



# Scaling-up Mountain Ecosystem-based Adaptation (EbA): building evidence, replicating success, and informing policy

Impact Evaluation



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# Acronyms

ARO	Asian Regional Office
AUPWAE	Professional Women in Agriculture and Environment
BMUV	Bundesministerium für Umwelt, Naturschutz, Reaktorsicherheit und Verbraucherschutz (Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection)
BRIDGE	Building River Dialogue and Governance
CBD	Convention on Biodiversity
CIFOR	Center for International Forestry Research
CIPDP	Chepkitale Indigenous Peoples' Development Project
CITES	Convention on International Trade in Endangered Species
CONDESAN	Consortio para el Desarrollo Sostenible de la Ecorregión Andina (Consortium for Sustainable Development of the Andean Ecoregion)
COP	Conference of Parties
CPEF	Critical Ecosystem Partnership Fund
EbA	Ecosystem-based Adaptation
ESARO	Eastern and Southern Africa Office
FEBA	Friends of Ecosystem-based Adaptation
FFLA	Fundación Futuro Latinoamericano
GAN	Global Adaptation Network
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GNH	Gross National Happiness
HCV	High Conservation Value
IdM	Instituto de Montaña
IGAD	Intergovernmental Authority on Development
IKI	Internationale Klimaschutzinitiative (International Climate Funding)
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature

KEFRI	Kenya Forestry Research Institute
MDO	Machhapuchhre Development Organisation
MIDAGRI	Ministerio de Desarrollo Agrario y Riego (Ministry of Agriculture of Perú)
MINAM	Ministerio del Ambiente del Perú (Ministry of Environment)
NAP	National Adaptation Plan
NbS	Nature-based Solutions
NDCs	Nationally Determined Contributions
NYCLR	Nor Yauyos Cochas Landscape Reserve
REDD+	Reducing emissions from deforestation and forest degradation
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SENASA	Servicio Nacional de Sanidad Agraria del Perú National Agricultural Health Service of Perú
SERFOR	Servicio Nacional Forestal (Department of Forestry)
SERNANP	Servicio Nacional de Áreas Naturales Protegidas por el Estado (National Service of Natural Areas Protected by the State)
SMM	SioMalaba- Malakisi sub-basin
TMI	the Mountain Institute
ToC	Theory of Change
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WFP	World Food Program
WMD	Watershed Management Division of the Royal Government of Bhutan
WWF	World Wide Fund for Nature

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# Executive summary

This report presents the internal impact evaluation of the project ‘Scaling Up Mountain Ecosystem-based Adaptation (EbA): building evidence, replicating success, and informing policy’.

*Chapter 1 describes the background and context of the project*, providing a brief overview of the importance of mountain ecosystems in the water cycle (both upstream and downstream) and the provision of a suite of essential ecosystem services to mountain communities – such as food, fibre, medicines and other non-timber forest products – for their daily lives and livelihoods. However, anthropogenic activities threaten the health of these valuable ecosystems. In addition, these ecosystems are also profoundly affected by climate change.

This chapter also introduces Ecosystem-based Adaptation (EbA) as a cost-effective approach that yields multiple benefits for both communities and ecosystems. EbA helps people adapt to climate change; makes use of biodiversity and ecosystem services; and is part of an overall adaptation strategy.

*Chapter 2 introduces the EbA project* (‘Global Ecosystem-based Adaptation (EbA) in Mountain Ecosystems’) conducted in Nepal, Perú and Uganda between 2011-2016, implemented jointly by UNEP, UNDP and IUCN. Dubbed the flagship project, this phase contributed to increase community and ecosystem adaptation capacities while decreasing vulnerabilities by promoting sustainable livelihoods. At the local level, rapid participatory assessments, vulnerability and impact assessments, and intensive capacity building provided the buttressing for these achievements. At the national level, the demonstration of the efficacy of EbA at project sites paved the way for the integration of EbA into national policies and plans.

Building upon the achievements of the Mountain EbA Flagship Programme, the project “Scaling Up Mountain Ecosystem-based Adaptation: building evidence, replicating success, and informing policy” (hereafter known as the project) was implemented between 2017 – 2022, jointly by the Mountain Institute and IUCN. This expanded the ambit of the flagship programme and scaled-up EbA by supporting climate change adaptation in three additional

countries, neighbouring the flagship countries: Bhutan, Colombia and Kenya – ‘the expansion countries’ – which would promote effective EbA actions, while the flagship countries were expected to consolidate, replicate and scale-up their existing EbA actions, as well as adding new ones.

IUCN commissioned an internal impact evaluation of the project for the generation of lessons learned. It was also expected that knowledge products and communication assets of these lessons learned would be generated for the project. The evaluation addressed 1) Effectiveness; 2) Assumptions; 3) Adaptability; 4) Socio-ecological sustainability and impact; 5) Contribution to the FEBA framework; and 6) Demonstration of clear linkages from EbA to biodiversity conservation and climate change.

Chapter 2 also details a suite of externalities that sequentially affected the continued progress of the project. The first was in late 2019, when the Mountain Institute (TMI) informed the donor that it was unable to fulfil its obligations because of its debts to a regional bank, causing the cessation of all work on the project in December 2019. In April 2020, TMI informed IUCN of its dissolution. During 2020, IUCN held detailed and repeated discussions with the donor to restart the project with IUCN as a full implementing partner and an updated results framework reflecting on what was achieved at the moment of the project’s suspension. Conditional approval was provided by IKI in September 2020, but the formal and legal approvals for the continuation of work with IUCN as implementing partner took until the end of 2021, and country work recommenced only in January 2022. During this hiatus, the pandemic of COVID-19 also struck. With the dissolution of TMI, their staff left their positions, and other staff at IKI and IUCN also left. In addition, during this period country governments changed or reshuffled their officers at all levels. It is against the backdrop of these externalities that the impact evaluation was conducted.

*Chapter 3 presents project descriptions by country*. In Nepal, the project was implemented in the watersheds of Chilime (the replication site) and Harpan Khola (the consolidation site). EbA actions included the improvement of pasturelands, the conservation of threatened plants, broom grass plantation for the reduction of roadside

erosion, livelihood improvement and pond conservation and protection of water sources for ensuring water security.

In Perú the project was implemented in Miraflores, Canchayllo, Tanta and Tomas within the Nor Yauyos Cochas Landscape Reserve. The project sought to 1) strengthen local capacities and knowledge (with participatory rural appraisals, climate risk assessments and capacity building); 2) expand green-grey infrastructure commenced during the flagship phase; and 3) strengthen community organisation and institutions (developing a participatory pasture and water management plan, to ensure better and more integrated management of water, grasslands and livestock resources). In Tomas, the EbA action focused on the expansion, conservation and communal management of native grasslands, water management and wild vicuñas.

On the Uganda side of Mt. Elgon, the project worked in the micro-catchments of the Sipi-Chebonet and Atwari-Kaptokwoi rivers to 1) restore riverbank vegetation, 2) establish a buffer zone along the river bank, and 3) establish on-farm agroforestry systems.

In Bhutan, before the hiatus, the project 1) analysed the policy framework for EbA (with a focus on water); and 2) carried out site-based EbA dialogues and training in two pilot sites. After the hiatus, these were no longer possible, therefore the project was adapted to 1) support the application of EbA measures in the two demonstration sites in the Gawa Phuntsum and Tsezusachu springsheds, carried out by their partners; 2) develop a technical and policy brief on springshed management; and 3) carry out a training mission on EbA.

The focus of the project in Colombia veered from the other countries to 1) collaborate with the GEF-funded project 'Adaptation to Climate Impacts in Water Regulation and Supply for the Chingaza-Sumapaz-Guerrero Area', 2) contribute to capacity building processes and the exchange of experiences in spaces for capacity building that were developed both at local and national levels, and 3) develop an e-learning course on 'Nature-based Solutions for a sustainable and resilient development in Colombia'.

In Kenya, the project worked in Mt. Elgon, in the Chepkitale Nature Reserve with the Ogeik Indigenous Peoples to improve water security for the community by identifying and protecting springs in the watershed through 1) a rapid participatory assessment of climate change vulnerability in

the Chepkitale Nature Reserve, Mt. Elgon, 2) participatory 3-Dimensional Modelling (P3DM) and spatial mapping, 3) carrying out a feasibility assessment to assess the viability of springs, and 4) implementing the water structure for the Chororo Spring.

*Chapter 4 presents the methodology for the evaluation.* Initially, documentation related to the project was obtained from online project folders, as well as from country focal points and reviewed. Three sets of questionnaires were prepared for IUCN and implementing partners, government officers and communities. Of the total number of people nominated for interviews, 36% were interviewed virtually, 17.33% responded by email and 46.76% excused themselves/were expected to respond /or did not respond. Because of the terrain (with communities living in hard-to-access-areas, as well as attempting to conduct interviews during the rainy season), and the lack of financial resources, it was not possible to organise in-person gathering or spaces for virtual meetings or group calls. Therefore, only three community members (one from Perú, one from Uganda and one from Kenya) were interviewed. Although it was envisaged that answers to close-ended questions would be analysed using Categorical Principal Component Analysis, sample sizes per question were too small to allow for this. Hence, only visual representation using graphs is presented in the quantitative analysis – using MS Excel for general analyses and, for countrywise analyses, bubble charts from the R Project for Statistical Computing were used.

Other documents reviewed include the biannual county reports – where the expected targets were evaluated against the achieved results – and the handbook forms developed to guide the continuous process of setting up, implementing, monitoring, and scaling up the EbA interventions under this project.

The country teams reviewed the draft report of this evaluation at a workshop held in Washington DC, USA between Oct 24-26 2022. The inputs from this workshop have been included in this final document.

*Chapter 5 presents the results of the evaluation.* The majority of the responses were positive. It should be noted that responses for Kenya were received before the completion of the main action of the project, and this is likely to have affected the direction of the answers.

Element for evaluation	Total responses	Country-specific responses
<b>Effectiveness</b>		
• Project was successful	83% yes	Majority yes
• Project was effective	69% very effective/ effective	Majority very effective/effective
• Integration of EbA into a local plan	73.3% yes	Majority yes
<b>EbA scaled up in flagship countries and accounted in expansion countries</b>		
In flagship countries, mountain EbA measures are continued, tested, monitored, and adapted at local levels by communities	73% yes	Mostly yes
<b>Validity of assumptions</b>		
Project was flexible	Detailed under the results framework	
Socio-ecological sustainability and impact	78.57%	Majority yes
Involvement of actors sufficient and effective	80.65% yes	Majority yes
<b>Contribution to the FEBA framework</b>		
• Reduces social and environmental vulnerabilities	68.75% yes	Mostly yes
• Generates societal benefits within the context of climate change adaptation	90% yes	Majority yes
• Restores, maintains or improves ecosystems and their services	84% yes	Majority yes
• Is part of a larger adaptation strategy	89% yes	Majority yes
• Is participatory	90% yes	Majority yes
• Is consensus-oriented	93% yes	Majority yes
• Is accountable to all actors	90% yes	Majority yes
• Is transparent	82% yes	Majority yes
• Is inclusive	87% yes	Majority yes
• Is equitable	68.58% yes	Majority
• Is carried out according to national/regional/ local laws and policies	70% yes	Majority yes
<b>Demonstration of linkages to biodiversity conservation and climate change</b>		
• Conserved biodiversity by restoring degraded ecosystems	91% yes	Majority yes
• Project actions reduced the impact of extreme weather events	80% yes	Majority yes

In relation to the element ‘the validity of assumptions’, and the extent to which the project goals were achieved during implementation, all 14 expect targets of the revised results framework were achieved and some, even exceeded.

The handbook forms had not been filled completely for all countries, likely because of the externalities discussed earlier.

It is estimated that 25% of the water sources across Bhutan are in the process of drying out © IUCN





The scaling up mountain EbA project, despite the externalities that beset it, has yielded some valuable lessons learned as shown below. *Chapter 6 details these lessons learned.*

General lessons learned
<p><b>Lesson learned 1: EbA measures which deliver tangible dividends are the most effective.</b></p> <p>Often, the impact of EbA activities takes many years to become measurable and visible. For communities, such concepts of abstract, long-term benefits – such as ecosystem restoration that generates ecosystem services to benefit human well-being – are, often, not easy to grasp. When the impact becomes quickly evident and there are tangible benefits, EbA actions are successful and sustainable. This was observed clearly in the flagship countries, Nepal, Perú and Uganda.</p>
<p><b>Lesson learned 2: The project's evidence and its extensive capacity building and creation of awareness now provide greater opportunities for replication and scaling up.</b></p> <p>The project's evidence and its extensive capacity building and creation of awareness now provide greater opportunities for replication and scaling up. The flagship countries are now becoming champions of EbA and the project expansion countries have made these countries EbA-ready.</p>
<p><b>Lesson learned 3: The project showcases the generation of co-benefits from EbA actions.</b></p> <p>In Perú, this was tangible through the conservation of the globally Vulnerable Andean condor and Peruvian guemal/Taruca associated with the improved management of the Puna grasslands, in the Nor Yauyas Cochabamba Landscape Reserve, Perú. A remarkable co-benefit of the project ensued in Kenya in the Chepkitala Nature Reserve, Mt. Elgon, where IUCN worked with the Ogiek Indigenous People who were at odds with the local government, as they had been evicted from the Reserve. During the project, IUCN played the role of a peacekeeper, communicating with the local government administration and supporting the community to build trust between the two. The Ogiek finally won a landmark case against the government to allow them to reside legally in their ancestral lands. This is a remarkable example of an EbA initiative contributing towards peacebuilding and safeguarding rights of the Indigenous Peoples.</p>
<p><b>Lesson learned 4: The three-pronged approach of working simultaneously with local communities, local government and national government achieves impacts that can be showcased easily in global arenas.</b></p> <p>In the flagship countries, particularly, this approach is clearly successful. In these countries strong relationships have been built at every level, which allow, in turn, for the integration of EbA into each level. The result is the integration of suitable EbA actions into the lives and livelihoods of communities. When communities start experiencing benefits, this leads to sustainability. Local governments, observing the impacts of the actions, integrate EbA into local policies/plans and strategies. Seeing the benefits and impacts of the approach, the national government integrates EbA into its national plans/policies and strategies.</p>
<p><b>Lesson learned 5: Knowledge shared by project countries has supported the development of other EbA projects and networking with existing projects has boosted EbA efforts.</b></p> <p>Nepal: three new EbA projects; Perú: three new EbA projects; Uganda: two new EbA projects; Bhutan: one new EbA project; Colombia= many likely through extensive capacity building and the virtual NbS course; Kenya: one new EbA project</p>
<p><b>Lesson learned 6: Knowledge management is about internal, as well as external management.</b></p> <p>More knowledge sharing and learning opportunities among partners about project actions, achievements and the project as a whole, would have been beneficial. Also, there was a missed opportunity to connect with many respondents in the interviews planned and with the interviews conducted, there were some gaps regarding the information they possessed about the project. TMI's field and global staff leaving because of the project interruption in 2019, as well as COVID-19, were major contributing factors to these gaps.</p>
Operational lessons learned
<p><b>Lesson learned 7: The project has exemplified adaptive management, which is critical for EbA projects.</b></p> <p>The efforts of the project teams (both at the global and country level) in restarting the project under conditions of a 'perfect storm' of externalities is an excellent example of adaptive management. The resolve and persuasiveness of IUCN's global team in negotiating with the donor to restart the project, under the sole management of IUCN, ultimately revived it at the end of 2021. The role that the country focal points played in spurring work after the long pause and continuing to endeavour to build relationships with new government officers, is also laudable.</p> <p>Before the hiatus, in Bhutan, a review of the environmental policy framework had been completed, ready with recommendations for improved integration of EbA within different policies. After the hiatus, it was found that there had been government re-structuring, which meant that the Ministry with which the country focal point had worked for two years, would likely no longer exist. The project in Bhutan modified its course as a result of the consultations with the actors. After extensive dialogues with local actors, the project collaborated with two other organisations to enhance their ongoing programme on springshed management, providing technical support in the preparation of several briefs and capacity building.</p>

