सम्भव हो सके। शिक्षण में इस उद्यम हेतु सामाजिक, सांस्कृतिक, नैतिक एवं समस्त चारित्रिक मर्यादाओं के साथ ही राष्ट्रीय प्रजातांत्रिक मूल्यों को विकसित करने के लिए सफल प्रयास करना शिक्षण प्रशिक्षण का लक्ष्य रखा जाये।

सन्दर्भ

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8

कोविड–19: भारतीय सांस्कृतिक चेतना

डॉ0 प्रमिला मिश्रा

कोरोना महामारी (कोविड–19) से पूर्व विश्व में बहुत सी मह. ामारियाँ आ चुकी हैं, उदाहरणार्थ चेचक, प्लेग, टायफाइड, सार्स फ्लू, ऐशियाई फ्लू, इबोला वायरस, निपाह वायरस, स्वाइन फ्लू आदि महामारी जिस समय आई है जनजीवन को बहुत अधिक प्रभावित करती रहीं हैं। इसी क्रम में यह कोविड–19 भी आई है जिसने सम्पूर्ण विश्व को चारों ओर से आवृत कर लिया है। वास्तव में देखा जाये तो मानव का विलासतापूर्ण जीवन ही ऐसी महामारियों को आमन्त्रित करता है। मेरा मानना है कि यदि किसी देश के लैब से निकला हुआ यह वायरस सम्पूर्ण मानव जाति का विध्वंसक बना हुआ है तो भी यह गलती तो मानव द्वारा ही की गई है। आखिर में ऐसा कार्य क्यों किया गया है जिससे मानव का अस्तित्व ही खतरे में आ गया है ? आज बहुत दुःखद दृश्य टेलीविजन के माध्यम से दिखाई दे रहा है। कितने घर बेघर हो चुके हैं। आर्थिक, सामाजिक, मानसिक, शारीरिक, बौद्धिक ह्रास दिखाई दे रहा है।

संस्कृत साहित्य के मूर्धन्य विद्वान ने कहा है–

को जानीते स्वकीयां कुटिलदृषमहो क्व क्षिपेत्क्रूरकालः।1

वीरांगना झलकारी बाई (खण्ड काव्य)

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समर्पण

गुरुदेव परम आदरणीय
श्री ललित मोहन गुप्ता एडवोकेट
एवं
माता श्रीमती कौशल्या देवी व
पिता श्री अतरपाल सिंह
के चरणों में सादर समर्पित !

अनुक्रमणिका

शुभाशंसा

साहित्यकार देवेन्द्र देव मिर्जापुरी जी वास्तव में एक स्वयंसिद्ध कवि हैं। आपकी लेखनी ने **"वीरांगना झलकारीबाई"** जैसा महाकाव्य रचकर हिन्दी काव्य जगत में एक महनीय कार्य किया है। झलकारीबाई जैसे समाज के दलित वर्ग के नायक को अपना वर्ण्य विषय बनाकर कवि ने सामाजिक सद्भाव और समरसता का अद्भुत काम किया है एवं स्वतन्त्रता की बलिवेदी पर आत्मोत्सर्ग करने वाले वीरों के प्रति अपनी कृतज्ञता ज्ञापित कर सच्ची श्रद्धांजलि दी है, इस समय यह महाकाव्य और अधिक पाठकों को आनन्दित–गौरवान्वित महसूस करायेगा; क्योंकि कुछ समय के बाद ही हम स्वतन्त्रता के ७५ वर्ष का उत्सव मनाने जा रहे हैं।

झलकारीबाई बुन्देलखण्ड के एक दलित परिवार की बेटी थी, जिन्होंने अपने अदम्य शौर्य एवं युद्ध कौशल से अंग्रेजों को भी पीछे हटने पर विवश कर दिया। अन्त में देशभक्ति का भाव लिये वह स्वयं ही अपना बलिदान कर इतिहास में अमर हो गयी। ऐसी वीरांगना के महान चरित्र को देवेन्द्र देव जी ने बड़ी ही कुशलता के साथ अपने महाकाव्य के द्वारा पाठकों के समक्ष लाने का जो सफल प्रयास किया है, वह स्तुत्य है।

इति कृति के प्रणयन हेतु कृतिकार को कोटिशः शुभकामनाएँ बधाई!

डॉ. पवनपुत्र बादल
महामन्त्री अखिल भारतीय साहित्य परिषद, उत्तर प्रदेश
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तिथि : श्री गुरु पूर्णिमा, विक्रम सं. २०७८ तदनुसार २४ जुलाई, २०२१

ओज का प्रखर स्वर
'वीरांगना झलकारी बाई'

ओज के कवि श्री देवेन्द्र 'देव' मिर्जापुरी जी के काव्य में प्राचीन गौरव एवं राष्ट्र प्रेम की छाप स्पष्ट परिलक्षित होती है।

सुकवि ने 'प्रणवीर मगल पाण्डे' से प्रारंभ कर निरन्तर अनेक वीर काव्यों का सृजन किया है। उसी श्रृंखला की नूतन कडी है–'वीरांगना झलकारी बाई।

अद्वितीय वीरागना झलकारी बाई, जिसने रानी लक्ष्मीबाई के साथ मिलकर अंग्रेजों के घोर अत्याचारों एवं अन्याय के विरुद्ध झाँसी में स्वतन्त्रता यज्ञ की अग्नि जलाकर अन्त में अपने प्राणो की आहुति दे दी, की गौरव गाथा का गान कवि ने अत्यंत उत्साह से किया है।

ऐसे प्रेरक नारी चरित्र के जीवन की अमर गाथा को कवि ने सात सर्गों में विभक्त करके 'वीरांगना झलकारी बाई' शीर्षक से खण्डकाव्य का प्रणयन किया है।

प्रारंभ में कवि ने अंग्रेजों के घोर अत्याचारों से पीडित भारत माता के कष्टों का वर्णन किया है–

हाल बुरा जब त्रसित हुई थी
कुटिल प्रहार सहे थे
भारत माँ की आँखों से भी
रक्तिम अश्रु बहे थे।।
मौन भारतियता रोती थी
दुष्कर्मी चालों से
मानवता को घेर रहे थे
दुश्मन जंजालों से।।

यहीं सदोबा और लहकारी की पुत्री झलकारी का परिचय प्राप्त होता है–

यही सदोवा–लहकारी की
तनया थी झलकारी
रचा नव्य इतिहास अनूठा
वीर सुता थी प्यारी।।

प्रथम सर्ग में कवि ने तत्कालीन समाज में व्याप्त वर्ण भेद एवं दलितों की उपेक्षा की ओर संकेत किया है–

वर्ण विभेदक चीख रहे थे
धर्म नहीं हारेगा
शूद्र जाति जन यहाँ जनेऊ
कोई नहीं धारेगा।।

सुकवि ने राष्ट्रघाती भारतीयों के अंग्रेज शासकों से मिलने की बात भी कही है–

अपने ही जासूस बने थे
अंग्रेजों की टोली में
कूट–कूट कर गरल भरा था
उनकी देशी बोली में।।

झाँसी के महाराज की मृत्यु के उपरान्त अंग्रेजों ने झाँसी पर अधिकार करने की कुत्सित नीति के अनुसार निःसंतान रानी लक्ष्मीबाई के दत्तक पुत्र को उनके उत्तराधिकारी की मान्यता नहीं दी। इसके विरोध में महारानी लक्ष्मीबाई ने अंग्रेजों के विरुद्ध घनघोर युद्ध किया। रानी की हमशक्ल झलकारी बाई रानी लक्ष्मीबाई द्वारा गठित 'दुर्गा दल' की प्रमुख थी। उसका पति पूरन झाँसी के दुर्ग की रक्षा करते हुए शहीद हो गया किन्तु वीर पति की मृत्यु से विचलित न होकर झलकारी बाई ने पूर्ण शौर्य एवं पराक्रम के साथ रानी लक्ष्मीबाई के वेश में अंग्रेजों से युद्ध किया और झाँसी की रक्षा में प्राणोत्सर्ग करके वीरगति प्राप्त की।

इस कथावस्तु को अपनी मौलिक प्रतिभा से कवि श्री देवेन्द्र 'देव' जी ने एक विशिष्ट रूप प्रदान किया है। उनके इस वीर काव्य में उनका उफनता हुआ उत्साह सर्वत्र दृष्टिगत होता है।

वीरबाला झलकारी को ये किंचित भी स्वीकार नहीं कि उनकी झाँसी का मस्तक किसी भी परिस्थिति में शत्रु अंग्रेजों के समक्ष झुक जाए। वह पूरे ओज और तेज के साथ हुंकार भरती है–

असह थी भारत माँ की पीर
रही संतति को देख अधीर
किया झलकारी ने आह्वान
छेड़ दो आज प्रलय का गान।।

