

Collaborative Workshop on

Mountain and Forest Ecosystems: Challenges, Issues and Way Forward

13-14 August, 2007

Dehradun, INDIA

EXECUTIVE SUMMARY



Introduction

The Series on Biodiversity constitutes one of the six main programme pillars of the UNITAR Hiroshima Office for Asia and the Pacific (HOAP) and aims to contribute towards national policy planning related to biodiversity conservation and management in the region. It now counts over 200 alumni in the region and is thus becoming one of the most long-standing training initiatives of UNITAR/HOAP

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. Thus, the application of the ecosystem approach helps to reach a balance of the three objectives of the Convention on Biodiversity (CBD): conservation; sustainable use; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. Ecosystem approach has been considered as key to ensure the balance between sustainable/wise use and conservation. This approach is highly flexible or adaptive (to country or regional context), thereby it is hard to find a uniform checklist or methodology to pursue this approach.

In the Series UNITAR promotes two key approaches for more effective ecosystem management: 1. A focus on integrated water resource management as a tool to enhance the ecosystem approach; 2. Training on policy development regarding ecosystem management, taking into account the specificity of the conservation area and the surrounding political, social and ecological contexts.

Wildlife Institute of India (WII) is a long-time partner of UNITAR-HOAP. Its mandate is to build capacity in the field of wildlife conservation and

management through training and research. WII and UNITAR agreed to hold a collaborative national workshop for India in the framework of UNITAR's regional Series on Biodiversity, aiming at supporting Indian government officials, practitioners and researchers in their national policy-making related to ecosystem management.

The two-day workshop in Dehradun was designed to achieve the following objectives:

- ◆ Rendition by various experts in India working in mountain, forest and wetland ecosystems of the challenges faced in their conservation work;
- ◆ Consultation with national and international experts and identification of next steps to tackle identified challenges, especially in the field of capacity-building;
- ◆ Making use of case studies, best practice and lessons-learned approaches, exchange knowledge on the appropriate conservation measures among the participants and create a network of information exchange to continue after the workshop;
- ◆ Feed back of the findings to international bodies such as CBD and Ramsar and into the future training programmes of WII and UNITAR.

2007 Collaborative Workshop

The 2007 Collaborative Workshop on Biodiversity Series once again benefited from the strong network created since 1998 and from the participation of partners and resource persons involved in previous workshops of WII and UNITAR. The workshop was open to conservation managers and scientists working in scientific, training and research institutions in India and in civil society organizations in the field of mountain and forest ecosystems conservation. 24 participants and resource persons attended this workshop, which included some UNITAR Alumni. Leading experts in the fields of wetland, mountain and forest ecosystems ecology were invited for this workshop as resource persons (**Annexure-I**).

The workshop employed four main methodologies:

- 1) Interactive presentations and lectures;
- 2) Brainstorming session;
- 3) Study tour and debriefing;
- 4) Plenary discussions.

The major topics discussed in the workshop:

- 1) Current Status of Mountain Ecosystems in India
- 2) Integrated Water Resource Management – A Tool for Ecosystem Approach
- 3) Case Study on Integrated Water Resource Management
- 4) Climate Change Impacts on Himalayan wetland

The agenda for the workshop is placed as **Annexure-II**.

Dr. V. B. Mathur, Dean, Faculty of Wildlife Sciences, Wildlife Institute of India welcomed all the participants and resource persons and briefed about the objectives and methodology of the workshop. He provided an overview on the collaborative workshop and highlighted the importance attached by both WII and UNITAR to such capacity building initiatives.

P. R. Sinha, Director, Wildlife Institute of India in his opening remarks urged the participants and resource persons to discuss the available conservation tools, management methods and policies in India and abroad and to suggest action plans for conservation of wetland, mountain and forest ecosystems of India. He also emphasized the urgent need to conserve the dwindling freshwater wetlands and their biodiversity.

Nassrine Azimi, Director, UNITAR Hiroshima Office for the Asia Pacific (HOAP) in her opening remarks welcomed the concept of collaborative national workshop and appreciated the efforts made by the Wildlife Institute of India in organizing the workshop with such a short lead time. She urged the participants and the resource persons to address global climate change and its impact on biodiversity more directly and pragmatically while highlighting why this could not be dealt with separately from the energy-intensive and consumer-driven lifestyles that our current economic systems tended to promote. She said that it was time for scientists – in particular those dealing with earth sciences -- to step up their involvement in policy decisions and life-style choices of society if we are to have any chance of turning the tide of global climate change and other natural calamities.