**Lesson learned 8: Projects with a longer duration that build upon existing EbA work and evidence show clear impacts and sustainability.**

The three flagship countries have now had on-the-ground work and policy advocacy since 2011 (not counting the hiatus). The results show clearly that these three countries now have measurable outcomes. These results indicate that longer project durations are warranted for EbA actions, which require time for – for example, restoration – impacts and co-benefits to show.

It should also be highlighted to donors that in the Global South, getting a project approved by the incumbent government often takes 12-18 months. Also, often government changes and the resulting reshuffling of government officers reset the project clock. These realities must also be accommodated in decisions made about project durations.

**Lesson learned 9: A shift to a clear Theory of Change approach would have ensured more streamlined monitoring and reporting.**

Reporting on the EbA targets and progress is scattered under interim reports, field reports and meeting logs. To ensure effective monitoring and periodic evaluation, as well as course-correction for adaptive management, a clear Theory of Change (ToC) is recommended for EbA projects. Even though all elements of the ToC were included in project reports, using a diagram onto which immediate, interim, and terminal results, externalities that retarded progress and the number of beneficiaries for each action were logged in periodically, would have provided a clear snapshot of the project at any given time, and not be scattered in different places. By using the ToC approach, a more robust and rigorous internal monitoring and evaluation system can be set up at the very beginning of the project and updated periodically, as project results and achievements must be available, at any point, for sharing and dissemination.

**Lesson learned 10: Emulating a model which allows for a project preparation phase would allow for discussions with proposed partners during the design phase.**

In the design phase of the project, it will be productive if discussions could be held with proposed government partners and country focal points. This will generate ownership of the project among government officers and allow country focal points to highlight what is possible and not. This would also allow for the design across countries of actions that can be achieved in practice and the development of a common results framework for all countries.

**Lesson learned 11: Setting up a project in (an expansion) country with in-country project staff is important for effective implementation.**

The projects in Bhutan and Colombia could have benefited with on-site project offices or an officers, as the focal points had to fly from Bangkok to Paro or from Quito to Bogotá and back for project activities. However, considering the budget availability, this was not possible. Therefore, allocation of adequate resources is critical in this regard.

**Lessons learned towards the achievement of core EbA objectives**

**Lesson learned 12: There is a need to clarify the overlap between the FEBA Criteria for EbA and the overall NbS Global Standard to avoid confusion among actors.**

Not all Nature-based Solutions are EbA actions, as they might not be targeting climate vulnerabilities *per se*, though the reverse that EbA is NbS holds true. In many instances NbS and EbA have been used interchangeably. Clarification regarding which criteria must be used (whether FEBA criteria or the NbS global standard) must be provided, at the very earliest, by IUCN, so that this confusion is resolved.

**Lesson learned 13: Assessing linkages to biodiversity conservation and climate change needs improvement.**

In biodiversity conservation, the increase in species diversity is used as a proxy to measure the improvement of ecosystem health (and, in turn, the delivery of ecosystem services). Such increases have been assessed anecdotally during the project, although they could have been assessed more robustly using established methods. In addition, EbA that involves restoration/better management of ecosystems will generate not only benefits of climate adaptation but also carbon sequestration and therefore, ecosystem-based mitigation. Strengthening these linkages in future projects will be beneficial.

*Chapter 7 provides a list of recommendations drawn from the author's evaluation results and the global workshop held in October 2022.*

**Recommendation 1: Use IUCN's strengths to develop larger projects with higher investments.**

IUCN is a union of 1,400 government and civil society member organisations and 15,000 volunteer experts in six commissions. These experts should be called upon to support project design, while members can implement project actions so that IUCN can work at the global policy level. IUCN's other strength is in facilitation and this strength of bringing diverse actors together could be used in the implementation of recommendations 2-7.

**Recommendation 2: Include the private sector in project design and activities.**

Actively engaging the private sector in EbA projects will allow for unlocking private investments. Here too, the eliciting the support of IUCN's thematic work programme 'Business, finance and economics' will strengthen future projects. The involvement of the private sector will also ensure that livelihood alternatives are not only environmentally sustainable but also economically viable. Ensuring value chains that include the entire product life cycle will also be supported through such partnerships.

**Recommendation 3: Engage development partners.**

Twinning with recommendation 2, engaging development partners – such as multi-lateral or bi-lateral development banks and partners – will ensure that new green-growth business models and investment vehicles for EbA are formulated to support not only national governments in implementing recommended policy changes but also IUCN, to achieve needed global policy reforms.

**Recommendation 4: Greatly improve innovative practices.**

Re-assessing known issues from a different perspective will generate the development of innovative approaches for EbA. One such innovation is blended finance, using capital from government sources to attract private sector investment. Other innovations of technology include climate-smart agriculture, GIS mapping to visualise and communicate changes in ecosystems before and after EbA interventions, remote sensing of environmental drivers and using civil society for the collection of data.

**Recommendation 5: Promote transformative multi-stakeholder platforms.**

Multi-stakeholder platforms are crucial for implementing EbA because they engage different government sectors, include multidisciplinary technical experts, and leverage financial resources when the private sector is also involved. Including rights holders as well stakeholders from different sectors and sections of society in these platforms will be essential.

**Recommendation 6: Build upon existing knowledge to develop transboundary projects.**

The mountain EbA project is now well-positioned to transition to transboundary projects. The siting of the target countries from the flagship and scaling up phases next to each other in three continents allows for a shift from project-site-based actions to working in transboundary basins for example, for the formulation of transboundary policies.

**Recommendation 7: Develop projects that link issues of concern.**

There is an urgent need to shift away from the silo-dominated practice of working on separate issues. The time is opportune for IUCN and its partners to expand their purview to formulate projects such as those that are framed by understanding and addressing the food security-climate-change-biodiversity nexus and the nature-health-climate change nexus.

**Recommendation 8: Carry out integrated assessments to ensure all linkages are studied.**

One of the areas of project actions that could have received more input was the scientific assessment of improvement of biodiversity as a consequence of better management/conservation/restoration of a given ecosystem. The incorporation and implementation of integrated assessments (assessing the type of ecosystems and their services; threats to those ecosystems and their services; the diversity of species; socio-economics; economic valuation of ecosystem services identified; and amount of carbon sequestered) are acutely needed for assessing impacts before and after project interventions.

**Recommendation 9: Use a more streamlined method of project reporting that includes stringent self-monitoring and evaluation.**

Improving self-monitoring and continual evaluation will greatly strengthen future projects.

Despite the overwhelming administrative issue that assailed the project in late 2019, and the pandemic of COVID-19 that followed, project staff leaving at this juncture, as well as government reshuffles in many countries, the project has shown considerable strength and flexibility to continue on-the-ground work and policy advocacy to ensure that EbA – as an approach to climate change adaptation – has been consolidated and scaled-up in Nepal, Perú and Uganda.

The lessons from long-term project sites (the flagship sites) show the effective sustainability of project and community ownership, showing that longer durations for project implementation are needed for EbA. The three-pronged approach of the creation of awareness and capacity building at the community, local and national government levels has been unparalleled in achieving results.

In Bhutan, project actions have been course-corrected skilfully. In Kenya, after detailed preliminary participatory work before the hiatus, the protection of a spring was completed by the end of the project. In Colombia, after extensive capacity building, a Spanish e-learning course on NbS for the region will be launched shortly.

These efforts have ensured that flagship countries have become champions of EbA, while extension countries have laid the foundation for commencing EbA implementation in other projects.



▲ Landslide triggered by the monsoon after heavy rainfall covering the agriculture land, Chilime Rasuwa (© Alisa Rai)



# Chapter 1:

## Background and introduction to the project



## Background and context

The provision of clean, freshwater by rivers originating upstream in mountains and their flow downstream is a critically important ecosystem service. When moist air is forced upward by mountain ranges, the changes in temperature and pressure most often result in some form of snow or rain ([Guernsey, 1987](#)) – stored in wet seasons as snow on mountain tops or glaciers and as water in lakes (Figure 1).

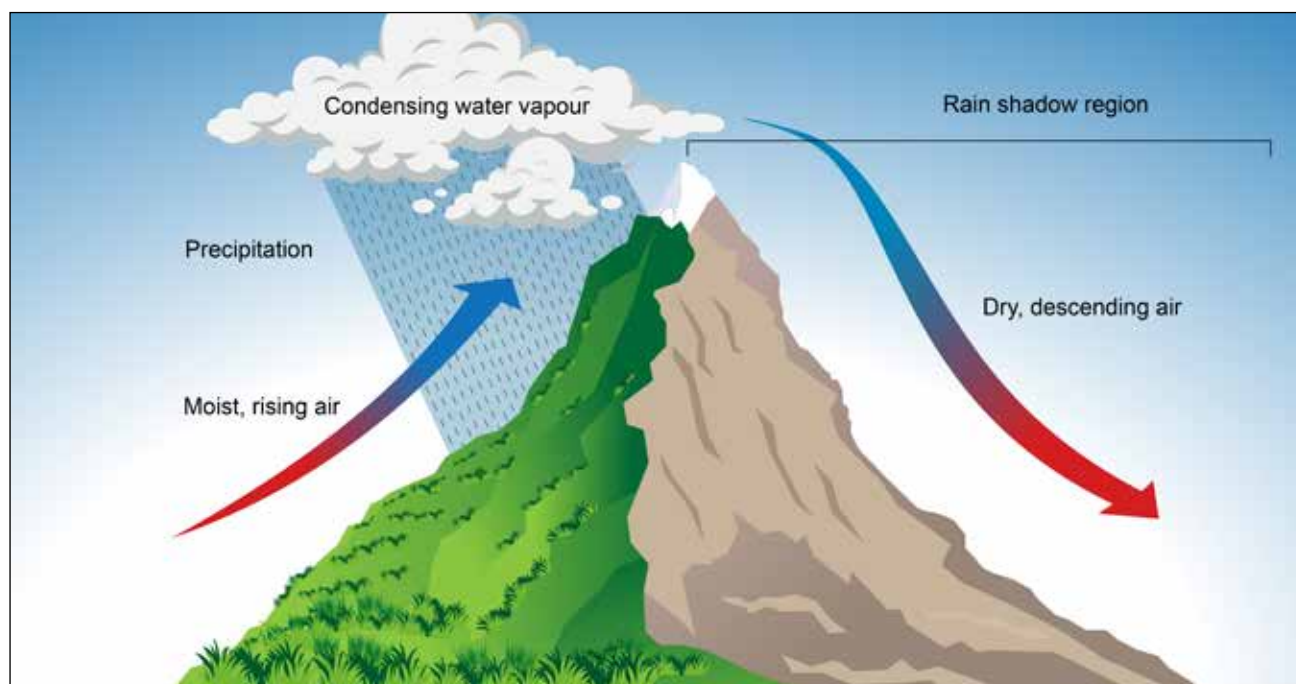


Figure 1. The formation of precipitation in water towers  
(Source: Encyclopaedia Britannica, 2020)

During hot and dry seasons, this stored water is released downstream, providing a steady supply for the demands of freshwater downstream. These mountain waters – which store and supply water to ‘sustain human demands – are called water towers’ ([Immerzeel et al., 2019](#)). These water towers are, therefore, critical for water security.

Apart from the provision of water, through their ecological processes, mountain ecosystems are essential in the water cycle ([Immerzeel et al., 2019](#)), and also provide a suite of essential services to mountain communities – such as food, fibre, medicines and other non-timber forest products – for their daily lives and livelihoods ([IUCN, 2022a](#)). Downstream, the provision of freshwater in more highly populated areas is important as drinking water and also for agriculture and industry ([IUCN, 2022a](#)). In addition, healthy mountain ecosystems provide additional benefits – co-benefits regulating not only water flow, but its quality, as well as filtering the air; serving as carbon sinks; pollinating flowers

and dispersing seeds; ensuring pest and disease control; and providing protection against the impacts of natural hazards ([Price & Egan, 2014](#)).

