

**Experts' Consultation on**  
**A FRAMEWORK FOR LONG-TERM ENVIRONMENTAL AND SOCIOECONOMIC**  
**MONITORING AND ECOSYSTEM MANAGEMENT IN THE HINDU KUSH**  
**HIMALAYAS**

**Place: Chengdu, PR China**

**Dates: May 12 – 16, 2014**

## **Background**

To gain a thorough scientific understanding of the environment around us, biologists, ecologists, climatologists and social scientists have been working to assess the current state, patterns and processes of the environment. Most researchers try to address these fundamental questions from within the boundaries of their respective fields, overlooking the relationships between different fields. With the advancement of environmental science, however, it has been increasingly realized that there is a need for interdisciplinary approaches and convergence of different themes for managing natural ecosystems sustainably. This calls for a comprehensive and integrated approach to long-term environmental monitoring as well as ecosystem management based on a scientific approach, tried-and-tested methods and empirical data from the field.

The Hindu Kush Himalayan (HKH) region has been identified as one of the biodiversity rich areas encompassing four global hotspots. However, with increasing human population, globalization and changing climate, most of the ecosystems are facing stress, which has affected their structure, function and delivery of goods and services. As a regional knowledge development and learning centre, ICIMOD is committed to strengthening the existing research network in the HKH and also facilitate data sharing mechanisms. In 2008, a framework on 'HKH Transboundary Landscapes and Trans-Himalayan Transect' was developed with technical inputs from recognized mountain experts. The objective was to promote transboundary collaboration among the countries and fill the data deficit through seven representative landscapes across the gradients of precipitation, altitude and latitude. At the same time, it was felt that there is a need to follow an ecosystem approach to conservation while implementing the transboundary landscape conservation and development programme.

Since 2008, ICIMOD and its regional member countries have made significant progress in mainstreaming this framework within ICIMOD through implementation of the Transboundary Landscape Programme. As part of this programme, two draft frameworks have been developed for the region viz., (i) Framework for Long-Term Environmental and Socio-economic Monitoring (LTESM), and (ii) Ecosystem Management Framework (EMF) for the HKH region. In this connection, ICIMOD plans to organize an Experts' Consultation Meeting to discuss how these frameworks can be customized for the HKH region. The broad objectives of this workshop are as follows:

## Objectives

- To identify key features of successful ecosystem management from biophysical and socio-economic angles in the major ecosystems of the HKH region
- To finalize the broad framework for ecosystem management for the HKH region which can be used by natural resource managers and the scientific community
- To share best practices and approaches on LTESM in the HKH region and elsewhere, and
- To discuss, prioritize and agree on broad thematic areas, key variables and associated indicators to be included in the LTESM framework.

## Workshop Programme

The programme will include sessions on global and regional perspectives on EMF and LTESM, best practices including discussions and finalization of ecosystem related monitoring needs, indicators, implementation framework with targets, timelines and resources. During the sessions on EMF, participants will brainstorm on the need to scale up successful ecosystem management practices, harmonize management approaches, share experiences and come up with a broad framework for ecosystem management in the HKH region. The programme will also include a field visit to some of the relevant sites in the nearby areas. A tentative programme of the workshop is provided in **Annex 1**. The workshop participants include selected experts working on these issues at the global and the regional level, and key partners from the HKH member countries with experience working in the transboundary landscapes in the region.

## Expected Output

The workshop is expected to achieve the following outputs:-

- Finalize the framework for integrated ecosystem management for the HKH region.
- Reach general consensus on the approaches to ecosystem management in the HKH region, and agree on guidelines for sharing best practices.
- Better understanding of the LTESM through field observation and interaction.
- Finalize the LTESM framework with agreed thematic areas, key variables and associated indicators including targets, timelines and resources required.

