

# Monitoring of microbes and possible remediation through genetically engineered microbes

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## 14.1 Introduction

In recent years, environmental contamination due to human activity has become a widespread concern [1–3]. Various poisonous contaminants, such as aromatic compounds, pesticides, microplastics, and heavy metals, are found in industrial waste products that directly or indirectly affect the environment and humans [4–7]. These hazardous contaminants lead to cardiovascular and respiratory diseases as well as several cancers [8]. Several factors contribute to bioremediation's popularity, including safety, sustainability, and economics [9,10]. Traditional remediation methods use chemical and physical processes. Water and air are used to transfer toxins into the other medium, where they are concentrated and decomposed or destroyed, e.g., by oxidation. Even though chemical methods are expensive and inefficient, decomposition reactions may produce hazardous intermediates [11].

Living organisms such as bacteria perform bioremediation by utilizing toxic chemicals and contaminants as nutrients for growth. Living organisms eliminate or reduce pollution by eliminating or converting pollutants into nonhazardous products [9]. Compared to other clean-up methods, bioremediation offers numerous benefits. Bioremediation relies on natural metabolic processes in living systems, which produce by-products, minimizing environmental damage. Furthermore, because microbes contain the materials needed for toxic chemical decomposition, for bioremediation, large-scale equipment is not required that is powered by fossil fuels as well as emits contaminants. That is why bioremediation is more environmentally friendly and less expensive compared to other methods. In 2019 worldwide bioremediation market was esteemed at 106 billion USD; by 2027, at a 15.5% compound annual growth rate, it is expected to reach 335 billion USD [12].

Bioremediation uses microbes isolated from polluted sites, generally from natural populations. For example, toluene, xylene, and benzene can be used as carbon sources by *Pseudomonas putida*, which is highly resistant to hazardous chemicals [13,14]. Thus, *Pseudomonas putida* is an excellent material for eliminating hazardous organic compounds. Generally, bioremediation involves isolating suitable bacteria by performing the following steps: (1) collecting samples from contaminated soils and wastewater treatment plants, (2) isolating and screening toxic pollutants using a specific medium, (3) identifying bacteria by genome sequencing or 16S rRNA sequencing, and (4) characterizing microbes' physiology and bioremediation capacity [15,16]. Microorganism communities that co-metabolize hazardous chemicals, in addition to single species, have recently been identified and used for bioremediation; for hydrocarbons, *Bacillus* species, for petroleum, these contain rhizosphere bacteria, and for aromatic compounds *Paraburkholderia* species [17–19].

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# Diversity of Microbes Inside Plants and Their Reaction to Biotic and Abiotic Stress



Pooja Sharma, Ambreen Bano, and Surendra Pratap Singh

**Abstract** In a symbiotic ballet of mutualistic harmony, plant microbes enhance the host's defenses and fortify its resilience against the relentless duet of biotic and abiotic stresses. It focuses on understanding how these microbes contribute to plant health and resilience under both biotic and abiotic stress conditions. Plant microbes are able to enhance nutrient uptake, produce protective compounds, and boost the host's resilience to environmental stresses through a wide range of stress-tolerance mechanisms. Abiotic stressors, such as pathogen attacks, and biotic stressors, such as environmental fluctuations, present significant challenges to plants. Plant-associated microbes respond dynamically to these stressors, elucidating their role in enhancing the host plant's defense mechanisms and stress tolerance. Insights gained from this research contribute to the broader understanding of plant-microbe interactions and may inform sustainable agriculture strategies by harnessing the potential of these microbial communities to boost plant resilience in the face of diverse stress conditions.

**Keywords** Microbial diversity · Tolerance mechanism · Microbial interaction · Plant stress

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# Recent Advances in Genetic Improvement of Cotton

# 4

Kajal Verma, Pooja Sharma, Kanchan Tripathi, Reena Yadav, and Surendra Pratap Singh

## 4.1 Introduction

Cotton (*Gossypium* spp.) is economically important and a model polyploid crop all over the world (Liu et al. 2017). Millions of cotton bales are needed yearly for the textile industry's primary use of cotton fiber (Shahzad et al. 2019). The demand for cottonseed meals for livestock feed has risen along with using cotton vegetable oil (Shahzad et al. 2022). Polyploid evolution and domestication can also be understood through the diversity of *Gossypium* species. However, genomic research is hampered by the complex and large cotton genome (Yang et al. 2020). Multiple genes control the fiber quality characteristics of cotton with a minor effect, and traditional genetic improvement techniques require a long time to increase fiber quality. For cotton breeders, one of the biggest challenges is the genetic improvement of fiber quality (Ijaz et al. 2019). Plant biotechnology has allowed researchers to insert foreign genes that regulate many features like drought tolerance, fiber quality, herbicide resistance, CLCuV resistance, and pest resistance, which is crucial for preserving cotton yield (Razzaq et al. 2021). Increased economic potential in cottonseed and other economic features can help enhance profitability for cotton growers. Cotton breeders urgently aim to increase cotton production's profit due to intense competition from other important crops (Ijaz et al. 2019).

Besides being the most important natural fiber crop in the world, cotton provides a great environment for studying genome evolution, polyploidization, and cell elongation. Five cotton genomes were assembled, and an allopolyploidization

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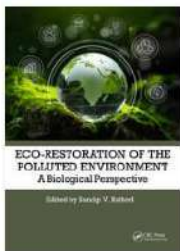
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Chapter

## Biological Solutions for Metal-Contaminated Environments

Role of Engineered Microbes and Plants

By *Pooja Sharma, Ambreen Bano, Surendra Pratap Singh*

Book [Eco-Restoration of Polluted Environment](#)

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### ABSTRACT

Heavy metal (HM) contamination poses a significant threat to ecosystems and human health. Metal-polluted environments are often complex, making traditional remediation methods inadequate. Engineered microbes and plants have emerged as a promising approach for efficient and sustainable HM decontamination in recent years. A review of the state-of-the-art advancements in bioremediation is presented, focusing on the innovative use of genetically modified organisms (GMOs). There is a problem in that HM contamination is growing, and its consequences are being discussed. This chapter highlights the limitations of traditional clean-up methods as well as the potential of engineered microbes and plants. A review of current developments in bioremediation is also mentioned in the abstract, with a focus on GMOs for HM decontamination.

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# Microbiome-Based Decontamination of Environmental Pollutants

Plant and Soil Microbiome

2024, Pages 147-166

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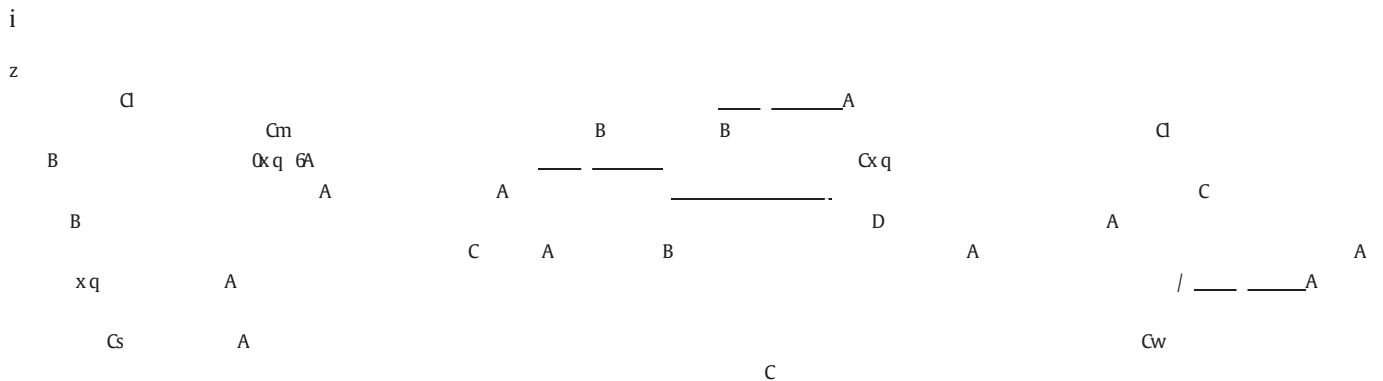
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Chapter

## Antibiotic Resistance Genes in Sewage Sludge

By *Pooja Sharma, Ambreen Bano, Surendra Pratap Singh*

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### ABSTRACT

Various sources of antibiotic-contaminated wastewater, including hospitals, households, and pharmaceutical manufacturing facilities, can discharge antibiotic-resistant genes (ARGs) into sewage sludge. Antibiotic overuse results in many antibiotic-resistant bacteria (ARB) and ARGs. Transduction, conjugation, and transformation are all methods of horizontal gene transfer for transferring ARGs between bacteria. Wastewater treatment plants (WWTPs) are important sources and sinks of ARGs, as well as players in their generation, treatment, and distribution. This chapter summarizes the ARGs types, concentrations, and factors in WWTPs, investigates the sources of ARGs in wastewater, compares the removal efficiencies of different treatment processes on ARGs, and analyses the potential risks of ARGs accumulation in the effluent, sludge, and air emission. Culture-independent molecular biology techniques are widely used to detect AB resistance in sludge. The presence, as well as identification of ARGs in microbes, is frequently based on genetic information taken from samples. Thus, to detect ARGs using culture-independent molecular biology techniques, RNA and/or DNA were extracted from sludge samples using extraction kits, i.e. RNeasy Mini Kit for RNA and Fast DNA™ Spin Kit for DNA. Because RNA is unstable, the RNA extracted is usually synthesized into cDNA and then used for ARG detection via RT-qPCR, metagenomics, or DNA microarray. To minimize the spread of antibiotic resistance, water treatment, antibiotic use, and sludge management practices must all be improved. This chapter systematically summarizes and compares the fate of ARGs due to various sludge digestion strategies and in combination with relevant pretreatment technologies and additives.

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## Chapter 10

# Genome Data Resources and Tools for Sequence Analysis

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### Abstract

Bioinformatics is the study of a set of omics data of organisms that involves the creation of statistical analysis software, techniques, and tools that can analyze and interpret data to acquire knowledge about biological information. Many databases, such as the National Center for Biotechnology Information (NCBI), the European Molecular Biology Laboratory (EMBL), and the DNA Data Bank of Japan (DDBJ), provide access to biological and genetic data from members of the International Nucleotide Sequence Database Collaboration (INSDC). These databases include data ranging from raw reads to sequence alignments and assemblies to functional annotation and are enriched with information about samples and experiments. The study of an organism's entire

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# Arbuscular Mycorrhizal Fungi (AMF): A Natural Tool for Phytoremediation of Heavy Metals (HMs)



Piyush Mishra, Amit Tiwari, Vinod Kumar Dubey, Alka Kushwaha,  
Sunil Kumar Singh, Vijay Kumar Singh, and Nitesh Kumar Singh

**Abstract** Human health and the entire ecosystem have been severely jeopardized due to worldwide heavy metal pollution. Over the last few decades, phytoremediation as a means of cleaning pollution from soil has gained momentum due to its cost-effectiveness, eco-friendliness, and ease of installation and operation. Removal of toxic heavy metals (HMs) from soil through phytoremediation is an efficient methodology. Symbiotic fungi that enter mycorrhizal association with land plants induce a series of shifts in the partnering plant's physiology, nutrient uptake, and soil microflora, which have a bearing on the effects of phytoremediation attempts. Alleviation of heavy metal phytotoxicity employing arbuscular mycorrhizal fungi (AMFs) is an excellent strategy because of its cost-effectiveness and eco-friendly attributes. A significant headway has been progress in understanding the physiological role of AMFs in the alleviation of toxicity in plants due to heavy metals (HMs) and also that of enhanced acquisition of nutrients through them. Indigenous and stress-adapted strains of AMFs can be used to inoculate plants as potential biotechnological interventions for successfully restoring degraded ecosystems. Arbuscular mycorrhizal fungi assisted in bioremediation (detoxification) of heavy metal-contaminated soils by directly involving heavy metal adsorption on fungal surfaces and immobilization in the soil by glomalin.

**Keywords** Phytoremediation · Arbuscular mycorrhizal fungi (AMFs) · Heavy metals (HMs) soils · Glomalin

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# Assessing the Role of Environmental Science Guidelines in Mitigating Emerging Environmental Challenges

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## ABSTRACT

*Environmental challenges, ranging from the dire consequences of climate change to the devastating effects of habitat destruction and pollution, have become ever more intricate and pressing. In light of these escalating issues, this review paper undertakes a thorough examination of the pivotal role played by environmental science guidelines in addressing and mitigating these emerging challenges. It delves into the evolutionary trajectory of these guidelines, their profound influence on policymaking and decision processes, and their effectiveness in fostering sustainable practices. Through an exhaustive analysis of compelling case studies and the extensive body of scientific literature, this review underscores the vital importance of guidelines in cultivating environmental stewardship and proffers insightful recommendations for their continuous improvement and enhancement. The evolution of environmental science guidelines reflects an escalating awareness of the intricate nature of environmental problems and the need for nuanced solutions. Initially, these guidelines were devised to regulate pollution and protect human health. Through comprehensive exploration of scientific literature, this review paper illuminates the critical role that environmental science guidelines play in addressing environmental challenges. It underscores their significance in cultivating environmental stewardship and offers thoughtful recommendations for their enhancement. As we navigate the complex terrain of environmental issues, these guidelines stand as our guiding beacons, helping us chart a course towards a more sustainable and resilient future for our planet, where the delicate balance of nature is preserved for generations to come.*

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2023

# SUSTAINABLE DEVELOPMENT IN CURRENT SCENARIO

The background features a stylized illustration of a landscape with several wind turbines. A large, semi-transparent circular graphic element is overlaid on the scene, partially obscuring the turbines and the sky. The overall aesthetic is modern and clean, with a focus on renewable energy and sustainable development.

