



New Delhi Office

Cluster office for Bangladesh,
Bhutan, India, Maldives,
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Regional Conference
Conservation and Management of
UNESCO World Heritage Sites: Sharing
Experiences and Best Practices from
South Asia

17 and 18 September 2013

Proceedings

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**Proceedings of the Regional Conference
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Inaugural Session

Welcome Address

Mr. Shigeru Aoyagi – Director and UNESCO Representative to India, Bhutan, Maldives and Sri Lanka

The welcome address was delivered by Mr. Shigeru Aoyagi who welcomed all the participants to this regional conference on the conservation and management of UNESCO World Natural Heritage sites in the South Asian region.

This is in fact the wrap up event of the first phase of the “World heritage biodiversity programme- India” which is being implemented in 4 World Natural Heritage Sites of India namely - Kaziranga, Manas, Keoladeo and Nanda Devi National Parks. The programme has been successful in developing effectively managed clusters of existing World Heritage Sites representing critical ecosystems and habitats of India. We wanted to share the experiences of this successful initiative with larger audience and also plan for scaling up this flagship programme.

He extended his heartiest welcome to Mr. Hem Pande, Additional Secretary and Mr. Garbyal Additional Director General of the Ministry of Environment & Forests, Govt of India and representatives of the State Govts to this conference. This programme was an ideal example of collaboration between the UNESCO, Govt of India, State Govts, academics and civil society. This is in line with the principle enshrined under the ‘World Heritage Convention’ for preserving the outstanding universal value of these sites of exceptional natural beauty and aesthetic importance.

Mr. Aoyagi also commended the partners in this project, the Wildlife Institute of India (WII) and Asoka Trust for research in Ecology and Environment (ATREE) who will be sharing some of the outcomes achieved under this programme. He also expressed his appreciation at the presence of the park managers from all over India as well as a warm welcome to the representatives of World Heritage Sites from Sri Lanka, Nepal, Bangladesh and Bhutan who were present to share experiences from their countries.

The programme has helped raising the profile of World Heritage Sites in India and in the region. It has triggered a series of positive actions for the conservation and management of World Heritage Site, besides inception of Western Ghats in 2008. This is perhaps the largest serial natural site inscription covering a whole range of ecosystems with 39 protected areas in 5 States.

The two day conference will deliberate on several issues besides presentation of case studies form sites and will come out with a set of recommendations and way forward for improving the status of natural WHS throughout the region.

Mr Aoyagi expressed hope that the conference will seriously discuss the issue of resources for continuation of this innovative programme. He was happy that Ministry of Environment and Forests, Govt of India is favorably considering our proposal for setting up a Trust Fund with UNESCO to sustain some of the key activities of this programme. The Trust Fund will hopefully provide a mechanism for

other donors and corporate groups to contribute to the programme. He mentioned the possibility of the fund to improve the management of the 11 World Heritage Sites in the South Asian region and the attempts to establish global and regional resources to build capacities in the region to manage these sites.

He stated that the conference would enable an exchange of experience and views to come up with a set of recommendations and a way forward for the World Heritage Biodiversity Programme in the special panel on resource mobilization that will come out with useful guidance on this important concern as well. He said this conference is important for cooperative action for the conservation of natural sites and would present perspectives from central, state governments and practitioners as well as establish business strategies to improve the management of sites and build capacities of people from the ground level up to the policy level.

He once again warmly welcomed all the distinguished participants from India and abroad to this important event and hoped for all to actively participate and have a fruitful deliberation.

The Chief Guest, Mr. Hem Pandey – Additional Secretary, Ministry of Environment and Forest (MoEF), Government of India, formally inaugurated the conference by lighting the ceremonial lamp. He was joined by all the other dignitaries as well. Mr. Pandey then went on to give the inaugural address.

Inauguration Address

Mr Hem Pandey – Additional Secretary, Ministry of Environment and Forests (MoEF), Government of India

The Inauguration address was delivered by the Chief Guest, Mr. Hem Pandey. He began by welcoming participants from neighbouring countries. He complimented UNESCO for organising a regional conference for the conservation and management of World Natural Heritage Sites (WNHS) and for popularising the management of these sites in India and neighbouring countries. He stated that the World Heritage Site is a good brand name and it is a challenge to remain at the level of conservation and management required for World Heritage Sites. He mentioned that Manas National Park became a site 'in danger' and is now back on the list and commended the effort the team from MoEF made for getting Western Ghats in the list of WNHS.

Addressing the participants as 'friends of biodiversity' he stated that along with biodiversity it is also important to look at the ecosystem services provided by biodiversity and explain this concept to communities that protect biodiversity. The world has quite a skewed distribution of biodiversity with 20 countries containing 75% of the world's biodiversity and those holding onto biodiversity need to be told in simple words of its importance.

Biodiversity is a priority for the ministry. To commemorate the Eleventh Conference of Parties (COP 11), a Biodiversity Museum has been established with 193 saplings planted for each of the member countries

and the National Biodiversity Action Plan is being prepared in partnership with Wildlife Institute of India (WII). India has also signed to Nagoya Protocol though the challenge is to get other countries to sign it – some of the neighbouring countries are in the process. He concluded by saying that India is a mega diverse country and though it houses one-fifth of the world's population it has 8% of the world's biodiversity and it is only possible to maintain all this because of the 'friends of biodiversity'.

Keynote Address

Professor PS Ramakrishnan, School of Environmental Sciences , Jawaharlal Nehru University

Professor PS Ramakrishnan delivered the Keynote Address by way of a Power Point presentation on Sustainability Science.

He introduced Sustainability Science as a trans-disciplinary area and from which one comes to the conclusion that there is a lot to be learnt from rural communities in general and traditional societies in particular. Prof. Ramakrishnan stated that his research focused particularly on mountain communities and shared some lessons from his work in the last five decades:

- His work has identified linkages between biophysical dimensions of ecology and socio-political-economic dimensions of social sciences to reach out to stakeholders through policy documents, outreach manuals and audio-visual material.
- Biological diversity cannot be delinked from cultural diversity and this has implications for both urban and rural areas. This linkage can lead to restoring and conserving a value system based natural cultural landscape. Traditional forest dwellers have always conserved the cultural landscape to which they are attached and urban societies are trying to get closer through urban cultural landscapes, by linking traditional knowledge systems with textbook knowledge as seen by NGO movements in Delhi, Mumbai and different parts of the world.
- There are two kinds of knowledge systems - Knowledge based on hypothetico-deductive process which is delinked from the human element and traditional knowledge systems which is rich in the mountain regions with 200 ethnic groups and has a strong human element. The two can be linked for a 'hybrid technology'.
- Prof. Ramakrishnan has tried to find the best elements in traditional knowledge and integrated it with text book knowledge. Biodiversity was studied at three levels – species level, ecosystem level and landscape level to create hybrid technologies where emphasis was more on traditional technologies and built upon on an incremental pathway.
- The key lessons are that socially valued species invariably have a keystone value. An example is the Nepalese Alder which is not removed during slash and burn and is rich in Nitrogen. The Bamboo is also socially valued and the three species which are valued by almost all tribes are each in rich in nitrogen, potassium or carbon showing that tribes socially value species that are also scientifically valuable. Other examples mentioned were sacred groves and the Apatani landscape that has an extremely high ecological efficiency. Every unit of energy spent in this landscape has a return of 200-300% which surpasses any yields in modern agricultural systems.
- Efforts are being made to identify and study similar cultural landscapes such as the Demojong landscape in Sikkim where there is a concept of sacred lakes.

Prof. Ramakrishnan also made a point about the Globally Important Agricultural Heritage Systems (GIAHS) initiative which is an integral component of the anthropocentric landscapes. There is also a joint initiative between the International Geosphere-Biosphere Programme (IGBP) and International Human Dimensions Programme (IHDP). He has approached FAO with building up a linkage between UNESCO and FAO.



Figure 1: Professor Ramakrishnan delivers the keynote address
Source: UNESCO New Delhi, Natural Science

Biodiversity Conservation through Natural World Heritage Sites

Mr. Marc Patry, World Heritage Committee, UNESCO

Mr. Marc Patry made a Power Point presentation on the global context of World Natural Heritage Sites. The main points of his discussion are summarised below:

- The World Heritage convention is an international law convention concerning the protection of the world cultural and natural heritage in 1972 adopted by the 17th UNESCO general conference meeting. There are 222 natural sites including some which are mixed natural and cultural sites.
- The World Heritage Convention has strong ties, where countries have the mandate to check on other countries. This is unique and no other international convention allows that. There is also a strong spirit of cooperation and opening up to a community of peers. The WHC meets annually as part of a monitoring process.
- Almost all countries have ratified the convention, in fact more countries than the CBD. The convention has a lot of weight in the international community which is good for getting aid for conservation.
- The International Union for the Conservation of Nature (IUCN) is technical advisor to UNESCO and assists with guidelines for criteria for nominating a World Heritage Site.

- The criteria for natural sites are
 - Criteria VII sites of exceptional natural beauty and aesthetic importance; example is the Monarch butterfly reserve in Mexico
 - Criteria VIII for outstanding examples of natural history; for example Egypt's "Whale's valley" containing fossils of the earliest forms of Whales
 - Criteria IX for sites representing ongoing ecological and biological processes; 'functioning ecosystems' examples are the Amazon
 - Criteria X which are sites rich in biodiversity such as the Galapagos, sites with the panda bear in China
- Conservation challenges are large. There is an expanding agricultural frontier with changes in land use from forests to agriculture and cattle ranching, poaching, trafficking in ivory, and the Rhino horn.
- Google Earth is a valuable tool for the monitoring of World Heritage Sites.
- Globally significant features of WHS in South Asia are the following - that the Sunderbans is a valuable repository of Mangroves, Manas is the only site globally that has 7 reported cat species, Indian WHS have the highest number of Rhino species.
- The convention is successful and provides a credible platform for private and public sectors. There are partnerships with ICM, Shell, OPIC, UNF, JP Morgan, Goldman Sachs, Cairn who agree that they will stay out of WHS in their contracts etc. (since they feel there is solid backing from inter-governmental organizations), which is not the case in Ramsar or CBD. There are also several indicators of success in WHS such as banks not giving loans for mining activities that may hurt sites.
- They can be used for leveraging progress towards conservation objectives by building broader public political support and defining clear limits for development.

Introduction to the World Heritage Biodiversity Programme in India

Dr. SS Garbyal – Additional Director General (Wildlife) Ministry of Environment and Forests (MoEF), Government of India

Dr. SS Garbyal stated that India has demonstrated the feasibility of large mammal conservation. Being one of the earliest signatories to the World Heritage Convention, it has 6 natural sites and should have one more by next year – The Great Himalayan National Park and many more in the years to come.

He provided an introduction to The World Heritage Biodiversity Programme - India (WHBPI). Some of the key points he made were as follows:

- The WHBPI has been implemented since 2008 in Kaziranga, Manas, Keoladeo and Nanda Devi national parks

- These World Natural Heritage sites seek to conserve the earth's most spectacular examples of natural and biological heritage. They represent a unique combination of natural landscapes and biological diversity.
 - Kaziranga National Park is a prime example of unusual beauty and unique habitats for some of the last examples of world's rare animals and plants, including the Asian rhinoceros.
 - Manas National Park includes some of the most diverse stands of evergreen forests and several species of rare mammals.
 - The Keoladeo National Park is an internationally acclaimed wetland harboring over 300 avifaunal species; it is the wintering ground for many migratory bird species.
 - Nanda Devi and Valley of Flowers protects a wilderness zone of the Himalayan ecosystem
 - The Sunderbans support the unique mangrove ecosystem and species, including the tiger
 - Western Ghats are one of the best examples of the 'monsoon system' on the planet and one of 8 'hottest-hotspots' of biological diversity.
- The programme has been designed to meet the conservation needs of each park based on its socio-political, geographical and conservation context.
- Though this project had a delayed start, in 5 years it has done a commendable job. While WII and ATREE the implementation partners would make presentations on the outcomes and successes of the project, Dr Garbyal highlighted one project activity: the selection of over 400 children through a competitive process for a WHBPI scholarship. These children through this initiative became ambassadors of conservation and got connected to 500 families. He also gave the example of the rickshawallas of Keoladeo who were given language training in French and German to improve the tourism experience for tourists from these countries and became more involved in the management of the park.
- He concluded by saying that efforts are underway to maintain some of these very important initiatives.

Vote of Thanks

Dr. Ram Boojh Programme Specialist, Natural Science Sector, UNESCO New Delhi

Dr. Ram Boojh delivered a quick vote of thanks to all participants and in particular to the implementing partners WII and ATREE who demonstrated very good results in the field and participants from ICIMOD, G B Pant Himalayan Institute, BVIEER, and Norwegian Embassy. He stated that the good response to the invitations to the conference was very encouraging. He concluded by saying that the next sessions would provide an overview of the programme and room for interaction and discussion during the open forums.

Session 1: World Heritage Biodiversity Programme India

Introductory Comments by Chair

Chair: Dr. Jagdish Kishwan, Chief Policy Advisor, Wildlife Trust of India and Former Director General Forest, Government of India

The chair, **Dr. Jagdish Kishwan** introduced the first session by talking about his experience with World Natural Heritage Sites. He said that it is difficult to be listed as a World Heritage Site (WHS), more difficult to manage it as a WHS, unfortunately easy for it to lapse into a site on the 'in danger' list of UNESCO's World Heritage Committee, and then almost impossible to get the site out of the 'in danger' list. He mentioned that he had this experience with Manas National Park, Assam which was able to come off the 'in danger' list last year. It was a big achievement. The site was 'in danger' because of local insurgency and it took 19 years for it to recover, and if certain commitments by Government of India are not followed it could lapse back. He also brought up the recent addition of the serial sites of Western Ghats and how difficult it was to enlist 39 serial sites of Western Ghats. He said that there are 7 World Natural Heritage Sites in India and 4 covered under this project.

About the Conference: World Heritage Biodiversity Programme India (WHBPI)

Dr. Ram Boojh, Programme specialist, UNESCO - New Delhi

Dr. Ram Boojh made a power point presentation and talked about the context of the conference, the vision of program and evaluation of project (which looked at indicators like uniqueness, governance mechanism, young ambassadors, research and monitoring etc.). He stated that the main objective of this conference is to explore ways to scale up and to look for partnerships and resource mobilization strategies. The next phase would ideally look at synergies with other UNESCO initiatives, with other national plans and processes. There is already a UN Joint program for the North East with biodiversity as a focus and talks with state governments are already under way.

WHBPI Implementation in Nanda Devi and Keoladeo – Key Outcomes and Learnings

Dr. VB Mathur, Dean of Wildlife Institute of India (WII)

Dr. Mathur made a power point presentation on the implementation of the project in Keoladeo and Nanda Devi National Parks:

KEOLADEO NATIONAL PARK

Dr. Mathur started off by talking about the key management techniques employed in Keoladeo National Park in Rajasthan.

