

At national level NAPAs, National Communications, NBSAPs and UNCCD NAPs mention the importance of linkages between the Rio Conventions. However, in the 3 countries, the NBSAPs and UNCCD NAPs tend not to fully recognise the links between biodiversity conservation, land degradation and desertification, and adaptation. The UNCCD NAP of Peru, the NBSAP of Nepal, and the NBSAP and NAP of Uganda do not mention adaptation. The UNCCD NAP of Nepal and Peru's NBSAP address the impacts of climate change on biodiversity, but do not link this to people adapting. Emphasis must be given at national level to embracing the full potential of benefits for adaptation in the planning and implementation of commitments under all Rio Conventions.

## Policy Planning in Nepal, Peru and Uganda – Ecosystem-based approaches to adaptation in activities, projects and programmes

Concrete activities, projects and programmes for adaptation were identified in some of the policies and in particular in national adaptation plans and in local level plans.

Nepal (2010) and Uganda (2007) both have NAPAs, whilst Peru has a National Action Plan on Adaptation and Mitigation (2010). These national adaptation programmes and plans identify priority actions on adaptation, many of which relate to ecosystem-based approaches to adaptation: 4 out of the 9 priority project profiles in Nepal's NAPA include ecosystem components; 6 out of the 9 priority projects in Uganda; and 11 out of 21 projects in Peru. The plans prioritise ecosystem-based approaches to adaptation based on cross-sectoral, multi-stakeholder, multi-criteria processes. In Nepal, NAPA actions were prioritized based on criteria which indicate that ecosystem-based approaches are important because they have the potential to support local livelihoods, build on people's participation, be cost-effective, and easy to implement. Further, these approaches can provide cross-sectoral benefits. The Uganda NAPA was developed with representation from several Ministries and using participatory approaches within selected communities.

All actions in Nepal, Peru and Uganda on ecosystem-based approaches to adaptation fall into the natural resource management sectors of agriculture, water and forests or under biodiversity conservation. Actions include, for example, agroforestry, and soil and water conservation for adaptation. In Nepal, there was one action in the energy sector and in Peru and Uganda some actions in the tourism sector. Peru also had actions on integrated coastal zone management. Integrated approaches to managing ecosystems at a landscape scale for adaptation were found in all countries. In many cases, ecosystem-based approaches to adaptation are combined with other approaches to adaptation such as hard infrastructure and institutional strengthening.

Implementing actions around ecosystem-based approaches to adaptation requires integration in local and regional level management plans, so as to deliver community-driven actions at the ecosystem scale. Peru is in the process of developing Regional Climate Change Strategies. Of those that have already been developed, all refer to actions around ecosystem-based approaches to adaptation. Nepal is beginning to develop Local Adaptation Programmes of Action (LAPAs).

### Box 4. National Policies with Respect to Ecosystem-based approaches to Adaptation

Nepal Climate Change Policy – Objective: “to enhance the climate adaptation and resilience capacity of local communities for optimum utilization of natural resources and their efficient management”. (p 5-6)

Peru Bicentenary Plan - Objective: “Conservation and sustainable use of natural resources and biodiversity using an integrated and ecosystem approach for an environment that enables good quality of life for people and healthy, viable and functional ecosystems in the long term”, under which climate change adaptation approaches should also be implemented. (p. 247, unofficial translation)

Uganda National Development Plan - Priority intervention for climate proofing development: “Implement NAPAs with a focus on building community and ecosystem's resilience to adverse impact of climate change”. (p. 316)

Further research on ecosystem-based approaches to adaptation is required. As recognized in Peru's National Research Agenda on Climate and Nepal's National Communication, a lot of uncertainty remains including with regards to the likely impacts of climate change on ecosystems and ecosystem services. The scientific case for ecosystem-based approaches should further be linked to solid and downscaled vulnerability and impact assessments that support informed decision making and action on the ground.

## Conclusions and lessons learned

Better integrated, cross-sectoral approaches to policy formulation, supported by multi-stakeholder institutional arrangements and adequate funding, will be critical in ensuring the delivery of effective, sustainable solutions on the ground that enable both ecosystems and people to adapt in a changing climate. The research on integration of ecosystem-based approaches to adaptation in policy formulation and planning in Nepal, Peru and Uganda reached the following conclusions. They provide an initial view of how ecosystem-based approaches to adaptation can be integrated in national policy.