Dr. Jobaid KABIR, Manager, Corporate Environmental Compliance, Lower Colorado River Authority), USA informed the participants of the various challenges faced by different rivers and water systems in the Asia-Pacific region especially mountainous region due to climate change and its impact on global water resources.

1. Interactive presentations and lectures followed by questions and answers sessions, included the following:

Current status of mountain ecosystems in India by Uppeendra Dhar (Director, G. B. Pant Institute of Himalayan Environment and Development). Dr. Dhar first explained about the characteristic features of the Himalayan Mountains including the distribution patterns of various plant communities. In his presentation he emphasized on the importance of conserving each and every part of the Himalayas, due to presence of unique biodiversity across Himalayas. He said that Himalayas act as a major water tower for most of the rivers in Indian Subcontinent. Since the Himalayan ecosystem is geologically vulnerable, sensitive to climate change, geographically isolated and the people in this region are economically poor, an Integrated Ecosystem Management Plan to safeguard its unique biodiversity was needed. He also informed that due to climate change, the timberline vegetation communities and functions of certain forest ecosystems have been drastically changed. Because of these changes in the forest community structures, changes in water flows and sediment loss have been recorded in some forest ecosystems of Himalayas, which ultimately would adversely affect the downstream wetland ecosystems. He said that it was important to understand the impact of various disturbance regimes including the climate change on the functioning of mountain/forest ecosystems in order to plan and implement effective mitigation measures for safeguarding biodiversity values.

Wetland conservation programme: National scenario with emphasis on current status of high altitude wetlands by Siddharth Kaul (Director, Ministry of Environment and Forests, Government of India). Dr. Kaul in his presentation gave a detailed account of Indian high altitude wetlands and their features, ecological services, conservation issues and conservation measures. Status of Indian wetlands, role of Ministry of Environment and Forests in conservation of wetlands, and linkages of wetland conservation with India's National Environment Policy (NEP) were also highlighted in his presentation. He also presented a detailed account of RAMSAR Convention and Indian wetlands. He discussed the existing and proposed institutional mechanisms and processes for the conservation of wetlands in India. He also highlighted the need for participation of local communities and other stakeholders in wetland conservation and management. He also presented a detailed action plan for conservation of wetlands in this region.

Integrated water resource management – A tool for ecosystem approach by Jobaid Kabir (Manager, Environmental Compliance, Lower Colorado River Authority, USA). Dr. Kabir presented step by step procedure for developing a successful water management plan for protecting environment. He emphasized that a water management plan should be flexible and adjusted to current situations and needs i.e. it should be an adaptive water management plan. Inherently subject to disputes, water management required taking into consideration the views of all stakeholders including local communities. The ecosystem should be part of a water management plan and at the same time water management should be woven into holistic ecosystem management plan. Dr. Kabir took the Lower Colorado basin as a model for water management in order to provide practical suggestions. Dr. Kabir also related his experience with Lower Colorado basin to Indian Subcontinent wetlands. He emphasized that landscape level planning was necessary in management of river ecosystems in India.

Climate change impacts on Himalayan wetlands by Jobaid Kabir.

Dr. Kabir in his second talk explained the adverse impacts of climate change in the global environment as well as on the Himalayan ecosystems. Dr. Kabir alerted the participants about the various challenges faced by different rivers and water systems in the Himalayan region, which included the threat of disappearance of glaciers. He emphasized on the importance of actions needed now for protecting water resources in the Himalayan region to meet the needs of ever increasing populations. He also discussed the impacts of climate change on global water resources. Participants were invited to reflect on the interrelationships between human activities, ecosystems and biodiversity, taking into account the damage that had already been done.

Natural Resources Management for Groundwater recharges using RS & GIS by Ambrish Kumar (Senior Scientist, Central Soil and Water Conservation Research and Training Institute, Dehradun, India). Dr. Kumar informed the participants about the growing ground water scarcity and the alarming decline in ground water levels in many parts of world including India. He explained the causes of ground water table decline in the State of Uttar Pradesh and provided suggestions for preventing such declines in future. Dr. Kumar also highlighted the importance of modern techniques such as remote sensing and geographic information systems in monitoring the ground water level and its management.

2. Brainstorming session

Characteristics of Indian mountain and wetland ecosystems: Conservation and management challenges – Coordinator Binod Choudhury (Scientist F, Wildlife Institute of India). Mr. Choudhury first provided an update on the various mountain ranges in India and their role in water harvesting. In his talk he also discussed the characteristic features of all mountain ecosystems and the ecological services provided by them, issues and conservation measures taken, so far. He also defined the mountain and forest ecosystems as ‘*source*’ of water and the wetlands as ‘*sink*’. He emphasized the importance of linking the water ‘*sources*’ to ‘*sinks*’ and managing both through an Integrated Water Resource Management Plan.

