

FINAL REPORT for APN PROJECT

Project Reference Number: CBA2011-05NSY-Schang

National Dialogues on Adapting Biodiversity Management to Climate Change



The following collaborators worked on this project:

Scott Schang, Environmental Law Institute, United States, schang@eli.org

Tran Thi Huong Trang, Law and Policy of Sustainable Development, Vietnam, tranglpsd@gmail.com

Kunzang Kunzang, National Environment Commission, Bhutan, kunzang@nec.gov.bt



Trung tâm Nghiên cứu Pháp luật & Chính sách Phát triển bền vững



National Dialogues on Adapting Biodiversity Management to Climate Change

Project Reference Number: CBA2011-05NSY-Schang
Final Report submitted to APN

©Asia-Pacific Network for Global Change Research

PAGE LEFT INTENTIONALLY BLANK

OVERVIEW OF PROJECT WORK AND OUTCOMES

Non-technical summary

This project sought to build national capacity in Vietnam and Bhutan to make biodiversity laws, policies, and management more adaptable to climate change. A National Dialogue was organized in each country to bring together scientists, policymakers, academics, resource managers, and civil society groups to identify climate change impacts, prioritize biodiversity adaptation needs, and discuss steps for developing and implementing a plan of action. Five representatives of each country attended both workshops, in order to facilitate regional exchange and cooperation around climate change adaptation measures.

The Dialogues were guided by two publications on climate change adaptation released by ELI and its partners in August 2011 (though not prepared under the current grant). The first publication, a Resource Manual on *Legal and Policy Tools to Adapt Biodiversity Management to Climate Change*, presents an overview of climate change adaptation, introduces a set of legal and policy tools to incorporate adaptive management principles into legal frameworks governing biodiversity, and applies these tools in four areas of natural resource management. The second publication, *Strategic Options for Adapting Biodiversity Management to Climate Change*, condenses the discussion for policymakers and presents policy options that reference the tools and approaches introduced in the Resource Manual.

Objectives

The main objectives of the project were:

1. Ensure that participants understand the nexus of climate change and biodiversity management;
2. Develop science-policy mechanisms of coordination and planning using the model of ecosystem-based adaptive management; and
3. Institute mechanisms of information exchange between regional scientists and policymakers on climate change impacts and biodiversity needs.

Amount received and number years supported

The Grant awarded to this project was:
US\$ 40,000 for Year 1.

Activity undertaken

Two National Dialogues (workshops) on “Legal and Policy Tools to Adapt Biodiversity Management to Climate Change” were held, one each in Bhutan and Vietnam. The first National Dialogue was held in Hanoi, Vietnam on August 24-25, 2011. It was attended by approximately 45 stakeholders from scientific and academic institutions, government agencies and ministries, and nongovernment organizations. The second National Dialogue was held in Paro, Bhutan on March 13-14. It was attended by approximately 46 stakeholders from the same mix of institutions and agencies. In addition, five participants from Bhutan attended the workshop in Vietnam, and five participants from Vietnam attended the workshop in Bhutan.

Results

Each National Dialogue helped build the capacity of scientists, resource managers, academics, and civil society members to understand and begin to apply the concepts of adaptive management to

biodiversity protection, management, and sustainable use. In Vietnam, 45 stakeholders (27 on day 2) were trained in these concepts; and in Bhutan, 47 stakeholders (41 on day 2) were trained. The dialogues also fostered stronger, more institutionalized relationships between scientists and policymakers, and helped build a national “community of practice” to eventually educate others about the nexus of climate change and biodiversity management and the role of ecosystem-based adaptive management.

The dialogues also helped strengthen the understanding by policymakers of the status and priority areas for reform in existing legal and policy frameworks, and established a template for similar workshops in other countries, especially in Asia, based on lessons learned. They also laid the groundwork for developing a set of practices and implementation policies among resource management agencies in each country, informed by the principles of adaptive management and science-based decision making.

Relevance to the APN Goals, Science Agenda and to Policy Processes

The Dialogues advanced APN’s goals of developing scientific capacity in two developing nations, enhancing science-policy integration in the areas of climate change and biodiversity conservation, and raising awareness of the impacts of climate change on biodiversity. They provided an opportunity for regional scientists and climate experts to engage with policymakers in a cooperative workshop environment, and created a community of stakeholders in each country focused on climate change adaptation and biodiversity protection. They also promoted regional knowledge exchange and collaboration between Bhutan and Vietnam by enabling the participation of five science and policy experts from each country to both workshops.

These activities fulfilled APN’s goal to “enable countries in the Asia-Pacific region to successfully address global change challenges through science-based adaptation strategies, effective science and policy linkages, and capacity development.” The project responded directly to the goals set forth in APN’s Third Strategic Plan by fostering research and understanding in all four areas of APN’s Scientific Research Agenda (climate change and variability; ecosystems, biodiversity, and land use; atmospheric, terrestrial, and marine changes; and resource utilization and pathways for sustainable development). The Dialogues also helped build scientific capacity in developing countries in line with APN’s Scientific Capacity Development Agenda, including the articulated strategy of building capacity “for both the science and non-science communities” (3.2(2)). Finally, they strengthened science-policy interactions and linkages by drawing on climate change data to inform adaptive management policy responses and to investigate future scientific questions to be researched to promote adaptive responses for biodiversity to climate change (3.3).

Self evaluation

1. Successes

The National Dialogues appeared to be largely successful. They were held as scheduled (Aug. 2011 for Vietnam; March 2012 for Bhutan) and were well attended by a diverse mix of stakeholders from various agencies and ministries, academic and scientific institutions, and civil society/nongovernmental organizations. Translated copies of the Resource Manual and Strategic Options paper were provided to participants in Vietnam, while hard copies of the documents in English were provided to participants in Bhutan (where many people speak English); although the



documents have since been translated into Dzongkha, Bhutan's national language, for use by local governments. The workshops ran on time and most sessions were held as planned (one or two speakers for each workshop could not make it due to last-minute scheduling constraints, but we were able to substitute other speakers and/or sessions).

The group discussions served to identify important data about climate impacts generally, their effects on biodiversity, and adaptation needs and priorities. Each National Dialogue generated some ideas for next steps, with participants expressing strong interest in follow-up activities.