×××

नहीं झाँसी से बढ़कर और
हमारी झाँसी है सिरमौर
मरेंगे या फिर देंगे मार
दासता नहीं हमें स्वीकार।।

अतः यह खण्डकाव्य 'वीरांगना झलकारी बाई' राष्ट्रप्रेम, शौर्य एवं ओजस्विता का अमर गान है।

इस काव्य की भाषा विचारों एवं भावों की अभिव्यंजना में पूर्णतः समर्थ है। यह बोधगम्य, सहज, प्रवाहमयी एवं ओज गुण प्रधान है। यथा–

खड्ग करती थी शोणित पान
धरा भी हुई रक्त से लाल
खनन–खन टकराती तलवार
लड़ी थी झलकारी इस हाल।।

कवि ने अपने खण्डकाव्य 'वीरांगना झलकारी बाई' के सात सर्गों में कथ्य की प्रभावी प्रस्तुति के लिए विभिन्न छन्दों का कुशलता से प्रयोग किया है।

सुकवि ने सार छन्द, हरितांटक छन्द, ताटंक छन्द, आँसू छन्द और प्रसाद छन्द का अत्यंत श्लाघनीय प्रयोग किया है। यथा–प्रसाद छन्द का कुशल प्रयोग दर्शनीय है–

उमड़ता था शोणित में जोश
भड़कता झलकारी का रोष
बरसती थी आँखों से आग
देशहित रही भावना जाग।।

अथवा आँसू छन्द का सटीक प्रयोग भी दृष्टव्य है–

हमशक्ल बनी रानी की
सूरत जिसकी प्यारी थी
रानी का रूप धरा पर
धर आई झलकारी थी।।

इस प्रकार उनकी छन्द योजना भी शौर्य के भावों हेतु पूर्ण समर्थ सिद्ध हुई है।

भाव निरूपण एवं शिल्प विधान की दृष्टि से यह उच्चकोटि का काव्य है। कविवर श्री देवेन्द्र 'देव' जी की ओजस्विनी मनीषा इस वीर रस से ओतप्रोत काव्य में बारंबार अवतीर्ण हुई है।

वर्तमान में दिग्भ्रमित नव युवा पीढ़ी को झलकारी बाई जैसी रणचण्डी के व्यक्तित्व को जानने–समझने की परम आवश्यकता है। यह कृति उस तेजस्विनी वीरांगना झलकारी बाई की प्रेरक जीवनगाथा को पूर्ण काव्य वैभव के साथ प्रस्तुत कर उस परम आवश्यकता को पूर्ण करेगी और सहृदय पाठकों के अन्तर्मन को छूकर उनके व्यक्तित्व को प्रभावित करेगी ऐसा मेरा दृढ़ विश्वास है। इस उत्तम कृति की रचना के लिए कविवर को मेरा साधुवाद !

डॉ. नीता सक्सेना
असिस्टेंट प्रोफेसर (हिंदी विभाग)
शहीद मंगल पाण्डे राजकीय महिला स्नातकोत्तर महाविद्यालय, मेरठ
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POPULATION & SUSTAINABLE DEVELOPMENT

(24)

Editor

Dr. Mitra Pal Singh

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A review about the Impact of Population on Development in India

Dr. Daisy Verma

ABSTRACT

India is the second most populated country in the world behind China and in the next six years by 2024 India would surpass China. High population is a problem about which successive governments have been aware and it is not that steps are not being taken to address it. In this study we will discuss few reasons of growing population in our country and what will be the impact of population growth on the developments in India as well as the solutions how we may control the rapidly increase in the population of our country.

Introduction

India is the second most populated country in the world behind China and in the next six years by 2024 India would surpass China (1,2). High population is a problem about which successive governments have been aware and it is not that steps are not being taken to address it. The main impact of growing population is on the economic growth as a modest increase in national income under economic development is being eaten up by the increase in population.

In this study we will discuss few reasons of growing population in our country and what will be the impact of population growth on the developments in India as well as the solutions how we may control the rapidly increase in the population of our country.

Reasons Behind the Uncontrolled Population Growth

SMPGGPG College Meerut 250002

5. **Employment of Women:** Another method to check the population is to provide employment to women. As a result their number in teaching, medical and banking etc. will increase rapidly. Due to job pressure and promotion they will delay having children.

Conclusions

This paper provides a personal perspective on the rich discussions about the impact of population growth in India. The size, rate of growth and age structure of the human population interact with many other key factors, from environmental change to governance. While the details of future interactions are sometimes difficult to predict, taken together they pose sombre threats to a socially and economically sustainable future for the rich and to any realistic possibility of lifting the India's bottom many millions people out of poverty. Adaptive changes will be needed to cope with an ageing population in our country with low fertility or below, but these are achievable. More worrying, continued rapid population growth in our country could lead to hunger, a failure of education to keep pace with growing numbers, and conflict. The assumption that the demographic transition from high to low birth rates occurs as a result of exogenous social and economic forces is being replaced by a clearer understanding of the many barriers that separate women from the knowledge and technologies they need to manage their childbearing within a human rights framework. The forum ended with a clear consensus that much more emphasis needs to be given to meeting the need for family planning and to investing in education.

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Self-Reliant India
Since Independence

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NEW ECONOMIC POLICY AND THE RELEVANCE OF SELF RELIANCE IN INDIA

Dr. Vikas Kumar & Dr. Deepa Gupta

With 65% of India's population residing in rural and far remote areas, rural infrastructure needs to be upgraded and revised and the government should ensure to provide rural people with all basic amenities. The government is also trying to provide digital connectivity in villages so that people there could access mobile phones, television, computers etc. which could make the people's living, their challenges and sufferings a littleeasier to some extent. Infrastructure includes improving telecommunication, airports, railways, metro stations, banks, ATMs, AI technology, management system etc.

On 12 may 2020, PM Modi in his speech said "It is the right time to become outspoken for the local products and make them globally available." Under this programme, segments like cottage industry, micro small and medium enterprises, labourers, middle class and industries and so on will be benefited a lot.

Economic policies are known as the policies, rules and regulations set up by the government in the field of economy

by domestic goods and services. The government found it better to manufacture the goods and domestically produce services in our country in spite of getting it from outside countries. It in turn would allow India to become self dependent and reduce its foreign dependency. It was also a way of providing people who are living in poverty and are in need in our country with some work and money to fulfil their basic needs.

1991 Economic Crisis

- Till 1985, India started facing the problem of "balance of payments".
- Balance of Payments means India's expenditure was exceeding its income.
- Expenses made by the country were going overflown by its income by a so large gap that India was not even able to make money available to buy important and essential goods from foreign countries like petroleum and so their prices reaches high sky in no time.

IMF and World Bank

- Now after having little money in its foreign exchange reserves to afford essentials, India approached World Bank and International Monetary Fund for its help financially.
- IMF and World Bank provided India with an aid of 7 billion dollars in return of a pledge of goldof 20 tonnes to Union Bank of Switzerland and 50 tonnes to Bank of England as dealt with IMF.
- In addition, IMF demanded liberalisation of Indian economy in return from India and also to open up doors for foreign countries to trade and economise and to loosen its restrictions.

- **Tax Changes:** corporate tax was reduced after liberalisation changes.
- And remaining tax reforms were undergone changes and some of the rates were lowered.
- **Forign Exchange Reforms:** There was devaluation in Indian currency "Rupee" due to which there was an increase in inflow of foreign exchange.
- Market and its suppliers were also permitted to value the foreign exchange rates.
- **Trade and Investment Policy Reforms:** Restrictions related to quantity on imports were also removed and softened by the government.
- Taxes on imports were also reduced.
- Licensing techniques were relaxed from many products except products hazardous and environmentally not fit for the environment
- Exports duty was removes to put fire in exports

Privatisation

Privatisation means transfer of property which is in the control of government It means that the sectors under government will now to handle by the private sector. It in turn will promote modernisation in the country and also help to augmentthe FDI inflow in country. "Disinvestment" is another term related to this which means selling PSE's to the public and privatising it.

Globalisation

It is the process in which products and services and other facilities are made world wide. Outsourcing is one such concept related to this. Outsourcing is the business practise of keeping in contact with a party out from a company to perform services and generate goods that earlier were performed in house by

PM Narendra Modi to make India "More big and more important part of the Global economy" using strengths, opportunities, challenges available in hand with us.

PM wants to apply this self reliant formula to the whole of India and to all its sectors including health, manufacturing, agriculture, education, defence, foreign, environment, digital sectors etc. for all segments of people including poor, rich, middle class, BPL, traders, entrepreneurs, labourers etc.

Innovations in Self Reliant India

1. Health sector

Covid-19 has made us aware of the fact that researchers and medical practitioners in India could innovate to no extent at a global level. India has really played safe since the arrival of this fatal dangerous disease and competed wellin comparison to its counterparts. The solutions which are adapted by India are more affordable.