Annex 1: Workshop Programme

<b>11<sup>th</sup> May, 2014</b>		
Venue: Chengdu, Hotel to be decided (TBD)		
Arrival of all participants		
<b>Day 1: 12<sup>th</sup> May, 2014</b>		
<b>Opening Session and Reception Dinner</b> hosted by CAS and ICIMOD		
Time: 09:00-10:30		
Emcee: Prof Wu Ning		
09:00-10:00	Welcome Remarks	CIB, CAS
	Welcome Remarks	Dr Eklabya Sharma, ICIMOD
	Overview of ICIMOD's Regional Programmes and Need for Regional Cooperation for Ecosystem Management and Long-Term Environmental and Socio-economic Monitoring	Dr Eklabya Sharma, ICIMOD
	Concluding Remarks	Chair, IMDE, CN-ICIMOD Committee
10:00-10:30	Tea break and photo session	
<b>Session 1 : Principles and Practices of Ecosystem Management</b>		
<b>Chair : Prof. S.P. Singh</b>		
10:30 – 10:15	Introduction of the participants	
10:15 – 10:45	Management of Ecosystems for Sustaining Services – An Overview – Keynote Address	Prof. S.P. Singh, India
10:45 – 11:15	Draft Framework for Ecosystem Management for Sustaining Services in the HKH region	Dr Gopal Rawat, ICIMOD
11:15 – 11:45	Management of Ecosystem Services based on Ecosystem Functioning : A Conceptual Framework	Dr Philip Bubb, UNEP-WCMC
11:45 – 12:15	Human Dimensions of Ecosystem Management	Dr Lynn Bennett, ICIMOD
12:15 – 12:45	Institutional Mechanisms for Ecosystem Management	Dr Rucha Ghate, ICIMOD
12:45 - 13:00	Discussion and Concluding Remarks	Chairperson
13: 00 – 14:00	Lunch Break	
<b>Session 2: Review of Ecosystem Management Framework:</b>		
Group work to identify key ecosystem elements that supply services w.r.t. specific ecosystem types		
<b>Facilitator: Dr Philip Bubb</b>		
14:00 – 14:10	Introduction and guidelines for group work	Dr Philip Bubb, UNEP-WCMC
14:10 - 17:00	Group 1: Forest Ecosystem	Groups I – IV
	Group 2: Rangeland Ecosystem	
	Group 3: Wetland Ecosystem	

	Group 4: Agro-ecosystem	
18:30-20:00	<b>Reception Dinner Hosted by CAS and ICIMOD</b>	
<b>Day 3: 13<sup>th</sup> May, 2014</b>		
09:00-10:30	<b>Session 3: Ecosystem Management Framework: Conclusion and Way Forward</b> <b>Chair: Prof Wu Ning, ICIMOD</b>	
09:00-10:00	Group Presentations based on group work on Day 1	Group Representatives 10-15 minutes each
10:00 – 10: 30	Discussion	
10:30 - 11:00	Tea break	
11:00 – 11:45	Summary and Way Forward	Dr. Eklabya Sharma, ICIMOD
11:45 – 12:00	Closing Remarks	Chairperson
12: 00 – 13:00	Lunch Break	
<b>Session 4: Setting the stage: Understanding LTESM</b> Chaired by : Eun-Shik KIM		
13:00 – 13:30	ILTER in Asia – An Overview – Keynote Address	Prof. Eun-Shik KIM, Kookmin University, Seoul, Korea
13:30 – 13:45	LTESM Framework	Dr Nakul Chettri, ICIMOD
13:45 – 14:00	Long-term monitoring of Chinese Forest Biodiversity	Prof Ma Keping, CNC- Diversitas, CAS
14:00 – 14:15	Long-term monitoring of grasslands in Tibetan Plateau – A case study of Haibei Station of CERN, Qinghai	Zhao Xinquan, CIB, CAS
14:15 – 14:30	GLORIA	Dr Harald Pauli
14:30 – 14:45	Long-Term Monitoring System of CERN	Prof. Ouyang Hua, CAS
14:45 – 15:00	Cryosphere assessment and monitoring	TBD
14:45 – 15:00	Discussion and summary remarks from the Chair	
15:30 - 16:00	Tea break	
<b>Session 4: Setting the stage: Understanding LTESM continue</b> <b>Chair: Prof. P.K. Mathur</b>		
16:00 – 16:15	Wildlife habitat management and monitoring at landscape level: Experience from the Indian Trans-Himalayas	Dr Yash Veer Bhatnagar, NCF and SLT, India
16:15 – 16:30	Recent advances in wildlife population assessment and monitoring	Dr S Sathyakumar, WII, India
16:30 – 16:45	Socioeconomic development indicators and monitoring	Dr Rucha Ghate, ICIMOD
16:45 – 17:00	Discussion and summary remarks from the Chair	
<b>Day 3: 14<sup>th</sup> May, 2014</b>		