**DR. RAJESH KUMAR**  
**DR. RAJENDRA KUMAR**

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अखिलेश कुमार

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डी० ए० वी० कॉलेज, कानपुर

सारांश

इस अनुसंधान लेख का मुख्य उद्देश्य है विशेष रूप से कृषि क्षेत्र में काम करने वाली महिला किसानों की समस्याओं और उनके सामाजिक स्थिति का विश्लेषण करना, साथ ही समाधानों की दिशा में नए सुझाव प्रस्तुत करना है। महिला किसानों की सुरक्षा, गहरी और असमान स्थिति ने कृषि क्षेत्र में उनकी भूमिका को सीमित कर दिया है। इस अध्ययन में हमने महिला किसानों के सामाजिक और आर्थिक संदर्भ को समझने के लिए सुरक्षित माध्यमों का उपयोग किया है। उनकी समस्याएं जैसे कि भूमि संधारि, विशेषज्ञता की कमी, और वित्तीय समस्याएं उन्हें कृषि उत्पादन से दूर कर रही हैं। अनुसंधान के परिणामस्वरूप, हमने महिला किसानों के लिए सुधार के लिए कदम उठाने की आवश्यकता को उजागर किया है। सामाजिक रूप से उन्हें सशक्त बनाने के लिए सामाजिक सुधार, वित्तीय सहायता, और तकनीकी शिक्षा की आवश्यकता है। यह अध्ययन एक नए प्रासंगिक दृष्टिकोण प्रदान करता है, जिससे सनाज और सरकार महिला किसानों के प्रति अपनी दृष्टिकोण को सुधार सकते हैं ताकि वे स्वयं हों और उनका योगदान कृषि सेक्टर में पूरी तरह से महत्वपूर्ण हो सके।

शब्द विन्दु

महिला किसान, कृषि क्षेत्र, सामाजिक स्थिति, सारणार्थ और चुनौतियाँ।

प्रस्तावना

कृषि क्षेत्र में महिला किसानों की समस्याएं और समाधान पर यह अनुसंधानलेख महत्वपूर्ण और आवश्यक विषयों को ध्यान में रखता है। आत्मकल, महिला किसानों का कृषि सेक्टर में योगदान बढ़ रहा है, लेकिन उनकी समस्याएं और चुनौतियाँ भी वृद्धि कर रही हैं। इसलिए, इस अनुसंधान के माध्यम से हम उनकी समस्याओं को समझने और समाधान की दिशा में कदम बढ़ाने का प्रयास कर रहे हैं। इस लेख में, हमने इस विषय की प्रासंगिकता और महत्वपूर्णता को विश्वसनीयता के साथ पेश किया है। महिला किसानों का सामाजिक और आर्थिक योगदान उनके कुशल प्रबंधन के लिए अत्यंत महत्वपूर्ण है, लेकिन उन्हें कई सारी सामाजिक, आर्थिक, और तकनीकी समस्याओं का सामना करना पड़ता है।

इस अनुसंधान का प्रयोजन है महिला किसानों की समस्याओं को गहरी से अध्ययन करना और इसके विभिन्न पहलुओं को समझना, ताकि हम सुधार की संभावनाओं पर प्रकाश डाल सकें। इसके लिए, हमने विभिन्न स्रोतों से अध्ययन किया है और योग्य तकनीकों का उपयोग कर अद्युष्टी गुणवत्ता वाली जानकारी को संग्रहित किया है। इस लेख के संदर्भ में, हमने प्रमुख बिंदुओं की पहचान की है जो महिला किसानों को कृषि सेक्टर में कड़ी मेहनत और समर्पण के बावजूद उनकी सामाजिक, आर्थिक, और सांस्कृतिक समस्याओं से घिरा हुआ रखते हैं। इस अनुसंधान में हम विभिन्न तंत्रों, योजनाओं, और कदमों का विश्लेषण करेंगे, जो महिला किसानों को समर्थन और सुरक्षा प्रदान कर सकते हैं। प्रमुख अध्ययन क्षेत्र के तौर पर, हम महिला किसानों की भूमिका, उनके सामाजिक संदर्भ, और उनकी सांस्कृतिक पहचान को समझेंगे। इसके साथ ही, कृषि सेक्टर में उनके योगदान और उनकी समस्याएं भी विश्लेषण किए जाएंगे। अनुसंधान के चरण में, हम सुधार के लिए संभावनाएं पहचानेंगे और इस अनुसंधान से उत्पन्न नए दृष्टिकोणों को साझा करेंगे। अध्ययन के परिणामों को समर्पित करने के साथ, हम उन सुझावों को प्रस्तुत करेंगे जो महिला किसानों को सशक्त बनाने और उनकी समस्याओं का समाधान करने की दिशा में हो सकते हैं।

अंत में, इस अनुसंधान का महत्वपूर्ण हिस्सा होने वाले संदर्भ और सन्दर्भों का साथी तालिका से उपयोग करने के साथ हम इस अध्याय से महिला



## भारतीय अर्थव्यवस्था पर बढ़ती जनसंख्या और संसाधनों की असमानता का प्रभाव

डॉ पुन्जमाधकर

एसोसिएट प्रोफेसर,

अर्थशास्त्र विभाग, डी-ए.वी. कॉलेज, कानपुर

**सारांश :** जनसंख्या की वृद्धि ने भारतीय अर्थव्यवस्था पर व्यापक प्रभाव डाला है, खासकर सामाजिक और आर्थिक परिस्थितियों में। विशेष रूप से, जनसंख्या की वृद्धि ने संसाधनों की अधिकता और उनके उपयोग में असमानता उत्पन्न की है। संसाधनों की असमानता ने आर्थिक और सामाजिक विभाजन को बढ़ाया है, जिसने समाज में असमानता की मात्रा को बढ़ा दिया है। असमानता के परिणामस्वरूप, एक छोटा भाग समृद्धि का अधिकांश लाभ उठा रहा है, जबकि बड़ा हिस्सा आर्थिक सुधार और समृद्धि के लाभ में शामिल नहीं हो पा रहा है। इस लेख में हमने यह विश्लेषण किया है कि इस चुनौतीपूर्ण स्थिति का सामना करने के लिए कैसे नीतियों और कदमों की आवश्यकता है ताकि समृद्धि के साथ सामाजिक समानता प्राप्त हो सके। इसके साथ ही, भविष्य के लिए सुझाव भी दिया गया है जो भारतीय समाज को अधिक समृद्धि, सामाजिक न्याय, और सामाजिक समानता की दिशा में आगे बढ़ने में मदद कर सकते हैं।

**शब्दविदुः** जनसंख्या वृद्धि, संसाधनों की असमानता, भारतीय अर्थव्यवस्था, आर्थिक प्रभाव, सामाजिक परिस्थितियाँ।

**प्रस्तावना :** भारतीय अर्थव्यवस्था पर बढ़ती जनसंख्या और संसाधनों की असमानता का प्रभाव एक गंभीर और चुनौतीपूर्ण मुद्दा है जिसे हमें स्वीकार करना होगा। इस मुद्दे के चलते देश को अनेक समस्याएँ और चुनौतियों का सामना करना पड़ रहा है जो सीधे रूप से भारतीय अर्थव्यवस्था को प्रभावित कर रही हैं। जनसंख्या का वृद्धि एक विकट समस्या है, जिसका सीधा प्रभाव हमारे संसाधनों पर हो रहा है। जनसंख्या वृद्धि का सबसे अधिक प्रभावित क्षेत्र बिना सुनिश्चितता के है। लोगों की संख्या में इस तरह की वृद्धि ने बेरोजगारी, भूख, और गरीबी जैसी समस्याएँ बढ़ा दी हैं। इसके साथ ही, शिक्षा, स्वास्थ्य, और आर्थिक समाधानों की कमी भी बढ़ गई है।

संसाधनों की असमानता भी एक गंभीर समस्या है जो भारतीय समाज को अपने मुख्य स्तम्भों में गहराई से छू रही है। आर्थिक और सामाजिक विभाजन के कारण विभिन्न वर्गों के बीच अन्याय और असमानता बढ़ रही है। इस असमानता के आँकड़ों ने दिखाया है कि कुछ लोग अपनी अमीरी को बढ़ाते हैं जबकि अधिकांश लोगों को आवश्यक सामाजिक और आर्थिक सुविधाओं से वंचित रखा जा रहा है। इस असमानता के प्रभावों को समझना महत्वपूर्ण है। अर्थव्यवस्था पर इसका सीधा प्रभाव है क्योंकि समृद्धि के साधनों का अनुचित वितरण और समाज में असमानता के कारण अधिकांश लोग आर्थिक रूप से पिछड़ा हुआ महसूस कर रहे हैं। सामाजिक समृद्धि में रुकावट से भी यह प्रभावित हो रहा है क्योंकि समाज में समानता के अभाव से लोगों को सामाजिक मिलनसार का अधिकार नहीं हो पा रहा है।



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इस पुस्तक में दो गर्ड़ सामग्री एवं व्यक्त विचारों के मौलिकता का दायित्व पूर्णतः लेखक/सम्पादक का है तथा किसी भी प्रकार को होने वाली हानि के लिए शब्द संयोजक, मुद्रक तथा प्रकाशक का कोई भी दायित्व नहीं होगा।

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प्रकाशक-

सत्यम् पब्लिशिंग हाऊस

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प्रस्तुत पुस्तक का निर्मा भी रूप में प्रकाशक की निविदा अनुमति के बिना मुद्रण, वितरण एवं पुनः प्रकाशन करना दण्डनीय अपराध है, तथा ऐसा करने पर कानूनन कार्रवाई की जाएगी।

द्वारा में प्रकाशित-

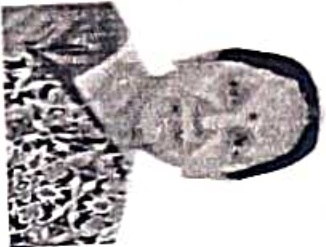
श्री आ० डी० पण्डेय द्वारा 'सत्यम् पब्लिशिंग हाऊस' के लिए प्रकाशित। सत्यम् प्रिन्टोपब्लिक्वस, नई दिल्ली द्वारा तंत्रांतरांश मेंटिग तथा विशाल कौशिक प्रिंटर्स, शाहदरा, दिल्ली द्वारा मुद्रित।

Anandiben Patel  
Governor, Uttar Pradesh



Raj Bhavan  
Lucknow - 226 027

13 December, 2023



Message

I am happy to know that the Department of Defence and Strategic Studies, D.A.V. (P.G.) College, Kanpur is organizing an ICSSR sponsored two-day National Seminar on "Non-traditional Security Issues in India" on 3rd and 4th February, 2024.

In this endeavor to address non-traditional security challenges, the seminar stands as a crucial platform for scholars, researchers and practitioners to engage in meaningful discussions and share valuable insights.

I extend my heartfelt best wishes on this occasion, hoping for a successful and enlightening seminar that fosters deeper awareness and insights into non-traditional security concerns in India.

Anandiben Patel  
(Anandiben Patel)

### अनुक्रमणिका

1. गानव सुरक्षा, लैंगिक समानता एवं गानवाधिकार  
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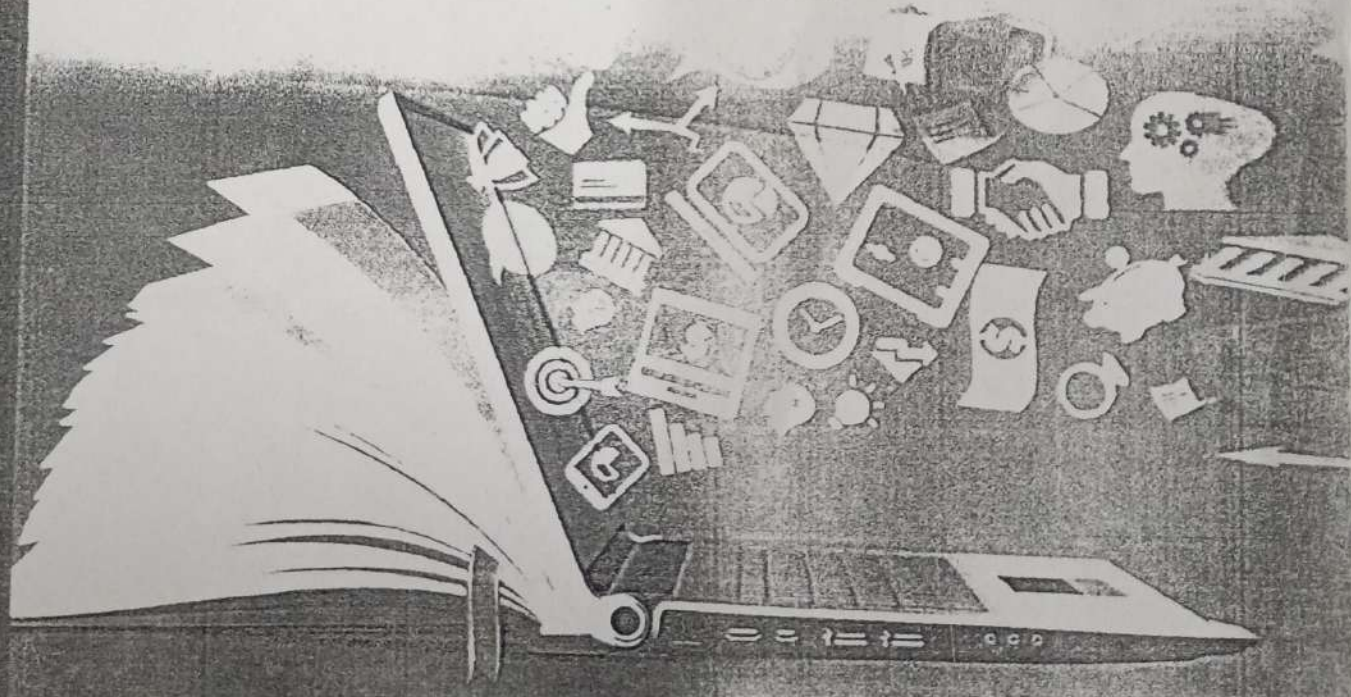
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डॉ. जगदेव  
डॉ. मीता सरल

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कल्पना आर्या (शोध छात्रा)

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डी.ए.वी. कॉलेज, कानपुर, उ०प्र०

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# नई शिक्षा नीति के परिप्रेक्ष्य में कौशल विकास एवं उद्यमिता

डॉ. जगदेव  
डॉ. मीता सरल

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2024



नई शिक्षा नीति के परिप्रेक्ष्य में कौशल  
विकास एवं उद्यमिता

लेखक

डॉ० जगदेव

डॉ० मीता सरल

भारती पब्लिशर्स एण्ड डिस्ट्रीब्यूटर्स

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	Poonam	136-141
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इस्लामुद्दीन

डॉ० राम प्रकाश

डी.ए.वी. पी.जी. कालेज, कानपुर

**मनरेगा - (परिचय)** भारत मुख्य रूप से गावों का देश है। यहाँ की लगभग दो तिहाई आबादी कृषि और कृषि से सम्बंध अन्य गतिविधियों से जुड़ी हुई है और यही उनकी आजीविका का मुख्य साधन है। भारत की अधिकांश कृषि मानसून पर निर्भर रहने के कारण वर्ष भर रोजगार नहीं मिल पाता जिससे ग्रामीण जन समुदाय की आजीविका सम्बंधी गतिविधियाँ अनियमित रहती हैं। जिसके कारण ग्रामीण क्षेत्रों से बड़ी संख्या में श्रम बल रोजगार की तलाश में शहरों की ओर पलायन कर जाता है। जिसका मुख्य कारण ग्रामीण क्षेत्रों में वैकल्पिक आजीविका का अभाव है।

इसी को ध्यान रखते हुए भारत सरकार द्वारा समय समय पर अनेक - रोजगार योजनाएँ चलायी गयीं। जिससे ग्रामीणों को आजीविका का वैकल्पिक साधन प्राप्त हो सके जो उनकी गरीबी को कम करके उनके जीवन स्तर में सुधार कर सके। इन योजनाओं में से एक योजना महत्त्वा गाँधी राष्ट्रीय ग्रामीण रोजगार गारण्टी योजना ग्रामीण को राष्ट्रीय 2006 फरवरी 2 है। जिसे (मनरेगा) के (नरेगा) रोजगार गारण्टी योजना नाम से प्रारम्भ किया गया था तथा बाद में को इसका नाम बदलकर मनरेगा रख दिया गया। 2009 अक्टूबर 2



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विभाज और चुनौतियाँ

Development and Challenges of Indian  
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बी०ए० प्रथम वर्ष  
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लेखक

डॉ० अखिला सिंह गौर

असिस्टेंट प्रोफेसर

डी.ए.वी. कॉलेज, कानपुर

प्रकाशक

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पूजनीय  
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(पूर्व महामंत्री, कानपुर विश्वविद्यालय, शिक्षक संघ)  
को  
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-डॉ. अखिला सिंह गौर

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## लेखिका की ओर से

य पाठकों,

पाठकों आज शिक्षा का विकास निरन्तर होता जा रहा है। मानव ने अपने अथक प्रयासों से शिक्षा के विकास के क्षेत्र में जो सफलता प्राप्त की है उससे शिक्षा के क्षेत्र में विविध आयाम स्थापित किये गये हैं तथा आज शिक्षा को मानव प्रगति का मानदण्ड माना जाता है। आधुनिक इक्कीसवीं सदी में भारत को विकसित राष्ट्रों की कोटि में आने के उद्देश्य से कार्य योजना 2020 ई. का जो ढाँचा विकसित किया गया है। उसमें शिक्षा उन्नत प्रौद्योगिकी सम्पन्न बनाने के लिये कुशल प्रबन्धन की पृष्ठभूमि विनिर्मित करने का संकल्प किया गया है। निःसन्देह इसके लिये ज्ञान की वर्तमान प्रणालियों में परिवर्तन लाना होगा और नवीन ज्ञान की सम्भावनाओं को तलाशना होगा।