2. Agriculture and Farming

As we know, a large part of Indian populationrely on farming for its livelihood and survival. There are tremendous opportunities in agricultural field for startups and government is also encouraging those who want to start their trade and business in farming by providing easy loans at low rate of interest or no interest(in cases) from their nearest branch of banks or NBFCs. Advancement in agricultural technology could improve the quality of agricultural seeds, fertilisers, pesticides, soil etc and also manufacturing them at a lower cost and supplying it at a cost slightly higher to get high returns.

3. Education

The pandemic situation has compelled educational institutions to delay exams and shift to online platform and virtual classes. For innovating more in this field, the National Education Policy has come out with more new modifications related to technology. The government also launched PM e-

Now we have to focus on the sectors which depend majorly on imports now and cannot increase production even in the country itself?

As all Electrical parts and appliances such as mobilephones, I pads, computers, washing machines, generators etc are a main part of import bill of India.

The electrical industry of India has some additions but in limited value whereas our country mostly relies on imports to obtain most components primarily used to make them, comprising printed circuit boards (PCBs). For example, approximately 88 per cent of the electrical parts used by the mobile and smartphone companies are bought in from outside and foreign countries like China.China is a country which supplies raw materials, finished and semi- finished goods at a lower cost than any other country in comparison.

Around 60% of medical devices are also imported. Other things which are imported from outside India are the electrical components like cells and batteries which are used by our country's solar power industry. Prime Minister Modi, in the course of the 15th august 2020 Independence speech, said that 'Produce for world' should be applied altogether with 'Make in India' campaign programme. The new slogan will be "Make in India for the world". Government has the aim of producing the goods and making services available not only for its own country but also for the whole world. Government has also planned to replace trade fairs and exhibitions with e-market programmes to promote it.

Support to State Governments

So to implement all these measures, Central government has given its support to State government from 3 per cent to 5 per cent for 2020-21 only, with extra financial help of Rs 4.28 lakh crore (US$ 60.72 billion) to states . Therefore, the total financial help provided by the government for its country

is of Rs 20 lakh crore (US$ 2.84 billion). At the same time, Indian and other state governments will also fight the battle of this pandemic spreading dangerous virus. In turn, Indian government will fortify its economy. Overall budget provided by Aatmanirbhar Bharat Package is:-

Overall budget provided by Aatmanirbhar Bharat Package			
Sn No.	**Item**	**Rs crore**	**US$ billion**
1	Tranche 1	5,94,550	84.35
2	Tranche 2	3,10,100	43.99
3	Tranche 3	1,50,000	21.28
4	Tranche 4 and 5	48,100	6.28
	Sub-total	11,02,750	156.44
5	Earlier Measures including PMGKP	1,92,800	27.35
6	RBI Measures (Actual)	8,01,603	113.72
	Sub-total	9,94,403	141.07
Total		20,97,153	297.51

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Global Climate Change and Health Concerns

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INTRODUCTION

Climate change is one of the most important global environmental challenges facing humanity with implications for food production, natural ecosystems, freshwater supply, health, etc. Global Climate Change' concept is very complicated people are still fully unaware about the risk and consequences of global climate change on human health incoming decades. It is also necessary for the survival of human beings and societies but the human health is more important than another element of the life. We construct our societies to attain the resources, economic growth and security but these are the means of the survival of human beings and health. In developing and underdeveloped countries health sector is ignored as compare to other sectors. According to the latest scientific assessment, the earth's climate system has demonstrably changed on both global and regional scales since the pre-industrial era. The evidence of climate change is compelling sea levels are rising, glaciers are retreating, precipitation patterns are changing, and the world is getting warmer. Recent evidence suggests even more rapid change, which will greatly, and in some cases irreversibly, affect not just people, but also species and ecosystems. Climate change is a serious risk to poverty reduction and could undo decades of development efforts. While climate change is global, its negative impacts are more severely felt by poor people

and poor countries. They are more vulnerable because of their high dependence on natural resources and limited capacity to cope with climate variability and extremes.

Restoring and maintaining key ecosystems can help communities in their adaptation efforts and support livelihoods that depend upon the services of these ecosystems. Moving towards low-carbon societies can help reduce greenhouse gas emissions, improving human health and well-being and creating green jobs. Climate change is a fact of life. We need to act urgently if we are to avoid an irreversible build-up of greenhouse gases (GHGs) and global warming at a potentially huge cost to the economy and society worldwide. The effects of climate on human health are known since early years. The link between the climate and human health is in certain ways. Earth System Science Partnership (ESSP) and Global Environmental Change and Human Health (GECHH) a joint project on climate change observes that, "It widely understood that human societies and the well-being and health of their populations depend on the flow of materials, services and cultural enrichment from the natural world."

CLIMATE VARIABILITY AND CLIMATE CHANGE

Climate variability refers to variations in the prevailing state of the climate on all temporal and spatial scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system, or to variations in natural or anthropogenic (human-driven) external forcing. Global climate change indicates a change in either the mean state of the climate or in its variability, persisting for several decades or longer.

Human health has always been influenced by climate and weather. Changes in climate and climate variability, particularly changes in weather extremes, affect the environment that provides us with clean air, food, water, shelter, and security. Climate change, together with other natural and human-made health stressors, threatens human health and well-being in numerous ways. Given that the impacts of climate change are projected to increase over the next century, certain existing health threats will intensify and new health threats may emerge. Connecting our understanding of how climate is changing with an understanding of how those changes may affect human health can inform decisions about mitigating (reducing) the amount of future climate change, suggest priorities for protecting public health, and help identify research needs. The influences of weather and climate on human health are significant and varied. Exposure to health hazards related to climate change affects different people and different

communities to different degrees. While often assessed individually, exposure to multiple climate change threats can occur simultaneously, resulting in compounding or cascading health impacts.

(A) Direct Impacts of Change in Climate and Weather on Health

Changes in temperature and precipitation and occurrence of heat waves, floods, droughts and fires directly impact health of people.

1. Heat-Stress and Related Impacts

The IPCC Special Report on Extreme Events (SREX) has a mention that there has been an overall decrease in the number of cold days and nights, and an overall increase in the number of warm days and nights, at the global scale. If there has been an increase in daily maximum temperatures, resulting in increase in number of heat-related illnesses. As per the basic processes of human thermoregulation, the health effects are seen when body temperature rises above 38°C i.e. physical functions are impaired with experience of weakness (heat exhaustion), when body temperature rises further to 40.6°C, the risk of physical and cognitive functions get impaired (heat syncope), risks of organ damage, loss of consciousness, and death increase sharply at further rise in body temperature usually above 40.6°C (heat stroke). The vulnerable population implies the demography (extremes of age, sex, population density, pregnant women and certain occupations), Health Status (like proportion of malnourishment, suffering with infectious and/ or chronic diseases, mental or physical disability), socio-economic status (poor/ marginalised- more vulnerable), type of occupation or socio-cultural practices. The vulnerable regions implies unplanned urban housing, proportion of slums, drought risk zones, water-stressed zones, food-insecure zones and remote rural areas. Numerous studies have reported increase in temperature-related morbidity (hospital admissions or emergency presentations), events due to cardiovascular, respiratory, and kidney diseases. These impacts have been related to the duration and intensity of heat. Health risks during heat extremes are greater in people who are physically active.

2. Drought, Storms and Floods

Climate change can result in more hot days, resulting in more periods of 'drought', 'dust storms', or 'heavy rains (precipitation)', and even 'flooding'. The health gets directly affected due to injuries, hypothermia, hyperthermia, drowning and indirectly through population dislocation, crowding, poor living conditions, faeco-oral transmission of gastro-intestinal pathogens causing water and food borne illnesses, respiratory illness and other infectious diseases (e.g., leptospirosis, vector-borne disease, cholera and also mental ill-

The reason primarily is due to contamination of water and sewage disposal.

3. Ozone

Ozone is a secondary pollutant, formed via sunlight-driven photochemical reactions involving precursor hydrocarbons and oxides of nitrogen. Ozone pollution is projected to increase because warmer temperatures enhance these reactions. Ozone is a powerful oxidant that has been persistently associated with damage to structure of airway or lung tissue. It contributes to more severe symptom of asthma, increase in other respiratory illnesses and deaths. High concentration of ground-level ozone accompanied with Heat waves result in higher frequency and severity of cardio-pulmonary attacks, asthma and allergic rhinitis.