- He stated that the flexibility of the fund in terms of implementation allowed the project to move faster on the needs of park managers.

- Strengthening the capacity for effective management was a big objective achieved by organising workshops for the frontline staff where they got to visit other national parks to compare practices. This was a different approach rather than sending just senior management on visits. Additionally, bicycles were given to staff; secure patrolling huts were constructed with solar panels. A small amount of money was used to great effect in the park. In Bharatpur, rickshaw pullers were given uniforms that gave them an identity. They were also taught foreign languages like German and French, following an analysis of tourists who visit the park.
- Scholarships were given to children on the basis of merit (70% to local children and 30% to staff children). The children were being activity engaged to learn. For instance, they learnt about bird calls, garbage disposal, and quizzes were also conducted.
- Another important aspect was research studies conducted to identify the existing gaps. Aligarh Muslim University performed research on larger mammals in addition to the avifaunal monitoring and fish monitoring that was happening in the park. There was also monitoring of water quality and the relationship between birds and water availability – details into the quantum of water as well as availability. There is an annual research seminar where strategies were discussed and an interpretation center data that was installed. A website has also been created for the World Heritage site and publications pertaining to research done at Keoladeo exist.
- He then spoke about the satellite wetlands in KNP which were also included in the project. He said a different approach is needed for KNP to ensure that the satellite wetlands are also managed and this necessitated a landscape approach to conservation for birds. These smaller sites would require more active management. When Bharatpur dried up, the tourists visited these surrounding wetlands instead for bird sightings.
- Some of the issues in KNP mentioned were pesticides in the water, due to presence of agricultural land all around the park. Availability of water in the park – which is natural or through dam, got impacted because of a drought from 2008-2011, and from 2011 onwards there was no water. With the help of the Planning commission, additional water sources were looked at and a pipeline project from Chambal, Dholpur, called the Goverdhan project is now getting water to the park. He cited this as a major achievement for the park, with Rs. 60 crore of funding by Government of India given to Keoladeo by the Planning Commission. Another important issue he highlighted was of the invasive species seen in Keolado specifically African Catfish and water hyacinth.

NANDA DEVI AND VALLEY OF FLOWERS NATIONAL PARK

The key points highlighted by Dr. Mathur in his presentation with regard to Nanda Devi national park were as follows:

- Transboundary trade in wildlife is a big issue in the park. An Indo-Tibetan trans boundary post where youth were trained in villages, provided information on Wildlife Protection Act. Front line staff needed practical knowledge, modern tools of camera traps, GPS. Himalayan front line crew was taken to Kanha National Park, Madhya Pradesh to see better management techniques; they

were also sent to Kanchenjunga for an exposure visit. The use of camera traps was twofold as not only did it capture images of snow leopards and red pandas as proof value, but also served as a deterrent to poachers. The camera traps were publicized to influence psychology of poachers.

- Under the project an Aerial surveillance was carried out, which was not possible in the usual management budget.
- Micro-enterprises were also set up under the project; local carpentry kits were provided to local communities. Himachal Pradesh is advanced in alternative livelihoods, so villagers went there to see and to Kanchenjunga.
- Biodiversity mapping of insects and butterflies were done using modern mapping tools. There was also an establishment of advisory committee and \$500 were allotted for a contingency fund. This money was given to managers, for use with no questions asked. The money is meant for emergency training or usable otherwise.



Figure 2: Dr. Mathur's session
Source: UNESCO New Delhi, Natural Science

LESSONS LEARNT AND OUTCOMES

- Dr. Mathur said that though the planning grant was small, the large planning period was their strength, and a blessing in disguise. Almost 2.5 years were taken, so the planning phase led to correctly assess needs of the park and project. The design of the project helped to manage the money well. Working with managers *and* frontline staff for accurate delivery and also involving local communities and public partners. The civil society organisations and government worked together to professionalise management of the park.

- The steering committee had good people from the Government of India, and donors were supportive – United Nations Foundation matched funds raised dollar for dollar thanks to their scheme.
- He stressed the importance of the 5 member project implementation team at WII that remained unchanged for entire duration of the project. These WII representatives provided stability.
- The Young Ambassadors scholarship initiative helped reach not only the children, but the families as well. He stated that 5 years are at least required for any project to see results.
- One thing he felt could have been done better was the organizing of a professional fund raiser to garner financial support, since it is hard to get funds for the continuation of the project.
- The strongest outcome of the project was the increased attention of the Indian policymakers and decision makers related to World Natural Heritage Sites. The project helped in a “heritage movement being triggered”. Wildlife Institute of India will be hosting the first category 2 centre on World Natural Heritage Sites for the Asia-pacific region.

WHBPI Implementation in Manas and Kaziranga – Key outcomes and Learnings

Mr. Niraj Kakati, Program Coordinator, Ashoka Trust for Research in Ecology and the Environment (ATREE)

Mr. Kakati talked about the implementation in Assam project in the two field sites - Manas and Kaziranga.

MAJOR OUTCOMES:

- For the first time, photographic data of wildlife species and diversity was found in Manas. This was done with other conservation groups under the park management and was instrumental in restoring the original world natural heritage site status to it.
- Mr Kakati also talked about the quantitative indicators for livelihood outcomes – participatory appraisals PRA, micro planning for the villages and intervention in those villages. Pilot studies performed on additional livelihood intervention like sheep rearing, fisheries etc. lead to 6-10% additional income garnered. These were pilot demo projects and also created goodwill among the communities. Strategically located depredation towers were used to ward of elephants. A qualitative measure of its positive impact was that neighbouring villages wanted the towers too.
- Scholarships also included students from poor and wildlife affected families. It was found that many children living a little distance away from the park had never been inside so they were taken for field trips to the park.
- Filled in small gaps in capacity building eg. rubber boats for floods, better communication technology and equipment.

LESSONS LEARNT:

- There should be a closer link between indicators of success and the action plan. Practical log frame with realistic indicators to measure results. M&E plan and Exit strategy and scaling up.
- It is crucial to ensure efficient resource allocation – successfully demonstrate with appropriate scale of activities – better to intensify in particular areas than to spread yourself too thin. It helps more to synergize and form partnerships than to work in isolation. The project must also retain flexibility in the field and maintain the ownership and trust of local people.
- Fund flow mechanisms from donor to implementing partner should be simple.

WAY FORWARD:

Mr. Kakati gave a few suggestions to map the way forward in the two field sites in Assam. They were

- leveraging project results to raise additional resources,
- To continue the trend of working with communities,
- To address gaps in research,
- To understand the effects of climate change,
- To identify the role of alternative energy and skill development.

The chair, **Dr Kishwan** appreciated the role of both implementation partners by saying WII and ATREE with small resources have created wonders in both areas, which are distinct from each other. The relationship they were able to build with local communities and state government has given wonderful results.

Experiences of Mountain Landscapes as Potential World Heritage Sites

Dr Gopal S Rawat, Chief Scientist, Ecosystem Services, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal

Dr. Rawat made a presentation on the transboundary landscapes in the Hindu Kush Himalayan (HKH Region). He stated that these landscape see latitudinal, longitudinal and altitudinal coverage. There is great potential for mountain landscapes to be listed and managed as world heritage sites. There a lot of them at junctions of several countries where ICIMOD is working:

- Wakhan Landscape at junction of Afghanistan, Tajikistan and Pakistan
- Karakoram Pamir Landscape – India China Pak. Good relations between China and Pakistan to conserve the park area.
- Kailash sacred landscape tri-junction at India Nepal and China
- Kanchenjunga junction at Sikkim and Bhutan
- Brahmaputra-Salween landscape China Indo Burmese hotspots.

Some of the key points from his presentation are as follows:

- Transboundary landscape initiatives require a lot of effort in terms of negotiation with existing countries, management collaboration, scientific collaboration feasibility, long term planning, and regional cooperation framework (important as it leads to more policies). Effort in the 5 landscapes is in different phases with the Kailash Sacred Landscape being furthest along.
- With the Kailash sacred landscape program in the countries of India, Nepal and China - he hopes for it to be longer term – around 25 years and some initiatives such as innovative livelihood approaches, access and benefit Sharing (ABS), long term conservation objectives are already being implemented.
- Outstanding Universal Values of Kailash Sacred landscape give it great potential to be a World Heritage Site (WHS) are: 1) unique geology – Mount Kailash is an ancient formation older than the Himalayas, 2) source of Asia's four major rivers 3) junction of three bio-geographical regions. Outstanding Cultural features of the landscape are 1) meeting place of 4 religions, 2) sacred landscapes 3) historical and cultural linkages 4) diverse and socio-cultural groups.
- The Kailash Sacred Landscape program requires a lot of ground work to make things happen and local national and international communities need to come together to assist in managing the initiative.
- He then also clarified that they would rather do the site planning and management properly than rush to get the world heritage status. Since this is transboundary landscape, the task to be completed first is to prepare of transboundary heritage tourism plans.

Open Forum

- **Ms Archana Godbole** congratulated ATREE and WII on their implementation of the project and asked “What is the kind of sustainability with communities specially with awarding the youngsters with Scholarship programs? What about livelihood activities – are they sustainable now?”

Dr V B Mathur responded that the project has led to capacity building where the skills can be transferred to other avenues also. The continuity to be maintained is with scholarships. Process of sustainability is important. Rickshaw puller are empowered to continue with another project, if need be.

Mr Niraj Kakati addressed the sustainability aspect stating that the livelihood initiatives are 2-3 years old. Only initial seed fund (EDC) was given but they have started the work and continued themselves. The EDC receives funds annually which are put into livelihood activities and profits are put in the bank account as well.

Dr Kishwan: stated that participants can also contribute with ideas for future sustainability and the Mobilisation of resources should not just be from outside, but we should look inside as well.

- **Dr Hemant Badola** asked a question directed to Dr G S Rawat on Sacred trails, associated with cultural and natural uniqueness. Why not show smaller landscapes within the larger park?

Dr Rawat responded trails link culture, biodiversity and is also the lifeline of the people. ICIMOD is working with partners and local communities to link people, culture and biosphere to give a proper shape to this landscape and more homework is required for this.

- **Ms Alka Tomar** provided inputs on the question of sustainability for livelihood initiatives. CMS (her organisation) does Monitoring & Evaluation and implementing of government projects, and national and state government schemes on livelihoods. She said that government projects that guarantee livelihoods exist already and mainstreaming livelihoods in existing schemes in the project area should be considered. National skill development programme has been focusing on this in a big way and should be looked into. The skill development mandate already exists in programmes and must be looked at to be integrated.

Session II: Sharing experiences and best practices from the South Asian Region

Introduction

This session was devoted to case study presentations from World Natural Heritage Sites (WNHS) of India and the South Asian region. Representatives who manage and work on WNHS from India, Nepal, Sri Lanka, Bangladesh and Bhutan made presentations. These provided information on the Outstanding Universal Value's (OUVs) of the sites and covered unique initiatives, best practices and challenges with regard to management of these sites. Relevant research and monitoring studies undertaken in the park were also presented.

Chair: Dr. VB Mathur, Dean, Wildlife Institute of India (WII)

Manas National Park, INDIA

Ms. Sonali Ghosh and Mr. Anindya Swargowari, IFS Chief Conservator of Forests & Field Director, Manas Tiger Reserve

Outstanding Universal Values: Manas National Park is the only national park in the country to meet three out of four World Natural Heritage Site criteria. It provides a habitat for 22 of India's most threatened mammals. It is an important source site for tiger populations across the landscape and together with Royal Manas, is one of the largest continuous protected forest tracts (see Figure 3). It has the only global populations of Pygmy Hog and largest population of Golden langur, Hispid hare & Bengal florican.

Site in Danger: In 1992 Manas was declared as a World Heritage Site "in danger". This tag was removed in 2011 with the efforts of several stakeholders.

Best Practices and Initiatives: The practice of posting 80% of forest service recruits in the national park shows commitment at the political and administrative level. There is a high level of involvement from Non-Governmental Organisations such as ATREE, Aaranyak, WTI, WWF who have helped in rebuilding the park in a systematic and scientific manner.

The Rhino reintroduction programme is showing signs of success with 26 Rhinos who are currently in the park. An initiative to reintroduce Swamp deer in the park is also planned.

The rebuilding of infrastructure in the park has received a boost from the World Heritage Biodiversity Programme and with the efforts of the park director Mr Swargowari – this was a challenging task since it started from square one.

Manas also has an initiative of joint patrolling, with local youth. A reorientation workshop is needed for them to define what is permissible inside the park. The park has some livelihoods initiatives with a focus on Women's SHGs for the communities in fringe villages.

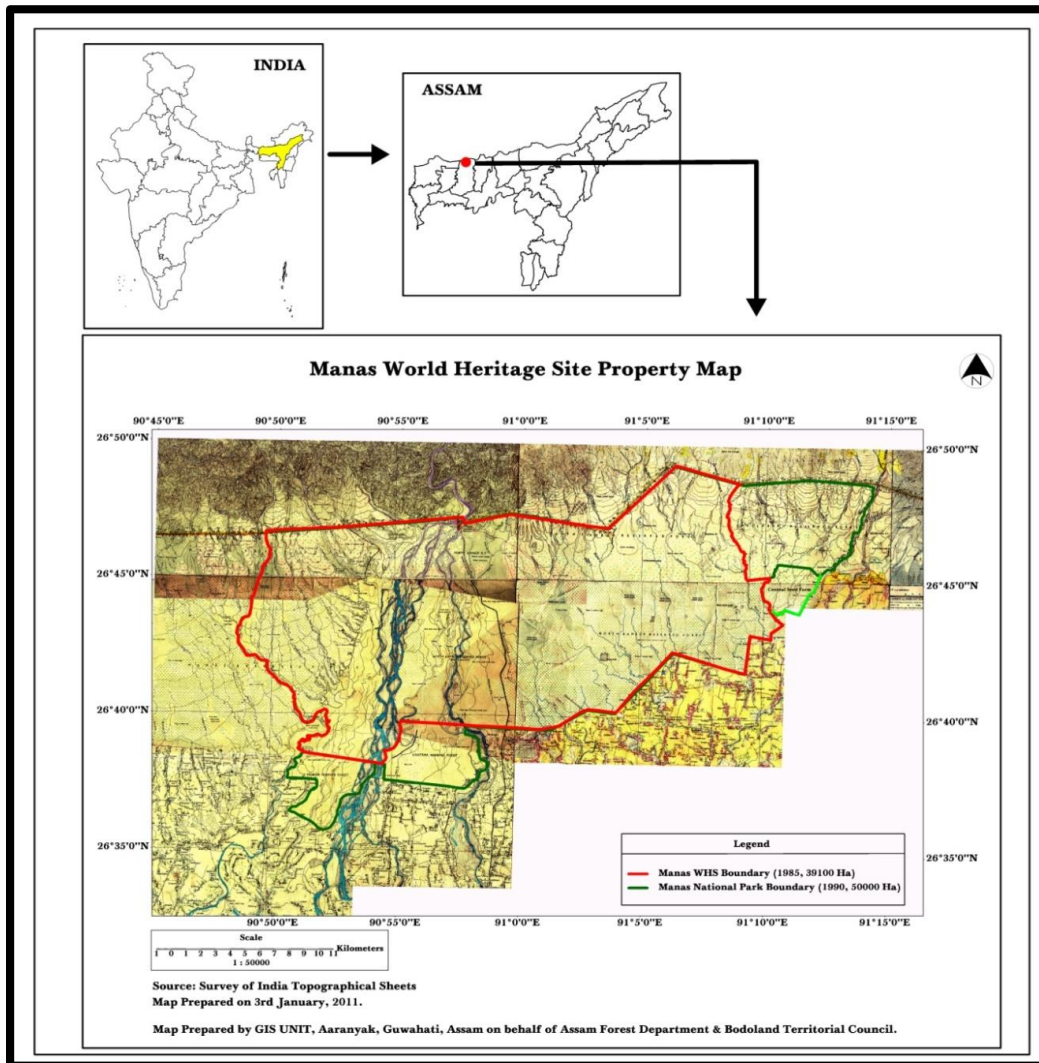


Figure 3: Map of Manas World Heritage Site
Source: Sonali Ghosh

A Manas Tiger Conservation plan which is a comprehensive document for 10 years on conservation, tourism etc. is under consideration and should take care of funding and tourism issues.