प्रस्तुत पुस्तक भारतीय शिक्षा व्यवस्था का प्रथम संस्करण प्रस्तुत करते हुये हमें अत्यन्त हर्ष की अनुभूति हो रही है। यह पुस्तक राष्ट्रीय शिक्षा नीति 2020 के नवीनतम कार्यक्रम पर आधारित है। जिसमें बहुविकल्पीय, लघु एवं दीर्घ उत्तरीय प्रश्नों को यथासंभव शामिल किया गया। जिससे विद्यार्थियों को विषय के संबंध में संपूर्ण ज्ञान हो सके। इस प्रस्तुत की रचना में विभिन्न विषयों से सम्बन्धित विद्वजनों की हृदय से सज्जता प्रकट करती हैं साथ ही मैं उन गुरुजनों मित्रों एवं महाकाली प्रकाशन की भी अत्यन्त आभारी हूँ जिनके प्रत्यक्ष एवं अप्रत्यक्ष रूप से प्रेरणा एवं परामर्श से इस पुस्तक को और अधिक उपयोगी बनाया जा सकता।

प्रस्तुत कृति को और अधिक उपयोगी बनाने के हर प्रकार के संकेतों एवं सुझावों को हम हार्दिक स्वागत करेंगे इन सुझावों के आधार पर हम इस पुस्तक में संशोधन करने की भी प्रयास करेंगे पुस्तक कितनी उपयोगी है इसका निर्णय विद्यार्थी स्वयं करेंगे यह विद्यार्थियों के लिये उपयोगी एवं ज्ञानवर्धक होगी ऐसा मेरा दृढ़ विश्वास है-

चैत्र नवरात्रि, 2023

-डॉ. अखिला सिंह गौर  
मो. 8004592051

## Challenges to Gender Security: Need to Change the Narratives

Prof. Nisha Gupta

Professor, Department of English,  
D.A-V. College, Kanpur

Terry Eagleton, in his essay "Ideology and Vicissitudes in Western Marxism" writes about ideology as "a representation of the imaginary relationships of an individual to their real conditions of existence" (*From Mapping Ideology* 134). He describes ideology as a tool in the hands of the dominant class that helps them to perpetuate the subjugation of the subordinate class. Ideology strengthens their hold over power and further solidifies their strong position in the society. The other forms of ideology are traditions, customs and also the narratives. Ideologies or narratives are built up and established to ensure the concurrence of domination and control in all walks of life - social, religious, economic and political and so on. For instance, in social life, the subordination of women is upheld and sustained with the help of many socially and traditionally popular beliefs or narratives.

No doubt, women are stepping out of their domestic boundaries and are showing their talents in all walks of life. Yet, the percentage of women participating in the non-traditional and unconventional occupations, outside of their home, is still much less or we can say disproportionate as compared to their male counterparts. We see in newspapers every day, the cases of violence against women, both physical and mental, both within the home and in the workplace or in the insecure environment (like, in the lonely place and in the night). The cases of acid attacks, eave teasing, molestation, divorce, domestic violence, and other forms of abuse can be witnessed on daily basis. Where does the fault lie and who is responsible for it? Of course, the perpetrators of the wrong are the main culprits, but the question arises as to who has given them this kind of training. And who has laid the foundation of this kind of narrative that ascribes the status of a weaker and submissive gender to one half of the world population? Despite the building up of counter narratives, like feminism, we find that the threat to gender security is still persisting as a major security challenge within the society. It is, therefore, the high time, to address this major threat/challenge to the internal/societal security issue.

The counter narrative in the form of feminism is not a recent development. Its beginning dates back to the eighteenth century, with its origin in the West. Mary Wollstonecraft (1759-97) is regarded as the "mother of feminism". She opined that women were not inferior to men, but appeared to be only because they lacked education. She advocated for a social order based on reason in which both genders were treated as equal and rational beings. Virginia Woolf (1882-1941) was called an ardent feminist at a time when women's rights were barely recognized. In her essay, *A Room of One's Own* (1929) and *Three Guineas* (1938), she claimed equal opportunities for women in non-traditional fields of work, especially writing as a career and rightfully demanded a much needed space for women, "a room of one's



भारत में

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सुरक्षा सुब्ब

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# **Vedantic Notions of Living Life; (an Armour during Pandemic) in the works of Swami Vivekananda and Sri Aurobindo**

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**Abstract:** Swami Vivekananda; Narendra Dutta born on 12th January 1863 – 4th July 1902. One of the great mystics born on this land. His greatest literary works put an embark to the mindset of the people living in this post-modern era. Sri Aurobindo on the other hand born on 15th August 1872 – 5th December 1950, is one of the greatest examples of Supra-mental tendency. His Vedantic as well as yogic approach has a deep impact over people's mind; where they can prepare mentally even for the worst situation. These Indian approaches not only had a futuristic vision but also nearly ended the urge of materialistic approach. These two writers, philosophers and greatest sages changed the vision of the entire masses. These philosophies, whether Supra-mental tendency or Vedantic approaches, acted as an apex of the institution while we were fighting against the biggest pandemic.

**Keywords:** - Supra mental tendency, Yogic vision, Karma yoga, Bhakti yoga, Vedantic vision, Theory of evolution.

**Introduction:** - Swami Vivekananda, an Indian Hindu monk, philosopher, religion teacher, chief disciple of Indian mystic Ramakrishna Paramhansa; has been a leading figure while we talk about Indian aesthetics. His major works were based on Vedanta and Yoga. The two-core notions which were a basic requisite in the year 2019; while we were struggling hard to cope up both with mental and physical health.

Swami Vivekananda in his work Karma yoga has explained the urgency to adopt it. Karma yoga is a futuristic vision leading the pathway towards spiritual ecstasy. This yogic embracement will turn the abstract notion towards a concrete vision. Turning towards spiritual liberation while our biosphere is struggling for life and shelter, indeed it was very essential to keep our mind at solace. Since ages has been a land of culture and ethnicity. Its written literature has been famous worldwide not for its narrative script but also for its core truth. Swami Vivekananda in his literary works has depicted that he is the greatest fascinators of western notions but he immensely is engrossed in power of culture which his motherland had incurred since ages. There had been several witnesses where we have seen the world suffering from numerous

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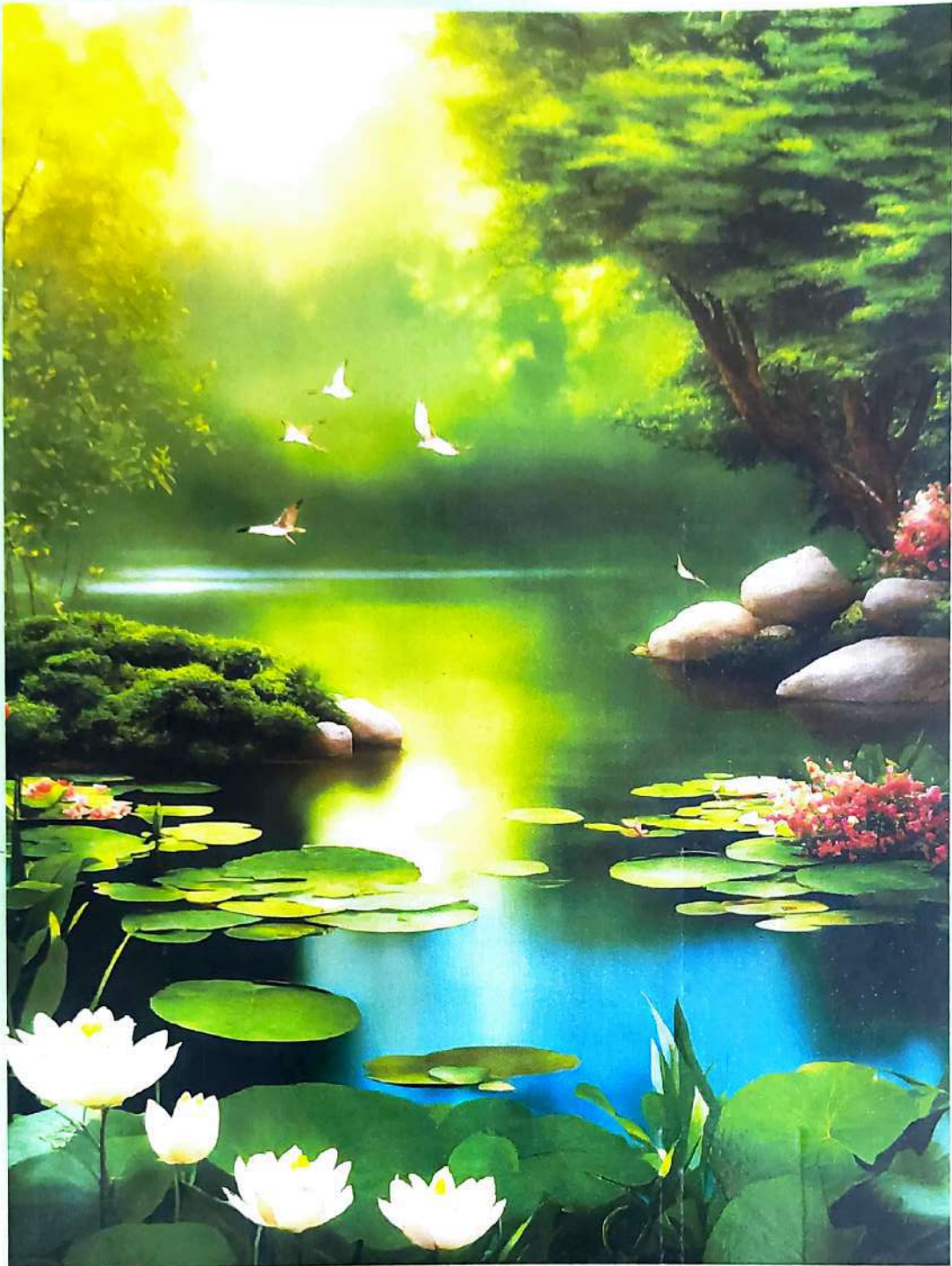
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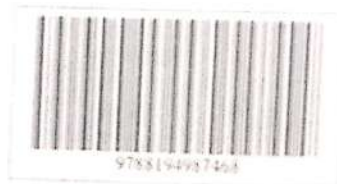
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डॉ० अनुपमा सिंह  
असिस्टेन्ट प्रोफेसर  
भूगोल विभाग, डी.ए-वी. कालेज कानपुर

सभी प्रकार की घटनायें जिनसे अपार जन धन की हानि होती है आपदा कहलाती हैं चाहे वह प्राकृतिक हो अथवा मानवीय। इन घटनाओं के लिये अलग-अलग शब्दावलियों का प्रयोग किया जाता है जैसे चरम घटनायें, प्रकोप। ऐसी घटनायें जो कभी-कभी घटित होती हैं परन्तु उनका असर लम्बे समय तक रहता है जैसे भूकम्पीय घटना, ज्वालामुखी उद्भेदन, बाढ़, सूखा, चक्रवात, टाइफून, हरिकेन, जहरीली गैसों का रिसाव, पेट्रोलियम पदार्थों का सागरीय जल में रिसाव, जंगलों में लगी आग चरम घटनायें कहलाती है। इन चरम घटनाओं को भी दो भागों में विभक्त किया जा सकता है एक पर्यावरणीय प्रकोप, दूसरा आपदा। पर्यावरणीय प्रकोप में उन घटनाओं को शामिल किया जाता है, जो घटनायें पर्यावरणीय जीव जन्तुओं एवं वनस्पतियों की सहन शक्ति को तहस-नहस कर मानवीय सम्पत्ति एवं अधिवास का विनाश कर देती हैं। कभी कभी ये घटनायें निर्जन प्रदेशों में घटित होती हैं तब इनको प्राकृतिक प्रकोप नहीं कहा जाता है। ऐसी सभी घटनायें प्रकृतिजन्य या मानवकृत जिनके द्वारा मानव समाज, जीव जन्तु एवं वनस्पति जगत की अपार क्षति होती है, ये घटनायें त्वरित गति से घटित होती हैं जिसके द्वारा सारा जैवजगत का ढाँचा घ्वस्त हो जाता है, आवश्यक कार्य भी सम्पन्न नहीं किये जा सकते सारी व्यवस्थायें छिन्न-भिन्न हो जाती हैं। आपदा कही जा सकती है। मोटे तौर पर इन घटनाओं को दो भागों में बाँट सकते हैं।

1. **प्राकृतिक घटनायें**— ऐसी आपदा जिसमें मनुष्य का किसी प्रकार का बस नहीं चलता जैसे भूकम्प, ज्वालामुखी का उद्भेदन, हिमखण्डों का टूटना, बाढ़, सूखा, सुनामी मौसमी आपदायें बर्फीले तूफान इत्यादि।
2. **मानवजनित आपदा**— ऐसी आपदा जो प्रकृति द्वारा उत्पन्न नहीं होती बल्कि मनुष्य इसका जिम्मेदार होता है जैसे फैक्ट्रियों या बस्तियों में आग लगना, जंगल में आग लगना, आतंकवादी घटनायें, मानवनिर्मित बीमारियाँ इत्यादि सभी घटनायें मानव समाज सहित, जीवजन्तु एवं पादप जगत को अल्प समय में ही अपार क्षति पहुंचाने की क्षमता रखती हैं ये सभी घटनायें अचानक घटित होती हैं जो मानव के नियंत्रण से बाहर होती हैं जिससे सभी प्रकार के क्रियाकलाप रुक जाते हैं। ऐसी परिस्थितियों में आपातकाल सेवाओं की आवश्यकता पड़नी है जिसकी तैयारी बहुत बड़े स्तर पर और पहले से ही करके रखनी होती है। इन्हीं क्रियाओं को आपदाप्रबन्ध कहा जाता है इन क्रियाओं का उद्देश्य प्राकृतिक आपदाओं के प्रभावको कम करना तथा इन घटनाओं से होनेवाली त्रासदीको कम करना होता है।

**प्राकृतिक घटनाओं के प्रबंधन एवं उनके प्रभावको कम करने कुछ उपाय :- इसे तीन चरणों में बाँट के अध्ययन किया जा सकता है।**

1. **प्रकोप विश्लेषण**—इसके अन्तर्गत किसी क्षेत्र विशेष में घटित होने वाली प्राकृतिक घटनाओं का इतिहास, उन घटनाओं की विनाशात्मक प्रकृति, भविष्य में घटित होने की आशंका मानव समाज पर पड़ने वाला प्रभाव, घटनाओं के उत्पन्न होने के कारण, घटित होने की अवधि आदि तथ्यों का विश्लेषण किया जाता है। इससे घटित होने वाली घटनाओं की प्रकृति का अध्ययन आसानी से किया जा सकता है।
2. **सुभेद्यता विश्लेषण**— इसका अर्थ है कि किसी खास आपदा से दुष्प्रभावित कौन-कौन होगा इसका विश्लेषण करना इसमें कोई स्थानीय इकाई से लेकर एक प्रदेश, देश या कोई भौतिक इकाई पर्वत, पठार, सागरतटीय मैदान या मानव समुदाय जन्तु समुदाय व वनस्पति समुदाय हो सकते हैं। इसका स्पष्ट आशय है कि किस घटना का कहां पर और किन लोगों पर असर होगा इसका विस्तृत अध्ययन करना उदाहरण के लिये प्रत्येक प्रकोप की घटना का घटित होने का कोई स्थान होता है और उससे प्रभावित होने वाले जीव होते हैं। इसका पता



सर्वेश तिवारी 'राजन'

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# स्वच्छ भारत : स्वस्थ भारत



एक कदम स्वच्छता की ओर  
स्वच्छ भारत अभियान  
Swachh Bharat Abhiyan

लेखन एवं संपादन :  
सर्वेश तिवारी 'राजन'

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# Sustainable Development through Swachh Bharat : Swasth Bharat

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## Abstract

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*Every human being has a natural or inherent aptitude of leading a healthy and happy life. This seems to be quite simple but is very difficult to achieve as it needs assurance of well-being of mind and heart through sustainable practices of living in the nature. It can only be achieved by inheriting proper healthy and hygienic practices in a clean environment within and outside. The idea of swachhata is prevalent since time immemorial in all the civilizations. It relates to psychological development apart from physical and mental well being of an individual. As such it can be promoted by the positive thinking among the youth of a nation. Mahatma Gandhi, the father of the nation said that "Sanitation is more important than Independence". Swachh Bharat Abhiyan started in 2014 to make aware every citizen and with active participation of one and all in this cleanliness drive make India a Clean, Green and healthier place to live in. We should all collectively stand and support this initiative together and urge every Indian to join this mission.*

**Keywords - environment, physical and mental health, cleanliness, hygiene.**

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## Introduction -

Swachh Bharat Abhiyan or Swachh Bharat campaign is a clean India drive started by the Prime Minister of India, Sh. Narendra Modi in 2014 on Gandhi Jayanti that's 02nd of Oct to form Republic of India a clean and green nation. Indian society is an advanced mixture of various cultures, people, beliefs and languages. This quality and richness brings with itself advanced nature of social issues and problems. Social issues in Republic of India also are frozen within the non-secular practices and beliefs of it individuals. Although India is creating strides within the world as a nation with encouraging developments in scientific, economic and technological fields, however on social development platform especially "Cleanliness" it is still one among the lowest ranked countries. Various governmental bodies and non-governmental organizations (NGOs) are working together hard to improve the situation but the mindset of the people of the country is not helping in improving the situation due to lack of knowledge and disbeliefs.

