

ESW XII Annual National Research Conference
“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025



Organized by

Environment and Social Welfare Society, Khajuraho, MP

(Redg. No. SC2707/2K, M. P. Govt. Firms & Society Act 1973/44. Accredited by NITI Aayog, MP/2014/0076324 and Income Tax Dept. under sec. 12a(1)(ac)(iii) 2022-23 to 2026-27 Govt. of India, Registered for undertaking CSR, Ministry of Corporate Affairs, Government of India)

In association with



Zoological Survey of India, Ministry of Environment, Forest and Climate Change, Government of India, Kolkota, West Bengal.



International Union for Conservation of Nature-CEC, Switzerland



Mahakoshal Vigyan Parishad, Vigyan Bharti, Jabalpur, Madhya Pradesh



Madhya Pradesh Council of Science & Technology, Bhopal, Madhya Pradesh

Editor

Dr. Ashwani Kumar Dubey

(Zoology, Ichthyology, Biochemistry, Free Radical Biology, Toxicology, Stress Monitoring, Biodiversity & Natural Resources Management)

In collaboration with MoU Institutes

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Assisted by: Godavari Academy of Science & Technology, Chhatarpur, MP

ESW XII Annual National Research Conference
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XII- Annual national research conference: 2025

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"Impact of Climate change on Ecosystem, Environment and Agriculture"

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क्रमांक 400 /राजभवन/2024
भोपाल, दिनांक-02 दिसम्बर, 2024

संदेश

हर्ष का विषय है कि एनवायरनमेंट एंड सोशल वेलफेयर सोसायटी खजुराहो **Impact of Climate change on Ecosystem, Environment and Agriculture** विषय पर 12वीं वार्षिक राष्ट्रीय शोध संगोष्ठी का आयोजन खजुराहो में किया जा रहा है। पारिस्थितिकी तंत्र, पर्यावरण और कृषि पर जलवायु परिवर्तन के प्रभावों पर चर्चा समसामयिक पहल है।

जलवायु परिवर्तन मानव स्वास्थ्य के लिए गंभीर चुनौतियों को उत्पन्न कर रही है। रोजगार, सतत विकास प्रयासों में अवरोध उत्पन्न कर अर्थ व्यवस्था पर नकारात्मक प्रभाव डाल रही है। जैव विविधताओं की हानि, पारिस्थितिकी तंत्र में असंतुलन जल, वायु, मिट्टी प्रदूषण जैसी अनेक समस्याओं का दुःश्चक्र जलवायु परिवर्तन है। आवश्यकता है कि पारिस्थितिकी तंत्र, पर्यावरण, कृषि और सतत विकास के विभिन्न पहलुओं पर जलवायु परिवर्तन के नकारात्मक प्रभावों को रोकने के लिए अनुसंधानात्मक प्रयासों पर विशेष बल और प्रोत्साहन दिया जाए।

आशा है, वार्षिक राष्ट्रीय संगोष्ठी की स्मारिका जलवायु परिवर्तन के प्रभावों पर होने वाले वैचारिक विर्मश को प्रस्तुत करने का प्रभावी दस्तावेज बनेगी।

शुभकामनाएं,

मंगुभाई पटेल
(मंगुभाई पटेल)



Central University of Punjab

(Established vide an Act no. 25(2009) of Parliament)

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Prof. Raghavendra P. Tiwari
Vice-Chancellor

Ref No._CUPB/VC/2025/0077

Date: 21st January 2025

संदेश

मुझे यह जानकर अत्यंत प्रसन्नता हो रही है कि पर्यावरण एवं सामाजिक कल्याण सोसायटी, खजुराहो, भारत द्वारा दिनांक 01 और 2 फरवरी, 2025 को गोदावरी स्वरोजगार केंद्र, ग्राम नहदोरा, जिला छतरपुर, मध्य प्रदेश में "जलवायु परिवर्तन का पारिस्थितिकी तंत्र, पर्यावरण और कृषि पर प्रभाव" विषय पर 12वां वार्षिक राष्ट्रीय सम्मेलन आयोजित किया जा रहा है।

इस राष्ट्रीय सम्मेलन का उद्देश्य जलवायु परिवर्तन के विषय में जागरूकता पैदा करना और भावी पीढ़ी के लिए हमारी प्रकृति की रक्षा करने के महत्व को उद्घाटित करना है।

हमारे विश्वविद्यालय का इस संस्था के साथ समझौता ज्ञापन होने जा रहा है और मैं आशा प्रकट करता हूँ कि इसके परिणामस्वरूप शिक्षाविदों, शोधकर्ताओं और वैज्ञानिकों को बहुमूल्य मार्गदर्शन प्राप्त होगा।

राघवेन्द्र प्रसाद तिवारी
कुलपति

ESW XII Annual National Research Conference
“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025

डॉ. धृति बैनर्जी
निदेशक
Dr. Dhriti Banerjee
Director



भारत सरकार
भारतीय प्राणि सर्वेक्षण
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Government of India
Zoological Survey of India
Ministry of Environment, Forest and Climate Change



Message

Dear Esteemed Participants,

With great honor and enthusiasm, we welcome you to the National Research Conference on the "Impact of Climate Change on Ecosystem, Environment, and Agriculture." This platform is an invaluable opportunity to exchange knowledge, share innovative solutions, and foster collaborations among researchers, policymakers, and industry leaders passionate about addressing one of the most pressing challenges of our time.

Climate change continues to reshape ecosystems, disrupt agricultural systems, and pose significant threats to environmental sustainability. We must come together to explore adaptive strategies, advance scientific understanding, and work toward actionable solutions that secure the future of our planet.

Your participation underscores your commitment to these critical issues, and we are confident that the insights and discussions from this conference will inspire impactful contributions to research, policy, and practice. Let this event be a beacon of hope, innovation, and resilience in the face of climate challenges.

I greatly appreciate the efforts put in by the Society to take the initiative at a very appropriate moment that will act as a motivation for the youth to take up such modern issues for advanced research. I am told that the Society has also instituted several awards to recognize the research efforts of younger scientists from different corners of the country. This will go a long way in imbuing the spirit to face challenges in the youth. The platform provided by the Society shall allow youngsters to interact in depth with experts from various prestigious institutions and universities in the country.

I convey my sincere best wishes to Dr Ashwani Dubey, the conference's Organizing Secretary, and the entire team of the organising committee of the "ESW 12th Annual National Research Conference on "Impact of Climate Change on Ecosystem, Environment and Agriculture" for the conference's great success.

Dr. Dhriti Banerjee



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ESW XII Annual National Research Conference
“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025



केन्द्रीय कृषिवानिकी अनुसंधान संस्थान
पट्टज बाँव के सामने, जौंसी-ग्यालियर मार्ग, जौंसी 284003 (उ० प्र०)
Central Agroforestry Research Institute



डा. अ. अरुणाचलम / A. Arunachalam PhD., D.Sc.

निदेशक / Director

Message



I am happy that the Environment and Social Welfare Society, Khajuraho is organizing its 12th Annual National Research Conference on ‘Impact of Climate change on Ecosystem, Environment and Agriculture’ on 1-2 February, 2025, at Godavari Self Employment Centre, Nahdora, Khajuraho. I am sure this conference would provide a good platform for the stakeholders, common man, researchers, and professionals to discuss and deliberate on the challenges and opportunities in the environment sector including human perspectives and efforts in policy making within context of changing scenario of climate.

Notably, this Conference stands as enabling a unique roadmap for resilient, adaptive, and sustainable future for environmental management while focusing on balancing act with modern lifestyle and nature conservation through science promotion.

I wish the Conference a great success and look forward to meaningful discussions and strategic recommendations.

Date: 9-1-2025

Place: Jhansi, Uttar Pradesh

(A. Arunachalam)

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भा.कृ.अनु.प.- राष्ट्रीय मत्स्य आनुवंशिक संसाधन ब्यूरो
ICAR-National Bureau of Fish Genetic Resources

डॉ. उत्तम कुमार सरकार, एफएनएएस, निदेशक
Dr. Uttam Kumar Sarkar, FNAAS, Director



Message

Ref. No. G/Message/2024
Date: 16.01.2025

It is a matter of immense pleasure that the **Environment & Social Welfare Society, Khajuraho**, is organizing its “**12th Annual National Research Conference**” on the theme “*Impact of Climate Change on Ecosystem, Environment, and Agriculture*” during February 1–2, 2025, at Godavari Self Employment Centre, Nahdora, Khajuraho, Madhya Pradesh. The conference theme is highly pertinent in the current global scenario, where the cascading effects of climate change are increasingly evident across various ecological and agricultural systems. The rapid alteration of ecosystems, biodiversity depletion, and agricultural vulnerabilities due to extreme weather events highlight the need for collaborative research and action. Conferences such as this provide an excellent platform for researchers, academicians, policymakers, and stakeholders to discuss strategies for mitigating and adapting to the impacts of climate change, ensuring sustainable management of our natural resources and food security. We are deeply committed to addressing the challenges posed by climate change, particularly in conserving and managing aquatic genetic resources and promoting climate-resilient fisheries. I extend my warm wishes to the organizers, participants, and all contributors for the success of this noble initiative. May this conference foster fruitful discussions, innovative solutions, and collaborations that pave the way for sustainable ecosystems and resilient agricultural systems.

Best regards,


(Uttam Kumar Sarkar)

कैनल रिंग रोड, डाकघर-दिलकुशा, निकट तेलीबाग, लखनऊ-226 002 उ.प्र., भारत
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प्रो. मुकेश पाण्डेय
कुलपति

Prof. Mukesh Pandey
Vice-Chancellor



बुन्देलखण्ड विश्वविद्यालय
झाँसी - 204 128 (उ. प्र.) भारत

BUNDELKHAND UNIVERSITY
JHANSI - 284 128 U.P. (INDIA)
(STATE UNIVERSITY OF U.P.)

MESSAGE

I am delighted to know that Environment and Social Welfare Society, Khajuraho, India is organizing its ESW 12th Annual National Research Conference on "Impact of Climate change on Ecosystem, Environment and Agriculture" to be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, Madhya Pradesh.

This objective of the national conference is to create climate change awareness and importance of protecting and improving our Ecosystem, Environment and Agriculture for future generation. I hope the outcome of the conference will provide valuable guidance to the academicians, researchers and scientists.

I convey my sincere best wishes to Dr. Ashwani Kumar Debey the Organising Secretary and entire team of the organising committee of National conference for great success of the conference.

(Prof. Mukesh Pandey)
Vice Chancellor

Dr. Ashwani Kumar Debey
Organizing Secretary
Environment and Social Welfare Society
Godavariipuram, Bajrangnagar,
Ward No. 17, Chhatarpur (M.P.) India

NAAC A++ Accredited, NIRF Ranked, PM-USHA (MERU), ISO:9001-2015 Certified, State University of U.P.

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ESW XII Annual National Research Conference
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Dr. Rajkumar Acharya
Vice-Chancellor

डॉ. राजकुमार आचार्य
कुलपति



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अवधेश प्रताप सिंह विश्वविद्यालय
रीवा - 486003 (म.प्र.)
vcapsu@gmail.com

Dated 13th January 2025

MESSAGE

I am delighting to know that Environment and Social Welfare Society, Khajuraho, Madhya Pradesh India is organizing the ESW 12th Annual National Research Conference on “*Impact of Climate change on Ecosystem, Environment and Agriculture*” to be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre, Nahdora-Khajuraho.

I am sure that this unique opportunity provided by national conference will be fruitfully utilized for ensuring better quality agricultural crops to formers and human.

I extend my best wishes and congratulate to Dr. Ashwani Kumar Dubey, Organizing Secretary and to organizing committee members for taking up the task to organize regular Annual National Research Conference.


(Dr. Rajkumar Acharya)
Vice-Chancellor

Dr. Ashwani Kumar Dubey
Organizing Secretary
Environmental and Social Welfare Society
MIG 24, Vidhyadhar Colony
Khajuraho - 471606

ESW XII Annual National Research Conference
“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025

प्रो. अर्पण भारद्वाज
कुलगुरु

Prof. Arpan Bhardwaj
Vice Chancellor



विक्रम विश्वविद्यालय
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Date - 31-12-24

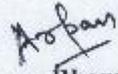
MESSAGE

I am delighted to know that Environment and Social Welfare Society, Khajuraho, India is organizing its ESW 12th Annual National Research Conference on "Impact of Climate change on Ecosystem, Environment and Agriculture" to be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, Madhya Pradesh.

This objective of the national conference is to create climate change awareness and importance of protecting our nature for future generation.

I hope the outcome of the conference will provide valuable guidance to the academicians, researchers and scientists.

My best wishes.


(Prof. Arpan Bhardwaj)



राजा शंकर शाह विश्वविद्यालय, छिंदवाड़ा
Raja Shankar Shah University, Chhindwara

प्रो. इन्द्र प्रसाद त्रिपाठी

कुलगुरु

Prof. Indra Prasad Tripathi
Vice-Chancellor

MESSAGE

I am delighted to know that Environment and Social Welfare Society, Khajuraho, India is organizing its ESW 12th Annual National Research Conference on ‘Impact of Climate change on Ecosystem, Environment and Agriculture’ to be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre, Nahdora, District Chhatarpur, Madhya Pradesh.

I am sure that this unique opportunity provided by national conference will be fruitfully utilized for ensuring better quality of life for human kind today and for generation to come.

I convey my sincere best wishes to Dr. Ashwani Kumar Dubey to Organising Secretary and entire team of the organising committee of National Conference for great success of the conference.


01/01/2025
(Prof. I.P. Tripathi)

To,

Dr. Ashwani Kumar Dubey
Organizing Secretary
Mobile : 09425143654
Email : ashwanikhajuraho@gmail.com

ESW XII Annual National Research Conference
“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025



OFFICE OF THE PRINCIPAL,
GOVT. GIRDARI LAL DOGRA MEMORIAL DEGREE COLLEGE HIRANAGAR
NAAC ACCREDITED B+

Website: <http://www.gldmcollegehiranagar.in> Email: hiranagar@gldm.ac.in M.No: 94192-20975

Dr. Pragya Khanna
Principal

No:HC/2025/2136

Date 10-01-2025

Message

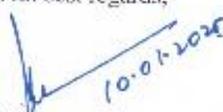
It gives me immense pleasure to extend my warm regards and congratulations to the Environment and Social Welfare Society (ESW Society), Khajuraho, for organizing the **12th Annual National Research Conference** on "*Impact of Climate Change on Ecosystem, Environment, and Agriculture*". This conference addresses a critically important issue that has far-reaching implications for our planet and future generations.

Climate change continues to pose unprecedented challenges to ecosystems, the environment, and agriculture, and platforms like this conference serve as invaluable opportunities for researchers, policymakers, and stakeholders to exchange ideas and collaborate on innovative solutions.

I am confident that this event will provide significant insights, foster meaningful discussions, and pave the way for actionable outcomes in mitigating the impact of climate change.

I wish the conference great success and commend the ESW Society for its continued efforts toward environmental and social welfare.

With best regards,


Dr. Pragya Khanna

PhD, D.Lit., MNASC., FRLSc., FIASC., FESW

Principal

GLDM Degree College, Hiranagar (J&K).

Govt. G.L. Dogra
Memorial Degree College
Hiranagar

कार्यालय प्राचार्य - श्री राजीव गांधी शास. महाविद्यालय, बण्डा, जिला-सागर



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Website : <http://mphiighereducation.nic.in/bandacollege>

डॉ. बी.डी. अहिरवार,

प्राचार्य

अर्द्धशास. पत्र क्र. 1605
दिनांक : 29/01/2025



MESSAGE

I am delighted to know that Environment and Social Welfare Society, Khajuraho, India is organizing its ESW 12th Annual National Research Conference on “Impact of Climate change on Ecosystem, Environment and Agriculture” to be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, Madhya Pradesh.

I convey my best wishes for the successful conclusion of the national conference and would like to congratulate Dr. Ashwani Kumar Dubey for conducts this regular event for some positive steps towards improving our Earth for future generation.

(Dr. B. D. Ahirwar)
Principal

PM College of Excellence, Govt Nehru PG College, Ashoknagar, MP

hegndcash@mp.gov.in

Internalquality603@gmail.com



Dated 15-01-2025

शुभकामना संदेश

डॉ. अश्वनी कुमार दुबे, आयोजन सचिव, ESW XII Annual National Research Conference-2025, आपके पर्यावरण एवं सामाजिक उत्थान के क्षेत्र में किये जा रहे कार्यों की हम सराहना करते हैं। पर्यावरण एवं सामाजिक कल्याण सोसाइटी (ESW सोसाइटी), खजुराहो, मध्य प्रदेश, के माध्यम से आपके प्रयास सदैव प्रशंसनीय हैं। आपकी संस्था के साथ जुड़ कर हमारा महाविद्यालय गौरवान्वित है।

ESW XII Annual National Research Conference-2025, हेतु अग्रिम बधाई एवं शुभकामनायें।

Dr Renu Rajesh
Convener IQAC, HOD Botany

Manoj Thakur
Principal

ABOUT ENVIRONMENT & SOCIAL WELFARE SOCIETY, KHAJURAHO

Environment & Social Welfare Society (ESW Society) *Dedicated to Environment, Education and Sciences & Technology throughout India since Bi-Millennium* is registered organization under the society Act 1973, Government of Madhya Pradesh, India on 31 January 2000 with No SC2707. It was affiliated by Nehru Yuva Kendra Sangathan, Ministry of Youth Affairs and Sports, Government of India. It is accredited by Jan Abhiyan Parishad, Government of Madhya Pradesh, since 2013, NITI Aayog, (National Institution for Transforming India), Govt. of India. ID MP/2014/0076324 and Registered under 12a(1)(ac)(iii) 2022-23 to 2026-27 Income Tax Dept. Govt. of India & Registered for undertaking CSR, Ministry of Corporate Affairs, Government of India.

Now it's worldwide known for its impact. ESW Society has been to develop the relationship between Environment and Society envisions the promotion of Education and Sciences among the University, College and School students as well as in the society for Environment Social Welfare.



Object of The ESWSociety:

1. To establish, arrangement and management all around development in the field of Education and expansions of educational institutions.
2. To develop Ideal morality, Character building in the Children according to Indian tradition and Culture.
3. All around development of the Children. Arrange training programme to establish Self Employment Centre.
4. To organize Seminar for Environmental management, Pollution control, and establish Awareness centre for the same.
5. To make awareness for Social welfare. Check against Animal cruelty and to protect against cruelty and Tyranny.
6. Open animal house for improvement of animal health and provid necessary facility for them.
7. To highlight modern Technology, Computer, Games & Sports, Music, Art, Literature, and various languages Hindi, English, Urdu, and other foreign languages in the field of Education.
8. Establish Research Centre

ESW XII Annual National Research Conference

“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025

ACKNOWLEDGEMENT

This is an honor for Environment and Social Welfare Society, Khajuraho organizes its ESW 12th Annual National Research Conference on “*Impact of Climate change on Ecosystem, Environment and Agriculture*” to be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre, Nahdora-Khajuraho, Madhya Pradesh, India.

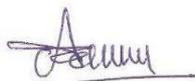
I am Thankful to Dr. Dhriti Banerjee, Director, Zoological Survey of India, Ministry of Environment, Forest and Climate Change, Government of India, Kolkota, West Bengal, Dr. P. N. Vasanti, Regional Vice Chair for S & SE Asia, IUCN CEC, Switzerland, Dr. S. P. Gautam, President, Mahakoushal Vigyan Parishad, Unit of Vigyan Bharti, Jabalpur and Dr. Anil Kothari, Director General, Madhya Pradesh Council of Science and Technology, Bhopal for its association.

I am Thankful to Dr. Ramdas Gomaji Atram Honourable Vice Chancellor, Dr. Bheem Rao Ambedkar University, MHOW, Indore, Madhya Pradesh. Prof Ram Shankar Honourable Vice Chancellor, Pt. S. N. Shukla University, Shahdol, Madhya Pradesh. Prof Arpan Bharadwaj, Honourable Vice Chancellor, Vikram University, Ujjain, Madhya Pradesh. Prof. Rajesh Kumar Verma, Honourable Vice Chancellor, Rani Durgavati Vishwavidyalaya, Jabalpur, Madhya Pradesh. Prof. Mukesh Pandey, Honourable Vice Chancellor, Bundelkhand University Jhansi, Uttar Pradesh. Prof Rajkumar Acharya, Honourable Vice Chancellor, Awadhesh Pratap Singh University, Rewa, Madhya Pradesh. Mr. J. N. Misra, Honourable Chancellor, Nehru Gram Bharti Deemed to be University, Prayagraj, Uttar Pradesh. Honourable Vice Chancellor, Sikkim Skill University, Sikkim. Dr. A. Arunachalam, Director, ICAR-CAFRI, Jhansi, UP. Principal, Mr. Anil Khajuria, Principal, Govt. Degree College Chenani, Jammu & Kashmir. Dr. Pragya Khanna, Principal, Govt. Girdari Lal Dogra Memorial College, Hiranagar, Jammu & Kashmir. Prof. Rajesh Kumar Sinha, Principal, LND College, Motihari, Bihar. Principal, Govt. Kalidas College Ujjain, Madhya Pradesh. Mr. Manoj Thakur, Principal, Govt. Nehru Degree Collage, Ashoknagar, Madhya Pradesh. Prof. B. D. Ahirwar, Principal, Shri Rajiv Gandhi Govt. College, Banda, Madhya Pradesh. Dr. Anil Kumar Upahya, Principal, PM College of Excellence, Govt Nehru Dergee College, Burhar, Shahdol, Madhya Pradesh for its collaboration as MoU institutes in this conference.

It is my privilege and pleasure to express my profound gratitude to our VIP Guest of inaugural & Valedictory session.

I am heartily thankful to honorable Invitee Guest who have very kindly consented and given us an opportunity to share valuable thought which will provide milestone on the way of leading Scientists in the Conference.

I am especially thankful to all delegates who actively participated in this Conference. I am thankful to Electronic and Print Media. I am profoundly thankful to my Board of Director and All members of ESW Society for their invaluable cooperation, and those entire person who are directly or indirectly concerned with this conference.



Dr. Ashwani Kumar Dubey

Environment and Social Welfare Society

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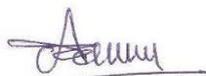
EDITORIAL

The ESW 12th Annual National Research Conference on “*Impact of Climate change on Ecosystem, Environment and Agriculture*” to be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre, Nahdora-Khajuraho, Madhya Pradesh, India organized by Environment and Social Welfare Society (ESW Society), Khajuraho, Madhya Pradesh, India. The theme is “To take some positive steps towards improving our Earth for future generation” which will underpin the need for collaboration and cooperation of individuals from a wide range of professional backgrounds.

The ESW Conference will strive to offer plenty of networking opportunities, providing you with the opportunity to meet and interact with the leading professionals as well as sponsors and exhibitors. And also to provide a platform to Educational Administrators, College Principals, Deans, Readers, Professors, Assistant Professors, Scientists, Environmentalist, Stakeholders, Researchers, Young scientists and Students to disseminate knowledge related to Strategies for promotion and conservation of environment and native species to protect and restore the nature and possible solution by technological approach.

Human-driven changes in land use and land cover such as deforestation, urbanization, and shifts in vegetation patterns also alter the climate, resulting in changes to the reflectivity of the Earth surface, emissions from burning forests, urban heat island effects and changes in the natural water cycle. Burning fossil fuels, cutting down forests and farming livestock are increasingly influencing the climate and the earth's temperature. This adds enormous amounts of greenhouse gases to those naturally occurring in the atmosphere, increasing the greenhouse effect and global warming. Climate change is altering ecosystem productivity, exacerbating the spread of invasive species, and changing how species interact with each other and with their environment. These changes are reconfiguring ecosystems in unprecedented ways.

ESW Society, India and its MoU institutes have joined hands in fulfil the object of ESW Society, raise awareness and valuable solution of Sustainable Development Goal. Take urgent action to combat climate change and its impacts, and will continue to coordinate their endeavours in support of its implementation.



Dr. Ashwani Kumar Dubey

ESW XII Annual National Research Conference
“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025

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IJGSR publishes papers on a broad range of topics in the areas of Environmental Sciences, Environmental Ethic, Environmental Legislation, Environmental Impact Assessment, Environmental Management, Environmental Policies, Environmental Pollution, Natural Resources Conservation, Biosciences, Agricultural Science, Anthropology and Behavioral Sciences, Animal Husbandry, Aquaculture, Biodiversity, Biotechnology, Biochemistry, Bioinformatics, Cell and Molecular Biology, Fish and Fisheries, Home Sciences, Immunology, Life Sciences, Limnology, Medical Sciences, Microbiology, Nutrition, Plant Sciences, Taxonomy, Tissue Culture, Toxicology, Veterinary Sciences, Wildlife Conservation, Zoology, Earth and Atmospheric Sciences, Mineralogy and Wildlife which hold much promise for the future, are also within the scope of IJGSR..

JOURNAL HIGH CITATIONS & INDEXED WORLDWIDE: IJGSR is a highly indexed research journal, providing Crossref DOI for research papers, using DOI your published paper is indexed & accessible from various universities, libraries/repositories. The published papers are made highly visible to the scientific community through a wide indexing policy adopted by this online international journal. IJGSR is currently indexed in: ISSN Directory, NISCAIR, Road Directory, Google Scholar, Citefactor, CABI UK, AcademicsKeys, Crossref, J-Gate, Open Access Journal, NAAS, UDOI, IP, ICI Journals Master List / ICI World of Journals, AGORA, Idealonline, Fatcat, Sciencegate.

In International & National Library: IEEE, Rajiv Gandhi Govt. College Banda Madhya Pradesh, & Xplore digital library.

IMPACT FACTOR: A recent accomplishment for the journal has been the Impact Factor as a result of its genuine editorial efforts and consistent growth. IJGSR is part of the eco-friendly community and favors e-publication mode for being an online 'GREEN journal'

Under auspicious of: Environment & Social Welfare Society, India

ESW XII Annual National Research Conference

“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025

ABOUT ESW XII ANNUAL NATIONAL RESEARCH CONFERENCE

It gives us immense pleasure to invite and welcome you in the Environment and Social Welfare Society (ESW Society), Khajuraho, Madhya Pradesh, India to participate in ESW 12th Annual National Research Conference on “*Impact of Climate change on Ecosystem, Environment and Agriculture*” to be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre, Village Nahdora, District Chhatarpur, Madhya Pradesh, India organized by ESW Society, Khajuraho, Madhya Pradesh, India.