1. Nepal, Peru and Uganda recognize, in recent climate change and adaptation plans and policies, the importance of ecosystem management, conservation and restoration so as to help people adapt.
2. Inclusion of ecosystem-based approaches to adaptation in national development plans indicates that such approaches can contribute to broader development goals and economic growth.
3. Environmental and sectoral policies in natural resource management often fail to refer to ecosystem-based approaches to adaptation, even if they do recognize the importance of ecosystem management for broader human well-being and development. Climate change overall was not on the development agenda when most environmental and sectoral policies were formulated, many being about 10 years old. Sectoral policies require updating.
4. A cross-sectoral vision should be adopted for delivering adaptation, which emphasizes the importance of cross-sectoral, ecosystem scale interventions and the value of taking an ecosystem-based approach. This will require understanding and managing multiple demands on ecosystems and managing trade-offs.
5. Emphasis must be given at the national level to embrace the full potential of benefits for adaptation in the planning and implementation of commitments under all Rio Conventions.
6. Cross-sectoral, multi-stakeholder, multi-criteria processes often prioritise ecosystem-based approaches to adaptation at national level.
7. Actions on ecosystem-based approaches to adaptation were mainly in the sectors of agriculture, water and forests or under biodiversity conservation.
8. In many cases, ecosystem-based approaches to adaptation are combined with other approaches to adaptation such as hard infrastructure and institutional strengthening.
9. Ecosystem-based approaches to adaptation should be integrated into local and regional level development plans to deliver community-driven actions on the ground at the ecosystem scale.
10. Further research on ecosystem-based approaches to adaptation is required. The scientific case for ecosystem-based approaches should also be linked to solid and downscaled vulnerability and impact assessments that support informed decision-making and action on the ground.

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# Ecosystem-based Approaches to Adaptation in National Policy

## The Cases of Nepal, Peru and Uganda<sup>1</sup>

Ninni Ikkala

### Introduction

The urgency to adapt to the impacts of climate change is growing, especially in developing countries. Existing coping strategies to deal with climate variability, as well as new and enhanced adaptation approaches are required. The role of ecosystems in adaptation is recognized at the international level under the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CBD) and the United Nations Convention to Combat Desertification (UNCCD). Given the urgency of adaptation and often limited funding, available and cost-effective adaptation solutions are often prioritized. Ecosystem-based approaches to adaptation, or the conservation, sustainable management, and restoration of ecosystems to help people adapt to the impacts of climate change are gaining increasing attention, as they are accessible to the rural poor in developing countries and can be cost-effective. Such approaches include, for example, sustainable agriculture, integrated water resource management, and sustainable forest management interventions that use nature to reduce vulnerability to climate change.

This paper provides an overview of international policy on ecosystem-based approaches to adaptation and of initial research on integrating such approaches into national policies and plans, including NAPAs. It then assesses whether and how international policy guidance on ecosystem-based approaches to adaptation has been integrated into national level development, climate change and sectoral policies in the case study countries of Nepal, Peru and Uganda. The paper focuses on reviewing policies, rather than in-depth analysis of political economy considerations,

<sup>1</sup> A more detailed and fully referenced version of this paper is to be found on [www.iucn.org/climate](http://www.iucn.org/climate)



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for example around governance issues. It is also limited to a few case studies. It is hoped that the findings will provide initial insights into potential ways as to how ecosystem-based approaches to adaptation can be integrated into country-level policy making and implementation.

## Ecosystem-based approaches to adaptation in international policy

The Rio Conventions provide international policy guidance for countries to implement and enhance action around sustainable management, conservation and restoration of ecosystems for climate change adaptation of both biodiversity and people, and to integrate such approaches into their policy frameworks.

A first set of decisions address the need for ecosystems to adapt in the face of climate change. The UNFCCC includes this in its objectives (Box 1). CBD decisions refer to managing ecosystems to maintain their resilience to climate change and the 10-year strategic plan of the UNCCD (2008–2018) has an objective to reduce the vulnerability of affected ecosystems to climate change.