4. Air pollution

Air pollution is a major environmental risk to health. The formation, transport and dispersion of many air pollutants is determined partly by climate and weather factors such as temperature, humidity, wind, storms, droughts, precipitation and partly by human activities known to produce various air pollutants. It is thus logical to assume that climate change will influence the dynamics of air pollution. Air pollution also affect health by causing acid rain; eutrophication due to nitrogen oxides emission in air from power plants, cars, trucks, and other sources Haze toxic effects on wildlife, Ozone depletion, Crop and forest damage etc.An increase in air pollution can pose a high risk to health. Higher levels of dust, ozone, and fine particles in the air can all reduce air quality and cause or exacerbate a range of health issues, including:

- Asthma
- Chronic obstructive pulmonary disease (COPD)
- Coughing and irritation of the throat
- Inflammation of the lungs
- Risk of lung cancer
- Airway congestion
- Chest pain
- Heart attacks

Over 4 million people die prematurely from illness attributable to the household air pollution from cooking with solid fuels. 3.8 million premature deaths annually from noncommunicable diseases including stroke, ischemic heart disease, chronic obstructive pulmonary disease (COPD) and lung cancer are attributed to exposure to household air pollution.

5. Ultraviolet Radiation

- Increased levels of ultra violet (UV) radiation due to ozo depletion may have serious consequences for living organisms
- Adverse impact of ultra violet-Beta (UV-B) rays has been repor on terrestrial plant growth and photosynthesis.
- Increased UV-B has also been shown to have a negati influence on aquatic organisms, especially small ones such a phytoplanktons, larval crabs, shrimps, and juvenile fish.
- Since many of these organisms are at the base of the marine foo chain, increased UV-B may seriously affect aquatic ecosyster
- Furthermore, increased UV-B radiation affects troposphe air quality and may cause damage to materials such as wood plastic and rubber.

Health impact of climate change is likely to be associate with multitude of effects: The IPCC AR5 mention few studies whic states that ultraviolet radiation (UVR) are linked to higher incidence. few skin carcinoma for every 1°C increment in average temperature However, exposure to the sun also has beneficial effects on synthes of vitamin D, with important consequences for health. Accordingly th balance of gains and losses due to increased UV exposures vary wit location, intensity of exposure, and other factors (such as diet) tha influence vitamin D levels. The excess of exposure to solar ultraviol radiation (UVR) even within the ambient environmental range ma results in sunburn, photo-ageing, cataracts, immune suppression an skin melanomas. UVR induced immune-suppression may influenc occurrence of various infectious diseases as well as affect vaccin efficacy. There is evidence to support a relationship between sunbur during childhood and adolescence and skin cancer in adulthood.

(B) Indirect Impacts of Climate and Weather on Health

Indirect impacts are due to ecological disruptions, rising sea leve changing temperatures and precipitation patterns which leads to cro failures, shifting patterns of disease' vectors, water-borne disease vector-borne disease. Climate dependant diseases particularly affectin the vulnerable populations include the following:

1. Air-Borne and Cardio-Respiratory Illnesses

Climate change influences various illnesses including respirator tract infections like asthma, rhino-sinusitis, chronic obstructiv pulmonary diseases (COPD), respiratory viral diseases (Avian Influenza & circulatory collapse posing danger to cardiac patients. The cite easons are poor air quality, high ozone, dust storms, extreme heat esertification, alteration of allergens, change in timing and duratio

of survival and transmission cycle of respiratory virus, alteration in bird migration. Further the other contributory factors are demographic factors (age, sex, immunity status, pregnant women, prevailing endemic illnesses etc) low socio-economic status, overcrowding, poor hygienic conditions, accessibilities to health care facilities, population with tuberculosis, immune-compromised level, or mentally or physically challenged people.

2. Vector-borne diseases (VBD)

Climate change and other weather parameters have significant impact on vector borne diseases such as Malaria, Dengue, Chikungunya, Japanese Encephalitis, kala-azar, and filariasis. The known parameters are temperature, humidity, wind, rainfall, flood and drought, affecting 'distribution of vector' and 'effectiveness of transmission of pathogen' through vectors. The temperature affects vectors' survival, population growth, feeding behaviour, susceptibility to pathogen, incubation period, seasonality of vector activity as well as pathogen transmission. The roles of rainfall on vectors are: increase in breeding sites due to increase in surface water, increase vegetation and expansion of vertebrate hosts, flooding bring vertebrate host close to human population. Other factors affecting VBDs are population growth, population displacement, socioeconomic status, changes in residential pattern, changes in land use, water projects, agricultural practices, housing projects, international travel, resistance of diseases vectors and pathogens, accessibility to health care and diagnostic facilities.

3. Waterborne & Food borne diseases

Typhoid, hepatitis, dysentery, and others caused from micro-organisms such as Vibrio vulnificus and Vibrio cholera, E.Coli, Campylobacter, Salmonella, Cryptosporidium, Giardia, Yersinia, Legionella are some climate-dependant infectious diseases. The increase in temperature is seen to be associated with increased survival and abundance of micro-organisms. The decreased precipitation and drought result in decrease availability of safe-water, reuse of wastewater, contamination of water sources, transmission from vertebrate to human or human to human etc. Flooding cause contamination of water source as well as disruption of sewage disposal system, further contributors are population displacement, overcrowding, poor sanitation and hygiene, subsequent faeco-oral contamination and spread of pathogens etc .

4. Malnutrition and Consequent disorders

Climate change result in food insecurity, namely, food availability, food accessibility, food utilization, and food system stability. Drought occurrence diminishes crop yield, dietary diversity, supply chain disrupted, increase in market prices, also reduction in animal and

aquatic products are being experienced. These factors reduce overall food consumption, and may therefore lead to macro as well as micronutrient deficiencies. For India, a proactive approach is critical as nearly half of children (48%) aged less than five are chronically malnourished, more than half of women (55%) and almost one-quarter of men (24%) are anaemic (NFHS-3). The health of the vulnerable population is further threatened by the changing climate. There are certain positive effects of climate change too, like modest reductions in coldrelated morbidity and mortality, geographical shifts in food production, and reduced capacity of disease-carrying vectors due to exceeding of thermal thresholds.

5. Mental health

Extreme weather and natural disasters can be traumatic and stressful for the people whom they affect. People may undergo displacement, injury, the loss of their home and possessions, or the loss of loved ones. Extreme heat may also have a more significant effect on people with mental health conditions. According to the Centers for Disease Control and Prevention (CDC), suicide rates have a negative effect on depression and other mental health conditions. Extreme temperatures can also change how certain medications, such as schizophrenia treatments, work in the body. In addition, they may affect people's ability to regulate their body temperature correctly. Natural disasters, such as Hurricane Katrina, have negative mental health effects on those involved, including post-traumatic stress disorder and high levels of anxiety. Floods, heat waves, and wildfires may also create these issues. Concerns about the effects of climate change may also be a source of increased anxiety or despair for some people.

CONCLUSION

Climate change is happening and it is caused largely by human activity. Its impacts are beginning to be felt and will be worsen in the decades ahead unless we take action. The increasing rate of global warming courtesy of carbon dioxide and other green house gas emissions from human activities have led to climatic changes and environmental degradation, which in turn have resulted to great challenges in relation to diseases and human health. Many diseases which were previously unknown in certain climatic zones are now finding their way to such areas, due to changes in the weather conditions. In the coming decades, doctors who are interested in the long-term health of their patients and communities will have a central role in the mitigation of climate change and in preparing for and managing its adverse health impacts. Interdisciplinary and intersectional partnerships from the

local to international level that seek to improve health through rapid deployment of mitigation strategies to stabilize climate change and development of proactive adaptation programmes to minimize health impact of climate change are fundamental. We must act now because the rate at which the human environment is changing is alarming and the impact of climate change on human health is getting worrisome. All tiers of government, health professionals and other stakeholders should be able to marry the socioeconomic development of our generation and the global ecosystems. Protecting Health from Climate Change depends on how we address the challenges posed by climate change and ozone layer depletion.