<b>Session 5: Identification of key component variables of the thematic areas for LTESM</b> <b>Chair: Prof Kim, Korea</b>		
09:00 – 10:30	Group formation and group work (cryosphere and climate should be considered as cross cutting issues)	Philip Bubb, UNEP-WCMC
	Group 1: Ecosystem	Groups I – III
	Group 2: Biodiversity (flora, fauna and agro-biodiversity)	
	Group 3: Socio-economic	
10:30 - 11:00	Tea break	
11:00 - 12:00	Group work continue	
12:00 - 13:00	Presentation of the group works and discussion	
13:00-14:00	Lunch break	
<b>Session 6: Group discussion and finalization of methodologies indicators for LTESM</b> <b>Chair: Dr Eklabya Sharma, ICIMOD</b>		
14:00 – 15:30	Group formation and group work (cryosphere and climate should be considered as cross cutting issues)	Dr Philip Bubb, UNEP-WCMC
	Group 1: Ecosystem	Groups I – III
	Group 2: Biodiversity (flora, fauna and agro-biodiversity)	
	Group 3: Socio-economic	
15:30 - 16:00	Tea break	
16:00 - 16:30	Presentation of the group work and discussion	
16:00 - 17:00	Plenary discussion, summary and way forward	Dr Eklabya Sharma, ICIMOD
<b>Day 3: 14<sup>th</sup> May, 2014</b>		

**Field Trip 15-16 May 2014**

Annex 2: List of Participants (draft).

<b>Resource persons</b>	<b>Contact details</b>
1. Philip Bubb	Senior Programme Officer, Ecosystem Assessment Programme, UNEP-WCMC 219 Huntingdon Road, Cambridge, CB3 0DL, UK Email: <a href="mailto:philip.bubb@unep-cmc.org">philip.bubb@unep-cmc.org</a>
2. Dr Harald Pauli	Dr. Harald Pauli Scientific Coordinator, GLORIA Network Austrian Academy of Sciences, Institute for Interdisciplinary Mountain Research & University of Natural Resources and Life Sciences, Vienna c/o Dept. of Conservation Biology, Vegetation and Landscape Ecology University of Vienna; Rennweg 14, A-1030 Wien, Austria Tel.: +43-1-4277-54383 E-mail: <a href="mailto:harald.pauli@oeaw.ac.at">harald.pauli@oeaw.ac.at</a> ; <a href="mailto:harald.pauli@univie.ac.at">harald.pauli@univie.ac.at</a>
3. Andrea Lamprecht	GLORIA Coordination, University of Natural Resources and Life Sciences, Center for Global Change and Sustainability, Vienna, Austria Email: <a href="mailto:andrea.lamprecht@boku.ac.at">andrea.lamprecht@boku.ac.at</a>
4. Dr Yash Veer Bhatnagar	Senior Scientist, Nature Conservation Foundation Mysore & Director, Snow Leopard Trust-India 3076/5 IV Cross, Gokulam Park Mysore, Karnataka, Pin 570 001, India Phone: +91-821-2515601, Fax: +91-821-2513822 <a href="http://www.ncf-india.org">www.ncf-india.org</a> ; <a href="http://www.snowleopard.org">www.snowleopard.org</a>
5. Prof (Dr) Eun-Shik KIM	Professor and Chair, ILTER East Asia-Pacific Regional Network and Co-Chair, AP- BON Kookmin University, Seoul, Korea Email: <a href="mailto:kimeuns@kookmin.ac.kr">kimeuns@kookmin.ac.kr</a>
6. Prof S P Singh	Prof. S.P. Singh, Institute of Technology and Science SGRR Education Mission, Patel Nagar, Dehradun (Uttarakhand), India Email: <a href="mailto:surps@yahoo.com">surps@yahoo.com</a>
7. Prof Ma Keping	Institute of Botany, Chinese Academy of Sciences (CAS) Secretary General for CNC-DIVERSITAS Add: 20 Nanxincun, Xiangshan, Beijing 100093