### Box 1. Promoting ecosystem resilience to allow adaptation

*“The ultimate objective of this Convention ... is to achieve... stabilization of greenhouse gas concentrations in the atmosphere ... should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change.”* (Article 2. UN Framework Convention on Climate Change)

A second set of references focuses specifically on how ecosystem management, and the goods and services provided by ecosystems, can enable people to adapt to the impacts of climate change. CBD provides a definition for Ecosystem-based Approaches to Adaptation, whilst the UNFCCC Cancun Adaptation Framework invites Parties to enhance action on adaptation through sustainable management of natural resources (Box 2). This kind of adaptation is the focus of the German Government-funded UNEP/UNDP/IUCN partnership programme on Ecosystem Based Adaptation in Mountain Ecosystems. It is this approach that will be explored in the country case studies.

## Ecosystem-based approaches to adaptation in national plans and policies in developing countries

Climate change is a cross-cutting issue and should be mainstreamed across policy domains. There has been comparative analysis of National Adaptation Programmes of Action (NAPAs) and the integration of ecosystems and natural resource management; and of how particular natural resource sectors have been integrated into development, climate change and sectoral policies at the country level.

### Box 2. Ecosystem-based approaches to adaptation

*“Ecosystem-based approaches for adaptation: (j) Recognizing that ecosystems can be managed to limit climate change impacts on biodiversity and to help people adapt to the adverse effects of climate change; implement where appropriate, ecosystem-based approaches for adaptation, that may include sustainable management, conservation and restoration of ecosystems, as part of an overall adaptation strategy.”* (Decision X/33, Para 8, CBD)

*“Invites all Parties to enhance action on adaptation under the Cancun Adaptation Framework, [...] by undertaking, inter alia, the following: (d) Building resilience of socio-economic and ecological systems, including through economic diversification and sustainable management of natural resources.”* (FCCC/CP/2010/7/Add.1, Para 14)

NAPAs under the UNFCCC support Least Developed Countries (LDCs) in identifying priority activities to respond to immediate and urgent climate change adaptation needs. Several LDCs have recognized the role that ecosystems can play in helping people adapt to climate change in their prioritized NAPA projects (Box 3). The majority of NAPA activities that recognize the role of ecosystem management in adaptation

### Box 3. Ecosystem-based approaches to adaptation in NAPAs

56% per cent of priority NAPA projects reviewed by Reid *et al* (2009) had significant natural resource components. In certain countries (Cape Verde, Eritrea, Sudan, Solomon Islands and Vanuatu) every NAPA project had a strong natural resource component, whilst each NAPA had at least one project with a natural resource component. Initial work by Pramova *et al* (2010) looked specifically at the integration of Ecosystem-based Adaptation in the NAPAs and found that 68% of the NAPAs have at least one reference to ecosystem services. Stucki *et al* (2010) estimated that 42% of NAPA project profiles include ecosystem restoration as an adaptation component.

have been in the agricultural sector and around food security, followed by coastal zone management, forestry and water management. Natural resource components have also been included in disaster risk reduction, health and energy sectors. A key challenge for NAPAs is how and if these are integrated into national policy and how, and whether, the prioritized activities are actually implemented in practice.

Ecosystem-based adaptation approaches in water and forest management have often been overlooked in national sectoral, climate change and development policies. Conflicts and synergies between national climate change policies and sustainable water management were analyzed by Pittock *et al* (2011) in 9 countries. In LDCs, the analysis found that climate change policies proposed a diverse array of water-related climate adaptation actions, from infrastructure and supply-led approaches to those that focus on restoration of the natural sources of water. “No and low regrets” measures - such as restoration of floodplains to manage floods - have largely been overlooked. In terms of forests, Nkem *et al* (2007) found that Poverty Reduction Strategy Papers and national development plans often fail to recognize the importance of forests for livelihood adaptation. More harmonized approaches to adaptation policy (including with respect to ecosystems) require cross-sectoral policy development, the inclusion of key actors from high-level ministries, and multi-stakeholder approaches.

## The analytical basis for assessing national policy

The analysis builds on OECD Policy Guidance (2009) on integrating climate change adaptation into policy cycles, in particular into national and sectoral strategies and policies. A range of adaptation relevant policies, including national development plans, climate change and adaptation policies, sectoral policies, national action plans to combat desertification (UNCCD NAPs), and national biodiversity strategies and action plans (NBSAPs) were reviewed. This analysis focuses on the Policy formulation stage, which includes incorporating keywords in visions, strategies and policies at national level, which are then integrated into sectoral plans and policies to guide decision-making. It then addresses the Planning stage, which includes climate change adaptation activities, programmes and projects that are identified in line with the objectives set at the policy formulation stage.