Research Studies: Studies for monitoring of tigers in the site are at an advanced stage. Monitoring is being done with the help of camera traps and genetic sampling. There is evidence that tigers are crossing boundaries between India and Bhutan highlighting the need for transboundary cooperation/corridors (see Figure 4).

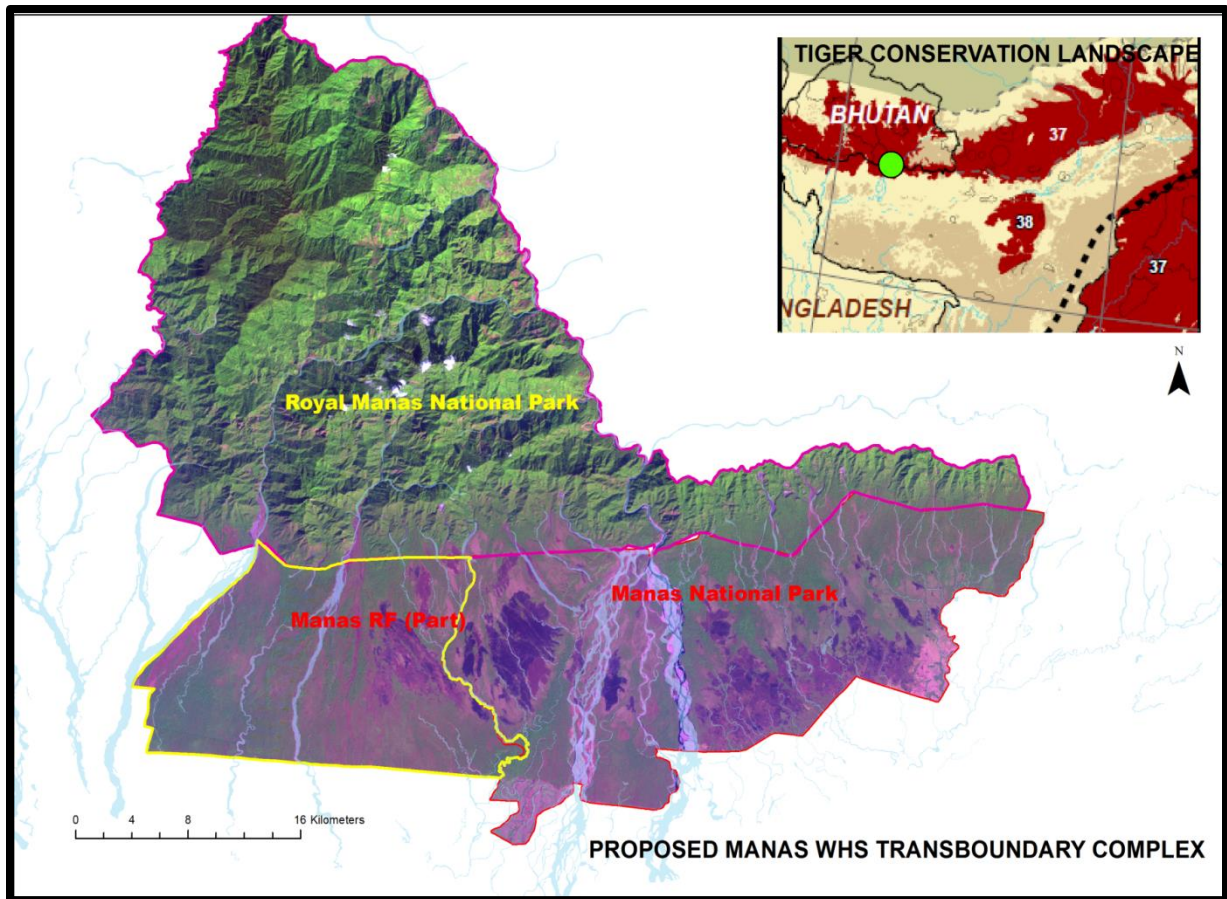


Figure 4: Map of Manas Tiger Reserve and Adjacent Areas of Bhutan
Source: Sonali Ghosh

A Rhino identification manual is being prepared as per international protocol. Research is also being undertaken on Land Use Land cover Mapping using GIS and PhD students are doing research on this aspect. There is a need for an integrated eco-system monitoring approach.

Challenges: Poaching and timber smuggling are threats; however the core area of the park is secure. There are local socio-political issues that flare up for which measures are being taken such as the Interdepartmental Security council (military, para military, park people etc.).

Royal Manas National Park, BHUTAN

Ms. Thinley Choden, Wildlife Conservation Division, Department of Forests and Park Services, Ministry of Agriculture and Forest, Bhutan

Conservation Scenario in Bhutan: The country is seen as a conservation hub. It has 51% of land under protected area and biological corridors shared with other countries. It is a safe haven for conservation because of strong political support and Buddhist religious values for conservation of

nature and biodiversity. Royal Manas National Park (RMNP) is one of the oldest and richest parks in the country and is a tentative WHS.

Outstanding Universal Values: The Park represents several ecosystems – forests and grasslands and rich floral and faunal diversity. It has the highest tiger density in the world (see Figure 5) and has 8 cat species present in the site.

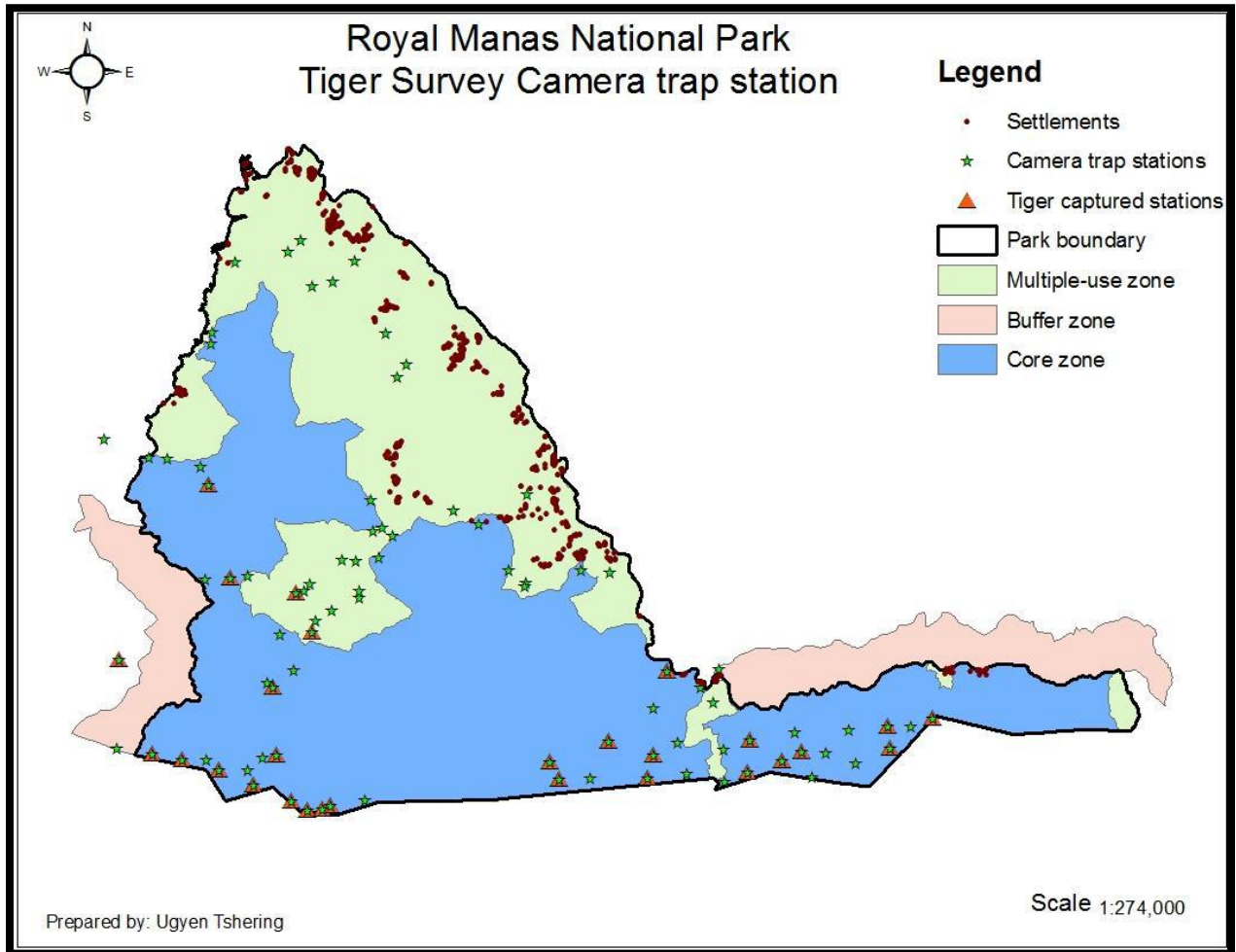


Figure 5: Tiger Population Survey showing high population density
Source: Thinley Choden

Collaboration with India: India-Bhutan consultative meeting on Trans-boundary Biodiversity Conservation took place in February 2013 at Manas Tiger Reserve with a focus on Tiger and Rhino conservation. Transboundary issues of biological corridors, control of poaching, illegal trade in wildlife and forestry products, HWC across borders, movement of wild animals and monitoring were tabled. A MoU has been signed with International Fund for Animal Welfare - Wildlife Trust of India (IFAW - WTI). This nomination can move forward with Indian support and collaboration.

Future Plans: To prepare for the nomination of RMNP in the planning process, get community support and undertake regular monitoring and trans-boundary collaboration.

Challenges in park management include rugged terrain, difficulties in research and monitoring, donor dependent PA management, habitat fragmentation, capacity building, knowledge gap, human-wildlife conflicts.

Opportunities: Regional collaboration for exchange of expertise between MNP and RMNP to get WHS status.

Kaziranga National Park, INDIA

Mr. NK Vasu, Field Director, Kaziranga National Park, Assam

Outstanding Universal Values: The Park is in the flood plains of the Brahmaputra river (see Figure 6) and is a very dynamic system. The annual flooding and fluctuations in the river gives the park its unique ecological and biological processes. The site represents the flood plains, high ground up to foothills and the Karbi Anglong Hills. There are lots of islands in the Brahmaputra that come under the national park. The park has rich biodiversity and a good representation of mega herbivores including buffaloes.

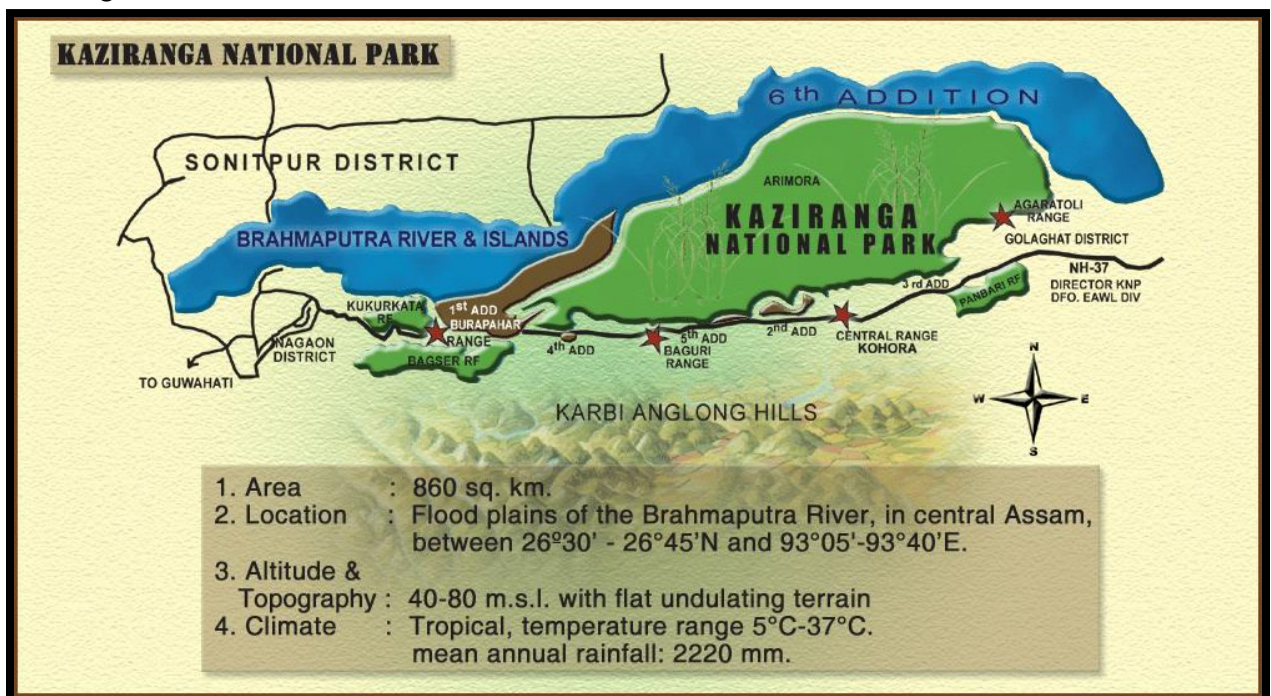


Figure 6: Map of Kaziranga National Park and Additions
Source: NK Vasu

Challenges: The three primary challenges in the park are flooding, poaching of Rhinos and Invasive species (*Mimosa*). There is a high mortality of animals during the floods. The poaching of Rhinos in the park is controversial. Poachers are using increasingly sophisticated weapons such as guns and electric wires. On an average the park loses 100 Rhinos a year and gains 175-200 Rhinos a year. *Mimosa* is an invasive species harmful for Rhinos as well.