2. Challenges

Although the dialogues on the whole went well, there were a few challenges along the way. The concepts of adaptation and adaptive management proved at times to be difficult to apply in practice, especially when maintaining the project's focus on biodiversity resources. The workshop participants identified a number of climate impacts on biodiversity and corresponding adaptation needs, but when it came time to develop a plan of action at the end of each workshop (while maintaining the project's focus on legal and policy frameworks), there was a consensus that more time was needed to understand all of the effects of climate change on biodiversity resources, and to propose adaptive measures. In Vietnam, participants felt that a more comprehensive matrix of climate change impacts on biodiversity should be prepared before turning to the question of adaptive management responses; while in Bhutan, the plenary discussion generated more fundamental questions about how to apply the principles of adaptive management to biodiversity protection. These experiences suggest that it will take more than a few days for stakeholders to come together around the issues of climate change, biodiversity protection, and adaptive management, and that creating an action plan by the end of the workshops may have been a bit ambitious.

Potential for further work

The group discussions at the National Dialogues, along with exchanges among the core group of Vietnamese and Bhutanese participants who attended each event, generated a number of ideas for follow-up projects:

- (1) Individual case studies of specific biodiversity adaptation initiatives in each country
- (2) Vietnam's Law on Biodiversity – amendments to this law are scheduled to be made in 2012. One of the workshop participants, Mr. Duong Thanh An is overseeing the amendments. Mr. An is the director of the Department of Policy and Legal Affairs at the Vietnam Environment Administration with the Ministry of Natural Resources and Environment. This presents a key opportunity to incorporate adaptive management into a major biodiversity law.
- (3) A regional project focusing on coordinating climate adaptation measures in Vietnam, Bhutan, and Nepal
- (4) Incorporating adaptive management into the (not yet developed) legal framework for a transboundary protected area shared between Vietnam, Laos, and Cambodia
- (5) Developing public-private partnerships to incorporate adaptive management into biodiversity protection, management, and sustainable use
- (6) Focusing on adaptive management and biodiversity protection at the local level
- (7) Focusing on adaptive management and biodiversity protection at the regional level
- (8) Update Bhutan's National Adaptation Programme of Action (NAPA), which dates to 2006

Publications

The National Dialogues were based on two publications written by ELI and our local partners, which were distributed to all participants. In Vietnam, they were translated into Vietnamese have also been translated into Dzongka, Bhutan's national language Bhutan, a translation into Dzongkha has just been completed. The writing and translating of the publications was covered under the project's matching funds. The publications are:

- (1) Daniel Schramm, Scott Schang, Carl Bruch, and Lisa Goldman, *Legal and Policy Tools to Adapt Biodiversity Management to Climate Change* (Environmental Law Institute 2011)
- (2) Daniel Schramm, Scott Schang, Carl Bruch, and Lisa Goldman, *Strategic Options for Adapting Biodiversity Management to Climate Change* (Environmental Law Institute 2011)

References

Bhutan NEC, *National Adaptation Programme of Action* (undated)

Government of Bhutan, *Fourth National Report to the Convention on Biological Diversity* (2009)

Government of Bhutan, *National Action Plan on Biodiversity Persistence and Climate Change* (2011)

Government of Vietnam, *National Report on Protected Areas and Development* (2003)

Ministry of Agriculture, *Forest and Nature Conservation Rules of Bhutan* (2006)

Mekong River Commission, *Adaptation to Climate Change in the Countries of the Lower Mekong Basin: Regional Synthesis Report* (2009)

Ministry of Natural Resources and Environment, *Fourth Country Report on Vietnam's Implementation of the Biodiversity Convention* (2008)

T.Q. Nguyen, N.B. Nguyen, & T.N. Tran, *Forest Tenure Reform in Vietnam: What Lessons can be Learned for Policy Implementation and Poverty Alleviation in Forest Communities* (2005)

Robin Kundis Craig, 'Stationarity is Dead' – Long Live Transformation: Five Principles for Climate Change Adaptation Law, 34 HARV. ENVTL. L. REV. 9 (2010); Alejandro E. Camacho, *Adapting Governance to Climate Change: Managing Uncertainty through a Learning Infrastructure*, 59 EMORY L.J. 1 (2010).

Tran Thi Huong Trang and Christophe Krolik, "Clean energy under of sustainable use of natural resources aspects in the Law on Environmental Protection 2005 of Vietnam – some relevant references to EU's Law", Law & Policy of Sustainable Development Journal, No. 2 (2008)

USAID ASIA, *Asia-Pacific Regional Climate Change Adaptation Assessment, Final Report: Findings and Recommendations* (2010)

UNDP, *Bhutan National Human Development Report 2011, Sustaining Progress: Rising to the Climate Challenge* (2011)

Dr. Vu Thu Hanh, Dr. Nguyen Van Phuong, Hanoi Law University, translated by Tran Thi Huong Trang, "Strengthening Legal and Policy Frameworks for Addressing Climate Change in Asia: Vietnam" (working draft; <http://new.unep.org/DEC/PDF/Casestudies/CCVietnamdraft.pdf>)



The World Bank, *Climate-Resilient Development in Vietnam, Strategic Directions for the World Bank* (2011)

Acknowledgments

Special thanks must be given to the Asia Pacific Network for Global Change, the John D. and Catherine T. MacArthur Foundation, and the following partners on the global biodiversity project (whose publications were the foundation for the National Dialogues on Adapting Biodiversity Management to Climate Change):

- Manuel Pulgar-Vidal, formerly Executive Director, Sociedad Peruana de Derecho Ambiental (SPDA) (Peru)
- Nelson Pimentel, Environmental Attorney, Instituto de Abogados para la Proteccion del Medio Ambiente (INSAPROMA) (Dominican Republic)
- Kenneth Kakuru, Executive Director, Greenwatch (Uganda)
- Lalaina Rakotoson Randriatsitohaina, Team Leader, Development and Environmental Law Center (DELC) (Madagascar)
- Kunzang Kunzang, Legal Officer, National Environment Commission (Bhutan)
- Tran Trang, Director, Law and Policy of Sustainable Development (LPSD)
- Hanh Vu, Deputy Dean of Economics Law Faculty, Hanoi University of Law (Vietnam)

TECHNICAL REPORT

Preface

In 2011, ELI and its international partners released a Resource Manual on Legal and Policy Tools to Adapt Biodiversity Management to Climate Change and a Policymaker's guide on Strategic Options to Adapt Biodiversity Management to Climate Change. Using these documents, ELI and its local partners in Vietnam and Bhutan planned a National Dialogue in each country to examine climate change impacts on biodiversity and options for addressing these impacts. The Dialogues brought together stakeholders including government agencies, scientists, policymakers, academics, and nongovernment/civil society organizations. They also included a regional exchange for five participants from each country who attended both workshops.