It first assesses the extent to which policies include key word references and incorporate ecosystem-based approaches to adaptation in strategies and policies. The following key words were used as references for the concept of ecosystem-based approaches to adaptation: “ecosystems”, “biodiversity”, “conservation”, “sustainable management” and/or “restoration” – combined with “adaptation” of “people/livelihoods/communities”. The second step identifies which actions, or concrete activities and programmes, on ecosystem-based approaches to adaptation are put forward in the plans and policies.

This paper provides an introductory analysis of how ecosystem-based approaches to adaptation have been integrated into national policy in Nepal, Peru and Uganda. These countries were chosen to represent vulnerable mountain (and other) ecosystems in three continents. They also vary in terms of development. Peru ranks 80 on the Human Development Index (HDI), with Nepal ranking 157, and Uganda 161. They are countries where the Ecosystems and Livelihoods Adaptation Network<sup>2</sup> and the BMU funded UNEP/UNDP/IUCN partnership programme on Mountain Ecosystem Based Adaptation are being implemented<sup>3</sup>.

<sup>2</sup> ELAN is a partnership between CARE, IIED, IUCN and WWF. For More information, please visit <http://www.elanadapt.net/>

<sup>3</sup> For more information, please visit <http://www.unep.org/climatechange/adaptation/EcosystemBasedAdaptation/EcosystemBasedAdaptationinMountainEcosystems/tabid/51980/Default.aspx>

## Policy formulation in Nepal, Peru and Uganda – Ecosystem-based approaches to adaptation in visions, policies and strategies

Climate change and adaptation policies and plans in Nepal, Peru and Uganda integrated ecosystem-based approaches to adaptation in their visions, objectives, policies, strategies and actions. All countries also had references to ecosystem-based approaches to adaptation in their national development plans (Table 1 and Box 4).

Ecosystem-based approaches to adaptation are seen as relevant components of climate change policy in all countries. National Development Plans also recognize the role of ecosystems in helping people adapt, and ecosystem conservation and management for adaptation were seen as part of broader sustainable development, economic growth and poverty reduction. For the 3 countries, climate change and adaptation policies were structured to build on and complement one another, therefore the priorities, objectives, visions and actions are synergistic, including with respect to ecosystem-based approaches to adaptation. In these cases, development plans are also aligned with broad objectives around these approaches.

Whilst climate change and adaptation plans and policies, as well as National Development plans, all included ecosystem-based approaches to adaptation in their visions and objectives in Nepal, Peru and Uganda, several national policies did not integrate the concept.

National Environmental Policies do not link adaptation and ecosystems. The National Environmental Policy of Nepal (1993) includes no reference to climate change. The National Environment Policy for Uganda (1994), sets an objective to monitor the climate to better guide land-use and economic development decisions, and refers to the need to conserve ecosystems but does not refer to adaptation. The National Environment Policy of Peru (2009) includes both policies on ecosystems, conservation and human well-being, as well as on adaptation, but again does not link them together.

Several sectoral policies recognize the importance of ecosystems and ecosystem services for development, but do not mention or integrate this with adaptation. In Nepal, the Agricultural Perspective Plan (1996), the Forest Sector Policy (2000), the Wetlands Policy (2003), Conservation Strategy (1988) and the Biodiversity Strategy (2002) all emphasise the link between ecosystems and human well-being, but do not include references to climate change. The Wetlands Policy (1996), Wetland Sector Strategic Plan (2001), Wildlife Policy (1999) and Forestry Policy (2001) in Uganda recognise the link between ecosystem services and development, but do not mention adaptation. The National Forestry Strategy of Peru (2002) acknowledges that sustainable management of forests and rural development are intrinsically linked, but the policy has no references to climate change<sup>4</sup>.

Table 1: Policies having references relevant for Ecosystem-based Approaches to Adaptation

Country	Policies Reviewed	Policies with reference to Ecosystem-based Approaches to Adaptation
Peru	18	11
Nepal	17	6
Uganda	16	5

<sup>4</sup> It is worth noting that overall, Peru had significantly fewer sectoral policies related to natural resource management than Nepal and Uganda. Peru is also in the process of reformulating several policies under a new government, including the National Climate Change Strategy