3. Field tour (Case study)

Asan Wetland Conservation Reserve – Tour briefing by Kuppusamy Sivakumar (Scientist, Wildlife Institute of India). Dr. Sivakumar briefed the participants about the Asan wetland, which has been established as the first ‘*Conservation Reserve**’ of India. In his briefing, characteristic features, ecology, ecological services and conservation issues related to Asan Conservation Reserve were explained to the participants. He also discussed the ongoing management activities in the Asan Conservation Reserve.

Following the tour briefing, on the next day the participants were taken to the Asan Conservation Reserve. **Mr. Dhananjay Mohan** (Scientist F, Wildlife Institute of India) discussed the management issues and

* *Conservation Reserve: “The State Government may, after having consultations with the local communities, declare any area owned by the Government, particularly the areas adjacent to National Parks and Sanctuaries and those areas which link one protected area with another, as a conservation reserve for protecting landscapes, seascapes, flora and fauna and their habitat”. “The State Government shall constitute a conservation reserve management committee to advise (emphasis provided) the Chief Wildlife Warden to conserve, manage and maintain the conservation reserve”*

various management initiatives undertaken by the State Forest Department, Uttarakhand with the cooperation of various stakeholders. He said that Asan Conservation Reserve was an excellent example for stakeholders' participation in active conservation of wetland. Initially, there was no cooperation but only conflict between the Forest Department and other stakeholders. However, through constant effort and management interventions, most of the conflicts had been amicably resolved. Presently, the Asan wetland, which is a refuge for several thousand birds is managed with the cooperation of stakeholders especially the Irrigation Department. Because of improvements in the habitats, several native birds had started breeding in the Asan Conservation Reserve.

4. Plenary discussion

Action Plan for Integrated Management of Wetlands by Ainul Hussain (Scientist E, Wildlife Institute of India). Dr. Hussain initiated the plenary discussion by summarizing all the presentations and discussions, which had taken place earlier in the workshop. Subsequently, institutional mechanisms, processes and methodology for preparation for Action Plan for Integrated Management of Wetlands were discussed in detail by the participants.

A panel comprising Dr. Kaul, Mr. Choudhury and Dr. Kabir initiated a discussion on 'Integrated Water Resource Management Plan'. During the discussion the following points emerged:

1. Mountain and Forests ecosystems are to be treated as '*sources*' of water and downstream wetlands are to be considered as '*sinks*'. A landscape level integrated management plan is required to manage both water '*sources*' and '*sinks*'.

2. Linking of water '*source*' and '*sink*' is important, therefore, a National/International Policy is required as it invokes interstate/international cooperation.
3. Documentation, promotion and practice of the eco-compatible traditional knowledge in mountain, forest and wetland habitats and resource management are needed.
4. It is essential to have a policy support for wetland conservation. It is also important to finalize the National Wetland Policy. While finalizing India's National Wetland Policy, existing wetland conservation models such as Ganges Action Plan, Yamuna Action Plan, National Lake Conservation Programme etc. should be critically analysed and lessons learned from these projects should appropriately incorporated.
5. Existing and anticipated threats, which are common to most of the wetlands, need to be identified so that a common action plan can be prepared.
6. Inconsistencies in the National River Policy with other natural resource management policies in India need to be resolved.
7. Continuous monitoring of wetlands and its biodiversity using modern techniques such as remote sensing and geographic information systems is important.
8. Multi-agency involvement in participatory conservation of wetlands is crucial, including the participation of local communities.

9. Threats to a wetland should also be critically analysed before preparing a management plan.
10. 'Critical minimum water flow' of a river required to maintain its normal ecological services should be estimated for all the rivers in India.
11. Impact of climate change on 'source' as well as 'sink' habitat should be studied and placement of preventive mechanisms considered.
12. 'Conservation Reserve' and 'Community Reserve' concept would be the better for conservation of most of wetlands in India as local communities are highly dependent on these wetlands.
13. National Wetland Policy should emphasize the need for developing management prescription for natural, man-made, coastal, marine, riverine and other wetlands separately.
14. 'Fishing holiday' or 'Closed season' for harvestable renewable resources should be strictly followed in all wetlands in India.
15. A few catchment areas in each major river system should be designated as 'inviolable zone' and considered as control sites for monitoring long-term changes.
16. Capacity building of the range of stakeholders involved in the conservation and management of wetlands should be done periodically.