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Contents

डॉ. भावना सिंह, चौधरी चरण सिंह विश्वविद्यालय के शहीद मंगल पांडे राजकीय महिला स्नातकोत्तर महाविद्यालय, मेरठ में असिस्टेंट प्रोफेसर, बीएड विभाग में अध्यापनरत है। इन्होंने बीएड एएम.ए. (शिक्षाशास्त्र) एम.ए. (प्राचीन भारतीय इतिहास), यूजीसी नेट (2003), यूजीसी जे.आर.एफ. (2004), एवं जे.आर.एफ. एवं एस.आर.एफ. छात्रवृत्ति के साथ इलाहाबाद विश्वविद्यालय, इलाहाबाद से 2011 मे डी. फिल. की उपाधि प्राप्त की है। लेखिका का 11 वर्ष का शिक्षण एवं शोध अनुभव भी है। इन्होने 50 से अधिक राष्ट्रीय एवं अंतर्राष्ट्रीय सेमिनार/ कॉन्फ्रेंसो में शोध पत्रों का प्रस्तुतीकरण किया है एवं 20 से अधिक राष्ट्रीय एवं अंतर्राष्ट्रीय शोध पत्रिकाओं में लेख भी प्रकाशित हुए हैं। जिसमें से 8 शोध पत्र यूजीसी लिस्टेड एवं यूजीसी केयर लिस्टेड जर्नल में प्रकाशित है। इसके अतिरिक्त अनेक पाठ्य सामग्री एवं ई-कटेन्ट भी निर्मित किए हैं।

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डॉ. भावना सिंह

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डॉ० भावना सिंह

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प्राक्कथन

शिक्षा सभ्य समाज, सुसंस्कृत एवं प्रगतिशील मानव समाज के लिए एक आधार शिला का निर्माण करती हैं। राष्ट्रीय विकास में योग्य, कुशल एवं शिक्षित नागरिकों का महत्वपूर्ण योगदान होता हैं। शिक्षा के इस महत्व को स्वीकार करते हुए। भारतीय संविधान में 6-14 वर्ष के बच्चों की शिक्षा को मौलिक अधिकार बनाया गया हैं। वर्ष 2011 की जनगणना से पता चलता है कि भारत में विकलांगों की कुल संख्या करीब 2-68 करोड़ या आबादी का 2-21% है जो अपनी विशेष स्थिति के कारण समाज की मुख्यधारा से अलग हो गये हैं। जिन्हे समाज की मुख्यधारा में सम्मिलित करने के लिए उचित शिक्षण एवं प्रशिक्षण की आवश्यकता होती हैं। जिससे विकलांग व्यक्ति भी आत्मनिर्भर हो सके और समाज के विकास में अपना योगदान दे सकें। विकलांग बच्चों के शिक्षण एवं प्रशिक्षण के लिए सरकार द्वारा विशिष्ट शिक्षा की व्यवस्था की गयी है। विशिष्ट बच्चों के असाधारण या भिन्न आवश्यकता के लिए विशेष रूप से संरचित अनुदेशन को विशिष्ट शिक्षा के रूप में परिभाषित करते है। विशिष्ट शिक्षा में विशिष्ट शिक्षण सामग्री, प्रशिक्षण प्रविधियों, विशिष्ट उपकरण और विशिष्ट रूप से प्रशिक्षित शिक्षकों की आवश्यकता होती है। सभी शिक्षण सामग्री प्रविधियों तथा विशिष्ट उपकरणों का महत्व तभी हैं, जब भली-भाँति और समर्पित शिक्षक इन सभी का उपयोग मेहनत और लगन से करें। अतः शिक्षकों को विशिष्ट शिक्षा की पूर्ति हेतु अति महत्वपूर्ण होने के कारण प्रस्तुत शोध द्वारा यह जानने का प्रयास किया गया है, कि मूक बधिर तथा अन्ध विकलांग विद्यालयों के शिक्षकों के व्यक्तित्व, मूल्य, शिक्षण अभिक्षमता तथा कृत्य सन्तोष उन्हें कैसे प्रभावित करते है।

प्रस्तुत पुस्तक के प्रथम अध्याय में विकलांग बालक, शारीरिक विकलांग, विशिष्ट शिक्षा का इतिहास, विशिष्ट शिक्षा, श्रवण क्षतियुक्त तथा दृष्टि दुर्बल बालकों की शिक्षा, विशिष्ट शिक्षक, अध्ययन की आवश्यकता, अध्ययन के उद्देश्य, परिकल्पनाएं अध्ययन की परिसीमाएं, पदों की परिभाषाओं पर विचार किया गया है। द्वितीय अध्याय में सम्बन्धित साहित्य का सर्वेक्षण व तृतीय अध्याय में शोध अभिकल्प का वर्णन किया गया है। जिसमें शोध विधि, जनसंख्या, न्यादर्श, प्रयुक्त शोध उपकरणों, आंकड़ों का संग्रह तथा प्रयुक्त साख्यिकीय प्रविधियों का उल्लेख किया गया है चतुर्थ अध्याय में प्रदत्त विश्लेषण व परिणामों का प्रस्तुतीकरण व उनका विवेचन किया गया है। पंचम अध्याय में निष्कर्षों उनके शैक्षिक निहितार्थों तथा भावी अध्ययन के लिए सुझाव का उल्लेख किया गया है।

– डॉ० भावना सिंह

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Impact of Indian Culture, Custom and Traditions on Environment and Ecosystem

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Abstract

In many parts of our country most of the communities have the rich traditions of love and reverence for nature through ages. There are so many religious preaching, traditions and customs which play an important role for the betterment of the nature. This culture of the conservation of nature dates back to the ancient period. All the four Vedas are full of hymns dedicated to the supremacy of various natural entities. The Rigvedic hymns refer to many Gods and Goddesses identified with sun, thunders, lightening, snow, rain, water, rivers, trees etc. The Ganga is a river but we called Ganga with honour as Ganga Mayya (mother), which wash away our criminal offences after bathing. Moon is actually a satellite but it belongs to holy faiths and called Chanda Mama. Trees like Banyan, Peepal, Neem, Tulsa, Asoka, Sandalwood, Coconut, Durva grass, Marigold, Aak, lotus, are related with our religious rituals. 'Jeevon Par Daya Karo' is an important idea of Buddhism.

Many Hindu God and Goddesses have some particular animal or birds as their vehicles (Vahanas). Lion, tiger, elephant, bull, horse, peacock, swan, owl, vulture, ox, mouse etc are the main animals which were used as Vehicles. This dependency of our God and Goddesses on animals and birds tells us the relationship between human and nature. This type of people's religious beliefs played an important role for the preservation of natural entities. Today when the world is undergoing a serious crisis of ecological imbalance and environmental degradation. Therefore, it is necessary to discuss the journey of human from ancient time to till now. It is also important to know the factors which are responsible for this crisis.

Keywords: Religious preaching, Vedas, Durva grass, Peepal tree, Buddhism, Ecological imbalance, Environmental degradation.

Introduction

Modern man tend to look down upon indigenous people as primitive, backward and superstitious. They may be poor, illiterate and disadvantaged in many other ways, but they have a tremendous understanding of ecosystems and the factors that sustain them[1].Our ancestors used nature and natural things in their daily life. They used fruits and vegetables as food items to alive. They used natural caves for stay and save their life from uneasy climatic changes such as rain, cold, sunlight, hot weather, storms, and dangerous wild animals. It is the glory of our country that all citizens respect nature and natural creations. We are very rich in this regard that our ancestors transfer the valuable knowledge and thoughts to save our environment and climate. Our ancestors love birds, animals, plants, herbs, trees, rivers, mountains, sun, moon, planets and earth. We call ganga river as Ganga Mayya which wash our sinfulness and criminal activities after bathing in ganga. We faith Ganga is not a river but it is a holy river which was carried from heaven to earth by Bhagirath. Today, not only India but also whole world is undergoing a serious crisis of ecological imbalance, unusual climatic changes and environmental degradation, it is very important to know about the culture of our ancestors and acts of the modern society for sustainable development .Scholars of environmental ethics and Indic traditions have differentiated two models of environmental awareness for our country; the "Development model" and The "Renouncer model".[2] These two models are based on a long-standing dichotomy between the householders and ascetic[3] Householders perform devotional and ritualistic activities whereas ascetics perform austere practices. Most of Indians prefer devotional rather than ascetic practices. To be sure, the devotional Indians do not reject ascetics. They continue to attend discourses by ascetics and pay their respect to them but their own practices largely consist of daily rituals, puja at home and at temples[4].

Our Ancestors and Their Environmental Awareness

Living in harmony with nature has been integral part of Indian culture. Early peoples were aware about the importance of the nature and natural resources like trees, agricultural plants, rivers mountains, sunlight, moon and rains. They live in natural caves to protect their lives from cold, rains, floods and dangerous animals. The relationship between culture and ecology was the integral part of ancient Indian

society. During the course of evolution of the human race, civilization has transformed the environment in countless ways. Use of fire, domestication of animals and agricultural practices are the main steps to modify their life style. In the Indus Valley civilization was a Bronze Age civilization (3300-1300 BCE) extending from northeast Afghanistan to Pakistan and northwest India. Along with Ancient Egypt and Mesopotamia, it was one of three early civilizations of the old world, and one of the most widespread. Peoples were very much close to forest, rivers, mountains and other natural resources. Many characteristics of civilization as planned cities, water drainage system and social structure showed their environmental awareness. The presence of leaves, peacocks, tiger, elephant, bulls, one horned deer etc on the seals and mud pots indicates the pattern of biodiversity in their society[5]. Several characteristics of the city planning, drainage system and social structure showed environmental awareness but it was the environmental and climatic change which was probably the main reason behind the fall of this civilization3. In many coins and seals in Harappa there were many animals including elephants, rhinoceros and tigers. But at this time there is no forest area in Harappa and Mohenjo-Daro, which may indicate the change in climatic conditions[6]. An icon, which had both the characteristics of human and other animals. In the seal of Pasupathi, a man was encircled with animals proved that they often went want to the forest to spend a part of their life[6], which reflects their closeness with nature.