Object: To provide a platform to Vice Chancellors, Educational Administrators, Academicians, Professors, Readers, Associate Professors, Assistant Professors, Scientists, Environmentalist, Researchers, Young scientists and Post Graduate Students to disseminate knowledge related to Strategies for promotion and conservation of environment and native species to protect and restore the Nature.

Goal: The principal goal of this conference will be to present some of the latest outstanding breakthroughs in Strategies for promotion and conservation of environment and native species to protect and restore the Nature to bring together both young and experienced scientists from all regions of the world, and to open up avenues for research collaborations at regional and global level.

Theme: To take some positive steps towards improving our Strategies for promotion and conservation of environment and native species to protect and restore the Nature for our future generation

THE GENERAL TOPICS COVERED IN THE CONFERENCE WILL BE AS UNDER

1. **Biological Sciences:** Biological Sciences, Agricultural Science, Anthropology and Behavioral Sciences, Animal Husbandry, Aquaculture, Biodiversity, Biotechnology, Biochemistry, Bioinformatics, Cell and Molecular Biology, Fish and Fisheries, Home Sciences, Immunology, Life Sciences, Limnology, Medical Sciences, Microbiology, Nutrition, Plant Sciences, Taxonomy, Tissue Culture, Toxicology, Veterinary Sciences, Wildlife Conservation, Zoology.

2. **Environmental Sciences & Climate change:** Environmental Ethic, Environmental Legislation, Environmental Impact Assessment, Environmental Management, Environmental Policies, Environmental Pollution, Natural Resources Conservation.

3. **Earth and Atmospheric Sciences:** Mineralogy.

4. **Sustainable Development:** Nutritional and Food Security, Biodiversity conservation, Promotion and conservation of indigenous species, Strategic and advocacy for nature conservation, Scientific approach of native species conservation, Scientific temper to protect and restore the nature, Livelihood

5. **Agriculture:** All aspects of agriculture, horticulture and floriculture.

ESW XII Annual National Research Conference
“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025

Brief Report

**ESW XI Annual National Research Conference on
“Impact of human activities on Ecosystem and Climate change”**

Date: 28 to 29 January, 2024 (Sunday & Monday)

Venue: Godavari Self-Employment Centre, Nahdora, Dt. Chhaarpur, Madhya Pradesh, India

Organized by

Environment & Social Welfare Society, Khajuraho, India.

(Redg. No. SC2707/2K, M. P. Govt. Firms & Society Act 1973/44.

Accredited by NITI Aayog, MP/2014/0076324 & Income Tax Dept. us 12a(1)(ac)(iii) 22-23 to2026-27 GoI
Registered for undertaking CSR, Ministry of Corporate Affairs, Government of India.

In association with

Zoological Survey of India, Ministry of Environment, Forest and Climate Change, GoI, Kolkota, WB.

International Union for Conservation of Nature- CEC, Switzerland,

The National Academy of Sciences, Bhopal Chapter, Madhya Pradesh.

Vigyan Parishad, Mahakoushal Prant, Jabalpur.

MP Council of Science & Technology, Bhopal

Website: www.godavariacademy.com and www.ijgsr.com



Chief Guest Dr. Virindra Nath Former Scientist "G" CSIR - NBRI Lucknow Uttar Pradesh & Chairman of the Program Dr. Kanhaiya Tripathi Former Special Duty Officer, The President Office, Republic of India, Government of India inaugurated ESW 11th Annual National Research Conference - 2K24

A PRELUDE: After the success of ESW 10th Annual Research Conference International Level on “Strategies for promotion and conservation of environment and native species to protect and restore the Nature” during 29 to 31 January, 2023 Environment & Social Welfare Society, Khajuraho, India organized its ESW XI Annual National Research Conference on “Impact of human activities on Ecosystem and Climate change” on 28 & 29 January, 2024 (Sunday & Monday) At Godavari Self-Employment Centre, Nahdora, Dt. Chhaarpur, Madhya Pradesh, India in association with *Zoological Survey of India*, Ministry of Environment, Forest and Climate Change, GoI, Kolkota, West Bengal, International Union for Conservation of Nature- CEC, Switzerland, The National Academy of Sciences, Bhopal Chapter, Madhya Pradesh, India, Vigyan Parishad, Mahakoushal Prant, India with collaboration of ESW MoU Institutes Dr. B. R. Ambedkar University of Social Sciences, MHOW, Madhya Pradesh. Pt. S. N. Shukla University, Shahdol, Madhya Pradesh. Vikram University, Ujjain, Madhya Pradesh. Rani Durgavati University, Jabalpur, Madhya Pradesh. Bundelkhand University, Jhansi, Uttar Pradesh. *Nehru Gram Bharati* (Deemed to be University), Prayagraj, Uttar Pradesh. Govt. College, Chenani, Jammu, Jammu & Kashmir. Govt. Girdari Lal Dogra Memorial College, Hiranagar, Jammu & Kashmir. Assisted by Godavari Academy of Science and Technology, Chhatarpur, MP, India.

OBJECT: To provide a platform to Policy makers, Vice Chancellors, Educational Administrators, College Principals, Deans, Head of Departments, Professors, Readers, Associate Professors, Assistant Professors, Scientists, Environmentalist, Researchers, Young scientists and Post Graduate Students to disseminate knowledge related to environment and native species.

ESW XII Annual National Research Conference

“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025

GOAL: The principal goal of this conference will be to present some of the latest outstanding breakthroughs in environment and native species, to bring together both young and experienced scientists from all regions of the world, and to open up avenues for research collaborations at regional and global level.

THEME: In the preamble to the 2030 agenda, world leaders affirmed that they are: “Determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.” Therefore, ESW Society organized this conference to take some positive steps towards improving our Environment, Society and Human health for our future generation.

INAUGURAL FUNCTION: The ESW XI Annual National Research Conference inaugurated on 28 January, 2024 by Dr. Virindra Nath Former Scientist "G" CSIR - NBRI Lucknow Uttar Pradesh by candle lighting in front of Goddess Saraswati in the gracious presence of Chairman of the Program Dr. Kanhaiya Tripathi Former Special Duty Officer, The President Office, Republic of India, Government of India And Chair Professor Dr. Ambedkar Chair on Human Rights and Environmental Values, Central University of Punjab, Special Guest Dr. B. D. Ahirwar Principal Shri Rajiv Gandhi Government College, Banda, District Sagar, Mr. Harishchandra Patel, Sarpanch Village Nahdora, Dr. Ashwani Kumar Dubey, Founder President, Environment & Social Welfare Society, Khajuraho, Madhya Pradesh, Fellow/Member of Environment & Social Welfare Society Khajuraho, India, Mrs. Vandana Dubey, Managing Director, Godavari Academy of Science and Technology, Chhatarpur, MP and distinguished guests, participations from various part of country and hundreds+ participants including social media were participated in the conference. Miss. Muskan Ahirwar, Khushi Ahirwar and Jyoti Adivasi presented Saraswati Vandana and Dr. Amit Pal, Vandana Singh and Vandana Dubey welcomed ESW Society by putting badges.



Souvenir released with Message of Mr Mangubhai Patel, Honourable Governor, Rajbhawan Madhya Pradesh, Dr. Dhriti Banerjee Director, ZSI, Govt of India, Prof. Rajkumar Acharya, Honourable Vice Chancellor, Awadhesh Pratap Singh University, Rewa, MP, Prof. Kapil Deo Mishra, Honourable Vice Chancellor, Rani Durgavati Vishwavidyalaya, Jabalpur, Prof. Akhilesh Kumar Pandey, Honourable Vice Chancellor, Vikram University, Ujjain and Prof. Avinas Tiwari, Honourable Vice Chancellor, Jiwaji University, Gwalior, MP. Fifty research abstracts received and published related with Biological Sciences, Environmental Sciences, Earth and Atmospheric Science and sustainable development from various States of India viz. Uttarakhand, Uttar Pradesh, Madhya Pradesh, Gujarat, Bihar, Rajasthan, Maharashtra, Jammu & Kashmir, Karnataka, New Delhi, Telangana, Chhattisgarh and as well as from Hong Kong. Its available online <https://godavariacademy.com/godavarinew/wp-content/uploads/2024/04/Souvenir-ESW-XI-Annual-National-Research-Conference-2024.pdf>

ESW XII Annual National Research Conference

“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025



Book released by Guest: Book Organic Farming Authors Dr. Ashwani Kumar Dubey released by VIP guest during ESW XI Annual Research Conference 2024.



ESW Society, Khajuraho, India and Shri Rajiv Gandhi Govt. College, Banda, Sagar, MoU Signed and exchange file between executive of institutes by Dr. Ashwani Kumar Dubey & Dr. B. D. Ahirwar

Chief Guest Dr. Virindra Nath focused on environmental protection and solution of global warming and climate change.

President Dr. Kanhaiya Tripathi highlighted in his presidential address on Village development for ecosystem and Nature conservation.

Guest of Honour Dr. B. D. Ahirwar said that Plantation and forest conservation can improve the quality of ecosystem.

Guest of Honour Mr. Harishchandra Patel threw light on conservation of local species.

Executive Director, ESW Society and Organizing Secretary of conference Dr. Ashwani Kumar Dubey, highlighted the 11th years activities of the society, said that all the members associated with this organization are working dedicatedly for environmental protection for future generation on our Earth.

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The general topics discussed in the conference as follows in Five Scientific Session and One Poster session.

- 1. Biological Sciences:** Biological Sciences, Agricultural Science, Anthropology and Behavioral Sciences, Animal Husbandry, Aquaculture, Biodiversity, Biotechnology, Biochemistry, Bioinformatics, Cell and Molecular Biology, Fish and Fisheries, Home Sciences, Immunology, Life Sciences, Limnology, Medical Sciences, Microbiology, Nutrition, Plant Sciences, Taxonomy, Tissue Culture, Toxicology, Veterinary Sciences, Wildlife Conservation, Zoology.
- 2. Environmental Sciences:** Environmental Ethic, Environmental Legislation, Environmental Impact Assessment, Environmental Management, Environmental Policies, Environmental Pollution, Natural Resources Conservation.
- 3. Earth and Atmospheric Sciences:** Mineralogy, Wildlife.
- 4. Sustainable Development**

TECHNICAL SESSION: After the inauguration, the technical session started where Research papers and posters presented by Invited guest, Scientist, Research scholars & Academicians.

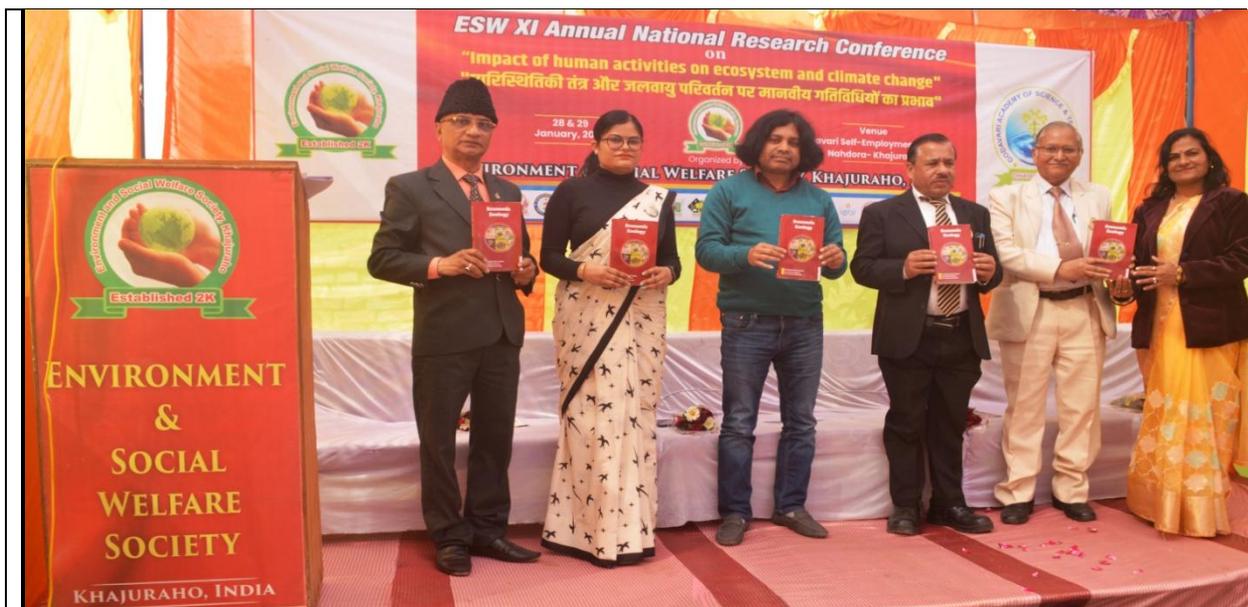


VALEDICTORY & AWARD CEREMONY: 29 January, 2024.

Patron Dr. Kanhaiya Tripathi Former Special Duty Officer, The President Office, Republic of India, Government of India & Chair Professor Dr. Ambedkar Chair on Human Rights and Environmental Values, Central University of Punjab. **Chief Guest** Mr. Prakhar Singh (IAS) SDM Rajnagar. **Special Guest** Dr. B. D. Ahirwar Principal Shri Rajiv Gandhi Government College, Banda, District Sagar. **Guest of Honour** Dr. Monika Singh, Principal, Government Naveen College, Rajnagar, MP & Dr. Arun Arya, Former Professor, MS University, Badodara and President ESW Society Dr. Ashwani Kumar Dubey, were the Guest of the Valedictory and Award ceremony of the conference and other eminent scientists were present on this auspicious occasion.

ESW XII Annual National Research Conference

“Impact of Climate change on Ecosystem, Environment and Agriculture” Feb 01 & 02, 2025



AWARD CEREMONY:

National Amazing Godavari Memorial Award (NAGMA) “Excellence in Education and Science” Dr. Kanhaiya Tripathi Former Special Duty Officer, The President Office, Republic of India, Government of India



Lifetime Achievements Award: Dr. Virendra Nath, Former Scientist "G" CSIR-NBRI, Lucknow, UP

Best Academician Award: Dr. B. D. AHIRWAR, Principal, Shri Rajiv Gandhi Govt. College Banda, Dt. Sagar

Best Scientist Award: Dr. Vinay Kumar Dwivedi, General Manager, Research and Development, Reliance Industries Limited Gagva Jamnagar, Gujarat.

Best Woman Scientist Award : Dr. Madhuri Sharma, Associate Professor of Zoology, Department of Fisheries Resources Management, College of Fishery Science, NDVSU, Jabalpur, Madhya Pradesh

ESW Fellowship Award Dr. Rajeev Kumar Niranjan (Jan. 2023) Assistant Professor of Environmental Science, Nehru College, Lalitpur, Uttar Pradesh & Dr. Ajeet Kumar Sharma, Associate Professor of Botany, St. Wilfred College for Girls Mansarovar Jaipur, Rajasthan.

ESW Excellence Award Dr. Amit Pal Assistant Professor, Institute of Environment & Development Studies, Bundelkhand University, Jhansi, Uttar Pradesh and Dr. M. M. Alam Assistant Professor of Zoology, P. G. Department of Zoology, R. K. College, Madhubani, Bihar

ESW Recognition Award: Dr. Ranjan Kumar, Assistant Professor of Zoology, R. K. College, Madhubani, Bihar. Dr. Ashok Kumar Singh, Assistant Professor of Zoology, R. K. College, Madhubani, Bihar. Dr. S. B. Shashi, Assistant Professor of Zoology, M. K. S. College, Trimuhan – Chandauna, Bihar

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Social Innovative ESW National Award Mr. Ramesh Sharma, Open Eye News, Bhopal, Madhya Pradesh
Social Innovative Educational National Award Major Contribution in the field of National Service Scheme and Academic Dr. Atul Gupta, Assistant Professor of History, Govt. College Sahrai, Dt Ashoknagar
Hindi Sevi Samma-2023 Dr. Anju Sihare, Assistant Professor of Hindi, Govt. College, Pichhor, Dt. Shivpuri
Best Paper Presentation Award in 1st Technical Session Dr. Phool Gend Kumar, Kanpur U.P., 2nd Dr. Shahina Kalim, Jhansi, U.P., 3rd Prof. Abdurahhem K. Aligarh, U.P., 4th Dr. Suchit Swaroop, Lucknow, U.P. & Dr. Ashish Kumar, Lucknow, U.P. 4th Poster presentation was provided to Dr. Chitra Singh by the guests from the stage.



Vote of thanks: Vote of thanks given by In Inaugural session Mrs. Vandana Dubey & In Valedictory session Dr. Amit Pal to our all respected guest and participants..

Dr. Ashwani Kumar Dubey conducted the program.

Beneficiary: Two hundred + Listeners/ Research scholars/ Students/ Academician/ Social workers were benefited by this event.



Group Photo

RECOMMENDATIONS:

- Dr. Ashwani Kumar Dubey Founded Godavari Self-Employment Centre at Village Nahdora District Chhatarpur will be mile stone for Village Development.
- Farmers and Villagers will be get training and new technology for agriculture practices.
- Government and Administrative officer can interact directly to farmers in this centre

NEWS

ई एस डब्ल्यू सोशायटी खजुराहो के दो दिवसीय राष्ट्रीय शोध संगोष्ठी का हुआ समापन

मोहम्मद इमरान पत्रकार छतरपुर।

मुख्य अतिथि प्रखर सिंह एसडीएम राजनगर ने कहा कि गांव में स्वरोजगार केंद्र की स्थापना से महिलाओं को आत्मनिर्भर होने में मदद मिलेगी।



महाविद्यालय राजनगर एवं कार्यक्रम अध्यक्ष डॉ वी अहिरवार प्राचार्य शासकीय महाविद्यालय बंडा जिला सागर उपस्थित रहे। डॉ कन्हैया त्रिपाठी ने अपने उद्बोधन में बताया कि हमें गांव में साफ सफाई एवं यहां के वातावरण में खासतौर से मद्दत प्रदान करने में फेल्टी कृषि तकनीकों को दूर करने को आवश्यकता है। मुख्य अतिथि डॉ प्रखर सिंह अनुविभागीय अधिकारी रासव्य राजनगर ने कहा कि गांव में स्वरोजगार केंद्र की स्थापना से यहां की महिलाओं को आत्मनिर्भर होने में मदद मिलेगी एवं शासकीय योजनाओं का क्रियान्वयन ग्रामीण स्तर पर ऐसे केंद्र के माध्यम से आसानी से

किया जा सकता है। उन्होंने पूरे सेंटर का अवलोकन किया। डॉ मीनिका सिंह ने गांव में होने वाले राष्ट्रीय शोध संगोष्ठी के कार्यक्रम की भूरी-भूरी प्रशंसा की। विशिष्ट अतिथि डॉ वी डी अहिरवार ने एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी द्वारा आयोजित इस तरह के कार्यक्रम को गांव में करने के निर्णय को गोदावरी अकेडमी की प्रबंध निदेशक वंदना दुबे के द्वारा किया गया। इस अवसर पर गोदावरी स्वरोजगार केंद्र में आठ राज्यों से आए प्राध्यापक, वैज्ञानिक विषय विशेषज्ञ एनबीओ के प्रतिनिधि गांव के गणमान्य नागरिक एवं पत्रकार बंधु उपस्थित रहे।

राष्ट्रीय शोध संगोष्ठी में शासकीय महाविद्यालय बंडा जिला सागर एवं ई एस डब्ल्यू सोशायटी खजुराहो के बीच हुआ एकेडमिक एवं शोध करार।

मोहम्मद इमरान पत्रकार छतरपुर



राजनगर। एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी खजुराहो द्वारा आयोजित 11वीं राष्ट्रीय शोध संगोष्ठी का आयोजन गोदावरी स्वरोजगार केंद्र द्वारा ग्राम नहदौरा तहसील राजनगर जिला छतरपुर में आयोजित किया गया जिसमें पूर्व वैज्ञानिक जी सी एस आई आर - एन बी आर आई लखनऊ उत्तर प्रदेश विशिष्ट अतिथि डॉ वी डी अहिरवार प्राचार्य शासकीय महाविद्यालय बंडा जिला सागर डॉक्टर सुरेश बौद्ध भोपाल एवं कार्यक्रम के अध्यक्ष डॉ कन्हैया त्रिपाठी पूर्व विशेष कर्तव्य निष्ठ अधिकारी रिपब्लिक भारत भारत सरकार एवं चेर प्रोफेसर डॉ आंबेडकर चेर ओन हुमन राइट्स एंड एनवायरनमेंटल वैल्यूज केंद्रीय विश्वविद्यालय पंजाब ने अपने अपने विचार व्यक्त किए। शासकीय महाविद्यालय बंडा जिला सागर एवं ई एस डब्ल्यू सोशायटी खजुराहो के बीच हुआ एकेडमिक एवं शोध पर एम ओ यू हस्ताक्षर किए गए एवं फाइल का आदान-प्रदान किया गया इस एमओयू में दोनों संस्थाओं के बीच में अकादमिक शोध एवं शैक्षणिक गतिविधियों को लेकर के आपसी सहयोग प्रदान करने की बात कही गई। इस अवसर पर ग्राम के सरपंच हरिश्चंद्र पटेल डॉ अरुण आर्य एम एस विश्वविद्यालय बडोदरा डॉ चित्रा आर्य डॉ कुसुम कश्यप सहायक प्राध्यापक राजा भोज कॉलेज भोपाल शोभाराम आट्या गोदावरी अकेडमी की डायरेक्टर वंदना दुबे देश के विभिन्न प्रांतों से आए शोधार्थी प्राध्यापक एवं वैज्ञानिक सहित गांव के गणमान्य नागरिक एवं पत्रकार उपस्थित रहे?।

30 जनवरी मानवीय मूल्य एवं पर्यावरण संरक्षण से ही विकास संभव

दो दिवसीय ग्यारहवीं राष्ट्रीय शोध संगोष्ठी का आयोजन किया गया

छतरपुर। पारिस्थितिक तंत्र एवं जलवायु परिवर्तन पर मानवीय प्रभाव विषय पर एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी खजुराहो द्वारा ग्राम पंचायत नहदौरा के गोदावरी स्वरोजगार केंद्र में दो दिवसीय ग्यारहवीं राष्ट्रीय शोध संगोष्ठी का आयोजन किया गया। समापन सत्र में कार्यक्रम के संरक्षक डॉ कन्हैया त्रिपाठी पूर्व विशेष कर्तव्यनिष्ठ अधिकारी द रिपब्लिक भारत भारत सरकार, मुख्य अतिथि प्रखर सिंह आईएसएस अनुविभागीय अधिकारी रासव्य राजनगर, विशिष्ट अतिथि डॉ मीनिका सिंह प्राचार्य शासकीय नवीन महाविद्यालय राजनगर एवं कार्यक्रम अध्यक्ष डॉ वी डी अहिरवार प्राचार्य शासकीय महाविद्यालय बंडा जिला सागर उपस्थित रहे। कार्यक्रम के संरक्षक डॉ कन्हैया त्रिपाठी ने अपने



उद्बोधन में बताया कि हमें गांव में साफ सफाई एवं यहां के वातावरण में खासतौर से मद्दत प्रदान करने में फेल्टी कृषि तकनीकों को दूर करने को आवश्यकता है। मुख्य अतिथि एसडीएम राजनगर प्रखर सिंह ने कहा कि गांव में स्वरोजगार केंद्र की स्थापना से यहां की महिलाओं को आत्मनिर्भर होने में मदद मिलेगी एवं शासकीय योजनाओं का क्रियान्वयन ग्रामीण स्तर पर आसानी से किया जा सकता है। उन्होंने पूरे सेंटर

का अवलोकन किया। डॉ मीनिका सिंह ने गांव में होने वाले राष्ट्रीय शोध संगोष्ठी के कार्यक्रम की भूरी-भूरी प्रशंसा की। विशिष्ट अतिथि डॉ वी डी अहिरवार ने एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी द्वारा आयोजित इस तरह के कार्यक्रम को गांव में करने के निर्णय को सकारात्मक बताया। ईएसडब्ल्यू समिति के अध्यक्ष डॉ अश्वनी कुमार दुबे ने गत वर्ष किए गए कार्यक्रम का संक्षिप्त प्रतिवेदन प्रस्तुत किया एवं समिति द्वारा आजीवन सदस्य, लाइफटाइम अचीवमेंट अवार्ड, ईएसडब्ल्यू एक्ससीलेस अवार्ड, रिकॉग्निशन अवार्ड, गोदावरी अकेडमी इंपैक्ट अवार्ड, बेस्ट साइटीस्ट अवार्ड, बेस्ट वूमन साइटीस्ट अवार्ड, सोशल इन्वोवेटिव ईएसडब्ल्यू नेशनल अवार्ड एवं तकनीकी सत्र में प्रत्येक सत्र से बेस्ट पेपर प्रेजेंटेशन अवार्ड डॉ फूल गेंद कुमार, डॉ शाहिना कलीम, डॉ मनीष यादव, डॉ अन्दुल रहीम एवं पोस्टर प्रेजेंटेशन में डॉ चित्रा आर्य को दिया गया। आभार प्रदर्शन गोदावरी अकेडमी की प्रबंध निदेशक वंदना दुबे के द्वारा किया गया। इस अवसर पर गोदावरी स्वरोजगार केंद्र में आठ राज्यों से आए प्राध्यापक, वैज्ञानिक विषय विशेषज्ञ एनबीओ के प्रतिनिधि गांव के गणमान्य नागरिक एवं पत्रकार बंधु उपस्थित रहे।

खजुराहो। एनवायरनमेंट एंड सोशल वेलफेयर सोसाइटी द्वारा आयोजित 11वीं राष्ट्रीय शोध संगोष्ठी का आयोजन राजनगर जनपद के ग्राम नहदौरा में किया जा रहा है। रविवार को इस दो दिवसीय संगोष्ठी का शुभारंभ हुआ। शुभारंभ सत्र के मुख्य अतिथि डॉ वीरेंद्र नाथ पूर्व वैज्ञानिक जीसीएसआईआर-एनबीआरआई लखनऊ उग्र एवं पूर्व विशेष कर्तव्यनिष्ठ अधिकारी रिपब्लिक भारत रहे। जबकि विशिष्ट अतिथि के रूप में डॉ वी डी अहिरवार प्राचार्य शासकीय महाविद्यालय बंडा जिला सागर, डॉ सुरेश बौद्ध भोपाल मौजूद रहे। अध्यक्षता डॉ कन्हैया त्रिपाठी पूर्व विशेष कर्तव्यनिष्ठ अधिकारी रिपब्लिक भारत भारत सरकार एवं चेर प्रोफेसर डॉ आंबेडकर चेर ओन हुमन राइट्स एंड एनवायरनमेंटल वैल्यूज केंद्रीय विश्वविद्यालय पंजाब ने की। अतिथियों ने मां सरस्वती की प्रतिमा के समक्ष दीप प्रज्वलन कर कार्यक्रम का शुभारंभ हुआ। ग्राम की छात्रा मुस्कान अहिरवार खुशी अहिरवार ज्योति आदिवासी

ने सरस्वती वंदना प्रस्तुत की। तदपुरांत ईएसडब्ल्यू समिति के बैज लगाकर अतिथियों का स्वागत वंदना दुबे, संचित लाहोटी और अमित पाल ने किया। राष्ट्रीय शोध संगोष्ठी की सोविनिर का विमोचन अतिथियों द्वारा किया गया। इसके अलावा आईसीबीसीपी लखनऊ के द्वारा न्यूज लेटर रिलीज किया गया, डॉ अश्वनी कुमार दुबे अतिथि विद्वान शासकीय महाविद्यालय पिपरई जिला अशोकनगर के द्वारा नई शिक्षा नीति पर आधारित ऑर्गेनिक फार्मिंग विषय पर प्रयोग पुस्तिका का विमोचन किया गया। मुख्य अतिथि डॉ वीरेंद्र नाथ ने म्यूजियम के लिए हर संभव मदद करने का भरोसा दिलाया। डॉ वी डी अहिरवार ने अपने उद्बोधन में कहा कि हमारे भौगोलिक क्षेत्र में और वृक्षारोपण करने की आवश्यकता है।

News Gallery:

International, National and Local news paper and electronic channel covered this event promptly.
 Praveen Prabhat: <https://youtu.be/KvGfJRJ1kNA?si=nlq4TRjFTaB7zGMI>
 City News 18 <https://youtube.com/watch?v=pMucY5sTFY0&si=KyTKR0DDGKtWNQDn>

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Invited Lecture

AGNIHOTRA AND HOMA FARMING-TOOLS FOR A SUSTAINABLE DEVELOPMENT ON PLANET EARTH

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Environmental Pollution and Climate Change are the big challenges of our time. All live on this planet – plant kingdom, animal kingdom, and humans – are affected. The Covid pandemic has shown how vulnerable we are.