About a quarter of the world’s land mass comprises mountains ([UNEP, undated](#)), but in terms of supporting services, as much as half of the world’s global biodiversity hotspots are found in these regions. Mountains contain one-third of all terrestrial diversity and have very high plant diversity ([Immerzeel, et al., 2019](#)). This high species diversity and associated high genetic diversity have been the source of many of the world’s major crops ([Price & Egan, 2014](#)). Alpine forests and grasslands sequester carbon. Mountain ranges are historic and cultural sites and they attract millions of tourists from all over the world ([Immerzeel et al., 2019](#)). Water towers and their associated river basins are reported to generate 4% and 18% of the global gross domestic product (GDP), respectively ([Immerzeel et al., 2019](#)).



Anthropogenic activities – such as land cover change (due to agricultural expansion, urbanisation, and large-scale infrastructure development); unsustainable land use practices (for example, overgrazing); overexploitation (for example, illegal logging and extraction of wood) – are also threatening the health of these valuable ecosystems ([Odawa & Seo, 2019](#); [UNDP, 2022](#)).

Mountains are also highly affected by climate change and, in the last century, compared to the global mean, they warmed faster than lower elevations ([Price & Egan, 2014](#)). Globally, most glaciers are decreasing in size, and the ‘dynamics of snow melt’ are, therefore, changing ([Immerzeel et al., 2019](#)). At the same time, precipitation (snow, hail, rain) as well as evapotranspiration<sup>1</sup> patterns are also changing because of climate change. This means that the timing, quantity and quality of water supplied by mountains are changing ([Immerzeel et al., 2019](#)).

As much as 10% of the world’s population lives in high mountain areas, less than 100 km from glaciers or permafrost ([Hock et al., 2019](#)). [In Colombia, 60% of its population, including urban populations, live in mountain areas ([Red Cross Red Crescent Climate Centre, 2021](#))]. By 2050, the world’s mountain population is expected to grow to 736–844 million ([Hock et al., 2019](#)).

## Ecosystem-based adaptation

Among the many approaches available to reduce the impacts of climate change is adaptation. Climate change adaptation is ‘the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects’ ([IPCC, 2014](#)). Adaptation is becoming more and more important because of the current projections regarding climate change.

Ecosystem-based adaptation is a cost-effective approach that yields multiple benefits for both communities and ecosystems. The Secretariat to the Convention on Biological

<sup>1</sup> Loss of water from the soil both by evaporation from the soil surface and by transpiration from the leaves of the plants growing on it’ (Encyclopaedia Britannica, 2022).

Diversity defines ecosystem-based Adaptation (EbA) as ‘the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change’ ([CBD, 2009 & 2010](#)).

Thus, EbA can be identified by three elements:

1. It helps people adapt to climate change;
2. It makes use of biodiversity and ecosystem services; and
3. It is part of an overall adaptation strategy ([FEBA, 2020](#)) (Figure 2).



Figure 2. The elements of EbA (Top: people (The Ogiek Indigenous Peoples, Kenya); middle: ecosystems (a stream, Bhutan); bottom: part of a larger adaptation strategy (National adaptation meeting, Kathmandu, Nepal (all © IUCN)

### Box 1. Ecosystem-based adaptation, nature-based solutions and the ecosystem approach

Ecosystem-based adaptation is sometimes used interchangeably with the terms Nature-based Solutions and Ecosystem-based approach. At the outset, this needs clarification.

Nature-based Solutions (NbS) ‘are actions to protect, sustainably manage and restore natural and modified ecosystems in ways that address societal challenges effectively and adaptively, to provide both human well-being and biodiversity benefits’ (Cohen-Shacham, 2016). NbS is supported by ecosystems services that are generated by healthy ecosystems. NbS is an umbrella term that includes approaches to address themes such as biodiversity loss, food and water security, human health, disaster risk reduction and climate change (IUCN, 2020). (Figure 2). Ecosystem-based adaptation is one approach under the umbrella of NbS. Therefore, it should be noted that while EbA is always NbS, NbS is not always EbA.

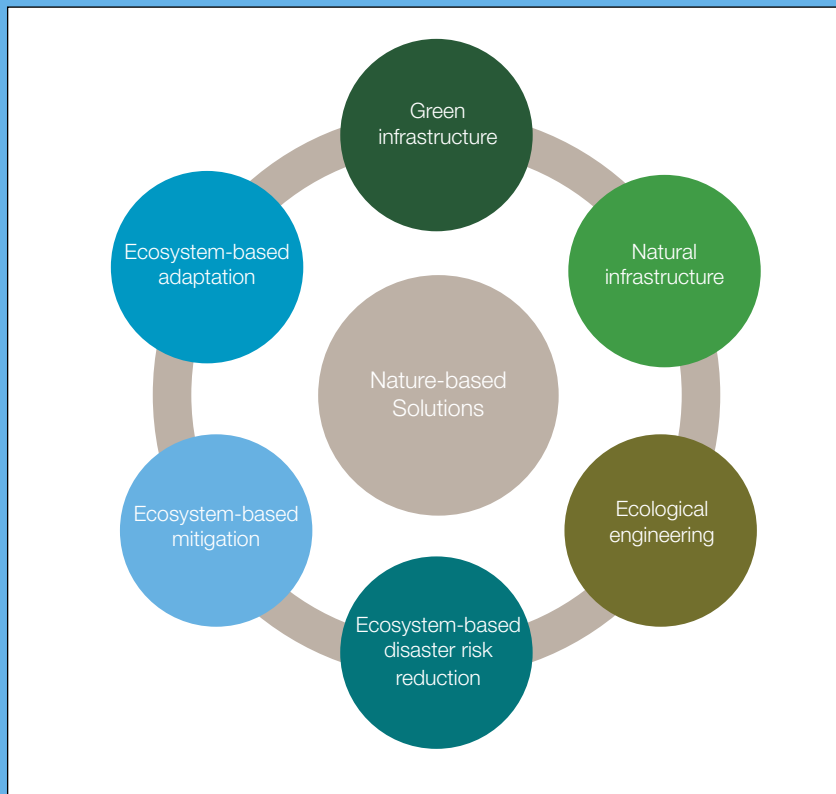


Figure 3. Ecosystem-based adaptation, nature-based solutions and the ecosystem approach (GIZ, IUCN and IISD, 2022)

The Ecosystem Approach ‘is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way’ (CBD, 2021). It balances human well-being; ecosystem well-being and good governance. Thus, the ecosystem approach can be used in many contexts such as in fisheries and agriculture.

It should be noted, therefore, that EbA is an approach designed specifically to use nature and ecosystems to support people adapt to climate change, and therefore, should not be used in other contexts. It should also be noted that EbA is also termed NbS for adaptation.



## Chapter 2:

# Scaling up mountain ecosystem-based adaptation (EbA): building evidence, replicating success, and informing policy



## The flagship programme: mountain ecosystem-based adaptation

From 2011-2016, the programme ‘Global Ecosystem-based Adaptation (EbA) in Mountain Ecosystems’ was implemented jointly by UNEP, UNDP and IUCN, funded by the Government of Germany through the International Climate Initiative (IKI). In partnership with the governments of Nepal, Perú and Uganda, this programme was implemented as pilot projects in mountain ecosystems in these three countries ([UNDP, 2015](#)).

This programme (henceforth called ‘the flagship project’) contributed to increased community and ecosystem adaptation capacities while decreasing vulnerabilities by promoting sustainable livelihoods. At the local level, rapid participatory assessments; vulnerability and impact assessments; and intensive capacity building provided the buttressing for these achievements ([UNDP, 2015](#)).

At the national level, the demonstration of the efficacy of EbA at project sites paved the way for the integration of EbA into national policies and plans. For example, through the provision of technical guidance the flagship programme ensured the integration of EbA into the National Forest Policy in Nepal; the Nationally Determined Contributions (NDCs) in Perú; and the National Climate Change Strategy in Uganda ([UNDP, 2015](#)).

At the global level, IUCN – through the network of Friends of Ecosystem-based Adaptation (FEBA) – developed an EbA Learning Framework to map and assess the effectiveness of initiatives ([FEBA, 2020](#)), as well as convening regional climate change fora through the Global Adaptation Network (GAN) and enhancing capacity building through EbA-focused training workshops. Through the advocacy of the flagship programme, EbA has been mainstreamed into the global policy (for example, the CBD and the UNFCCC) ([UNDP, 2015](#)).

## Scaling up mountain ecosystem-based adaptation (EbA): building evidence, replicating success, and informing policy

Building upon the achievements of the Mountain EbA Flagship Programme, the project ‘Scaling up Mountain Ecosystem-based Adaptation: building evidence, replicating success, and informing policy’ (hereafter known as the project) was implemented between 2017 – 2022.

In partnership with the Mountain Institute (TMI) (as a co-implementing agency with IUCN), this project expanded the ambit of the flagship programme and scaled-up EbA by promoting climate change adaptation in three additional countries, neighbouring the flagship countries: Bhutan (next to Nepal); Colombia (neighbouring Perú); and Kenya (next to Uganda) (Figure 4). These new countries were dubbed ‘the expansion countries’ and would promote effective EbA actions, while the flagship countries were expected to consolidate, replicate and scale-up their existing EbA actions as well as add new ones.

EbA actions included ensuring that the flagship projects, as well as new projects

- i) yielded long-term evidence and lessons;
- ii) extracted knowledge and evidence;
- iii) built local capacity to replicate successful approaches; and
- iv) informed local, national, and international adaptation plans and policies, such as National Adaptation Plans (NAPs).

The project was funded by the Federal Ministry for The Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV), based on a decision by the German Bundestag.



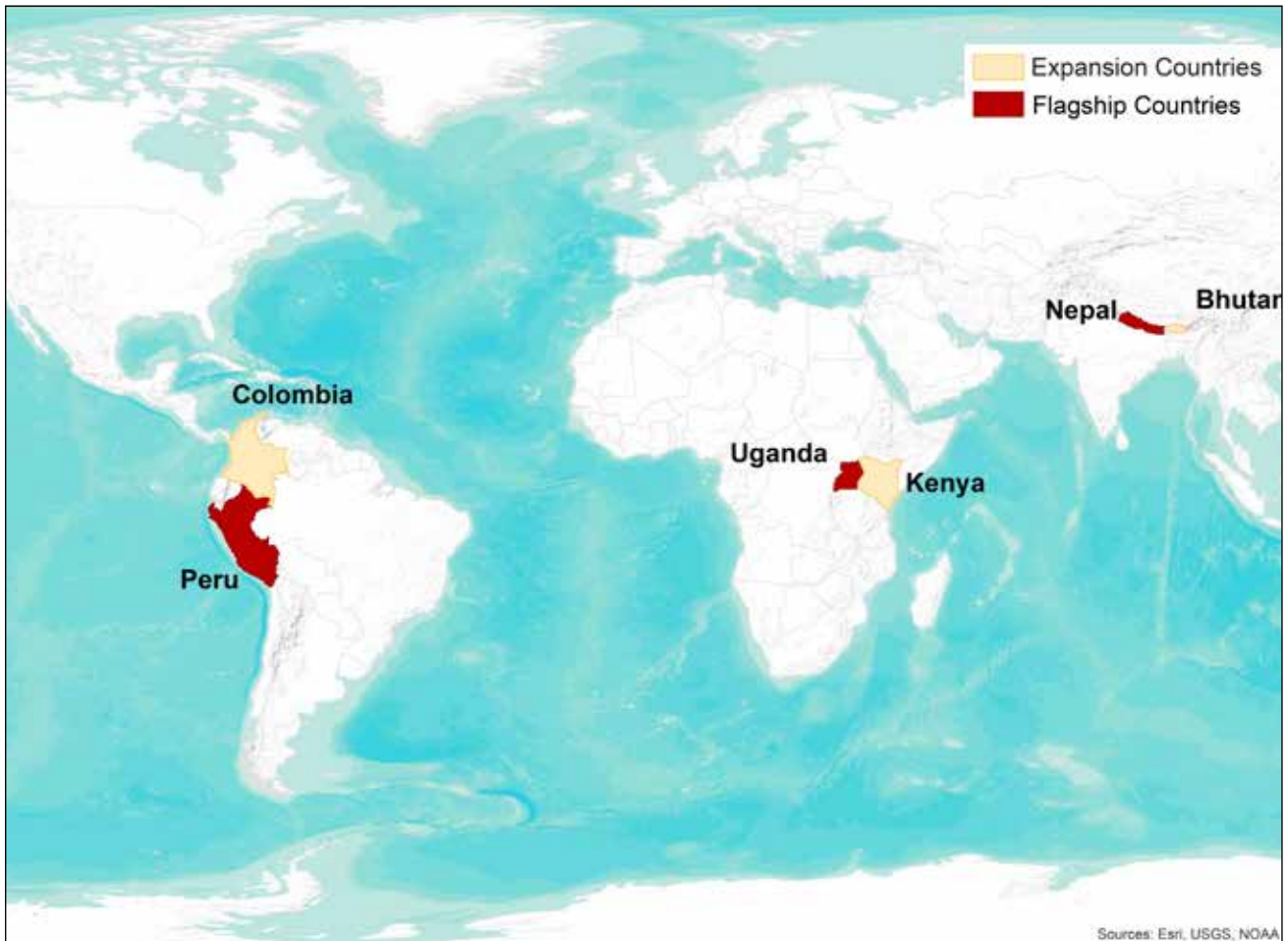


Figure 4. The Mountain EbA sites  
 (Source: [IUCN, 2023](#); map prepared by Champika Jayathilaka)

## The overall goal of the scaling up mountain ecosystem-based adaptation project

The overarching goal of the project is that

*‘Effective and sustainable EbA measures for mountains are applied and up-scaled in Flagship countries; planned for application in other mountainous regions in South America, East Africa, and South Asia (“Expansion” countries); and shared globally by key actors’.*

(In the project proposal this goal is presented as an outcome.)

## Results framework for impacts and outcomes

The above goal/outcome was expected to be supported by three outputs and 14 activities, with each element defined by a clear set of indicators and expected milestones for ease of monitoring results. This framework is presented in Annex 1.

## Project collaborators/partners

The project was managed by the Climate Change Programme of IUCN’s Washington DC Office. Initially, the project was implemented by TMI and in 2022, IUCN assumed full responsibility for implementation.