Table of Contents	Page
1.0 Introduction	8
2.0 Methodology	10
3.0 Results and Discussion	12
4.0 Conclusions	20
5.0 Future Directions	21
Appendix	23

1.0 Introduction

Over the last few decades, countries have developed and sought to implement legal, institutional, and governance frameworks designed to manage biodiversity. Initially, biodiversity management focused on protection; now, there is a more nuanced set of approaches that advance biodiversity protection, management, and sustainable use. In addition to community-based approaches, frameworks for governing biodiversity have incorporated principles of ecosystem-based management, transboundary cooperation, ecosystem services, and equitable sharing of benefits. Yet there remains a critical gap in most of the existing frameworks governing biodiversity: by and large, they fail to consider, much less address, the effects of climate change.

Climate change is not just altering nature; it is challenging the very definition of what is natural. In Africa, forests are giving way to savannahs and savannahs to deserts as precipitation patterns shift. Plants and animals venture into regions where they have never been recorded. In the Himalayas, rising temperatures melt glaciers, dramatically diminishing the water supply of mountain communities. In the Caribbean, biologists desperately search for new ways to save fast-dying coral reefs and associated tourism livelihoods.



The inability of current laws and policies governing biodiversity to effectively address climate change will have momentous consequences. Underlying assumptions in a world undergoing climate change may be fundamentally different: adaptation increasingly focuses on conserving centers of evolution, not just conserving biodiversity. Current laws and policies often emphasize preserving the status quo. This means that instead of improving the resilience of a broader ecosystem to climate change, the current governance framework often requires scarce resources to be focused primarily on protecting the most endangered species. The result could be that more species will be threatened in the long run. In addition, protected area borders may need to be redrawn and connectivity between areas strengthened to account for changing ecological conditions. With increasing competition for resources, expanding development, and the growing effects of climate change, new regimes and approaches are critical.

In response to this need, ELI undertook a global project to improve laws and policies governing biodiversity so that they could better adapt to a changing climate. The project pursued the following objectives:

- Identify strategic and technical approaches that can effectively govern biodiversity in a changing and increasingly variable climate;
- Develop and make available specific tools and approaches for protecting and managing biodiversity in a changing and increasingly variable climate;
- Raise awareness of the importance of reviewing and revising laws governing biodiversity; and
- Build capacity of governments, NGOs, and others to strengthen legal frameworks governing biodiversity to adapt to climate change and variability.

To achieve this, ELI worked with government and non-governmental partners in six developing countries to produce a detailed “Resource Manual for Adapting Laws to Protect Biodiversity from Climate Change.” The Resource Manual presents the principles of ecosystem-based adaptive management and examined how countries can use science and policy to adapt biodiversity management to the uncertain effects of climate change, based on an ecosystem-based, adaptive management approach. It is intended to help both natural resource managers and policymakers in developing new legal and policy frameworks and management approaches when responding to the effects of climate change on biodiversity and natural resource conservation, sustainable use, and management. ELI also drafted an accompanying Strategic Options Paper, which highlights key messages and guidance from the Resource Manual targeted at policymakers. The publications are designed to work together. The Strategic Options paper explains *why* it is necessary to design legal and institutional frameworks that govern biodiversity to consider climate change impacts, and offers specific options for strengthening biodiversity laws, policies, and institutions. It is essential in raising awareness of high-level decision-makers and stakeholders more broadly. The Resource Manual provides more detailed technical and legal guidance on *how* to review, revise, draft, and use such tools. It sets forth specific technical options for resource managers. The project research focused particularly on lessons learned in developing and implementing adaptive management approaches in biodiversity hotspots (including Bhutan and Vietnam), while examining relevant experiences and lessons learned from other countries. Both documents were released at the Convention on Biological Diversity’s Tenth Conference of Parties in Nagoya, Japan in October 2010, at a side event

co-sponsored by Bhutan's National Environment Commission and Vietnam's Ministry of Natural Resources and Environment.

The next phase of the project involved holding National Dialogues in selected countries containing critical biodiversity and natural resources with implications for conservation, research, and local livelihoods. The Dialogues brought together scientists, natural resource managers, policymakers, civil society, and other stakeholders to discuss how to use the scientific principles of adaptive management, together with an evolving legal and policy framework, to better anticipate and manage the effects of climate change on biological resources. Topics included an overview of climate change impacts, a review of biodiversity resources, an introduction to adaptation and adaptive management, an overview of the legal framework governing biodiversity resources, current projects on climate change and biodiversity protection, and group discussions on priorities for action in each country.

The Dialogues associated with this project were held in Vietnam and Bhutan, with additional support from the MacArthur Foundation, which also enabled us to hold events in the Dominican Republic and Uganda. Through an integrated process of assessment and consultation, each National Dialogue produced a list of priorities and needs for using and strengthening national and local biodiversity management systems to respond to climate change.

Participants were recruited primarily from government, educational, and nongovernment institutions and organizations, including scientists, resource managers, policymakers, environmental NGOs, and other civil society leaders. The Dialogues focused on developing capacity in both countries and raising awareness about the occurrence of climate change, its impacts on biodiversity, and the importance of addressing these impacts through science-based adaptive management. They also included a focus on regional information exchange and learning, as five participants from Vietnam and Bhutan attended each country's workshop.

2.0 Methodology

The Dialogues were structured around the Resource Manual (Legal and Policy Tools to Adapt Biodiversity Management to Climate Change) and Strategic Options paper (Strategic Options for Adapting Biodiversity Management to Climate Change) that ELI and our partners in Bhutan and Vietnam released in August 2011. Each Dialogue was planned through the following steps:

- (1) ELI drafted a preliminary agenda for review by our in-country partners in Vietnam and Bhutan. The agenda included sessions on climate change impacts in each country; an introduction to adaptation; a review of each country's biodiversity legal framework; an introduction to the Resource Manual and Strategic Options paper; and group discussions about climate change impacts on biodiversity, adaptation priorities, and a plan of action to address the priority adaptation needs and issues.
- (2) Our in-country partners began recruiting participants from government, scientific, academic, educational, and civil society institutions.
- (3) Through a series of emails and phone calls, ELI and our in-country partners made decisions concerning logistics including the workshop venue, accommodations for participants, transportation, meals, translation of the key documents, and other necessary arrangements.