We have to change our lifestyles and find sustainable ways in order to basically save our planet.

What can be the solution for this universal problem?

One such solution is Homa Therapy with Agnihotra, a daily pyramid fire at sunrise and sunset, as its basic tool. It comes from ancient Vedic Knowledge and has wide-reaching beneficial effects on our whole environment, means on our atmosphere, on the soil, and on our water resources, and also biodiversity is increased.

Agnihotra purifies our environment and thus offers a solution for a sustainable future where humans live in Harmony with Nature, with plants and animals and keep this planet, our Mother Earth, alive and thriving.

In this presentation first the method of Agnihotra and Homa Therapy will be explained.

Then I will give an overview on the research done so far and the research currently being carried out about how Agnihotra and Agnihotra Ash help to mitigate problems of the pollution of our atmosphere, the soil, and water resources and thus lead to sustainable agriculture and horticulture.

Besides that, Homa Organic Farming can help a lot to sequester large quantities of CO₂ from the atmosphere which helps in controlling Climate Change.

As Homa Organic Farming has been shown to be more profitable than conventional farming, this also is an important example of how we can bring ecology and economy together.

Also quite some research has been done in the field of microbiology and biotechnology – e.g. showing that Agnihotra reduces the bacterial load in the air, it purifies water from microbiological pollution, multi drug-resistant bacteria can be controlled, and the virulence of pathogenic bacteria is reduced. Also Biodiversity is restored.

More research in all these fields is suggested, and I hope that the Department of Zoology, Guru Ghasidas Vishwavidyalaya as well as the Zoological Society of India will in future be part of this research on different topics to study the impact of Agnihotra.

Keywords: Environment, Pollution, Climate Change, Homa

CLIMATE CHANGE AND FOOD SECURITY

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Climate change poses problem of food security for population. Despite increase in agriculture and food production, several thousand people are still facing food security and malnutrition. If we do not pay any attention to this problem now, it will increase due to increase in temperature and population. In 2021, nearly eight million people were facing hunger.

Mahatma Gandhi used to say that the Mother Earth can provide enough food to her inhabitants, but she cannot face their over exploitation of resources by the people. This disaster will increase in future, if we do not pay attention to it. Rapid increase in population has impact on agriculture production. In 2020 and 2022, one out of nine people were facing adequate food problem. Insufficient food production and lack of proper distribution of food are the main reasons of hunger. The other reasons are due to climate change, increase in floods and temperature; poverty, lack of basic facility and political instability.

The linkages between climate change, livelihoods and food security are critical for designing policies and management strategies in the communities, nations and regions that depend on them. Doing soeffectively will require sustained investment in research that informs policy, resource management and development. We must diagnose vulnerability to climate change, understand current coping mechanisms and adaptive responses, contribute to mitigation, and building the capacity to respond and adapt.

Keywords: Climate change, population, agriculture, disaster

CLIMATE CHANGE AND INDIAN FISH GENETIC RESOURCES: IMPACT, STATUS AND APPROACHES FOR CONSERVATION AND SUSTAINABLE MANAGEMENT

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Globally, climate change poses challenges to fish genetic resources impacting the distribution and biology due to escalating temperatures, rainfall shifts, and the occurrence of extreme weather events. The tropical regions of Africa and Asia are more prone to the impacts of climate change. The aquatic resources of India support a rich diversity of 3,218 species roughly contributing to 9% of the global fish diversity. Being the major factor affecting the fisheries and aquaculture, climate change needs to be studied for devising measures for mitigation in various aquatic systems of the country. The climato-hydrological influences on the breeding phenology of small Indigenous Fishes (SIFs) were assessed from diverse ecosystems. The vulnerability assessment of fish species towards climate change from inland waterbodies including various wetlands based on climate, water quality, reproduction and population biology were studied. The reproductive requirement of fish and the influence of the periodic occurrence of inland heat waves on the ecosystem were assessed to understand the ecosystem-level impacts. The geospatial mapping of climate resilient deep pool habitats across riverine ecosystems and quantification of carbon sequestration potential of blue carbon ecosystem is vital to reinforce the actions to combat climate change. Devising effective mitigation and adaptation strategies against climate change is necessary to conserve the fish genetic resources and sustain the livelihood of local communities. Addressing the challenges includes the identification of optimal climatic conditions for natural recruitment, development of climate-resilient adaptation strategies and techniques, modelling the distribution and abundance of fish under the future changing climatic conditions, and community approach to equip the stakeholder towards extreme events. The quantification of climate-induced risks at the regional, national and global levels is necessary to discern specific long-term trends which can aid in evolving adaptation and climate resilience measures.

Keywords: Climate change; breeding phenology; Adaptation; Mitigation; Small Indigenous Fishes

PRESENT STATUS, CHALLENGES AND FUTURE PROSPECTS IN AQUAFEED RESEARCH AND DEVELOPMENT: IN AN INDIAN PERSPECTIVE

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Aquaculture is one of the fastest growing food production sectors in India with an average annual growth of over 8% since last ten years or so. The country stands 2nd in world aquaculture production with a fair share of 8%. But India has long way to go to match China who stands first and contributes about 32% of the global aquaculture production. The definition of modern day aquaculture is nothing but budgeting of nitrogen input and nitrogen output. More precisely, it is the budget of energy input and energy output in a fish culture system. Among all inputs, feed is considered as the most costly but vital inputs in aquaculture constituting 60-70% of the operational cost. Thus, the economic viability and sustainability of aquaculture mainly depends up on the optimum and effective utilization of feed. At present, in India, about 2.5 million tons manufactured feeds and 8.0 to 9.0 million tons farm-made feeds are being used to produce about 10.0 million fish from aquaculture mainly the freshwater aquaculture. However, so far, the feed based aquaculture is less than 15% in India. However, 10 years down the line, the country requires about 30.0 million tons of manufactured feeds to produce estimated 20.0 million tons of fish from aquaculture. To manufacture the above quantity feed, establishment of 20 new feed mills of different capacity is required across the country in addition to the exist ones. The fish feed resources are finite in nature and there are many competitors for the same ingredients in different animal production sectors which are also growing at the same pace as that of aquaculture. The production of sustainable aqua-feed is an impending major challenge to be faced by the aquaculturists around the globe in near future. Some of the priority and challenging areas of research and development in aqua-feed sector are: identification of new and novel feed ingredients, redefining the nutrient requirement of fish for their various life stages, species specific feed development, development of fish feed standards, improvement of digestion and absorption of nutrients, nutrient and energy budget, live feed and their nutritional contribution in pond culture by studying the primary productivity and plankton dynamics, metagenomics for microbial communities, development of system species feed, feed for high density fish culture, use of nutraceuticals, functional food aids, and feed additives for improving the feed and nutrient utilization efficiency, nutritional programming, use of artificial intelligence, cloud computing, big data analysis, Internet of Things (IoT) and machine learning for feed formulation and manufacturing, efficient utilization feed and available nutrients, production of quality and safe fish, production sustainable aquafeeds, formulation of zero/minimum fish meal and fish oil diets, development of nutrient-dense low-pollution feeds, nutrient recycling and waste management through the circular economy principle, input optimization and reduction of carbon footprint, dietary intervention for improvement of product quality and storage life, improvement of immunity and health status of fish through dietary intervention, fish feed production technology and feeding management. The next generation feed should address the sustainable aquafeed. Apart from the above, the provision of quality human resources in terms of unskilled, semi-skilled, skilled and highly skilled are essentially required for the research and development of the aquafeed sector. To make the sector more vibrant, viable, sustainable and inclusive, the training, demonstration and skill development form the integral parts.

Keywords: Aquaculture, Aquafeed, Sustainable

Biological Sciences

Anthropology and Behavioral Sciences, Biodiversity, Biotechnology, Biochemistry, Bioinformatics, Cell and Molecular Biology, Home Sciences, Immunology, Life Sciences, Limnology, Medical Sciences, Microbiology, Nutrition, Plant Sciences, Taxonomy, Tissue Culture, Toxicology, Veterinary Sciences, Wildlife Conservation, Zoology.

FORAGING BEHAVIOUR, DIET PREFERENCE AND DIET COMPOSITION OF WHITE-THROATED FANTAIL, *RHIPIDURA ALBICOLLIS* VIEILLOT, 1818 (AVES: PASSERIFORMES: RHIPIDURIDAE)

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The present paper describes the foraging behaviour, dietary preferences and dietary composition of a small terrestrial passerine bird (size 17.5 – 20.5 cm in length) belonging to the order Passeriformes & family Rhipiduridae, White-throated Fantail, *Rhipidura albicollis* (Vieillot, 1818) from Motihari town (26.65620°N and 84.90455°E), East Champaran district, Bihar, India. According to International Union for Conservation of Nature (IUCN), the White-throated Fantail is categorized as *Least Concern* (LC). White-throated Fantail, *Rhipidura albicollis* is a cheery, smoke-brown bird with a restless demeanor, distinguished by its conspicuous white eyebrows, white-spotted breast and flanks, and whitish abdomen. The most striking feature of White-throated Fantail is the perky, cocked, and fanned-out tail dramatically framed by drooping wings on either side. This species has a large range, extending from the foothills of Himalayas (Nepal & Sikkim) from northeast Pakistan and India east to western Nepal, Bangladesh, Bhutan, Myanmar, Southern China, Thailand and Northern Indo-China, Peninsular Malaysia, Sumatra to Borneo. This bird is native or resident of India, Nepal, Bhutan, Bangladesh, Cambodia, China, Indonesia, Malaysia, Myanmar, Thailand, Vietnam etc. In India, it is reported from southern Gujarat, Maharashtra, Uttar Pradesh, Bihar (including East and West Champaran districts) and peninsular India in and south of Madhya Pradesh, up to about 2000 m above msl. It inhabits forest, grasslands, shrublands, cultivation, mangroves, gardens and even amidst noisy urban settlements. The White-throated Fantail, *Rhipidura albicollis* is primarily an insectivorous. This bird is an agile and active forager, flitting from branch to branch as it pursues its primary diet of insects. Its varied insectivorous diet consists of small creatures such as flies, moths, beetles, and caterpillars, which it captures in mid-air with swift, agile flight. The fantail's feeding technique is remarkably effective, enabling it to consume a large quantity of insects essential for maintaining its energy levels. This is achieved through its active foraging style, characterized by short, rapid flights to catch insects in mid-air, as well as swift snatches from leaves and branches. The White-throated Fantail is characterized by its boundless energy and inquisitive nature. With a perpetual quest for insects, it can be spotted darting energetically through the forest, pausing to perch on low-hanging branches or hop along the ground with an air of curiosity.

Keywords: White-throated fantail, Passeriformes, Rhipiduridae, least concern, Motihari, East Champaran, Bihar, diet, foraging behaviour, insectivorous.

INDIAN MEDICINAL PLANTS AND THEIR USES IN FASCIOLIASIS CONTROL

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Fascioliasis is a worldwide parasitic disease caused by *Fasciola hepatica* and *F. gigantica*. This trematodes disease caused infection in the cattle and human population, which affects a large proportion of the world. However, in cattle, fascioliasis causes severe economic loss. Infected animals lose body weight, milk production, wool, and quality of flesh. *Fasciola* affects millions of livestock resulting in considerable economic loss worldwide. The infection of *Fasciola* can be controlled by the control of snail population by the use of various effective molluscicides. Synthetic drugs are frequently used as molluscicides for the control of infected mollusk population, but synthetic molluscicides cause side effect among no target organisms as well as environments. In India, various medicinal plants are frequently used in control of parasitic disease. Phytochemicals are used as anti-bacterial, anti-fungal, and anti-viral products. Thus, phytochemicals are gaining a lot of attention for curing parasitic infections. Some common plants and their phytochemicals can be used for the control of harmful snails which have more effective molluscicidal properties, and biodegradable characteristics. Mollusks are also an important part of the ecosystem which plays an important role in ecological balance. Therefore, trematodes can be controlled by the use of phytochemicals treatment at larval stages in the host body. The continued uses of synthetic drugs are also causing major drug resistance in the helminths. Each medicinal plant has its own specific phytochemicals for particular larval species. In *in vivo* treatment of larva by the use of phytochemicals will be an effective method for control of fascioliasis. The literature review summarized that the use of traditional medicinal plants and their different preparations further leads to the evaluation of new researchers for the control of the fascioliasis program.

Keywords: Fascioliasis, Phytochemicals, Molluscicides, *Fasciola*.

THE IMPACT OF CLIMATE CHANGE ON VESICULAR ARBUSCULAR MYCORRHIZAE

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Climate change is reshaping ecosystems worldwide, with rising temperatures, shifting rainfall patterns, and higher levels of atmospheric CO₂ posing significant challenges to biodiversity and ecological balance. Vesicular arbuscular mycorrhizae (VAM), a vital partnership between plant roots and fungi, play a critical role in enhancing plant nutrient uptake, improving stress tolerance, and maintaining ecosystem health. This paper delves into how climate change could impact these essential symbiotic relationships, focusing on how environmental shifts affect fungal communities and their interactions with host plants. Understanding these dynamics is key to predicting ecosystem responses and developing sustainable solutions for agriculture and natural resource management.

Keywords: Climate change, ecosystems, temperature

STUDY OF HEALTH AND HYGIENIC STATUS OF SASSOON DOCK FISH LANDING CENTER BY PHYSICO-CHEMICAL ANALYSIS OF WATER.

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The physico-chemical analysis plays a crucial role in examine contamination of various ecological areas. This study focuses on evaluating the health status of the surroundings of the fish landing base at Mumbai's Colaba, specifically the Sassoon Dock fish landing centre. The untreated wastewater discharged near the fish landing base deteriorates the seawater quality. The aim of study provides insights into the quality and hygiene of seawater near the fish landing base. The study also emphasizes the necessity of testing water for various physicochemical parameters to ensure its quality and purity, considering its diverse uses and potential contaminants. Coastal areas, being hubs of human activity, are particularly vulnerable to water pollution, necessitating robust monitoring and management strategies. Therefore, the aim of study is to gauge the seawater condition around Sassoon Dock fish landing centre in Mumbai - Colaba, employing various physicochemical parameters as indicators of quality and hygiene. The physicochemical analysis of ocean water is directly linked to human hygiene and well being. This analysis involves assessing various parameters such as Ph, salinity, temperature, dissolved oxygen and pollutant level in the oceanic environment. The objectives include determining water quality, gathering quantitative data on its physical, chemical, and biological characteristics through statistical sampling, and assessing water quality aspects. This study underscores the importance of understanding the impact of fish landing activities on seawater quality and emphasizes the need for effective management and remediation strategies to mitigate pollution and preserve marine ecosystems.

Keywords : Physiochemical parameters, seawater, Colaba , Sassoon Dock, pollution, Mumbai temperature, salinity, seasonal variations.

BIODIVERSITY: AN OVERLOOKED CAUSE FOR HUMAN EXISTENCE

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Biodiversity refers to the diversity of life forms in each ecological system. Biodiversity gives ecosystems the strength, stability, and resilience they need to thrive. Humans are constantly modifying Earth's ecosystems. High and rising living standards in developed and quickly emerging countries lead to the conversion of extra land to agriculture and urban areas, increased energy use, climate change, and biotic homogeneity. These changes present new challenges because novel pathogens spill over from wildlife when human activities encroach on natural areas, pathogens are introduced to new regions, novel host species are introduced to new continents or islands, animal populations increase or decrease as land-use changes, and climates shift to become warmer, wetter, or drier. These serious concerns to public health may necessitate unique approaches and tactics.

Keywords: Biodiversity, conservation science, human existence, climate change, global warming.

INVASION OF TILAPIA, *OREOCHROMIS NILOTICUS* (LINNAEUS) FISH IN RIVER YAMUNA AT MATHURA DISTRICT, U.P. AND ITS IMPACT ON NATIVE FISH

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As far as concern with the trophic utilization of fishes; carnivorous fishes were dominant followed by herbivorous and omnivorous. Now present condition has changed in terms of native fish fauna are gradually decreasing. A preliminary record shows that 48-fish species belonging to 13-families were recorded in Mathura waters so far. In the present study recorded 31 -Species belonging to 22 genera and 10 families, of which reported 5 species as Alien viz. *Cyprinus carpio*, *Hypophthalmichthys molitrix*, *Clarias geripineus*, *Ctenopharyngodon idella* and *Oreochromis niloticus*. Species of the family Cyprinidae were most dominant followed by Bagaridae, Schilbeidae, Clupeidae, Ophiocephalidae. It has been recorded that presence of invasive fishes gradually establishing themselves as a breeding population replacing the Indian Native Fish Fauna. Study reveals that the use of Yamuna river water for the purpose of hydal projects, irrigation and drinking purpose and water pollution are the main threats affecting the habitat of native species and has provide a favorable environment for the alien fishes. In terms of the status of Invasive fish species significance presence of *Oreochromis niloticus* is evident in majority of the river stretches. *Oreochromis niloticus* is an alien species for the communities in river and corresponding one of the major reason in decline of native fish fauna of River Yamuna. Introduction of the *Oreochromis niloticus* for aquaculture purposes has become a threat to indigenous fishes in our rivers.

Keywords: Tilapia, River Yamuna, Native fish fauna, Invasive Alien fishes

POLLUTED WATER BODIES: A BREEDING GROUND FOR CULICINE MOSQUITO

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Water pollution is a major problem because it encourages the growth of Culicines mosquitoes, which spread illnesses including dengue, Chikungunya, and filariasis. Mosquitoes like these flourish in dirty, standing water, which is common in both rural and urban regions with poor drainage and sanitation. Industrial waste, agricultural runoff, and inappropriate waste disposal are some of the causes that contribute to water pollution, which in turn encourages the reproduction of Culicines mosquitoes. This link is examined in this review study. In order to address both water contamination and mosquito-borne illnesses, this analysis stresses the need of community engagement, stronger environmental regulations, and sustainable urban development. To address this pressing public health issue, it suggests that academics and policymakers work together to enhance water quality and health outcomes.

Keywords: Culicine mosquitoes, polluted water bodies, mosquito-borne diseases, dengue, Chikungunya, filariasis, water pollution, vector control, public health.

SARP SHIKSHA ABHIYAN: DEVELOPING AWARENESS AMONG PEOPLE LIVING IN SNAKE PRONE AREAS, IN INCIDENCES OF SNAKE BITE AND SNAKE BITE DEATH

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According to an estimate of WHO and many reports more than 100,000 people in India particularly labours and farmers face snake bites and more than 50,000 die every year as a result of snake bite. In the last about 78 years of independence we could not develop strong system to prevent incidences of snake bite and snake bite death.. Most of these incidences of snakebites have been reported from agricultural fields, forests and houses situated near the forest areas and agricultural fields. Normally snakes do not attack human beings until unknowingly human come in close vicinity of snake ignorantly in spite of their alarming signals (hissing etc.). Results of our field observations have indicated that snake bite incidences happens when people are not aware about snakes, human snake encounter takes place in snake prone areas mainly due to lack of safety measures. In a situation of snake bite people advise victim to go for tantriks, local healers waste golden period and when they reach to hospital for treatment it gets too late. Therefore, it was decided to develop awareness programmes to have one to one interaction with people living in snake prone areas. India is a big country of 3,287,263 square kilometers with 142.86 (2023) crores population. In order to cover large mass for awareness about snakes in a short period advanced digital technology was also used.

In view of the regular increase in the cases of snake bite death and decreasing population of four majors, we started interacting snake experts and people who are working for the cause of snakes formulated two National groups on social media namely (1) Mission Snake Bite Death Free India (14th September, 2019) and (2) Sarp Shiksha Abhiyan (22nd January, 2024). Educating people about snakes developing Awareness through, Conferences, Seminars, workshops, creating snake awareness youtube videos, mass training programmes to Forest staff, defense personnel's, Jail staff, Police staff, faculty and students in schools, colleges, universities, medical para medical students and faculty, door to door campaign distribution of banners (Fig.1) posters T shirts printed in multi lingual, making snake farmer stories for school children etc. Impact of such awareness has been measured by the records of hospitals and police Department. We are gathering data from different states and Union territories. Results are very encouraging, in many snake bite prone areas hospital wards are empty, means nil cases of snake bite. To further extend awareness programme globally, our team of volunteers decided to celebrate Snake Awareness globally as World Snake Awareness Day on 11th April 2020. Every year this day is celebrated to develop awareness about snakes.

Due to fear of snakebite people immediately kill snakes whenever they spot them. This has significantly reduced population of four major snakes namely Cobra, Krait, Saw Scaled viper and Russel's viper in India. The only medicine to treat snake bite victims is Anti Snake Venom (ASV), or poly -venom from all the four majors, production is facing severe difficulty. Many Snake Bite cases when reach hospital some times die due to non availability of ASV. Due to continuous reduction in the population of four majors anti venom producing organizations are finding it difficult to get adequate quantity of venom to produce Anti Snake Venom. Recently, Supreme Court of India on a PIL writ petition has asked Government about adequate availability of ASV in hospitals. Sarp Shiksha Abhiyan has not only reduced snakebite death but also changed mind set of people from on-site killing of snakes to *in situ* conservation.

This would definitely bring harmonious co-existence of humans and snakes.

Keyword: Sarp Shiksha Abhiyan, snake bite, WHO

ADDITIONAL RECORD OF INDIAN TREE FROG *POLYPEDATES MACULATUS* (J. E. GRAY, 1830) (AMPHIBIA, ANURA, RHACOPHORIDAE) FROM CHHATARPUR DISTRICT, MADHYA PRADESH INDIA)

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This paper deals with additional record of *Polypedates maculatus* (J. E. Gray, 1830), Indian Tree Frog or Chunam Tree Frog belonging to family Rhacophoridae under order Anura and class Amphibia, from inside a house in village Nahdora, tehsil Rajnagar, district Chhatarpur, Madhya Pradesh (India). It is a small-sized yellowish-brown delicate frog with smooth skin, little darker or faint markings on body and legs, loreal-temporal region blackish and moderately developed fingers and toes. Earlier, it was recorded from Raneh Falls on river Ken, about 20 km away from Khajuraho and 51 km from Chhatarpur.

Keywords: First record, *Polypedates maculatus*, Chhatarpur, M.P.

CROSS-INTERCONNECTION OF BACTERIAL TOXIN-ANTITOXIN SYSTEMS: CELLULAR AND ENVIRONMENTAL FACETS

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Toxin-antitoxin (TA) systems are widely present in bacterial genomes. They consist of stable toxins and unstable antitoxins that are classified into distinct groups based on their structure and biological activity. TA systems are mostly related to mobile genetic elements and can be easily acquired through horizontal gene transfer. The ubiquity of different homologous and non-homologous TA systems within a single bacterial genome raises questions about their potential cross-interactions. Unspecific cross-talk between toxins and antitoxins of non-cognate modules may unbalance the ratio of the interacting partners and cause an increase in the free toxin level, which can be deleterious to the cell. Moreover, TA systems can be involved in broadly understood molecular networks as transcriptional regulators of other genes' expression or modulators of cellular mRNA stability. In nature, multiple copies of highly similar or identical TA systems are rather infrequent and probably represent a transition stage during evolution to complete insulation or decay of one of them. Nevertheless, several types of cross-interactions have been described in the literature to date. This implies a question of the possibility and consequences of the TA system cross-interactions, especially in the context of the practical application of the TA-based biotechnological and medical strategies, in which such TAs will be used outside their natural context, will be artificially introduced and induced in the new hosts. Thus, in this review, authors discuss the prospective challenges of system cross-talks in the safety and effectiveness of TA system usage in view of exploring biotechnological and biomedical applications likely to be worth-interesting for human welfare.

Keywords: Bacterial Toxin-Antitoxin Systems, Cross- interlinkages, Cellular factors, Environmental facets.

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IMPACT OF CLIMATE CHANGE ON ECOSYSTEM, ENVIRONMENT AND AGRICULTURE

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Climate change, driven by rising greenhouse gas emissions, is one of the most significant challenges of the 21st century, impacting ecosystems, the environment, and agriculture globally. This research explores the multifaceted effects of climate change, emphasizing the interconnectedness of these domains.