The implementation and partners for each country are presented on the next page in Table 1.

Table 1. Implementing partners and collaborators in each selected country

(Sources: Project reports)

Country	Implementing partner		Collaborators
	2017-2019	2022	
<b>Flagship countries</b>			
Nepal	TMI/IUCN	IUCN	<ul style="list-style-type: none"> <li>• Government of Nepal Ministry of Forests and Environment</li> <li>• The Central Department of Environmental Science at Tribhuvan University</li> <li>• National Science Academy</li> <li>• Machhapuchhre Development Organisation (MDO)</li> <li>• Manekor Society Nepal</li> <li>• Local government in               <ul style="list-style-type: none"> <li>• Panchase (Kaski)</li> <li>• Chilime (Rasuwa)</li> </ul> </li> <li>• Local communities in               <ul style="list-style-type: none"> <li>• Panchase</li> <li>• Chilime</li> </ul> </li> </ul>
Perú	TMI	Instituto de Montaña (IdM)	<ul style="list-style-type: none"> <li>• Ministerio del Ambiente del Perú (MINAM) (Ministry of Environment)</li> <li>• Servicio Nacional de Áreas Naturales Protegidas por el Estado (SERNANP) (National Service of Natural Areas Protected by the State)</li> <li>• Nor Yauyos Cochabamba Landscape Reserve</li> <li>• Local communities in               <ul style="list-style-type: none"> <li>• Miraflores</li> <li>• Canchaylo</li> <li>• Tanta</li> <li>• Tomas</li> </ul> </li> </ul>
Uganda	IUCN	IUCN	<ul style="list-style-type: none"> <li>• Ministry of Water and Environment of Uganda</li> <li>• Uganda Wildlife Authority</li> <li>• Kapchorwa District Local Government</li> <li>• Third Northern Ugandan Social Action Fund (NUSAF III)</li> <li>• Center for International Forestry Research (CIFOR) in partnership with the Uganda Association of Professional Women in Agriculture and Environment (AUPWAE)</li> <li>• Local Communities in Kapchorwa District</li> </ul>
<b>Extension countries</b>			
Bhutan	Asian Regional Office (ARO), IUCN	Asian Regional Office (ARO), IUCN	2017-2019
			2022
Colombia	Regional Office for South America, IUCN	Regional Office for South America, IUCN	<ul style="list-style-type: none"> <li>• Ministerio de Ambiente y Desarrollo Sostenible (Ministry of Environment)</li> <li>• Conservation International</li> </ul>
Kenya	Eastern and Southern Africa, IUCN (ESARO)	Eastern and Southern Africa, IUCN (ESARO)	<ul style="list-style-type: none"> <li>• Water Resources Authority</li> <li>• Chepkitalde Indigenous People Development Project</li> <li>• Ogiek Community in Chepkitalde National Reserve</li> </ul>

## Impact evaluation of the project

In June 2022, IUCN commissioned an internal impact evaluation of the project, for the generation of lessons learned. It was also expected that knowledge products and communication assets of these lessons learned would be generated for the project.

The review is expected to assess the following:

1. *Effectiveness*: What was the extent of, and which activities and outputs led to anticipated changes in demonstration sites and policy formation and implementation?
2. *Assumptions*: What was the extent to which the implied hypotheses in the project documentation related to change were held during implementation?
3. *Adaptability*: How was the project able to adapt in response to:
  - i. The changes in the global team and the suspension of activities from 2019 to 2021 and
  - ii. Other external factors which might have influenced the evolution of the project, especially the Covid-19 pandemic.
4. *Socio-ecological sustainability and impact*: What is the extent to which the conditions – at demonstration sites and in policy – are in place to enhance resilience and reduce vulnerability, while enhancing measurable ecosystem services, human well-being benefits and community governance?
5. *Contribution to the FEBA framework*. Identification of whether the project included the FEBA elements of EbA
  - iii. Did it help people to adapt to climate change?
  - iv. Did it use biodiversity and ecosystem services?
  - v. Was it a part of an overall adaptation strategy?
6. *Demonstration of clear linkages from EbA to biodiversity conservation and climate change*. Biodiversity and climate change are often seen as separate silos from EbA. Did the project ensure that they were not?

The generation of knowledge assets and communication materials derived from the review will

1. Identify best practices and lessons learned from the project to inform:

- i. existing and/or future similar projects in the context of large-scale mountain EbA implementation;
- ii. the design, mechanisms and strategies to guarantee the project's effectiveness in delivering its outputs; and
- iii. elements which can be used for innovative creative solutions.

2. Showcase the most successful socio-ecological stories.

The results of this evaluation will

- provide the Mountain EbA project coordination team evidence, analysis and lessons from the implementation of scaling up that can be used to design an exit strategy and to build upon the project for future funding including public and private investment;
- provide implementing partners with evidence, analysis and lessons that can inform their work on EbA in the future and
- inform IUCN, IKI-ZUG, Friends of EbA Network, and the Making EbA Effective Framework through evidence and analysis of what has worked/ what has not worked regarding scaling up the programme.

The generation of knowledge and communication assets will

- provide technical knowledge and policy lessons that can be used to inform IUCN's policy-influencing work;
- capture project learnings and key outcomes to inform the community of practice; and
- showcase successful results to actors.

## Externalities that affected progress

For two years, from 2017-2019, the project progressed as expected. However, a suite of externalities sequentially affected continued progress.

1. On November 27, 2019, the Mountain Institute (TMI) informed the donor of a 'material adverse event that is impairing TMI's ability to fulfil its obligations under the mountain ecosystem-based adaptation program . . . and related grant agreement' because of its debts to a regional bank and merging of the said bank with another. On-the-ground actions and work on the project ceased in December 2019. In April 2020, TMI informed IUCN of

its dissolution (sourced from internal documentation and interviews with key personnel).

During 2020, IUCN held detailed and repeated discussions with IKI to restart the project. IUCN suggested that it took full control as implementing partner; continued the project with a reviewed results framework (Table 2); absorbed the financial loss incurred by TMI's dissolution and managed with the balance of funding available from IKI. Conditional approval was provided by IKI in September 2020, but the grant of formal and legal approvals for the continuation of work with IUCN as implementing partner took until the end of 2021 (sourced from internal documentation and interviews with key personnel).

At this point, the country focal points recommended that re-commencing work would be better at the start of a new year, and work began again only in January 2022. A timeline detailing all the above is shown in Figure 6.

2. Because of the above delays in formal approval, there was a two-year hiatus imposed on the project.

3. The impact of the pandemic of COVID-19 was of unpredicted proportions, and strict lockdowns prevented work in the field.
4. With the dissolution of TMI, their staff in Nepal left their positions. During the hiatus, other staff at IKI and IUCN also left.
5. As is usual in many countries of the Global South, governments change frequently, and with them, there is inevitably a shuffle of government officers, at all levels – from national, to regional and local. When a project starts, implementing staff at country levels always establish contact, create awareness about the project and painstakingly develop professional relationships with such officers. The two-year hiatus resulted in such change in all the countries, which meant this process had to be restarted, and time which should have been spent progressing with activities was, instead, invested in this process.

All of the above created a 'perfect storm' of externalities affecting the project (Figure 5). It is against the backdrop of the above that the evaluation was conducted.

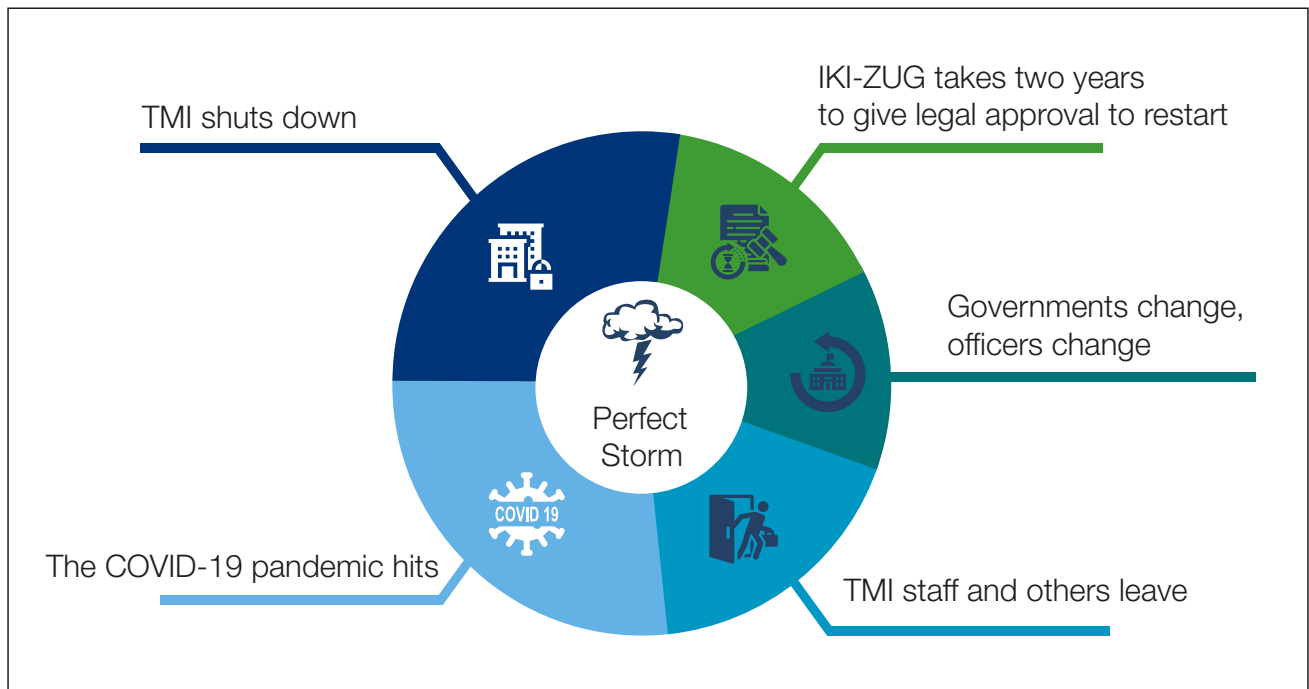


Figure 5. A suite of externalities creates a 'perfect storm'

(Source: compiled by report author from analyses of interviews conducted; diagram credit: Devinda Halwalage)

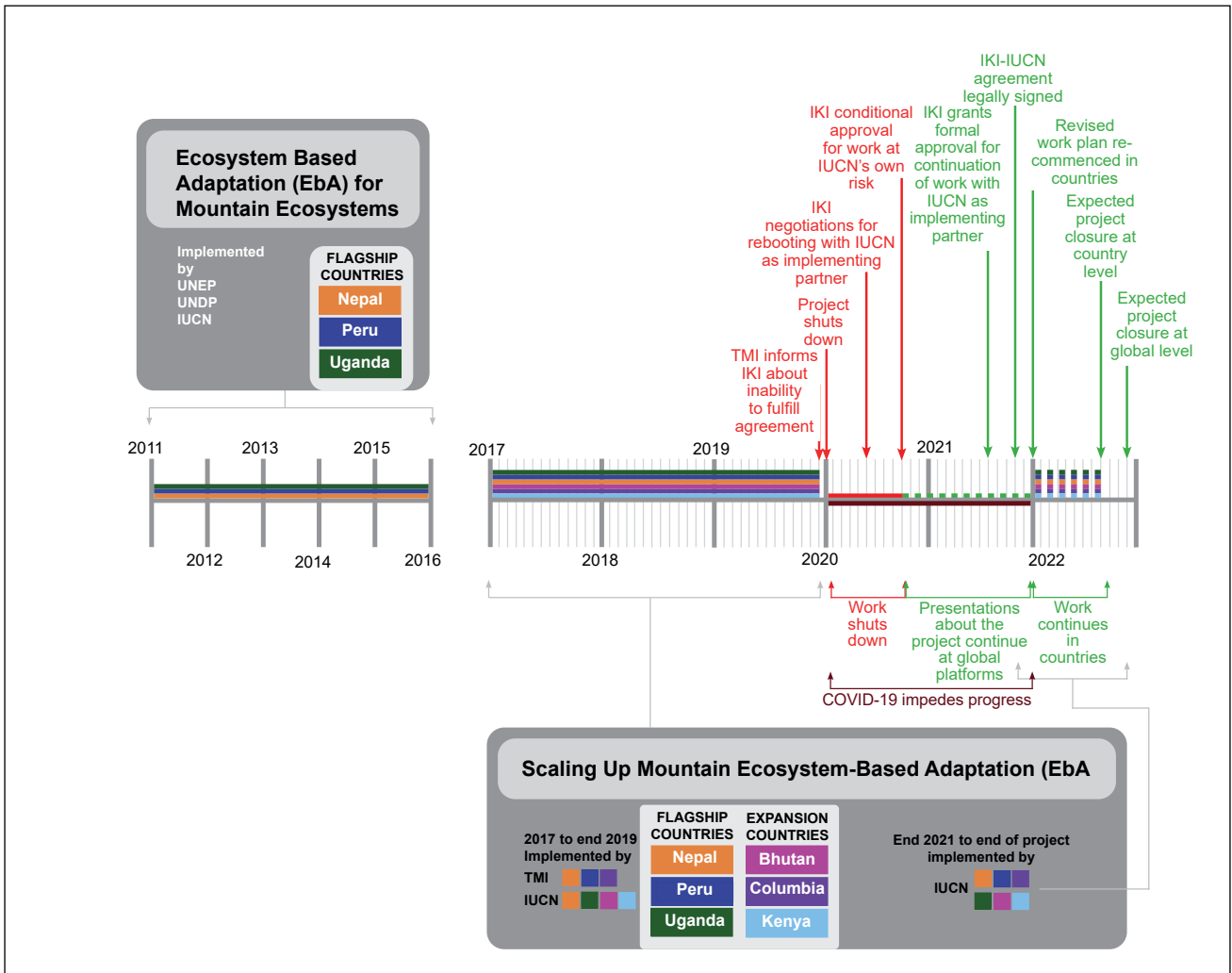


Figure 6. Timeline of external events affecting the project  
(Source: compiled by report author from analyses of interviews conducted and project reports)