Best Practices and Initiatives: Several measures are being taken in the site to control poaching. Legal instruments have been put in place to control poaching. Punishment for the crime is a minimum sentence of 7 years in prison to life imprisonment. There is the deployment of Assam Forest Protection Force with sophisticated arms, Kaziranga tiger conservation foundation, and coordination committees with police and civil administration. The park receives additional support for anti-poaching activity from the CBI, Special Task Force (Assam Police), CID, Wildlife Crime Control Bureau, Traffic India, WWF etc. Rescue and rehabilitation centres have been set up and there are a large number of anti-poaching camps in the park that use elephants and camera traps. The park currently has 2300 Rhinos as compared with 1120 Rhinos in 1991. To control the invasive species *Mimosa* – GIS and GPS studies were undertaken to get a *Mimosa* invasion map for the park. This Risk zonation will help in the removal of the plants which can only be done mechanically. The park has an extensive number of camera traps for monitoring of wildlife.

Keoladeo Ghana National Park, INDIA

Ms. Khyati Mathur, Deputy Conservator of Forests, Bharatpur

Outstanding Universal Values: The Park has a remarkable diversity of species and ecosystems concentrated in an area of just 29 sq. km. Keoladeo is a manmade wetland in a dry land. Dykes and canals were created by rulers in 1800s, along with a reservoir made for Bharatpur. This wetland was a wintering ground for the rare Siberian Crane and though this migratory species no longer visits the park. However, it is still the habitat of other migratory waterfowl and has 375 bird species and 34 mammal species (see Figure 7).

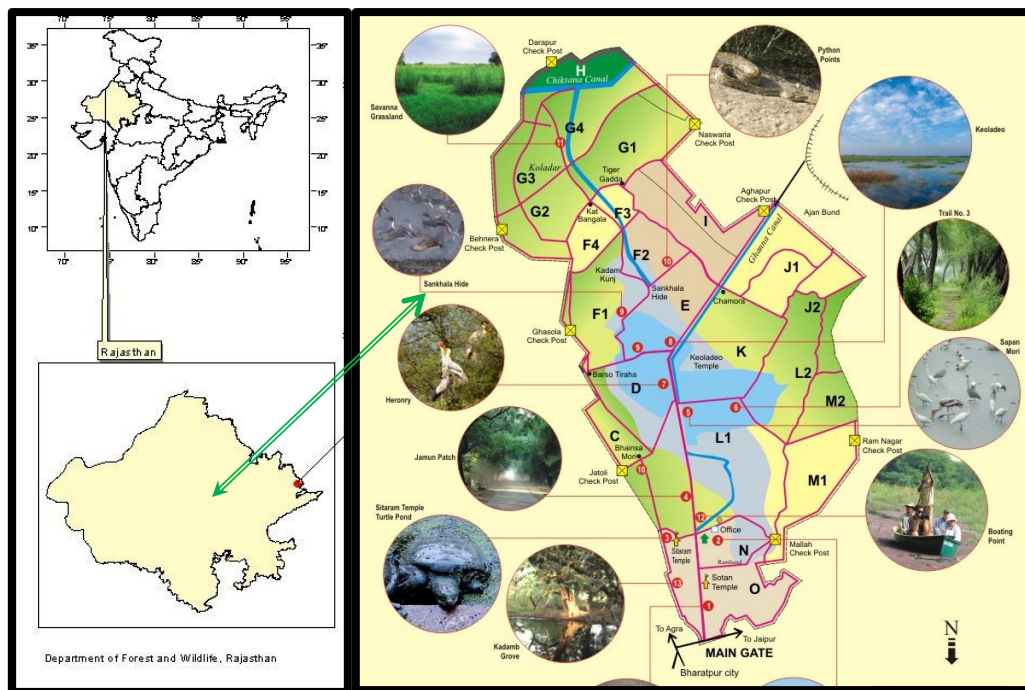


Figure 7: Map of Keoladeo National Park
Source: Khyati Mathur

Satellite wetlands: Under the UNESCO World Heritage Biodiversity Programme, 27 wetlands have been identified, but 3 of them have been lost to highways. One of these wetlands has 29 Sarus Crane and Black Buck. These wetlands are the buffers which have acted for Keoladeo as a substitute when the park was facing crisis.

Challenges: KNP has been on the verge of losing its World Heritage status because of the severe water crisis the park has been facing for several years. Additionally, the park suffers from the invasive species *Prosopis juliflora* and feral cattle that roam around in the park as well as a monkey menace.

Success Story: In August 2013, the park has started receiving water from the Govardan Drain after 10 years. The park also receives water through a pipeline that draws water from the Chambal river. This is a tremendous breakthrough for solving the water crisis that the park has been facing for the past 10 years. The World Heritage Status accorded to sites is a matter of prestige and makes governments take notice.

Initiatives: Invasive species are being dealt with in the innovatively. Funding for the removal of invasive species was included in management plan and local communities are involved in its removal and use the wood for firewood, cots etc. Communities have been involved in the removal of catfish and water hyacinth as well. Another unique initiative in the park is the support provided to rickshaw pullers which makes visiting the park more eco-friendly and provides them with livelihood opportunities.

Suggestion: The WHBPI Scholarship Programme that has been a success in the park can be supported by the park entry fee received. The park received around 14 crore rupees in revenue. A proposal has been submitted for the use of this revenue in the surrounding villages and the park. The Eco development committee of the park also earns proceeds from sales in the souvenir shop that can act as a buffer to mitigate some small scale issues.

Central Highlands of Sri Lanka and Sinharaja Forest Reserve, SRI LANKA

Mr. EAPN Edirisinghe - Assistant Conservator of Forests, Forest Department, Sri Lanka

Outstanding Universal Value (OUV): Both sites - Sinharaja Forest Reserve and Central Highlands of Sri Lanka (See Figure 8) meet criteria ix and x, which means they are outstanding examples of representing significant on-going ecological and biological processes and contain significant in-situ biodiversity. Some unique species in the sites are the Purple faced langur, the endangered Sri Lankan Leopard and Sri Lankan molluscan fauna that is the most distinct in the South Asian region. Central Highlands hosts a high number of threatened species. There is a high level of species richness and extraordinary levels of endemism. Sinharaja has floral relics from Gondwana land, several endemic bird species and last patches of relatively undisturbed remains of tropical rain forests in Sri Lanka.

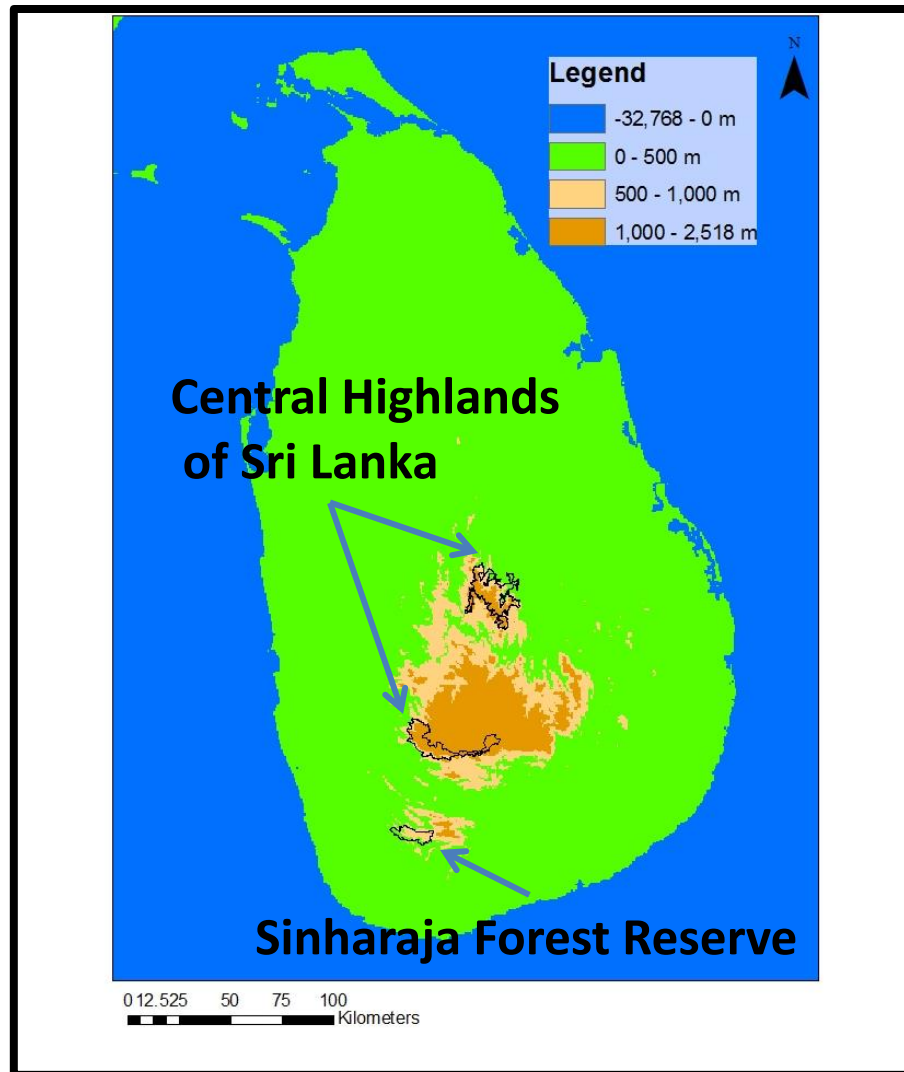


Figure 8: Map showing elevations of Central Highlands of Sri Lanka and Sinharaja Forest Reserve
 Source: EAPN Edirisinghe

Challenges and Threats: These include encroachment, tourism, invasive species, forest fires (manmade usually), illegal gemming, cardamom cultivation, infrastructural development. There is a huge influx of religious tourism – 2 million visitors over a six month period in the sites. While the pilgrim routes are not part of the property they create problems such as garbage and pollution.

Best Practices and Initiatives: The sites have the highest level of legal protection provided including the Forest Act, Flora and Fauna Protection Ordinance, National Heritage Wilderness Area Act etc. There are also initiatives for community participation and livelihood development through training programmes, enhancing agricultural productivity, domestication of forest products, creating linkages between communities and micro finance service providers, providing health care facilities, ecotourism initiatives, preparation of integrated management plans, promotion of environmental education, garbage management and developing alternative sites for visitors.

Sagarmatha and Chitwan National Park, NEPAL

Mr. Fanindra Kharel , Planning Officer, Department of National Parks and Wildlife Conservation, Kathmandu, Nepal

Conservation Scenario in Nepal: The country has 20 Protected Areas covering 23% of the country (See Figure 9). There is a focus on endangered species conservation.

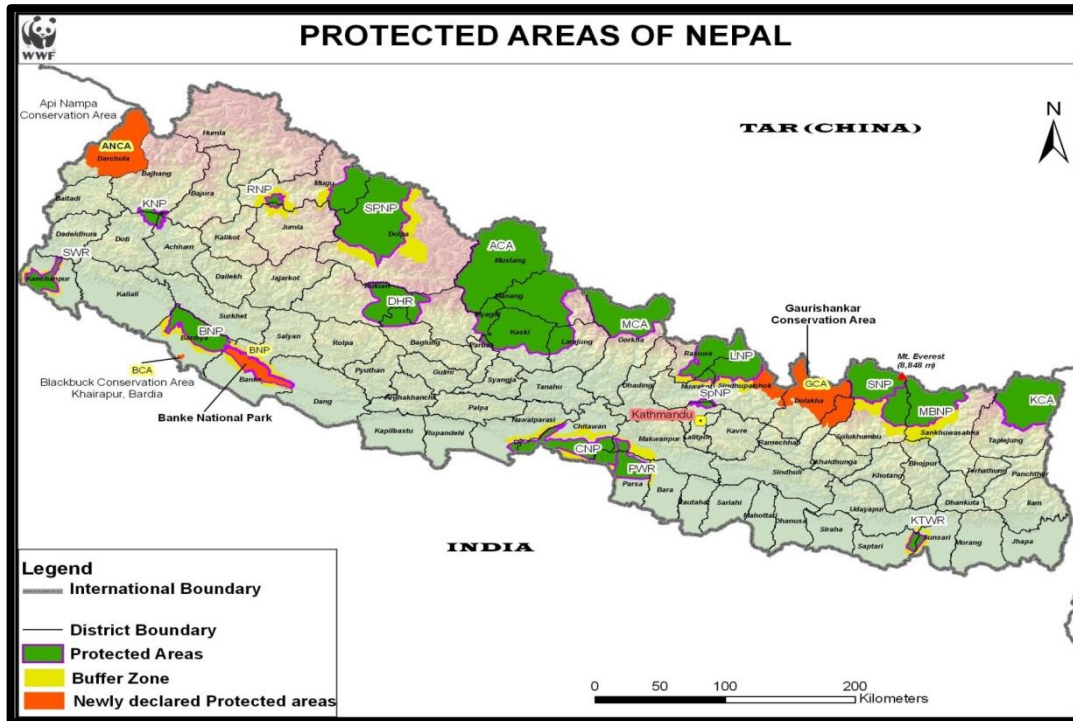


Figure 9: Protected Areas of Nepal
Source: Mr. Fanindra Kharel

Outstanding Universal Values: Sagarmatha is nominated under criteria viii, containing the highest point on the Earth's surface Mount Sagarmatha (Everest; 8,848 m). It is an exceptional area with dramatic mountains, glaciers, deep valleys and seven peaks other than Mount Sagarmatha over 7,000m. The park is home to several rare species such as the snow leopard and the red panda. Chitwan national park is nominated under three criteria and rich flora and fauna and is home to one of the last populations of single-horned Asiatic rhinoceros and is also one of the last refuges of the Bengal Tiger. The park is the last surviving example of the natural ecosystems of the 'Terai' region.

Initiatives: There are several legal instruments in place for conservation and species conservation action plan is in use. Individual plans for the conservation of tiger, snow leopard and the Rhino were prepared. A 5 years protected area and buffer zone plan has also been prepared. A Sagarmatha national park management and tourism plan was prepared for 2007-2012.