(4) ELI and our in-country partners also selected five participants from each country to attend the National Dialogue in the other country. The criteria used to select participants included expertise in climate change and biodiversity issues, representation from government, scientific, and nongovernment entities; gender parity; and motivation and interest in attending the Dialogues. The participants from each country were as follows:

Bhutan:

1. Kunzang Kunzang, Legal Officer, National Environment Commission
2. Karma Chhopel, Head, Water Resources Division, National Environment Commission; APN Focal Point
3. Chukey Wangchuk, Chief Program Officer, Bhutan Trust Fund for Environmental Conservation
4. Dr. Lam Dorji, Executive Director, Royal Society for the Protection of Nature
5. Kinley Tenzin, Chief Legal Officer, National Council Secretariat, Parliament of Bhutan

Vietnam:

1. Thi Huong Trang, Director, Law and Policy of Sustainable Development
2. Dang Dinh Bach, Attorney, Law and Policy of Sustainable Development
3. Huynh Thi Mai, Vice Director, Biodiversity Conservation Agency, Vietnam Environment Administration, Ministry of Natural Resources and Environment
4. Dr. Nguyen Huu Ninh, Chairman, Centre for Environment Research, Education, and Development, APN Focal Point
5. Duong Thanh An, Director, Department of Policy and Legal Affairs, Vietnam Environment Administration, Ministry of Natural Resources and Environment

(5) The first National Dialogue was held in Hanoi, Vietnam August 24-25, 2011. The event was attended by 45 participants (27 on day 2), including our partners with the Law and Policy of Sustainable Development in Vietnam, four of the five Vietnamese delegates to the Bhutan workshop, and Lisa Goldman with the Environmental Law Institute.

(6) The second National Dialogue was held in Paro, Bhutan March 13-14, 2012. The event was attended by 47 participants (41 on the second day), including our partners with the National Environment Commission in Bhutan, four of the five Bhutanese delegates to the Vietnam workshop, and Scott Schang and Lisa Goldman with the Environmental Law Institute.

(7) During and following the Dialogues, we held discussions with the participants about potential next steps, which continue to this point.

3.0 Results & Discussion

The results and discussion in both Vietnam and Bhutan indicate that both countries are focusing closely on climate change impacts and the need for adaptive measures, but that more steps could be taken to strengthen the ability of resource managers, scientists, policymakers, and others to incorporate adaptive management into their resource governance laws, policies, and strategies.

3.1 Climate Change Impacts on Biodiversity

The workshops opened with presentations and discussions on the impacts of climate change on biodiversity resources. As expected, these sessions indicated that climate change is having significant impacts on biodiversity resources in both countries. In Vietnam, participants identified general climate change impacts including: sea level rise and increased saline intrusion, increased temperatures, an increase in extreme weather events, flooding and inundation, and an increased risk of forest fires.

The group discussions highlighted the following climate change impacts on biodiversity in Vietnam:

1. Reduction in species diversity
2. Species migration & changes in species population and distribution
3. Degradation of species habitat
4. Diminished quality of freshwater ecosystems
5. Changes in ecosystem functioning
6. Emergence of new pests and diseases
7. Harm to coral reefs
8. Effects on coastal mangrove forests and ecosystems, including the Mekong Delta
9. Impacts on tropical forests
10. Changes in food chains
11. Impacts on fisheries
12. The emergence of new pests and diseases
13. Socioeconomic impacts, which can affect biodiversity resources

In Bhutan, some of the general impacts of climate change mirrored those in Vietnam, while others were distinct. The impacts discussed by one of the presenters included: increased temperatures, changes in weather patterns, increased frequency and intensity of wind and thunderstorms, cyclones and periods of intense rainfall, drought (drying water sources and longer intervals between rains), and increased risk of forest fires.

The group discussions identified the following climate change impacts on biodiversity in Bhutan:

1. Disruption of ecosystem and ecosystem services
2. Loss of species
3. Shrinking, fragmentation, and degradation of species habitat
4. Increased establishment of invasive species



5. Loss of agro-biodiversity
6. Increased pests and diseases
7. Loss of traditional bio-cultural knowledge and practice
8. Increase in human-wildlife conflict

3.2 Adaptation Needs Corresponding to Climate Change Impacts on Biodiversity

After reviewing the projected and actual impacts of climate change on biodiversity resources, the workshop participants engaged in small group discussions to identify and prioritize adaptation needs arising from these impacts.

In Vietnam, these ideas included:

1. Comprehensive assessment of the impacts of climate change on biodiversity
2. Strengthening of protected areas (e.g. improved planning and zoning; establishment of buffer zones)
3. Program to regularly monitor and evaluate species populations
4. Reforestation to restore freshwater ecosystems
5. Development of integrated management programs
6. Cultivation of local (native) species
7. Community-based ecosystem monitoring
8. Improve institutional coordination (both horizontal and vertical integration)
9. Strengthen national and local capacity

In Bhutan, group discussions about climate change impacts and adaptation needs generated the following lists:

Group I. Priority issues: Biodiversity

1. Comprehensive Assessment of Water Resources to improve understanding of water resource availability, the effects of climate change and develop appropriate adaptation measures. Improve resilience to impact of Climate Change
2. Adoption of Integrated Water Resource Management and eco-efficient framework for water resource management
4. Institute Climate observation and network for early warning, forecasting and modeling
5. Mainstream Climate Change and Natural Resource Management into national plans and programs to address adaptation variability
6. Conduct comprehensive assessment to adequately monitor and understand the impacts of CC on flora, fauna and ecosystem
8. Address risks of species loss from climate change by strengthening species conservation and management
9. Measures to address issues from invasive species due to CC

10. Develop and implement comprehensive forest fire management program,
11. Promote community management of natural resources and sustainable land use
12. Develop sustainable local conservation financing mechanism
13. Enhance public understanding and awareness on biodiversity and CC
14. Strengthen existing institutional arrangements

II. Adaptation Issues

1. Insufficient coordination between various stakeholders involved in climate change related programs
2. Need to raise awareness of the negative impacts of climate change
3. Vulnerability assessments must be conducted to design appropriate adaptation strategies
4. Lack of funding
5. Lack of technical capacity
6. Lack of time series data/information related to weather
7. The functionality of protected areas and biological corridors under a changing climate must be strengthened

Group 2:

1. No direct policies that deal with climate change and its effects on biodiversity.
2. Lack of adequate data.
3. Biodiversity issues not identified for priority short-term consideration or action.
4. Are all the changes in biodiversity a result of climate change?
5. How to balance biodiversity conservation with economic requirements?
6. Are invasive species necessarily bad?
7. How would controlled forest fires affect biodiversity?
8. How can Bhutan maintain 60% forest cover when roads are built through parks and economic pressures put more demands on forest and natural resources?