Workshop evaluation and way forward

Dr. V. B. Mathur in his closing remarks, congratulated the participants for a very fruitful workshop and thanked the participants and resource persons for their valuable contributions. Ms. Nassrine Azimi suggested that the lessons learned from the conservation and management including conflict resolution in Asan Conservation Reserve should be incorporated in a case study, which would be hosted on UNITAR and WII websites and shared with other practitioners in the region. Participants welcomed this suggestions and Mr. P.R. Sinha assured that WII would do the necessary in this regard immediately.

Each participant was requested to fill in an evaluation form. Majority of participants found the workshop deliberations extremely useful in light of their professional responsibilities. The focus of the workshop, namely integrated water resource management, was deemed appropriate. Resource persons were commended for not only being highly knowledgeable in their own particular fields but also for being proficient mentors. The study tour was considered as the most useful of the workshop's activities, followed by the plenary discussions.

A majority of participants complimented WII and UNITAR HOAP for organizing the workshop and suggested that it should be conducted on a regular basis.

Feedback

Overall impressions from reading evaluations

The feedback from participants was very positive. Participants reported that the workshop was valuable in deepening their understanding and knowledge about Himalayan ecology and on various aspects of watershed management. The study tour and plenary discussion were considered useful in providing forum for brainstorming and exchange of views. The action points that have emerged during the workshop deliberations would be useful in finalizing the National Wetland Policy of India.

**V. B. Mathur,
Programme Coordinator & Dean, Faculty of Wildlife Science
Wildlife Institute of India**

Workshop on

**Mountain and Forest Ecosystems:
Challenges, Issues and Way Forward**

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BRIEF BIOS OF RESOURCE PERSONS/ PARTICIPANTS

1.		<p>Ms. Nassrine Azmi Director Hiroshima Office for Asia and the Pacific (HOAP) United Nations Institute for Training and Research (UNITAR) Chamber of Commerce and Industry Bldg. 5-44 Motomachi, Naka-ku Hiroshima, 730-0011 Japan Tel.: +81 82 511 2424 Fax: +81 82 211 0511 Email: hiroshima@unitar.org</p>	<p>Nassrine Azimi has a post-graduate degree in urban studies from the School of Architecture of the University of Geneva. She graduated in political science from the University of Lausanne and in international relations from the Graduate Institute of International Studies in Geneva, and has also completed a programme of communication and journalism at Stanford University. At UNITAR, she has been the coordinator of the Institute's environmental training programmes, deputy to the executive director, and chief of the Institute's New York office, respectively. In 2003, she was invited as a visiting scholar to the Centre for the Study of Ethnicity and Race at Columbia University. In May 2003 she was appointed the first director of the new UNITAR's Office for Asia and the Pacific, established in Hiroshima.</p>
2.		<p>Ms. Bharti Associate Professor Indira Gandhi National Forest Academy IGNFA, P.O. New Forest, Dehradun- 248006 Uttarakhand Tel.: 0135 2757316 (ext) 2276(O) Fax: 0135 2757314, 09411112653 (Mob) E-mail: bharatimohanti@yahoo.co.in</p>	<p>After completing M.Tech in Energy studies from IIT Delhi, Bharti joined the Indian Forest Service in 1992, worked in Sikkim Forest Deptt and Science & Technology Department and was also involved in Working Plan and Remote Sensing activities. Presently, she is on deputation to IGNFA, Dehradun as Associate Professor since 2004. Her research areas are RS & GIS, Environmental Conservation, EIA, Environmental, Laws & Forest Mensuration. She has participated in Integrated LU Management course at Dresden University and has presented a paper on knowledge management in an International Conference at Freiburg, Germany.</p>
3.		<p>Mr. Parmeet Singh Bhatt, Senior lecturer Chandigarh College of Architecture Sector -12, Chandigarh-160012. Tel. : 0172 2747835 Email: bhattparmeet@hotmail.com</p>	<p>Parmeet Singh BHATT obtained a Bachelor's in Architecture from the Chandigarh College of Architecture and Masters in Landscape Architecture from the School of Planning and Architecture. He is currently a Senior Lecturer at the Chandigarh College of Architecture, under the Chandigarh Administration. His field of speciality is urban open spaces.</p>