Hindu Mythology and Nature

According to Hindu mythology Brahma, Vishnu and Mahesh is the main holy trinity who create, preserve and destroy the whole world. Brahma is creator, Vishnu is preserver and Mahesh is destroyer of this world[7]. Vedas are universally accepted to be the most precious Hindu heritage, which are most valuable. Vedas contained many references about environment conservation, sustainable development, ecological balance and climatic changes, which indicates the awareness of the people at that time. They were very sensitive about environment and ecology. The Mahabharata, Ramayana, Vedas, Upanishads, Bhagavad Geeta, Purana and Aranyak were full of the messages for preservation of nature, environment and ecological balance. Cutting of green trees were prohibited and punishments were fixed for this type of bad acts[8]. In the Geeta Lord Krishna says to Arjuna, "Of all that is material and all that is spiritual in this universe, know for certain that I am both its origin and dissolution" (Gita 7.6). Lord Krishna also says," The cosmic order is under me. By my will it is manifested again and again and

by my will, it is destroyed at the end" (Gita7.6)[9]. According to Hindu mythology both God and Prakriti (Nature) was to be same and the one. Prajapati (in Rigveda) is the creator of sky, earth, oceans, mountains and all other species found at earth, he is also their protector and destroyer.The four Vedas are full of references to various herbs, trees and flowers and their significance. Trees and plants were considered as animate beings and to harm them was regarded as a sacrilege. The Atharva Veda glorifies the medicinal value of various herbs. In the ancient texts we come across reference to trees like Kalpavraksha and Parijata with mythical powers Padma (lotus) and trees like Vatvraksha (Banyan), or flame of the forest, Palasa (Butea frondosa) were given special attention. The worship of the Peepal tree (Ficus religiosa, also known as Boddhi tree) became a folk ritual, and the Peepal was called the king of trees in Brahma Purana.In the course of time, many such type of plants and trees came to be associated with various gods and goddesses and were worshipped accordingly. There are so many traditions are continuing for a long time. In our society, we must have seen women moving in circle around a tree each morning and many other traditions.[10]

The Rigvedic hymns refer to many Gods and goddesses identified with sun, moon, thunder, lightning, snow, rain, water, rivers, snow, rain, water, rivers, trees etc. They have been glorified and worshipped as givers of health, wealth and prosperity. The God of rain (Indra) has the largest numbers of hymns attached to him. The four Vedas are full of references to various herbs, trees, flowers and their significances. The Atharva-Veda glorifies the medicinal value of herbs and other medicinal plants. The Ayurveda is also related to the medicinal plants which are used for curing many diseases. In the ancient texts we come across references of trees like Kalpavraksa and Parijata with mythical powers. There are some scientific reasons underlying those beliefs. The Peepal tree releases oxygen 24 hours in atmosphere, and therefore, such knowledge must have been put into a spiritual form by our ancestors[11].Flora and fauna and their associations with human beings were depicted in epics like Mahabharata, the Ramayana, and in Kalidasa's composition such as Meghaduta, Abhigyan shankuntalam. They provide colourful potryal of trees, creepers, animals and birds conversing with people and sharing their joys and sorrows, which shows that people believed in harmony between human and nature. Kautilya's Arthasastra also mentioned forests and animal sanctuaries where animals were protected from poaching. A superintendent of forests was responsible for their upkeep and for the proper management of forest produce, poaching was punished with various penalties[12].

Atharva Veda also mentions about the importance of air, water and green plants essential for human existence. Plants and herbs destroy poisons (pollutants) (Atharva Veda 8.7.10) , "Plants possess the qualities of all all duties and they are serious to humanity" (AtharvaVeda 8.7.4). The Indian traditions teach us that all forms of life- plants, animals and human beings are closely interlinked and independent and that disturbances in any one of them would jeopardize the entire ecological balance of the universe[13]

Environmental Conservation in Buddhism and Jainism

"Dhamma is nature, natural truth, natural law and the teachings of Buddha". Buddhism and Jainism both are inspired by truth, peace and humanity and founded by Gautam Buddha and Mahavira. Indian society possesses various spiritual qualities and successfully moved away from animal killing for Yagna and food. "Jeevon par Daya karo is the main hymn of Buddha dharma. Buddhist are very careful about animals and plants. They love nature and peace. Jainism classifies the various living beings into two categories according to their development and sense faculties. All the living beings are fall in two classes, Trasa or mobile and Stharva or immobile. Trasa living beings are tosoe possess two, three, four and five sense organs. Humans are fall in this category. Stharva living beings are those who possess only one sense organ of touch. Stharva living beings are of five kinds, earth-bodied, water- bodied, air-bodied, fire- bodied and vegetables. A Jain monk is supposed to avoid injury to all trasa and stharva beings and a Jain householder is also supposed to avoid injury to trasa and minimise injuries injury to stharva beings. This is the main reason that all Jain followers avoid eating meat and other vegetables which are roots of plants. In this way Jain followers save animals and other plants and help to save our environment. Jain followers also avoid eating fruits and vegetables that may contain living organism such as fig and honey. Even Jain followers wrap their mouth with a cloth to avoid taking inside small organism from air with their breath.

Aparigrah is a hymn of Jain Dharma which means non accumulation of material things. Aparigrah is an obstacle against consumerist revolution in India. Only in 1990's, finally, India also started embracing Western capitalist model of economy and now market forces are fast transcending the proverbial, "Hindu rate of economic growth". Until this Western market invasion, this rate of growth might have been both the result and the reason for limited Indian spending for consumer goods[14]. It is clear that these two heterodox sects of ancient times also advocated nature conservation. At one side Buddhism believes in

tolerance, love, compassion, forgiveness and non-violence to all and on the other side Jainism advocates complete non-violence or Ahimsa; it treats every creature on earth including the smallest insects or microbes as of equal importance and forbids their killing by all means. This perception was a long way to preserve biodiversity on earth.

Bishnois and Environmental Conservation

During the medieval period in India there are some Religious groups dedicated for environmental conservation. They believed that environmental conservation is a holy act and they perform it with spirituality. One of such group was Bishnois, which became widely accepted in a climatically hostile zone of Rajasthan. The followers of this group advocated the banning of cutting tree because they believed that trees are the basis of a harmonious and prosperous environment. They love for trees was so greatly infused in the minds and souls of the Bishnois that in Khejali village of Rajasthan. The Bishnois are a small community in Rajasthan, India, who practise a religion of environmental conservation. They are very active towards the conservation of nature and natural entities. They believe that cutting of trees or killing of animals is a criminal offence and all the criminals who are responsible for this type of activities should be punished. Their religion, an offshoot of Hinduism, was founded by Guru Maharaj Jambaji, who was born in 1451 CE in the Marwar area in Rajasthan. In his younger age he saw that during the drought in Rajasthan peoples cut down the trees to feed animals, but when drough continued for a long time nothing was left to feed animals, so animals died. Jambaji thought that if trees were protected, animals' life would be sustained and his community would survive. He gave 29 Injunctions and principles among them was a ban on the cutting of any green tree and on the killing on animal or bird for any purpose.

After 300 years King of Jodhpur wanted to build his new palace in Bishnois area which was densely covered by trees. He sent his soldiers to cut the trees of that area, peoples of Bishnoi followers protested and the Bishnois, led by a woman, hugged the trees to protect them with their bodies. Soldiers started to kill the Bishnois and soldiers kept on killing the villagers, more and more of Bishnois came forward to honour the relifious injunctions and principles of their Guru Maharaj Jambaji. The massacre continued until 363 persons were killed defending trees. When the King heard about this human sacrifice, he stopped the operation, and gave up the Bishnois state protection for their belief.[15] Today the Bishnois community continue to protect trees and animals with the same efficiency. Their community is a best example of the

Hindu-based rituals defence of the environment in our country, and their sacrifice became the inspiration of Chipko and Apiko movement in India. The genesis of Chipko movement[16] is not only to be found in the ecological or economic background but, in spiritual and religious belief.