Threats: Unsustainable resource harvesting in Non Timber Forest Products and MAPs, Invasive species and encroachment, habitat fragmentation, degradation, human-wildlife conflict and then retaliatory killing, climate change and its impacts.

Ecological and social implications – focus on Khangchendzonga Biosphere Reserve, Sikkim. He highlighted the statistics of scientific publications in different areas. Studies conducted by his group in recent years and compared with the observations recorded by his institute over one decade back given vital clues towards the climate change and changing vegetation scenario in some parts of KBR. They have prepared a response assessment plan – and policy interventions. In 2010 German documentary film on ethno biology in Dzongu landscape was made.

Efforts for Inclusion in Biosphere Reserve World Network: Development of UNESCO MAB nomination document and the role in notifying the Transition zone covering 311.20 sq Km area having 44 villages in Sikkim in the year 2010. The UNESCO applauded the document earlier and the final recognition in WNBR is awaited once the document is re-submitted after endorsing a revisions. Efforts from the state government are on towards pushing Khangchendzonga National Park under the world heritage site through nomination process.

Successes: Homestay is a successful venture and regularised tourism – mostly concentrated in the south-western site. Grazing is a success story since except for a few cases the biosphere reserve is free of any kind of grazing. Settlements have been removed. Effective NGOs work with departments. There is also negligible fuel wood consumption in the park. There were encroachment problem at the Nepal border that required deployment of forces etc. There are often conflicts with monitoring expeditions – whether to scale a peak or not as it is sacred. A Sikkim biodiversity action plan- 2012 was prepared with a working group and a policy for the next 10 years was released. Responsibilities of different organisations were endorsed. The KBR is one of most sought destinations for the eco-tourism; a hike in the number of tourists was recorded over the past 6 - 7 years.

Open Forum

Mr. Fanindra Kharel asked about human-wildlife conflict in Kaziranga national park considering its vast Rhino population

- To this **Mr. NK Vasu** stated that large mammals are part of the landscape and new settlements get established and animals move out. However, there is a problem of conflict and this is dealt with by short term and long term mitigation strategies such as compensation and crop protection.

Ms Seema Bhatt asked about the Kaziranga Tiger Conservation Foundation to which **Mr NK Vasu** stated that as part of the Wildlife Protection Act of 1972 every tiger area will have a Tiger Conservation Foundation with standards and guidelines. There are currently 38 of them in place.

Mr. Marc Patry asked how hydroelectric projects would affect the waterways, since there are so many projects being developed anyway?

- To this **Dr. Mathur** stated that for the two sites in Assam the water requirements are very specific in terms of quantity and months, so Environment Impact Assesments will be done on

downstream heritage sites and the required releases from dams can be ensured even in the case of hydro projects in the upstream state of Arunachal Pradesh.

Dr. Ganesan Balachander made the observation that the sharing of revenues needs be looked at more closely. Communities should feel that they have a link to conservation and innovative financing needs to be looked at to establish a direct link between conservation and direct benefit to communities. He also stated that the Pachna dam for water to the Keoladeo national park is an excellent and practical example of payment for ecosystem services.

Dr. GS Rawat, ICIMOD stated that the conservation values of Indian Manas would be enhanced if Royal Manas National Park (Bhutan) was to be inscribed and asked whether UNESCO authorities have an interest in this

- **Dr. Mathur** provided some context to this question by stating that there was a proposal to increase the site area with minor boundary modifications – to increase the area from 391 to 500 sq metre, this proposal was not accepted by UNESCO. There needs to be more collaboration and cooperation with Bhutan to have a transboundary section.
- **Mr. Marc Patry** stated that it makes sense to have a transboundary site because the ecosystem is a logical extension and will be an example of good collaboration which is necessary for conservation. Whether proposing a distinct site in Bhutan or one transboundary site – both countries will have to take distinct measures before taking this forward.
- **Mr. S Chand** PCCF Assam stated that NTCA/ Bhutan and GoI has had a meeting and taken certain decisions – the ground rules are being decided for working jointly in terms of addressing the transboundary issues. Local level coordination and cooperation is already there. He said that discussions are ongoing and this will be further developed and institutionalised.

Dr. Aparna Watve stated that WNHS require a lot of management and there should be one authority to manage this. She asked if it was possible in future sites that are out of Forest jurisdiction for example like in the Konkan

- **Dr. VB Mathur** stated that such sites are better suited for Biodiversity Management Sites, which is also being promoted by **Dr. Balachander** also promoting this. Areas/ pockets where agro-biodiversity exists can also be designated under Biodiversity Management Sites

Ms. Archana Godbole asked whether the Forest Rights Acts is being implemented in WHS to which **Dr. VB Mathur's** response was that the FRA is a federal Act applicable everywhere – WHC does not bring any new modifications to this. The problem is that the rights within the act haven't been outlined or determined.

Session III: Special Session on Western Ghats

Co-Chairs:

1. **Dr. Rajendre Shende, Former director UNEP**
2. **Dr. KS Murali, Senior Prog Officer, IDRC**

Panelists:

1. **Dr. Aparna Watve - Biome Conservation Foundation**
2. **Ms. Vinita Apte - TERRE Policy Centre**
3. **Ms. Archana Godbole - Applied Environmental Research Foundation**
4. **Dr. Jaishanker Nair - Indian Institute of Technology and Management, Kerala**

Introduction

Dr. Ram Boojh provided the introduction for the second day's sessions, by thanking the participants from the previous day and speaking a little about the panelists for this session. He said that the TERRE Policy Center working in the Kas plateau in Western Ghats is an example of the organizations that have played an important role in the inscription of the Western Ghats. Even the communities have been very strongly involved. Dr Boojh introduced Dr KS Murali, who is with the International Development Research Centre, before which he served at UNDP and other international organizations. Dr Murali has also worked extensively in the Western Ghats and preferred to be on this panel. Dr Vinita Apte is working in the Kas plateau and Dr Jaishanker Nair has a very valuable traditional knowledge base and would speak about how this base is helping in biodiversity conservation.

Dr Rajendre Shende, Former director UNEP

Co-chair, **Dr Rajendre Shende** at the outset thanked UNESCO, WII and MoEF for organizing the workshop and the Special Session on Western Ghats. He expressed that the event has already provided an opportunity for networking. He also conveyed his appreciation of Dr Ram Boojh for conceiving and thoughtfully organizing the agenda, and very carefully selecting the speakers and co-chairs. The main points he made were as follows:

- He was fortunate to have known Dr. KS Murali who is engaged in Canadian bilateral initiatives, as co-chair for the session. During Mr. Shende's work in UNEP, he had experienced the support of Government of Canada for the Montreal Protocol which aimed at protection of the Ozone Layer. The Ozone Fund was generously contributed by Government of Canada. Canada also hosted the secretariat of the Multilateral Fund for the protection of the Ozone Layer. He therefore hoped that there is the possibility of a sizeable financial and technical support from Dr. Murali for the management and conservation of Western Ghats.

- 2012 was a special year. It was one of the hottest years in recorded recent decades in the history of climate change. It was also in 2012 when the World Heritage Convention celebrated its 40th anniversary during which UNESCO launched its initiative linking management of World Natural Heritage and sustainable development. In the same year Western Ghats were inscribed as a world heritage site. Because of UNESCO's strong emphasis on the sustainable development of the local communities for the longer term management of the World Natural Heritage, the World Heritage Convention has established a strong nexus between human development and ecosystems.
- All experts on the dais for this session are currently contributing in a practical way for conservation and particularly by caring for the sustainable development of communities.
- Dr. Shende appreciated the efforts of Dr. Mathur towards the inscription of Western Ghats and described him as a person of passion. He remembered Dr. Mathur's contribution in nomination process and the diplomatic negotiations that he facilitated in St. Petersburg during World Heritage Committee's meeting where the Western Ghats was inscribed. The informal dialogues in the corridors during the meeting in St. Petersburg resulted in removing the doubts and were very important. Dr. Shende recollected the kind of opposition that was faced both nationally and internationally during those negotiations. He also praised Dr. Ram Boojh's efforts to visit Kas Plateau before the inscription when he guided the experts and civil society to get prepared for the post-inscription management. Dr. Boojh even after the inscription had continued community dialogue to highlight the importance of World Natural Heritage site management. Dr. Shende also praised Dr. Jagdish Kishwan as being very supportive of the community initiatives. He described Dr. Kishwan's effort as a less visible force but much focused on creative tools to manage the sites. He learnt from Dr. Kishwan that mobilization of resources is also not just the funding but includes mobilisation of the potential of local people and technical support from private sector. Dr. Shende also mentioned contribution of Mr. Khanduri of MOEF who was St. Petersburg and played a behind-the-scene role in inscription.

Dr. Shende then went on to officially start the session by telling the audience two anecdotes that displayed the potential of communities at Kaas Plateau of the Western Ghats.

- The first one was related to his recent visit to Kaas Plateau. Wild flowers bloom there only for 12 weeks and display formidable beauty but are very fragile. The tourists walking over it can destroy them for the full season. Before visiting he had made it known to the sarpanch of Kaas that he would be reaching at 9am to meet him and his colleagues at the plateau itself. Surprisingly, the sarpanch wasn't there to receive Dr. Shende at 9 am and did not turn till next 30 minutes. Though Dr. Shende was disappointed, he saw at distance far from the meeting point that the sarpanch was busy driving the group of tourists out of the flower beds so as to not destroy the flowers that fragile ecosystems. That was the reason why sarpanch was not available in time to welcome Dr. Shende. The sarpanch considered the conservation and protection of fragile flowers to be of higher priority than to welcome Dr. Shende. Dr Shende acknowledged this incidence as indication of the community's passion for the protection of the biodiversity and that it is up to us to leverage such potential.

- Dr. Shende's second anecdote was about compassion of the community of Kaas. It has not received any funding yet for the management. But the community raised its own funding by collecting park fees from tourists and allotting them for necessary activities for the protection of the eco-systems there. 2012 specifically was a bad year for Maharashtra due to famine and water shortage. Apart from number of villages the cattle suffered too. The Forest committee had reserves of fodder and grass which was available from the plateau; since after the flowers have bloomed, only grass is left behind. The local forest committee decided that fodder be given to the cattle camps set up by the government in the villages that suffered from the famine most. Kaas community hired the trucks and transported the fodder to cattle camps at their own cost from the part of the fees they collected. When it was needed most, at the time of need, the community showed the 'Indian tradition of compassion'. Dr. Shende emphasized that this compassion and action by communities were also the part of our natural heritage. Such potential must be supported and nurtured through technical and financial assistance. He then passed the stage to his co-chair, Dr. KS Murali.



Figure 11: Co-Chair Dr. Shende address the audience
Source: UNESCO New Delhi, Natural Science

Dr. KS Murali, Senior Prog Officer, IDRC

Co-chair, **Dr KS Murali** started his address with a personal story relating to the Western Ghats. He would wander in Western Ghats 30 years ago, and didn't even know science then. 10 years later he started working in the Western Ghats associated with Professor Bala. The region is rich in biodiversity with 3500 species of plants, lot of insects and birds, 1500 endemic species. Species can be seen flourishing, adapting to rainfalls and temperature patterns. However, there are still new things that need to be discovered.

There are a lot of movements in environment, like Save Western Ghats Campaign in 1982-1983. There also exist models for enterprise based conservation issues, a highly regarded being the one in Kerala institutions. It is best that regional development programs be planned and implemented, though there is a committee that takes up these issues. Co-development projects started in the Western Ghats model for other regions. Dr. Murali referred to his recent visit to Brazil to contrast the two countries. The main difference he noticed was that Brazil was less populated and yet had deforestation happening at a higher rate. India on the other hand holds a lot of diversity despite all the population growth He attributed this to Indians cultural and spiritual beliefs being rooted in nature.

Dr. Aparna Watve - Biome Conservation Foundation

Dr. Watve appreciated the learning experience of the conference. She then went on to talk about the jubilation that was felt when the inscription of Western Ghats came through, as the status came last year after 3 years of struggling. Some of the main points she made were:

- There are ecological initiatives taking place and eco schools set up in Western Ghats, but all of this is relatively new in northern WG, it is mostly rare to see researchers in the northern region.
- Western Ghats has a mosaic landscape, which is a natural phenomenon and northern Western Ghats see 8 months of dry periods and remaining 4 months of rain. This leads to a mosaic of rocky and dry areas, sometimes entirely barren. In monsoons however, the region is extremely flowery (See Figure 12). Dr. Watve stressed on the importance of the strong ecosystem seasonal cycles, which the biodiversity follows very closely. The usually dormant regions become suddenly flushed with life. The mosaic landscape also causes different phenomenon like higher diversification of species, in all taxa. New reptiles, amphibians, new lichens are seen, even plants follow similar patterns.



Figure 12: Monsoon season in northern Western Ghats

Source: Aparna Watve

- To Dr. Watve, the newer undiscovered species were the flagships for the Western Ghats. Some new amphibians and reptiles are thought to be found that show local speciation, 2-3 rare species and high diversity in amphibians. The northern region has 50 new species, and a few of them are threatened already according to IUCN.
- The challenge is to manage mosaic landscape with every high endemism and complement ecosystem processes. Regular lessons from forest ecosystems won't work here since regular soil and water management would cause ecological process disturbance. To maintain micro-drainage and nutrient probing, a strong scientific background is required.

Dr. Watve then talked specifically about the Kas Plateau, which sees more than 1 lakh tourists within the first month of flowering.

- Simple flexible solutions were required for the area, not rigid management. The tourists were sensitized over a longer period of time. She also praised the local community calling it a strong network where the people understood value of the region. There were many consultations and debates surrounding the park. The way ahead Dr. Watve said was to have clear conservation guidelines. The enumeration of management actions is required, along with predictive modeling of alternative scenarios and their impact on world natural heritage sites (with tourists, with encroachment, with long term). Strong researcher network must be formed and working with local communities and forestry department. Tourist feedback is also an important pool of information, with topics like trash disposal, what they want etc.

Dr. Shende corroborated the message from Dr. Watve's presentation and referred back to Dr. Bharucha's talk in earlier sessions about the different approaches of seasonal management that are required for the Western Ghats. He then invited the next speaker, Ms. Vinita Apte to take the stage.

Ms. Vinita Apte - TERRE Policy Centre

Ms. Apte began her part by thanking everyone and reiterating that the conference is a good learning experience for environmentalists who are new to the field. She is a communication strategist and focuses on that as a means to gaining objectives, and hence this conference was a good tool. She then told the audience a little bit about TERRE, which is a food and energy security consultancy, working in Western Ghats now. Since the Western Ghats' inscription into UNESCO Natural Heritage List, TERRE has been working extensively with local communities. Ms. Apte then showed the audience a film on Kas plateau, saying talking often makes less of an impact and visuals more. The film talks about the work that TERRE has done in Kas plateau and featured several of the panelists and attendees of this conference. It also told the audience that 39 sites of Western Ghats are on the world natural heritage list.