4.		<p>Shri B.C. Choudhury Scientist-F Wildlife Institute of India, Chandrabani, Dehradun (Uttarakhand). INDIA Tel.: 0135 2641484 (O) Fax: 0135 2640117 Email: bcc@wii.gov.in</p>	<p>A zoologist with special interest in Herpetology, Binod Choudhury has been working with crocodiles, snakes and other reptiles and amphibians since 1976. He is a member of the IUCN/SSC Crocodile, Amphibian, Snake and Turtle Cataecan and Conservation Breeding Specialist Group. He has also worked as a short term FAO Consultant and is also involved in teaching wildlife management to in-service forest officials since 1979 and conducting research on amphibians, turtles, crocodiles, aquatic vertebrates and wetland habitats both fresh water and marine. He has been nominated as a member of the World Commission on Protected Areas of the IUCN.</p>
5.		<p>Dr. Uppeandra Dhar Director G. B. Pant Institute of Himalayan Environment and Development, Kosi-Katarmal, Almora 263 643, Uttaranchal Email: psdir@gbpihed.nic.in; udhar@nde.vsnl.net.in</p>	<p>Uppeandra Dhar obtained his M.Sc in 1973 and did his Ph.D. in 1978 from P.G. Department of Botany, University of Kashmir, Srinagar. He is the country representative for PDF-B GEF project on Pollinators and a recipient of ICFRE Award for Excellence in Forest Conservation. He is also a national coordinator of NBSAP-TWG " Wild Plant Diversity" of the GEF Global Pollination Project and the coordinator of NBSAP-SSG "Uttar Pradesh". The number of his publications are more than 100 both in national and international journals.</p>
6.		<p>Dr. S.A. Hussain Scientist-E Wildlife Institute of India, Chandrabani, Dehradun (Uttarakhand). INDIA Tel.: 0135 2640111 to 114 Ext.: 210 (O) Fax: 0135 2640117 Email: hussain@wii.gov.in</p>	<p>After graduating from the Utkal University, Bhudaneswar, S.A. Hussain obtained his Masters in Zoology and M.Phil. & Ph.D. in Wildlife Sciences from Aligarh Muslim University. He joined the Wildlife Institute of India in 1987. Currently, he is working on the ecology of brow-antlered deer and their wetland habitat, impacts of dams on otter and other wildlife, and integrated approach to reduce the vulnerability of local community to environmental degradation in the Western Himalayas. He has been nominated as Member, World Commission on Protected Areas, IUCN SSC Red List Authority on Otter species of the world; Govt. of India Core Group on Antarctica and Southern Ocean affairs etc.</p>
7.		<p>Dr. Jobaid Kabir Manager Lower Colorado River Authority P.O. Box 220, Austin, Texas 78767 USA Tel.: +1 512 473 4076 ; Mobile: +1 512 636 2614 Fax: +1 512 473 3274 Email: jkabir@lcra.org</p>	<p>Jobaid Kabir is the Manager of Environmental Compliance for the Lower Colorado River Authority of Austin, Texas, USA. Dr. Kabir is responsible for environmental compliance of the Lower Colorado River System. He is also a Research Fellow of the University of Texas at Austin. He has a PhD in Engineering, MSc in Civil and Environmental Engineering, MSc in Water Resources Engineering and a BSc in Civil Engineering. His areas of expertise include environmental management, engineering, assessment and auditing; water resources conservation and management; pollution prevention and waste minimisation; irrigation and public policy. He has provided expert services to several countries.</p>
8.		<p>Dr. Siddharth Kaul Director Ministry of Environment & Forests, Parayavaran Bhawan, CGO Complex, Lodhi Road, New Delhi-110003 Ph.: 011 24360492; Fax: 011 24360492 ; Email: kaul52@yahoo.com</p>	<p>Siddharth Kaul has an experience of more than 35 years on conservation and sustainable development of wetlands in India and abroad. He has played a key role in fulfilling Government of India's obligation to international conventions including Ramsar Convention and has been associated with several international organizations. He is Ph.D. in Aquatic Ecology, UNESCO Diploma Holder from Germany in Environmental Management & Protection. He is on Board of Directors of Wetland International and also a Ramsar/ STRP Focal Point from India. His area of specialization include limnology, conservation and management of wetlands, national and international networking for wetland conservation.</p>