Group 3:

1. Poor baseline information on biodiversity
2. Financial constraints
3. Poor technical capabilities
4. Poor coordination among stakeholders
5. Drawbacks of carbon credit systems
6. The country is not clear about climate change and adaptive measures
7. Existing policies and laws do not adequately address all climate change and biodiversity issues

Group 4: Policy



- Overlapping policies/synergy missing?
- Policies are mandatory in nature but whether the people adhere to it is a big challenge
- Policy versus mandatory activity
- Need an overall strategy to mainstream climate change issues in all activities of different departments/NGOs/CSOs/private firms

Information

- Insufficient specific in-depth research on particular species
- Weak information dissemination
- No ground breaking proof (research/studies/scientific data) on impact of climate change in Bhutan
- Assessment of impact of climate change on biodiversity or loss of biodiversity

Implementation/Management

- Coordination and communication gap between implementing agency and regulatory bodies
- Weak institutional capacity of the implementing agency (departments/resource managers...)
- Train the local government representatives in a way to explain or convince the communities on climate change
- Training of the communities on climate change and adaptation

Group 5:

1. Biodiversity issues due to climate change
 - a. Range shifting (tree lines)
 - b. Glacier retreat (link to water loss)
 - c. Inadequate data of different species
 - d. Human wildlife conflicts
 - e. Loss of vegetation covers
 - f. Unbalanced ecosystem
 - g. Hydropower development (water related)
 - h. Invasive species
 - i. Decrease/disappearing of native flora and fauna
2. Adaptive issues
 - a. Conservation policy (policies conflicts, implementation and monitoring)
 - b. Education and awareness
 - c. Lack of proper data
 - d. Species ecological data (no information sharing)
 - e. Coordination and cooperation amongst the stakeholders
 - f. Economic development activities highly dependent on natural resources
 - g. Not many long term adaptive measures, generally adaptive measures are focused for short term
 - h. Not mainstreamed at policy and planning levels

3.3 Legal and Policy Approaches to Address the Identified Adaptation Needs

After the initial group discussions focusing on climate change impacts on biodiversity resources and corresponding adaptation needs, the focus of the National Dialogues turned to potential tools to incorporate into the legal and policy framework. This part of the discussion was preceded by a presentation by Lisa Goldman of the Environmental Law Institute on the Resource Manual (*Legal and Policy Tools to Adapt Biodiversity Management to Climate Change*). The small group discussions that followed generated the following ideas for addressing the identified climate adaptation needs through the legal and policy framework in each country:

Vietnam:

Group 1:

The Government of Vietnam is seeking to develop a complete legal framework on climate change, to be completed by December 2012 at the earliest. The plan is to circulate writing circulars after six months, followed by action plans issued within the following six months, and completed implementation of those action plans within the following four years.

3 targets for incorporating adaptive management into biodiversity protection:

- (1) National Target Program to Respond to Climate Change
- (2) Adaptation Action Plans – required at the provincial level by the National Target Program. As of August 2011, only 2 of the 62 provinces had piloted their plans.
- (3) Law on Biodiversity – the Biodiversity Conservation Agency is preparing supporting documents to implement this law

Information management: 3 gaps

- (1) Climate data over historic periods
- (2) Climate monitoring system (e.g. rainfall, temperature, storm events)
- (3) Baseline data for biodiversity monitoring system (e.g. composition of water resources, species, and habitats)

Group 2:

- (1) Periodic review of biodiversity policies and decisions (e.g. annual or semi-annual; to be evaluated every five years and/or based on certain indicators) (Chapter 6 of the Resource Manual)
- (2) Coordination between government agencies (Chapter 7 of the Resource Manual) – need to identify the relevant agencies to work with MONRE, the Ministry of Natural Resources and Environment, to develop climate change response plans.
- (3) Measures to address gaps in the policy framework providing for community participation in biodiversity governance (Chapter 9 of the Resource Manual)

Group 3:

- (1) Must strengthen information management and sharing, both within and between agencies
- (2) There is a lack of historical biodiversity data (e.g. in the fisheries sector, only have five years' worth of data, not 10 years)
- (3) The legal framework does not require periodic reviews and assessment



- (4) Coordination can be a problem – e.g. the responsibilities of the Ministry of Natural Resources and Environment and the Ministry of Agriculture and Rural Development overlap in some areas (e.g. MONRE is responsible for ocean management, but MARD is responsible for fisheries), which can affect the efficiency of the agencies. There are also inconsistencies and overlaps between some of the legal tools
- (5) Proposal to establish a new agency or department to enforce environmental protections

In Bhutan, discussions about gaps in the legal and policy framework identified the following issues:

Group 1:

Gaps

1. The process for developing the legal framework is not done on a consultative basis – more public participation is needed.
2. Several of the laws are contradictory and must be harmonized.
3. A comprehensive review of all biodiversity and climate change legislation is needed to identify and address gaps need to review all biodiversity / cc legislation to identify & address gaps
4. Rules and regulations for the Biodiversity Act must be developed
5. The implementation of the existing legal framework must be improved, and clear roles and responsibilities articulated
6. The 2011 Forest Policy addresses climate change, but the 1995 Forest Nature and Conservation Act needs to be revised

Group 2:

Gap analysis:

Laws with a high potential capability for adaptive management:

- Environmental Assessment Act, 2000
- Biodiversity Act, 2003
- Water Act, 2011
- Land Act, 2007
- National Environmental Policy Act, 2007
- Plant Quarantine Act, 1993
- Forest and Nature Conservation Act, 1995

Recommendations

1. With respect to the leasing of land, there is overlap between the 2000 Environmental Assessment Act and the 2007 Land Act that can affect biodiversity protection. The legal authority does not clarify that environmental assessment should precede the issuance of land leases.
2. There is some jurisdictional confusion between the 2000 Environmental Assessment Act and the 2011 Water Act. It is not clear whether permit approvals for the water sector should be granted by the National Environment Commission, because the Environmental Assessment Act and regulations identify the Department of Agriculture as the permit-issuing authority.

3. The requirement under the 1995 Mines & Minerals Management Act to identify existing species before issuing land leases is not being followed.
4. A review of existing Acts affecting biodiversity for overlapping jurisdiction should be undertaken.
5. The stakeholder consultation requirements of the 2000 Environmental Assessment Act are not taken seriously.

Group 3:

Inventory of Biodiversity-Related Laws

1. Forest and Nature Conservation Act (1995)
2. National Environment Protection Act (2007)
3. Environmental Assessment Act (2000)
4. Biodiversity Act (2003)
5. Mines and Minerals Management Act (1995)
6. Water Act of Bhutan, 2011.
7. UN Framework Convention on Climate Change
8. Convention on Biological Diversity (1995)
9. International Treaty on Plant Genetic Resources for Food and Agriculture (2003)
10. UN Convention to Combat Desertification
11. Ramsar Convention on Wetlands which Parliament ratified during its 7th session)
12. Plant Quarantine Act (1993)
13. Seeds Act (2000)
14. Road Act (2004)
15. Penal Code of Bhutan (2004)
16. Food Act (2005)
17. Bhutan information, Communications and Media Act (2006)
18. Land Act (1979/2007)
19. Waste Prevention and Management Act, 2009.
20. Constitution (2008)

Group 4:



Legal Gaps:

1. Roles, responsibilities, authority, and accountability are not clearly defined
2. Many laws have overlapping provisions
3. The role of public participation in the decision-making process is not clear
4. There is a lack of participation from relevant stakeholders
5. The general provisions of the new laws are overriding existing laws

Recommendations

1. Amend the National Environmental Policy Act of 2007, which serves as a framework law, to address the existing gaps
2. Amend all existing environmental acts and regulations
3. Address weaknesses in monitoring and enforcement

3.4 Implementing Adaptation Tools and Policies in Four Areas of Natural Resource Management

The final discussion before the plenary session focused on Part 3 of the Resource Manual, which examines implementation of adaptation tools and policies in four areas of natural resource management: (1) Permitting, licensing, and concessions for natural resource access and extraction; (2) Community-based natural resource management; (3) Protected areas on public lands and waters; and (4) Private conservation.