After Ms. Apte's talk, **Dr. Shende** mentioned that managing 39 sites of the Western Ghats is a huge task and seeking guidance from Mr. Patry, Dr. Mathur and Dr. Bharucha would be important. Kaas is one of

the smallest WHB sites, but offers an excellent pilot site to be a role model for other sites. He then invited Ms. Archana Godbole to deliver her talk.

Ms. Archana Godbole - Applied Environmental Research Foundation

Ms. Godbole is a conservation practitioner and saw a lot of issues still pertaining to conservation. Her talk was to outline how to make best use of the practices now that Western Ghats has the UNESCO tag. She was very happy to see the inscription and then the effort that went behind it. Western Ghats colloquially refers only to regions south of Goa, but not 3 sites from Northern Western Ghats have also been included. This helps to promote the past 30 years of conserving biodiversity. She also views it as a great opportunity for more researchers to come and study. The opportunity is created, and now we must make the best use of the inscriptions and engage meaningfully with the communities.

Ms. Godbole then went on to describe AERF, which works with communities to conserve forests on the ground.

- Northern Western Ghats have limited protected areas; most forests are open habitats or are privately owned. There are different challenges for but also an opportunity. She suggested linking to livelihood to attract people to northern WG. In the process of working with communities, she learnt a lot of lessons – important one being that conservation will not happen just with fencing or participation. What benefits communities get, long term benefits and how to engage with them from the start on management protection conservation agreement, incentivize are important. To be able to demonstrate with them how communities will see benefits without cutting down the forests.
- She also mentioned that the biggest threats to Western Ghats now is land conversion from forest to plantations for rubber and cashews at the cost of biodiversity that may not even be studied right now – we wouldn't even know what we are destroying.
- While she agreed agriculture is necessary, it is important to address the issue of how to deal with such ways of so called development. The threat of mining, thermal power plants etc can now get the attention of the international donor communities.
- Recently the Western Ghats has been attracting investment since it's a hotspot. Just consider rare plants and endemism, but the region is equally under human pressure.
- Ms. Godbole talked about a network of 60 north Western Ghats conservation civil organizations to see how they'd like to be part of the effort. This is one mainstreaming benefit that the world natural heritage site led to. Save the Western Ghats campaign celebrated its 25th year last year; this movement happens across the 6 states of Western Ghats.

Dr. VB Mathur then gave some finer input about what the inscriptions are. He compared it to a garland, which has many smaller and/or bigger sites, for which a lot more research and understanding is required regarding management practices, role of forest department in protecting those sites and to attract investors. They still need research and data for local community practices, how that understanding is taken to different international forums, and how various stakeholders are involved. Local communities

not the only stakeholders but miners play a significant role also. Some of the mining companies in other countries have included in their contracts that they will not operate in natural heritage sites – need to talk to miners in Western Ghats also. Civil society organizations should come together as they can take the lead to understand different facets. There also needs to be a strategy to protect the sites, how to increase the number in this garland but more importantly to ensure that no site will fail.

Dr. Mathur ended his bit by saying, “conservation is never in isolation, is always performed in conjunction with everyone else.”

Dr. Jaishanker Nair - Indian Institute of Technology and Management, Kerala

Dr. Nair is basically a modeler or an ‘ecological physicist’ but has realized that social aspect is important. He even said “cultural empathy is the key to sustainable development’. His presentation talked about

- the role IT can play to attain sustainable development,
- using concepts of social engineering for sustainable development, even though the concept can often be like a mirage, and never within reach.
- Preserving traditional knowledge, even though it is a pre-industrial societal concept, is still important since those are the last stem cells of sustainability. However, he did mention that traditional knowledge does not employ scientific method quite as it is done now.

Dr. Nair then talked about ethno-medical properties being described only by very few old papers/articles, and there not being much depth of knowledge. The literature was published 3-4 decades ago. He specifically took the example of a well advanced tribal community called the Kurichars, a community that was showing the decline in traditional knowledge base. There were 7-10 such communities upon which Dr Nair’s research focused. Some conclusions he discussed were that traditional erosion is more prominent among younger generation, particularly males.

Of the ‘melting crucible’ in Western Ghats, he related the qualitative erosion of tribal knowledge back to the need for conserving the Western Ghats. The link between social engineering for sustainable development and the use of information technology was underlined further.

Dr. Nair left us with a few thoughts like ‘change is constant’ and ‘codification is the way to conserve, have to technically store data in a format that can be used by everyone.’

Dr. Shende gave his final comments on the applicability of erosion models of traditional knowledge and then opened up the floor to questions from the audience.

Open Forum

Audience Member: Codification is important for traditional knowledge, context of knowledge has changed. The way we integrate it with local economy, but there are certain kinds of knowledge that gains more imminence because they are more conducive to economy. How does that lead to preservation?

- **Dr Shende:** Question deferred to private discussion since it is not directly related to Western Ghats.

Sujay Chowdhury: Dependency of existing communities on western ghats? Alternative livelihood options?

- **Ms. Apte:** Young people undergo a training program so they can work as guides in the park, there exist women self help groups, preserve their traditional knowledge.

Jyotsna Mathur: Are there livelihood related skills that your SHG teaches?

- **Dr Watve:** This management is new to all of us. Studies concentrate on biodiversity and conservation. Interaction is there constantly, so livelihood is the logical next step. Discussion about balance in livelihood since tourism is only for 2 months, what to do the rest of the year.
- **Ms. Apte:** Managing tourism sites like Bed&Breakfasts. Kas plateau site is popularized because of seasonal flowers, but otherwise people come for research. Village tourism will develop.
- **Dr Shende:** Sustainable Tourism principles need to be communicated to the younger generation. Research tourism is the new concept coming up in number of countries including in China, where students do some useful learning and research during the holidays. Chinese initiative offers students to come to China and do research for about 10 days for the world natural heritage sites. Something along the same lines may be applied for Indian sites in the future.

Audience Member: Can you tell us more about the local huts?

- **Ms. Apte:** These are publicized on MCD website and on TERRE's website to interact with other people. A few NGOs working there also network so they get booked quite fast. But regarding ecotourism, a lot of things need to be done at village level. Student's research shows that issues need to be solved at gram panchayat level before tourism can be taken up.

Sonali Ghosh: Congratulations on level of detail in western ghats – 39 sites, 60 civil societies. Question on land use conversion - since world heritage convention is an international convention, have you thought of putting it under additional Indian legal protection?

- **Ms. Godbole:** 1 site from Karnataka is a community conserve centre. More legal protection for that, but others are protected areas anyway. Problem was that not just protected areas get people engaged in conservation but if land conversion is allowed around it, then the sites will be isolated. There needs to be a continuous corridor. When management is being talked about, it's not just for that site. There needs to be a mechanism to halt surrounding changes in habitat. I am cautious about ecotourism, since you have to think about carrying capacity of the place. Also

there exist no good examples in India at least. Better Stakeholder communication. Rather think about it first, discuss before jumping into popular activities, talk to everyone first and then provide the necessary things.

- **Dr Bharucha:** Western ghats will also have a very different management style since it's fragmented into 39 sites. Are there linked management styles can be used? According to biological differences. Tied into larger stuff, but also broad framework must exist for this.
- **Alka Tomar:** Responsible tourism, eco tourism. 39 sites. Communicate responsibly, like makemytrip.com, tripadvisor.com etc., instructions on what to do when you go to the sites, in flight magazines, publicize in places such that responsible tourism can be promoted.

Harshad (WWF): Livelihood and opportunity costs? The livelihood is not sustainable seriously, because it's more lucrative to sell land and just move to the city. How do you provide a sustainable livelihood option in such a scenario?

- **Dr Watve:** Very difficult to answer this since we always put conservation first, and then see if alternative livelihood helps with conservation. At this moment, some people aren't looking at just the money part, some are looking for recognition. Social interviews said there were tourist problems, but they were happy that their village was known in foreign circles. Aren't looking at it primarily for the money. Money and economics don't always drive conservation, but there are alternate ways.
- **Dr Murali:** Benefits can't just be monetarily valued. Communities and tribes that hoard their land, strong conviction to not cut tree, not sell land etc. other benefits that the society gets from these lands.
- **Ms. Godbole:** People near nature, are closer, are intrinsically linked to that. Also, if a cost-benefit analysis is done with cost of medicine and travels, villages turn out to be cheaper. More awareness of climate change and impact of destruction, their decisions are weighing in on that. There are also other innovative solutions for that. Don't sell the land but assemble tracks of land. Create land banks so the value has to be assessed in what you deposit in the bank and get a rate of interest. This is then managed collectively by a separate entity and run professionally in activities like organic farming, carbon credits etc.
- **Dr Bharucha:** This is on shaky ground because we tend to generalize and glamourize and that is a dangerous thing to do. These livelihood issues have to be deeply researched, with every community.
- **Audience member:** In Kaziranga and Manas – 100% tourism income goes to local communities.
- **Mr. Menon:** Connecting 39 sites physically may not be feasible, one of those pragmatic reasons why it was put in a certain way. Connecting it in the mind, since public doesn't think of it as one site, reporting and aligning it together. Identification of the challenge.
- **Audience member:** Research on tourism mentioned is mentioned which is citizen science related. There is a successful model of research tourism, a unique concept is called citizen science – provide opportunities for citizens to perform science. Bringing in volunteers from

HSBC, Ernst & Young to MIT, bring benefits to fringe management to communities and the entire region. Bring in scientific evidence based research. MIT grads that visit and interact with communities to find local solutions.

Smita Nariyal: To TERRE, Kas plateau is a good example of local governance. Are you into institutionalization or legal framework for Kas?

- **Dr Shende:** Legal frameworks exist already.
- **Dr Mathur:** While sites were being inscribed, 2 more conditions were given. That the state of India will prepare an overall management framework. Suggestions will be taken into consideration. AND tourism guidelines need to be in place. So for the western ghats sites, there is a national management committee, all 6 chief wildlife warden, 2 civil societies are members of that. Committee met last month to decide actively responsible tourism and management framework. Kerala (that has 19 site) is hosting the workshop.
- To add more sites, 4 states are already on board – Goa has 4 more sites on tentative lists and 2 more sites being looked at in Gujarat.

Dr Murali gave the final word for the session by reiterating the importance of local communities and to make all the sites an entire corridor. There can be lessons taken from the small initiatives to make conservation effective through community participation.



Figure 13: Question and Answer Session
Source: UNESCO New Delhi, Natural Science

Session IV Panel discussion: Strategy for Building Partnerships & Resource Mobilisation

Co-Chairs:

- **Mr. Shigeru Aoyagi - Director & UNESCO Representative to India Bhutan, Maldives and Sri Lanka**
- **Dr. S S Garbyal, Additional Director General (Wildlife), Ministry of Environment and Forests**

Panelists:

1. **Dr. Ganesan Balachander, Director, ATREE**
2. **Mr. Vivek Menon, Executive Director, Wildlife Trust of India (WTI)**
3. **Mr. Anupam Joshi, Environmental Specialist, World Bank**
4. **Ms. Jane Schukoske, CEO, SM Sehgal Foundation**

Opening remarks by Co Chairs

Dr. S S Garbyal opened the session by stating that for conservation and better management of parks the most important aspect is partnership. Partnerships are necessary at three levels - with communities, governments and partnerships across borders in the case of World Heritage Sites (WHS) which have common boundaries. He stated that a good management strategy for World Natural Heritage Sites is needed and resources available in the parks are very important.

Mr. Shigeru Aoyagi stated that Phase I of the WHBPI will end in September and the project will come into a second phase as envisaged from the beginning. He stated that if the programme stopped there would be losses in many aspects and the session should focus on how partnerships under the programme can be expanded. He stressed that the WHBPI is a very important programme for international society, since in the global discourse on sustainable development, there is more stress on development and less on aspects of sustainability and this programme addresses the balance between conservation and development by showing results. He requested that all participants be a part of the programme in whatever way they can. He then spoke about the financial crisis that UNESCO is facing since the US has withdrawn their support, however UNESCO is continuing to promote and expand this programme believing that this is a beautiful programme important for sustainable development and the future generations.



Figure 14: Director of UNESCO-New Delhi office and Co-Chair of the session, Mr. Shigeru Aoyagi addresses the audience
Source: UNESCO New Delhi, Natural Science

Dr. Ganesan Balachander, Director, ATREE

Dr. Balachander spoke on three aspects – the positives that came from the first phase of the WHBPI, what could have been done differently and about the future of the programme. In terms of the positives, he said

- The programme has some elements that were path breaking in the Indian context.
- The World Heritage branding gave a boost to the project areas and enabled resource flows to these parks and got them global recognition.
- The aspect of connecting people to the land was a very important area the programme addressed.
- He stated that the WH brand was and remains a very valuable asset that provided a platform for bringing multiple donors including Ford Foundation and American India Foundation together for a common agenda. He said a common agenda that meets the donor's wish list and mission is important to enable this coming together.
- The Government of India and the State governments came on board and worked with partners they had not worked with before and trust was built over the course of the programme
- Information was being built up under the programme which was not there before. Qualified, highly motivated staff in the forest department, concern about livelihood needs and so on, practitioners to improve – ¾ full glass.

In terms of things that could have been done better he said:

- The design of the project was a lot more comprehensive than a top-down design; however it diluted resources for specific things. There were multiple aspects the programme was addressing including livelihoods for people living in and around WHS.

- There were serious delays in the project and questions from donor headquarters as to no money spent and there were no activities. There were steep learning curves in project implementation. Need to get clear on objectives and get the activities together and actions going. Getting a coordinator for the project and other aspects took an enormous amount of time.
- He stressed the need to be more nimble. That the market is dynamic and situations change. The concerns of governments, forest department and donors need to be addressed. There is a need to be bold.
- If there are unresolved issues these need to be left to small task groups and there is a need to be a lot more disciplined about deadlines
- There is a need to have a clear sense of impact guidelines and a establish more rigorous and scale oriented links between benefits and conservation.
- The programme could have been better showcased; donors should have been taken to the field.

In terms of what can be done for the future of the programme he said:

- Should think of taking potential donors to the field and making a pitch.
- The programme can learn a lot from the experience which is outside WHS – for instance CGIAR (Consultative Group on International Agricultural Research) gets a billion dollars a year and what made the difference is that the implementers spoke with one voice. Also there was a clear sense of performance measures.
- Donors want to see impact and it is great if implementers and donors can come together on this.
- Branding is important and the consideration: how do we attract a global audience? While the issues can be very local, globally a large number of people are willing to participate in the management of WHS. There is a lot of interest from young people and thought is needed on how to channel this – ideas and pocket books.
- We need to think of individuals in our own country. Crowd sourcing is something that needs to be considered. Indian Biodiversity Information Network (IBIN), Indian Biodiversity Portal (IBP), GBIF, all these are attempted to make available accessible portals where you can look at inventory of species, spatial distribution etc. to be made available to policy makers in a useful way. With our population of 1.2 billion and growing we need to make much better use of information and crowdsourcing allows people to participate. Lots of young people are getting involved in bird watching etc. – social media is another way to get the youth involved.