Ecosystems face severe disruptions, including biodiversity loss, habitat degradation, and shifts in species distribution. Altered precipitation patterns, rising temperatures, and extreme weather events exacerbate the fragility of ecosystems, threatening both terrestrial and aquatic systems. The environment bears the brunt of pollution, deforestation, and urbanization, amplifying vulnerabilities and accelerating feedback loops that worsen climate impacts.

Agriculture, a critical pillar of global food security, is particularly vulnerable. Prolonged droughts, erratic rainfall, and shifting growing seasons reduce crop yields and threaten livelihoods, especially in developing regions. Additionally, the spread of pests and diseases, compounded by climate stressors, further undermines agricultural productivity.

This study underscores the urgent need for adaptive strategies, including sustainable land management, conservation of biodiversity, and climate-resilient agricultural practices. It advocates for collaborative efforts among governments, researchers, and communities to mitigate adverse impacts and build resilient ecosystems and food systems. Addressing climate change is not merely an environmental imperative but a socioeconomic necessity to ensure a sustainable future for all.

Keywords: Climate change, Greenhouse, Ecosystem

SIGHTING INDIAN SCOPS OWL *OTUS BAKKAMOENA* PENNANT, 1769 (AVES, STRIGIFORMES, STRIGIDAE) FROM KHAJURAH, CHHATARPUR DISTRICT, MADHYA PRADESH (INDIA).

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The present communication deals with the sighting of *Otus bakkamoena* Pennant, 1769, belonging to family Strigidae under order Strigiformes and class Aves, on a high tree at Khajuraho, Chhatarpur district, Madhya Pradesh (India). It is a medium-sized brownish owl with small head tufts, nuchal -collar, dark brown eyes, whitish spotting above and fine dark streaks below. It is sometimes confused with slightly larger Collared Scops Owl (*Otus lettia*) and Oriental Scops Owl (*O. sunia*) but can be distinguished by eye colour and call. Earlier Spotted Owlet (*Athene brama*) and Jungle Owlet (*Glaucidium radiatum*) were recorded from Khajuraho Temple sites.

Keywords: Sighting, *Otus bakkamoena*, Khajuraho, Madhya Pradesh

INFLUENCE OF SELECTIVE INBREEDING PRACTICES ON THE OVIPOSITION OUTPUT OF THE BLACK SOLDIER FLY, *HERMETIA ILLUCENS*

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Hermetia illucens, commonly known as the black soldier fly (BSF), is a prevalent and widely distributed species belonging to the family Stratiomyidae. The utilization of BSF larvae for the recycling of diverse organic materials, alongside the generation of biomass for feed purposes, is well recognized. The selection of different BSF varieties is crucial when considering their applications. In the present study, the life-history characteristics of a local BSF strain were analyzed in comparison to those of a selectively inbred population, which has undergone over ten generations of inbreeding. The initial four larval stages of the BSF progressed swiftly, occurring within a span of 1 to 14 days, with each transition between stages leading to a doubling in size for both populations. Selective inbreeding did not affect the life-history characteristics of the larval exuviate stage regarding age, size, weight, and feed reduction rate. The total egg production for the inbred strain was significantly greater, being two times that of the local strain. This increase can be attributed to enhanced adult emergence and individual oviposition capabilities. It is hypothesized that inbreeding has improved the reproductive success of the inbred adult female offspring, with the selection process contributing to its stabilization. These results suggest that selective inbreeding may enhance overall oviposition performance and serve as a viable strategy for breeding BSF with high egg production for future applications.

Keywords: selective inbreeding; black soldier fly; egg production; life-history

AMELIORATIVE EFFECT OF JAMUN (*SYZYGIVM CUMINI*) SEED AND ORANGE (*CITRUS SINENSIS*) PEEL EXTRACTS AGAINST LEAD INDUCED ALTERATION IN LIVER BIOMARKERS OF RATS

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The protective effects of jamun seed extract (JSE) and orange peel extract (OPE) on lead induced alteration in liver biochemical parameters were investigated. One hundred twenty Wistar rats were divided into six groups (A-F). Group A (control): No treatment was given, Group B: lead nitrate (10 mg/kg b wt.) was given, Groups C: rats were given 10 mg/kg b wt. Lead nitrate and 200 mg/kg b wt. Jamun seed extract, Group D rats were given 10 mg/kg b wt. Lead nitrate and 200 mg/kg b wt. orange peel extract, Groups E: 200 mg/kg b wt. orange peel extract, and Group F rats were given a dose of 200 mg/kg b wt. jamun seed extract. The treatments were conducted for 14 days. On 7th and 14th day, blood samples were collected from each group and liver biochemical parameters were analyzed. In lead nitrate treated rats liver biomarkers levels (serum alkaline phosphatase, serum SGOT, serum SGPT, serum bilirubin and serum lactate dehydrogenase) were increased at 7 day and 14 day whereas serum albumin levels decreased on 7 day to 14 day as compared to control. JSE and OPE exerts hepatoprotective effects against lead induced alternation in liver biomarkers as the changes in serum alkaline phosphatase, serum SGOT, serum SGPT, serum albumin, serum bilirubin and serum lactate dehydrogenase were recovered to near control values.

Keywords: Lead, Liver biomarkers, Jamun seed extract, Orange peel extract, Protective

IMPACT OF INDUSTRIAL AIR POLLUTION ON AVIAN BIODIVERSITY IN KANPUR DISTRICT WITH SPECIAL REFERENCE TO RESTORATION STRATEGIES

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The study titled "Impact of Industrial Air Pollution on Avian Biodiversity in Kanpur District with Special Reference to Restoration Strategies" represents an extensive inquiry into the dynamic and complex relationship between industrialization and its cascading effects on avian biodiversity. The research is set against the backdrop of Kanpur, one of India's most industrialized and polluted urban centers, which harbors a unique mix of ecological zones, including wetlands, urban parks, and agricultural fields. The study investigates the multidimensional effects of industrial air pollution on bird populations, focusing on species richness, abundance, behavioral changes, and physiological stress. Birds are widely recognized as critical bioindicators of environmental health due to their sensitivity to ecological changes, mobility, and key roles in ecosystem services. They contribute to pollination, seed dispersal, pest control, and nutrient cycling, making their presence integral to ecological stability. However, urbanization and industrialization have placed unprecedented pressures on avian populations, particularly in regions like Kanpur, where unregulated emissions from tanneries, textile mills, chemical plants, and power stations have led to severe air quality degradation. This study explores the largely under examined impact of industrial air pollution on avian biodiversity in Kanpur District, highlighting the ecological consequences. Industrial pollutants like sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), and heavy metals adversely affect birds' respiratory systems, reduce their immune function, and can even cause mortality. These pollutants also degrade habitats, leading to the loss of food and nesting sites, which exacerbates biodiversity decline. The research identifies significant effects of air pollution on bird populations and highlights critical ecosystems that require restoration. The findings support the implementation of habitat restoration programs for vulnerable species, emphasizing reforestation, wetland conservation, and the establishment of green buffers around industrial areas.

This study aims to deepen the understanding of how air pollution impacts avian biodiversity and offers strategies for mitigating these effects.

Keywords: Impact of pollution, Avian biodiversity, Restoration, Vulnerable species

PROTECTIVE EFFECTS OF AMLA FRUIT EXTRACT AND SELENIUM ON DIMETHOATE INDUCED CHANGES IN BIOCHEMICAL PARAMETERS OF KIDNEY IN RATS

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Wistar rats were divided into 6 groups: Group A (control rats), group B (dimethoate treated rats), group C (dimethoate + selenium treated rats), group D (dimethoate + amla fruit pulp extract treated rats), group E (selenium treated rats), and group F (amla fruit pulp extract treated rats). The dimethoate treated rats (group B, C and D) received orally 20 mg/kg b wt of dimethoate daily for 7 and 14 days. The selenium treated rats (group E) and amla fruit pulp extract treated rats (group F) were administered orally 0.5 mg/kg b wt of selenium and 200 mg/kg b wt of amla fruit pulp extract, respectively. Blood Samples were obtained and sera were separated. Serum bilirubin, albumin, lactate dehydrogenase (LDH), serum glutamic oxaloacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT), and alkaline phosphatase (ALP) were analysed by using kits (Beacon Diagnostics Private Ltd, India). Dimethoate exposure significantly elevated serum bilirubin, LDH, SGOT, SGPT, and ALP levels while albumin levels were decreased, indicating hepatic damage and dysfunction. Treatment with selenium and amla fruit pulp extract, to dimethoate exposed rat significantly ameliorated these alterations. These findings suggest potential therapeutic applications of amla fruit pulp extract and selenium in managing pesticide induced liver damage.

Keywords: Amla fruit pulp extract, Selenium, Dimethoate, Hepatotoxicity

DIMETHOATE-INDUCED ALTERATIONS IN SERUM CALCIUM AND PHOSPHATE LEVEL OF RATS: PROTECTIVE ROLE OF SELENIUM AND AMLA FRUIT PULP EXTRACTS

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Wistar rats were divided into 6 numerically equal groups and treated as -- Group A: Control; Group B: dimethoate (20 mg/kg b wt); Group C: dimethoate (20 mg/kg b wt) and selenium (0.5 mg/kg b wt); Group D: dimethoate (20 mg/kg b wt) and amla fruit pulp extract (200 mg/kg b wt); Group E: selenium (0.5 mg/kg b w.) and Group F: amla fruit pulp extract (200 mg/kg b wt). Blood samples were collected on 7 and 14 day and serum calcium and phosphate levels were analyzed. Serum calcium levels of rats treated for 7 day with dimethoate (Group B); dimethoate +selenium (Group C) and dimethoate+amlam fruit pulp extract (Group D) decreased as compared to control rats (Group A). The administration of amla fruit pulp extract and selenium did not fully restore the reduced calcium levels caused by dimethoate, despite a slight increase in calcium levels of group C and group D. After 14 day, calcium levels decreased after dimethoate; dimethoate+ selenium; and dimethoate +amlam fruit pulp extract treatment. Although serum calcium levels are increased in group C and group D as compared to dimethoate treated group (group B) but the levels (group C and D) are still hypocalcemic as compared to control. Levels in group E (selenium) and F (amlam fruit pulp extract) remain unaltered on day 7 and 14. Serum phosphate levels decreased after 7 and 14 day in dimethoate, dimethoate+selenium and dimethoate+amlam fruit pulp extract treated rats. In group C (as compared with E) and group F (as compared with F) phosphate level decreased. Phosphate levels of group C and group D increased as compared to group B. This indicates that treatment of amlam fruit pulp extract and selenium caused phosphate levels to recover.

Keywords: Dimethoate, Calcium, Phosphate, Amlam fruit pulp, Selenium, Pesticide, Amelioration, Organophosphate

DNA BARCODING: A NEW HORIZON OF MOLECULAR ANALYSIS

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DNA barcoding is a molecular technique that helps identify and categorize species using short and standardized regions of genetic material. This advanced approach has transformed the study of interspecific diversity in both freshwater and marine fishes by providing precise genetic markers that describe species identification, ecological adaptations, and phylogenetic patterns. By analyzing variations in mitochondrial genes, such as COI (cytochrome c oxidase I), we can uncover cryptic species and assess genetic diversity among species, facilitating a deeper understanding of evolutionary processes and ecological resilience. The application of DNA barcoding in aquatic ecosystems has been helpful in biodiversity assessments, conservation efforts, and the management of fisheries, particularly in regions facing anthropogenic pressures. Furthermore, the integration of DNA barcoding with advanced genomic techniques, such as Next Generation Sequencing, can enhance our understanding of fish biodiversity. This integration serves as a crucial tool for exploring and conserving fish diversity by enabling accurate species identification and contributing to broader ecological studies, allowing for more effective conservation strategies and sustainable management in the face of rapid climate change.

Keywords: Biodiversity, Cryptic species, Cytochrome c oxidase I, DNA barcoding, Phylogenetic analysis

COMPARATIVE LIFE CYCLE DYNAMICS OF *SITOPHILUS ORYZAE* ACROSS DIVERSE RICE VARIETIES

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Cereal rice, particularly *Oryza sativa*, is of paramount importance globally, serving as a staple food for over half of the world's population and providing essential calories and nutrients, especially in Asia. In this study life cycle of major pest of rice *Sitophilus oryzae* or rice weevil was comparatively studied in different rice varieties- Basmati, Sona masoori, Pusa, Sita, Jaya and Padma. The study observed that upon emergence, adult weevils began mating immediately. Female weevils chose healthy grains for oviposition, laying one egg per grain. The pre-oviposition period ranged from 3.43 days in Pusa to 6.33 days in Jaya. Oviposition was shortest in Pusa (29 days) and longest in Jaya (56 days), with fecundity lowest in Pusa (83 eggs) and highest in Jaya (179 eggs). The incubation period varied, with Pusa taking 4 days and Jaya 3.37 days. Hatching rates ranged from 64% in Pusa to 92.33% in Jaya. The larval period was longest in Pusa (16.01 days) and shortest in Jaya (12.69 days). Pupation rates were highest in Jaya (81.53%) and lowest in Pusa (54%), with pupal periods of 7.67 days and 6.98 days, respectively. Adult emergence rates were highest in Jaya (93.33%) and lowest in Pusa (52.66%), correlating with varietal susceptibility. Male longevity ranged from 46.39 days (Pusa) to 52 days (Jaya), while females lived longer, from 67.33 days (Pusa) to 106 days (Jaya). The sex ratio favored females, peaking in Sita (1:1.83) and lowest in Pusa (1:1.32). The developmental period of *S. oryzae* ranged from 23.04 days in Jaya to 27.68 days in Pusa. Growth indices were lowest in Sita (2.003) and highest in Pusa (3.948). Annual generations varied: six in Jaya and Sona Masoori, four in Padma, Basmati, and Sita, and three in Pusa.

Keyword: Rice, *Sitophilus oryzae*, Life Cycle, Basmati, Sona masoori, Pusa, Sita, Jaya, Padma.

EFFICACY OF ORANGE (*CITRUS SINENSIS*) PEEL EXTRACTS AND JAMUN (*SYZYGIUM CUMINI*) SEED AGAINST CADMIUM INDUCED HISTOLOGICAL ALTERATIONS IN LIVER OF RAT

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The aim of the present study was to investigate histological changes in the liver of rats induced by cadmium and to evaluate the protective role of jamun (*Syzygium cumini*) seed and orange (*Citrus sinensis*) peel extracts. Male wistar rats were divided into six groups – Group A : Control ; Group B : Cadmium (Cd) (10 mg/ kg b wt) ; Group C : Cadmium and jamun seed extract (Cd+ JSE) ;Group D : Cadmium + orange peel extract (Cd + OPE) ; Group E : Orange peel extract (OPE) (200 mg/ kg bwt/ day) ; Group F : Jamun seed extract (JSE) (200 mg/ kg bwt/ day).

For light microscopy liver was fixed on 7 and 14 day following the treatment. After 7 day (Cd) Group B, (Cd + JSE) Group C and (Cd + OPE) Group D treated rats, hepatocytes showed hyperchromatic nuclei. The sinusoids were dilated. Few crescentic nuclei have been observed in cadmium treated rats. In 14 day Group B(Cd) the deposition of glycogen in sinusoids were encountered. Few binucleated hepatocytes cells were noticed in cadmium treated rats. Focal degeneration of hepatocytes was seen at some places. Fatty degeneration was also noticed in liver of cadmium exposed rats. (Cd+ JSE) Group C and (Cd + OPE) Group D treated rats there was degeneration in hepatocytes but in comparison to Group B (Cd) the degeneration was less. The hepatocytes of (OPE) Group E and (JSE) Group F treated rats have not shown any morphological alteration and are similar to control rats.

Keywords : Cadmium, hyperchromatic, *Syzygium cumini*, *Citrus sinensis*, antioxidant

EVALUATION OF ANTI-CANCER POTENTIAL OF *MOMORDICA DIOICA* USING MTT AND DAPI ASSAYS

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Momordica dioica is a medicinal plant known for its diverse biological activities, including antimicrobial, anti-diabetic, antioxidant, hepatoprotective, and anti-cancer properties. This study focused on evaluating the anti-cancer potential of methanolic extracts from the stem-leaf, root, and callus of *Momordica dioica* against two cancer cell lines: MCF-7 (human breast cancer) and A549 (lung cancer). The evaluation was conducted using the MTT assay and DAPI staining method, both of which are reliable and widely used techniques in cancer research. The MTT assay, a sensitive and quantitative colorimetric method, was employed to assess cell viability, proliferation, and metabolic activity. The results revealed that methanolic stem-leaf and callus extracts significantly inhibited the growth of MCF-7 cells at IC₅₀ concentrations, indicating their effectiveness in targeting breast cancer cells. DAPI staining, a fluorescence-based method used to detect DNA fragmentation and apoptosis, was applied to the A549 lung cancer cell line. The findings demonstrated a dose-dependent induction of apoptosis in A549 cells treated with the extracts, suggesting their potential role in activating apoptotic pathways in lung cancer cells. Overall, these results highlight the promising anti-cancer properties of *Momordica dioica* methanolic extracts. The ability to inhibit cancer cell growth and induce apoptosis underscores their potential as natural therapeutic agents. This study provides a foundation for further research aimed at isolating and characterizing the active compounds responsible for these effects, which could lead to the development of novel and effective anti-cancer drugs.

Keywords: Anti-cancer, A549, DAPI, MTT, *Momordica dioica*, MCF-7

A STUDY OF STRESS MANAGEMENT AND ITS IMPACT AMONG STUDENTS

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Stress is a very serious problem, which is closely related to a variety of physical and mental health issues. Some of the health issues linked to stress include cardiovascular disease, diabetes, obesity, depression, anxiety, sleep issues and immune system suppression. Stress is a feeling of emotional strain and pressure. In a cognitive relation, stress is a type of psychological pain, which affects health due to mental discomfort. In another words, we can say that “stress is a state of worry or mental tension in routine life. In general, stress is the wear and tear condition that our minds and bodies experience as we attempt to cope with our continually changing environment”. It is a state, which occurs mainly when the pressure is greater than the given resources and such concerns may be self-created or given by external environment. Stress condition is generated based on how we perceive life, whether an event makes us feel threatened or stimulated, encouraged or discouraged, or happy or sad, depends to a large extent on how we perceive our selves. The present study tries to understand what stress is and how is stress managed especially in students.

Keywords: Stress management, Cardiovascular disease, Emotional stress, Stress condition.

SUCCESSIVE PHYTOCHEMICAL SCREENING AND STUDY OF TOTAL PHENOLS AND FLAVONOIDS CONTENT IN EXTRACT OF ZYGOPHYLLUM ARABICUM

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The study aimed to investigate the phytochemical composition and quantity the total phenol and flavonoid content in various extracts of *Zygophyllum arabicum*. Extracts were prepared using chloroform, ethyl acetate, and methanol, yielding 4.46%, 5.31% and 8.29% respectively. Phytochemical screening revealed the presence of flavonoids, diterpenes, phenols, and saponins, particularly in the methanol extract, which exhibited the highest concentration of these bioactive compounds. Quantitative analysis showed the total flavonoid content as quercetin equivalents (QE) and total phenolic content as gallic acid equivalents (GAE). The methanol extract contained the highest levels of flavonoids (0.766 mg/100mg) and phenols (1.583 mg/100 mg). These findings confirm *Zygophyllum arabicum* significant antioxidant potential, supporting its traditional medicine uses and highlighting its promise as a natural source of therapeutic agents. The results provide a scientific basis for further pharmacological studies to explore the plant's health benefits.

Keywords: *Zygophyllum arabicum*, phytochemical screening, total phenol content, total flavonoid content, antioxidant potential.

THE IMPACT OF COAL FLY ASH OF AMARKANTAK THERMAL POWER STATION ON THE LIVER OF SELECTED COMMERCIAL FISH

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Amarkantak Thermal electricity plants utilize bituminous coal as a fuel, which incorporates an excessive amount of coal fly ash (as much as 40 %), sulfur (0.2- 06%), and heavy metals such as Hg, Mn, Cu, Pb, Ni, Fe, Cr and Cd in varying percentage. However fly ash generally includes just about 50% silica which together with oxides of Al, Fe, and Ca increases 95 to 99 percent of its contents whereas Na, Mg, Ti, K, C, and S make up 0.5 - 3.5%. The rest of the fly ash comprises trace elements. (Davison et al.,1974). The plant disposed of ash combined with warm wastewater at the Sone River and for that reason, it has an unfavorable effect on the river. Consequently, the quality of the water has been altered. Some studies have confirmed that a big quantity of heavy metals, like lead, copper, nickel, silicon, etc were found in the disposal water. Water quality in any ecosystem provides significant information about the resources accessible to support life in that ecosystem. In the present observation, in water, the concentration of metals such as Pb, Al, Fe, and Cr was found much higher than the permissible limits prescribed by WHO(World Health Organization) and Indian Standards. Different metals are stored in different ways in different parts of fishes. After bioaccumulation they cause tissue degeneration in different organs like Liver, Kidney, Gonads, Gills, Skin and Intestine.

Keywords: Coal Fly Ash, Chemical Composition, Heavy Metals, *Channa punctatus*, fish liver , Amarkantak Thermal Power Plant.

ETHNOMEDICINAL PLANTS OF RATAPANI WILDLIFE SANCTUARY

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Ethnobotany is an interdisciplinary field at the interface of natural and social sciences that studies the relationships between humans and plants. It focuses on traditional knowledge of how plants are used, managed, and perceived in human societies. The Ratapani Tiger Reserve, located in the Raisen district of Madhya Pradesh. It has been a wildlife sanctuary since 1976. As of March 2013, in-principle approval by the National Tiger Conservation Authority (NTCA) has been granted for upgrading it to a status of tiger reserve. On 2 December 2024, the Government of India officially announced the area as a tiger reserve. This designation brings the total number of tiger reserves in India to 57, with 8 located in Madhya Pradesh. Ratapani Wildlife Sanctuary spreads over an area of 1201.29 km² is located in Raisen District in the State of Madhya Pradesh. Ratapani Wildlife Sanctuary is extremely rich in flora and fauna. Ratapani Wildlife Sanctuary is rich in biodiversity.. Ratapani Wildlife Sanctuary contains 129 tree species, 73 herbs and shrubs species, 33 climbers and parasites, 35 grasses and bamboo species, 35 mammals, 205 birds, 14 fish, 33 reptiles and 10 species of amphibians have been recorded in Ratapani Wildlife Sanctuary.

Keywords: Ethnomedicinal Plants, Ratapani wildlife sanctuary, Tiger Reserve

GENETICS, PRACTICES AND CHALLENGES IN GUPPY FISH BREEDING: A COMPREHENSIVE OVERVIEW

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Guppy fish (*Poecilia reticulata*) are one of the most widely kept and bred freshwater fish species in the aquarium hobby. Known for their vibrant colors, small size, and ease of care, guppies have become a popular subject of both casual and scientific breeding programs. Breeding guppies presents opportunities for genetic studies, as well as the creation of distinct colour morphs and patterns, making it a subject of both recreational and scientific interest. This paper examines the principles and practices of guppy fish breeding, focusing on aspects such as genetics, reproductive biology, and environmental factors that influence breeding success. Key topics include the role of selective breeding in enhancing desirable traits, the identification of male and female guppies for controlled breeding, and the management of breeding environments to ensure healthy offspring. Additionally, the paper discusses the common challenges faced by breeders, such as managing inbreeding, preventing overpopulation, and maintaining genetic diversity. The implications of breeding for ornamental purposes versus breeding for conservation or research are also explored. By synthesizing current research and practical insights, this work aims to provide a comprehensive understanding of guppy fish breeding practices, along with its broader applications in the aquarium trade, conservation efforts, and scientific inquiry.

Keywords: *Poecilia reticulata*, offspring, genetic diversity, breeding.

Environmental Sciences & Climate Change
Environmental Ethic, Environmental Legislation, Environmental Impact
Assessment, Environmental Management, Environmental Policies,
Environmental Pollution, Natural Resources Conservation.

AQUATIC POLLUTION: A CASE STUDY OF YAMUNA RIVER IN FARIDABAD

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The Yamuna River's surface water fulfills the diverse needs and is the primary water resource for various domestic, irrigation and other purposes for the survival of the inhabitants of the Faridabad city. But today over increasing demography, rapid developmental activities, industrialization and urbanization are the major key factors largely contributed to worsening and deterioration of the Yamuna River's water quality. In this context, the present work was intended on seasonal basis from May 2016 to April 2017 to examine the Yamuna River's water quality at different stretches in Faridabad city of Haryana State, India. In order to determine the excellence of river water, eleven different sampling sites of river Yamuna from upstream (Entry point in Faridabad) to downstream (exit point of Faridabad) of Faridabad district were taken to assess the various selected physico-chemical (Temperature, pH, EC, SS, TDS, TS, TH, CaH, MgH, Ca, Mg, Chloride and DO) parameters. Methods prescribed by APHA (American Public Health Association), were used during the research work. From the observations and results of the study, it was revealed that the Yamuna River's water quality has been heavily deteriorated at drain sites. Therefore, this river needs the qualitative aspects of supervision for predicting the flowing water quality conditions.

Keywords: Faridabad, River Yamuna, River pollution, Water quality and Physico-chemical parameter

AIR QUALITY INDEX OF POLLUTION AND THEIR IMPACT ON HUMAN HEALTH

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Air pollution directly affects the respiratory and cardiovascular systems. It may influence pregnancy outcomes, promote carcinogenesis and have a variety of secondary effects such as irritability and behavioral problems, impaired physical growth, cognitive development of children and reduced life expectancy. An air quality index (AQI) is an indicator developed by government agencies to communicate to the public how polluted the air currently is. AQI category is 0-50 then it is considered as good, satisfactory if it is 51-100, moderate if it is 101-200, poor between 201-300, very poor if 301- 400 and severe between 401-500. Main air pollutants are particulate matter (PM₁₀ & PM_{2.5}), lead, sulphur dioxide, nitrogen oxides, ground level (tropospheric) ozone, ammonia, carbon monoxide. AQI measures the quality of air by transforming weighted values of individual pollution parameters into a single number and grades the same into above six categories.

Keywords: Air pollution, air quality index, health impacts of air quality.

IMPACT OF CLIMATE CHANGE ON ECOSYSTEM, ENVIRONMENT AND AGRICULTURE: A REVIEW

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Climate change, driven by rising greenhouse gas emissions, is profoundly altering ecosystems, degrading the environment, and threatening agricultural systems worldwide. This research examines the multifaceted impacts of climate change on biodiversity, soil health, water resources, and crop production. It highlights adaptive strategies and mitigation measures to ensure ecological stability and food security.

