

**Proceedings for the two days National seminar on “Burning Environmental Issues: Risk to Biodiversity and Human Health with Special Reference to North East India” held at Saint Mary’s College on 15<sup>th</sup> – 16<sup>th</sup> May, 2013.**

The inaugural ceremony of the two day national seminar commenced at 10:15 am on the 15<sup>th</sup> may, 2013, in the college auditorium, with a welcome song “heal the world” presented by the students of the B.sc 2<sup>nd</sup> year. The guests were facilitated by the teachers and students. Later, the Chief Guest, additional secretary Shri. P. B. O. Warjri was assisted by Dr. (Sr.) Mary Harriet, the Principal of Saint Mary’s College, Dr. B. K. Tiwari, the keynote speaker & Coordinator Mrs. A. P. Shabong for lighting the lamp to formally inaugurate the seminar. The prayer service was conducted by Mrs. M. War, Dept. of Education. Dr. (Sr.) Mary Harriet delivered the welcome address.

Prof. B. K. Tiwari, Department of Environmental Studies, NEHU in his keynote address highlighted that policies relating to biodiversity protection in North East region should be formulated in accordance with the local conditions and traditional practices prevailing in these areas. The solution to environment problems should be drawn from within the region, with the collective approach of policy maker, experts and research. He further stated that the region contributes about 50% of India’s biodiversity, 25% of forest area, 60% of bamboo & 60.24% geographical area. The professor further stressed the need to preserve this rich biodiversity by preventing the anthropogenic activity like mining, hunting, over-grazing, Jhum practices & pollution besides others.

The Chief Guest Shri. P. B. O. Warjri in his speech highlighted the fact that the Industrial Revolution on one side paved the way for development but on the other hand caused an adverse effect on natural resources. Increased demands of goods lead to excessive destruction of nature wealth. He also expressed concern over the local practice of burning the forests and hills during dry season as it destroys valuable flora and fauna, including medicinal herbs. He also informed the audience about a mystical natural phenomenon reported from Nohron & Nongryngkoh area where migratory occurrence of “Blue Worms” has been noticed which help in the soil fertility and thus are protected and nurtured by villagers. The vote of thanks was given by Mrs. A. P. Shabong, the Coordinator of the seminar.

The Academic Session I was chaired by Prof. B. K. Tiwari, Department of Environmental Studies, NEHU.

The Resource Person Shri. T. T. C. Marak, PCCF, Department of Forest & Environment, Govt. of Meghalaya, speaking on the sub theme “concept, issues & regulation of the environment & biodiversity” stressed on the role of various tribes of north eastern region in preserving of the faunal & floral richness of this region. He also spoke about the government efforts and various rules and regulations such as forest right act, 2006, forest

conservation act, 1980 etc. he lamented on the fact that these acts are not enforced in the state as the forest are under the District Council, Raid or Dorbar Shnong etc. thus multiplicity in governance of forests makes enforcement difficult. He concluded the talk by touching upon the major environmental issues and causes of deforestation, shifting cultivation, water scarcity, water pollution, etc.

Prof. A. Henia, Department of Education, NEHU talked about the dangers faced by the environment due to technological, anthropogenic and industrial activities. She further stressed upon the point that for an effective healthy living, environmental awareness and education are the only feasible measures & can be achieved through active participation of educational institutions.

Dr. Brinda B. Kharbiryumbai, Department of Education, NEHU spoke about the moral relationship and environmental ethics between man and this beautiful earth. She stressed upon the need for developing environmentally appropriate thought and action.

Dr. R. M. Shangliang, Department of sociology, NEHU, focussed on the policy issues pertaining to forest management & the close symbiotic relationship between man and nature. She briefly discussed the colonial forest policy in pre – independent India and how the infringement and loss of forest land continued into the post colonial forest policy as well. She highlighted the role of district council in mismanaging the forest in Khasi Hills. Her suggestions include involvement of women, NGO's, Government mechanism such as JFM (joint forest management) etc.

Miss Saphimosha Blah, Department of Philosophy, St. Mary's College presented a review of the Environmental Crisis where rivers are turned to sewages, cities being polluted with congested built ups etc. She further mentioned that traditional knowledge in combination with science and technology can be used to protect nature.

Shri. Mihin Dollo, Coordinator (Natural resources) NERCOMP, discussed the objectives of NERCOMP, a project initiated in three states – Assam, Manipur and Meghalaya, to improve the livelihood of selected communities and women in particular are empowered by providing funds and grants for various income generation activities such as agricultural and horticultural activities, animal husbandry etc.

Academic session II was chaired by Smt. Patricia Mukhim, Editor, Shillong Times, Shillong.

The Resource Person Shri. M. J. West, PHE, Rural Circle, Shillong pointed out that 78% of rural population is dependent on the resources of mother earth. However, the use of chemical fertilizers, dumping of plastics garbage, waste material from various sources untreated drinking water and non availability of sewage facility have posed severe challenges to the environment. He concluded the talk by informing about various schemes of the government like MNREGA, NRLM and NRDWP etc.