9.		<p>Dr. Ambrish Kumar Senior Scientist (SWC Engg.), HRD&SS Division, Central Soil & Water Conservation Research & Training Institute, 218, Kaulagarh Road, Dehradun 248 195, Uttarakhand. Tel.: 0135-2757210; Fax - 0135-2754213; E-mail: aktswc@yahoo.com</p>	<p>Ambrish Kumar has more than 12 years of experience of teaching, research and extension in the field of soil and water conservation/irrigation and drainage management in Himalayan mountain ecosystem. His M.Tech. thesis was focused on "Developing Optimal Groundwater Pumping Strategy: A case study of Lower Ghaggar Basin" and his Ph. D thesis was focused on "Groundwater recharge Planning of Ganga - Ramganga Interbasin using G.I.S.". He has published 21 research papers, 30 popular articles and 5 manual and technical bulletins.</p>
10.		<p>Sudhir Kumar Scientist – E ICFRE, New Forest Room No. 136, EIA Division, ICFRE New Forest, Dehradun – 248006 Tel. : 0135 27533882 Fax : 0135 2750297/ 298</p>	<p>Sudhir Kumar obtained an M.Sc and his areas of expertise are Seed handling, Tree Improvement and Environmental Impact Assessment. He has 18 year working experience in his areas. He completed number of EIA studies for various agencies such as Reliance Industries Ltd. and Government of India etc. He established Clonal Seed Orchards under Planting Stock Improvement Programme and worked on seed handling of various tree Species. His publications are more than 25 Papers in national and international journals and proceeding.</p>
11.		<p>Dr. S.P.S. KUSHWAHA Professor and Head Forestry and Ecology Division, Indian Institute of Remote Sensing 4 Kalidas Road, Dehradun 248001 , India Telephone: 0135- 2524170 Fax: 0135- 2741987 E-mail: spskushwaha@gmail.com</p>	<p>S.P.S. Kushwaha obtained Advance Diploma in Forest Remote Sensing from the University of Freiburg, Germany and has over 27 years of experience of application of geoinformatics in forestry and ecology. He has guided 8 students for doctorate research and has published more than 130 scientific papers.</p>
12.		<p>Dr. V. B. Mathur Dean, Faculty of Wildlife Sciences, Wildlife Institute of India, Chandrabani, Dehradun (Uttarakhand). INDIA Tel.: 0135 2640304(O) Fax: 0135 2640117 Email: vbm@wii.gov.in</p>	<p>Vinod Mathur is the Dean, Faculty of Wildlife Sciences, at Wildlife Institute of India and a Specialist in Wildlife and Protected Area Management, Environmental Impact Assessment for Biodiversity Conservation and Natural Heritage Conservation. He has been actively involved in 'World Heritage Biodiversity Programme' in India. After obtaining M.Sc. degree in Zoology he joined the Indian Forest Service in 1983, topped the 1983-85 IFS Course and was allotted to West Bengal cadre. He joined the Institute in 1986. In 1991, he obtained a D.Phil. degree from the University of Oxford, U.K. on the "Ecological interactions between habitat composition, habitat quality and abundance of some wild ungulates in India".</p>
13.		<p>Mr. Dhananjay Mohan Scientist-F Wildlife Institute of India, Chandrabani, Dehradun (Uttarakhand). INDIA Tel.: 0135 2640111 to 114 Ext.: 217 (O) Fax: 0135 2640117 Email: dmohan@wii.gov.in</p>	<p>Dhananjay Mohan is a member of the Indian Forest Service, currently on deputation to Wildlife Institute of India. An engineer by training, he is a keen birder and has extensive experience of managing wildlife in the States of Uttarakhand and Uttar Pradesh.</p>
14.		<p>Mr. Anup Nayak Scientist-F Wildlife Institute of India, Chandrabani, Dehradun (Uttarakhand). INDIA Tel.: 0135 2640111 to 114 Ext.: 217 (O) Fax: 0135 2640117 Email: anup@wii.gov.in</p>	<p>Anup Nayak joined the Indian Forest Service in 1986. He is on deputation to WII Dehradun since June, 2006 and works in Landscape Level Planning & Management Department. He has experience of working in Bhitarkanika Mangroves and in Gahirmatha Marine Sanctuary for about 4 years. He has worked in various capacities in Orissa Forest Department for about 15 years.</p>