VITAL ROLE OF ARBUSCULAR MYCORRHIZAL SYMBIONTS IN GROWTH OF CERTAIN TREE SPECIES IN MIYAWAKI PLANTATION OF GUJARAT, INDIA

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Arbuscular Mycorrhizal (AM) Fungi colonize 85% of plants and penetrate the surrounding soil, extending the root depletion zone and help the plant in different ways. Besides improving uptake of Phosphorus and other minerals AM fungi are known to affect biotic and abiotic stresses. AM associates are symbiotic soil borne fungi belonging to phylum Glomeromycota. No *in vitro* culture techniques are known to culture or multiply these fungi, which improve plant growth and soil fertility. Miyawaki urban plantations were raised in Vadodara city and Lakhi village in Dahej, Gujarat, India by SOCLEEN, an NGO. The saplings of *Pongamia pinnata*, *Tamarindus indica* and *Terminalia bellirica* were raised in poly bags with *Glomus fasciculatum* for two years. Plantation of 30 different types of angiospermic saplings was tried during October, 2020. Saplings with *Trichoderma* as biofertilizer was also used. Regular mulching was provided after sapling plantation at close distance and moisture was maintained for one year. Rhizospheric mycoflora was analyzed. An increase in plant biomass and height was observed as compared to controls. Soil fertility further increased by presence of *Frankia*, a nitrogen fixer, associated with *Casuarina*. The number of Phosphorus solubilizing microbes (PSM) also increased after one year. The role of AM fungi was also discovered to fight drought stress and protect the plants from pathogenic soil fungi like *Fusarium* and *Macrophomina*. The lesser mortality of saplings explains vital biocontrol potential of these microbes. The growth performance in three Miyawaki plantations will be analyzed and effect of AM fungi will be discussed.

Keywords: Arbuscular Mycorrhiza, Trees, Miyawaki, *Glomus*, *Trichoderma*, *Pongamia pinnata*, *Tamarindus indica*, and *Terminalia bellirica*

OPENCAST MINING AND IMPACT ON FLORISTIC COMPOSITION IN ADJACENT AREAS OF MINES IN BUNDELKHAND REGION OF UTTAR PRADESH, INDIA

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Opencast mining, a very important economic activity in many countries especially developing world today including India, causes significant environmental degradation in and around the vicinity of mining areas. In the current investigation an attempt has been made to identify the floristic composition in and around opencast granite mines each two of Jhansi and Lalitpur district belonging to Bundelkhand region of Uttar Pradesh, India. Present study revealed that there are a total of 96 species belonging to 39 different families from which maximum plant species found from Fabaceae family i.e. 16 species followed by Poaceae (07spp); Rutaceae (06spp) and so on. The existing species which are growing in such fragile environment and having dust scavenging nature may useful for greenbelt design in mining areas to combat the air pollution.

Our present investigation is limited to opencast mining area and villages of its surrounding vegetation (within 01km²) which showed the depletion impact on floral diversity. A large number of species growing in this area are of medicinal and economic importance also used by local peoples. The dominant species of study site I having *Acacia nilotica*, *Bambusa vulgaris*, *Butea monosperma*, *Calotropis procera*, *Cynodon dactylon*, *Eucalyptus globulus* respective species. The consisting dominant species at site II are *Butea monosperma*, *Cynodon dactylon*, *Dalbergia sisoo*, *Eucalyptus globulus*, *Ocimum gratissimum*, *Vachellia nilotica* respectively. At site III abundant species are *Adhatoda vasica*, *Allianthus excelsa*, *Butea monosperma*, *Datura metel*, *Jatropha curcas*, *Lantana camera* respective species. The site IV which is having lowest composition of floral diversity and dominant species are *Butea monosperma*, *Calotropis procera*, *Dalbergia sisoo*, *Jatropha curcas*, *Lantana camera* and *Ocimum gratissimum*, etc.

The finding suggested that it is obligatory to conduct further research and also enrich the research works in the field of vegetation cover on other types of mines to get satisfactory information about mining impacts on surrounding floral diversity.

Keywords: Air pollution, Bundelkhand region, Floristic composition, Opencast mining, Plant species.

CLIMATE CHANGE EFFECTS ON BIODIVERSITY, ECOSYSTEM AND ECOSYSTEM SERVICES

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Climate change is a pervasive and growing global threat to biodiversity and ecosystems. Here we present the most up to date assessment of climate change impacts on biodiversity, ecosystem and ecosystem services. Species are responding to climate change through changes in morphology and behaviour, phenology and geographic range shifts and these changes are mediated by plastic and evolutionary responses. Responses by species and populations, combined with direct effects of climate change on ecosystems, are resulting in widespread changes in productivity. Special interactions vulnerability to biological invasions and other emergent properties. collectively, these impacts alter the benefits and services that natural ecosystems can provide to society.

Keywords: Climate change, global threat, biodiversity

SOLID WASTE MANAGEMENT AND SUSTAINABLE DEVELOPMENT GOALS – A REVIEW

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Ineffective solid waste management systems are the result of global solid trash creation rates increasing more quickly than urbanization. Inefficient transportation, open-air incinerators, informal dumping, non-engineered landfills, storing trash in antiquated facilities, mixing household and commercial trash with hazardous waste, and other unsustainable practices are the outcomes of this. These practices release methane and toxic leachate, deteriorate the soil, contaminate the air and water, and fuel climate change. Marginalized socioeconomic groups bear significant environmental and public health costs because of these effects. Promoting favourable public perceptions and awareness campaigns is essential to successfully include the community in solid waste management. In cities, improper solid waste management also pollutes the water and air. Future studies should examine how the distinct features of each Global South nation affect the choice of solid waste management strategies, components, features, technology, and institutional or legal frameworks.

Keywords: SWM, SDG, climate change mitigation, pollution control, developing countries.

STUDY, SURVEY AND KNOWLEDGE OF TUBERCULOSIS IN DISTRICT DODA ALONG WITH CHALLENGES AND STATUS WITH SPECIAL REFERENCE TO JAMMU AND KASHMIR

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Tuberculosis (TB) is one of the most ancient disease of mankind and is one the ten major cause of mortality worldwide particularly in developing countries .It is an infectious disease caused by bacteria *Mycobacterium tuberculosis* . It usually affect the lungs but can also affect other organs of body .Inspite of various measures taken to eliminate the TB by Govt .of India by 2025 .The trend of TB cases and drug resistant cases in India is very disturbing .The study presents survey knowledge ,challenges and status of tuberculosis in Jammu and kashmir with special reference to District Doda where it was observed that still stigma regarding tuberculosis is prevalent in the society.

Keywords: Tuberculosis, India, Jammu and Kashmir, Doda, Drug resistant, Stigma.

HOW GREEN ARE MY PLASTICS

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Today plastics and other polymers are being widely used for packaging. In India there is ban on single use plastics and hence there is a need to look at alternate materials that are green and eco friendly and also natural in origin. Green polymers are thus one of the solutions.

Some of the actions that Mission LiFE encourages include:

Saving energy

Reducing waste

Saving water

Reducing single-use plastic

Adopting healthy lifestyles

When we want to reduce single use plastics we need alternative materials. There is need for green polymers.

Keywords: plastics, polymer, energy

IMPACT OF CLIMATE CHANGE ON REPTILES AND MOLECULAR CHARACTERIZATION OF SPECIES OF FEW RARE AND THREATENED REPTILES FOR THEIR CHARACTERIZATION FOR WILDLIFE FORENSIC AND MOLECULAR ECOLOGY.

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Reptiles, as ectothermic animals, are particularly sensitive to changes in temperature caused by climate change. They rely on external environmental temperatures to regulate their physiological processes, making them vulnerable to temperature fluctuations. Given that climate change projections vary by region, it is crucial to assess the local effects of these changes on reptile populations. Research has highlighted the potential impacts of climate change on different reptile species. In temperate regions, lizards are particularly susceptible to climate shifts, with effects on foraging behavior and reproduction. Snakes show similar vulnerabilities, with variations observed in climatic niche models across studies. The author noted the presence of *Calotes versicolor* and *Duttaphrynus melanostictus* on high altitude temperate area of Himachal Pradesh during survey indicating the alternation in distribution of the species of reptiles and change in climate niche. Turtles and crocodiles face even greater challenges than lizards and snakes. They are not only impacted by habitat changes and increased fragmentation but also by the fact that their sex determination is temperature-dependent. This means that altered temperatures could affect both reproductive success and the long-term evolutionary fitness of these species. The paper also explores the molecular characteristics of threatened and rare reptile species in Northwestern India, focusing on freshwater turtles and lizards for wildlife forensic and molecular ecology and highlighting their vulnerability in the face of climate change.

Keywords: Reptiles, Climate change, Molecular characterization, Wildlife forensic, Molecular Ecology

THE IMPACTS OF CLIMATE CHANGE ON ECOSYSTEM STRUCTURE AND FUNCTION

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Recent climate change research largely confirms the impacts on US ecosystems Identified in the 2009. National climate assessment and provides greater mechanistic understanding and geographic specificity for those impacts. Climate change impacts on ecosystems are those that affect productivity of ecosystems. Loss of sea ice, rapid warming and higher organic inputs affects marines and lake productivity white combined incepts of wildfire and insect out breaks decrease forest productivity,mostly in the arid and semi arid west.

Accelerated losses of nutrients from terrestrial ecosystems to receiving waters and are caused by both winter warming and intensification of the hydrologic cycle. Ecosystem feed backs,especially those associated with release of carbon dioxide and methane release from wetlands and thawing permafrost solid magnify the rate of climate change.

Keywords: Climate change, Ecosystems.

CLIMATE CHANGE AND VEDIC INSIGHTS

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Climate change represents a significant threat to ecological systems, economic stability, and public health worldwide, driven largely by human activities that increase greenhouse gas emissions. This introduction emphasizes the urgent need for effective responses to this crisis, spotlighting the potential of traditional knowledge systems, particularly Vedic philosophy, which can deepen our understanding of humanity's relationship with nature. The Vedic texts, rooted in the ancient traditions of India, emphasize concepts such as “Dharma” (ethical duty) and the sacredness of nature, advocating for harmony between humanity and the environment. Through analytical methods, this study explores the intersections between climate change discourse and Vedic insights, assessing their alignment with contemporary sustainability practices. The objectives include examining how Vedic principles offer solutions to current ecological challenges and advocating for an integrative approach that combines traditional ecological knowledge with modern technology. By highlighting Vedic wisdom as a guiding framework, this research aspires to inspire a renewed sense of responsibility toward environmental stewardship. Furthermore, the significance of this study extends to informing policy and practice, fostering deeper ethical engagement with our planet. Ultimately, the paper issues a call for a paradigm shift from exploitation to a more respectful coexistence that honors both human life and the ecosystems we depend on, illustrating an urgent need for an inclusive dialogue that bridges ancient wisdom with modern environmental action.

Keywords: Climate change, Vedic philosophy, sustainability, Dharma, ecological systems, traditional knowledge, environmental stewardship, interdependence, ecological challenges, holistic approaches.

IMPACT OF CLIMATE CHANGE IN THE FLOODPLAINS OF MITHILA, NORTH BIHAR, INDIA

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Climate change is a phenomenon being experienced at a global level. All efforts are being made to retrieve the previous situation through adoption of non-fossil fuels as sources of green energy. However, the impact of climate change is visible in Mithila Area of North Bihar mostly in the form of disappearance of large number of small rivers. This region is witnessing a diminished rainfall around 800-900 mm as against an average rainfall of >1200 mm some two decades back. Local farmers are shifting to crops requiring lesser water. As such an aquatic crop like Makhana (*Euryale ferox* Salisb.) is now being cultivated in arable plots. The area, earlier known as the zone of ponds and tanks is witnessing a big shrinkage in the number and area of both lentic and lotic water bodies. Shrinking ponds/tanks have triggered their illegal filling, leading to a flood of litigations. Of late, migratory birds have ceased to throng the area during winter months. This communication takes into account the facets of climate change as visible in the livelihood pattern in Mithila area of northern Bihar.

CLIMATE CHANGE AND ANTAORGANISTIC EFFECTS ON AGRICULTURE, ENVIRONMENT, SOIL FERTILITY AND HUMAN IMMUNITY

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This climate change has an effective impact on the environment and agriculture. Rabi and Kharib crops get, soil fertility decreases and due to increase and decrease in temperature, untimely rainfall decreases, sometimes conditions like drought and floods are created. Due to increase in temperature at the global level, there is change in weather, melting of ice, water shortage, increase in acidity in the ocean and loss of biodiversity etc. Loss of natural resources can be a big reason for humans. Because due to exploitation of nature, there has been a decrease in the food chain, decrease in crop production, lack of nutrients in food grains. Excessive use of any one grain causes deficiency of nutrients in the human body. For example, the amount of gluten is increasing due to the consumption of wheat, due to which the number of diabetes patients is increasing, due to which insulin is not being produced in the body. It is very important to emphasize on crop cycle according to the season every year. More and more chemical food products are being used in daily crop production, due to which the amount of chemicals in grains is increasing. Due to which many serious diseases are arising in humans. To prevent this, it is very important to promote coarse grain crops and animal husbandry and to promote plantation of trees in maximum numbers for environmental protection.

Keywords: Biodiversity Climate change temperature plantation humidity etc.

FIRST RECORD OF RUSSELL’S KUKRI SNAKE OLIGODON RUSSELLIUS (DAUDIN, 1803) (SERPENTES, COLUBRIDAE) FROM SAGAR DISTRICT, MADHYA PRADESH (INDIA)

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Oligodon russelius (Daudin, 1803) the Russell’s Kukri Snake, is very closely related to *Oligodon arnensis* (Shaw, 1802), the Arani Kukri Snake and hence mostly confused with it. As per recent morphological and biogeographic studies on *O. arnensis* species complex, two colour morph populations of *O. russelius* have been identified, viz. (i) North Indian, with narrow-cross bands, occurring in northern India including Himalayan foot hills and (ii) Central Indian, with comparatively complete laterally and wider anterior cross bands, in central India, southern Andhra Pradesh and eastern Maharashtra and Madhya Pradesh (both considered earlier as *Oligodon arnensis*). The remaining South Indian and Sri Lankan form belongs to *O. arnensis*, with lesser number of cross bands (as compared to *O. russelius*). In view of this, considering *russelius* as synonym of *arnensis* in some literature is also not justified. *O. tillacki* Bandara et al., 2022, the Tillack’s Kukri Snake, a western Indian form and endemic to India and *O. taeniolatus* (Jerdon, 1853), the Streaked Kukri Snake, from India and elsewhere, differ from these in colour pattern and other characters. Recently, a good specimen of *Oligodon russelius*, agreeing with the Central Indian morph, was sighted in the campus of Shri Rajiv Gandhi Government College, Banda, District Sagar, Madhya Pradesh (India) and reported here as new for the area with its systematic account, distribution and other details.

Keywords: First record, *Oligodon russelius*, Sagar, Madhya Pradesh, India

CLIMATE CHANGE IMPACTS ON BIODIVERSITY AND ECOSYSTEM

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Ecosystems are communities of living things, including plants, animals and micro-organisms that interact with each other and the physical world. People depend on ecosystems for many benefits, such as food, water, clean air, building materials and recreation. Climate change affects ecosystems in many ways. Climate controls how plants grow, how animals behave, which organisms thrive and how they all interact with the physical environment. As habitats experience different temperatures. Precipitation patterns and other changes, the organisms that make up ecosystems feel the effects. People are taking many actions to help ecosystems adapt to climate change impact. At the local level, many groups are preserving habitats and restoring ecosystems that have been damaged.

Keywords: Ecosystem, plant, animal, micro-organism

EFFECT OF CLIMATE CHANGE ON INSECT POLLINATORS: CHALLENGES AND ADAPTATION STRATEGIES

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Climate change is one of the most crucial environmental, social, and economic issues the world facing today. Changes in land use, pesticide applications, agricultural monocultures and the spread of non-native species and pathogens all threaten, which is likely to be exacerbated by climate change. Climate change harms pollinators and their habitats. Pollinator populations are declining worldwide and 85% of flowering plant species and 87 of the leading global crops rely on pollinators for seed production. Key biological events such as insect emergence, their foraging behavior and date of onset of flowering need to occur in synchrony for successful pollination interactions. On a large scale, changes in temperature, disturbances on rainfall pattern and other many environmental changes over the entire season may alter the abundance, diversity and foraging behavior of pollinators. Therefore, climate change may cause very serious impact on insect pollinators and flowering plants and hence it may cause global food insecurity. By implementing adaptive strategies such as habitat conservation, sustainable farming practices, and research initiatives, we can mitigate the impacts and support the resilience of these vital species. Proactive measures are essential to secure their role in maintaining global biodiversity and food security.

Keywords: Climate change, Insect pollinators, Extreme Weather events, Pollinator decline, Foraging behavior, Adaptation and resilience.

WIDESPREAD CONSEQUENCES OF CLIMATE CHANGE

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“Climate change was a critical global issue with extensive effects on ecosystems, the environment, and agricultural systems.” This study evaluated the various impacts of climate change, emphasizing the interconnected ripple effects across these areas. Utilizing satellite data, climate models, and comprehensive environmental databases, we conducted a statistical and comparative analysis across various regions, focusing on shifts in biodiversity, changes in crop yields, water resource variability, and the frequency of extreme weather events. The results demonstrated significant alterations in species distribution and a marked decline in biodiversity, especially in ecologically sensitive regions. Environmental impacts included a continuous rise in global temperatures, increased occurrences of extreme weather events, and elevated air and water pollution levels. In agriculture, climate change had reduced crop yields, heightened water scarcity, and caused soil degradation, posing serious threats to food security and economic stability in vulnerable areas. The discussion highlighted the urgent need for adaptive and mitigative strategies, including sustainable agricultural practices, advancement in climate-resilient technologies, and enhanced forest conservation efforts. This study underscored the necessity for coordinated global actions to address the widespread effects of climate change, ensuring the preservation of ecosystems, environmental integrity, and agricultural productivity. In conclusion, the research provided a deeper understanding of climate change dynamics and supported informed policy-making and strategic planning to mitigate its adverse impacts.

Keywords: Climate Change, Agriculture, Environmental Impact, Sustainability, Greenhouse Gases.

CLIMATE CHANGE AND ETHICS: A MULTIFACETED CHALLENGE

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Climate change poses a profound ethical challenge, necessitating careful consideration of our responsibilities to current and future generations, as well as to the natural world. This article examines the ethical dimensions of climate change, focusing on responsibility, mitigation, and adaptation. It highlights the complexities of historical responsibility, the need for global efforts to reduce greenhouse gas emissions, and the importance of adaptation strategies that prioritize equity, fairness, and human rights. Ultimately, the article argues that addressing climate change requires a comprehensive approach that balances mitigation and adaptation efforts with ethical considerations, in order to achieve a sustainable and equitable future.

Keywords: Climate change, Ethical dimensions, Mitigation, Adaptation

AN INTEGRATION OF “CLIMATE RESILIENCE SMALL FISHES” IN AQUACULTURE SYSTEM FOR IMPROVING NUTRITIONAL AND LIVELIHOOD SECURITY.

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For the development of small-scale aquaculture and promotion of nutrition-sensitive approaches such as polyculture of carps with nutrient-dense climate resilience small SIS because these SIS have been found to be suitable for both pond polyculture with carps and wetland stock enhancement so it is needed to prioritize nutrition-sensitive approaches that promote pond polyculture systems, where diverse small fish are grown alongside larger carp species in household ponds, which boosts economic opportunities through employment generation and improving access to nutritious foods. By this, the farmers are able to develop nutrition-sensitive small aquaculture systems by providing a constant supply of micronutrient-rich small indigenous fish availability of popular SIS and will support improvements in the nutritional status of millions of people across the countries. To ensure the supply of SIS in rural areas, a modified polyculture technology with large carps and SIS in the same ponds should be introduced under small-scale aquaculture. A properly documented plan is needed for their culture pattern because these fishes are important for rural livelihood protein. Low- to middle-income people are highly dependent on these small fishes for their nutrition.

Keywords: Climate Resilience, Small Indigenous Fishes, Polyculture, Small Scale Aquaculture, Nutrition.

Sustainable Development

Nutritional and Food Security, Biodiversity conservation, Promotion and conservation of indigenous species, Strategic and advocacy for nature conservation, Scientific approach of native species conservation, Scientific temper to protect and restore the nature, Livelihood

PANAX GINSENG A WONDERFUL PROTECTIVE HERB

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Panax ginseng belongs to Araliaceae family and native to South Korea and China. Now, it is also found in the Eastern part of the Asia. It has many active constituents like alkaloids, triterpenoids, flavinoids etc. but most potent active constituent is saponins. Now a day, it is known as the wonderful or booster herb due to the protective nature against various organs and chemicals. In the present investigation we explores out it's all the protective activities. It is hepatoprotective against mercuric chloride intoxication in albino rats. All the elevated liver marker enzymes like AST, ALT and ALP are decreased by incorporation of *Panax ginseng*. Similarly, it lowered the elevated renal marker enzymes like urea, uric acid and creatinine by *Panax ginseng* treatment. Moreover, it has in vitro and in vivo antioxidant activity against mercuric chloride stress in albino rat. Simultaneously, it is haemato-protective and repro-protective. Experimentally, it is prove that it is more potent than Indian ginseng (*Withonmia somnifera*).

CHANGING ECOLOGY AND LANDSCAPE OF THE CONFLUENCE CALLED AS SANGAM SITE IN THE CITY OF PRAYAGRAJ

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My paper on this title is based on the study undertaken by myself regularly visiting the Sangam Site where the meeting of the three sacred rivers the Ganges, Yamuna and Saraswati taking place is popularly known as the Confluence of three rivers as Sangam Site in the ancient city of Allahabad that is Prayagraj.

Further, My research paper still is in due process. My paper is depending on my continous hard work of field study conducted during each and every year in this area since 1985 onwards when I got admitted for completing my Bachelor Degree in Undergraduate Science in the faculty of Science at the University of Allahabad and further I usually had continued my continuous participation among the outsiders folk and local people of that region and thereafter I have gathered a lot of information from their point of view.

Also, This paper is based on primary sources of data conducted information about the variations and causes for that change taken almost during the past decades in forming the instant ecology and declining ladsapes and its changing patterns in the City of Prayagraj. So far as the Ecology of Sangam Site is concerned, it is not almost as same as found at present times as whatever it is seen through the naked eyes of the vistors, piligrims and outsiders who come from different places to enjoy and have a holy dip in its water rather it is a matter of deep scientific investigation and research conducted by eminent Anthropologist, hydrologists and geographers. Further in my paper, I am going to highlight the changing Ecology, landscapes likewise its topography of the Sangam site, how and why it is changed due in course of different times and periods and what are the reasons behind their decline and fall within it.

My paper lastly highlights certain important discussions about the Sangam Site and it is left further for Scientific investigations and researches needs to be done about such important matter of Sangam Site in Prayagraj.

Keywords: Ecology, Landscape, Ganges, Yamuna, Saraswati

Agriculture
Animal Husbandry, Aquaculture, Fish and Fisheries.

DIETARY AND HORMONAL MANIPULATION IN ADVANCING MATURATION FOR QUALITY SEED PRODUCTION OF INDIAN CULTURED FISHES WITH IMPACT OF CLIMATE CHANGES ON GAMETE OUTPUT AN UPDTE

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With the steadily growing importance of culture fisheries, the fish culturists should improve the technique necessary for securing basic requirement, the production of young ones (fry and fingerlings) for stocking. Hence, the artificial propagation technique needs constant refinement for obtaining quality fish seed at the desired times of the year. Recent advances in fish endocrinology have led to a better understanding of the hormonal factors involved in the control of gamete production, mode of their action and regulation of their secretion during different stages of reproductive cycle. Environmental stimuli like photoperiod and temperature are perceived by the brain which releases gonadotropin-releasing hormone (GnRH) that binds specifically to receptors in the pituitary gonadotrops and stimulates secretion of gonadotropic hormone (GtH- I, II) which enhance gonadal development and final maturation. GtH-I functions at the target sites in two ways- it induces synthesis and secretion of estradiol-17 β during pre-vitellogenic phase which, in turn, induces vitellogenesis or yolk production during post-vitellogenic phase, GtH-II triggers the synthesis of 17 α ,20 β -dihydroxyprogesterone (17,20-P) responsible for the final gonadal maturation leading to ovulation and spermiation. The recent identification of three GnRH (GnRH 1, GnRH 2 and GnRH 3), kissproteins, two kiss genes (kiss-1, kiss-2) and two kiss receptors (GPR54)- kiss 1r and kiss 2r as well as cytochrome P450 aromatase gene (CYP19) in brain and gonads (ovary and testis) have given better insight into mechanism of hormonal interactions in fish reproduction. Role of pheromones are also gaining importance in advanced phases of reproduction involving the synchronization of maturity, attraction of prospective mates, triggering spawning behaviour and release of gametes.

Role of nutrition in broodstock management for quality seed production in fishes has been appreciated during the recent years. Success of induced breeding depends on proper gonadal maturation because fishes reared without adequate food supply do not show full maturity. Also, the breeding of females and males do not synchronize under improper rearing conditions. Induced breeding of fishes for mass-scale seed production has been achieved successfully by employing pituitary gland extract (PGE) (hypophysation) and different synthetic GnRH-based drugs and antagonist dopamine administration in carps, Atlantic salmon, goldfish, *Chanos Chanos*, *Tinca tinca* and a number of catfishes inhabiting Indian waters. Interestingly, dietary as well as hormonal manipulations have resulted in the advancement of maturity in the Indian carps and catfish by 2 months under pond conditions giving scope for re-maturation and multiple breeding of the same fish in subtropical region of the country for better gamete output. Thyroid hormones (T₃, T₄), cortisol and hGH treatments resulted in better larval survival under hatchery conditions. Even thyroid hormones (T₃, T₄) treatment (dietary/intramuscular administration) in the female broodstocks resulted in better larval survival in carps and catfish. Modern fish industry is highly specialized exploring more and more possibilities to manipulate reproduction. In spite all the recent advances in reproductive physiology, we are still far behind to understand the basic mechanism (s) involved in process of fish propagation in nature. Knowledge on nutrition and reproductive endocrinology periodically refines the technology of production of quality gametes for the expansion of aquaculture. Climate change is one of the most critical global challenge of today. It may impact agriculture and fisheries. endanger food security, trigger higher sea level rise, lead to sea ice melting and glacier retreat, aggravate natural disasters such as floods, cyclones and droughts, accelerate the erosion of coastal zones, quicken species extinction and the spread of vector-borne diseases cause coral bleaching and decline in biodiversity. How the climate change affected India? Can governments and communities adapt to it? Both research and actions on the subject are at nascent stage. But recent studies throw some light on the subject. Impact of climate changes on the reproductive physiology and gamete output of commercially important fishes for sustainable fisheries have also been discussed.