In Vietnam, this discussion generated the following points:

Group 1:

1. Permitting, licensing, and concessions – not addressed.
2. Community-Based Natural Resource Management: must help facilitate public participation, especially in permitting procedures. The role of NGOs should be strengthened. Also want to promote a co-management approach in order to make full use of the local structure and also increase the local support and use of local knowledge.
3. Protected areas – need to develop migration corridors and strengthen linkages between protected areas, such as by creating buffer zones and by sharing benefits with communities. For transboundary cooperation, look at Vietnam-Laos-Cambodia triangle in Se San River – conservation is very important here. If they can develop an international cooperation mechanism between the three countries, it would be very helpful.
4. Private lands conservation – this is a new question for Vietnam and should be considered for the future. There is private management of natural resources on 2-3 million publicly-owned hectares of land (out of 13 million total), and a mechanism for private groups to participate in conservation is needed.

Comment: Community-based natural resource management has existed for some time in Vietnam, but authority for ownership of forest land has not been exercised. It does not fully cover the

ownership of the community. That is why people are interested in co-management, which was piloted 10-15 years ago in coastal forested areas. But this concept has not been fully realized because the government has not given special forest uses to community forest management – these uses are considered too sensitive. When co-management is enabled, communities should be adequately compensated for their management efforts and benefit-sharing provisions must be adequately designed.

Group 2:

1. Permitting, licensing, and concessions: greater discretion for agencies when granting permits would be helpful. The Law on Forest Protection does not reference any permitting schemes.
2. Community-Based Natural Resource Management: this has been piloted in some areas, but is not allowed in others where there is no local ownership. The issue of land ownership is a difficult one in Vietnam, where the government is starting to consider revisions to the 2005 land law. People need authority to make land-use decisions.
3. Protected areas: the legal framework does not yet consider climate change scenarios, and most of the legal requirements rely on administrative measures. Connectivity between protected areas is limited. Benefit-sharing mechanisms are another gap. The Forest Protection Law does make some reference to benefit-sharing, though it is difficult to apply in practice (especially with respect to relocation of people following the establishment of a protected area). In addition, the existing authorities do not contemplate the modification or shifting of protected area boundaries. Also, there are no laws addressing transboundary environmental protected areas. There could be legal conflicts with neighboring countries' regulations (e.g. between China and Laos). Finally, more studies are needed on species relocation and migration, both voluntary and involuntary (e.g. by illegal wildlife traders).
4. Private lands conservation – this is not supported by the current legal framework. To promote it, the land ownership system must be changed, and regulations would have to be developed. This issue should be reconsidered so the private sector can engage in conservation activities.

The comments that followed focused on the possibility under existing laws for international conservation groups to participate in protected area management. Discussion also focused on the different legal authorities over protected areas and sub-zones, which are managed by local authorities.

[This part of the discussion did not take place at the Bhutan workshop]

4.0 Conclusions

The National Dialogues illustrated both the strengths and obstacles that Vietnam and Bhutan are facing with respect to climate change and its impacts on biodiversity. While there is a clear acknowledgement of the existence of climate change and some of its impacts on biodiversity resources, it is less clear how to formulate an adaptive strategy to address some of these impacts. Part of this is due to ongoing uncertainties and a lack of data about the future nature of climate change and its impacts. Another factor involves the need for comprehensive monitoring of



biodiversity resources and how they are being affected by climate change. In short, knowledge about climate change impacts on biodiversity is still developing.

The workshops illustrated the value of bringing together scientists, academics, natural resource managers, decision-makers, and civil society representatives to share knowledge and perspectives on climate change, biodiversity protection, and adaptive management. They also highlighted the challenges of maintaining a focus on adaptive management and biodiversity resources, given the staggeringly broad scope of climate change impacts.

Follow-up efforts are needed to focus on legal and policy options for incorporating adaptive management into biodiversity governance. There is significant interest and engagement in these issues, with participants suggesting the use of a metric to prioritize biodiversity adaptation needs, as well as the creation of an in-country network of interested stakeholders to continue this critical dialogue.

5.0 Future Directions

Many ideas for further work came out of the National Dialogues. These include:

- (1) Individual case studies of specific biodiversity adaptation initiatives in each country
- (2) Amendments to Vietnam's Law on Biodiversity that incorporate adaptive management provisions. Amendments to this law are scheduled to be made in 2012. One of the workshop participants, Mr. Duong Thanh An is overseeing the amendments. This presents a key opportunity to incorporate adaptive management into a major biodiversity law in Vietnam
- (3) A regional project focusing on coordinating climate adaptation measures in Vietnam, Bhutan, and Nepal
- (4) Incorporating adaptive management into the (not yet developed) legal framework for a transboundary protected area shared between Vietnam, Laos, and Cambodia
- (5) Developing public-private partnerships to incorporate adaptive management into biodiversity protection, management, and sustainable use
- (6) Focusing on adaptive management and biodiversity protection at the local level
- (7) Focusing on adaptive management and biodiversity protection at the regional level
- (8) Update Bhutan's National Adaptation Programme of Action (NAPA), which dates to 2006
- (9) A program to promote greater institutional coordination with respect to climate change adaptation
- (10) A legal assessment of existing biodiversity-related laws and regulations to identify areas in which to incorporate adaptive management provisions

Our partners in Vietnam have also developed related ideas and concepts, based in part on the knowledge developed and exchanged at the workshops. These include:

1. Biodiversity conservation planning at the national and provincial levels, focused on mainstreaming an ecosystem-based approach (EBA) to climate change adaptation. Guidelines for doing so could be developed and then used to train local communities.

2. Payments for marine/wetland ecosystem services. A pilot model of payments for forest ecosystem services has been developed in Lam Dong province, and models for marine and wetland ecosystems should also be created. In addition, Vietnam's Biodiversity Law requires the development of a Government Decree on payments for ecosystem services.
3. A project focusing on how biodiversity conservation can help foster a green economy, through ecosystem-based management or mitigation to climate change.

