SLS Newsletter

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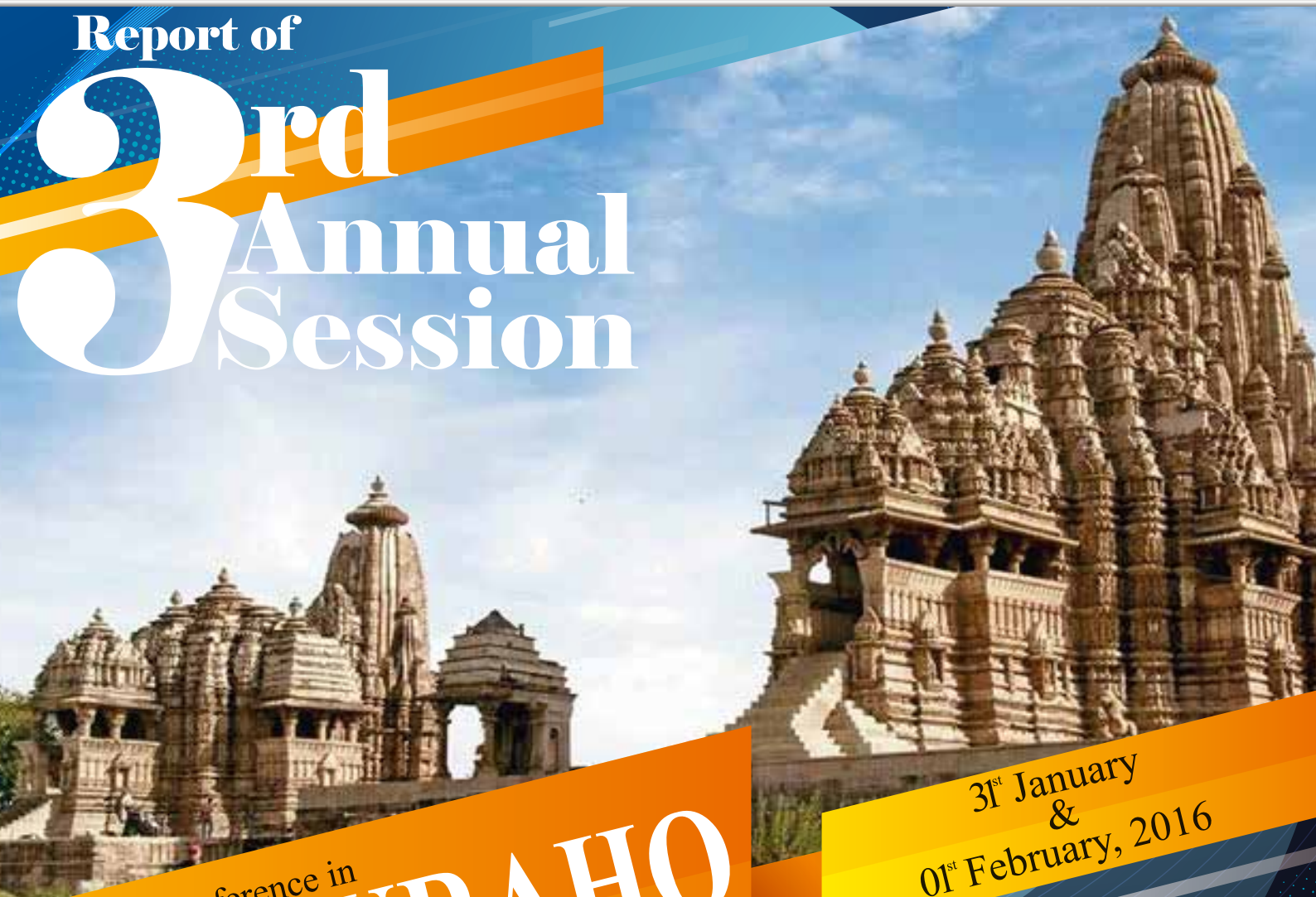

Report of 3rd Annual Session

National Conference in

KHAJURAHO

World Haritage.....