Keywords: Fish reproduction, Hormones, Dietary manipulations, Multiple breeding, Climate change, Quality seed production.

EFFECT OF DIFFERENT PEARL NUCLEI IMPLANTATION AND REARING METHODS ON SURVIVAL, GROWTH AND PEARL FORMATION IN FRESHWATER MUSSEL, *LAMELLIDENS MARGINALIS* REARED WITH CARPS IN A POLY CULTURE SYSTEM

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A natural pearl is formed when a foreign particle, such as a piece of sand or parasite, makes its way into a particular species of mollusc and cannot be expelled. As a defense mechanism, the animal secretes a substance, known as nacre, to coat the foreign body. Cultured pearls are produced both in marine and freshwater environments. Three freshwater mussels i.e. *Lamellidens marginalis*, *L. corrianus* and *Perreysia corrugata* are available in our country and can be employed for pearl production. Pearl culture trials with *Lamellidens marginalis* species have been conducted successfully. Three different implantation methods viz. gonadal, mantle cavity and mantle tissue, were tried with round and designer nuclei developed from dead mussel shell powder as a base material. Implanted mussels were tagged and kept for 10 days in a post-operative care unit after which they were reared with carps in a polyculture system in nylon bags hung in the bamboo frame and perforated plastic crates inside the pond. Data were analyzed statistically using a t-test to determine significant differences between groups at a 5% significance level ($P < 0.05$). Higher survival, growth and development, mantle cavity implantation and implanted mussel rearing in nylon bags hung in bamboo frames in fish ponds were found to be most suitable. True pearls were successfully produced in implanted mussels reared with carps in a polyculture system. A significantly higher growth ($P < 0.05$), mean length 9.52 ± 0.19 cm and mean weight 94.61 ± 1.06 gm was observed in the mussels reared in net bags as compared to mussels reared in plastic crates (mean length 9.16 ± 0.13 cm and mean weight 89.46 ± 1.40 gm). The maximum and minimum thickness of the nacreous layer was 0.35 and 0.20 mm respectively in the mantle cavity implantation method. The present study reveals the potential of utilizing freshwater pearl mussels for pearl production by different methods.

Keywords: *Lamellidens marginalis*, Nuclei Implantation, Pearl Culture, Survival, Growth

PHYSICO- CHEMICAL STUDY OF LONI DAM, REWA, MADHYA PRADESH, INDIA WITH SPECIAL REFERENCE TO WATER QUALITY.

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The Physico-Chemical parameters of surface water in Loni Dam situated in Rewa Madhya Pradesh were studied in July to June months of year 2020-21 for a period of 12 month from four different directions like 04 sites A, B, C and D which are located on East, South, West, North respectively. The current work deals with a study of Physico-chemical parameters like pH, Temperature, Total dissolved Solids, Transparency, Alkalinity, Dissolved Oxygen, Biochemical Oxygen Demand, Nitrate, Phosphate in water samples of Loni Dam Rewa, Madhya Pradesh. The water quality of the samples was compared with standard values given by World Health Organization and United State Salinity Laboratory for drinking and irrigation purposes. From the results it absolutely was found that the number of the water samples sites S-W and S-E are slightly polluted while S-N (north) site of water sample was medium polluted as a results of contamination with agricultural and domestic waste.

Keywords: Physicochemical parameters, Water quality, Purification treatment.

SUCCESSFUL INDUCED BREEDING OF PANGASIUS SUTCHI IN UTTAR PRADESH.

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Pangasius has become very popular in UP within very short time due to its higher stocking density, live fish availability and better meat realization. Stocking of Pangasius has increased 1500 times during last 15 years. UP imports maximum seed from West Bengal, out of which major portion comes from Bangladesh.

To fulfill this seed shortage I started Pangasius breeding in 2016. For breeding we select healthy breeders, females attaining age of 3-4 years and male 2-3 years. High water temperature of pond stimulates early maturity of breeders. Induced breeding is possible from April to August with good breeder management.

Synthetic hormone/Pituitary hormone is used for induced breeding. Females and males are stripped and then eggs are mixed gently to fertilize. Hatching pool is used to hatch these eggs to get fish spawn. Spawn is stocked in well prepared nursery pond having enough zooplankton, to get fry after 15-16 days. These fry may be stocked in rearing ponds to get fingerling or yearling which are suitable for culture pond.

Heavy mortality rate during spawn rearing is main difficulty in seed production; hence further study/research is required to address this issue. Successful Pangasius fish seed production outside West Bengal needs help of Fisheries institutes and department of fisheries as well.

Keywords: Pangasius, Induced Breeding, Uttar Pradesh, Stripping

DIETARY SUPPLEMENTATION OF FORMULATED FISH SPECIFIC MINERAL MIXTURE IMPROVED GROWTH AND HEALTH STATUS OF *CYPRINUS CARPIO* FINGERLINGS

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The present study was undertaken to standardize the dose and efficacy of formulated fish specific mineral mixture on survival, growth and health status of *Cyprinus carpio*. The experiment consists of five treatments (T1-T5, in triplicate), basal diet consisted of rice bran (49-50%), mustard oil (48.5-49%), mineral mixture (0-2%) and salt (0.5%), positive control with commercially available mineral mixture (T1) and negative control without any mineral mixture (T2) and three (T3-T5) treatments supplemented with formulated mineral mixture (as per ICAR, 2013 recommendations) at three inclusion levels 1%, 1.5% and 2% respectively. All of the water quality parameters were within acceptable limits. Supplementation of formulated mineral mix in fish feed significantly ($p \leq 0.05$) improved growth performance, feed utilization, hematological parameters, blood metabolic profile and proximate composition of *C. carpio* and recorded best @ 1.5% (T4) of total fish feed. Moreover, relative productivity and economic analysis also indicated additional increase in net profit i.e. 14.34% increase in T4 treatment (formulated mineral mix @ 1.5% of Feed) over control (conventional/market mineral mix). The data obtained in the present study will be helpful in increasing the fish production and productivity in sustainable way and in terms enhancing fish farmer's income and also helping in nutritional security of the nation.

Keywords: Mineral Mixture, *Cyprinus carpio*, Growth, Health, Proximate Composition, Economics

STRENGTHENING MARINE FISHERIES REGULATION ACTS (MFRAS) FOR SUSTAINABLE FISHERIES GOVERNANCE IN INDIA

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Marine fisheries in India are essential for livelihoods, food security, and economic growth, but face significant challenges such as overexploitation, resource depletion, habitat alteration, and climate change. To mitigate these issues, maritime states have implemented Marine Fishing Regulation Acts (MFRAs) to promote sustainable management through spatial and temporal restrictions, vessel licensing, and gear regulations. However, their effectiveness is hindered by gaps in implementation, weak enforcement, and limited integration of scientific principles. This study identifies critical issues within the MFRAs, including ineffective zoning enforcement, lack of comprehensive monitoring and compliance systems, and inadequate data collection. The absence of onboard observer programs and gear marking systems further impedes resource management. Overcapacity, exacerbated by the lack of vessel buy-back schemes, complicates regulatory governance. To address these challenges, the study recommends aligning MFRAs with the FAO Code of Conduct for Responsible Fisheries (CCRF), incorporating science-based multi-species reference points, and introducing key measures such as gear marking, vessel buy-back schemes, and vessel monitoring systems (VMS). Additionally, enhancing monitoring, control, and surveillance (MCS) and promoting selective, environmentally sustainable fishing practices are crucial for improving governance and optimizing resource management. These actions will ensure the long-term sustainability of marine fisheries. The findings highlight the urgent need to revise and strengthen MFRAs to effectively address emerging challenges and foster sustainable fisheries governance

BIODEGRADABLE FISHING GEARS: A SUSTAINABLE SOLUTION TO MARINE POLLUTION

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Marine pollution, particularly from abandoned, lost, or discarded fishing gear (ALDFG), poses a significant threat to marine ecosystems and biodiversity. This paper explores the potential of biodegradable fishing gear as a sustainable alternative to traditional non-biodegradable materials, which contribute to the growing crisis of marine plastic pollution. Biodegradable fishing gear, made from materials such as polylactic acid (PLA) and polyhydroxyalkanoates (PHA), is designed to decompose naturally in marine environments, thereby reducing the long-term accumulation of plastic waste. This study reviews recent research demonstrating the effectiveness of biodegradable materials in maintaining fishing performance while significantly mitigating environmental impacts. However, the transition to biodegradable fishing gear faces challenges, including production costs, supply chain logistics, and the need for education among fishermen regarding the benefits and limitations of these alternatives. Additionally, concerns about the degradation rates and potential microplastic release during the breakdown of biodegradable materials are addressed. The paper also highlights the economic implications of adopting biodegradable fishing gear, emphasizing the growing consumer demand for sustainable products and the potential for new market opportunities. By synthesizing existing literature, this study aims to contribute to the discourse on sustainable fisheries management and marine conservation efforts, ultimately advocating for the widespread adoption of biodegradable fishing gear as a crucial step towards reducing marine pollution and promoting healthier marine ecosystems.

PLASTICS IN FISHERIES AND MARINE ECOSYSTEM

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Plastics are a group of synthetic materials made up of organic polymers and some special additives. They have become part of our daily life due to their many applications and uses. However inappropriately managed plastic wastes have raised concern regarding their ecotoxicological and human health risks in the long-term. Plastics are used in every levels of aquaculture production whether it is tank, ponds lakes, coastal and marine fisheries including preparation of nets, hooks and lines, fry-fingerling transporting bags, feed bags, pond lining to manage seepage of water, lines piping, polysterine boxes for product (dried fish) transportation or chemical storage. Plastic has been successfully used in fabrication of portable breeding hatchery enabling us to produce major carps and ornamental fish seed even in remote areas of Odisha (Koraput, Kalahandi etc.) and almost every agro-climatic conditions of India. Plastic used in polyhouse of fish rearing has improved production during cold condition. In addition, there are general use of plastic products by the employees in many industries such as plastic cups and drinking water bottles. Globally, over 400 million tons of plastics are being produced annually for uses in a wide variety of applications. About 14 million tons of plastic end up in ocean every year and make up to 80% of all the marine debris found from surface water to deep sea sediments. Marine species ingest or entangle by plastic debris causing severe injuries and even deaths. Plastic pollution threatens food safety and quality, human health, coastal tourism and contribute to the climate change.

Due to non-degradable nature of plastics, their wastes may take several years to partially degrade in natural environments. Plastic fragments and particles can be very small in size and are mistaken easily for prey and or food by aquatic organisms like fish and invertebrates. The surface properties of plastic particles including large surface areas, functional groups, surface topography, point zero charge influence the adsorption of various contaminants, particularly heavy metals, oil spills, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls ((PCB) and DDT. Despite the fact that number of studies on biological effects of plastic particles on biota and human have been increasing in recent years, studies on mixture of plastics and other chemical contaminants in aquatic environment are still limited. It is important to gather information about the main characteristics of plastic particles that allows different types of contaminants adsorb on their surfaces, the consequences of this adsorption, and the interaction of plastic particles in the aquatic biota. It is important to boost more research in this topic to achieve a holistic view on the effects of meso- micro- and nanoplastics to biological system in aquatic environments. It is urgent to implement measures to deal with plastic pollution that include improving waste management, monitoring key plastic particles, determining concentrations of micro-, meso- and nano- plastics and the contaminants in seawater and marine food species consumed by humans applying clean-up remediation and biodegradation strategies.

Keywords: Plastics, Fisheries, Marine ecosystem, fisheries.

THE MODERN TREND OF FEMALE MALNUTRITION IN INDIA'S MAJOR CITIES: INVESTIGATING SOCIAL ISSUES

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India has a rich history of culture, food, mythological stories, spiritual enlightenment, and great personalities; however, it is still a developing nation, so it follows or borrows the culture, habits, and trends of developed nations. After India gained independence in 1947, Englishmen gave it new customs, including tea and bed tea, breads for breakfast, and tight clothing. From then on, we copy others' remedies, habits, trends, and so on. This was the premise for highlighting why Indian women are malnourished in different regions for various reasons. Malnutrition among urban women is discussed here. Urban starvation persists despite living in cities, being educated, and having sufficient money. How can we battle it? First, we must determine its origin and present its relevance to investigate this. Modernization, education, urban lifestyle, excellent purchasing power, and decent healthcare facilities are all positive in urban contexts, but how could they become detrimental to urban malnutrition? This study's major question is as follows. Therefore, we examined the causes and answers. Excellent coverage of women today is strong in any weather, village, or city because they are educated, work independently, sometimes live on their own, manage all household chores with a job, and financially free to fulfil their dreams and duties to their families and children. Owing to their double workload, women neglect their health. Lack of diet, sleep, exercise, stress, relationship problems, and FOMO lead to poor health. IT culture is at the top of all employment in urban areas such as Delhi, Gurgaon, Mumbai, Bengaluru, and Pune; therefore, their working culture is different from that of India, which contributes to malnutrition. Late-night parties, alcohol consumption, smoking, ready-to-eat junk food at work, limitless coffee consumption, and workplace celebrations contribute significantly to urban malnutrition among women. Urban malnutrition's obvious and indirect causes and solutions are discussed in this paper for further study.

Keywords: Urban malnutrition, women, India, lifestyle, education, employment.

PLANT MIRNAS: ESSENTIAL MEDIATORS OF INTER-KINGDOM AND INTRA-KINGDOM GENE REGULATION.

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Micro RNAs (miRNAs) are a family of 21-24 nucleotide-long, single-stranded, endogenous, non-coding RNAs engaged largely in post-transcriptional gene silencing in animals and plants. Their significance in the gene control of plant growth and development, biotic and abiotic stress responses, and methylation is revealed, and much more is expected by these little molecules. With each passing day, a new discovery concerning miRNAs and their explicit function in signalling, plant immunology, and plant-pathogen interactions is accumulating in the literature. In addition, the finding of miRNAs in plants and human secretions and their involvement in regulating the human genes are currently revealed. This observation leads to the speculation of the therapeutic role of secretory miRNAs of such plants, which demonstrate medicinal benefit. Further, given demonstrated evidence of their vital involvement in cross-kingdom gene regulation of multiple human genes, many diseases can be addressed by simply consumption of these plant miRNAs through food. In this review we have addressed about the significant significance of plant miRNA in diverse biological systems, speculating on their potential application as treatments, giving an altogether new approach to molecular biology research on these short RNA molecules.

Keywords: miRNA, plant development, stress, immunity, gene regulation, miRbase.

ECONOMIC IMPORTANCE OF SMALL INDIGENOUS FISH AMBLYPHARYNGODON MOLA (HAMILTON, 1822)

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Amblypharyngodon mola (Hamilton, 1822), commonly known as Mola carplet, belong to the order Cypriniforms and Family Cyprinidae. *Amblypharyngodon mola* is a freshwater fish species that inhabits ponds, rivers, floodplain lakes, canals, paddy fields and many other small water bodies in the Indian subcontinent. The species is widely distributed in South Asian countries including Bangladesh, Pakistan, India, Myanmar and Afghanistan. Small indigenous fish, *Amblypharyngodon mola* is highly popular as a food fish due to its high nutritional content such as Vitamin A (especially 3,4- dehydroretinol and > 2680 retinol activity equivalents per 100gm edible portions), protein and minerals Zn, Ca, F. It contains 3 times more calcium and 50 times more Vitamin A than that of silver carp and rohu. Furthermore, PUFAs especially the ω 3 fatty acids which have the beneficial effect on health and diseases were found in higher quantity from small amount flesh of small indigenous species in comparison with large fishes. The study showed that the ratio of ω 3 and ω 6 is also in good proportion which is very beneficial for preventing coronary heart disease, cancer and autoimmune diseases. *A. mola* has been identified as a potent species for preventing malnutrition in child and Pregnant women. *Amblypharyngodon mola* has also other economic importance household food and nutrition security and income, with successful production achieved within 3 to 5 months of seed stocking.

Keywords: *Amblypharyngodon mola*, Nutritional value, Fatty acid, Vitamin A.

IMPACT OF CLIMATE CHANGE ON ECOSYSTEM

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Climate change affects ecosystems by disrupting biodiversity and altering habitats. Rising temperatures, unpredictable rainfall, and ocean acidification threaten species survival and ecosystem services like carbon storage and water regulation. Impact of Climate Change on Ecosystem has significant impacts on ecosystems, disrupting their natural balance. Rising temperatures and erratic rainfall patterns affect local flora and fauna, leading to habitat degradation and biodiversity loss. Prolonged droughts dry up water sources, while intense rains cause soil erosion and flooding, damaging vegetation and agricultural land. The shifting climate also alters species distribution, with some struggling to adapt or facing extinction. Increased occurrences of invasive species and pests further threaten ecosystems. These changes disrupt ecological processes and reduce ecosystems' capacity to provide essential services like water regulation, soil fertility, and climate buffering. Conservation efforts are critical.

IMPACT OF CLIMATE CHANGE ON FISH BIODIVERSITY: CHALLENGES AND CONSERVATION STRATEGIES

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The ability of fish species to adapt to changing climatic conditions is crucial for their survival. Biodiversity loss, particularly in fish populations, exacerbates the severity of climate change and diminishes the resilience of aquatic ecosystems. Changes in climate have been linked to shifts in fish distribution, alterations in reproductive cycles, and disruptions in migration patterns. These measures aim to enhance the resilience of aquatic ecosystems and support the adaptation of fish species to changing climatic conditions.

पर्यावरण संरक्षण एवं सतत् विकास के लक्ष्यों का समागम करना

राजेश कुमार तिवारी एवं संतेश्वर कुमार मिश्र

नेहरू ग्राम भारती, मानित विश्वविद्यालय, प्रयागराज

समाजशास्त्र विभाग, नेहरू ग्राम भारती, मानित विश्वविद्यालय, प्रयागराज

जो कुछ भी मानव निर्मित नहीं है वह प्राकृतिक पर्यावरण के अंतर्गत आता है। भूमि, वायु, जल, पौधे और जानवर सभी प्राकृतिक पर्यावरण का हिस्सा हैं। आइए प्राकृतिक पर्यावरण के विभिन्न क्षेत्रों के बारे में जानें। ये हैं स्थलमंडल, जलमंडल, वायुमंडल और जीवमंडल। पर्यावरणसंरक्षण और सतत् विकास आज के समय की प्रमुख प्राथमिकताएँ हैं। यह दोनों ही मानव जाति के दीर्घकालिक अस्तित्व और प्रगति के लिए आवश्यक हैं। पर्यावरण संरक्षण का अर्थ है पर्यावरण की रक्षा और सुधार, जबकि सतत् विकास का अर्थ है वर्तमान आवश्यकताओं की पूर्ति करना बिना भविष्य की पीढ़ियों की जरूरतों को समझौता किए। इस लेख में, पर्यावरण संरक्षण और सतत् विकास के लक्ष्यों के समागम पर विस्तृत चर्चा की गई है, जिसमें वैश्विक चुनौतियाँ, रणनीतियाँ और संभावित समाधान शामिल हैं। पर्यावरण संरक्षण और सतत् विकास के लक्ष्यों का समागम करना एक चुनौतीपूर्ण कार्य है, लेकिन यह दीर्घकालिक मानव विकास और पर्यावरण की स्थिरता के लिए अत्यंत महत्वपूर्ण है। सतत् विकास के 17 लक्ष्यों में से कई सीधे या अप्रत्यक्ष रूप से पर्यावरण से संबंधित हैं। इनमें जलवायु परिवर्तन, जीवन के लिए जल, भूमि पर जीवन, और स्वच्छ ऊर्जा शामिल हैं। इन लक्ष्यों को प्राप्त करने के लिए एक समग्र और संतुलित दृष्टिकोण की आवश्यकता है, जो पर्यावरण संरक्षण और सतत् विकास को एक साथ लाता है।

POSTER

Snake Bite Death Free India



सर्प शिक्षा अभियान

सर्पदंश मृत्यु विहीन भारत

भारत में प्रतिवर्ष लगभग 50,000 सर्पदंश मृत्यु (WHO के अनुसार) को सर्पशिक्षा अभियान द्वारा बचाना हमारा राष्ट्रहित में निःस्वार्थ लक्ष्य है

प्रमुख चार विषैले सर्प



जोट, कोबरा, कीट स्नेक, पलार्थम स्नेक

कुछ कम विषैले सर्प



हीन साइन स्नेक, रदाऱट रीट स्नेक

विषहीन सर्प



सर्पदंश के बाद में क्या करना चाहिए

- जहाँ साँप ने काटा है उस जगह एंटीसेप्टिक, साबुन, डिटोल आदि से धोएं।
- व्यक्ति को तुरंत बचाव व भयमुक्त करे यह बताकर कि सर्पदंश का चिकित्सीय इलाज संभव है और हम सही चिकित्सालय पहुँच जायेंगे।
- इस दौरान व्यक्ति को जहाँ सर्पदंश हुआ है और जिसका स्थिति दिताई दे रहे है तो प्रेरण इन्फोर्मेडिटी प्रोग्राम तकनीकी का उपयोग करें।
- परिवार व्यक्ति को सरकारी चिकित्सालय पहुंचाए जहाँ एंटी स्नेक वेनम (ASV) दवा उपलब्ध हो।
- यदि संभव हो तो सर्पदंश स्थान और यदि निकटवर्त सर्प हो तो मोबाइल से फोटो लें और पुलिस व वन विभाग की हेल्पलाइन नंबर पर तुरंत संपर्क करें।
- 1000 एम्बुलेंस की सुविधा निकटवर्त उपलब्ध हो तो उसकी सहायता से व्यक्ति को अतिनीच सरकारी चिकित्सालय पहुंचाए।

सर्पदंश के बाद में क्या नहीं करना चाहिए

- सर्पदंश के स्थान पर कपड़े या रस्ती से कसाकर ना बांधें।
- तिल को घुंसाकर निकालने का प्रयास ना करें।
- तिल निकालने के लिए घाव पर कट न लगाए।
- सर्पदंश के बाद किसी आंखा, ताँबेक या द्रव्य कुंक से इलाज करने कासर्त से बचे।
- सर्प को पकड़ने, दूधने व पचकानने आदि में समय बर्बाद ना करें।

सावधानी

- जिस स्थान पर सर्प होने की ज्यादा संभावना हो वहाँ सावर्त रहें।
- जब भी किसी विशेष परिस्थिति में जमीन पर या घर पर सावधानी पर साँप लो भिस्तर, चादर आदि डालकर साँप।

प्रेरण इन्फोर्मेडिटी प्रोग्राम तकनीकी की जानकारी हेतु
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https://www.youtube.com/watch?v=KT_w8F8_fU8

सर्प शिक्षक -
सर्प शिक्षक परामर्शदाता - प्रो. कृष्ण कुमार शर्मा (राष्ट्रीय संयोजक - सर्प शिक्षा अभियान)
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Prof. Kapil Deo Mishra, Former Vice Chancellor, Rani Durgavati University, Jabalpur, MP, India

Prof Rajkumar Acharya, Honourable Vice Chancellor, Awadhesh Pratap Singh University, Rewa, MP, India

Prof. R. K. Day, Former, Vice Chancellor, Central University of Jharkhand, Ranchi, Jharkhand

Dr. Kunal Kumar Das, Scientist (Retd.), IIRS, ISRO, Dehradun, UK.

Dr. Niraj Kumar, Former, Executive Secretary, The National Academy of Sciences India, Allahabad, UP

Dr. Anil Kothari, Director General, MP Council of Science & Technology, Bhopal, MP

Dr. A. K. Pandey, Former Principal Scientist, National Bureau of Fish Genetic Resources (ICAR) Lucknow, UP

Mr. Rabindra Nath Padhi, Ex. Deputy Director General, Geological Survey of India, Bhubneswar, Odisha

Dr. Suresh Kumar Gahlawat, Dept. of Biotechnology, Ch. Devilal University, Sirsa, Haryana

Dr. Akhlaq Husain, Former Scientist E, Zoological Survey of India, Northern Regional Centre, Dehradun, Uttarakhand

Prof. Ramesh C. Gupta, Former Vice Chancellor, Radha Govind University India

Dr. Sameer Arun Joshi, KNOESIS, Pune, Maharashtra

Dr. Shiv Ji Malviya, Deputy Secretary, Uttar Pradesh Higher Education Service Commission, Prayagraj, UP

Dr. Shobha Shouche, Associate Professor of Zoology, Govt. Madhav Science College, Ujjain, MP.

Dr. Shuchita Majoomdar Chandorkar, Asst. Prof. of Zoology, Govt. Girls PG College, Ujjain, MP

Dr. Sudha Shrivastav, Former Professor of Zoology, Govt. Kalidas Girls College, Ujjain, Madhya Pradesh

Dr. Leena Lakhani, Former, Professor of Zoology, Govt. Girls College, Ujjain, Madhya Pradesh

Dr. Amita Srivastav, Asst. Professor of Zoology, Dayanand PG College, Kanpur, Uttar Pradesh

Dr. Renu Rajesh, Professor of Botany, Government Nehru PG College Ashoknagar, Madhya Pradesh.