The main objective of Swachh Bharat Abhiyan is to realize the vision of a "Clean India" by 02 October, 2019 (150 birth anniversary of Mahatma Gandhi). This mission has been declared by the Indian government as "beyond politics" and "inspired by patriotism" to administer its credit to all the voters of India. The mission would help India in reaching Sustainable Development Goal 6 (SDG 6) which was established by the UN in 2015. Another specific objective area is complete elimination of open defecation in each space, eradication of manual scavenging, promotion of recycling and reutilization of municipal solid wastes, bring behavioural changes to individuals relating to hygiene and health, link it to public health and facilitate private-sectors to massively participate during this mission for capital expenditure and

# Non-Traditional Security Issues in India

**Prof. Arun Kumar Dixit**

**Dr. Abhya Raj Singh**

**Dr Vinod Kumar Dubey**



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# Agricultural Challenges in 21<sup>st</sup> Century and Food Security in India

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## Abstract:

Pollution and climate change are the two main disastrous events that have been created by us in the last two centuries. Our needs will have become greed. We destroyed the environment so deeply that she can't recover herself. The soil of the earth is degrading rapidly due to desertification, which poses a huge threat to global food security. The importance of food security in the context of the explosion of the world's population, which is predicted to reach 9.7 billion by 2050, highlights the complex relationship between a wide range of agricultural challenges encompassing environmental aspects and food security. This paper attempts to untangle the complex web of difficulties, from climate-related dangers to socio-economic complexity, and analyze their worldwide ramifications while highlighting India's unique role as a vital actor in the global agricultural environment. This paper aims to provide brief insights that may be used to aware the farmers and encourage them to adopt climate resilient agricultural techniques to ensure the global food security in the dynamic and shifting landscape of the twenty-first century.

**Keywords:** pollution, climate change, population explosion, food security, emerging nations, sustainable, resilient, ramification, socio-economic

**Introduction:** In the twenty-first century, the dynamics of agriculture are deeply entwined with a plethora of issues that have an impact on the whole world and have significant consequences for the security of the world's food supply. The goal of the article is to examine the complex issues facing agriculture in the twenty-first century and how they affect the world's food security. The agricultural sector faces a wide range of interconnected challenges that necessitate careful consideration, from the urgent problems of resource depletion and climate change to the difficulties of adjusting to changing food habits and the demands of a growing population. This investigation covers a number of subtopics, each of which provides a complex viewpoint on the several facets of the main issue. We'll explore into subjects including how climate change affects farming practices, the significance of technology advancements, and how international trade laws affect food security. In order to comprehend their roles in forming the modern agricultural environment, socioeconomic variables, governmental regulations, and international partnerships

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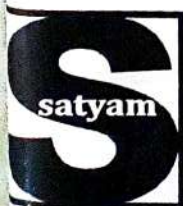
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**MYTH VS FACT: DEBUNKING COMMON MISCONCEPTIONS OF GLOBAL WARMING**

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**Introduction:**

Global warming refers to long term increase in the average temperature of Earth's atmosphere. It is primarily the release by the release of green house gases. Some people question whether it is a genuine phenomenon or other accepts it as a scientifically established reality. However tons of scientific evidences strongly support the reality of the global warming as a consequence of human activities. There are so many scientific data and evidences to clarify the reality of global warming like Sahara desert was once a dense tropical forest, the evidence of desert zones, rapid rate of melting Antarctica and arctic glaciers etc. Although proponents of global warming believe that the phenomenon is real and is largely responsible for the variations in climate observed in recent years, a result of increased emission of greenhouse gases, the concept has been widely rejected by skeptics. It is opposed to it as a mere myth or assumption with no scientific evidence linking it to anthropogenic activities. It is greatly inapprehensive (Wollstein, 2007). The world's ongoing, unprecedented climatic variability is the result of that underpins both the global warming phenomena and the discussion that has followed (IPCC, 2001). There is a scenario would be for these climatic changes to be evident and undeniable, even to deniers of the existence of global warming who acknowledge the existence of unique and unparalleled fluctuations in the global climate. It has been progressively changing over the last several decades. Nevertheless, rather than relying mostly on global climate models, the observed changing climatic conditions are highly dependent on global climate trends observed along party lines. Many of the scientifically established issues, like human responsibility for global warming, the focus of attempts, motivated by political or economic factors, to minimize, reject, or deny them. Some scientists refer to this ideological phenomenon as climate change denial. It has been questioned where most of the focus for climate scientists that disagree with conventional scientific perspectives. There are disagreements on urgency, cost-effectiveness, and optimal policy responses to the science. Climate scientists, particularly in the US, have reported under pressure from the government and the oil sector to conceal scientific data and suppress their work. They have also been told not to bring up the topic in public speeches. American climate scientists have heard lawsuits pertaining to global warming, its impacts, and mitigation strategies. It has been shown that fuels lobby actively or covertly backs attempts to erode or refute the body of scientific evidence about global warming. People who reject the theory of global warming have pointed to two important studies to bolster their position despite the overwhelming evidence to the contrary. In short, the research have been rejected as untrustworthy by those who reject the existence of global warming. They make it difficult for anyone to accept global warming is unreal. Moreover, those who think that human activity is causing global warming doubt the reliability of temperature (Wollstein, 2007). There is evidence that higher temperatures were linked to times in the earth's history when atmospheric carbon dioxide concentrations were high, but this is not the case now. The earth's surface temperature would have been fifty degrees Fahrenheit cooler than it is now if these gases had been virtually eliminated from the atmosphere. The growing concentration of greenhouse gases has the potential to impact global climate after they are emitted into the atmosphere, claim proponents of global warming [3]. Because of the earth's oceanic dynamical processes, the climate system exhibits a significant degree of climatic inertia (Archer, 2006) which supports the theory of global warming, ozone depletion has contributed to global cooling (Archer, 2006). It has come to the conclusion that it is hard to pinpoint the exact contribution that human activities, however small, to greenhouse gas emissions—have made to the ensuing global warming. Global temperatures, however, have increased by 0.3 to 0.7 degrees Celsius over the last ten years, according to data from climate scientists.

# संस्कृत वाङ्मय में समाजोपयोगी सन्दर्भ



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## Physical Geography in Vedic Literature: A Review



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### Introduction

Geography is a discipline devoted to study the relationship between human and environment with reference to its location. It is taken as bridge between physical science and social science. It is also known as mother of science as all branches of science are originated from geography. It is oldest discipline among various disciplines as father of geography Eratosthenes first used the word 'geography' for study of earth in second century BC (Roller, 2010). Geography has passed various paradigms and ultimately reached the paradigm of science and technology which was originated as subject to describe the earth surface. Geographical ideas and knowledge are expressed in *Vedic* literature in different form. Directly or indirectly, geographical ideas are shared in *Vedic* and *Pauranic* literature. Different dimension of geography like geomorphology, climatology, human settlement, livelihood etc. are studied in *Vedic* literature.

*Vedas* are earliest literature of universe meaning to knowledge. The word *Veda* is rooted from the Sanskrit verb 'vid' which means 'to know'. *Veda* explains origin of universe, origin of earth, livelihood strategies of human in *Vedic* period human adaptation to environmental situation, use of science and technology and so on. *Vedas* are earliest literature of universe meaning to knowledge. The word *Veda* is rooted from the Sanskrit verb 'vid' 'Jnane' which means 'to know'. *Veda* explains origin of universe, origin of earth, livelihood strategies of

## जलवायु परिवर्तन के प्रभावों का अध्ययन : कृषि में अनुकूलन की दिशा में नए उपाय विनीत कुमार' डॉ कुमार अभित'

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### सारांश:

आधुनिक समय में जलवायु परिवर्तन ने कृषि क्षेत्र को एक महत्वपूर्ण चुनौती के रूप में प्रस्तुत किया है। इसप्राकृतिक बदलाव के परिणामस्वरूप, भूमि, मौसम, और जलवायु के पैटर्न में परिवर्तन हो रहे हैं, जिससे कृषि क्षेत्र को बड़ी मात्रा में प्रभावित करता जा रहा है। इस अध्ययन में, "जलवायु परिवर्तन के प्रभावों का अध्ययन: कृषि में अनुकूलन की दिशा में नए उपाय" के तहत हम इस महत्वपूर्ण विषय पर ध्यान केंद्रित करते हैं और नवाचारी उपायों के अध्ययन का परिचय प्रस्तुत करते हैं। कृषि क्षेत्र, जो जलवायु परिवर्तन के तेवरों से प्रभावित हो रहा है, को अधिक सुस्त और सुरक्षित बनाने के उपायों का अन्वेषण करने का प्रयास है। जलवायु परिवर्तन के प्रभावों को समझने के लिए हमने कृषि सेक्टर की सामाजिक और आर्थिक परिवर्तन के प्रति विशेष ध्यान दिया है। बदलते मौसम पैटर्न, तापमान के वृद्धि, और बर्फबारी की मात्रा में परिवर्तन के प्रभावों का विश्लेषण किया गया है, और इन प्रभावों के साथ सामूहिक और व्यक्तिगत स्तर पर कृषि को कैसे प्रभावित किया जा रहा है, इस पर विचार किया गया है। इस अध्ययन में हमने नए और प्रभावी उपायों विश्लेषण करने का प्रयास किया है, जो कृषि क्षेत्र को जलवायु परिवर्तन के प्रभावों से बचाने और सुरक्षित रखने में मदद कर सकते हैं।

**शब्द बिंदु:** जलवायु परिवर्तन, कृषि, अनुकूलन, उपाय, प्रभाव, सुरक्षा।

### प्रस्तावना ( Introduction ):

जलवायु परिवर्तन आजकल एक गंभीर मुद्दा बन चुका है जिसका सीधा प्रभाव हमारे खेतों और कृषि उत्पादन पर पड़ रहा है। हम सभी जानते हैं कि कृषि हमारे समृद्धि और आजीविका के लिए एक महत्वपूर्ण अंग है, और जलवायु परिवर्तन के प्रभावों का कृषि पर पड़ने वाला असर हमारे खाद्यान्न और आर्थिक स्थिति पर सीधा प्रभाव डाल सकता है। इसलिए, हमें यह समझने की जरूरत है कि जलवायु परिवर्तन के कारण होने वाले परिवर्तनों का कृषि पर कैसे असर पड़ रहा है और कृषि क्षेत्र में इसके प्रति कैसे अधिक अनुकूलन किया जा सकता है। पहले ही से ही हमारे पास जलवायु परिवर्तन के कारण के बारे में गहरी जानकारी है। इसके प्रमुख कारण में वनों की कटाई, औद्योगिकीकरण, और जलवायु में बदलाव शामिल हैं। इन प्रक्रियाओं के चलते अधिक ग्लोबल ऊर्जा उत्पादन, जैव-विविधता की हानि, और अद्यतित जलवायु विकास हो रहा है। जलवायु परिवर्तन के कारणों में अधिकतर कारण मानव गतिविधियों से जुड़े हैं, जो हमारे खेतों और कृषि परिक्षेत्र को प्रभाव अनुकूलन के लिए अधिक विवादास्पद बना रहे हैं। जलवायु परिवर्तन के प्रभावों के बारे में बात करते समय, हमें यह समझने की आवश्यकता है कि यह कैसे कृषि पर पड़ रहा है। प्राकृतिक आपदाओं के बढ़ते संख्या, अच्छे बनावटी संरचनाओं की कमी, और पानी की कमी के चलते, किसानों को अपनी फसलों की सुरक्षा और प्रबंधन में और अधिक मुश्किलों का सामना करना पड़ रहा है। बदलते मौसम के प्रभाव के रूप में, अधिक उचित और नियमित वर्षा की कमी या बारिश की अधिकतम मात्रा के साथ, वाणिज्यिक प्रयासों के लिए बदलते जलवायु के परिणामस्वरूप फसलों की उपज पर भी असर पड़ रहा है।

जलवायु परिवर्तन के प्रभावों को न्यायपूर्ण रूप से सामान्य करने और कृषि क्षेत्र में अनुकूलन की दिशा में नए उपायों की खोज में हम आगे बढ़ रहे हैं। समृद्ध कृषि प्रणालियों का प्रयोग करने से किसान अपनी फसलों की उपज में सुधार कर सकते हैं, जैसे कि जल संचालन के प्रभावी और संवेदनशील तरीके से प्रबंधन। नई जानकारी के अद्वितीय उपयोग से भी किसान बेहतर फसल प्रबंधन कर सकते हैं। हम जलवायु परिवर्तन के प्रभावों को विस्तार से और उन नए उपायों को जानेंगे जो कृषि क्षेत्र में अनुकूलन की दिशा में आगे बढ़ सकते हैं। हम इस विषय पर विस्तार से चर्चा करेंगे और नवाचार, उपाय, और तंत्रशास्त्र के अनुसार जलवायु परिवर्तन के प्रभावों को कम करने के तरीकों पर भी गौर करेंगे। हम यह प्रयास करेंगे कि कृषि क्षेत्र में जलवायु परिवर्तन के प्रभावों के सामने खड़े होने के बावजूद भी हम नए और सुस्त उपायों के माध्यम से इसका सम्मुक्ति प्राप्त कर सकते हैं, ताकि हमारा कृषि क्षेत्र सुरक्षित और सुरक्षित रहे और हमारी भविष्य की खाद्यान्न सुनहरा हो। इसलिए, इस लेख का उद्देश्य है कि हम जलवायु परिवर्तन के प्रभावों के साथ खड़े होकर कृषि क्षेत्र को सुधारने के लिए नवाचारिक उपायों की ओर प्राधान करें, जो न केवल किसानों के लिए बल्कि समृद्धि के सभी स्तरों के लिए महत्वपूर्ण हैं। आपदाओं और