Conclusion

Today when we are facing a lot of problems by environmental degradation and climate change and losing lives of our valuable citizens by the irregular climatic changes, it is our moral responsibility to save our environment by using our precious culture, custom and traditions, which were used by our ancestors. It is the time to change our lifestyle, daily routine, bad habits and environmental enemy activities. We are very rich with natural entities. Reverence and regard for nature and its creations – air, water, land, soil, plants, insects, animals, mountains, rivers, forests and oceans are the soul of our country. Hinduism, Jainism, Buddhism, Islam or Christianity all regard the nature. Hinduism has gone one step further. They identified Flora and Fauna with particular personalities of the Hindu pantheon and started worshipping them. Bishnois are our lodestar which guide us to conserve our environment. With the advancement of civilization and development, environment degradation has raised the uncomfortable question about the concept of development itself. Development as expected has increased consumerism not only in mega cities but in small towns also. Therefore, it is required to see back our culture, custom and traditions to protect our environment and climate

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[Course Code-B010102P] Credit: 2, Marks (75 + 25)

Lab Experiment List

1. Moment of inertia of a flywheel
2. Moment of inertia of an irregular body by inertia table
3. Modulus of rigidity by statistical method (Barton's apparatus)
4. Modulus of rigidity by dynamical method (sphere /disc /Maxwell's needle)
5. Young's modulus by bending of beam
6. Young's modulus and Poisson's ratio by Searle 's method
7. Poisson's ratio of rubber by rubber tubing
8. Surface tension of water by capillary rise method
9. Surface tension of water by Jaeger's method
10. Coefficient of viscosity of water by Poiseuille's method
11. Acceleration due to gravity by bar pendulum
12. Frequency of AC mains by Sonometer
13. Height of a building by Sextant
14. Study the wave form of an electrically maintained tuning fork / alternating current source with the help of cathode ray oscilloscope

Brief Contents

EXPERIMENT

1 Moment of Inertia of a Flywheel

Object: To determine the moment of inertia of a flywheel about its own axis of rotation

Apparatus used: A flywheel, a few masses, stopwatch a strong and thin string, meter scale and vernier callipers

Formula used: As we know the kinetic energy of mass m having linear velocity v is given by $K = \frac{1}{2}mv^2$ and in the same manner. The kinetic energy of a body having I moment of inertia and ω angular velocity is expressed as

$$K = \frac{1}{2} I\omega^2 \qquad (1)$$

Where I, moment of Inertia depends on distribution of mass and axis of rotation

So fly wheel has large moment of Inertia and equation (1) shows that it can be used to store large kinetic energy

And the moment of inertia of flywheel is given by

$$I = \frac{2mgh - mr^2\omega^2}{\omega^2\left(1 + \frac{n_1}{n_2}\right)} \quad \Rightarrow \quad \frac{\frac{2mgh}{\omega^2} - mr^2}{\left(1 + \frac{n_1}{n_2}\right)}$$

As $\omega = \frac{4\pi n_2}{t}$ and $h = 2\pi r n_1$

$$I = \left(\frac{2mg\,(2\pi r n_1)\,t^2}{(4\pi n_2)^2} - mr^2\right) \Big/ \left(1 + \frac{n_1}{n_2}\right)$$

$$I = \frac{mr\left(\frac{gt^2 n_1}{4\pi n_2^2} - r\right)}{\left(1 + \frac{n_1}{n_2}\right)}$$

Here, g = gravitational acceleration

r = radius of flywheel axis

m = mass suspended through the string

n_1 = number of turns of string that wrapped on axle

n_2 = number of revolutions upto flywheel stopped after string leave the axis

t = time taken in n_2 revolutions

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Brief Contents

CHAPTER

1 Newtonian Mechanics

1. Introduction

Mechanics, the oldest physical science concerned with the study of motion of object or bodies, Mechanics may be divided into kinematics and other is Dynamics.

In kinematics, we describe the motion of bodies. In dynamics, we relate motion of object to forces associated with it as well as the properties of moving object.

Newtonian Mechanics based on application of newton's Law of motion. We easily apply Newtonian Mechanics on daily life because velocity of moving bodies is compatibly smaller than velocity of light.

However for practical applications, Relativistic effect are negligible and Newtonian Mechanics is an adequate description at low velocity.

2. Dynamics of a System of Particles

2.1 Historical Developments of Mechanics up to Newton

Mechanics involves a basic study of the various natural phenomena. It can rightly be regarded as the basics of all science. Mechanics has played an important role in the development of Physics. Mechanics Concerned with the motion of physical objects under the action of forces.

2.2 Some Important discoveries

Aristotle and other philosophers used a priori logic as arm chair physicist in the last few centuries BCE.

In the second century CE ptolemy brought the study of astronomy into a more touchable field of study, with a some what more scientific approach. He anticipated eclipses and studied the motions of the planets using the naped eye. In the 1500's to mid 1600's was Galileo, who discovered all sorts of stuff like using a telescope to look into space and some concepts like inertia

Second half of the 1600's, Isaac Newton invented calculus of course and unified the laws of motion, basically invented the modern field of physics.

2.3 Physics Related to Society and Technology

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Brief Contents

CHAPTER

1 Kinetic Theory of Matter-Ideal Gas

1. Introduction

The kinetic theory of matter, which take into account the microscopic structure of matter, states that matter is made up by large number of small particles, individual atoms or molecules that are in constant motion. Basically this theory helps to explain the behaviours of matter.

It is based upon two postulates, which are

1. Matter is not continuous but consists of very small particles in large number called molecules.
2. The molecules of matter are constantly in a state of raped rectilinear motion and energy of such molecules constitutes the heat content of the matter.

On the basis of kinetic theory of matter, three states of matter can be explained as follow

Solids : Solid is one of the four fundamental states of matter, the other being liquid, gas and plasma. The atoms in a solid are tightly bounded to each other and molecules can oscillate about their mean position at regular interval and therefore solid has a definite shape and volume.

When a solid is heated, its molecules gain heat energy and so the distance between their equilibrium position increases, therefore solid body expand (thermal expansion) when heat is further given, then distance between molecules becomes so much large that force of attraction between molecules becomes very feeble. Now molecules are free to move and then they turn into the liquid form of matter (melting of solid). In this conversion process (solid to liquid) temperature of solid and liquid remains same, because heat taken by the solid in melting is used against the force of attraction between the molecules and pulled them apart, this is said to be fusion of the solid.

Liquid : A liquid is a nearly incompressible fluid and has a definite volume but no fixed shape. In this state molecules are less closer in comparison of solid state so a smaller attraction exist between the molecules therefore molecules can move freely interior of the container but they are not capable to leave the liquid, so molecule has a definite size but not a definite shape.

When the temperature increases it increases vibration of the molecules causes distance between the molecule to increase when a liquid reaches its boiling point, the cohesive forces that bind the molecules closely together break and liquid state change into the gaseous state.

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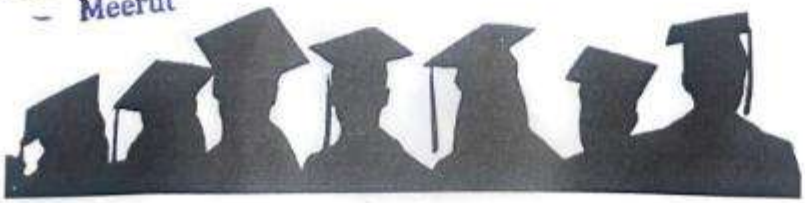

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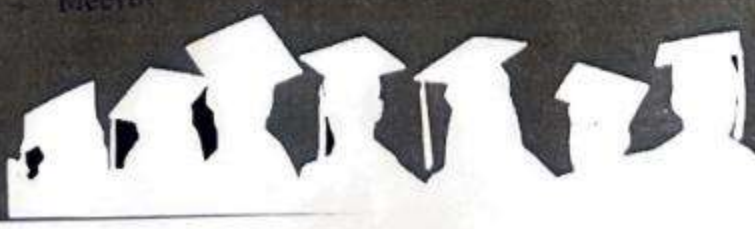

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Brief Contents

CHAPTER 1

Current Electricity

1. Introduction

If the charges are static i.e., stationary, we get an electro-static field in their vicinity and a static potential is developed.

However, if there is a potential difference, the charges start to move. This constitutes an electric current, the magnitude of which depends upon the resistance (R) offered to its flow, given by Ohm's law. In this chapter, we will study the growth and decay of current in electrical circuit containing the electrical elements i.e., resistance (R), inductance (I) and capacitance (C). We will further study about the L-C-R circuit theory in detail and the growth, decay of current in this circuit.

2. Kirchhoff's Law

In some cases it is difficult to get the solution of electric circuits easily with the help of Ohm's law. On the other hand, Kirchhoff's laws are very useful tool in such cases.

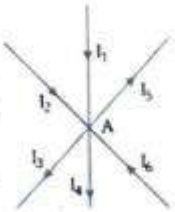
There are two Kirchhoff's laws. They are stated as follows :

1. Kirchhoff's Current Law (KCL)
2. Kirchhoff's Voltage Law (KVL)

2.1 Kirchhoff's Current Law

In any electrical circuit, the algebraic sum of currents meeting at any junction or node at any instant is zero.

In figure 1 (a), it has been shown that the current I_1, I_2 and I are entering to the point A while the currents I_3, I_4 and I_5 are leaving from the point A.