Figure 7. Vista of Mt. Elgon, Kenya  
(© IUCN)



# Revised framework for impacts and outcomes 2022

## Expected outcomes and indicators

Table 2. Revised results framework for the project

Outcome	Indicator	Baseline	Expected target value
Effective and sustainable EbA measures for mountains are applied and scaled up in flagship countries; planned for application in other mountainous regions in South America, East Africa, and South Asia ("expansion" countries); and shared globally by key actors.	<p><u>Outcome indicator 0.1:</u> Number of sites, i.e. defined area in a watershed/catchment (size and number of communities in each may vary) in each Flagship country in which community-based EbA measures (at least one specific intervention) are being applied.</p>	<p>Start of Project: Three (3) total. One (1) per Flag-ship country Baseline II (12/2019): Nine (9) total Perú – (4) Canchayllo, Miraflores, Tanta and Tomas. Nepal – (3) Chilime and Harpan Khola watersheds Uganda – (2) Sipi-Chebonet Micro-catchment and Atari-Kaptokwoi micro-catchment</p>	<p>Six (6) total. Two (2) per Flagship country: one original and one additional site in each country (Deemed as completed)</p>
	<p><u>Outcome indicator 0.2:</u> By 09/2022, Forests, wetlands, and/or grasslands in Flagship country sites show improved coverage and condition due to effective EbA measures.</p>	<p>Baseline II (12/2019) Perú: 8,881 ha; Nepal: 6,774 ha; Uganda: 1,039.7 ha</p>	<p>Target value for hectares with improved coverage and condition will be set after new sites and measures are determined and baselines are established per indicator I.1. (by PM 12). Preliminary estimates are: Perú: 3,000 ha Nepal: 850 ha Uganda 4,000 ha, revised to 2076 ha in 2018 Planned date of achievement according to project proposal 09/2022</p>
	<p><u>Outcome indicator 0.3:</u> By 09/2022, Nine (9) EbA measures, three indicating long-term effectiveness (for ecosystem services) and sustainability (affordability, socioeconomic benefits, and stakeholder buy-in) and six with early indications of effectiveness and sustainability, are available and being implemented in the three Flagship countries.</p>	<p>Zero (0) measures have been evaluated for effectiveness and sustainability. Baseline II (12/2019) Perú: 3; Nepal: 12; Uganda: 3</p>	<p>Three (3) Flagship EbA measures indicate effective-ness and sustainability, Six (6) other continuing or new EbA measures have early indications of effectiveness and sustainability Perú: 4; Nepal: 12; Uganda: 3</p>
	<p><u>Outcome indicator 0.4:</u> Number of national or subnational policy documents and processes in Flagship and Expansion countries that, by 09/2022, include information on Mountain EbA approaches, principles, and/or methods generated by the project.</p>	<p>Baseline II (12/2019): Perú: Ten (10); Uganda: Seven (7); Nepal: Ten (10); Bhutan: One (1); Colombia: Four (4);Kenya: Three (3)</p>	<p>At least three (3) in countries (e.g. Uganda, Bhutan, Perú) where national or subnational plans are at a stage where contributions are made during project term</p>

## Output I, related indicators and expected targets

Output	Indicator	Baseline	Expected target value
Mountain EbA measures are being continued, tested, monitored, and adapted at local levels by communities, government, and other stakeholders in flagship country sites.	Indicator I.1: Impact of continuing and newly established measures on ecosystems and/or ecosystem service provision is being monitored by the project with local partners in sites in flagship countries by 09/2022.	To be determined by PM 9, after new sites and measures are determined and baseline measurements of environmental conditions and ecosystem service provision are taken. Baseline II (12/2019) Perú: 3 measures; Nepal: 8 measures; Uganda: 3 measures	Target (09/2022) Perú: 4 measures; Nepal: 12 measures Uganda: 3 measures (Deemed as completed)
	Indicator I.2: Number of people directly involved and/or directly benefitting from Mountain EbA measures in Flagship countries by 09/2022.	Perú: 1,800; Nepal: 300; Uganda: 1,000 Baseline II (12/2019) Perú: 1,676 (46% women); Nepal: 7,050 (62% women) Uganda: 2,357 (52% women) Kenya: 115 people (20%)	Perú: 2,200 (50% women) Nepal: 600 (70% women) Uganda: 1,500 (55% women) + 500 in Kenya (Deemed as completed)
	Indicator I.3: Number of Mountain EbA measures in Flagship Sites that have been adapted and improved as assessed annually by the project partners	Baseline II (12/2019) Perú: Three (3); Nepal: Six (6); Uganda: Three (3)	Three (3) by PM-12, three (3) by PM 24, and three (3) by PM 36 (to be refined in first year depending on results of baseline studies) Target by 09/2022 Perú: 4; Nepal: 12; Uganda: 3

## Output II, related indicators and expected targets

Output	Indicator	Baseline	Expected target value
The Mountain EbA approach is being up-scaled in Flagship countries, locally and nationally, and taken into account in planning processes and strategies for application in Expansion countries by local governments and other stakeholders.	<p>Indicator II.1:</p> <p>By 09/2022, 13 knowledge products have been developed, including a Mountain EbA catalogue and, for each of six (6) countries, a map and at least one (1) information brief or report per country on the benefits, application, and policy implications of Mountain EbA.</p>	<p>Baseline II (12/2019)</p> <ul style="list-style-type: none"> <li>- 3 PANORAMA Solutions submission (1 each Flagship country)</li> <li>- Perú country map complete</li> <li>- EbA in Mountains infographic</li> </ul>	<p>1 catalogue of EbA measures with selection guidance</p> <p>6 country maps, 1 per country</p> <p>6 info briefs, 1 per country</p> <p>Target (09/2022)</p> <p>6 PANORAMA Solutions submitted</p> <p>6 country maps</p> <p>6 info briefs</p> <p>1 infographic</p>
	<p>Indicator II.2:</p> <p>By 09/2022, benefits, application, and policy implications of Mountain EbA have been shared with key actors in each of six (6) countries (Flagship and Expansion).</p>	<p>Baseline II (12/2019)</p> <p>Perú: 22; Colombia: 13;</p> <p>Kenya: 2; Uganda: 2; Nepal: 15</p> <p>Bhutan: 6</p>	<p>18, three (3) in each country</p> <p>Target (additional by 09/2022)</p> <p>Perú: 6; Colombia: 3; Kenya: 2</p> <p>Uganda: 2; Nepal: 8; Bhutan: 5</p>
	<p>Indicator II.3:</p> <p>By 2022 Mountain EbA measures are being applied in new sites by the project in at least one (1) additional site in each Flagship country + Kenya. In Expansion countries Colombia and Bhutan, Mountain EbA measures, including a funding strategy, are planned for application by others in at least one (1) site.</p>	<p>Baseline II (12/2019)</p> <p>Perú: 1 (Tomas)</p> <p>Nepal : 1 (Chilime sub-watershed)</p> <p>Uganda: 1 (Spichbonet micro-catchment)</p> <p>Kenya: 1 (Chepkitale national reserve)</p> <p>Bhutan : 0</p> <p>Colombia : 0</p>	<p>Four (4) applied, one (1) in each Flagship country and Kenya by Mountain EbA project</p> <p>Two (2) planned, one (1) each in Colombia and Bhutan, for implementation (or integration) by others</p> <p>(Deemed as completed)</p>
	<p>Indicator II.4:</p> <p>Mountain EbA approaches are integrated in at least one (1) local adaptation, watershed management, or community development plan in at least five (5) countries.</p>	<p>Zero (0) (to be verified)</p> <p>Baseline II (12/2019)</p> <p>Perú: 3; Colombia : 0 ;</p> <p>Uganda: 3; Kenya: 2; Nepal: 2;</p> <p>Bhutan: 0</p>	<p>One (1) in each of five (5) countries</p>

## Output III: related indicators and expected targets

Output	Indicator	Baseline	Expected target value
EbA as an adaptation strategy for mountain regions is taken into account by key actors in national and international policies and planning processes	Indicator III.1: Number of government and non-governmental organisations in Expansion countries that, by 11/2022, include Mountain EbA concepts, approaches or measures generated by the project in their strategy papers and planning documents.	Zero (0) Baseline II (12/2019) Colombia – 1 government / 2 non-governmental Kenya 2 governmental/2 non-governmental Bhutan –3 governmental/1 non-governmental	3 governmental and 3 non-governmental organisations, with at least one of each in each Expansion country by 11/2022.
	Indicator III.2: By 11/2022, Three (3) international policy processes or forums have incorporated information on Mountain EbA approaches generated by the project.	Zero (0) Baseline II (12/2019) Three (3) UNFCCC (SBSTTA and COP) CBD (SBSTTA and COP) Strategic Agenda for Adaptation to Climate Change in Andean Mountains	Six (6) by 11/2022.
	Indicator III.3: Number of international, EbA-relevant communities and initiatives that, by 11/2022, promote Mountain EbA through sharing information and expertise as a consequence of the project.	Zero (0) Baseline II (12/2019) Three (3) FEBA Mountain Sentinels PANORAMA Solutions Science for Adaptation	Three (3) by 11/2022



# Chapter 3: Project descriptions by country





Presented here and in the following pages are short descriptions of the geography, mountain ecosystems and climate change impacts of the six countries.

## Flagship countries

### Nepal

Nepal is a landlocked country that lies in the central part of the Himalayas within the Hindu-Kush Mountain Range. Its elevation ranges from the snow-covered mountain region containing Mount Everest at 8,848 m to 60 m above sea level in the southern lowland plains. These striking changes in elevation along a relatively short width from north to south and the linked changes in the climate have resulted in a uniquely rich diversity of over 100 ecosystems ([Ministry of Forests and Soil Conservation, 2014](#)).

Most of Nepal's 30+ million people live in mountain areas relying on the essential services that ecosystems in their mountains provide ([Xu et al., 2019](#)). However, mountain areas are now warming faster than the global average ([Hock et al., 2019](#)), and climate change is severely affecting the lives of the population of Nepal. There is 15-20% more rain during the monsoons with resultant floods, landslides and soil erosion. In contrast, during the dry season, there are droughts. Consequently, among other impacts, food security is threatened and the risk from extreme weather events is increased ([IUCN 2023b](#)).

In Nepal, the project was implemented in the watersheds of Chilime, Rasuwa and Harpan Khola, Kaski (Figure 8). The main ecosystems here were watershed forests. Chilime was the replication site where the focus was on the improvement of pasturelands by channelling water from a perennial river to recharge ponds, and the conservation of medicinal plants – in particular *Paris polyphylla*, a high-value medicinal plant. In Harpan Khola, effective EbA actions that were consolidated ranged from broom grass plantation for the reduction of roadside erosion and livelihood improvement; pond conservation and protection of water sources for ensuring water security; coffee and cardamon cultivation for livelihood improvement; establishment of a herbal block for the conservation of medicinal plants; conservation of a botanical garden and conservation within a forest of two plots of tree ferns (*Alsophila spinulosa*). A complete list of EbA measures implemented in Nepal is presented in Table 3.

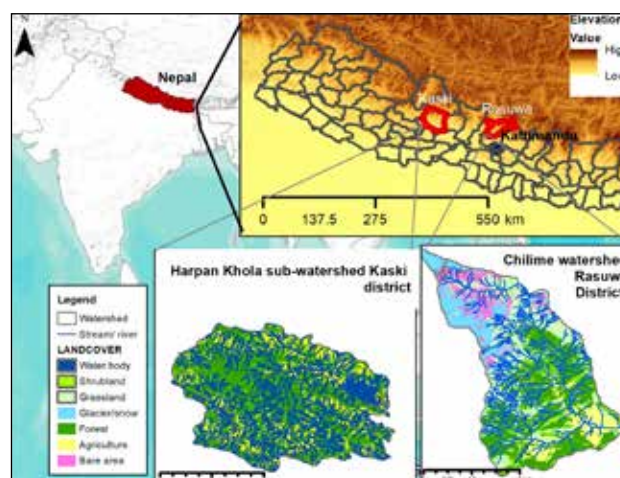


Figure 8. Map of project site locations in Nepal  
(Source: IUCN, 2023b)

### Perú

The South American Andes Mountain range extends from north to south along Perú. This chain of snow-capped mountains is the longest range in the world and the highest mountain range outside Asia. This range and its diverse landscapes shape Perú's geography, culture, history and people ([Deneven et al., 2022](#)).

About 36% of Perú's nearly 33 million people live in the rural, mountainous areas of the Andes, relying on the essential services that these mountain ecosystems provide. In addition, nearly 60% of the country's population lives on the desert coast and depends heavily on the water coming from the mountains, as do export agriculture and hydropower production.

The warmest five-year period ever recorded on Earth was between the years of 2015 and 2019. The impacts of this warming are now affecting more people, more severely in Perú. Glaciers are melting faster with an increasing threat of glacier lake outburst floods (GLOFs). Concurrently, declining glaciers mean that there are changes to the hydrological regimen, impacting water availability, particularly during dry seasons. In this context of glacier retreat, the health of mountain ecosystems is critical for water regulation and storage, especially in the Peruvian Andes, where the rainy season is less than six months a year ([Bergmann et al., 2021](#)).

In the target sites, the main ecosystems were Puna grasslands and high Andean wetlands or peatlands (locally known as *bofedales*) and the main livelihood is agropastoralism. In this region, climate change is causing changes in rainfall patterns, including the timing and intensity of rain, frosts, and drought. The lack of water during droughts is exacerbated by the under-use

and abandonment of indigenous hydraulic and water management systems. This means that in some areas of communal grasslands, there is a dearth of water for livestock herds. This, in turn, results in livestock farmers not following the agreed-upon pasture rotation system.

Understanding that water security is critical for the lives and livelihoods of communities in these sites, the focus of the Scaling up Project at the local level for consolidation remained the sustainable management of water and native grasslands, using a three-pronged plan of action in Miraflores, Canchayllo, Tanta and Tomas within the Nor Yauyos Cochis Landscape Reserve (NYCLR) (Figure 9): 1) strengthening local capacities and knowledge (with participatory rural appraisals and climate risk assessments and capacity building); 2) establishing green-grey infrastructure (expanding the green-grey infrastructure, commenced during the flagship phase, that used a combination of traditional knowledge and modern techniques); and 3) strengthening community organisation and institutions (developing a participatory pasture and water management plan, to ensure better and more integrated management of water, grasslands and livestock resources). In Tomas, the action was focused on the expansion, conservation and communal management of native grasslands, water management and wild South American camelids (vicuñas) (Table 3).