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## एक गैर परम्परागत सुरक्षा चुनौती के रूप में जलवायु परिवर्तन

सुधीर कुमार  
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सृष्टि के आरम्भ से सुरक्षा सबसे बड़ा मुद्दा रहा है हर तरह के जीव जन्तु अपनी सुरक्षा के लिये सदैव सतर्क रहते हैं, क्योंकि उन्हें सदैव दूसरे प्रकार के जीवों से खतरा रहता है। मानव जीवन का इतिहास भी इन खतरों से भरा हुआ है। ऐसा कोई समय काल नहीं रहा जब विश्व की मानवता के सामने अनेक प्रकार के खतरे न रहे हों। विश्व का इतिहास अनेक युद्धों, आक्रमणों और खून-खराबों की घटनाओं से भरा हुआ है। प्रत्येक व्यक्ति, प्रत्येक समाज, प्रत्येक राष्ट्र अपने अस्तित्व की एवं अपने मूल्यों की सुरक्षा के लिये प्रतिबद्ध होता है। इस कारण सभी को अपने आसपास या बाहरी खतरों से निपटने के लिये सुरक्षा के उपाय करने पड़ते हैं। विश्व के सभी देशों को अपनी सम्प्रभुता, स्वतंत्रता, अखण्डता और आन्तरिक शान्ति बनाये रखने के लिये मजबूत सुरक्षा के उपाय करने पड़ते हैं। इन सुरक्षा उपायों को दो भागों में बांटा जा सकता है :-

1. परम्परागत धारणा : परम्परागत अवधारणा में किसी देश के लिये सैन्य खतरे को सबसे अधिक खतरनाक माना जाता है। इस तरह का खतरा किसी दूसरे देश से होता है, जो सैन्य आक्रमण के द्वारा या सैन्य आक्रमण की धमकी देकर किसी देश की सम्प्रभुता, स्वतंत्रता, अखण्डता तथा अन्य केन्द्रीय मूल्यों के लिये खतरा पैदा कर देता है। सुरक्षा की परम्परागत अवधारणा का सम्बन्ध आन्तरिक सुरक्षा से भी होता है, क्योंकि कोई देश बाहरी खतरों से तभी अपनी रक्षा कर पायेगा जब उसकी अन्दरूनी सुरक्षा मजबूत हो।

2. सुरक्षा की गैर परम्परागत धारणा : इसका सम्बन्ध सैन्य खतरों से नहीं होता है। इसमें मानवीय अस्तित्व पर चोट करने वाले व्यापक खतरे और आशंकाओं को सम्मिलित किया जाता है। सिर्फ राष्ट्रों की ही नहीं व्यक्तियों, समुदायों और सम्पूर्ण मानवता की सुरक्षा इसमें आ जाती है। इसी अवधारणा को 'मानवता की सुरक्षा' या 'विश्व रक्षा' कहा जाता है। मानवता की सुरक्षा एवं राज्य की सुरक्षा दोनों एक-दूसरे के पूरक होते हैं। इस अवधारणा के मानने वालों का विचार है कि मानवता की सुरक्षा विदेशी सेना से तो करना ही है, इसके अलावा देश के अन्दर या बाहर से आने वाले खतरों से भी सुरक्षा करना शामिल है। इन खतरों की सूची में - अकाल, महामारी, आतंकवाद एवं अन्य प्राकृतिक आपदायें, बाढ़, सूखा, भूकम्प, ज्वालामुखी, चक्रवात इत्यादि संक्रामक रोग एवं सार्वजनिक स्वास्थ्य सम्बन्धी समस्यायें - जल की समस्या एवं प्रदूषण, संगठित अपराध, अवैध प्रवास, परमाणु सुरक्षा मुद्दे, गरीबी, रासायनिक एवं जैविक हथियार, धार्मिक अतिवाद आदि ऐसी अनेक प्राकृतिक एवं मानवीय देशीय एवं अन्तर्देशीय घटनायें हैं, जिनसे सम्पूर्ण मानवता की सुरक्षा करना आवश्यक है। ये खतरे इतने व्यापक हैं कि कोई एक देश अकेले इनसे निपटने की शक्ति नहीं रखता है। अगर केवल वैश्विक तापन की बात की जाये तो ये इतना बड़ा वैश्विक मानवता के सामने खतरा है कि कोई एक देश इससे निपटने की सामर्थ्य नहीं रखता।

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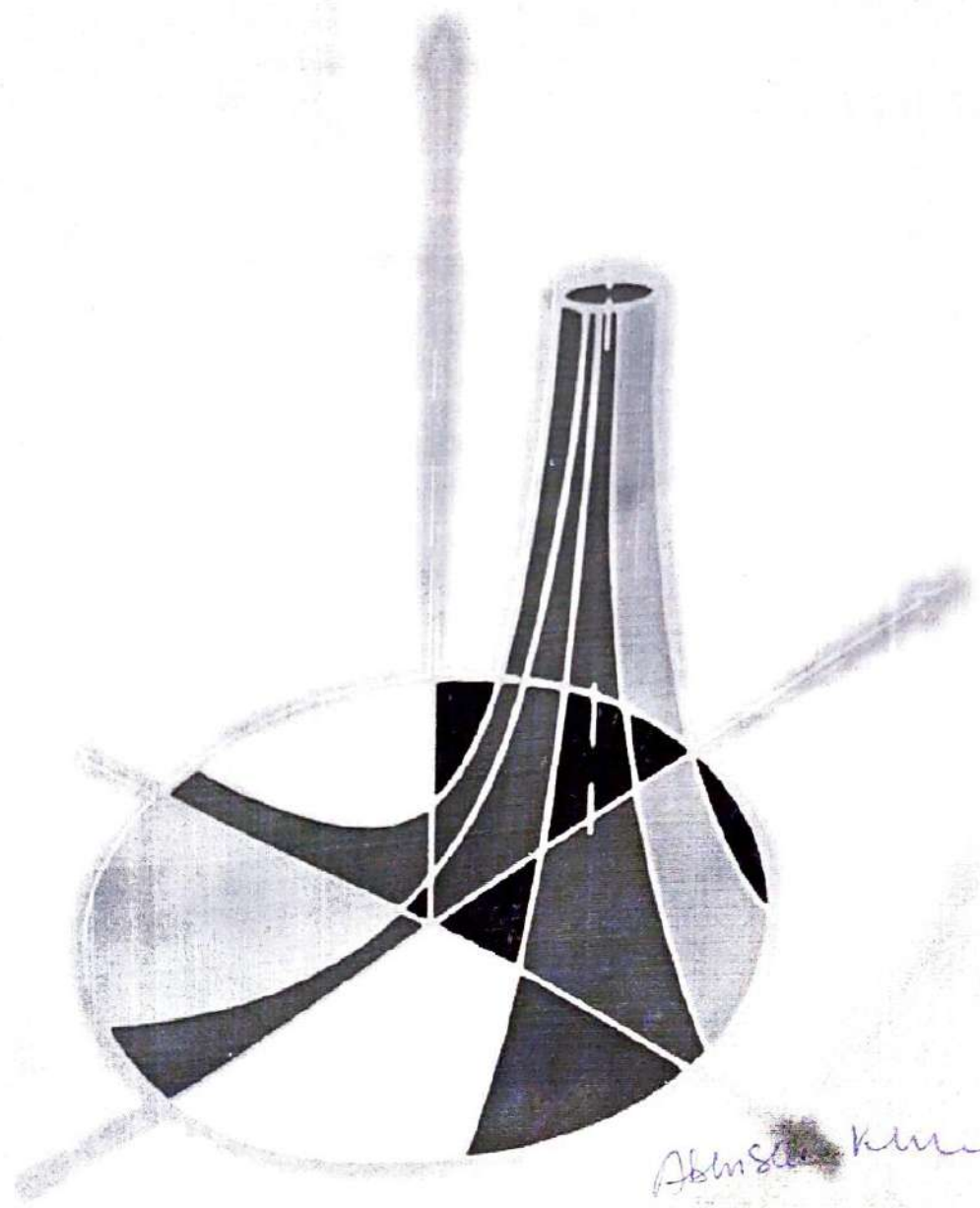
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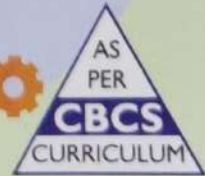
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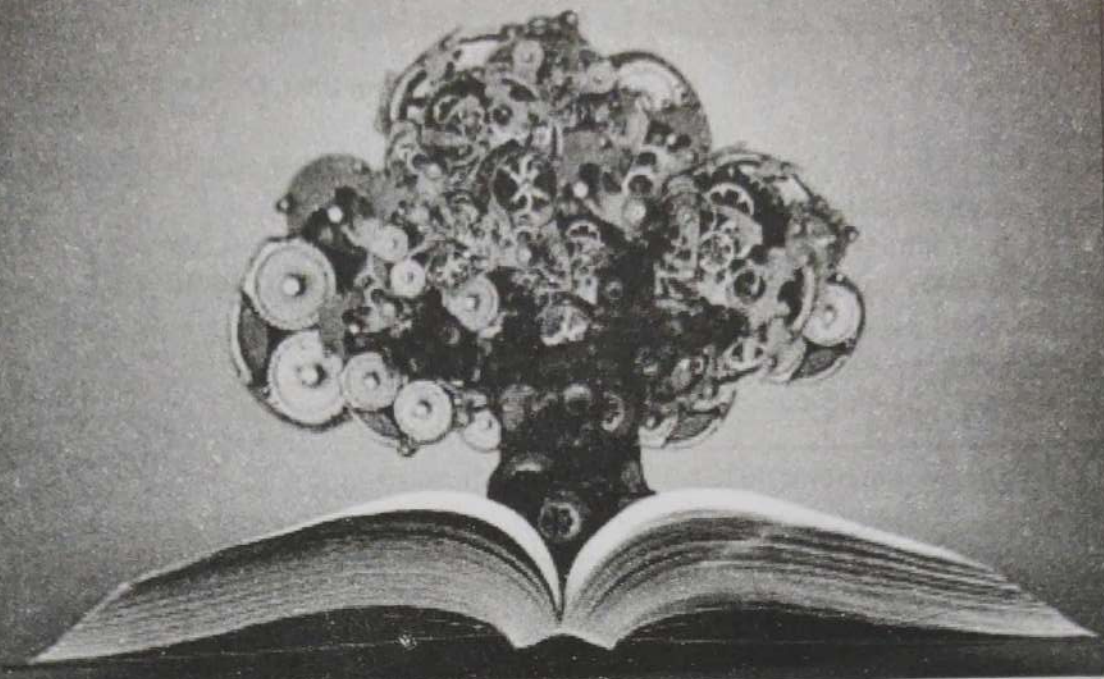
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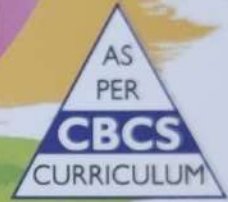
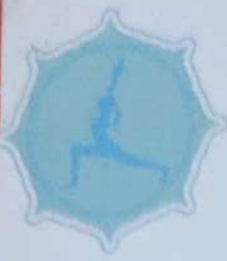
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वैधानिक चेतावनी : इस पुस्तक की सम्पूर्ण विषय-सामग्री के छायाचित्र लेखक के पास सुरक्षित हैं। अतः कोई भी व्यक्ति इसका नाम, शीर्षक, डिजाइन तथा विषय-सामग्री आदि को आंशिक या घुमा-फिराकर प्रकाशित करने का प्रयास न करे, अन्यथा कानूनी तौर पर हर्जे-खर्चे और हानि के लिए उत्तरदायी होगा। यद्यपि इस पुस्तक को यथासम्भव त्रुटिरहित रखने का प्रयास किया गया है तथापि यदि किसी भी मानवीय भूल, कमी या टंकण व तकनीकी सम्बन्धी त्रुटि रह गई हो तो इससे होने वाली क्षति या पीड़ा के लिए लेखक, प्रकाशक, मुद्रक एवं विक्रेता का कोई उत्तरदायित्व नहीं होगा। लेखक इस प्रकार की त्रुटि के लिए खेद व्यक्त करता है तथा पाठकों से आग्रह है कि किसी भी त्रुटि को लेखक के संज्ञान में लाएँ, जिससे उसे आगामी संस्करण में दूर कर दिया जाए। फिर भी किसी भी प्रकार के वाद-विवाद की स्थिति में न्यायिक क्षेत्र मेरठ न्यायालय ही होगा।