31st January & 01st February, 2016

Dr. Rashmi Singh
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Dr. Pragya Khanna
Managing Editor

Focused on

ANNUAL

Reports of Society of Life Sciences (Events & Activities)

Reports of Society of Life Sciences (Events & Activities)

Volume - 6 Number - (1&2) Year - 2016

SLS Annual Session in KHAJURAHO

Khajuraho 31 Jan. 2016

Environment & Social Welfare Society Khajuraho (M.P.) organized National Conference on "Strategy for Human Welfare on Nature conservation and Resource Management" and 3rd Annual Session of the Society of Life Sciences" on 31st January & 01st February, 2016. The National Conference was sponsored by M.P Council of Science & Technology, Govt. of Madhya Pradesh and supported by The National Academy of Sciences (NASI-BER Chapter), Society of Life Sciences and Godavari Academy of Science and Technology, Chhatarpur (M.P.).

In the conference more than 180 PARTICIPANTS

participated from various scientific organizations and Universities.

The event of the 3rd SLS Annual session and National Conference was inaugurated on 31st January, 2016bythe Chief Guest, Prof. N.C. Gautam, Vice-chancellor, Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot (M.P.).He emphasized that study of Environment conservation and Biodiversity is a need of the hour to practice from grass root level and must be introduced with the latest technology.

The Key note speaker, Prof. K. K. Sharma, Former Vice Chancellor, MDS University Ajmer (Rajasthan) delivered the Keynote address on "Bioacoustic based sensors can effectively reduce man-wild life conflict". Guest of Honour on the occasion was Prof. Kubaer Ram Mourya, Former Vice Chancellor Rajendra Agricultural University, Pusa (Bihar). He said that the enhancement of food processing is necessary for proper food supply and there was a need to develop basic infrastructure and technique for grain and food storage for future. Dr. Kunal Kumar Das, Scientist (Retd.), IIRS, Indian Space Research Organization Dehradun, Uttrakhand, focused on regular monitoring of environment by remote sensing and GPS technique for nature and resource management. Dr. Ashwani Kumar Dubey, Executive Director ESW Society, Khajuraho focused his attention on wildlife conservation to maintain food chain and ecosystem for our safe Environment. Prof. Shivesh Pratap Singh, Secretary, BER Chapter, The National Academy of Sciences India, Allahabad & Society of Life Sciences proposed the vote of thanks.

During inaugural function, Dr. Karuna S. Perdeshi, Abasaheb Garware College, Pune was awarded the SLS Eminent Scientist Award 2016 in recognition of her outstanding academic contribution in the field of Parasitology.Whereas SLS fellowship awards were presented to Dr. M.K. Nayak (Tikamgarh), Dr. Pushpa Singh (Maihar), Dr. Rajesh (Pantnagar), Dr. A.K. Srivastava (Tikamgarh), Dr. Danish (Pantnagar) and Dr. Raj Bhan Sahu (Satna).

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The general topics on Nature Conservation, Resource Management, Technological Approach were covered in the five technical sessions of this two days National Conference. To conserve, promote and develop the Indian's culture, Environment and Social Welfare Society, Khajuraho arranged a cultural event on 31st January followed by dinner.

Prof. K.K. Sharma, Former Vice Chancellor, Maharishi Dayanand Saraswati University, Ajmer, Rajasthan was the Chief Guest, Dr. A.K.Pandey, Principal Scientist, National Bureau of Fish Genetic Resources, Lucknow was the Special Guest and Dr. Kunal Kumar Das, Scientist (Retd.), IIRS, Indian Space Research Organization Dehradun, Uttrakhand presided over the Valedictory and the award ceremony of the National conference. Many Fellow members / Life Members of Environment & Social Welfare Society Khajuraho (M.P.) and Society of Life Sciences, Satna and other distinguished guests participated from various parts of India.

Certificates of paper presentation and participations were given by the Chief Guest and vote of thanks by Dr. Prahlad Dubey (Kota).