Mr. Vivek Menon, Executive Director, Wildlife Trust of India (WTI)

Mr. Vivek Menon initiated his discussion by asking what this exercise would mean for the local people in the parks. He said that he was impressed by the cluster approach of because it allowed a sharing of learning among people with similar goals and brought together organisations.

In terms of what appeals, Mr Menon made the following points:

- UNESCO's branding is brilliant. There is a need to figure out how to use the brand of UNESCO and pool together already existing resources. The brand can be used very effectively. The concept of conserving heritage positively appeals to people.
- That the natural heritage of India is secure is the vision of WTI. For conservation tangible action is needed. Often conservation does not reach the public, if it does it is as news. Tangible action and letting everyone know what is happening is more appealing to the public.

He outlined ways to raise resources for the project:

- First, he stated that resources could be in terms of human resources and monetary resources. It is important to build the human being who will bring in the monetary resources.
- An important source of funding is crowd funding which would need a public visible campaign on World Heritage Sites. Could do something as simple as using school children painting walls with the themes of what needs to be conserved. A fund should be created where people can contribute - GoI, State Government, UNESCO could come together and create a mechanism where people can give their 2rs – 5rs. Capture people to give to a fund that works locally.
- There is also scale to be considered because of the heterogeneity and sheer size involved. What is needed is a patchwork quilt of solutions where the seams work.
- Prominent corporates make sure of the 2% CSR contribution. They could consider 'adopting' one World Heritage Site. A champion to target these CSRs needs to be found – the person is important not the job.
- Another source is money from Human Resources Departments of corporates for their human resource development schemes.
- State government themselves have resources and Government Of India has resources. There needs to be active collaborations with Governments. Should consider getting senior politicians involved, make them care. Can work with 1-2 key political people.
- Responsible tourism is another area to draw resources. A small fraction of entire tourism can go to WNHS by establishing a mechanism with the tour operators of India where operators can be accredited to something as long as they give a share of their gross revenues.

In terms of how WTI can help he said:

- Public Campaigns are something that WTI has expertise in. They have carried out campaigns for Whale Shark conservation etc. He stated that WTI could also do co-funding.
- Mr Menon is getting corporate support for the Elephant 50-50 meeting and WTI and UNESCO can choose sites with linkages. Also, the IUCN –Leaders for Nature initiative that incorporates nature into businesses is a potential area that can be explored.
- A newsletter for the programme could be beneficial; WTI released a newsletter for Manas – important when you raise money to do something like this – because a regular newsletter ensures everyone knows what is happening. It is an important way of circulating and celebrating news.

- WTI work in some of the World Heritage Sites and is willing to pool that together with UNESCO/WII etc. Reasonable money to put in as long as there is a concerted effort to align the projects.

Mr. Anupam Joshi, Environmental Specialist, World Bank

Mr. Anupam Joshi addressed the question of convergence. He stated that convergence can take place at three levels.

- The first level is at the policy level by creating a shared vision. For example, each dollar invested in the project has to show how it is achieving the Millennium Development Goals. Tangible Measureable outcome towards MDGs is a shared vision that donors can look forward to. In conferences, rather than preaching to the already converted there needs to be diversification by inviting more donors
- The second level of convergence occurs at the programme level by identifying common goals. Embassies have their own goals. For instance, Asia Water Initiative – funded by Aus Aid and DFID – is a 30 million dollar programme to promote dialogue on water resources. The goals of the donors were converged to achieve this. Trans boundary water resources are a sensitive issue and common goals are required at the programme level.
- The third level of convergence happens at the objective/ project level. World Bank currently has two sites - Little Rann of Kutch (LRKN) and Ascot (part of Kailash landscape) – where there is a programme on biodiversity and livelihoods.
- There is a need to develop a national level course and ideas on aligning objectives at the policy, programme and project level. It is important also to develop a results framework. For instance for the Global Tiger Recovery Programme, 350 million dollars has been committed over the next 10 years. This money was not put in exclusively by WB, but a number of international NGOs doing similar activities rallied around a common results framework and this got the attention of other donors.

Mr Anupam Joshi also mentioned some other avenues of funding that UNESCOs World Heritage Biodiversity Programme could leverage:

- Corporate Social Responsibility (CSR), especially from Public Sector. For instance Coal India ltd has a CSR budget of 50 million dollars a year.
- CAMPA fund has a corpus of 7 billion dollars and interest from this is being used. CAMPA has a fixed mandate; however the objectives of CAMPA and WHBP can converge.
- There is money available and this needs to be innovatively tapped into.
- Donor countries have agreed to a 6th cycle of Global Environment Facility fund replenishment. The possibility of convergence with this fund needs to be looked at.
- A CEPF (Critical ecosystem partnership fund) of 200 million \$ has been established which is managed by ATREE. Perhaps, a discussion with CEPF for preference given to groups working in WNHS.

- Another way is by appealing to people and enabling them to contribute. A fundraising exercise on NDTV for Pench National Park raised 1 million dollars in one day by bringing in Amitabh Bachchan to talk about tigers.
- What is required is a shared vision, objectives and results framework and the need to share a common belief and then one can follow a chosen part of implementation which does not need to be compromised.

Ms. Jane Schukoske, CEO, SM Sehgal Foundation

Ms Schukoske started by saying that the Sehgal Foundation partially funded the first phase of the programme. She said that as a donor she agrees a hundred percent with the importance of visiting the sites, because this enables one to see the wellbeing of the communities around the sites and showing that the project supports development as well as biodiversity conservation. She said that when she visited the Kaziranga site, ATREE introduced her to all relevant groups of people involved in the project including the children who received scholarships, community members establishing alternate livelihoods to farming near the park (crafts, restaurant), and the park rangers heading research; they were thrilled with the project. NGO staff played the important role of facilitating the celebration of the local treasures. The project has the ability to convert that situation from a nature-human struggle to success stories and this is a very powerful thing that people should be able to witness directly.

She gave a few suggestions on the aspect of community development in such projects:

- Social media is an aspect that the project could look at; information could be shared with the community via community radio as well as SMS. A successful example of this is '*gram vaani*' developed by IIT Delhi alumni.
- To fund community development in the project area, the National Rural Livelihood Mission (NRLM) can be engaged to help people develop livelihoods.
- Public Sector Undertakings are a good source of CSR funding as they have had a 3% mandatory requirement for years. From April 2014, a 2% CSR spending requirement for Indian corporates of a certain size will come into effect. Environment is on the list of areas that can be funded.
- At the local level it is important to have people buy in, by having advisory groups consisting of local people, park rangers, state level people. Ideas such as 'Adopt a Rhino' have such appeal – the right line can certainly bring you many resources. There are many different ideas – strategy is important.
- The Times of India reported that Japan funded a 360 crore project in West Bengal from 2012-2019 on electronic fencing and a mobile squad of forest guards that drives elephants away from train tracks and human settlements. See: http://articles.timesofindia.indiatimes.com/2013-05-23/kolkata/39475016_1_forest-villages-forest-official-forest-department.
- Japan's Grant Assistance for Grassroots Projects funds projects under \$120,000 or so. People at the sites should look for what grants such as these are available.
- Other grant sources are available (e.g., those listed at <http://www.terravivagrants.org/Home/view-grant-makers/view-by-subject-areas/view-biodiversity-conservation-wildlife>).

Open Forum

Mr. Shigeru Aoyagi thanked Mr. Menon for his generous offer to co-finance projects in which WTI is involved and invited him to work with UNESCO to formulate a comprehensive communication strategy.

Dr. S S Garbyal stated that public sector undertakings are willing to contribute to elephant conservation and currently discussions are underway with Coal India. Discussions are needed with more public sector undertakings and concluded by saying that the current efforts need to be sustained because the impacts of not being able to manage parks at this standard can have devastating effects.

Dr. Hemant Badola asked who the campaign leaders were to which Mr. Vivek Menon responded that they are usually powerful leaders who are able to spread the message. For instance the campaign ambassador in Gujarat for a campaign on Whale Sharks was Morari Babu - religious leader at the local level.

When asked for broad guidelines from the World Bank for WHS at the grassroots Mr Anupam Joshi responded that there is one guideline – ensuring that the objectives and results framework match. WB will look whether objectives of WHS are already being met by existing projects. The World Bank has funds, however is mandated to respond to requests made by the governments.

Dr Jaishanker Nair affirmed an idea spoken about by Ms Schukoske, and said if technology facilitated conservation is done funds from IT companies can be leveraged. Workshops can be conducted in management school where students will have a lot of fresh ideas. A corpus fund can be used as a perennial source of funding. He mentioned IITM's dollar a year campaign, where everyone donates a dollar.

Dr Aparna Watve commented that partnership building with government departments such as irrigation, etc. is very important and one has to go out and speak to them, especially for the management of buffer zones.

- To this Dr S S Garbyal stated that the 6 World Heritage Sites have a common management framework. Also, that there are advisory groups for all the sites and all the stakeholders understand and follow their responsibility related to the park.

Mr Marc Patry stated that implementation of resource mobilisation strategies is always where the challenges are. He also mentioned the opportunity of REDD+ which was a big thing a few years ago and hadn't been mentioned at the conference. The programme could be viable for sites looking at mitigation and adaptation aspects.

- Anupam Joshi responded to this saying that there are a few REDD pilots and World Bank is the biggest buyer of carbon credits, however they have no value anymore. For instance in Nepal there has been a huge shock for people doing carbon offset projects, the value has gone from 15\$ only 0.5\$. Europeans are not buying credits from India and South Asia. UNESCO should advertise that they are looking for CSR funds. Ecosystem services markets – highlight the ecosystem services that you get from conservation financing and showcasing these can get investments.

Ms Alka Tomar stated that ONGC has a big project on cultural heritage sites since 2012. Cultural sites can be linked with natural sites within this programme. The chairman is pro-environment. A corporate employee's engagement program can also be looked at.

Mr Shigeru Aoyagi thanked the panellists for ideas on enhancing connectivity and promotion in the public at a larger scale and ideas like the use of ICT, Media etc. He stated that we should be the bridge between the ground level and policy makers. He appreciated the dedicated efforts of the MoEF.

Session V: Way Forward for Biodiversity Conservation in the Changing Scenario

Chair: Dr Erach Bharucha

Dr Bharucha started the session by outlining the main objective, which is, discussing the innovative things that can be used to make things better for conservation of biodiversity. He then passed the mic to Dr PS Roy.

Dr. PS Roy

Former director, Indian Institute of Remote Sensing (IIRS)

Dr. PS Roy had been interested in biodiversity for a while, and is a student of ecology. He has been coordinating national programmes on biodiversity conservation at a landscape level for a decade.

- Dr Roy suggested learning with the most eminent panellists and audience, calling them the drivers of change. Other drivers of change are the people who are directly dependent on forest resources, around 300 million people.
- Another interesting thing Dr Roy brought up was that land is classified as public forest in Nepal and Sri Lanka – quite astonishingly 50-60% people living in these natural systems are below the poverty line. Hence, for India and for neighbouring countries biodiversity conservation is essential for people to be connected to these resources. The linkages with biodiversity and traditional knowledge are to be explored and to see how that traditional knowledge has come about.
- Mining activities and transport are developing very fast. Traditions there are 500 years old and the different drivers of development help to link between landscape conservation and these old traditions. The changes are often so fast that conventional mapping methods cannot do justice, the use of new technologies to demonstrate these land use/land cover (LULC) changes is made.
- Another aspect talked about by Dr Roy was the studies pertaining to Western Ghats. Many of the plantation species like rubber, palm oil and teak have changed. To manage these plantations, modern techniques are used, that often contain pesticides. Indeed, man-made systems and natural systems are connected but both require different approaches.
- In the land use, an important factor of concern is climate change. Dr Roy emphasized that land use management needs a good scientific database like datasets that prove climate change. He also made an important point about building these databases as local level and landscape level both, to monitor the good work being done. Methodologies are being developed to study landscapes where very interesting observations can be recorded. He gave the example of Nature hotspots in the North East – Meghalaya where the landscape has seen constant change and there an interesting example of predicting water change is being done with the utilization of a data base.
- A major driver is the shifting cultivation which has been documented very well. The study used datasets to from the 1970s to 2000 and used a landscape dynamics model developed using

various parameters – socio-economic and physical. The predicted change on this model for 2010 when compared with actual mapping in 2010 showed 92% agreement.

Dr Roy ended his talk saying that predicting of the drivers of change is important and he would foresee a big challenge for biodiversity conservation should India not focus on building a good scientific database.



Figure 15: Dr. Roy addresses the audience while the other panelists look on
Source: UNESCO New Delhi, Natural Sciences

Mr. Mark Patry

Programme Specialist, World Heritage Centre, UNESCO Paris

Mr. Patry shared an example about his previous experience in Yucatan, Mexico with local indigenous communities who were consuming western products. He emphasized the importance of conservation of traditional knowledge of local communities and invited the audience to think about this question: Since traditional knowledge has been developed for many years ago, is there any need to look up again? There are different social scientists and managers who are wrapped in this situation. The way nature changes is also a big challenge and the way climate change is affecting nature is important to consider. He mentioned that climate change has not been talked about in the past 2 days. It is a challenge to look for potential actions facing the mineral and oil resources exploitation.

The new and big challenge for now is to look up for the branding of the Conservation and Management of the World Natural Sites. Marc also suggested to create and make active the Network of South Asia heritage Sites.

Dr. Ram Boojh

Programme Specialist, UNESCO New Delhi

Dr. Boojh talked about the importance of mobilizing people and communities to find new ideas for the process of conservation and management of Natural Heritages Sites. He talked about grappling with the issue of resource mobilization and how because of the finite resources and limited focus, community mobility ended up being a casualty. However, he praised ATREE and WII, without whose help the project would not have reached the point it has.

He mentioned also the importance of the World Heritage Center created in 2007. The World Heritage Biodiversity Programme has been a huge programme with limited resources. There are lessons to be learnt from the achievements.