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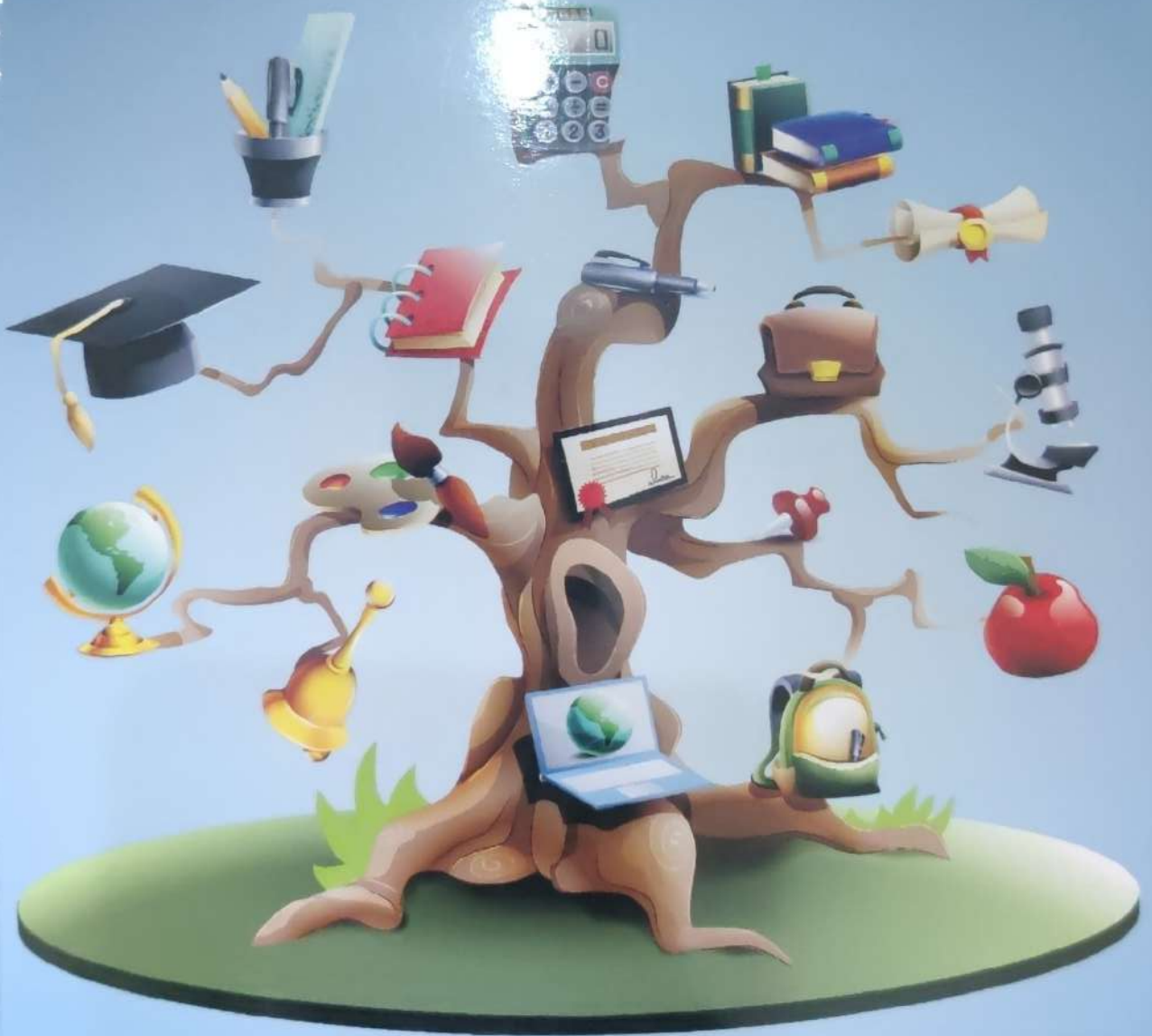
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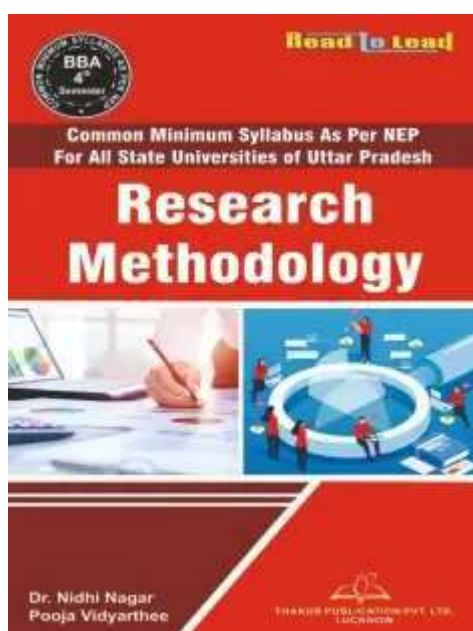
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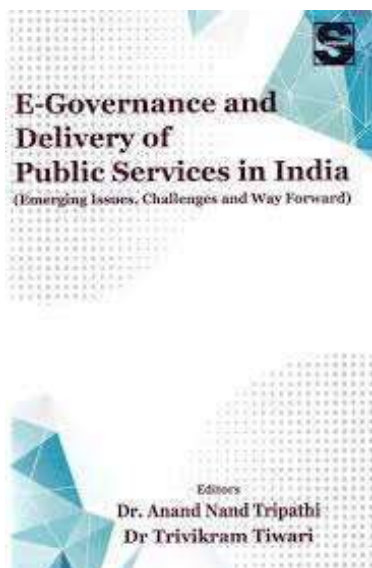
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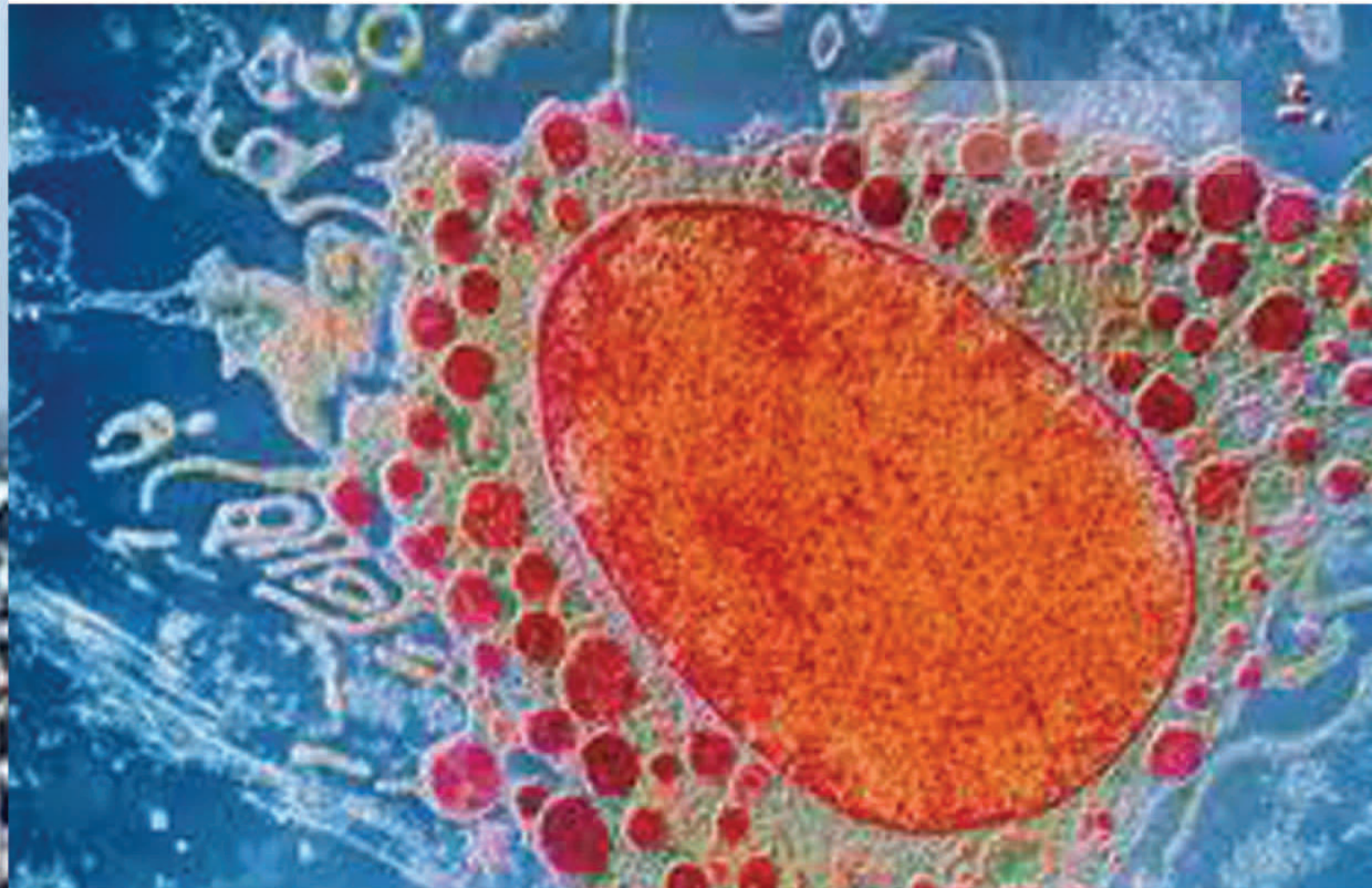
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**Chapter: 2****INVESTIGATING FISH DIVERSITY AND  
ZOOPLANKTON INTERACTIONS IN THE CONTEXT  
OF WATER QUALITY*****Bhawna Srivastava, Reddy P.B***

**Introduction:** Aquatic ecosystems are dynamic and intricate environments that support a remarkable diversity of organisms, each playing a vital role in the functioning and stability of these fragile habitats (Reddy, P.B. and Baghel, B.S., 2012, Reddy, P.B., 2017, Srivastava, B. and Reddy, P.B., 2020a, b, Shi, et al 2023). Among the numerous inhabitants of these ecosystems, fish and zooplanktons stand out as two critical components that influence the structure and dynamics of the entire food web (Heneghan et al 2016). The relationship between fish diversity and zooplankton populations has long been of interest to ecologists and fisheries biologists due to its profound ecological significance and implications for conservation and management efforts.

Fish are not only integral components of aquatic food webs but also serve as indicators of ecosystem health and environmental quality. As top predators, they regulate prey populations and contribute to the control of community structure within their respective habitats. Furthermore, fish diversity serves as an important measure of ecosystem stability, resilience, and overall biodiversity. Understanding the factors that govern fish diversity patterns can offer valuable insights into the health of aquatic ecosystems and aid in the development of sustainable management practices (Gebremedhin et al 2021, Troell et al 2023, Mandal, A. and Ghosh, A.R., 2023, Pinna et al 2023).

Zooplanktons, on the other hand, are minute organisms drifting in the water column, comprising a wide array of species belonging to various taxonomic groups. Despite their small

---

*Chapter: 2****PATENT REGIME IN INDIA:  
PROVISIONS, CHALLENGES AND SOLUTIONS******Bhawna Srivastava***

**Introduction:** Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. India, the 5th largest economy in the world, has more than 1.2 million businesses and one of the largest workforces. With such a magnitude, it has the potential to create and share a huge amount of patented products with the world. However, India has failed to unleash its potential in this domain. Further, many other nations including the U.S have criticized India's patent regime for being too lenient on violation of patent rights and placing significant barriers for getting a patent. This situation demands a honest introspection along with a plethora of proactive measures for improving the patent landscape in the nation. Recently, the U.S. Trade Representative (USTR) said in a report that India was one of the most challenging major economies as far as IP protection and enforcement is concerned.

The twenty-first century will be the era of information, truly the period of the intelligence. A country's capability to decipher information into prosperity and social upright through inventions will govern its future (Ahmad, T. and Godhwani, J., 2011). Consequently, inventions hold the key to the making as well as dispensation of knowledge. Intellectual property can be considered as the assets in thoughts or their expression. It is a conception of the mind, which

---

## **AN OVERVIEW OF THE EFFECTS OF ENDOCRINE DISRUPTERS (EDCS) IN FISH**

**Bhawna Srivastava**

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**Abstract:** The present review attempts to explore a critical assessment on the effects of EDCs on physiology and health status in fish. Most of the earlier assessments were mainly engaged on defining peripheral adverse effects as endpoints rather than discovering the mechanism(s) responsible for observed effects. For the present investigation, an online search was conducted from various scientific databases to obtain the relevant data.

Results of the published literature reveal that EDCs have the capability to mimic endogenous hormones, and may inversely affect male or female reproductive physiology. Reduction in the gametes number, development of intersex gonads, changes in the gonadosomatic index, gamete viability and reduced fertility rate has been frequently acknowledged. Variations in sperm density, motility, and fertility in males and inhibition of oocyte growth and maturation and the incidence of apoptotic/autophagic processes in female species have been reported. Certain EDCs can act also at gene level producing DNA mutations and changes in epigenetic pathways. In conclusion, the present review sum up that EDC exposure affects reproduction, disruption of steroidogenesis, feminization effects, distorted behavior patterns, response to stress, and incidence of epigenetic process, impact on thyroid and immune system focusing on mainly reproductive impairment in fish species. Therefore, for effective regulation, a set of global standardized and sensitive toxicity tests are to be established to ensure further description of EDCs properties.

**Keywords:** Aquatic Pollution, EDCs, Endocrine Disruption, Fish Reproduction.

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**Introduction:** The occurrences of recently acknowledged contaminants so-called “endocrine disrupting chemicals (EDCs) in our aquatic environments are of continued and is a global burning concern. These Endocrine disrupting chemicals (EDCs) enter the aquatic environments through industrial and urban discharged effluent and affect the metabolism and reproductive physiology of aquatic species, including fish. All vertebrate animals, from fish to mammals keep fundamentally the same hormonal mechanisms for dealing with the pollutant exposure. Hence, impacts of EDCs on fish can be projected in a large range of other animals including humans. Both wildlife and human offspring are currently exposed to a variety of synthetic chemicals at above the environmentally relevant concentrations, which have proven to be hazardous for normal embryonic development [1]. The presence of certain natural and synthetic chemical compounds in the aquatic environment can disrupt endocrine systems, leading to the reproductive destruction and threatening the survival of wild populations. A number of wildlife populations have been affected by endocrine disruption by various endocrine disrupting chemicals (EDCs) which primarily shown negative effects on growth and reproduction [2].

Endocrine disrupting chemicals (EDCs) are discharged into environment from packaging industries, pesticides, urban wastes and food constituents. Scientific evidences, laboratory experiments, and epidemiological studies suggest that EDCs can provoke major risks for human being by targeting different organs and systems in the body. Several molecular pathways through estrogen receptors, nuclear receptors and steroidal receptors activation are involved in targeting the normal system [3]. Animals populations exposed to various environmental pollutants are exhibiting strong evidence of

---

**Chapter: 8*****ASSESSMENT OF ARGUMENTS FOR THE PROTECTION OF  
PLANT VARIETIES & FARMERS' RIGHTS (PPV&FR)  
ACT, (2001)" IN RELATION TO REVOCATION OF  
PEPSICO'S POTATO******Bhawna Srivastava***

**Introduction:** The plant variety breeders' market is steadily dominated by a few of large corporations worldwide including in India. Developing countries like India want to protect their farmers' rights to use, sow and sell the produce, including seeds, of any plant variety they produce, even if International intellectual property rights-registered ones. Directed by TRIPS, India created a sui generis system for protection of plant variety known as "The *Protection of Plant Varieties & Farmers' Rights (PPV&FR) Act, (2001)* which contain 11 chapters and 97 clauses. The law aimed to create an effective arrangement for the protection of plant varieties, the rights of farmers and plant breeders and to inspire the growth of new varieties of plant. The act also establishes Protection of Plant Varieties and Farmers' Rights Authority under the Ministry of Agriculture and Farmers Welfare. Farmers are entitled to save, use, sow, re-sow, exchange, share or sell their farm produce, including seed of protected varieties, in the same manner as they were enabled to before the coming into force to the PPV&FR Act (<https://www.livelaw.in/columns/>).

Nevertheless, the act faced its biggest test when PepsiCo India started legal proceedings under section 64 against potato farmers of Gujarat for "illegally" growing its potato variety registered under the PPVFRA. However, farmers have cited Section 39 of the Protection of Plant Varieties

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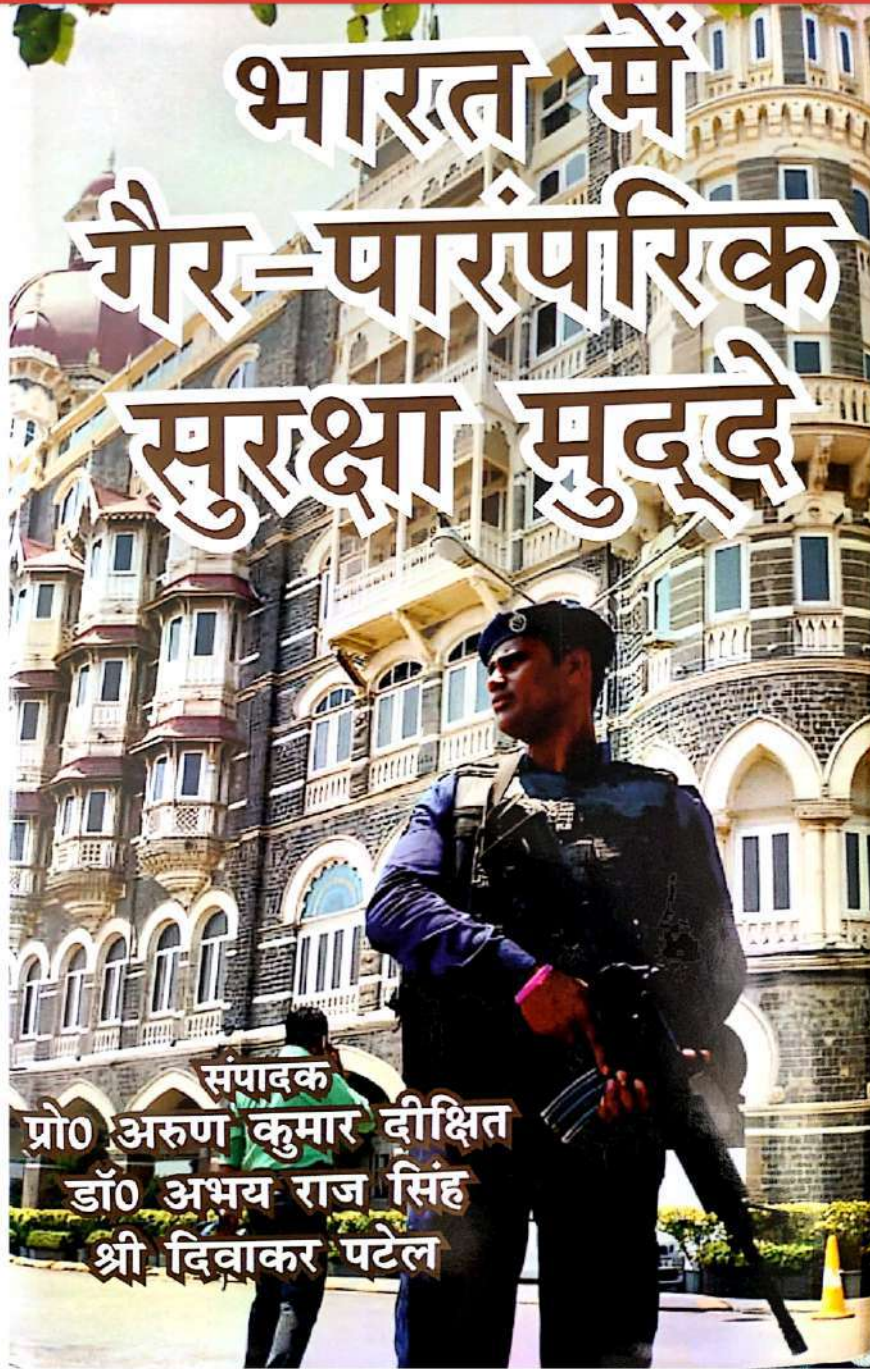