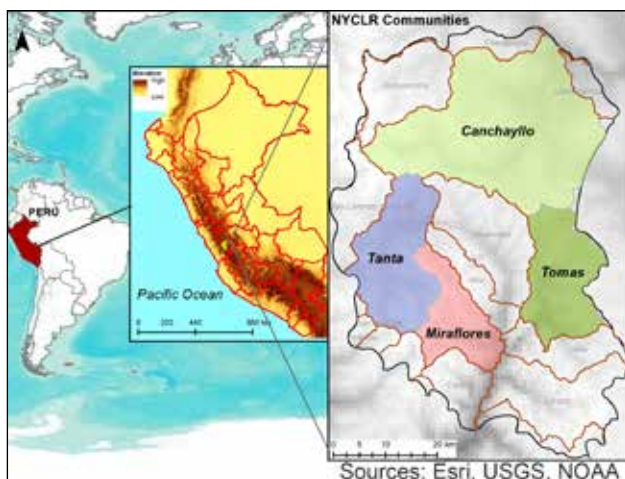


Figure 9. Map of project site locations in Nepal  
(Source: IUCN, 2023c)

## Uganda

Mount Elgon is an enormous, single volcanic mountain between Uganda and Kenya, spreading over 80 km, 772,300 ha and rising to 3,070 m (UNESCO, 2019). It is a major water tower in the region, providing a transboundary water resource for these two countries. The upper, forested slopes of this mountain are protected as national parks both in Kenya and Uganda. These forests serve as catchments

for the drainage systems of Lakes Victoria, Turkana and Kyoga (IdM, 2020).

In a country whose population density is 229 people per km<sup>2</sup>, the density in Mt. Elgon was estimated, a decade ago, to be 1,000 persons per km<sup>2</sup>, with a population growth rate of 3.4% per year (Michael, 2012). This mountain population relies on the essential services that wetlands ecosystems in this mountain provide. All accessible river watersheds are used for small-holder, resource-poor agriculture; small-scale industries; tourism; human settlements and wildlife conservation (Ministry of Water & Environment and UNDP, 2013).

Recent studies show an increased variability of rainfall, and a significant increase in temperature in the study site (Luwa et al., 2021). There is also a substantial increase in floods and droughts (Luwa et al., 2021). There is also an overall increase in unpredictable patterns of rainfall. Considerable deforestation of catchment forests and riverbanks, reclamation of wetlands, blockage of drainage channels and unsustainable cultivation, combined with climate change, has led to flooding, soil erosion, significant landslides, as well as droughts (Ministry of Water & Environment and UNDP, 2013).

On the Uganda side of Mt Elgon, the project worked in the micro-catchments of the Sipi-Chebonet and Atwari-Kaptokwoi rivers (Figure 10) because cultivation on riverbanks and poor agricultural practices on farms exacerbate flooding and erosion, respectively. EbA actions focused on 1) restoring riverbank vegetation; 2) establishing a riverbank buffer zone (where there would be no cultivation) to reduce flooding, and 3) reducing on-farm erosion through the establishment of agroforestry.

Actions to manage downstream floods included the construction of contour trenches and ridges, trash lines, and stone bunds, as well as planting native vegetation as natural infrastructure. Another action to reduce riverbank flooding was the establishment of a buffer zone where cultivation was prevented, and native trees, shrubs and Napier grass were planted.

On-farm erosion was reduced through the establishment of agroforestry on farm plots. Model farmers were dubbed champion farmers and they shared the lessons learned with other farmers.



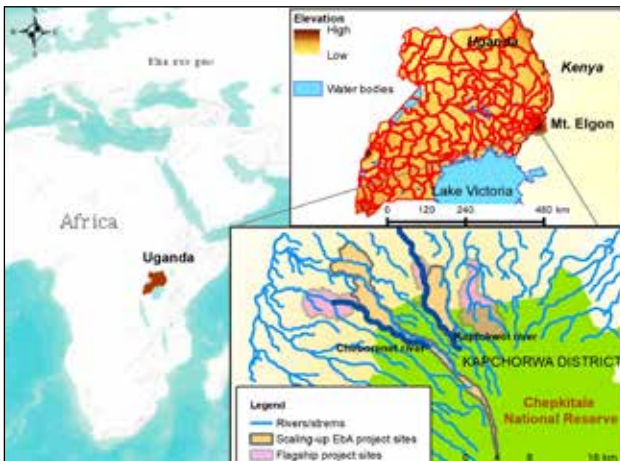


Figure 10. Map of project site locations in Uganda  
(Source: IUCN, 2023d)

## Expansion countries

### Bhutan

Bordered by India – except on the north by China – Bhutan is a landlocked country that lies on the southern slopes of the eastern Himalayas within the Hindu-Kush Mountain range (Royal Society for Protection of Nature, 2022). Its elevation ranges from more than 7,000 m to 100 m in the southern foothills. Draining from these steep and high mountains is a network of rivers (Figure 11). The sharp elevation changes, combined with climate changes, have given rise to a rich diversity of species and ecosystems (Royal Society for Protection of Nature, 2022).

Bhutan has a strong policy framework on the environment and is acclaimed internationally for its commitment to conservation. Over 40% of its land has been declared as protected areas, and 60% of the total land area is maintained – by constitutional mandate – under forest cover (WWF, 2022).

Unique among the countries of the world, Bhutan has a Gross National Happiness Index, which measures the well-being and happiness of its nearly 800,000 people (GNH Centre Bhutan, 2022).

About 80% of this population depends on subsistence agriculture (WMD, 2021).

However, the country is now transitioning from a low to middle-income country (The World Bank Group, 2022). There is increasing infrastructure and hydropower development, impacting hydrology throughout the country. Though Bhutan has ample water sources in its rivers and

valleys, high-altitude mountain communities are highly dependent on mountain springs as a source of drinking water and for agriculture and livestock. According to Bhutan's Watershed Management Division, springs comprise 67% of the total water sources in the country. However, recent studies have shown that springs throughout the country are drying up. While currently, only 1% of the total water sources have dried up, it is forecast that 25% of water sources in the country are in the process of drying, because of a combination of factors, including climate change and other anthropogenic causes (WMD, 2021).

The Scaling up Mountain EbA Project in Bhutan focused on strengthening existing policies and plans at the national level so that EbA approaches are better integrated into long-term investments.

Before the hiatus, the project had two main components: 1) analysis of the policy framework for EbA (with a focus on water); and 2) Site-based EbA dialogues and training in two pilot sites (Chamgang Watershed and the Namey Nichu Watershed) (Figure 11).

However, after the hiatus, when work commenced again in 2022, it was found that there had been government restructuring and reshuffling of government officers, and that key focal points had changed. Therefore, the continuation of planned work was not possible. The course of work was changed and 1) supported the application of EbA measures in the two demonstration sites in the Gawa Phuntsum and Tsezusachu springsheds (Figure 11), carried out by partners (see Table 1 & 4); 2) developed a technical and policy brief on springshed management; and 3) carried out a training mission on EbA. (See Table 3.)



Figure 11. Map of project site locations in Bhutan  
(Source: IUCN, 2023e)

## Colombia

About 60% of Colombia's 49 million population is concentrated in the highlands of the Andes Mountain range of South America ([World Population Review, 2022c](#)). The high mountain belt (above 2,800 m in elevation) includes a suite of ecosystems comprising cloud forests, páramos (a type of alpine tundra found only in Andes mountains above 3,810 m), wetlands, periglacial snowfields (characterised by freeze-thaw cycles and the presence of permafrost), and glacier ice caps ([CEPF, 2021](#)). The Colombian High Andes (Figure 12) are part of an important global biodiversity hotspot ([CEPF, 2021](#)), and Colombia is considered one of the world's megadiverse countries ([CBD, 2022](#)). These mountain ecosystems provide a range of life-sustaining ecosystem services. For example, the páramos ecosystem is a water tower that intercepts water from fog, rain and melting glaciers, stores it, and then releases it into the lowlands ([CEPF, 2021](#)). It is estimated that 40 million people (including residents of the capital Bogotá) depend on the páramos for drinking water ([Josse et al., 2009](#)). The undrained peat soils in the wetlands are carbon sinks ([Peña et al., 2009](#)). These mountain ecosystems are also considered to be among the most vulnerable to climate change ([Valencia et al., 2020](#)).

From 1950-2000, the average warming in Colombia was 0.1– 0.28°C per decade ([Llambí et al., 2021](#)) but in the páramos, the rate has been as much as 0.78°C per decade ([Cresso et al., 2020](#)). There is a general trend of an increase in precipitation. These climatic changes can cause altitudinal shifts in the distribution of species and their composition, as well as cause a drastic reduction of the páramos ecosystem. In addition, this warming has accelerated



Figure 12. Map of the Colombian Andes  
(Source: IUCN, 2023f)

the retreat of the glaciers of the region – it has been demonstrated that the current extent is 36% less than in the mid-1990s and 62% less than that in the mid-twentieth century ([Rabatel et al., 2017](#)). These changes in ecosystems will result in the reduction or loss of their invaluable services.

The focus of the project in Colombia veered from the other countries – as work was focused on three key areas: 1) collaborating with the GEF-funded project 'Adaptation to Climate Impacts in Water Regulation and Supply for the Chingaza-Sumapaz-Guerrero Area'; 2) contributing to capacity building processes and the exchange of experiences: spaces for capacity building have been developed both at local and national levels; and 3) developing an e-learning course on 'Nature-based Solutions for a sustainable and resilient development in Colombia'.

## Kenya

Mount Elgon – the second highest mountain in Kenya – is a massive, single volcanic mountain between Uganda and Kenya, spreading over 772,300 ha and rising to 3,070 m. Mt. Elgon is one of five major water towers in Kenya, and its forests are a key watershed for the River Nzoia (which drains into Lake Victoria) and River Turkwel (which drains into Lake Turkana) ([Kenya Water Towers Agency, 2020](#)).

In 2003, the watershed forests of Mt. Elgon were declared by UNESCO as a Biosphere Reserve, because of their globally significant biodiversity and their importance as a water tower. The natural ecosystems of Mt. Elgon are conserved as a montane forest reserve (in the high hills, managed by the Kenya Forest Service), a national park (Mt. Elgon National Park, managed by the Kenya Wildlife Service) and the Chepkitale Nature Reserve (managed by the Bungoma County Government) ([KEFRI, 2018](#)). The latter lies in the upper watershed of the Kuywa and Sosio rivers that feed into the Nzoia River ([KEFRI, 2018](#)).

Within the Chepkitale Nature Reserve live the Ogiek Indigenous Peoples ([FPP, 2013](#)). The Ogiek are mainly hunter-gatherers, depending entirely on the nearby forest and grasslands for natural resources, including water, with a few livestock only for household use. The Ogiek use very strong, traditional management and governance mechanisms to conserve their natural resources, and hence, have not damaged their surrounding environment. However, the location is remote and the community is marginalised, lacking basic amenities – such as a reliable water supply and access roads (Owino, 2019).



The Scaling up Mountain EbA project in Kenya was sited in the Chepkitale Nature Reserve and participating in it were the Ogiek Indigenous Peoples in the Bungoma County (Figure 13). The project focused on improving water security for the community by identifying and protecting springs in the watershed and included the following EbA actions: 1) a rapid participatory assessment of climate change vulnerability in the Chepkitale Nature Reserve, Mt. Elgon; 2) participatory 3-Dimensional Modelling (P3DM) spatial mapping; 3) carrying out a feasibility assessment to assess the viability of springs and 4) implementing the water structure for the Chororo Spring. (See Table 3.)

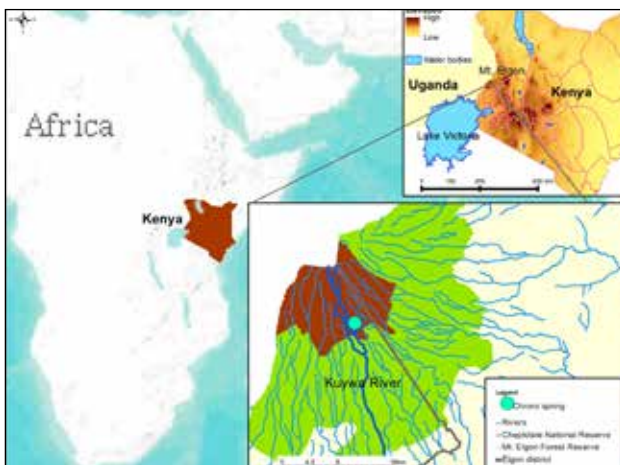


Figure 13. Map of the project site location in Kenya  
(Source: IUCN, 2023g)

A selection of EbA action from both flagship and expansion countries is shown in Figure 14.



Figure 14. Project actions in both flagship and expansion countries

(Top to bottom: Asparagus cultivation, Chilime, Nepal (© IUCN); planning workshop, Miraflores community, Perú (© IdM); capacity building, Sipi microcatchment, Uganda (© IUCN); community visit, Tsezusachu, Bhutan (© IUCN); meeting with officers of the Ministry of Environment, Bogotá, Colombia; feasibility study to assess the viability of springs, Chepkitale Nature Reserve, Kenya (© IUCN);

## Details of EbA field actions by country

Table 3 below provides details of EbA field actions for each country.