15.		<p>Dr. Mridula Negi Scientist Forest Research Institute P.O. New Forest Dehradun Email: mridula@icfre.org</p>	<p>Mridula Negi has a doctorate degree in Botany and is working as Scientist-B in Forest Ecology & Environment Division, Forest Research Institute, Dehradun. She has over 23 year of research experience in the field of population dynamics nutrient cycling, natural regeneration and restoration ecology. She also has seven years teaching experience specially M.Sc Environment Management, Forestry, post-graduate diploma courses (Biodiversity Conservation) conducted by the Forest Research Institute University.</p>
16.		<p>Ms. Kaori Okabe Office Manager Hiroshima Office for Asia and the Pacific (HOAP) United Nations Institute for Training and Research (UNITAR) Chamber of Commerce and Industry Bldg. 5-44 Motomachi, Naka-ku Hiroshima, 730-0011 Japan Tel.: +81 82 511 2424 Fax: +81 82 211 0511 Email: kaori.okabe@unitar.org</p>	<p>Kaori Okabe has an M.A. degree in Educational Development from the Graduate School for International Development and Cooperation at Hiroshima University. Prior to joining UNITAR she was involved in an Asia/Pacific Cultural Centre for UNESCO (ACCU) project for the development of environmental educational materials for secondary schools in Nepal. From 1998-2003 she was a Research Assistant at Hiroshima University and also spent a year as a researcher at the University of Amsterdam in the Netherlands. Kaori Okabe has written several papers in the field of international development in education and its evaluation. She has been the Office Manager of UNITAR HOAP since July 2003.</p>
17.		<p>Dr. Jnanendra Rath Lecturer Department of Botany Siksha-Bhavana (Institute of Science) Visva-Bharati University, Santiniketan, Bolpur, West Bengal – 731235 Tel.: 09474766362 E-mail: jnanendra@gmail.com</p>	<p>Jnanendra Rath received Ph.D. in 2003 from Utkal University in India, and is presently working as an Assistant Professor at Siksha-Bhavana University. He is presently working on a CSIR sponsored project, entitled "Assignment of Marine Algal Diversity of Orissa Coast and Their Screening for Production of Phycocolloides and Bioactive Substances." To date, his research has been published in 9 peer reviewed journals and one book. He is members of several academic societies and is also a partner of a UNESCO-affiliated center for experts in taxonomic identification. He has also participated in various training courses including an international training of trainers session on Wetland Management in the Netherlands.</p>
18.		<p>Dr. R.S. Rawal, Scientist, Conservation of Biological Diversity, G.B. Pant Institute of Himalayan Environment and Development, Kosi-Katarmal, Almora 263 643, Uttarakhand (INDIA). Tel.: 05962 241041 (O); 241038 (R); Fax: 05962 241014;241150; Email: rsrawal@gbpihed.nic.in; rs_rawal@hotmail.com</p>	<p>R.S. Rawal received Masters and Doctorate degrees in Botany from Kumaun University, Nainital. He has been trained in Forest Ecology and has extensively explored structural - compositional patterns of pioneering studies on vegetation patterns at climate sensitive Timberline zone of Himalaya. Current focus includes – analysis of native and endemic plants; conservation education programme for school children and teachers. He has published over 55 research papers, 4 books and popular booklets. He received ICFRE award of excellence on Forest Conservation (2001-02).</p>
19.		<p>Dr. V.R.S. RAWAT Scientist 'D' Indian Council of Forestry Research & Education Biodiversity and Climate Change Division ICFRE Hqrs. P.O. New Forest, Dehra Dun – 248006 Tel.: 0135 2750296 Fax: 0135 2750298 Email: rawatvrs@icfre.org</p>	<p>After the completion of his graduate studies in Tropical Forestry at George August University, Goettingen Germany, V.R.S. Rawat has been working as a Scientist "D" in the Biodiversity and Climate Division of Indian Council of Forestry Research and Education, Headquarters at Dehradun. He is presently responsible for various policy related issues for implementation of CDM Afforestation and Reforestation (Forestry Projects) in India and climate change negotiations at International level to facilitate the benefit of Kyoto Protocol and UNFCCC to the forestry sector in the developing countries.</p>