References

Bhutan NEC, *National Adaptation Programme of Action* (undated)

Government of Bhutan, *Fourth National Report to the Convention on Biological Diversity* (2009)

Government of Bhutan, *National Action Plan on Biodiversity Persistence and Climate Change* (2011)

Government of Vietnam, *National Report on Protected Areas and Development* (2003)

Ministry of Agriculture, *Forest and Nature Conservation Rules of Bhutan* (2006)

Mekong River Commission, *Adaptation to Climate Change in the Countries of the Lower Mekong Basin: Regional Synthesis Report* (2009)

Ministry of Natural Resources and Environment, *Fourth Country Report on Vietnam's Implementation of the Biodiversity Convention* (2008)

T.Q. Nguyen, N.B. Nguyen, & T.N. Tran, *Forest Tenure Reform in Vietnam: What Lessons can be Learned for Policy Implementation and Poverty Alleviation in Forest Communities* (2005)

Robin Kundis Craig, 'Stationarity is Dead' – Long Live Transformation: Five Principles for Climate Change Adaptation Law, 34 HARV. ENVTL. L. REV. 9 (2010); Alejandro E. Camacho, *Adapting Governance to Climate Change: Managing Uncertainty through a Learning Infrastructure*, 59 EMORY L.J. 1 (2010).

Tran Thi Huong Trang and Christophe Krolik, "Clean energy under of sustainable use of natural resources aspects in the Law on Environmental Protection 2005 of Vietnam – some relevant references to EU's Law", *Law & Policy of Sustainable Development Journal*, No. 2 (2008)

USAID ASIA, *Asia-Pacific Regional Climate Change Adaptation Assessment, Final Report: Findings and Recommendations* (2010)

UNDP, *Bhutan National Human Development Report 2011, Sustaining Progress: Rising to the Climate Challenge* (2011)

Dr. Vu Thu Hanh, Dr. Nguyen Van Phuong, Hanoi Law University, translated by Tran Thi Huong Trang, "Strengthening Legal and Policy Frameworks for Addressing Climate Change in Asia: Vietnam" (working draft; <http://new.unep.org/DEC/PDF/Casestudies/CCVietnamdraft.pdf>)

The World Bank, *Climate-Resilient Development in Vietnam, Strategic Directions for the World Bank* (2011)



Appendix

(1) Agenda for National Dialogue #1, in Hanoi, Vietnam

***Legal and Policy Tools to Adapt Biodiversity Management to Climate Change
Vietnam
August 24-25, 2011***

Days 24-26/8/ 2011, Saigon Hotel, 80 Ly Thuong Kiet, Hoan Kiem, Hanoi

Day 24/8/2011	
8.00 – 8.30	Participant registration
8.30-8.45	Opening remarks By LPSD By ELI: introduction, brief objectives, and significance of the workshop By representatives of Ministry of Natural Resources and Environment (MONRE), Ministry of Agriculture and Rural Development (MARD)
8.45 – 9.00	Introduction of participants, review workshop agenda; questions
9.00 –9.30	<i>Report on Overview of climate change impacts on biodiversity in Vietnam</i> (Institute of Strategies and Policy of Natural Resources and Environment) The above presenter could not make it to the workshop, so the presentation was replaced by: <i>Linkage of Humanity-Biodiversity-Climate Change: Suggestions for Monitoring to Help Make Progress</i> (Dr. Nguyen Huu Ninh, Chairman, Centre for Environment Research, Education, and Development, APN Focal Point) Questions and Answers and the discussion's results <i>Reading guide:</i> Figure I-3 from Resource Manual: Projected Impacts of Climate on Biodiversity
9.30 – 10.15	<i>Introduction to adaptation</i> (ELI) What is adaptation? Ecosystem-based management Active & passive adaptive management Community participation in adaptive management Dealing with uncertainty; vulnerability assessments

10.15 – 10.30	Tea/Coffee break
10.30 - 11.30	Group discussion: 5 biggest climate change impacts and adaptation needs in Vietnam
11.30 -12.00	Reporting back on discussion's results
12.00 -13.00	Lunch
13.00 – 13.30	<i>Report on projects of biodiversity and climate changes in Vietnam: implementation of policy of UN REDD⁺ in Vietnam</i> (Vietnam Forestry Agency, MARD)
13.30 – 14:00	<i>Legal and Regulatory Options for Adaptive Resource Management</i> (Lisa Goldman, ELI)
14.00 – 15.00	Group discussion: <i>Legal and Regulatory Options</i> - Vision and planning (defining adaptation objectives and strategies to achieve them, by a) exploring future scenarios; b) evaluating current and proposed policies; and c) defining core objectives for conservation - Information management - Periodic review - Coordination of policies and activities - Compliance and enforcement - Enforceable rights and duties
15.00 – 15.15	Tea/Coffee break
15.15 – 16.15	- Reporting back from the group discussion - Questions and Answers - Inter-discussion between groups
16.15 -16.45	Experiences from Bhutan – questions & answers Kunzang Kunzang, National Environment Commission

Day 25/8/2011	
8.00 – 8.30	Welcoming participants
8:30-9:00	<i>Report on overview of the current legal and policy framework for biodiversity in</i>



	<p><i>Vietnam</i></p> <p>(MONRE, Biodiversity Conservation Agency)</p>
9:00-10:00	<p>Group discussion:</p> <p>Assessing the legal framework:</p> <ul style="list-style-type: none"> - Conduct an inventory of relevant laws - Conduct a gap analysis. Can categorize as i. High potential capability for adaptive management; ii. Moderate potential capability; iii. Low potential capability - Develop recommendations for changes in laws, policies, regulations, or practices. Factors to consider: no-regrets approaches; valuing the future; high-vulnerability subgroups; recognizing and negotiating trade-offs - Solutions, lessons learned and application for Vietnam
10.00 – 10.15	Tea/Coffee break
10.15 - 11.15	Reporting back from the group discussion
11.15 -12.00	Inter-group discussion: Review adaptation issues raised by yesterday’s discussion and identify some legal and policy options for addressing them
12.00 -13.00	Lunch
13.00 – 13.30	<p><i>Implementing Adaptive Rules and Policies in Four Areas of Natural Resource Management</i></p> <p>(Lisa Goldman, ELI)</p>
13.30 – 14.30	<p>Group discussion: <i>Feasibility of Implementing Adaptive Rules and Policies in Four Areas of Natural Resource Management</i></p> <ul style="list-style-type: none"> - Permitting, licensing, and concessions for natural resource access and extraction - Community-based natural resource management - Protected areas on public lands and waters - Private conservation
14.30 – 14.45	Tea/Coffee break
14.45 – 15.45	Reporting back from the group discussion Inter-discussion between groups
15.45 -16.45	<p>Group discussion in final:</p> <ul style="list-style-type: none"> - Identify most important adaptation needs in Vietnam, in order of priority - Discuss strategies for addressing these needs, including timeline - Discuss creation of in-country network to keep things moving forward