Shri. Pankaj Roy in his paper entitled “Lessons learnt from 2012 floods of Assam”, attributed the causes of floods to enormous monsoon rains and river Brahmaputra being the

only reservoir to accommodate huge volume of water. The floods not only created food scarcity but also safe drinking water and mass devastation of property and human lives.

The second speaker Shri. R. Taba presented a paper on Bird Hunting in Arunachal Pradesh. As this practice is a part of the traditional custom of Adi tribe of Siang District, is putting a tremendous pressure on the avian population. The paper aimed to create awareness among the tribal population for the conservation of avian fauna in Arunachal Pradesh.

Dr. V. V. J. Wallang in her paper "Landslide and Flash flood hazards – analysis in Shillong master plan area" suggested an integrated study like remote sensing, GIS and other geological parameter should be conducted to solve the flood problem.

Ms. Sanghita Dutta in her paper, presented a case study on the presence of heavy metal like cadmium, lead, zinc, copper and arsenic in bed sediments of Deepor Beel, Guwahati. Among all the heavy metals, lead poses greatest ecological risk.

Ms. Jinu Deka in her paper reported the presence of Polycyclic Aromatic Hydrocarbon in Drinking water & soil of surrounding areas of Borholla Oil Fields of Jorhat, Assam, due to Anthropogenic Activities.

Cheten Jomba, in her paper on "Environmental degradation of West Kameng District", stressed that the main factors responsible for degradation are population growth, deforestation, shifting cultivation and pollution.

Academic Session III was chaired by Dr. Quendarisa Kharbuli, Associate Professor, Academic Staff College, North Eastern Hill University (NEHU).

The resource person, Shri Toki Blah, IAS (Retd.), President of ICARE, spoke on the severe consequences of anthropogenic activities on the river systems of Meghalaya (especially in the Jaintia Hills). The unregulated rat-hole mining has a disastrous effect on Lukha river of Jaintia Hills, which turned blue due to severe pollution. The rivers Rilang and Kynshi also met with the same fate due to pollution. In the urban area Wah-Umkhrah and Umshyrpi rivers are currently used as dumping grounds for the ever increasing refuse and garbage. ICARE and the District Council have taken the initiative to motivate common people and every household to make sincere efforts to clean and revive the river-systems of Meghalaya to their pristine glory.

Dr. I. Syiem, Associate Professor, Department of Education, NEHU, presented a paper based on personal observation on the increasing levels of pollution in river Umkhrah by unauthorised settlers and different sources that still constantly pollute the river.

Dr. Sanjiban Goswami, Associate Professor, Department of Botany, St. Edmund's College, presented a paper that emphasized the role of womenfolk in conserving the environment. He also depicted the deteriorating scenario of river Umkhrah and its tributaries through photographic presentations.

The next paper presented by Ms. Eva Mary Pala, Assistant Professor, Department of Zoology, Shillong College was on comparative microscopical and microanalytical studies on some haematological parameters of dwarf snake head fish (*Channa gachua*) from two

different locations of the river Umkhrah. The haematological parameters were found to be higher due to depleted level of oxygen in these polluted waters as a result of stone and gravel quarrying, hospital wastes and detergents from washinh of vehicles.

The paper presented by Dr.Bashida Massar, Assistant Professor, Department of Zoology, St. Anthony's College highlighted the ongoing pollution in Umiam reservoir and its impact on the common carpsinhabiting these waters. The paper also reported the occurrence of high content of lead and silicon in the blood of these fishes leading to reproductive degeneration and other abnormalities.

Academic Session IV was chaired by Dr. Vincent Darlong, Country Coordinator, IFAD.

The resource person, Prof. K.P. Sharma, Department of Environmental Studies, Tezpur University, in his theme lecture spoke on ground water contamination with arsenic, with special emphasis on Majuli, Assam. Arsenic contamination caused by man-made and natural activities lead to lung and kidney cancer.

Mr. Naba Bhattacharjee, MPERF, Shillong, spoke on the impact of population on the environment. Rise in population is responsible for growing demands leading to exploitation of natural resources.

The first paper of this session was presented by Ms. Carvy L. Nongpluh, Assistant Professor, Department of Geography, St.Mary's College. Ms Nongpluh highlighted the causes responsible for the degradation of Raid Sawkur Nongkseh sacred groves, such as environmental changes, anthropogenic activities, population explosion, disregard for traditional customs due to western influences and apathy of the people to the sanctity and importance of these groves.

Dr. Saipari Sailo spoke on a possible link between human health and decline in amphibian population. Amphibians constitute an important trophic level in the ecosystem as secondary consumers. Adult amphibians are the best biological pest controllers. Their extinction and decline could lead to a disturbance in the food chain, thereby affecting other organisms.