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## PISCICULTURE CHALLENGE: DETERIORATION OF FOOD VALUE OF FISHES THROUGH HELMINTHIC INFECTION

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### Abstract:

Fish constitute one of the most important units of the animal kingdom by having the importance in solving the alarming situation of food problem in our country. Since, last three decades, it has replaced the customary food items and has become the only source of food in some parts of our country. Besides it, they are rich in proteins, vitamins and minerals and substantially improve the qualitative deficiencies in our dietary habit. However, majority of fishes carry heavy infections of several parasites which create problems before fish culturists. Helminth parasites are one of them and are very important because they cause deterioration in food value of fishes. Many of them, particularly, digenetic trematodes cause fish diseases and result, their mortality. Ganga is the largest riverine system of India that includes mainly the river Ganga and its tributaries. It is main river of U.P. and Bihar but also touches some parts of Rajasthan, M.P. and West Bengal. It has very rich flora and fauna that is disturbed by accumulation of pollutants present in the river. Adverse environmental conditions decrease the ability of organisms to maintain an effective immunological response system. It certainly occurs in aquatic organisms, particularly fish, where acute or chronic pollution of surface water can cause a reduction in the level of immunity. No. of pollutants e.g. phenols, heavy metals and pesticides decrease the no. of leucocytes and lymphocytes, is followed by decrease in antibody production and resistance. Decrease in oxygen concentration increase three-to-four-fold increased reproduction rate of helminthes (trematodes). Pollutants can act either on the intermediate host or directly on the fish and can also affect the associated defence mechanism and immune responses. There is a strong relationship between high prevalence of parasites and condition of the fish in heavily polluted water. Many trematode parasites some monogenea i.e. *Dactylogyrus similis*, *Gyrodactylus carasii* and *Gyrodactylus vimbi* from fresh water fish *Cyprinus carpio* and some digenea i.e. *Complexobursa buxarensis* and *Neophanuroides ilishai* from *Hilsa ilisha*; *Lecithochirium acutus* and *Allopodocotyle coitori* from *Sciaena coitor*; *Orientocreadium batrachoides* and *Masenia batrachusi* from *Clarius batrachus* are reported from river Ganges, Varanasi and adjoining regions of Bihar. The infestation rate of digenean parasites in fresh water fishes are 40%, 60% and 50% respectively. Other helminth *Galaxias anomalus* with infections of *Telogaster opisthorchis* is also studied. Presence of these parasites within the fish host reduce the growth, shorten

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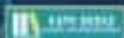
the life span and in some cases, it invites secondary invaders (pathogens), which kill the fish. Fish also acts as an intermediate host for transmitting helminthic infection or other diseases to humans and other animals through eating infected fish. Therefore, helminthic infection has become a problem of deep concern.

About The Authors

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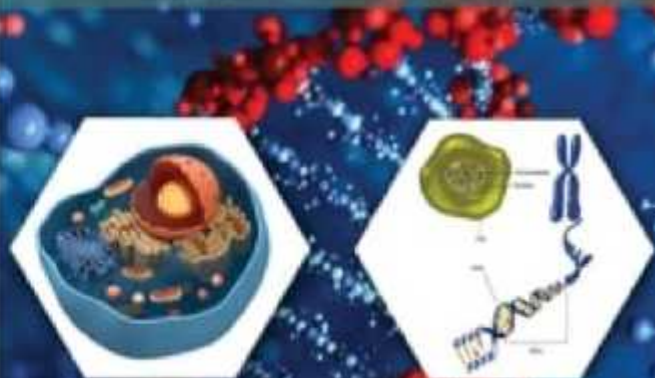


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# Cell Biology, Genetics, Molecular Biology, Evolution and Ecology (Volume-2)



Dr. Sonali Santosh Kadam  
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Dr. T. Shankar  
Dr. Pratibha Tripathi



**PROCEEDINGS OF THE  
NATIONAL WEBINAR ON BIODIVERSITY  
AND CONSERVATION - 2023**

**Editors**

**Dr. Sunil Prasad  
Sri. Vasudev Jatawan**

**Reviewer**

**Dr. Muthumula Chandra Mohan Reddy**

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**Government College, Nagda, Ujjain, MP**

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## IMPACT OF URBANIZATION ON BIODIVERSITY

PRATIBHA TRIPATHI, ARUN KUMAR TEWARI

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**Abstract:** The world is becoming progressively more urbanised; urbanisation rates are increasing at an unprecedented rate in the developing world. While the growth of cities has reflected man's advancement and achievement, there have also been some negative impacts on the natural environment. The urban expansion has been sometimes haphazard and unplanned; the result has been habitat fragmentation and biodiversity loss. Biodiversity is an important part of a complex urban ecosystem and providing significant ecosystem services. Natural resources are under extreme pressure due to the burgeoning human population and rapid urbanisation across the world. Many studies show that increase in the ecological footprint from the changing consumption behaviour, particularly of those residing in cities, continues to negatively impact the environment. Urbanisation is one of the most intensive and rapid humans-driven factors that threat biodiversity. In a rapidly urbanizing world, the conversion of natural habitats into urban areas leads to a significant loss of biodiversity in cities. However, these direct effects of urban growth seem to be much smaller than the indirect effects outside of cities, such as the urban release of greenhouse gases causing climate change globally or the increasing demand for food and resources in cities leading to land use change in rural areas. Both climate and land use change are key drivers of global biodiversity loss. Urbanisation often results in deforestation, habitat loss and the extraction of fresh water from the environment, which can decrease biodiversity and alter species ranges and interactions. Most cities in developing countries with increasing population have great difficulties in coping with the impact of infrastructure on biodiversity. Urban canters have substantial daily freshwater needs, and indiscriminate abstraction can have serious effects on species diversity and composition. Common phenomenon near and within urban areas, such as channelization, could drastically alter the physical characteristics and reduce habitat diversity of riparian vegetation. Urbanisation contributes to biodiversity loss. There is also a growing recognition that the indiscriminate usage of natural resources has led to serious problems.

**Keywords:** Biodiversity, Urbanisation, Deforestation.

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**Introduction:** Urbanisation is one of the most intensive and rapid human driven factors that threat biodiversity. Finding an indicator of species community responses to urbanisation is crucial for predicting the consequences of anthropogenic land cover changes. Natural resources are under extreme pressure due to the burgeoning human population and rapid urbanisation across the world. Urbanisation refers to the general demographic processes by which cities are expanding, "Urban - area "refers to the amounts of urban land cover, and "urban growth" to the expanded area of urban land cover.

While there are certainly costs associated with urbanization that must be mitigated, responsible urban development also offers opportunities to manage human population growth and consumption in ways that can reduce pressures on natural landscapes and create new urban ecological niches. It is therefore imperative that societies take the connection between biodiversity and urbanization seriously to manage the impact of this new trend to ensure responsible and sustainable growth.

**What is Urban:** India uses a combination of population, density and employment thresholds in defining "Urban". It classifies an area as urban, based on the population of more than 5,000; density exceeding 400 persons per sq. Km., and where 75% of the male workers are engaged in non- agricultural professions. However, this rapid growth in urban population accentuates the demand for natural resources, leads to change in land use pattern, causes pollution and loss of biodiversity. Substantial human induced environmental changes are linked to urbanisation on a regional scale and could become an important factor in biodiversity conservation.

The natural world provides the air we breathe, the water we drink and the essential resources and services that enable our societies and economies to thrive. So, when nature is under threat, it has an impact on all of us. And right now, our natural world is declining at an unprecedented rate. Urbanization directly

## ANTHROPOGENIC ACTIVITIES- CONSEQUENCES ON BIODIVERSITY AND CLIMATE CHANGE

DR. ARUN KUMAR TEWARI, DR. PRATIBHA TRIPATHI

**Abstract:** The rapid anthropogenic climate change that is being experienced in the early twenty-first century is intimately entwined with the health and functioning of the biosphere. Climate change is impacting ecosystems through changes in mean conditions and in climate variability, coupled with other associated changes such as increased ocean acidification and atmospheric carbon dioxide concentrations. Human alteration of the global environment has triggered the sixth major extinction event in the history of life and caused widespread changes in the global distribution of organisms. These changes in biodiversity alter ecosystem processes and change the resilience of ecosystems to environmental change. This has profound consequences for services that humans derive from ecosystems. The large ecological and societal consequences of changing biodiversity should be minimized to preserve options for future sustainable solutions to global environmental problems.

**Keywords:** Biodiversity, Climate Change, Anthropogenic, Aquatic Ecosystem.

**Introduction:** Scientific research continues to refine the understanding of Earth's climate system and its interdependence on the biosphere. For the most part, projections indicate an increased likelihood of negative consequences of climate change for ecosystems and people. Indeed, climate-related impacts are already being witnessed and seem to be increasing in severity and frequency. Consequently, the 2018 International Panel on Climate Change (IPCC) Special Report on 1.5 warns that allowing the planet to warm beyond 1.5°C will result in climate change impacts, including drought, floods, heat waves and sea-level rise, that are deleterious for humanity and for biodiversity. While the previous internationally agreed target was 2°C, this half-degree difference could reduce the risk of extensive degradation of Arctic and coral reef ecosystems. 1.5°C maximum warming ambition implies that the world has about 12 years to reduce global net carbon emissions by half to avoid the most significant impacts, but even if this target is achieved, potential impacts of warming are likely to continue for decades or even centuries. Whereas climate change means the change in climatic factors of an area caused due to the *anthropogenic factors* and natural disorders such as greenhouse effects and depletion of ozone layer [1]. In other words, it involves temperature increase (global warming) sea level rise, change in precipitation pattern and increased frequencies of extreme events. Even change of one degree in mean global temperature over long period of time is sufficient to cause change of climate of an area and even the composition of many plant communities. The climate change (CC) though due to the alteration in external forces i. e natural factors or human activities, but future projections indicate the influence of only anthropogenic increase in greenhouse gases and other human related factors [2]. Therefore, the twentieth century experienced the strongest warming trend of the last millennium with average temperature rising by about 0.60 c [3]. But temperature rise in future are likely to exceed this with a predicted rise between 0.1 and 0.20 c per decade. [4]. As far as India is concerned climate change is having a profound impact which is ranked fourth among the list of countries most affected by climate change in the period from 1996 to 2015 [5]. India emits about three gigatons of Carbon dioxide of greenhouse gases each year and about two and half tones per person which is less than world average. The country emits 7% of global emission. The Indira Gandhi Institute of Development Research has reported that if the prediction related to global warming made by the intergovernmental panel on climate change come to fruition, climate related factors could cause India's GDP to decline by up to 9% and this could lead to the shifting of growing season for major crops such as rice and production may fall up to 40%. Due to the climate change, temperature rises 0.7degree Celsius between 1901to2018in India. A study was carried out in 2018 projected that drought to increase in Northern and North Western India in the near future. It was also projected that at the end of the century most part of the India will likely face more and more severe drought. Besides this several landslides and floods are projected to become increasingly common in states like Assam. In case of severe climate change that leads to the rising of sea level will submerge Bangladesh and parts of India that border sea may lose vast tract of coastal land. Due to the ongoing sea level rise that have submerged low lying islands in Sundarbans and as a result thousands of people have been displaced. It has been reported that due to

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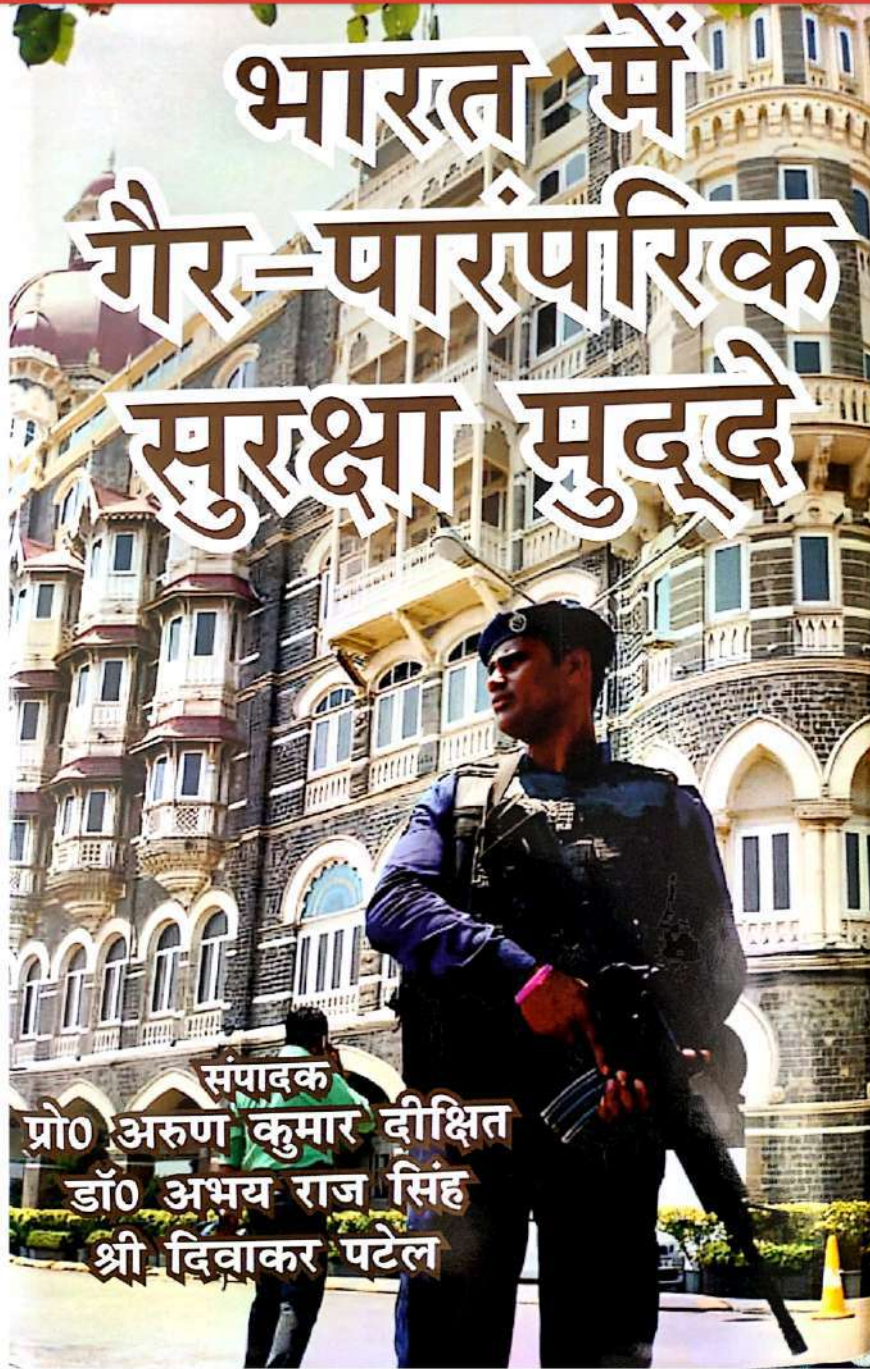
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इस पुस्तक में दी गई सामग्री एवं व्यक्त विचारों के मौलिकता का वायित्व पूर्णतः लेखक/सम्पादक का है तथा किसी भी प्रकार की होने वाली हानि के लिए शब्द संयोजक, मुद्रक तथा प्रकाशक का कोई भी वायित्व नहीं होगा।