ESW COORDINATOR

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Dr. Niraj Kumar, Department of Zoology, L.N.D. College, Motihari, Bihar

Dr. Md. Mansoor Alam, Department of Zoology, L. N. Mithila University, Darbhanga, Bihar

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WESTERN

Dr. Prahlad Dubey, (FESW) Former Assoc. Prof. of Zoology, Government College, Kota, Rajasthan
Dr. Praveen Kumar (FESW), Asst. Prof. Zoology, Agrawal College, Gangapur, Rajasthan

NORTHERN

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Dr. Parvinder Kumar, Sr. Assistant Professor of Zoology, University of Jammu, Jammu Union Territory
Dr. Parminder Singh, Zoologist, Punjab, Haryana.
Dr. Alok Sagar Gautam, (FESW), Asst. Professor Physics, Hemvati Nandan Bahuguna Garhwal Uni., Srinagar, UK
Dr. Pallavi Jamwal, Assistant Professor of Zoology, Govt. College for Women, Jammu Union Territory
Dr. Atul Kumar Mishra, Professor of Zoology, DAV College Kanpur, Uttar Pradesh
Dr. Esha Yadav, Assistant Professor of Zoology, Janta College, Bakewar, Uttar Pradesh
Dr. Aditya Narayan, Assistant Professor of Zoology, Bundelkhand University, Jhansi, UP
Dr. Praveen Kumar, KVK Leh, Laddakh Union Territory
Dr. Sandeep Arya, Assistant Professor, Institute of Environment and Development Studies, Bundelkhand University, Jhansi, UP
Dr. Rohit Kumar Singh, Associate Professor of Chemistry, Pt. J. N. Post Graduate College, Banda, Uttar Pradesh

SOUTHERN

Dr. Jayashree Thilak, Scientist D, Southern Regional Centre, ZSI, Chennai, Tamil Nadu
Dr. Ajay Kumar Singh, Principal Scientist, A.G. Biosystems Pvt., Ltd., Telangana

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Prof. Sangeeta Mashi, Head, Dept of Zoology, PM College of Excellence, Govt. Nehru PG College, Burhar, Shahdol
Dr. Deepali Jat, Assist. Prof. of Zoology, Dr. Harisingh Gour Vishwavidyalaya, Sagar, Madhya Pradesh
Dr. Mohd Ashfaq Siddiqui, Associate Professor of Management, Infinity Management and Engineering College, Sagar, MP
Dr. Sandeep Kushwaha, Assistant Zoologist, Zoological Survey of India, CZRC, Jabalpur, MP
Dr. Varsha Aglawe, Professor of Zoology and Biotechnology, Govt. Science College, Jabalpur, MP
Dr. Arjun Shukla (FESW) Department of Zoology, Government Model Science College, Jabalpur, MP
Dr. Vandana Ram, Assistant Professor of Fishery Science, Pandit S. N. Shukla University, Shahdol, Madhya Pradesh
Dr. Kusum Kashyap, Assistant Professor of Botany, Raja Bhoj Govt College Mandideep, Bhopal.

ACCOMODATION/ TRANSPORT

Mrs. Vandana Dubey, Managing Director, Godavari Academy of Science & Technology, Chhatarpur, MP

SESSION MANAGEMENT & REPORTING

Dr. Amit Pal (FESW), Professor, Institute of Environment & Development Studies, Bundelkhand University, Jhansi, UP.

REGISTRATION/ ACCOUNT/ CERTIFICATE COMMITTEE MEMBERS

Mr. Shobharam Athya, GAGT, Chhatarpur
Mr. Manoj Kumar, Chhatarpur

STAGE MANAGEMENT/ PHOTOGRAPHY/ VIDEOGRAPHY

Mr. Ramesh Soni, Khajuraho
Mr. Tulsidas Soni, Khajuraho

Guidelines of Fellow of Environment and Social Welfare (FESW) award

The Executive Board of the ESW Society, Khajuraho India has approved a Fellow of Environment and Social Welfare (FESW) award to recognize members of the FESW for distinguished contributions to the field of Environment and Social Science, and for promoting and sustaining the professional stature of the field.

A **fellow** is a member of a group of people who work together in a **fellowship** pursuing mutual knowledge or practice. A **fellowship** is a monetary award connected to a specific field. Usually given to scientist, professor, assistant professor and researcher.

Such accomplishments will have advanced the Education, Environment, Art and science & technology, as evidenced by:

- Sustained service and performance in the advancement of science and technology
- Publication of papers, articles, books, and standards which enhance the knowledge of Science
- Innovative development of new technology
- National and international service contributions
- Professional recognition

Requirements and Conditions will

- Candidates will have a minimum of one year’s active participation in ESW.
- Candidates will be nominated by their national delegation of FES Fellow. Each delegation may nominate at maximum of two (2) candidates per year.
- Nominations shall be submitted on the official form available from the ESW Secretariat.
- Nominations must be submitted to the ESW Secretariat no later than December 31 of the year prior to that in which the individual is recognized as Fellow.
- Nominations will remain valid for three years.
- All information on nominees will be held in strict confidence.
- Fellows will be selected by the Executive board based on the Performance of Applicant.

Number of Fellows

- Maximum of 06 Fellows will be selected each year, as determined by the Executive committee.

The Award

- The ESW Chair will present the Fellow of FESW Award at the ESW Conference of the ESW Society or Annual assembly.

Letter for ESW Membership

ENVIRONMENT & SOCIAL WELFARE SOCIETY, KHAJURAHO

Dedicated to Environment, Education, and Science & Technology entire India since Bi-millennium
Under Government of M.P., Firms & Society Act 1973
Accredited by JAP Govt. of MP & NITI Aayog, Govt. of India

Dear,

Applications are invited from the Eminent Scientist, Professor, Academic Institutes, University, Their affiliated Colleges, Deemed Universities, Autonomous Research Institution, and Industrial R & D Units for Member of Environment & Social Welfare Society, Khajuraho India. Membership form may be downloaded from Website <http://www.godavariacademy.com>.

An application filled dully sign by you in all respects should be submitted to President of ESWSociety. Payments are accepted only through Bank or NEFT online transfer in the account.

Name of Beneficiary: Environment and Social Welfare Society

Account Number: 77352200000561

IFS code: CNRB0017735

Name of Bank: Canara Bank, Chhatarpur, Madhya Pradesh, India

MICR Code: 471015002; SWIFT code: CNRBINBBFD

Please mail us complete membership form dully signed by you along with fee. Please inform us when you transfer payment to ESWSociety account so that we can track your payment (mail scan copy as proof to eswsociety320@gmail.com).

Membership Fee

A. Patron member Rs 10,000/- or more; **B. Life member** (10 years) Rs.5000/- or more;

C. Annual member Rs. 600/- per year; **D. Honorary member**

Board of Directors may offer honorary membership time to time the eminent scientist and distinguished persons. You will receive attractive certificate from ESWSociety, you can display on your office wall.

Only selected Life Members are privileged to write the abbreviation **F.E.S.W.** (Fellow of the Environment & Social Welfare Society) with their names.

With Regards.

All correspondence to:

Executive Director

Environment and Social Welfare Society (ESWSociety)

Head Office: Vidhyadahr Colony, Khajuraho Madhya Pradesh, India

Regional Office: Godavaripuram, Bajrangnagar, Ward No.31, Chhatarpur-471001, India

Email: eswsociety320@gmail.com, Mobile: +91-9425143654

Website: <http://www.godavariacademy.com>

MEMBERSHIP FORM

Regd. No.SC2707-2K

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Website: <http://www.godavariacademy.com> **Mobile:** 9425143654 **Email:** eswsociety320@gmail.com

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To
The President/Secretary
Environment and Social Welfare Society
Regional Office, Chhatarpur 471001

Photo

Dear,

I wish to be a Petron member/ Life member /General member of ENVIRONMENT & SOCIAL WELFARE (ESW) SOCIETY, Khajuraho, India and agree to abide by your rules and regulations. (For details see Letter call for Membership)

1. Name Dr.....
2. Designation.....
3. Date of birth.....
4. Address
Office.....
.....
- Mailing.....
.....
5. Mobile /Telephone:.....
6. Email:.....
7. Academic Qualification:.....
Graduation (Year/Subject).....
Post Graduation (Year/ Subject)
- Ph. D. (Year/ Subject).....
- Others.....
8. Field of specialization:
(1).....
(2).....
(3).....

Signature of applicant

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BRIEF RESUME

Name: Dr. Ashwani Kumar Dubey
Date of Birth: 01 July, 1970
Fathers Name: late Mr. Tuldidas Dubey
Qualification: M. Sc., Ph. D.
Invited speaker: 31
Editor: 38
Reviewer: 06 including Springer International Publishing.
Conference attended: 263
Present position: Guest Professor of Zoology
Present address: Shri Rajiv Gandhi Govt. College Banda, Sagar, MP
Permanent address: Godavaripuram, Bajrangnagar, Ward No.17, Chhatarpur, Madhya Pradesh
Honour/Award: 29
Fellowship: 04
Membership: 17
Book: 18
Research papers published: 38
Conference/Workshop organized: 64
Skill Dev. Program: 05
Editor-in-Chief: 01

Academic experience: 28 Years in Under Graduate, Post Graduate College & University as Guest Professor of Zoology in Higher Education Department, Govt. of Madhya Pradesh.

Research field: Zoology, Ichthyology, Biochemistry, Free Radical Biology, Toxicology and Stress Monitoring. Aquaculture Pathology, Water Quality Assurance, Biodiversity, Environmental Impact Assessment and Bio-Resources Conservation.

Research Guide & Project: Ph. D. 08, M. Phill. 01, M.Sc. 170

Academic Foreign Visit: Dubai, UAE 2022 & Bangkok, Thailand 2024.

Administrative Experience: Principal, Officer Information Technology, Deputy Registrar, Professor of Zoology, Head of Dept., Dean faculty of Science, Member, Management Committee, Chairman Board of Studies. Member, NAAC & Accreditation. Dean University Development Council, Member Research Advisory Committee. Nodal officer Admission, In charge Eco Club & Media Cell.

Organizational Experience: **Advisor**, Research Board of America, The American Biographical Institute, Inc. USA. **Co-ordinator**, DNA Club, DBTs Natural Resources Awareness Club, The National Academy of Sciences India Prayagraj. **Casual Announcer**, All India Radio Chhatarpur.. **Mentor (Trustworthy Advisor)** Chitrakoot Gramodaya University, Chitrakoot, Madhya Pradesh. **Academic Counselor**, (Honorary) Environmental Sciences, Indira Gandhi National Open University (IGNOU), New Delhi, CES Programme, Chhatarpur, MP. **Volunteer** Science Portal India, New Delhi. **Volunteer Educate:** Earth Day, Washington, DC, US. **Volunteer** World Wide Fund, Switzerland. **Active Member** of IUCN CEC South and Southeastern Asia, Switzerland, **Resource Person**, Empanelled with Centre for Entrepreneurship Development MP (CEDMAP) Bhopal. **Member Advisory Committee** for Rejuvenation of Lakes in India, AICTE, Ministry of Education, Govt. of India.

Subject Expert In Selection Committee: Jan Abhiyan Parishad, Govt. of MP. Shri Krishna University Chhatarpur.

Subject expert in Examination: Chhatrapati Shahu Ji Maharaj University Kanpur. Pt. S. N. Shukla University Shahdol, Govt. Girls PG College Sagar, Sarojini Naidu Govt. Girls P.G. (Autonomous) College, Bhopal, MP. and University of Kota Kota, Rajasthan.

Currently: Honored for "Award For Excellence in Teaching in Higher Education" at Asian Institute of Technology, Bangkok, Thailand, during 15th to 17th December 2024.

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Prof. B. B. Kaliwal, Vice Chancellor, Davangere University, Shivagangothri, Davangere

Prof. N.C. Gautam, Vice-chancellor, Mahatma Gandhi Chittrakoot Gramodaya Vishwavidyalaya, Chittrakoot-485334

Dr. A. K. Bhattacharya, MD, National Green Highways Mission, Government of India

Prof. K. N. Singh Yadava, Vice-Chancellor, Rani Durgavati University, Jabalpur, MP

Prof. Prakash Singh Bisen, Former Vice Chancellor, Jiwaji University, Gwalior, Madhya Pradesh.

Prof. Ramesh C. Gupta, Former Vice Chancellor, Radha Govind University India, Former Pro VC Nagaland Central University, Nagaland, India.

Dr. Kanhaiya Tripathi, Former OSD to the President of India, Govt. of India.

Prof. R. K. Day, Vice Chancellor, Central University of Jharkhand, Ranchi, Jharkhand

Honorable Fellow & National Amazing Godavari Memorial Award (NAGMA) awarded in the field of “Excellence in Education and Science”.

Dr. U. C. Shrivastava, (NAGMA-2014). Professor of Zoology, University of Allahabad, Allahabad, Uttar Pradesh

Dr. S. N. Pandey, (NAGMA-2015). Chancellor, The Global Open University Nagaland, Dimapur, India

Prof. K. K. Sharma, (NAGMA-2016). Former Vice Chancellor, MDS University Ajmer-305009

Dr. Priyavrat Shukl, (NAGMA-2017). Former Vice Chancellor, Maharaja Chhatrasal Bundelkhand University, Chhatarpur, Madhya Pradesh

Prof. P. K. Verma, (NAGMA-2018). Former Vice Chancellor, Barkatullah University Bhopal, Madhya Pradesh

Cdr. Dr. Bhushan Dewan, (NAGMA-2019). Indian Navy, India

Prof. H. S. Sharma, (NAGMA-2020). Former Professor of Geography, University of Rajasthan, Jaipur.

Prof. Asha Shukla, (NAGMA-2021). Vice Chancellor, Dr. B. R. Ambedkar University, Mahow, Madhya Pradesh

Dr. Dhriti Banergee, (NAGMA-2022). Director, Zoological Survey of India, Ministry of Environment, Forest and Climate Change, Government of India, Kolkota, West Bengal

Dr. M. S. Parihar, (NAGMA-2023). President, BIOEXONS, LCC Washington, USA

Dr. Kanhaiya Tripathi, (NAGMA-2024) Former Special Duty Officer, The President Office, Republic of India, Government of India.

Dr. Kunal Kumar Das, Scientist (Retd.), IIRS, Indian Space Research Organization, Dehradun, Uttarakhand

Prof. Kubaer Ram Mourya, Former Vice Chancellor Rajendra Agricultural University, Pusa, Bihar

Prof. Premendu Prakash Mathur, Vice-Chancellor, KIIT University, Bhubaneswar, Odisha

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Patron Member

Dr. Ashwani Kumar Dubey (FIASc; FESW; FSLSc.) Professor of Zoology, Department of Higher Education, Govt. of Madhya Pradesh

Dr. Arti Rani Dubey, Science Teacher, Govt. School, Basari, Madhya Pradesh

Dr. K. K. Dubey, (FESW) Former Professor of Zoology, Government Model Science College, Jabalpur, Madhya Pradesh

Prof. J. K. Pauranic, Former Principal, Govt. Maharaja College, Chhatarpur, Madhya Pradesh

Dr. Kailash Chandra, Scientist ‘G’, Former Director, Zoological Survey of India, Ministry of Environment, Forest and Climate Change. Govt. of India, ‘M’ Block, New Alipore, Kolkata, West Bengal

Dr. Shobha Shouche (Aug. 2021), Associate Professor of Zoology, Govt. Madhav Science College, Ujjain, Madhya Pradesh.

Dr. Shuchita Majoomdar Chandorkar (Aug. 2021), Assistant Professor of Zoology, Govt. College Kaytha, District Ujjain, Madhya Pradesh.

Dr. Sudha Shrivastav (Aug. 2021), Professor of Zoology, Govt. Kalidas Girls College, Ujjain. Madhya Pradesh

Dr. Leena Lakhani (Aug. 2021), Professor of Zoology, Govt. Girls College, Ujjain, Madhya Pradesh

Dr. Amita Shrivastav (Aug. 2021), Asst. Professor of Zoology, Dayanand PG College, Kanpur, Uttar Pradesh.

Dr. A. K. Pandey (March, 2024) Ex-Principal Scientist, ICAR-National Bureau of Fish Genetic Resources, Canal Ring Road, Lucknow, Uttar Pradesh Specialization in Comparative Endocrinology, Toxicology and Fishery Science.

Life Members

Mrs. Vandana Dubey (Jul. 2013), Managing Director, Godavari Academy of Science & Technology, Chhatarpur, Madhya Pradesh

Dr. Prahlad Dube (Aug. 2013) (FZSI; FISES; FSLSc; FICC; FESW.) Former Professor of Zoology, Government College, Kota, Rajasthan

Dr. Archana Chauhan (Sep. 2013), Professor of Zoology, Govt. Maharaja College, Chhatarpur, Madhya Pradesh

Dr. Amita Arjariya (Sep. 2013), Professor of Botany, Government College, Chhatarpur, MP

Dr. Devendra N. Pandey (Oct. 2013) (FESW), Former Professor of Zoology, Govt. S.K.N. Post Graduate College, Mauganj, Madhya Pradesh

Dr. Shaket Anand Saxena (Oct. 2013), Campbellton, Canada

Dr. Anil Kumar Singh (Oct. 2013), Scientific Officer, DNA Finger Printing Lab, Forensic Science, Sagar, Madhya Pradesh

Dr. Ravi Mishra (Oct. 2013), Scientist, National Centre for Antarctic & Ocean Research, Ministry of Earth Sciences, Government of India, Goa

Dr. Magansingh Awasya (Oct. 2013), Former Registrar, Rani Durgavati University, Jabalpur, Madhya Pradesh

Dr. Hemlata Verma (Oct. 2013), Professor of Zoology, Govt. Dr. Shyama Prasad Mukherjee Science and Commerce College, Bhopal, MP

Miss. Abha Shrivastava (Oct. 2013), Former Principal, Govt. Girls High School, Alipura, Madhya Pradesh

Dr. Prabha Sharma (Oct. 2013), Mining Inspector, Govt. of Madhya Pradesh, Indore, MP

Dr. Bibhu Snatosh Behera (Oct. 2013) (FESW) College of Agriculture, OUAT, Bhubaneswar, Odisha

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- Dr. Pramod Pathak (Dec. 2013), Professor of Hindi, Government Girls College, Chhatarpur, Madhya Pradesh
- Dr. Deepak Mishra (Dec. 2013) (FESW) Associate Professor of Biotechnology, AKS University, Satna, Madhya Pradesh
- Dr. Mohd. Abdullah (Dec. 2013), 146, Sastannagar, Faizabad Road, Gonda, Uttar Pradesh
- Dr. Arvind Prasad Dwivedi (Dec. 2013), (FESW), Guest Lecturer, Government Sanjay Gandhi Smriti College, Sidhi, Madhya Pradesh
- Dr. Dinesh Kumar Shadangi (Oct. 2014), Ex. Scientist, TFRI, Naya Ganj, Raigarh, Chhattisgarh
- Dr. A. K. Pandey (Oct. 2014), (FESW), Former Principal Scientist, National Bureau of Fish Genetic Resources (ICAR) Lucknow, Uttar Pradesh
- Mrs. Sadhana Gupta (Nov. 2014), Near Panjab National Bank, Chhatarpur, Madhya Pradesh
- Dr. Jagdeesh Prasad Rawat (Nov. 2014), Former Assistant Conservator Forest, Tikamgarh, Madhya Pradesh
- Dr. Safiya Khan (Nov. 2014), Aligarh Muslim University, Aligarh, Uttar Pradesh
- Dr. Usha Pancholi (Jan. 2015), Lecturer of Mathematics, Govt. College, Kota, Rajasthan
- Mrs. Meena Saxena (Jan. 2015), Nowgong, Madhya Pradesh
- Dr. Aditya Narayan (Jan. 2015), Department of Zoology, Bundelkhand University, Jhansi, Uttar Pradesh
- Mrs. Shivani Chaurasia (Jan. 2015), Ward No. 28, Chhatarpur, Madhya Pradesh
- Dr. Peyush Punia (Jan. 2015), Principal Scientist, National Bureau of Fish Genetic Resources (ICAR) Lucknow, Uttar Pradesh
- Dr. Shivesh Pratap Singh (Feb. 2015), (FESW), Professor of Zoology, Govt. PG College, Satna, Madhya Pradesh
- Dr. Praveen Ojha (Feb. 2015), (FESW), Assistant Professor of Zoology, Kishori Raman PG College, Mathura, Uttar Pradesh
- Dr. Govind Singh (Feb. 2015), Former Vice Chancellor, Shri Krishna University, Chhatarpur, Madhya Pradesh
- Dr. Karruna S. Pardeshi (Aug. 2015) (FESW), Professor of Zoology, Abasaheb Garware College, Pune, Maharashtra
- Mrs. Renu Jain (Aug. 2015), Infront of Collector Bonglaw, Chhatarpur, Madhya Pradesh
- Mr. Rachakonda Satyanarayan (Sep. 2015), Assistant Manager Operations, Jindal Steel & Power Limited, Kharsia Road, Raigarh, CG
- Dr. Atul Kumar Mishra (Jan. 2016), Associate Professor of Zoology, DAV College Kanpur, Uttar Pradesh
- Dr. Praveen Kumar (FESW) (Jan. 2016), Assistant Professor of Zoology, Agrawal College, Gangapur City, District Sawai Madhopur, Rajasthan
- Dr. Deepali Jat (Jan. 2016), Assistant Professor of Zoology, Dr. Hari Singh Gour Central University, Sagar, Madhya Pradesh
- Dr. Arjun Shukla (May. 2016), (FESW) Department of Zoology, Government Model Science College, Jabalpur, Madhya Pradesh
- Miss. Shivani Rai (May. 2016), Department of Zoology, Government M. H. College of Home Science and Science for Women, Jabalpur, Madhya Pradesh
- Dr. Mukta Dubey (May. 2016), Guest Lecturer of Political Science, Government College, Rampura, Madhya Pradesh
- Mr. Shachindra Kumar Dubey (Jun. 2016), RS, Department of Computer Science & Engineering, Government Engineering College, Gokalpur, Jabalpur, Madhya Pradesh
- Dr. Narendra V. Harney (Sep. 2016), (FESW) Assistant Professor of Zoology, Nilkanthrao Shinde Science and Arts College, Bhadrawati

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- Dr. Ashwani (Jan. 2017), (FESW) Lecturer, IGNOU, Bhagini Nivadita College, University of Delhi, Delhi.
- Prof. Anama Charan Behera (Jan. 2017), (FESW) Professor of Economics, D. B. College, Turumunga
- Mr. Rahul Dev Behera (Jan. 2017) , (FESW) Orissa University of Agriculture and Technology (OUAT), Bhubneswar, Odisha
- Mr. Debashish Sahu (Jan. 2017), (FESW) Orissa University of Agriculture and Technology (OUAT), Bhubneswar, Odisha
- Mr. Rabindra Nath Padhi (Jan. 2017), Ex. Deputy Director General, Geological Survey of India, Bhubneswar, Odisha
- Dr. Sandeep Kushwaha (Feb. 2017), (FESW) Scientist C, Zoological Survey of India, Central Zone Regional Centre, Jabalpur, MP
- Dr. Pragya Khanna (Feb. 2017), Principal, Govt. Degree College, Chenani, Udhampur, Jammu, Jammu & Kashmir
- Dr. Parvinder Kumar (Feb. 2017), Sr. Assistant Professor of Zoology, University of Jammu, Jammu & Kashmir
- Dr. Amit Kumar Bawaria (March. 2017), Assistant Professor of Chemistry, Government Naveen College, Khadgawan-497449
- Dr. Esha Yadav (March 2017), Professor of Zoology, Bramhanand College, Kanpur, Uttar Pradesh
- Dr. Hemlata Pant (Jul. 2017), Nematologist, Society of Biological Sciences & Rural Development, Allahabad, Uttar Pradesh
- Er. Priyansha Kushwaha (Jul. 2017), United College of Engineering and Research, Allahabad, Uttar Pradesh
- Dr. Shivam Dubey (Aug. 2017), RS, Central Ordnance Depot, Jabalpur, Madhya Pradesh
- Dr. Achuta Nand Shukla (Aug. 2017), Scientist B, Botanical survey of India, Allahabad, Uttar Pradesh
- Er. Saurabh Kushwaha (Sep. 2017), Mechanical Engineer, In front of Transformer Raiganj, Gorakhpur, Uttar Pradesh
- Dr. S. K. Bhatnagar (Sep. 2017), Director, Biomedical Research Centre, Delhi NCR
- Dr. Sanjay Tiwari (Nov. 2017), Former Registrar, Maharaja Chhatrasal Bundelkhand University, Chhatarpur, Madhya Pradesh
- Mr. Bhoopendra Kumar Ahirwar (Nov. 2017), RS, Department of Zoology, Government Science College, Jabalpur, Madhya Pradesh
- Dr. Krishna Pateria (Nov. 2017), Professor of Zoology, Government M. H. College of Home Science, Jabalpur, Madhya Pradesh
- Dr. Ashwani Kumar Awasthi (Dec. 2017), Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot, Madhya Pradesh
- Dr. Sangeeta Mashi (Jan. 2018), Professor of Zoology, Pt. S. N. Shukla, University, Shahdol, Madhya Pradesh
- Dr. Sajjad ul Akbar Wani (Jan. 2018), Assistant Professor of Zoology, I. K. College, Indore, MP
- Dr. Devendra Swaroop (Jan. 2018), (FESW), Assistant Professor, Krishi Vigyan Kendra, Thariaon, Fatehabad, UP
- Dr. Amita Pandey (Jan. 2018), (FESW), Assistant Professor of Botany, C. M. P. Degree College, Allahabad, Uttar Pradesh
- Dr. Manoj Kumar Singh (Jan. 2018), Department of Horticulture Kulbhaskar Ashram P G College, Allahabad, Uttar Pradesh

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“Impact of Climate change on Ecosystem, Environment and Agriculture” February 01 & 02, 2025