20.		<p>Dr. S. Sathyakumar Scientist-E Wildlife Institute of India, Chandrabani, Dehradun (Uttarakhand). INDIA Tel.: 0135 2640111 to 114 Ext.: 230 (O) Fax: 01352640117 Email: ssk@wii.gov.in</p>	<p>S. Sathyakumar holds a Master degree in Wildlife Biology and D.Phil degree in Wildlife Sciences. He is currently working as Scientist in Wildlife Institute of India, Dehradun. Since 1989, he has been working in the field of High Altitude Ecology, Conservation and Management of Himalayan Wildlife, particularly Mountain Ungulates, Bears and Pheasants. His subject areas of interest include: Habitat Ecology, Population Ecology, Conservation Biology and Quantitative Ecology.</p>
21.		<p>Dr. Vivek Saxena, Director, MOEF Ministry of Environment & Forests, Parayavaran Bhawan, CGO Complex, Lodhi Road, New Delhi-110003</p>	<p>Vivek Saxena is Director in the Ministry of Environment and Forests, Government of India and looks after the Conservation Division.</p>
22.		<p>Mr. P.R. Sinha Director Wildlife Institute of India, Chandrabani, Dehradun (Uttarakhand). INDIA Tel.: 0135 2640910(O) Fax: 0135 2640117 Email: dwii@wii.gov.in</p>	<p>Priya Ranjan Sinha joined the Indian Forest Service in the year 1977 and as Director of Wildlife Institute of India in September 2004. He obtained the Postgraduate Diploma in Wildlife Management from the Wildlife Institute of India in 1981-82. He has extensive experience of both <i>in-situ</i> and <i>ex-situ</i> conservation. He worked both as Deputy Director and as Field Director of Palamau Tiger Reserve for over six years. Before joining the Institute in September 2004, he was the Chief Wildlife Warden of Bihar State. He also worked as the Member Secretary, Central Zoo Authority, New Delhi for nearly 5 years (1999-2004) and as Director of Patna Zoological Garden for a 5 year period. His main fields of interests include wildlife policy, biotechnological applications and participatory resource conservation.</p>
23.		<p>Dr. Kuppusamy Sivakumar Scientist-C Wildlife Institute of India, Chandrabani, Dehradun (Uttarakhand). INDIA Tel.: 0135 2640111 to 114 Ext.: 217 (O) Fax: 0135 2640117; Email: ksivakumar@wii.gov.in</p>	<p>Kuppusamy Sivakumar has been conducting research on aquatic ecosystems and its biodiversity in India. Since 1996, he has completed seven research projects and eight projects are ongoing on wildlife mainly on wetland biodiversity. He has also completed three research projects on wetland biodiversity and its ecosystem management, which include 'Hydrology and management of wetlands in Uttar Pradesh, India'. Currently, three projects are ongoing that aim to prepare a comprehensive management plan for various threatened aquatic ecosystems as well as fauna in India. Preparation of the management plan for the Gulf of Mannar Marine Biosphere Reserve is one among them.</p>
24.		<p>Dr. Sejal Worah Programme Manager WWF, New Delhi Tel. :09837070839 (Mobile) Email: sejalw@vsnl.com</p>	<p>Sejal Worah is currently Programme Director at the World Wild Fund for Nature (WWF) India. She has worked on participatory forest management (including in mountain ecosystems) for over 15 years. Her main area of expertise is in capacity development, institutional strengthening and multi-stakeholder negotiations for conservation and sustainable development. She has worked on these issues in over 20 countries in Asia/Pacific and Eastern Africa. Currently, she is involved in mountain and forest ecosystem conservation and management in the western and Eastern Himalayas.</p>



Wildlife Institute of India (WII)
UNITAR Hiroshima Office for Asia and the Pacific (HOAP) Series on Biodiversity

Mountain and Forest Ecosystems: Challenges, Issues & Way Forward
Dehradun, India
13-14 August 2007

AGENDA

MONDAY ~ 13 August 2007	TUESDAY ~ 14 August 2007
<p>9h00</p> <p>Opening and Welcome Introduction of participants and resource persons</p> <p>9h30</p> <p>Current status of mountain ecosystems in India <i>Dr. Uppeendra DHAR</i></p> <p>10h30</p> <p>Tea/ Coffee Break</p> <p>11h00</p> <p>Wetland Conservation Programme: National scenario with emphasis on current status of high altitude wetlands <i>Dr. Siddharth KAUL</i></p> <p>12h00</p> <p>Integrated Water Resource Management – A tool for ecosystem approach <i>Dr. Jobaid KABIR</i></p> <p>13h00-14h30</p> <p>LUNCH</p>	<p>7h30-14h00</p> <p>Field trip to Asan Conservation Reserve <i>Mr. Dhananjay MOHAN</i> <i>Dr. Kuppusamy SIVAKUMAR</i></p> <p>14h00-15h00</p> <p>LUNCH</p>
<p>14h30</p> <p>Climate change impacts on Himalayan Wetlands <i>Dr. Jobaid KABIR</i></p> <p>15h30</p> <p>Natural Resources Management for Groundwater recharges using RS & GIS <i>Dr. Ambrish KUMAR</i></p> <p>16h15</p> <p>Brainstorming session – Characteristics of Indian mountain and wetland ecosystems: Conservation and management challenges <i>Coordinator: Mr. Binod CHOUDHURY</i></p> <p>17h15</p> <p>Briefing on the Field Trip <i>Dr. Kuppusamy SIVAKUMAR</i></p>	<p>15h00</p> <p>Plenary session – Action plan for Integrated Management of Wetlands <i>Coordinator: Dr. Ainul HUSSAIN</i></p> <p>Panelists: <i>Dr. Siddharth KAUL</i> <i>Dr. Jobaid KABIR</i> <i>Mr. Binod CHOUDHURY</i></p> <p>16h00</p> <p>Workshop Closing</p>

Glimpses of the Workshop and the Field Visit to Asan Conservation Reserve