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प्रस्तुत पुस्तक का किसी भी रूप में प्रकाशक की लिखित अनुमति के बिना मुद्रण, वितरण एवं पुनः प्रकाशन करना दण्डनीय अपराध है, तथा ऐसा करने पर कानूनी कार्यवाही की जाएगी।

### भारत में प्रकाशित-

श्री आर० डी० पाण्डेय द्वारा 'सत्यम् पब्लिशिंग हाऊस' के लिए प्रकाशित। सत्यम् प्रिंटोग्राफिक्स, नई दिल्ली द्वारा लेजरटाईप सेटिंग तथा विशाल कौशिक प्रिंटेर्स, शाहदरा, दिल्ली द्वारा मुद्रित।

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### Abstract:

Fish constitute one of the most important units of the animal kingdom by having the importance in solving the alarming situation of food problem in our country. Since, last three decades, it has replaced the customary food items and has become the only source of food in some parts of our country. Besides it, they are rich in proteins, vitamins and minerals and substantially improve the qualitative deficiencies in our dietary habit. However, majority of fishes carry heavy infections of several parasites which create problems before fish culturists. Helminth parasites are one of them and are very important because they cause deterioration in food value of fishes. Many of them, particularly, digenetic trematodes cause fish diseases and result, their mortality. Ganga is the largest riverine system of India that includes mainly the river Ganga and its tributaries. It is main river of U.P. and Bihar but also touches some parts of Rajasthan, M.P. and West Bengal. It has very rich flora and fauna that is disturbed by accumulation of pollutants present in the river. Adverse environmental conditions decrease the ability of organisms to maintain an effective immunological response system. It certainly occurs in aquatic organisms, particularly fish, where acute or chronic pollution of surface water can cause a reduction in the level of immunity. No. of pollutants e.g. phenols, heavy metals and pesticides decrease the no. of leucocytes and lymphocytes, is followed by decrease in antibody production and resistance. Decrease in oxygen concentration increase three-to-four-fold increased reproduction rate of helminthes (trematodes). Pollutants can act either on the intermediate host or directly on the fish and can also affect the associated defence mechanism and immune responses. There is a strong relationship between high prevalence of parasites and condition of the fish in heavily polluted water. Many trematode parasites some monogenea i.e. *Dactylogyrus similis*, *Gyrodactylus carasii* and *Gyrodactylus vimbi* from fresh water fish *Cyprinus carpio* and some digenea i.e. *Complexobursa buxarensis* and *Neophanuroides ilishai* from *Hilsa ilisha*; *Lecithochirium acutus* and *Allopodocotyle coitori* from *Sciaena coitor*; *Orientocreadium batrachoides* and *Masenia batrachusi* from *Clarius batrachus* are reported from river Ganges, Varanasi and adjoining regions of Bihar. The infestation rate of digenean parasites in fresh water fishes are 40%, 60% and 50% respectively. Other helminth *Galaxias anomalus* with infections of *Telogaster opisthorchis* is also studied. Presence of these parasites within the fish host reduce the growth, shorten

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the life span and in some cases, it invites secondary invaders (pathogens), which kill the fish. Fish also acts as an intermediate host for transmitting helminthic infection or other diseases to humans and other animals through eating infected fish. Therefore, helminthic infection has become a problem of deep concern.



# **SMART WASTE MANAGEMENT FOR GREEN ENVIRONMENT**

**Dr. SARAS**



**Dr Saras,**

**PhD, Diploma in ISO 14000 & EMS, Professional Certificate in NAAC**

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**She has also a patent to her credit , as a researcher she has more than 20 research papers published in international and national journals, co-authored and edited books also. She is also a research guide for research scholars at CSJM University, Kanpur .**

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## *References*

1. Green Technology For Environment Management by Biswal Anil Kumar & Hrudayanath Thatoi.
2. Waste Management And The Environment V 2010 Edition by V. Popov, H. Itoh, U. Mander.
3. IoT-Based Smart Waste Management for Environmental Sustainability By Biswaranjan Acharya, Satarupa Dey, Mohammed Zidan.
4. Handbook of Solid Waste Management: Sustainability through Circular Economy by Chinnappan Baskar, Seeram Ramakrishna, Shikha Baskar, Rashmi Sharma, Amutha Chinnappan, Rashmi Sehrawat.
5. Sustainable Green Technologies for Environmental Management by Shachi Shah, V. Venkatramanan, Ram Prasad.
6. Artificial Intelligence Based Smart Waste Management—A Systematic Review by Nusrat Jahan Sinthiya, Tanvir Ahmed Chowdhury & A. K. M. Bahalul Haque.
7. Benny Joseph (2005)., Environmental Studies, New Delhi, Tata McGraw Hill Publishing co. Ltd
8. Erach Bharucha (2005)., Textbook of Environmental Studies for Undergraduate Courses, Hyderabad, Universities Press.
9. Anji Reddy .M (2007), Textbook of Environmental Sciences and Technology, Hyderabad, BS Publications.
10. Y Anjaneyulu.(2004), Introduction to Environmental Sciences, BS Publications.

# Smart Waste Management for Green Environment

AUTHORS

DR. SARAS



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# Introduction to Waste Management

**Waste and wastes** are unwanted or unusable materials. Waste is a substance which is discarded after primary use, or it is worthless, defective and of no use.

The term is often subjective (because waste to one person is not necessarily waste to another) and sometimes objectively inaccurate (for example, to send scrap metals to a landfill is to inaccurately classify them as waste, because they are recyclable).

## United Nations Statistics Division

Wastes are materials that are not prime products (that is products produced for the market) for which the initial user has no further use in terms of his/her own purposes of production, transformation or consumption, and of which he/she wants to dispose.

Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities. Residuals recycled or reused at the place of generation are excluded."

**Waste management** is a set of activities that include the following

- Collection, transport, treatment and disposal of waste;
- Control, monitoring and regulation of the production, collection, transport, treatment and disposal of waste; and
- Prevention of waste production through in-process modification, reuse and recycling. Wastes are -
  - Generated during the extraction of raw materials,

- The processing of raw materials into intermediate products;
- The consumption of final products by other businesses;
- Municipal (residential, institutional, commercial and agricultural);
- Special (health care, hospitals, etc.); and

Waste management is intended to protect the environment or aesthetics, waste management practices vary among countries (developed and developing nations), and sectors (residential and industrial).

## List of waste types

Municipal waste includes Household waste, Demolition waste Hazardous waste includes Inorganic waste, Organic waste, and Toxic waste.

## Biomedical waste includes clinical waste

Special Hazardous waste includes radioactive waste, and

Electronic waste (e-waste)

Fig. 1.1.1.1. Waste management activities

- Municipal waste
- Industrial waste
- Hazardous waste
- Organic waste
- Inorganic waste
- Toxic waste
- Radioactive waste
- E-waste

Composting waste

- Composting waste
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- Composting waste



# Preface

This book consolidates and summarizes smart technologies like IoT, edge computing, and AI used in different aspects of waste material management, mitigation, and recycling for a sustainable environment. One of the cases explains how IoT-based systems and wireless sensors can be used to continuously detect common pollutants such as volatile organic compounds (VOCs), carbon monoxide, and particulate matter (PM) and how the data collected are used to assess the overall air quality and determine actions for improvements.

The book epitomizes the potential of green technologies for environmental management. It caters to the needs of environmentalist, microbiologists, agriculturalists and those who are interested in environmental stewardship and sustainability paradigms. We are honoured to receive chapters from leading scientists and professors with rich experience and expertise in the field of sustainable environmental management. Each chapter provides a detailed account of environmental management through sustainable green technologies that include sustainable landscaping, climate smart agriculture technologies, geospatial technologies, biofuels, phytoremediation, microbial technologies in waste management, green infrastructure, and bio fortification.

Title of the Book: **Smart Waste Management for Green Environment**

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Any attempt at any level can't be satisfactorily completed without our students' collaborative effort, resulting in our Book being unique.

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**Reviewer**

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## AGROFORESTRY: A NEW EMERGING TOOL FOR BIODIVERSITY CONSERVATION

SARAS, PADMA SAXENA

**Abstract:** The blend of executing different agricultural activities on the same agricultural land is mainly known as agroforestry. This is performed mainly with the integration and management of livestock crops and trees within the same open land system. There are various benefits of agroforestry as it can be performed both on small and large land holdings, agroforestry is also referred to as a land use management system in which trees or shrubs are grown around or among crops/pastureland. It is a combination of the three most important aspects of geography which are ecology, agriculture, and forestry. Though derived from ecology, agriculture, and Forestry the main difference lies in the process of integration of the livestock, crops, and trees. Agroforestry aims to be an aid to problems of land degradation, climate change, and reduction in greenhouse gases. With the following benefits from agroforestry, there lies many challenges as well like the extensive involvement of middlemen, installation, and implementation of updated technologies which often turn out to be expensive. The article orients us in looking into opportunities and challenges of agroforestry in India and also how agroforestry can be considered as a new tool of economic development. To exploit the benefits and cater to the problems, the Government of India launched the National Agroforestry Policy (NAP) in 2014.

**Keywords:** Agro-forestry, NAP, Bioremediation, Livestock, Carbon Sequestration etc.

**Introduction:** Agroforestry is a sustainable land use management system that increases the overall yield of the land and combines the production of crops including (trees/crops) and forest plants and/or animals. Sequentially on the same unit of land and applied management practices that are compatible with the cultural practices of the locals. In Agroforestry systems there are both ecological and economic interactions between the different components. Agro Forestry can also be defined as a dynamic ecologically based natural resource management system that through the integration of trees on farms and in the agriculture landscape diversified and sustained production for increased social economic and environmental benefits for land uses at all levels.

The benefit of Agroforestry is that it can be performed both on small and large land Holdings. Agroforestry can be practiced in both tropical and temperate regions. According to FSI (2013), in ancient times it was practiced for different purposes like fruits, fodder, food, firewood, biofertilizer, etc. In today's time, agroforestry can however be treated as a prospect and tool for economic development by using modern technology in agriculture with old agriculture practices. These practices enhanced crop yield as well as natural vegetation conservation along with land resource conservation.

Agroforestry is an innovative approach that can assist in the development of a country in an overall aspect and is a concept of thinking small scale to achieve potentially big and transformative outcomes (Steiner, 2012). Indian agriculture has dealt with various problems because of its diverse demography increased demand for foodstuffs and also climate change. Therefore, according to Dobryal (2014), an integrated management system needs to be identified that will help in both producing more cultivated items and also increasing the quality of the produce. This is a viable explication to farmers in producing a variety of products. So, to achieve this, NAP (2014) has been adopted by India.

### Objectives:

- Study the agroforestry management systems & common benefits
- A brief study of the extent of agroforestry policy after adopting the NAP (2014)
- To study the challenges and future prospects for sustainable development

**Agroforestry Management Systems & Common Benefits:** All agroforestry systems are characterized by the three important pillar components named woody perennials (Trees/Shrubs), herbaceous plants

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(crops/pasture species), and animals. Based on these 3 components, agroforestry systems can also be classified for all practical purposes according to their component composition.

- Agrosilvicultural System-** This system indicates, where agronomic crops are combined with shrubs/ Trees on the same unit of land for higher & better-sustained production on the basis of their component composition of annual crops, fodder, and wood.
- Silvopastoral System-** It indicates where range crops /animals & trees are combined for better production of grasses and fodder.
- Agrosilvopastoral System-** Food, Pasture, and trees/shrubs crops are combined on the same unit of land for the production of grass and browse fields, biomass for fuelwood, green manure, and food for human consumption.

In agroforestry, combinations of trees, crops, and livestock components are manipulated to enhance agricultural production along with biodiversity conservation in natural systems. Potential benefits from property-designed and managed agroforestry practices include:

### (i) Increase in crop yield and revenue generation (export)

- Increasing the Yield of crops in the field adjacent to shelterbelts has been reported in many studies. This increment occurs because of improved microclimates and better moisture retention, reduced wind speeds, and thus wind erosion and damage to crops.
- In Livestock benefits, well-planned shelterbelts can provide many benefits to livestock in both, winter/summer as well as screening noises, dust, and odors that can be associated with livestock operations.
- A common problem the farmers face every winter is heat loss through conduction and infiltration. Conduction. Also, Shelterbelts reduce the amount of energy required in heat confinement buildings. As time goes by more uses and benefits of trees are being discovered. Heating costs and related greenhouse gas emissions are reduced in farmyards protected by Shelterbelts.

(ii) **Soil Conservation and Improved Soil Quality:** Field Shelterbelts can be highly effective in preventing and controlling soil erosion by wind. Shelterbelt plantings on agricultural land as well as other land system to protect the crop and other natural vegetation respectively regard land resources. A shelterbelt must be designed to perform its main junction with optimum effectiveness. Ideally, field shelterbelts consist of tall, long-lived trees that are not competitive with nearby crops and do not occupy too much land. The trees should be drought-hardy, winter-hardy, disease/insect/herbicide tolerant, and have a porosity of 30-50% during the erosion periods. The growth habit and leafing characteristic of a tree along with the tree spacing in the row, influence Shelterbelts porosity.

(iii) **Soil for Plants Growth:** Depletion of soil can be protected from erosion by ground cover plants such as naturally growing grasses as well other flora in agroforestry systems. This help to stabilize the soil as they increase cover. Soil cover is a crucial factor in preventing erosion and cleaner water through reduced nutrients & soil surface runoff can be a further advantage of agroforestry. This facilitates diversified floral growth. By this few important prospects are fulfilled as Bioremediation, Drought resistance & increase crop stability.

(iv) **Increased Biodiversity:** Biodiversity in agroforestry systems is typically high rather than other practices. Two or more interacting plant species in a given area create a more complex habitat that can support a wider variety of fauna. Agroforestry is important for biodiversity in various manner. It provides a more typical faunal diversity for instance can be compared to the diversity in natural forests. Although agroforestry systems do not show the same canopy height. They do provide food and nesting possibilities. A further contribution to biodiversity is that the germplasm of sensitive species can be preserved. As natural agroforests have no natural clear areas. Habitats are more uniform. Furthermore, agroforestry can serve as the corridor between the habitats. Agroforestry can help to conserve biodiversity by having a positive influence on other ecosystem services.



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