Best Paper Oral Presentation Award in each Session were awarded to Dr. Jitendra Kumar, Fisheries College, Manglore; Dr. Sanofer Khokhar, Fisheries Research Station, Junagarh, OkhaPort (Gujarat); Dr. Mohammad Danish,G.B. Pant University of Agri. & Tech. Pantnagar and Dr. Dipali Jat from Dr. Harisingh Gour University, Sagar(M.P).

Best Poster Presentation Award was presented to Dr. Aditya Narayan, Bundelkhand University, Jhansi (U.P.) and Dr. Meenakshi Sharma, CP University, Kota (Rajasthan).

RECOMMENDATIONS of National Conference

- Bioacoustics based sensors can effectively reduce man wildlife conflict.
- Need to study of Environment conservation and Biodiversity on practical level and mustbe introduced with the latest technology.
- Food processing sector in India needs more attention.
- Enhancement of food processing is necessary for proper food supply and need to developbasic infrastructure and technique for grain and food storage for future.
- Regular monitoring of environment is required by remote sensing and GPS technique fornature and resource management.
- Attention on wildlife conservation to maintain food chain and ecosystem for oursafe Environment. Plantation may be safe guarded instead of wire boundary in Nationalpark and sanctuary.
- Need to revise its current approach by adopting the ecological methods and innovativetechniques of waste management.
- Evidences indicate that research is needed to improve the quality and quantity of compostas well as its efficient management.
- Biological process controlled nutrient cycling influence many other aspects of soilfertility.
- Knowledge of these processes helps farmers to make informed management decision abouttheir crops, how these decision affect soil biology especially root growth and organicmatters are key factors in efficient nutrient management.
- It requires training to the farmers in proper crop selection and farming practices and alsothe strict monitoring by the agriculture ministry.
- Species conservation must be the prime target for eco-balance and global health.
- Much Attention must be given on challenges at national level viz. Malnutrion, Poverty and environmental degradation.

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Scientists / Professors confirmed for The Society of Life Sciences Awards 2016

Dr. Karuna S. Perdeshi	Associate Professor, Dept. of Zoology, AbasahebGarware College, Pune (M.S.)	SLS Eminent Scientist Award in the field of Parasitology
Dr. G. K. Sahu	Medical Biotechnolgy Division, Dept. of Biochemistry, Pt. J.N.M Medical College Raipur (C.G.)	SLS Eminent Scientist Award in the field of Biochemistry
Dr. M.K. Nayak	Scientist, JNKVV, College of Agriculture, Tikamgarh (M.P.)	SLS Fellowship Award
Dr. Pushpa Singh	Dept. of Zoology, Govt. Vivekanand P.G. College Maihar Dist. Satna (M.P.)	SLS Fellowship Award
Dr. Rajesh	Assistant Professor, Dept. of Aquaculture, College of Fisheries, G.B. Pant University of Agri. & Tech. Pantnagar (Uttarakand)	SLS Fellowship Award
Dr. A.K. Srivastava	Scientist, JNKVV, College of Agriculture, Tikamgarh (M.S.)	SLS Fellowship Award
Dr. Danish	Dept. of Aquaculture, College of Fisheries, G.B. Pant University of Agri. & Tech. Pantnagar (Uttarakand)	SLS Fellowship Award
Dr. Raj Bhan Sahu	Dept. of Zoology, Govt. Autonomous P.G. College Satna (M.P.)	SLS Fellowship Award

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Award Ceremony of 3rd Annual Session of SLS

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Dr. Karuna Pardeshi, Pune

Dr. M.K. Nayak, Tikamgarh

Dr. A.K. Srivastava, Tikamgarh

Dr. Rajesh, Pantnagar

Dr. Raj Bhan Sahu, Satna

Dr. Danish, Pantnagar

Dr. Pushpa Singh, Maihar (Satna)

Group Photosession

Papular Article
Reports of Society of Life Sciences (Events & Activities)
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GENESIS OF ETHNOBOTANY IN INDIA A GLIMPSE

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Introduction

Plants have always played and continue to play a vital role in the life and culture of human beings since antiquity. Perhaps it was only the plant kingdom with which primitive man had established his first relationship for his basic needs as food, shelter and clothing etc. The science of Ethnobotany therefore had its origins during the early period of human history but Ethnobotany as a modern discipline is said to have emerged only during the later part of 19th century.