Assuming that, incoming currents is positive while outgoing current is

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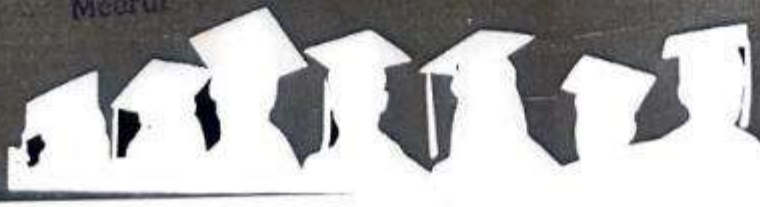

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अध्याय

1

वैद्युत धारा
(Current Electricity)

1. परिचय (Introduction)

यदि आवेश स्थैतिक (Static) अर्थात् स्थिर (Stationary) हो, तो हम उसके आस-पास के क्षेत्र में वैद्युत स्थैतिक (Electro-static) क्षेत्र प्राप्त करते हैं तथा एक स्थैतिक विभव (Static potential) उत्पन्न होता है। यद्यपि यदि विभवान्तर हो तो आवेश गतिशील हो जाते हैं। यह एक वैद्युत धारा उत्पन्न करता है, जिसका परिमाण ओम के नियम के अनुसार उस धारा के प्रवाह में उत्पन्न प्रतिरोध पर निर्भर करता है। इस अध्याय में हम वैद्युत तत्वों; जैसे–प्रतिरोध (R), प्रेरक (L) तथा संधारित्र (C) युक्त परिपथ में प्रवाहित धारा के क्षय तथा वृद्धि का अध्ययन करेंगे। इससे आगे हमें L-C-R परिपथ के सिद्धान्त का विस्तारपूर्वक अध्ययन करेंगे एवं इस परिपथ में धारा-क्षय/वृद्धि जानेंगे।

2. किरचॉफ नियम (Kirchhoff's Law)

कुछ स्थितियों में, ओम के नियम के अनुसार वैद्युत परिपथों का हल प्राप्त करना कठिन होता है। दूसरी ओर, इन स्थितियों में किरचॉफ के नियम का प्रयोग अत्यन्त उपयोगी है।

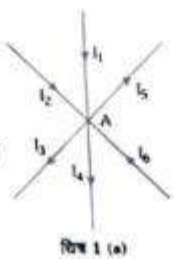
किरचॉफ के दो नियम हैं, जोकि निम्नलिखित हैं–

1. किरचॉफ का धारा नियम (Kirchhoff's Current Law)
2. किरचॉफ का वोल्टेज नियम (Kirchhoff's Voltage Law)

2.1 किरचॉफ का धारा नियम (Kirchhoff's Current Law)

"किसी वैद्युत परिपथ में किसी संधि पर मिलने वाली सभी धाराओं का बीजगणितीय योग (Algebraic sum) शून्य होता है।"

चित्र 1 (a) में दिखाया गया है कि धारा I_1, I_2 तथा I_6 बिन्दु A पर प्रवेश कर रही हैं तथा धाराएँ I_3, I_4 एवं I_5 बिन्दु A से निकल रही हैं।



चित्र 1 (a)

मान लीजिए, आने वाली धाराएँ धनात्मक, जबकि जाने वाली धाराएँ ऋणात्मक हैं।

अतः संधि A पर KCL के अनुसार,

$$I_1 + I_2 + I_6 + (-I_5) + (-I_3) + (-I_4) = 0$$

अथवा $I_1 + I_2 + I_6 = I_3 + I_4 + I_5$

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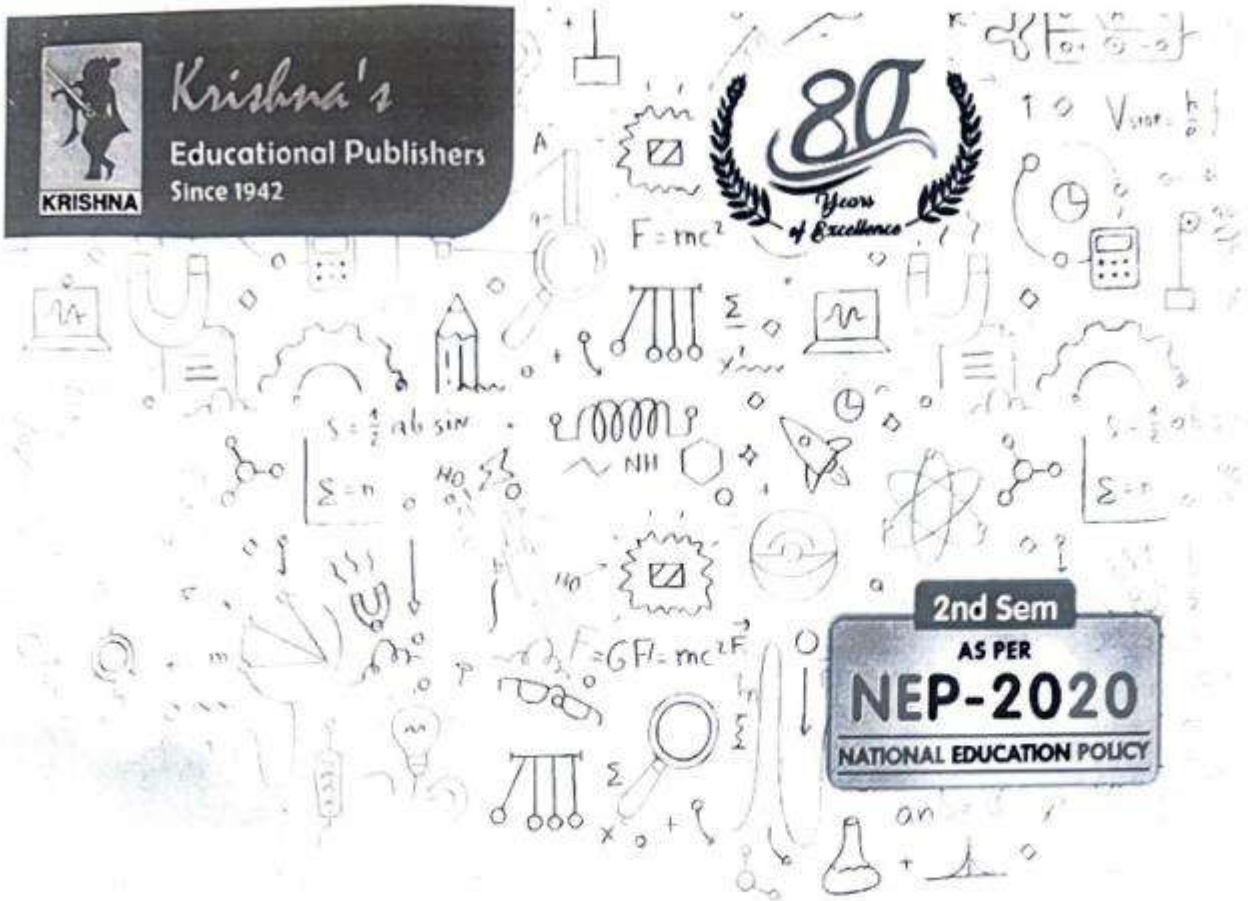

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1 Moment of Inertia of a Flywheel

Object: To determine the moment of inertia of a flywheel about its own axis of rotation.

Apparatus used: A flywheel, a few masses, stopwatch a strong and thin string, meter scale and vernier callipers.

Formula used: As we know the kinetic energy of mass m having linear velocity v is given by $K = \frac{1}{2}mv^2$ and in the same manner. The kinetic energy of a body having I moment of inertia and ω angular velocity is expressed as

$$K = \frac{1}{2}I\omega^2 \qquad \ldots(1)$$

Where I, moment of Inertia depends on distribution of mass and axis of rotation.

So fly wheel has large moment of Inertia and equation (1) shows that it can be used to store large kinetic energy.

And the moment of inertia of flywheel is given by

$$I = \frac{2mgh - mr^2\omega^2}{\omega^2\left(1 + \frac{n_1}{n_2}\right)} \quad \Rightarrow \quad \frac{\frac{2mgh}{\omega^2} - mr^2}{\left(1 + \frac{n_1}{n_2}\right)}$$

As $\omega = \frac{4\pi n_2}{t}$ and $h = 2\pi r n_1$

$$I = \left(\frac{2mg\,(2\pi r n_1)\,t^2}{(4\pi n_2)^2} - mr^2\right) \Big/ \left(1 + \frac{n_1}{n_2}\right)$$

$$mr\left(\frac{gt^2 n_1}{4\pi^2 n_2^2} - r\right)$$

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A Historical Analysis Of The New Economic Policy Of India

Dr. Bharti Dixit
Dr. Archie Ashish Rao

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