Table 3. EbA field actions for each country  
(Note: Colombia had no field measures)

Project site(s)	EbA field measures	Components of activities	Targeted ecosystem service	No. of households/ No. of people	Hectareage
Nepal (Hindu Kush-Himalayan mountain region)					
Chilime watershed, Rasuwa	Ecosystem Restoration	Plantation and distribution of multi-use tree species and NTFPs	<ul style="list-style-type: none"> <li>Supporting services: by enhancing biodiversity</li> <li>Provisioning services: by planting multi-purpose species and NTFPs</li> </ul>	340 HH	1
	Organic asparagus cultivation	100 asparagus crowns planted	<ul style="list-style-type: none"> <li>Regulating services: by improving soil formation and nutrient cycling through organic cultivation</li> <li>Provisioning services by cultivation of a food crop</li> </ul>	31 HH	0.04
	Livelihood diversification	Promotion of bee keeping	<ul style="list-style-type: none"> <li>Regulating services: by enhancing pollination</li> </ul>	12 HH	Improved pollination in 2,400 ha <sup>1</sup>
	Conservation and promotion of <i>Paris polyphylla</i> cultivation, a high value medicinal plant	<ul style="list-style-type: none"> <li>Training the local community on farming medicinal and aromatic plants (MAPs) (<i>Paris polyphylla</i>, in particular),</li> <li>Providing rhizomes of the <i>Paris polyphylla</i> for qualified local farmers</li> <li>Establishing a demonstration nursery of <i>Paris polyphylla</i></li> </ul>	<ul style="list-style-type: none"> <li>Supporting services: by enhancing biodiversity</li> <li>Provisioning services: by cultivation of a medicinal plant</li> </ul>	18 HH	0.162
	Pastureland improvement in highlands	Provisioning water through channelling it water from the perennial river by constructing water recharge ponds. <ul style="list-style-type: none"> <li>Improving governance and capacity of pastureland management group in managing highland pastures</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services by ensuring water security</li> </ul>	79 HH	4,767.7

<sup>2</sup> Assuming that each apjary site was assumed to have an area of 200 hectares (Governments of the Commonwealth of Australia and Queensland, 1989).

Project site(s)	EbA field measures	Components of activities	Targeted ecosystem service	No. of households/ No. of people	Hectarage
Harpan khola sub watershed, Kaski	Ecosystem restoration	<ul style="list-style-type: none"> <li>26,550 broom grass (<i>Thysanolaena nees</i>) rhizomes planted along the roadsides</li> <li>on private land</li> <li>on public land (CF land)</li> <li>value addition and marketing of broom grass</li> </ul>	<ul style="list-style-type: none"> <li>Supporting services: by preventing erosion</li> </ul>	110 HH	1.32 km
	Pond conservation	<ul style="list-style-type: none"> <li>Continued conservation and maintenance of 17 ponds from the flagship phase</li> <li>3 new ponds constructed/restored</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services: by ensuring water security</li> <li>Provisioning services: by ensuring water security</li> </ul>	240 HH	NA
	Protection of water sources	<ul style="list-style-type: none"> <li>Restoration and protection of 7 water sources from the flagship phase</li> <li>Restoration and protection of 5 new water sources</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services by ensuring water security</li> <li>Provisioning services: by ensuring water security</li> </ul>	111 HH	NA
	Organic coffee cultivation	<ul style="list-style-type: none"> <li>525 coffee seedlings planted</li> </ul>	<ul style="list-style-type: none"> <li>Regulating services: by improving soil formation and nutrient cycling through organic cultivation</li> <li>Provisioning services: by cultivation of a food crop</li> </ul>	11 HH	0.25
	Organic cardamom cultivation	<ul style="list-style-type: none"> <li>6340 cardamom seedlings planted</li> </ul>	<ul style="list-style-type: none"> <li>Regulating services: by improving soil formation and nutrient cycling through organic cultivation</li> <li>Provisioning services by cultivation of a food crop</li> </ul>	5 HH	1.5
	Conservation farming and livestock shed management	<ul style="list-style-type: none"> <li>Improvement of 108 livestock sheds, to collect manure for organic gardening</li> </ul>	<ul style="list-style-type: none"> <li>Regulating services: by improving soil formation and nutrient cycling through organic cultivation</li> </ul>	108 HH	NA
	Livelihood diversification (promotion of bee keeping)	<ul style="list-style-type: none"> <li>Providing 40 beehives to communities</li> <li>Providing training and technical support to beekeepers</li> </ul>	<ul style="list-style-type: none"> <li>Regulating services: by enhancing pollination</li> </ul>	68 HH	Improved pollination in 8,000 ha <sup>3</sup>
	Soil quality improvement	<ul style="list-style-type: none"> <li>Providing lime and practical training on how to use lime to improve soil quality</li> </ul>	<ul style="list-style-type: none"> <li>Regulating services: by improving soil formation and nutrient cycling</li> </ul>	50 HH	2.54

Project site(s)	EbA field measures	Components of activities	Targeted ecosystem service	No. of households/ No. of people	Hectarage
	Establishment of a herbal block	<ul style="list-style-type: none"> <li>Establishing a herbal block and tagging with species names</li> </ul>	<ul style="list-style-type: none"> <li>Supporting services: by enhancing biodiversity</li> </ul>	15 HH	0.25
	Updating a biodiversity garden	<ul style="list-style-type: none"> <li>Updating and name tagging a biodiversity garden</li> </ul>	<ul style="list-style-type: none"> <li>Supporting services: by enhancing biodiversity</li> </ul>	25	5
	Conservation of the tree fern ( <i>Alsophila spinulosa</i> )	<ul style="list-style-type: none"> <li>Two tree fern plots conserved, and awareness created on the importance of tree fern conservation</li> </ul>	<ul style="list-style-type: none"> <li>Supporting services: by enhancing biodiversity</li> </ul>	20 HH	0.5
<b>Perú (South American Andes)</b>					
Nor Yauyos Cochas Landscape Reserve (NYCLR): Miraflores, Canchayllo, Tomas and Tanta	Strengthening local capacities and knowledge	<ul style="list-style-type: none"> <li>Participatory rural appraisals and climate risk assessment and livestock productivity (only for Tomas in scaling up phase)</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services by ensuring water security</li> </ul>	48 people	Approximately, 13,031 ha in Miraflores and 7,670 ha Canchayllo
		<ul style="list-style-type: none"> <li>Capacity building of community members and park rangers on pasture fencing, water conservation and water distribution was carried out.</li> </ul>		Miraflores: 25 Canchayllo: 14 Tanta: 14 Tomas: 6 NYCLR: 15 Total: 74	
		<ul style="list-style-type: none"> <li>Training in Participatory Action Research and facilitation of participatory processes have also been provided to the NYCLR and to teachers and students of the Universidad Nacional del Centro</li> </ul>		Miraflores: 42 Canchayllo: 150 NYCLR: 7	
		<ul style="list-style-type: none"> <li>Facilitation of the development of a model for managing and maintaining pastures and water in the communities' common areas (flagship phase).</li> </ul>			

Project site(s)	EbA field measures	Components of activities	Targeted ecosystem service	No. of households/ No. of people	Hectareage
Perú (South American Andes)					
Miraflores	Establishing green-grey infrastructure	<ul style="list-style-type: none"> <li>The flagship project restored an ancient water management system comprising six pre-Inca dams and a channel (flagship phase).</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services: by ensuring water security</li> <li>Regulating services: by reducing soil erosion</li> </ul>	40	5 ha of wetlands
		<ul style="list-style-type: none"> <li>Protection of wetlands and dams, as well as the development of a new livestock rotational area of native grasslands with fences and five drinking fountains, because of the restored water system (flagship phase).</li> </ul>			165 ha of native grasslands
		<ul style="list-style-type: none"> <li>Expansion and improvement of the fence during the scaling-up phase.</li> </ul>		35	From 5 to 7 ha in Yanacancha
		<ul style="list-style-type: none"> <li>Maintenance, with more durable materials, of the fence and six dams.</li> </ul>			From 165 to 6,000 ha of pastures for rotation with cattle
		<ul style="list-style-type: none"> <li>Establishment of a live fence with native species, for protection from damage by animals.</li> </ul>			6,054
		<ul style="list-style-type: none"> <li>Maintenance of the channel restored during the flagship programme.</li> </ul>			
Canchayllo		<ul style="list-style-type: none"> <li>The Chacara dam was repaired and an ancient water channel, now unused, was restored, with the installation of pipes<sup>4</sup></li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services: by ensuring water security</li> </ul>		1,092 in the Yanaututo sector
		<ul style="list-style-type: none"> <li>A shed was built to protect livestock from extreme weather events (such as frost and hail).</li> </ul>			560 in the communal farm
Tanta				45	14.85 ha in the Gloriapampa sector

<sup>4</sup> Done because there is no labour for maintenance, as a consequence of out-migration and changes in social patterns.



Project site(s)	EbA field measures	Components of activities	Targeted ecosystem service	No. of households/ No. of people	Hectarage
Perú (South American Andes)					
Miraflores and Canchayllo	Strengthening community organisation and institutions	<ul style="list-style-type: none"> <li>Along the lines of the management plans developed in the flagship phase a plan of infrastructure operation and maintenance was developed</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services by ensuring water security</li> <li>Regulating services by reducing soil erosion</li> </ul>	45	165 ha
		<ul style="list-style-type: none"> <li>In Canchayllo, the status of water uses and distribution were developed in a participatory manner.</li> </ul>		18	Canchayllo: 1,092 ha in Yanaututo sector
		<ul style="list-style-type: none"> <li>Establishment of a committee to operate and maintain the restored water management infrastructure to ensure a sustained flow of water for livestock and for the irrigation of grasslands (flagship phase).</li> </ul>		Miraflores: 6 Canchayllo: 6	Miraflores: 16 ha Canchayllo: 1,092 ha in the Yanaututo sector
Tomas	Management of native grasslands, water and breeding of vicuñas (Vicuna vicugna)	<ul style="list-style-type: none"> <li>Enlarging a vicuña fence for semi-captive animals and repairing some sections</li> </ul>	<ul style="list-style-type: none"> <li>Supporting services: by enhancing biodiversity, and conservation of conservation-dependent species</li> </ul>	On the day of the chaku, 124 people attended to participate in and witness the event	from 31 to 241 ha
		<ul style="list-style-type: none"> <li>Capacity building for the Vicuña committee, in charge of arranging all activities related to the vicuñas raised in semi-captivity.</li> </ul>		10 people	NA
		<ul style="list-style-type: none"> <li>Establishing linkages with the vicuña committee members and SERFOR, SENASA and the National Agrarian University and facilitating training in vicuña management and sale of wool</li> </ul>			

Project site(s)	EbA field measures	Components of activities	Targeted ecosystem service	No. of households/ No. of people	Hectareage
<b>Uganda (Mount Elgon transboundary ecosystem)</b>					
Kaptokwoi micro-catchment, Kapchorwa District (consolidation site)		<ul style="list-style-type: none"> <li>Restoration of river bank vegetation, using indigenous species.</li> </ul>	<ul style="list-style-type: none"> <li>Regulating services – reduction of soil erosion and moderation of extreme weather events</li> </ul>	1,360 people (81M, 549W)	48 km
		<ul style="list-style-type: none"> <li>Re-training/ training participants from the flagship phase and scaling up phases</li> </ul>		308 from the flagship phase and 400 from the scaling up phase	
Chebonet micro-catchment, Kapchorwa District (replication site)	Restoring riverbank vegetation	<ul style="list-style-type: none"> <li>Participatory mapping and marking of the buffer zone (no-cultivation zone)</li> </ul>	<ul style="list-style-type: none"> <li>Regulating services: reduction of soil erosion and moderation of extreme weather events</li> </ul>	747 (with 48.3% women)	48 km
Kaptokwoi micro-catchment and Chebonet micro-catchment landowners		<ul style="list-style-type: none"> <li>Provision of plants to restore river bank areas within the owners' lands</li> </ul>		500 HH	
Kaptokwoi micro-catchment and Chebonet micro-catchment	Establishment of on-farm agroforestry and woodlands	<ul style="list-style-type: none"> <li>Cutting contour trenches</li> </ul>	<ul style="list-style-type: none"> <li>Regulating services: reduction of soil erosion and moderation of extreme weather events</li> </ul>	2,889 persons	20.76 km
		<ul style="list-style-type: none"> <li>Stabilisation of contour bands with grass</li> </ul>			
		<ul style="list-style-type: none"> <li>Promotion of sustainable agricultural practices (such as contour planting, crop rotation and mulching with crop residues</li> </ul>			
		<ul style="list-style-type: none"> <li>Establishment of woodlots and increasing tree cover using native species</li> </ul>			
		<ul style="list-style-type: none"> <li>Commencing farmer-managed natural regeneration (FMNR)</li> </ul>			
		<ul style="list-style-type: none"> <li>Regulating services: by ensuring water security</li> <li>Supporting services: by enhancing biodiversity and carbon sequestration</li> </ul>			
		<ul style="list-style-type: none"> <li>Regulating services: reduction of soil erosion and improvement of soil fertility</li> </ul>			

Project site(s)	EbA field measures	Components of activities	Targeted ecosystem service	No. of households/ No. of people	Hectarage
<b>Bhutan (Hindu Kush-Himalayan mountain region)</b>					
2017-2019 Chamgang and Namey Nichu springsheds	Site-based EbA dialogues and training in two pilot sites	<ul style="list-style-type: none"> <li>Two training sessions on EbA were held for two local communities</li> <li>A discussion/workshop was held for participatory selection of EbA actions, operationalisation and the way forward.</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services: by ensuring water security</li> </ul>	67 (30 women +37 men+ 8 forest department staff)	NA
				75 people	NA
2022 Gawa Phuntsum and Tsezusachu springsheds	Supporting the application of EbA measures in the two demonstration sites	<ul style="list-style-type: none"> <li>Working with two selected communities to carry out consultations and map springs and their recharge areas in the villages.</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services: by ensuring water security</li> </ul>	190 people	NA
	Carrying out a training mission	<ul style="list-style-type: none"> <li>Training community members in monitoring spring outflow</li> </ul>		83 people	NA
		<ul style="list-style-type: none"> <li>Community dialogues on EbA and feedback on technical interventions</li> </ul>		36 people	NA
		<ul style="list-style-type: none"> <li>Carrying out a two-day training/workshop for representatives from local government, national CSOs and universities.</li> </ul>		23 people	NA
<b>Kenya (Mount Elgon transboundary ecosystem)</b>					
Chepkitale National Reserve	Spring protection	<ul style="list-style-type: none"> <li>Carrying out a rapid participatory assessment for climate change vulnerability</li> </ul>	<ul style="list-style-type: none"> <li>Provisioning services by ensuring water security</li> </ul>	60 men and 30 women from three villages (Laboot, Tomooy, Toboo)	NA
		<ul style="list-style-type: none"> <li>Participatory 3-Dimensional Modelling (P3DM) spatial mapping</li> </ul>		Community elders, civil society members and representatives from the 32 clans that form the Chepkitale Ogiek	NA
		<ul style="list-style-type: none"> <li>Carrying out a feasibility study to assess the viability of springs</li> </ul>		Consultant engineer	N/A
		Consultant engineer		4 persons (will impact 500 persons)	NA









Figure 15. More EbA actions from the target countries

(1<sup>st</sup> row left: Bee keeping in Chilime, Nepal (© Alisia Rai); right: Vicuña *chaku*, Tomas, Perú (© IdM); 2<sup>nd</sup> row left: Cutting trenches in the Sipi river catchment to reduce the impact of floods, Uganda (© IUCN); right: workshop on springshed management, Gawa Phuntsum and Tsezusachu springsheds, Bhutan (© IUCN); 3<sup>rd</sup> row left: EbA and Eco-DRR classes, Bogotá, Colombia; right: vulnerability assessment, Chepkitale National Reserve, Kenya (© IUCN).