The term 'Ethnobotany' was first coined by Dr. J.W. Harshberger on 4th Dec. 1895, at a lecture in Philadelphia, to describe his field of inquiry, which he defined as the study of "plants used by primitive and aboriginal people." In 1896, Harshberger published the term and suggested "ethnobotany" be a field which elucidates the "cultural position of the tribes who used the plants for food, shelter or clothing".

Ethnobotany has been defined as the study of the past and present interrelations of primitive or aboriginal human societies with the ambient vegetation. Some definitions given by authors as:

Jones (1941) defined it as "The study of interrelationship of primitive men and plants".

- Faulks (1958) "The total relationship between men and vegetation".
- Schultes (1962) "The study of relationship which exists between people of primitive society and their plant environment".
- Ford (1978) "Ethnobotany is concerned with a wide range of interest of plants in cultural and ecological context".
- Martin (1995) "Ethnobotany is the part of ethnoecology which concerns plants".
- Cotton (1996) "Ethnobotany is considered to encompass all studies which concern the mutual relationship between plants and traditional peoples".
- Jain (2019) Study of traditional and indigenous knowledge about man plant relationships which exist since birth of man on this earth.

Ethnobotany is multidisciplinary science mainly studied by botanists, anthropologists, linguists, phytochemists, pharmacologists, pharmacognosits, archaeologists, psychologists, and even paleobotanists. In case of interdisciplinary study of ethnobotany, there are always more than one subject involved, extends beyond ordinary realm of botany and has significance input of another branch of science, like Archaeology, Ethnopharmacology, Ethnomedicine, Ethnogynaecology, Ethnopaediatrics, Ethno-agricultue, Ethnobiology, Ethnotoxicology, Ethnonarcotics, Ethnoorthopedics, Ethno-ophthalmology, Ethnohoriticulture, Ethnolimguistics, Ethnocosmetics, Archaeoethnobotany, Ethnomusicology etc. Ethnopharmacology is interdisciplinary between two subjects, ethnology and pharmacology, Archaeoethnobotany involves three subject, ethnology, archaeology and botany.

In subdisciplines of ethnobotany, the main subject is botany. Subdisciplines of Ethnobotany includes ethnobotanical work of subgroups of plant kingdom, like fungi, bryophytes, pteridophytes, lichens etc are subdisciplines and have been named as Ethnoalgology, Ethnomycology, Ethnobryology, Ethnopteridology, Ethnolichenology etc. Studies on special aspects of botany, like system of classification, medicinal uses, palaeobotany, ecology, etymology etc are also subdisciplines have been termed as Ethnotaxonomy, Ethnomedicobotany, Palaeoethnobotany, Ethnoecolog (Jain 1889).

Scope of Ethnobotany:

Ethnobotany is a multidisciplinary science and its scope is not confined to one area but it covers a broad range of study areas, which are interconnected to each other in one sense or the other. So, there is a great opportunity to explore the ethnobotanical approach towards the modern civilization and giving them a firm task, which should include:

- Conservation of plant species- including varieties of crops and other forms of biological diversity.
- Botanical inventories and assessment of the conservation status of the species.
- Sustainability in supplies of wild plant resources.
- Enhanced food security, nutrition and healthcare.
- Preservation, recovery and diffusion of local botanical knowledge and wisdom.
- Reinforcement of ethnic and national identity.
- Identification and development of new economic products from plants, for instance food, crafts, herbal formulations, horticultural plants, etc.
- Drug discoveries from plant sources.
- New product Development.
- Discovery of new sources of food plants.
- Less known or unknown uses of 9500 plants.
- Provides information regarding the traditional uses of plant wealth which can be utilized as direct reference of research.
- Conservation of forests and plants through faith, beliefs and taboos.
- Conservation of traditional crop varieties and wild relatives.
- Tribal artifacts.
- Cross cultural and comparative ethnobotanical study.
- Documentation of age-old traditional knowledge.