16.45-17.00	Conclusion & Workshop Closing
-------------	-------------------------------

(2) Agenda for National Dialogue #2, in Paro, Bhutan

***Legal and Policy Tools to Adapt Biodiversity Management to Climate Change
March 13-14, 2012
Paro, Bhutan***

Day 1: March 13, 2012	
8:00-9.00	Breakfast; Participant registration
9:00–9:30	<i>Opening remarks by Honorable Deputy Minister Special Advisor to NEC, Dasho Paljor J. Dorji and Lisa Goldman, Environmental Law Institute</i>
Participant introductions; review workshop agenda; questions	
9:30–10:15	<p><i>Overview of biodiversity resources in Bhutan (Dr. Tashi Yangzom, National Biodiversity Centre)</i></p> <p>What are Bhutan’s most important biodiversity resources?</p> <p>How are these resources used and what do they support?</p> <p>Which resources are most threatened?</p> <p>Overview of biodiversity projects in Bhutan</p>
10:15–11:00	<p><i>Introduction to climate change (Mr. Jigmi Nidup, Sr. Environment Officer, National Environment Commission)</i></p> <p>What is climate change?</p> <p>Dealing with uncertainty</p> <p>Climate change impacts on biodiversity in Bhutan</p> <p>Conducting a vulnerability assessment</p>
11:00-11:15	Tea/Coffee break
11:15–12:00	<p><i>Introduction to adaptation (Mr. Sonam Dagay, Environment Officer, National Environment Commission)</i></p> <p>What is adaptation?</p> <p>Distinguishing adaptation from mitigation</p> <p>Ecosystem-based management</p> <p>Active & passive adaptive management</p>



	Community participation in adaptive management Bhutan's National Adaptation Programme of Action
12:00-1:00	Lunch
1:00-1:45	<i>Biodiversity and Climate Change Projects in Bhutan (Mr. Chukey Wangchuk, Chief Programme Officer, Bhutan Trust Fund for Environmental Conservation)</i>
1:45-2:30	<i>Group discussion of biodiversity and adaptation issues in Bhutan</i>
2:30-3:15	<i>Legal and Regulatory Options for Adaptive Resource Management: Introduction to the Resource Manual and Strategic Options Paper (Lisa Goldman, Environmental Law Institute)</i>
3:15-3:30	Tea/Coffee break
3:30-4:15	<i>Biodiversity adaptation initiatives in Vietnam; Questions and answers (Tran Thi Huong Trang)</i>
4:15-5:00	<i>Wrap-up to day 1</i>

Day 2: March 14, 2012

8:00-9:00	Breakfast; Participant registration
9:00-9:30	<i>Review of Day 1</i>
9:30-10:15	<i>Implementing Adaptive Rules and Policies in Four Areas of Natural Resource Management (Ms. Thinley Choden, Wildlife Conservation Division, Ministry of Agriculture and Forest)</i> 1 Permitting, licensing, and concessions for natural resource access and extraction 2 Community-based natural resource management 3 Protected areas on public lands and waters 4 Private conservation
10:15-11:00	<i>Overview of Bhutan's Legal and Policy Framework for Biodiversity (Mr. Kinley Tenzin, Chief Legal Officer, National Council Secretariat, Parliament of Bhutan)</i>
11:00-11:15	Tea/Coffee break
11:15-12:00	<i>Breakout groups</i> Assessing Bhutan's legal framework for biodiversity: - Conduct an inventory of relevant laws - Conduct a gap analysis. Can categorize as i. High potential capability for adaptive

	<p>management; ii. Moderate potential capability; iii. Low potential</p> <ul style="list-style-type: none"> - Develop recommendations for changes in laws, policies, regulations, or practices. Factors to consider: no-regrets approaches; valuing the future; high-vulnerability subgroups; recognizing and negotiating trade-offs - Solutions, lessons learned and application for Bhutan
12:00-1:00	Lunch
1:00-2:30	<p><i>Breakout groups, continued</i></p> <p>Identify most important adaptation needs in Bhutan, in order of priority</p> <p>Identify laws and regulations that can be used to meet these adaptation needs</p>
2:30-2:45	Tea/Coffee break
2:45-4:15	<p><i>Plenary Discussion</i></p> <p>Action Plan: develop strategies for addressing the needs identified in the morning's session, including timeline</p> <p>Discuss creation of in-country network to keep work moving forward</p>
4:15-4:30	<i>Workshop Closing</i>

(3) Participant Lists

These are provided separately as PDF attachments.

(4) Funding sources outside the APN

John D. and Catherine T. MacArthur Foundation: \$67,260
Environmental Law Institute: \$12,000 (in-kind)

The final project report must follow the template outlined in this document. Use Calibri font size 12 for all the headings and font size 11 for the text.



The report is to be submitted **one month before the end the Contract Period** in the following formats:

1. By airmail to the address below:
 - a. **Soft Copy – 2 CD-ROMS**, appropriately labeled and covered using the design and information on the cover page of the Report Template
 - b. **Hard Copy – 2 bound copies** appropriately labeled and covered using the design and information on the cover page of the Report Template

Dr. Linda Stevenson
APN Executive Science Officer
APN Secretariat
4F East Building
1-5-2 Wakinohama Kaigan Dori
Chuo-Ku, Kobe 651-0073 JAPAN

2. By e-mail and addressed to Dr. Stevenson (l Stevenson@apn-gcr.org) and Ratisya Radzi (arradzi@apn-gcr.org).

Kindly note that our server can also receive attachments of up to 8MB file size. In case that the final project report file size exceeds 8MB please try any of the following options:

- a. For a file size of more than 8MB but less than 10MB please send the report to our Gmail account at apngcr@gmail.com and notify us in our APN account so we could check for it immediately.
 - b. For a larger file size please try the following:
 - Upload on your institution's ftp server and provide to us the download details (i.e. IP address, login details, etc)
 - Send through any of the free file hosting available in the internet. Please note that these free file hosting save your files for a limited number of days so it is very important to notify us immediately. Some of these are the following:
 - <http://www.filefactory.com/>
 - <http://www.mediafire.com/>
 - <http://www.yousendit.com/>
3. A separate CD containing other project outputs (i.e. publications, photos, etc)