- Getting Manas out of the danger list was the first priority, since certain attributes that were core constituents of the outstanding universal value (OUVs) were almost lost. Dr Boojh particularly highlighted the achievement of reactive monitoring missions in Manas. He himself was part of the first mission and he found the experience very interesting.
- Also, one of the major roles of the communities was the innovative way of involvement and participation due to the mobilization from the Forest Department. There was also involvement of the youth community and even Bodo militants as committed conservators.
- One of the major achievements of Keoladeo was involving communities in the entire process of conservation of the eradications of the invasive species. Dr Boojh also credited WII with the recovery of some of the attributes in Keoladeo.
- It was really interesting to see how the Government of India was mobilized in this programme, and the NGO's were very active as well.
- Is motivating to see how local communities are proud of the value of Heritage Sites in Western Ghats. UNESCO and the World Heritage Convention have realized the role of engagement of the communities – even the theme of the 40th anniversary of the World Heritage Convention was 'sustainable development of communities'. There is even a conference in Nagoya by UNESCO where the millennium development goals will be renamed as sustainable development goals.
- Now, is very important to think of the value, the brand to use if we want to save all this Natural Sites. Dr. Boojh mentioned the interesting example of how the 5000+ population of Maldives demanded the creation of the entire nation as a Biosphere Reserve by 2017 and were able to mobilize all kinds of interest.

He concluded his talk by calling on all the stakeholders to be involved in the process of conservation and management of the sites. We need a narrative for our world heritage sites and the neighbouring states of Bhutan and Sri Lanka require our support. He reiterated his support for the creation of a Network of South Asia Natural Sites.

Dr. VB Mathur

Dean, Wildlife Institute of India (WII)

Dr. Mathur started his speech by talking about the changing scenario in this country. He had worked for 26 years in WII, looking at wildlife and protected areas. Only in the last 13 years has he started looking at conservation and heritage. In the 80s, the thought process was that if one set up the conservation area, everything else will be protected. But now they understand the smaller nuances of conservation management, which are as follows:

- There has been a progressive evolution to cope with the growing challenges over the years. The question now is of how well the park and conservation areas are being managed. From landscape management to the role of keystone species and human-wildlife conflict, the role of forest management is changing now.
- WII has to build capacity and talk to not only park rangers but to the departments of agriculture, of irrigation, the district magistrate etc. since the dynamics of occurrences beyond the park boundaries are going to dominate and dictate the park's internal functions as.
- There is a call to look at adaptive management, to build capacity and train managers differently.
- Newer areas of research are coming up like genetic molecules, stressors, physiological stresses with tigers, emerging infectious disease, and others. WII deals with new research questions and managers to look at landscape development approaches.

Dr. Mathur then talked about the biggest stumbling block to get Manas out of the danger list being out own datasets. India itself had reported wrong numbers of population, arguing the initial numbers were not correct. Thankfully reporting of tigers via camera trapping had just started, and using that, trend reporting was done. He praised Aaranyak for assisting with the camera traps in Manas. He also praised the local community, including Bodoland, coming together to support the park.

He then went on to give details about the successes of Western Ghats nominations and what to look forward to in the future:

- Because UNESCO had been very strict with maps recently, the Western Ghats nomination had the best database with IRES, biodiversity and biotechnology for the whole country. That database in GIS domain is what they used. Remote sensing and GIS can be used for all issues like connectivity, sensing, identification etc. So now, we have one of the best databases for corridors, connectivity and characterization of biodiversity in the Western Ghats.
- The Natural Sites Committee will have a meeting in December to have a larger dissemination of ideas pertaining to the Western Ghats. Some issues are creating an overarching management framework since there are 39 management plans for the individual sites, but a framework is needed overall.
- There is also the need for responsible circuits as they exist in Kerala and Karnataka example, and increasing the number of sites from 39 to 45 within the Western Ghats.
- The meeting will also talk about improving ecotourism plans, and using the World Heritage Brand strongly for regulating development.

Dr Bharucha encouraged the panelists to exploit the strong constituency of will present at the conference.

Dr. SK Khanduri

Inspector General of Forests, Ministry of Environment and Forestry

Speaking on behalf of the ministry, Dr. Khanduri mentioned there has been a change in the attitude towards the environment. Post the inscription of Western Ghats everyone understands the responsibilities that come with it. The good thing is that the objective of management of world heritages sites and management of the project tiger reserves were along the same lines so there was no issue. He mentioned that the resources used for these sites can also be used for the world heritage sites. Investment in protected areas is also more focused where people now are sensitized.

With the National Environment Policy of 2006, communities realize that conservation will also protect their livelihoods or may in fact bring sustainable livelihood to them. A livelihood built purely for subsistence cannot bring growth with it. And growth to some extent can bring conservation if it is oriented in a certain way.

There are three instruments of that pertain to this discussion:

- Forest Conservation Act,
- Environment Protection Act, and
- Wildlife protection Act

There exist systems for examining all projects around forest lands that require environmental clearance for big projects which can impact the environment. There has been a process to see the environmental impact. Wildlife Protection Act and Environment Protection Act can be used for this. The National and State Wildlife boards are in place under the chairmanship of the chief ministers of state.

Dr. Khanduri also coined a term 'sarkari community' referring to the governmental population, where there are a lot of debates due to which sometimes decisions get delayed, but sometimes well informed decisions are also made.

Open Forum

- **Dr Shende:** Questions that industrial community is going to ask are about mining, specifically in Goa, since it is a 'hot' place for mining: can we do mining without moving top surface? Can make a management plan to the UNESCO world heritage committee that includes mining underground without affecting ecosystems? Industry may argue that mining has to be there, but can we have some way that mining can be done without disturbing the OUVs. Are there any such best practices for mining?

Dr Khanduri: Protected areas are no go areas. Nothing in last 3-4 years where mining has happened in protected areas, most of it has been mostly on agro land. Technology for mining – based on type

of mining and mineral being mined. Restorative mining plans are what is seen, but that is because of the obligations that exist in those mined areas

Mr Patry: mining should not be done in protected areas as at all.

- **Dr Badola:** 10 km radius area from pa, is a difficult task for hilly areas. Same debate in Sikkim.
Dr Khanduri: 10 km radius has been resolved that anything that has an impact on conservation just has to undergo a rigorous appraisal process for taking up developmental activity.
Mr Patry: extra EIA or something. How does that work for satellite wetlands, buffer zones to the main heritage sites?
Dr Khanduri: Won't generalize but can be taken into the ambit of the local management plan.
Dr Mathur: new plan is landscape plan not just park management plan. Added level of protection.
- **Audience Member:** What efforts are being made to sensitize tourists? How do you plan on communicating to people how much work goes behind making a place a heritage site?
Dr Mathur: That would be covered in a good management plan. Education of tourists to not carry plastics inside exists already but building up larger consciousness cannot be the mandate of park officials either, everyone needs to do that. Not by law but by raising general consciousness.
Mr Patry: each management team needs to decide based on the fragility of the park, how much tourism should be permitted. The level of sensitivity to each site varies according to different number of tourists, number of trails etc.
- **Ms Apte:** news items published in media only cover beauty do not cover other news as well, awareness for masses. Social networking and other kinds of media.
Dr Khanduri: the communication strategy has to be an intricate part of the management plan. Introduce compulsory watching of a small 10 minute video before you enter the park.
Dr Bharucha: the role of media, and then education – interpretation centers. Formal education, understanding of sites, heritage sites etc. 3 pronged way to get this passed.

Dr Bharucha summarized the overall session calling it very interesting and main take away points from each panelist. Dr PS Roy talked about cultural landscapes having enormous biodiversity, and redefine how we look at this in LULC. Mr Patry gave us a global picture – that the world has similar problems and livening networking between people of this room and to keep it going. There are a lot of successes in this programme like getting water to Bharatpur, the 39 sites of Western Ghats. There are a lot of little star stories and we should not forget those. He looks forward to seeing what Seema would have compiled and offered his help any which way he could.

Valedictory Session

Observation by Panel Chairs

Dr Bharucha

Dr Bharucha lent a personal touch to his observations of the conference by relating his own life to the Western Ghats project. He had grown up in that region and it meant a lot to him that the region has world heritage status. He has seen things go up and go down and the two conference days gave him hope. Transboundary protected areas are roots to further friendships, need to be encouraged. Solving problems for world heritage are the best ways to influence cross border collaboration. Heritage is about our future, that's how these places, and by extension, mankind will be saved.

Dr S S Garbyal

Dr Garbyal reiterated that the conference was a learning experience for him. The Park managers spoke about the pressures, threats and best practices for World Heritage Sites. Listening to managers from our country and neighbouring countries we realize the threats are similar, ways to tackle them are also similar. Many of the threats that we perceive as threats can also be used as opportunities to engage with local communities eg. Keoladeo catfish, *Prosopis juliforma* plant. Such best practices can be replicated across India in not just world heritage sites but protected areas too.

We have 6 world heritage sites currently and may have more in the future. There is great potential to make cross border collaborations the roots for further friendship. Local communities are also changing. He quoted Dr Nair's thought of 'traditional knowledge being the remaining stem cells for sustainability'. Aspirations and expectations of the communities have to be put into the managements and landscape plans. There is a need to have them be an important part of the process as well, not just objective and aims for livelihood. Though there is competition for limited resource, there is no shortage of funds, we just need to catch the right kind of people to make these resources available. Many innovative ideas have been gathered about how to generate the resources, some of them – like CSR, existing governmental programs – having activities important for conservation of protected areas and can be linked with existing aims and goals.

Dr Garbyal also talked about making publicly visible campaigns and the importance of selling and marketing products, potentially involving famous celebrities to garner necessary resources. There are also several tangible things that like-minded organizations need to do. He referred to more discussions on management of world heritage sites and a workshop in Kerala about Western Ghats management ideas. Involvement of social scientists is also very important, along with donors and public sector undertakings.

Dr Garbyal ended his speech by expressing his appreciation for the experience and workshop, and by thanking the organizers.

Address by Chief Guest

Mr Kabir Sheikh (MGIEP)

Director, Mahatma Gandhi Institute for Education of Peace and Sustainable Development (MGIEP)

Dr Sheikh was thankful for this unexpected privilege, and talked about his institute and elaborated upon overlapping areas. What follows are details about his institute, the Mahatma Gandhi Institute for Education of Peace and Sustainable Development (MGIEP):

- The MGIEP, is a 1st category UNESCO institute in Asia and the only one that has the name of a person. Mahatma Gandhi had a direct connection with sustainable development through *satyagraha* and *swatantra*.
- The other unique attribute of the institute is that the Government of Indian has contributed \$14 million even though it's an international organization. This UNESCO educational institution is about the impact of education on human behaviour.
- Key challenge is to get conceptual clarity between peace, sustainable development and education. Ideal of MGIEP outcome is to generate some peace. If that has to happen then prerequisite for peace is security, to feel unthreatened. Peace is not the absence of conflict, but a continuous linear societal state in inequality. Humans by nature are consumers, when they can't consume they compete. That competition brings about conflict.
- Sustainable development has not been discussed entirely, since most of it has been done by ecologists and natural scientist. MGEIP sees what the prerequisite is to providing that security, by sustainable development in energy, food, water, preservation and nature, and the sensible use of natural resources. There isn't a sense of security unless that happens and thus, no peace.
- This is being done through all levels of education and other sphere of societal change and media. There is an annual lecture given on Gandhi's ideas and relevance in today's context. The institute also works on human development area, particularly youth since their future is more linked to peace building and ideas of global citizenship. MGEIP is also developing an interactive portal allowing social networking to generate ideas.
- They are also working on infrastructure and program strategy.

The brief of MGIEP is to create advocacy and support debate on issues, quite similar to the ones addressed in the conference. They also feel it is their responsibility to create research, by commissioning research on impacts of focus areas, help capacity building between nations.

Dr Sheikh envisions MGIEP as being a global learning house for anything in peace education and sustainable development. They are creating MGIEP fellowships to look at research going on, and how to enhance it by further creating databases, generating knowledge and then creating partnerships. The importance of developing this region was illustrated by a sobering comparative statistic: Asia pacific has 25% of world land area, 50% of world's disasters and 67% of globe's population.

Closing Remarks

Mr. Shigeru Aoyagi

Mr Aoyagi thanked everyone for their valuable inputs and suggestions. To him, the very important issue in conservation and management of these sites was to promote a sense of ownership among the different stakeholders. There must also be broader and wider involvement, to attract people from outside the forum, in terms of resource mobilization and partnerships. The same thing is happening in the global debate.

Mr Aoyagi encouraged there to be connections of the local debates to wider 2015 agenda, and to find entries within those 12 entry points of the UN mandate (energy, water, sanitation etc.). That will lead to effective channelling of our voice. Most important thing is to have a publicly visible campaign for the public, which UNESCO is now seriously working on. Have a strategy to promote communication and advocacy. We will share these strategies soon, so we have an innovative program.

Vote of Thanks

Dr Ram Boojh

Dr Boojh started by thanking Mr Aoyagi for his support, Dr Garbyal for taking over as chairman. In the future, we will require Dr Garbyal's support, guidance, and ministry support for biodiversity conservation. To ensure the sustainability of the program, collaborate with Dr Khanduri further and hope for more. Dr Boojh also expressed hope that Mr Patry provides support all over from headquarters as well. Dr Bharucha is a surgeon and nature educator for more than 20 decades interaction, intensity and energy he exudes despite his age, his guidance has been very useful, keeps us stimulated and inspired for all projects, specially the Western Ghats area. Dr Shende from UNEP, was thanked for his help in community dialogues for the Western Ghats. Dr Boojh then thanked all the participants from Nepal, Bangladesh, Bhutan and Sri Lanka, stressing the importance of cross border collaboration, especially with Bhutan with the Royal Manas National Park. ICIMOD has generated huge interest for mountainous development from donors. The GB Pant Himalayan Institute got out a huge volume of biodiversity documentation, richly contributing to the whole process. Dr, Boojh also thanked all the park managers for their excellent presentations, the effort they have been putting and innovative management strategies that are coming up. He thanked Dr Nair for elucidating on IT help in management and traditional erosion in tribal populations. Dr Nair is currently working with UNESCO on a project document. He mentioned Seema Bhatt who organized the 1st ecotourism conference together and is now doing compiling a report on this project. He then thanked the UNESCO team members – Elisabeth, Aditi, Satish, Veronica and Rowena. Suprava Patnaik for helping out for the last 2 years.

Last but not the least, the implementation partners WII and ATREE. Dr Boojh specifically thanked Dr Mathur from WII and Dr Balachander and Dr Kakati for their commendable field implementation and tremendous dedication.



Figure 16: Dr. Boojh gives the vote of thanks
Source: UNESCO New Delhi, Natural Sciences

The idea of networks that came from the forum is great and category II centre in another feather in the cap. There are a series of such events and changes that have brought around a revolution. 5 years ago, hardly anyone knew of natural heritage sites and now we have 39 sites – which was also the largest serial nomination. Dr Boojh closed the conference by thanking everyone for the achievement of the past 5 years and saying “this is just the beginning – we will continue this initiative in the days to come”.