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The scope of ethnobotany in drug research needs no elaboration. Some ethno medicines are now in main stream and used for medicare programme. Discovery of medicinal properties of certain plants, like Artimisnine drug is obtained from Artimisia annua and has antimalarial properties. Similarly, Reserpine is obtained from Rauvolfia serpentine (hypotensive, tranquilizer), Caffeine from Camellia sinensis (male contraceptive), Quinine from Cinchona officinalis (antineoplastic), Vincristine from Catharanthes roseus (antineoplastic). Recently 'Jeevaniya' from Trichopus zeylanicus is discovered in Thiruvananthpuram district of Kerala, by the JNTBGRI with the help of 'Kani' tribals of Agasthyar mount, which has been reported to possess rejuvenative, immuno enhancing, antistress and antifatigue properties.

Ethnobotany in India:

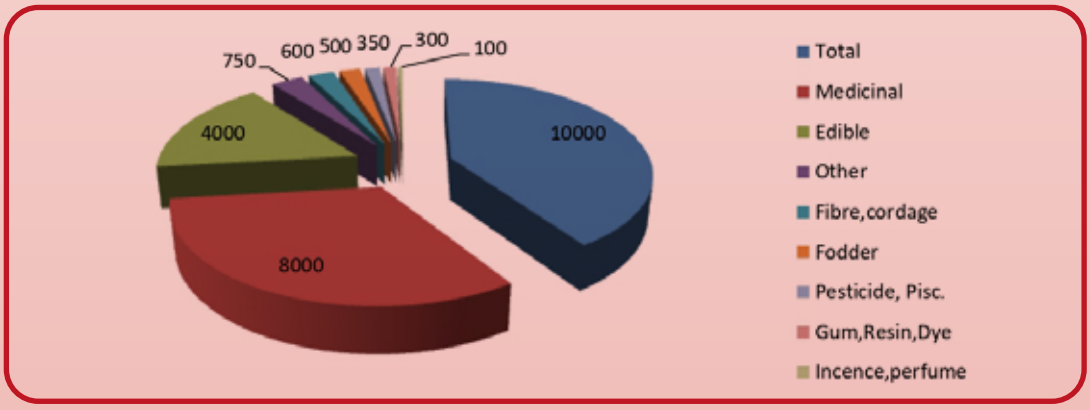
India has all the three elements that contribute to ethnobotanical richness of an area: these are floristic diversity, ethnic diversity and rich culture diversity. In India there are about 705 tribal communities of 227 ethnic groups as per the classification made by anthropologists on linguistic basis. Their population in India is 84.3 million constituting 8.2% of the total population (2011) census. They mainly inhabitabout 5000 forested villages or lead a nomadic life in the forest (Pushpangadan & Pradeep, 2008).

Vast ethnobotanical knowledge exists in India from ancient time in Vedas and Samhitas. Work of Chrak, Susruta and Dhanwantari's attracted serious attention of people in India even during the early centuries. Cattle grazers, shepherds and forest dwellers have the deep knowledge of medicinal plants of the forest and identify them by name, morphology and properties. The Ayurveda students should learn the name, property and morphological characters of medicinal plants from these people with deep interaction. Although the concept and definition of the science of Ethnobotany was cleared respectively by Powers (1874) and Harshberger (1895), the elements of this science appeared in India even before. Garcia da Orta (1563) published a book 'Coloquios dos simples' e drogas medicinas da India'. Acosta (1578) also published a book 'Tractado de las drogas y medicinas de las Indias Orientalis' on Indian medicinal plants from Malabar. Van Reede, the compiler of 'Hortus Malabricus' (1678-1693) gave an excellent and accurate introduction of Malabar, its people and their costoms, specially the virtues of the medicinal plants. Sir George Watt published 'Dictionary of the Economic Products of India' (1889-1896). In this Dictionary he provided nearly 3000 local names of the plant products and their uses as obtained from various regions of India.