- Dr. Ayyandar Arunachalam (Mar. 2018), Director, ICAR-Central Agroforestry Research Institute, Jhansi, Uttar Pradesh
- Dr. Mohammad Mubashir Kachroo (Jul. 2018), Sher-e-Kashmir University of Agricultural Sciences and technology, Kashmir
- Dr. Shamim Ahmad Banday (Jul. 2018), Assistant Professor of Zoology, Government Degree College, Poomch, Jammu & Kashmir
- Dr. Khursheed Ahmad Dar (Jul. 2018), College of Temperate Sericulture, SKUAST-Kashmir, Jammu & Kashmir
- Dr. Arti Maheshbhai Joshi (Jul. 2018), ICAR, Central Institute of Fisheries Technology, Matshya Bhavan, Bhidiya, Veraval, Gujrat
- Dr. Sujata Magdum (Dec. 18) Asst Prof of Zoology, KTHM College, Nashik, Maharashtra
- Dr. Shri Prakash (Dec. 18) Assistant Professor of Zoology, K.A.P.G. College, Prayagraj, Uttar Pradesh
- Dr. A. K. Verma, (Dec. 18), Professor of Zoology, Government P.G. College, Saidabad, Prayagraj, Uttar Pradesh
- Dr. S. B. Shashi, (Jan. 19), Department of Zoology, R.B. Jalan College, Bela, Darbhanga, Bihar
- Dr. Md. Mansoor Alam, (Jan. 19), Department of Zoology, L. N. Mithila University, Darbhanga, Bihar
- Dr. Smita Singh (Jan. 19) Scientist in Agronomy, K.V.K., Rewa, Madhya Pradesh
- Dr. Chandra Shekhar Dwivedi (Dec. 19) Department of Geoinformatics, Central University of Jharkhand, Ranchi, Jharkhand
- Mr. Umesh Kumar Mishra (Dec. 19) Research Scholar, Department of Zoology, Bipin Bihari (PG) College, Jhansi, Uttar Pradesh
- Dr. Vandana Ram (Dec. 19) Assistant professor of Fishery Science, Pandit S. N. Shukla University, Shahdol, Madhya Pradesh
- Dr. K. K. Kamani (Dec. 19), Professor of Physics, Govt. Science College, Chitradurga, Karnataka
- Dr. Neerja Khare (Jan. 2K20) (FESW), Prof. of Zoology, Govt. P.G. College, Satna, Madhya Pradesh
- Dr. Bhawna Srivastava (Jan. 2K20), Asst. Prof of Zoology, D.A.V. College, Kanpur, Uttar Pradesh
- Dr. Pranay Punj Pankaj (Jan. 2K20) Asst. Prof of Zoology, Fish Biology & Fisheries Lab, Department of Zoology, Nagaland University, Lumami, Nagaland
- Ms. Annie Durrant, (Jan. 2K20) Psychologist, 5, Tan Lan, Llanfrothen, Penrhyndeudraeth, Gwynedd, LL48 6SG, Wales, UK.
- Dr. Parveen Kumar (Jan. 2K20) Scientist, Krishi Vigyan Kendra, Leh, SKUAST-K
- Dr. S. G. Syeddain Zaidi (Jan. 2K20) Former Senior Scientist Aquaculture, Indian Council of Agricultural Research, Central Education of Fisheries Education Bombay, Directorate of Cold water Fisheries Research, Bhimtal, India.
- Dr. Rashmi Tripathi (Jan. 2K20), Assistant Professor Zoology, Bramhanand P.G. College, Kanpur, Uttar Pradesh.
- Dr. Roshni Pandey (May, 2K20) Assistant Professor Zoology, Government College, Badwara, Katni, Madhya Pradesh
- Dr. Amit Pal (May, 2K20) (FESW), Professor, Institute of Environment & Development Studies, Bundelkhand University, Jhansi, Uttar Pradesh.
- Dr. Sarada Prasad Mohapatra, (FESW), (Aug. 2K20) Associate Professor of Botany, Narasingh Choudhary College, Jajpur, Odisha

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- Dr. Shobha Thakur (Oct. 2K20) Assistant Professor, Department of Chemistry, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, Uttar Pradesh.
- Dr. Niraj Kumar (Oct., 2K20) Department of Zoology, L.N.D. College, Motihari, Bihar
- Dr. Shiv Ji Malviya, (Dec., 2K20) Deputy Secretary, Uttar Pradesh Higher Education Service Commission, Prayagraj, Uttar Pradesh
- Dr. Alok Sagar Gautam (Jan., 2K21), (FESW), Asst. Professor of Physics, Hemvati Nandan Bahuguna Garhwal University, Srinagar, Uttarakhand
- Dr. Neetu Mishra (Jan., 2K21) Associate Professor of Home Science, University of Allahabad, Uttar Pradesh
- Dr. Pratibha Tripathi (Jan., 2K21) Asst. Prof. Zoology, D.A.V. College, Kanpur, Uttar Pradesh
- Dr. Ajay Kumar Singh (Jan., 2K21) Principal Scientist, A.G. Biosystems Pvt., Ltd., Telangana
- Dr. Awanish Kumar Singh, (Jan. 2021) Asst. Prof of Botany, SGN Govt. PG College, Muhammadabad, Mau, Uttar Pradesh
- Dr. Ranjana Verma (Feb., 2K21) Asst. Prof of Zoology, Bherulal Patidar Govt. P. G. College, Mhow, Madhya Pradesh
- Dr. Varsha Aglawe (Feb., 2021) Professor of Zoology and Biotechnology, Govt. Science College, Jabalpur, Madhya Pradesh
- Dr. Parminder Singh (Feb., 2021), Zoologist, Punjab, Haryana.
- Dr. Santosh Kumar Kushwaha (Feb., 2021), Guest Lecturer of Zoology, Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College, Bhopal, Madhya Pradesh.
- Dr. Sameer Arun Joshi (May, 2021) CEO, KNOESIS, Pune, Maharashtra
- Dr. Mohd Ashfaq Siddiqui (July, 2021) Associate Professor of Management, Infinity Management and Engineering College, Sagar, MP
- Dr. Palla vi Jamwal (July, 2021) Assistant Professor of Zoology, Govt. College for Women, Parade Ground, Jammu, Jammu & Kashmir.
- Dr. Popiha Bordoloi (July, 2021) Subject Matter Specialist (Soil Science), KVK Ri-Bhoi, ICAR (RC) NEH Region, Umiam, Meghalaya
- Dr. Harendra Nath Sharma (Aug. 2021) Assistant Professor of Zoology, Dr Bheem Rao Ambedkar University, Agra, Uttar Pradesh
- Dr. Pratibha Akhand (Aug.2021), Assistant Professor of Zoology, Govt. Girls P.G. College, Ujjain, Madhya Pradesh
- Dr. Archana Akhand(Aug.2021), Assistant Professor of Zoology, BKSN Govt. College, Shajapur, Madhya Pradesh
- Dr. Kanhiya Mahour (Dec. 2021), Associate Professor, R. P. P. G. College, Kamalganj, Farrukhabad, Uttar Pradesh
- Dr. P. K. Bajpai (Dec. 2021), Former Professor of Zoology, DAV College, Kanpur, Uttar Pradesh
- Dr. Eshita Pandey (Dec. 2021), Assistant Professor of Zoology, Dayanand Girls PG College, Kanpur, Uttar Pradesh
- Dr. Anjali Srivastava (Dec. 2021), Associate Professor of Zoology, Dayanand Girls PG College, Kanpur, Uttar Pradesh
- Dr. Rajesh Kumar Pandey (Dec. 2021) Assistant Professor of Botany, Bundelkhand University, Jhansi, Uttar Pradesh
- Prof. Vandana Rai (Dec. 2021) Department of Biotechnology, V B S Purvanchal University, Jaunpur, Uttar Pradesh
- Dr. Sandeep Arya (Dec. 2021) Assistant Professor, Institute of Environment and Development Studies, Bundelkhand University, Jhansi, UP
- Dr. Jyoti Sharma (Dec. 2021), Kota, Rajasthan

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- Dr. Mohd. Shamsul Haque (Jan. 2022), Assistant Professor of Zoology, Government Indira Gandhi Home Science Girls PG College, Shahdol, Madhya Pradesh
- Dr. Neeshma Jaiswal (Jan. 2022), Assistant Professor of Zoology, School of Life Sciences, Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh
- Dr. Lakavath Ramsingh (Jan. 2022) Associate Professor of Veterinary Gynaecology & Obstetrics, College of Veterinary Science, Rajendranagar, Hyderabad
- Amita Yadav (Jan. 2022) Guest Lecturer, School of Studies in Environmental Science, Jiwaji University, Gwalior, Madhya Pradesh.
- Dr. Pradeep Kumar (Jan. 2022), Assistant Professor of Zoology, Govt. Degree College, Sukrauli, Kushinagar, Uttar Pradesh
- Mr. Barun Kumar Prahbat (Jan. 2022), Assistant Professor of Zoology, J. N. College, Madhubani, Darbhanga
- Prof. Mahendra Singh (Jan. 2022), Principal, KK PG College, Etawah, Uttar Pradesh
- Mr. Vagh Sarman Naranbhai (April, 2022) College of Fisheries Science, Junagarh Agricultural University, Veraval, Gujrat.
- Mr. Lal Singh (April, 2022) Assistant Professor of Law (April, 2022) Shri Varshney College Aligarh, Uttar Pradesh.
- Mr. Sharang Ambadkar (April 2022) FeelGood EcoNature LLP Mumbai, Maharashtra.
- Dr. Santeshwar Kumar Mishra (April 2022) Assistant Professor of Sociology, Nehru Gram Bharti Deemed to be University Prayagraj, Uttar Pradesh.
- Dr. Keshava Chandra K. (April 2022), Assistant Professor of Botany, Alva's College, Sundari Anand Alva Campus, Vidyagiri, Moodubidre, Karnataka.
- Dr. Gaurav Sharma (Oct. 2022) Associate Professor of Floriculture & Landscaping, Rani Laxmi Bai Central Agriculture University, Jhansi, Uttar Pradesh
- Dr. Sangeeta Chaurasia (Nov. 2022) Guest Faculty of Zoology, Specialization in Ichthyology, Swami Vivekanand Government College, Berasia, Madhya Pradesh.
- Dr. Baban Seyke (Nov. 2022) Assistant Professor of English, Specialization in Indian Novel, Swami Vivekanand Government College, Berasia, Madhya Pradesh.
- Dr. Chandrakanta Ahirwar (Nov. 2022) Assistant Professor of Physics, Specialization in Digital Electronics, Swami Vivekanand Government College, Berasia, Madhya Pradesh.
- Dr. Saroj Gupta (Dec. 2022) Professor Department of Hindi, Pandit Deendayal Upadhyay Government Arts and Commerce College, Sagar, Madhya Pradesh,
- Dr. Richa Sharma (Dec. 2022) Assistant Professor of Biological Science, SHUATS, Prayagraj, Uttar Pradesh. Specialization in Noise Pollution, Water pollution, Air Pollution, Climate Change, Global warming, Plant Science, sustainable Agriculture.
- Dr. Rakesh Rahul Jadhav (Dec. 2022) Assistant Professor of Fisheries Engineering, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth (Agricultural University), Dapoli, India. Specialization in Fisheries Science, Food Engineering and Bioprocess Technology.
- Ms. Priyanka Singh (Dec. 2022) Research Scholar, Department of Environmental Science, Bundelkhand University, Jhansi, Uttar Pradesh. Specialization in Environmental pollution.
- Dr. Phool Gend Kumar (Dec. 2022) Assistant Professor of Zoology, Bramhanand College, Kanpur, Uttar Pradesh. Specialization in Entomology and Toxicology.
- Dr. Kusum Arunachalam (Jan. 2022) Professor, School of Environment and Natural Resources, Doon University, Dehradun, Uttarakhand. Specialization in Microbiol ecology, Productivity & Mountain ecosystem and development.
- Dr. Kusum Kashyap (Jan. 2022) Assistant Professor of Botany, Raja Bhoj Govt College Mandideep, Bhopal. Specialization in Plant Pathology.

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- Dr. Shalini Misra (Jan. 2023) Associate Professor of Psychology, J.D.V.M., Post Graduate College, Kanpur, Uttar Pradesh, Specialization in Clinical Psychology.
- Dr. Arjun Lal Ola , (Jan. 2023) Assistant Professor of Vegetable Science, College of Horticulture, Rani Lakshmi Bai Central Agricultural University, Jhansi, Uttar Pradesh. Specialization in Vegetable crop improvement & Vegetable Production Technology
- Dr. Ajeet Kumar Sharma, Associate Professor of Botany, St. Wilfred College for Girls Mansarovar Jaipur, Rajasthan. Affiliated with University of Rajasthan Jaipur. Specialization in Physico-Ecology, toxicology and Ethnobotany.
- Dr. Kavita Singh Chaudhary (Jan. 2023) Assistant Professor of Microbiology, Govt. P. G. College, Noida,U.P
- Dr. Rohit Kumar Singh (Jan. 2023) Associate Professor of Chemistry, Pt. J. N. Post Graduate College, Banda, Uttar Pradesh
- Dr. Rajeev Kumar Niranjan (Jan. 2023) Assistant Professor of Environmental Science, Nehru College, Lalitpur, UP. Specialization in Organic Farming, Environmental Pollution, Vermicomposting.
- Dr. Rahul Kait (Feb. 2023) Associate Professor of Zoology, GGM Science College, Jammu, Jammu & Kashmir. Specialization in Wildlife Conservation Biology.
- Mrs.Vimala Bind (Feb. 2023) Assistant Professor of Zoology, Navyug Kanya Mahavidyalaya Rajendra Nagar Lucknow, University of Lucknow, Uttar Pradesh.
- Dr. Dushyant Mahavadiya (Feb. 2023) Assistant professor of Fisheries Science, Department of Department of Aquaculture, College of Fisheries Science, Kamdhenu University, Veraval, Gujarat.
- Dr. Ulrich Berk (Feb. 2023) German Association of Homa Therapy, Germany
- Dr. Vinay Kumar Dwivedi (May 2023) General Manager, Research and Development, Reliance Industries Limited Gagva Jamnagar, Gujarat.
- Dr Kavita Sharma (Aug. 2023) Assistant Professor of Zoology, Government Post Graduate College Jalesar, Etah, Uttar Pradesh.
- Dr. Anupama Panigrahi (August 2023) Assistant Professor of Mathematics, Faculty of Mathematical Sciences University of Delhi, Delhi. Area of Specialization is DNA Cryptography.
- Dr. Smita Lenka (August 2023) Assistant Chief Technical Officer, ICAR-National Bureau of Plant Genetic Resources, Pusa Campus , New Delhi.
- Dr. Shahina Kalim (Nov. 2023) Assistant Professor of Biochemistry, Department of Biochemistry, J. C. Bose Institute of Life Sciences, Bundelkhand University, Jhansi, Uttar Pradesh. Area of Specialization is Plant Biochemistry.
- Dr. Archana Bahuguna (Nov. 2023) Scientist E, Zoological Survey of India, Dehradun. Area of Specialization is Wildlife forensic (Trichotaxonomy, Molecular), Herpetofauna.
- Dr. Ranjan Kumar (Dec. 2023) Assistant Professor of Zoology, R. K. College, Madhubani, Bihar.
- Dr. Renu Rajesh (Dec. 2023) Professor of Botany, Government Nehru PG College Ashoknagar, Madhya Pradesh. Area of Specialization in Plant physiology, Environment and Ethnobotany.
- Dr. Madhuri Sharma, (Jan. 2024) Associate Professor of Zoology, Department of Fisheries Resources Management, College of Fishery Science, NDVSU, Jabalpur, Madhya Pradesh. Area of Specialization in Fisheries, Aquatic Toxicology, Aquatic Health Management.
- Dr. Ashok Kumar Singh (Dec. 2023) Assistant Professor of Zoology, R. K. College, Madhubani, Bihar
- Dr Preeti Priya (March 2024) Assistant Professor Guest Faculty of Geography, Laxmi Narayan Dubey College, Motihari, B.R.A.B.U. Bihar. Area of Specialization in Human Geography, Environmental Geography
- Mr. Shakti Soni (July 2024) Social Worker, Jarhi, Sarguja, Chhattisgarh.

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- Dr. Abhed Pandey (August 2024) Associate Professor, Department of Aquaculture, College of Fisheries, DKAC Campus, Arrabari, Post – Raipur, District -Kishanganj, Bihar.
- Dr. Sanjay Kumar Srivastava (August 2024) Proprietor, Medha Matsya Prajanan Kendra, Barohia, Post-Jagdaur, Maharajganj, Uttar Pradesh Specialization in Fishery and Consultant Trained in India and abroad.
- Dr. Amarendra Kumar Pandey (August 2024) Assistant Professor of Zoology, D.A.V. Post Graduate College, Gorakhpur Uttar Pradesh, Area of Specialization Zoology, Entomology, Biological Pest Control and Organic waste management.
- Dr. Suchit Swaroop (September 2024). Associate Professor, Experimental & Public Health Laboratory, Department of Zoology, University of Lucknow, Lucknow, Uttar Pradesh. Specialization in Experimental & Public Health
- Dr. Ashish Kumar (September 2024). Associate Professor of Zoology, University of Lucknow, Lucknow, Uttar Pradesh
- Dr. Kavita Mathpal , (September 2024). Department of Sociology, Bundelkhand University Jhansi, Uttar Pradesh. Specialisation in Malnutrition in women.
- Dr. Jyoti Uikey (September 2024). Assistant Professor of Zoology, Sarojini Naidu Govt Girls P. G. Autonomous College, Bhopal. Specialization in Aquaculture, Cell Biology and Immunology.
- Dr. Manas Joshi (October 2024) Ph. D., Department of Zoology, University of Lucknow, Uttar Pradesh. Specialization in Fisheries and Fish genomics
- Prof. Yashodhara Sharma (October 2024) Principal, M.B.D. Government Girls Post-Graduate College, Anwalkhera, Agra, Uttar Pradesh. Areas of Specialization are Fish and Fisheries, Wildlife Management & Aquatic Pollution.
- Prof. D A. Patil (October 2024) Former Professor & Principal, SSVP Sanstha's L. K. Dr. P. R. Ghogrey Science College, Dhule, Maharashtra. Area of specialization are Botany, Angiosperm Taxonomy.
- Mr. Nitin Shrikrishna Ingale (October 2024) Inspection NDT, Injotech India Pvt Ltd Pune. Area of specialization is Non Destructive Examination
- Dr. Akshay Panigrahi (October 2024) Principal Scientist & Scientist in Charge (NGRC), ICAR-Central Institute of Brackishwater Aquaculture, Chennai, Tamil Nadu. Area of specialization Agriculture, Fisheries, Microbiology, Immunology, Shrimp breeding and Genetics.
- Prof. Bandana Bose (October 2024) Ex-Dean, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh. Area of Specialization are Botany, Plant Physiology and Biochemistry.
- Dr. Vidyanath Jha (October 2024), Retd Prof of Botany, L. N. Mithila University and Former Principal of M.R.M College, Darbhanga and M L S M College, Darbhanga, Bihar. Area of Specialization Aquatic Biology, Natural Resource Management.
- Dr. Kedar Nath Mohanta (November 2024) Principal Scientist and Head, Fish Nutrition, Biochemistry and Physiology Division, ICAR-Central Institute of Fisheries Education (Deemed University), Versova, Andheri West, Mumbai, Maharashtra. Areas of Specialization are Fish Nutrition, Biochemistry, Physiology and Aquaculture.
- Dr. Vitthal T. Mohite (November 2024) Associate Professor & Head, Department of Zoology, Thakur College of Science and Commerce (Autonomous), Thakur Village, Kandivali (E), Mumbai, Maharashtra. Area of specialization: Toxicology, Bioresource Management and Conservation.
- Dr. Sanjay Mishra (November 2024), Professor, Department of Biotechnology, SR Institute of Management & Technology Lucknow, Uttar Pradesh. Specializations are Biochemistry & Biotechnology, Enzymology and Protein Engineering, Cancer Biology, Reproduction Biology, Medical Biochemistry & Bioinformatics.

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Professor S. N. Pandey (December 2024), Department of Botany, University of Lucknow, Lucknow, Uttar Pradesh. Area of specialization is Environmental Biology.

Dr. Bhuwan Bhaskar Mishra (January 2025) Assistant Professor, Department of Zoology, B. N. Mandal University, Madhepura, Bihar. Specialization are Insect, Pest Management, Vector Control and Toxicology.

Prof Sunil Kumar Srivastav (January 2025) Department of Zoology, Deen Dayal Upadhyay Gorakhpur University, Gorakhpur, Uttar Pradesh. Specialization are Fishery Biology and Endocrinology

Dr. Uttam Kumar Sarkar (January 2025), FNAAS, Director, ICAR-National Bureau of Fish Genetic Resources, Lucknow, Uttar Pradesh. He have specialization in Fisheries Resource Management, Aquatic Biodiversity & Conservation.

Dr. Yogesh Chandra (February 2025) Director, S. L. Education Institute, Pallupara Ghosi, Post-Pakwara, District-Moradabad, Uttar Pradesh. Specialization in Marketing, Education, Operations and Marketing of Petroleum Products, Human Resource Management.

Dr. Ajaz A. Wani (February 2025) Associate Professor, Department of Zoology, Govt. Degree College Bhaerwah. Specialization in Wildlife Biology and Management.

General Members

Mrs. Anupama Bhargava, Assistant Teacher of English, P.S. Samadua, Jhansi, Uttar Pradesh

Mr. Vipin Kumar Soni, Former Guest Lecturer of Chemistry, Govt. Maharaja College, Chhatarpur, Madhya Pradesh

Dr. Sangeeta Chaurasia, Former Assistant Professor of Zoology, Rajeev Gandhi College, Bhopal, Madhya Pradesh

Dr. Satyandra Prajapati, Former Assistant Professor of History, Babu Degree College, Nowgong, Madhya Pradesh

Dr. Sandeep Kumar Shukla, Guest Lecturer of Zoology, Govt. College, Seoni, Madhya Pradesh

Mr. Arvind Kumar Dubey, Guest Lecturer of English, Godavari Academy of Science and Technology, Chhatarpur, Madhya Pradesh

Mrs. Sudha Pauranic, Former Lecturer, Govt. School, Chhatarpur-471001

Dr. H. N. Khare (Oct.-13 to Sep. 14), Professor of Zoology, Govt. Maharaja College, Chhatarpur, MP

Dr. Umesh Patel (Oct.-13 to Sep. 14), Guest Lecturer of Zoology, Govt. Maharaja College Chhatarpur, MP

Dr. Pushpa Singh (Oct.-13 to Sep. 14), Asst. Professor of Zoology, Govt. Vivekanand College, Maihar, Madhya Pradesh

Dr. Manju Jain (Oct.-13 to Sep. 14), Former Professor of Botany, Govt. Girls College, Vidisha, MP

Dr. Vaheedun Nisha (June-13 to May-15) Guest Lecturer of Zoology, Govt. Maharaja College Chhatarpur, MP

Dr. Vidushi Sharma (Dec.-17 to Nov. 18) General Secretary, International Human Rights Organization, New Delhi

Dr. Malik Asif Aziz, (July-18 to June 19) Assistant Professor, Division of Basic Science & Humanities, Faculty of Agriculture, Wadia, SKUAST-Kashmir

Dr. J. Thilak (Jan-19 to Dec. 20) Scientist D, Southern Regional Centre, Zoological Survey of India, 130 Santhome High Road, Chennai.

Mr. Vagh Sarman Naranbhai (Jan. 20 to Dec. 20) College of Fisheries Science, Junagarh Agricultural University, Veraval, Gujrat.

Mr. Gaurav Swaroop Nigam, (Jan-20 to Dec. 20) Department of Botany, Atarra P. G. College, Atarra, Banda, Uttar Pradesh

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Dr. Mathua Ahirwar (March-20 to Feb. 21) Assistant Professor of Botany, Govt. P. G. College, Rampura, Dist. Neemuch, Madhya Pradesh.

Miss. Mahima Tamta (Jan-21 to Dec. 21) Research Scholar, Govind Ballabh Pant University, Pantnagar, Uttrakhand.

Dr. Shrikant N. Chimma (Jan-21 to Dec. 21) Guest Lecturer, Institute of Dr. Bheem Rao Ambedkar Studies and Research, Gulbarga University, Kalaburagi

Dr. Pramod Kumar Fatehpuriya, College of Agriculture, Gwalior, Madhya Pradesh

Dr. Adesh Kumar , (Nov. 2022 to Oct. 2023) Assistant Professor of Zoology, School of Science, JECRC University, Ramchandrapura Industrial Area, Vidhani, Jaipur, Rajasthan. Specialization in Wildlife and Conservation Biology, Ecology Environment and Animal Behaviour, Behavior Ecology and Molecular Taxonomy.

Dr. Arun Arya , (Nov. 2022 to Oct. 2023) Former Professor of Environmental studies, M S University, Lucknow, Uttar Pradesh. Specialization in Mycology, Plant Pathology, Biodiversity, Biodeterioration and conservation of object

Dr. A. Raj Shekhar, Professor of Geography, Kalinga University, Raipur, Chhattisgarh, India. Specialization in Urban And Environmental Geography

Mrs. Chitra Arya (Feb. 2023 to Jan. 2024) Gujarat.

Dr. Virendra Nath , NBRI, Lucknow

Sunita Das (July 2024) Lecturer in Political Science, Government Girls Higher Secondary School Ambikapur, Chhattisgarh.

Mr. Kuber Tiwari (July 2024) Department of Commerce, Shri Sign Baba Aadarsh Mahavidyalay Ambikapur, Sarguja, Chhattisgarh.

Mr. Aman Kumar Jaiswal (July 2024) Lecturer of Mathematics, St Charles H. Sec. School Bhatgaon, Chhattisgarh.

Mr. Aditya Barua (July 2024) Social Worker, Etawa, Uttar Pradesh

Mr. Brijesh Kumar Pandey (July 2024) English Teacher, Behind Kali Mata Temple, Ambikapur, Chhattisgarh.

Miss Kavita Rathore (July 2024) Master of Social Work, Stenographar, Bamhanpali kharsia, District-Raigarh, Chhattisgarh.

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Dear,

Thanks for your interest in participation and submission of your unpublished research work in the ESW XII Annual National Research Conference on “Impact of Climate change on Ecosystem, Environment and Agriculture” will be held during 01 & 02 February, 2025 at Godavari Self-Employment Centre Nahdora-Khajuraho, Madhya Pradesh, India (12 KM from Khajuraho)

Brief schedule

Date	Event	Time
01/02/2025	Spot registration & Breakfast	08:00 am to 09:00 am
	Inaugural Session	09:30 am to 11:30 am
	Tea Break	11:30 am to 11:45 am
	TECHNICAL SESSION I (ORAL PRESENTATION)	11:45 am to 12:45 pm
	TECHNICAL SESSION II (ORAL PRESENTATION)	12:45 pm to 01:45 pm
	Lunch	01:45 pm to 02:45 pm
	TECHNICAL SESSION III (ORAL PRESENTATION)	03:00 pm to 04:00 pm
	Children's Science Conference: Interaction with Scientist.	05:06 PM to 07:00 PM
	President Meet with ESW Members	06:00 pm to 07:00 pm
	Cultural Programme	07:00 pm to 09:00 pm
	Dinner	09:00 pm to 10:30 pm
02/02/2025	Break Fast	07:00 am to 07:50 am
	TECHNICAL SESSION IV (ORAL PRESENTATION)	08:00 am to 09:30 pm
	TECHNICAL SESSION V (ORAL PRESENTATION)	09:30 am to 10:30 am
	TECHNICAL SESSION VI (POSTER PRESENTATION)	10:30 am to 11:00 am
	High Tea	11:00 am to 11:10 am
	Valedictory Session & Award ceremony	11:20 am to 01:30 pm

Dr.. Ashwani Kumar Dubey
Organizing secretary