Academic Session V was chaired by Dr.Z. Changsan, Scientist, Central Pollution Control Board, Shillong.

The resource person, Rev H.H.Mohrmen spoke at length on the impact of coal and limestone mining and cement manufacturing on the biodiversity of Jaintia Hills. Mining in these areas is the prime cause behind the degradation of resources. He further stated that negligence on the part of the government and lack of regulation by the dorbar shnong have added to the proliferation of rat-hole mining. He even suggested that central laws should be made applicable to the states also.

Dr.Subrata Purkayastha, Associate Professor, Department of Geography, NEHU, presented a paper on a comparative study of the socio-economic impact of limestone mining by corporate sector and individual miners in Shella, Meghalaya. She highlighted the difference between the mining done by Lafarge and private individual miners and further

stated that the mining done by Lafarge was more scientific ,safe and provides several community benefits.

Mr.Krishna Chauhan, Assistant Professor, Department of Economics,B.B.S. College, Shillong spoke on the new mining policies which can be considered as an instrument of environmental conservation and also as a catalyst generation of income and employment.

Academic Session VI was chaired by Mr. Naba Bhattacharjee, MPERF, Shillong,

The theme talk was delivered by Dr. Surender Singh, Delhi University,Delhi, Dr. Singh talked about the greenhouse gases and their impact on global warming. He further stated that keeping a check on the emissions of greenhouse gases can help in arresting the rate of global warming.

In the first paper of this session,Shri K.Nongrum highlighted the impact of forest fires on the biodiversity of Ri Bhoi District of Meghalaya. He expressed his concern over the frequency of the occurrence of forest fires which are usually man-made. He also stated that regular environmental hazards have depleted the resources and caused health problems in the district.

Shri Baniateilang Majaw, Research Scholar, Department of Political Science,NEHU Shilong further highlighted the environmental hazards caused by deforestation and limestone quarrying, regular practices in Cherrapunjee. These activities disturb the ecosystem of the region and also threaten the sanctity and sustainability of sacred groves.

Dr.Amal Bhattacharya, Central Silk Board, Guwahati, stated that sericulture has a great potential for forest conservation.He further mentioned that sericulture can be one of the best solutions for counteracting environmental catastrophes like global warming, increase in ozone and carbon dioxide concentration,etc. The socio-economic impact of sericulture in north east India include generation of employment and marketing the by-products of sericulture as fertilizers.

Academic Session VII was chaired by Ms. Magdalene Badwar ,Head, Department of Economics, St. Mary's College, Shillong.

Dr. S. R. Joshi, Associate Professor, Department of Biotechnology & Bioinformatics, NEHU, Shillong, in his theme talk explained the term 'bioremediation' as a process that uses microorganisms or their enzymes to break down the pollutants. He further stressed on the benefits of bioremediation as a toxin-resistant technique, safer to use, naturally degradable and time and cost saving.

Shri. W. R. Kharkrang, Environmental Engineer, Meghalaya Pollution Control Board, expressed his concern over the garbage disposal and management of waste. He staed that waste management should start from household level-segregation,storage,collection,transportation-processing,recovery and disposal. Community awareness is the prime requirement in managing the waste.

Dr. Rihunlang Rymbai, Assistant Professor, Department of Education, NEHU,explained about solid waste and its scientific disposal and treatment. She also highlighted the services provided by Shillong Municipal Board and also their problems.

Shri. S.N. Mishra, Regional Silk Technology and Resource Station, Guwahati, presented a paper on the commercial revival of natural dyes and their sources used in textile industry, and their role in protecting the environment. He further stated that synthetic dyes are now replacing natural dyes in cosmetics and this is the reason why many cosmetics have been found to be carcinogenic.

Dr. B.K. Singh, Central Silk Board, Guwahati, presented a paper on the biodiversity of eri silkworms and their host plants in northeast India. Different strains of eri silkworm feed on castor leaves. By-products of eri silkworm such as pupae, excreta, unused leaves etc are also utilised very effectively by recycling them in nature as bio fertilizers.

Rev. Dr. Sr. Mary Harriet, Principal, St. Mary's College, Shillong, presented a paper on the interconnectivity between media and the environment. The paper discussed the role of media in creating environmental awareness through education, entertainment and communication. Television as an audio-visual medium serves as powerful tool in influencing the public.

The Valedictory Session on 16<sup>th</sup> May, 2013 at 4:30pm began with a short prayer conducted by Ms. C. Pyngrope.

The Chief Guest, Shri. R.G. Lyngdoh in his speech expressed the hope that the wisdom gathered in the two-day seminar will be implanted in protecting the environment. The proceedings of the seven academic sessions during the seminar were read out by Ms. C.L. Nongpluh.

Certificates were distributed to the resource persons, paper & poster presenters and participants by the Chief Guest. The convener of the Seminar Mr. L. Marbaniang then proposed the vote of thanks