Padmashri Dr. E.K. Janaki Ammal (1956), as an official programme in the Economic Botany Section of Botanical Survey of India, lit the lamp of 'Scientific Indian Ethnobotany' by creating an 'Ethnobotanical Section' at the Cetral Botanical Laboratary, B.S.I. Allahabad. She did loud think and a wish in her publications, which has been fulfilled later by Dr. S.K. Jain. Besides the books, since begining from 1963 to tilldate Dr. Jain has published more than 400 research papers on different aspects on Ethnobotany and Folklore medicine in India. Dr. S.K. Jain deserves to be called as the "Father of Indian Ethnobotany".

In the early 1980's the Department of Environment and Forest, Government of India funded an All-India Coordinated Research Project on Ethnobiology. This work triggered the ethnobotanical study in India and work was carried out in over a dozen institutions under the Botanical Survey of India (BSI), Council of Scientific and Industrial Research (CSIR), some universities and other laboratories of India. A large area was covered in a quick survey and significant ethnobotanical data were recorded.

Over 10000 wild plant species used by tribals for meeting their varied requirements have been recorded so far. Out of 8,000 wild plant species used by tribals for medicinal purposes, about 2000 are found to be new claims and worthy of scientific scrutiny. Out of 4000 or wilder plant species used as edibles by tribals, about 800 are new information and at least 250 of them are worthy of attention to be developed as alternative source of food that the world would need in the future. Similarly, out of over 600 wild plant species used by tribals for making fibre for cordage, 80 are promising for commercial exploitation. Out of 500 plant species used as fodder, 100 are worth recommending for wider use and out of the 325 wild plant species used by tribals as piscicides and pesticides; at least 180 are quite promising to be developed as safe biopesticides. Almost all the plants used as gum, resin, dye, incence and perfumes are worth investigating since there is a revived interest the world over for natural sources of these products (Pushpangadan & Pradeep, 2008).



The Society of Ethnobotanist (SEB) was established in 1980 and it brings out a journal on ethnobotany called 'Ethnobotany' in 1989, which is the only journal on ethnobotany in India.The society also conducts training programme in ethnobotany in well-designed manner to make understand the scope and concept of ethnobotany for young researchers in the field of ethnobotany. Sofar, 8 training courses have been organized by the society.

More than 3000 research papers on different aspects of ethnobotany have been published sofar in aforesaid Indian as well as foreign journals. There are more than 300 Doctoral thesises (Ph.D.) were published from different Universities and Instituttions based on ethnobotancal field work in different ethnobotanical aspects of varoius tribal communities across India. All funding agencies of Central Government like CSIR, ICFRE, DST, DBT, ICAR, ICMR, ICAR, UGC etc. funded and funding projects for ethnobotanical work. States funding agencies like SSB, SMPB, State Councils of Science & Technology also funding the projects. Thousands of seminars, conferences, seminars, symposia, workshops, training courses have also been organized.

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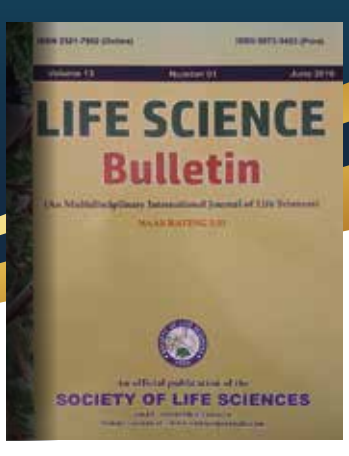

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Papular Article
Climate Change: A Challenge to Sustain Environmentand Human Health
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Climate Change
A Challenge to Sustain Environment and Human Health

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Climate Change: India is the most 13th most vulnerable country to climate change. since more than 60% of Indian agriculture is based on rain and it hosts 33%of the world' poor, climate will be having significant impact on the food nutritional security of the country (Sharma, 2013). Global warming is the increases of average world temperatures because of what is known as the greenhouse effect. As the greenhouse gases build up in the atmosphere, the Earth gets hotter. This process is leading to a rapid change in climate, also known as climate change (Kour, 2014). In other words, the layer of Greenhouse Gases (GHG), including carbon dioxide (CO2), methane, nitrous oxide and others, in their optimum concentration in Earth's atmosphere, acts like a protective blanket which maintains its temperature and the natural ecosystem. Lately, anthropogenic (human induced) activities, mainly burning of fossil fuels, have resulted in increasing the concentration of these gases which in turn trap extra heat and increase Earth's average temperature leading to climate change. This in turn leads to a wide-ranging impact including sea level rise, melting of snow and glaciers, changes in weather patterns, increased frequency and intensity of extreme events and natural disasters etc (Uberoi, 2014).