	People's Republic of China Tel: 86-10-62836223 (o) Fax: 86-10-82599518 Email: <a href="mailto:kpma@ibcas.ac.cn">kpma@ibcas.ac.cn</a>
8. Professor ZHAO Xin-Quan	Director General, Chengdu Institute of Biology, Chinese Academy of Sciences (CIB, CAS) No. 9 Section 4, Renmin Nanlu, Chengdu 610041, Sichuan, People's Republic of China Tel: +028 82890009 (O); +097 16106460 (H), Fax: +028 82890288 Email: <a href="mailto:zhaoxq@cib.ac.in">zhaoxq@cib.ac.in</a> ; <a href="mailto:xqzhao@nwipb.ac.cn">xqzhao@nwipb.ac.cn</a>
9. Professor Hua Ouyang	Professor Hua Ouyang Institute of Geographical Sciences and Natural Resources Research Chinese Academy of Sciences (IGSNRR, CAS) A11 Datun Road, Chaoyang District, Beijing 100101 People's Republic of China Phone: +86 13910595546 Cell Email: <a href="mailto:ohua@igsnr.ac.cn">ohua@igsnr.ac.cn</a>
10. Dr S Sathyakumar	Scientist- G, Department of Landscape Level Planning & Management Wildlife Institute of India PO Box 19, Chandrabani, Dehradun 248001 Uttarakhand, India Phone: +91 135 2640111, Fax: +91 135 640117 Email: <a href="mailto:ssk@wii.gov.in">ssk@wii.gov.in</a>
<b>Experts from the region</b>	
<b>China</b>	
11. Dr Shi Peili,	Professor Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences A 11, Datun Road, Chaoyang District Beijing 100101, P R China Tel: +86 10 64889026; 136 7124 0032 (Mobile) Fax: 86 10 64854230 Email: <a href="mailto:shipl@igsnr.ac.cn">shipl@igsnr.ac.cn</a>
12. Dr. Luo Rong Zhandui	Professor, China Tibetology Research Center Sichuan University 131 East Road of North 4 <sup>th</sup> Ring, Beijing 100101, People's Republic of China (No.24 South Section 1, Yihuan Road, Chengdu, China, 610065

	Phone: +133 7012 6037,+86-13701176357 Email: <a href="mailto:luorzhd@126.com">luorzhd@126.com</a>
13. Dr. Yan Zhaoli	Associate Professor, Chengdu Institute of Biology Chinese Academy of Sciences (CIB CAS) No. 9 Section 4, Remin Road South Chengdu 610041, Sichuan, P. R. of China Phone: +86 1398 1920 213, Fax: +86 28 8289 0288 Email: <a href="mailto:zhaoliy@cib.ac.cn">zhaoliy@cib.ac.cn</a>
14. Dr. Bao Weikai	Director of Maoxian Ecological Station Chengdu Institute of Biology Chinese Academy of Sciences (CIB CAS) No. 9 Section 4, Remin Road South Chengdu 610041, Sichuan, P. R. of China Email: <a href="mailto:baowk@cib.ac.cn">baowk@cib.ac.cn</a>
<b>Pakistan</b>	
15. Dr. Bashir Ahmed Wani	Retired Inspector General, Forest Phone: +0321 517 9203 Cell Email: <a href="mailto:wani48@hotmail.com">wani48@hotmail.com</a>
<b>India</b>	
16. Dr. Pradeep K. Mathur	Dean Faculty of Wildlife Sciences Wildlife Institute of India (WII) PO Box 18, Chandrabani, Dehra Dun 248 001, India Phone: +91 135 2640111, Fax: +91 135 640117, Cell: +91 9412075 Email: <a href="mailto:mathurpk@wii.gov.in">mathurpk@wii.gov.in</a> ; <a href="mailto:mathurpk@yahoo.com">mathurpk@yahoo.com</a>
17. Dr. Ranbeer Singh Rawal	Scientist F, G B Pant Institute of Himalayan Environment and Development (GBPIHED) Nodal Person KSLCDI – GBPIHED Kosi Katarmal, Almora, 263643 Uttarakhand, India Tel: 91-5962-241041 *36; +91-5962-241038; +91-9410392114 (Mobile) Fax: 241150 Email: <a href="mailto:rsrawal@gbpihed.nic.in">rsrawal@gbpihed.nic.in</a> ; <a href="mailto:ranbeerrawal4@gmail.com">ranbeerrawal4@gmail.com</a>
<b>Bhutan</b>	
18. Mr. Sonam Wangchuk	Chief, Wildlife Conservation Division Department of Forest & Park Services, Thimphu 11002, Bhutan Email: <a href="mailto:sonamwangchuck@gmail.com">sonamwangchuck@gmail.com</a>
<b>Nepal</b>	
19. Professor Ram Prasad Chaudhary	The Research Center for Applied Sciences & Technology (RECAS)



	Central Department of Botany, Tribhuvan University Kirtipur, Kathmandu, Nepal Phone : (Cell ) 9841283652 <a href="mailto:ram@cdbtu.wlink.com.np">Email: ram@cdbtu.wlink.com.np</a>
20. Dr Suresh K. Ghimire	Associate Professor, Department of Botany Tribhuvan University Kathmandu, NEPAL Tel: ++977 9841266197, 9751001062 <a href="mailto:sureshkgimire@yahoo.com">Email: sureshkgimire@yahoo.com</a>
21. Mr. Hari Bhadra Acharya	Department of National Park/Wildlife Conservation (DNPWC) Babar Mahal, Kathmandu, Nepal 977 1 4248808, Fax: +977 1 4262 348, Cell :9840058292 <a href="mailto:hbacharya07@gmail.com">Email: hbacharya07@gmail.com</a>
22. Mr Durga P. Manandhar	Senior Divisional Meteorologist Department of Hydrology and Meteorology, Babar Mahal, Kathmandu, Nepal Phone: 977 1 4248808, Fax: +977 1 4262 348, Email: <a href="mailto:dpsmanandhar@yahoo.com">dpsmanandhar@yahoo.com</a>
<b>International Centre for Integrated Mountain Development (ICIMOD)</b> G.P.O. Box 3226, Kathmandu, Nepal Tel: +977-1-5003222; Fax: +977-1-5003277, 5003299	
23. Dr Eklabya Sharma	Director Programme Operation; <a href="mailto:sharma@icimod.org">Email: sharma@icimod.org</a>
24. Prof Wu Ning,	Theme Leader, Ecosystem Services <a href="mailto:nwu@icimod.org">Email: nwu@icimod.org</a>
25. Dr. Rajan Kotru	Regional Programme Manager, Transboundary Landscape, KSLCDI Programme Coordinator <a href="mailto:rkotru@icimod.org">Email: rkotru@icimod.org</a>
26. Dr Rucha Ghate	Senior NRM Governance Specialist <a href="mailto:rghate@icimod.org">Email: rghate@icimod.org</a>
27. Dr Gopal Rawat	Chief Scientist-Ecosystem Services/ICIMOD Focal Person India <a href="mailto:gawat@icimod.org">Email: gawat@icimod.org</a>
28. Dr. Lynn Bennett	Visiting scientist/Senior Social Scientist <a href="mailto:lbennett@icimod.org">Email: lbennett@icimod.org</a> ; <a href="mailto:lbennettwildhorse@gmail.com">lbennettwildhorse@gmail.com</a>
29. Dr. Laxmi Bhatta	Ecosystem Management Specialist Email: lbhatta@icimod.org
30. Dr MSR Murthy	Theme Leader, Geospatial Solutions Geospatial Applications Lead (NASA SERVIR Himalaya) <a href="mailto:mmurthy@icimod.org">Email: mmurthy@icimod.org</a>
31. Dr Yi Shaoliang	Sr. NRM Specialist, Ecosystem Services <a href="mailto:syi@icimod.org">Email: syi@icimod.org</a>
32. Dr. Nakul Chettri	Initiative Coordinator Kanchenjunga Landscape

	Component Lead 4, KSLCDI Email: <a href="mailto:nchettri@icimod.org">nchettri@icimod.org</a>
33. Ms Himaa Rai	Programme Associate, TBL-KSLCDI Email: <a href="mailto:hrai@icimod.org">hrai@icimod.org</a>