The conference concerned to climate change was first held in Kyoto Protocol in Japan and signed by many countries to protect the environment during 11 December 1997. The effects of climate change span the physical environment, ecosystems and human societies. It also includes the economic and social changes which stem from living in a warmer world. Human-caused climate change is one of the threats to sustainability. Many physical impacts of climate change are already visible, including extreme weather events, glacier retreat, changes in the timing of seasonal events (e.g. earlier flowering of plants), sea level rise, and declines in Arctic sea ice extent. Climate change has already impacted ecosystems and humans (IPCC, 2014). In combination with climate variability, it makes food insecurity worse in many places and puts pressure on fresh water supply. This, in combination with extreme weather events, leads to negative effects on human health. Climate change has also contributed to desertification and land degradation in many regions of the world. This has implications for livelihoods as many people are dependent on land for food, feed, fibre, timber, and energy (IPCC, 2014). Rising temperatures, changing precipitation patterns and the increase in extreme events threaten development because of negative effects on economic growth in developing countries. Climate change already contributes to migration in different parts of the world. The future impact of climate change depends on the extent to which nations implement prevention efforts, reduce greenhouse gas emissions, and adapt to unavoidable climate change effects (Oppenheimer, 2014). Much of the policy debate concerning climate change mitigation has been framed by projections for the twenty-first century. The focus on a limited time window obscures some of the problems associated with climate change. Policy decisions made in the next few decades will have profound impacts on the global climate, ecosystems, and human societies, not just for this century, but for the next millennia, as near-term climate change policies significantly affect long-term climate change impacts (Field, 2014 and Clark et al., 2014).

Effects of Global Warming on Human Health: Humans are exposed to climate change through changing weather patterns (temperature, precipitation, sea-level rise, and more frequent extreme events) and indirectly through changes in water, air and food quality and changes in ecosystems, agriculture, industry and settlements and the economy (Confalonieri; et al., 2007). Air pollution, wildfires, and heat waves caused by global warming have significantly affected human health (Takaro et al.,2013),and in 2007, the World Health Organization estimated 150,000 people were being killed by climate-change-related issues every year (CAP, 2007).

A study by the World Health Organizationconcluded that climate change was responsible for 3% of diarrhoea, 3% of malaria, and 3.8% of dengue fever deaths worldwide in 2004. Total attributable mortality was about 0.2% of deaths in 2004; of these, 85% were child deaths. The effects of more frequent and extreme storms were excluded from this study. The human impacts include both the direct effects of extreme weather, leading to injury and loss of life (IPCC, 2014), as well as indirect effects, such as undernutrition brought on by crop failures. Various infectious diseases are more easily transmitted in a warmer climate, such as dengue fever, which affects children most severely, and malaria. Young children are the most vulnerable to food shortages, and together with older people, to extreme heat. India's post-2020 climate goals: For post-2020 period, in response to the decisions of the Conference to the Parties, India submitted its Nationally Determined Contribution (NDC) to the UNFCCC, outlining the climate actions intended to be taken under the Paris agreement.

The eight goals put forth by India in its Nationally Determined Contribution (NDC) are: To put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation, to adopt a climate friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development, to reduce the emissions intensity of its GDP by 33 to 35 percent by 2030 from 2005, to achieve about 40 percent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030 with the help of transfer of technology and low cost international finance including from Green Climate Fund (GCF), to create an additional carbon sink of 2.5 to 3 billion tons of CO2 equivalent through additional forest and tree cover by 2030, to better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, Himalayan region, coastal regions, health and disaster management, to mobilize domestic and new & additional funds from developed countries to implement the above mitigation and adaptation actions in view of the resource required and the resource gap and to build capacities, create domestic framework and international architecture for quick diffusion of cutting-edge climate technology in India and for joint collaborative R&D for such future.

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