Box 2. The special case of Colombia: an e-learning course of EbA as one of the main deliverables

In Colombia the main output for the Scaling up project Mt EbA project was the development of an e-learning course on NbS in Spanish, adapted to the Colombian context, named 'Nature-based Solutions for a sustainable and resilient development in Colombia'.

This course is a direct response to the objectives of Colombia's NAP (1B: Education, training, communication, and public awareness on climate change, and 1C: Strengthening of institutional capacities for adaptation to climate change) and aims to:

- strengthen capacities, concepts, and tools in the application of NbS, with emphasis on the EbA approach;
- socialise the regulatory framework on climate change policies and how NbS and EbA are integrated; and
- share experiences and lessons learned on the implementation of EbA initiatives in mountains and other key ecosystems (with important interconnections in this diversely biogeographical country).

In addition, this course promotes collaboration among various initiatives and organisations, capitalising on ongoing climate change adaptation efforts through the development of 'state-of-the-art' materials about Colombia's progress on EbA, as well as a compilation of practical experiences and learning. Through this work, the creation of a practitioners' network on NbS and EbA is expected as a basis to promote and scale-up this knowledge and practice.

To design the course, a survey was developed and shared widely within the country to gather topics of interest and define key elements of the course content. More than 122 responses were received and meetings with about 20 people in the development/revision of the contents. Based on these, four modules have been designed for a target group of professionals and representatives from public, academic, private, and civil society institutions at local and national levels.

In addition, the e-learning course has the valuable support of several representatives of initiatives (past and active) and organisations (including IUCN members and commissions), who are contributing both with inputs for knowledge products (reading materials) being prepared and compiled, as well as with presentations on the topics of the course during upcoming webinars. For example, the Chair of the IUCN's Commission on Ecosystem Management provided a talk in the first webinar of the virtual course.

Several case studies of EbA will showcase EbA in practice within diverse types of ecosystems, including various in mountain ecosystems, such as Conservation International; Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN) (Consortium for Sustainable Development of the Andean Ecoregion); Fundación Futuro Latinoamericano - FFLA (IUCN member); the Nature Conservancy and Fundación Alma; UNDP; the World Food Program (WFP); Fondo Adaptación; and Fundación Natura (IUCN member).

By mid-October 22, 238 persons had registered for the course (59% women) and are from 55 diverse areas/cities of Colombia, and 71 institutions).

The course is hosted on 'Savia', the virtual platform of the Ministry of Environment.



## Local, regional and national level engagement for each target country

Table 4 lists the local and national level engagement for each target country.

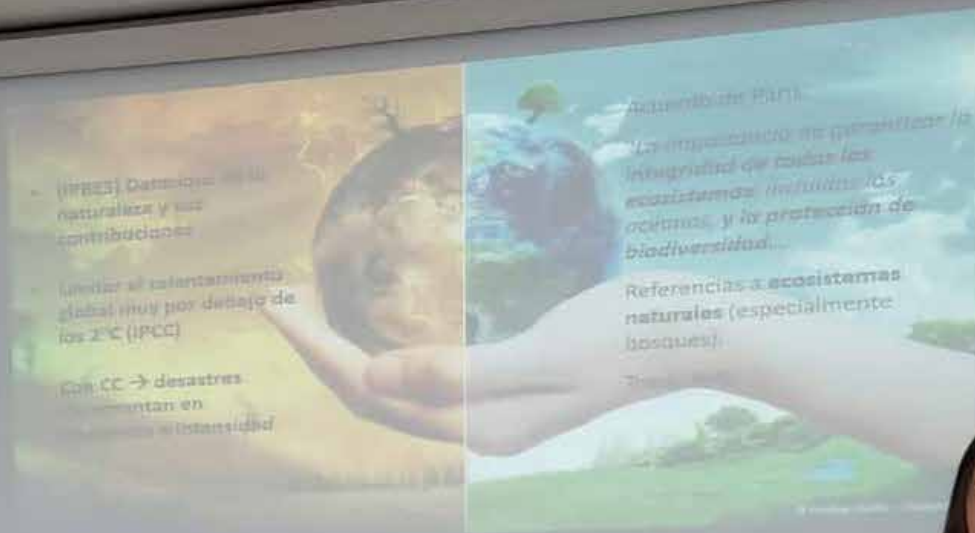
Table 4. Local, regional and national level engagement by country

Country	Local government involvement in project	Regional/National government involvement in project
Flagship countries		
Nepal	District level government in <ul style="list-style-type: none"> <li>• Panchase</li> <li>• Chilime</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Forests and Environment, Government of Nepal</li> </ul>
Perú	Nor Yauyos Cochas Landscape Reserve, National Service of Natural Areas Protected by the State (SERNANP)	<ul style="list-style-type: none"> <li>• Ministerio del Ambiente del Perú (MINAM) (Ministry of Environment)</li> <li>• Servicio Nacional de Sanidad Agraria del Perú National Agricultural Health Service of Perú (SENASA)</li> <li>• Servicio Nacional Forestal (Department of Forestry) (SERFOR)</li> </ul>
Uganda	Local government, Kapchorwa District	<ul style="list-style-type: none"> <li>• Ministry of Water and Environment of Uganda</li> <li>• Uganda Wildlife Authority</li> </ul>
Expansion countries		
Bhutan	2017-2019 <ul style="list-style-type: none"> <li>• Watershed management division, Forest Department, Ministry of Agriculture and Forests</li> <li>• Contribution from other relevant authorities in the Royal Government of Bhutan</li> </ul>	<ul style="list-style-type: none"> <li>• 2022</li> <li>• Non-governmental –Tarayana Foundation</li> <li>• College of Nature Resources, Royal University of Bhutan</li> </ul>
Colombia		<ul style="list-style-type: none"> <li>• Ministerio de Ambiente y Desarrollo Sostenible (Ministry of Environment) + many others through capacity building and networking</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>• Local government, Bugoma County</li> </ul>	<ul style="list-style-type: none"> <li>• Water Resources Authority</li> </ul>



Figure 16. View from the Sipi falls in the Mount Elgon national park in Uganda  
(© Dennis Wegewijs)

# Chapter 4: Methodology



Antecedentes



Initially, documentation related to the project was obtained from online project folders and country focal points and reviewed.

Three sets of questionnaires were prepared for IUCN and implementing partners, government officers and communities (Annex 2). Nomination lists for interviews were compiled by the country focal points (Annex 3), and interview schedules arranged. It was expected that semi-structured interviews with 75 nominated key actors (from all six target countries), as well as focus group meetings with 5-20 rights-holders for Kenya, Nepal, Perú and Uganda, would be conducted. It was envisaged that these interviews and discussions would be conducted i) virtually, ii) by phone or iii) by email.

Because of the terrain, and the lack of financial resources (end of the project) it was not easy to gather the rights holders in a location that would allow for a timely virtual meeting or a group call. Only Nepal managed to gather three community members for a virtual meeting, but even at this event, the connection was soon lost and ultimately only one local government officer was interviewed. Only three community members (one from Perú, one from Uganda and one from Kenya) were interviewed by the evaluator.

Finally, 27 of 75 of the actors were interviewed virtually, 13 responded by email using the questionnaire (of these four responded long after the analyses had been carried out, resulting in the need for re-analyses) and 25 excused themselves/were expected to respond (as they responded positively at the beginning)/or did not respond. These numbers are shown as percentages in Figure 17.

In total, 53.33% responded to the evaluation (Figure 17). However, not all the interviewees answered all the questions, because of the range of questions posed covered outcomes, on-the-ground field activities, the elements that define EbA, as well as good governance. Some of these topics were not relevant to certain countries. A list of those who were interviewed virtually/responded by email is presented in Annex 4.

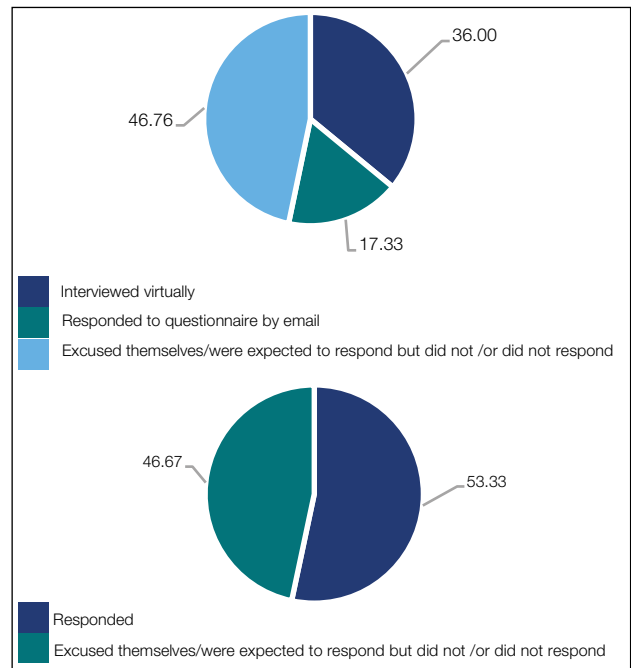


Figure 17. Top: mode of response as a percentage; and bottom: percentage of responses obtained

(Source: compiled by report author from analyses of interviews conducted)

One interviewee left the project before the implementation phase and these interview responses were discarded for the quantitative analysis. Another had responded regarding another project, not the Scaling up mountain EbA one. Yet another had only answered one question. Question 4 was omitted given the externally imposed hiatus and the revised results framework.

The response by country is shown in the graph below (Figure 18).

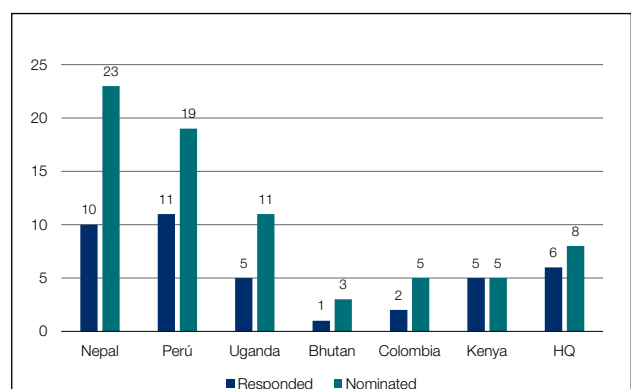


Figure 18. Response by country

(Source: compiled by report author from analyses of interviews conducted)

The response by category of actor is shown below (Figure 19).

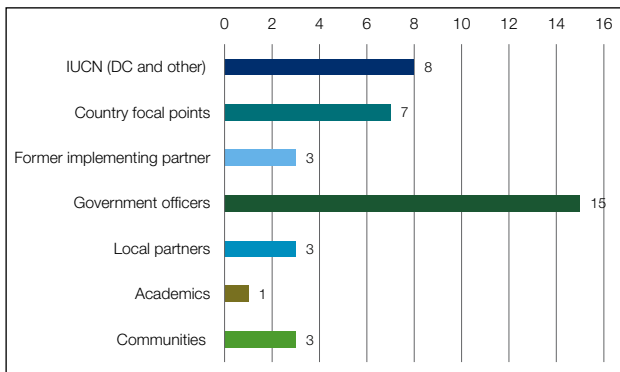


Figure 19. Response by category of actor

(Source: compiled by report author from analyses of interviews conducted)

Although it was envisaged in the inception report that answers to close-ended questions would be coded for each country and analysed using Categorical Principal Component Analysis, sample sizes per question were too small to allow for this. Hence, data are represented visually as graphs for general quantitative analyses, using MS Excel. Countrywise analyses were also hampered with small sample sizes, for example, there was only one respondent each for Bhutan and two for Colombia – one of which related to the GEF project in which the project was involved and not the EbA project as a whole in Colombia. Therefore,

bubble charts, using the R Project for Statistical Computing are presented.

The county report template (submitted twice a year) follows the results framework and has been developed to capture all the expected targets. These reports were also reviewed, and the expected targets evaluated against the achieved results.

A handbook had been developed, meant to guide the continuous process of setting up, implementing, monitoring, and scaling-up the EbA interventions under this project. There are ten forms for a) exploring the viability of EbA (Stage 0: Site Selection Criteria and Stage 0: Flagship measures status report); b) Understanding the context and defining EbA goals (Stage 1); c) Assessing vulnerability: climate risks and adaptive capacity (Stage 2); d) Rapid ecosystem services appraisal (Stage 3); e) Developing an EbA strategy and designing adaptation measures (Stage 4: EbA strategy); f) Consolidation measures (Stages 4, 5 & 6); g) Replication measures (Stages 4, 5 & 6); and Policy influencing (Stage 7).

The country teams reviewed the draft report of this evaluation at a workshop held in Washington DC, USA between Oct 24-26, 2022. The recordings of the plenary sessions and the workshop report were provided to the author. The inputs from this workshop have been included in the final draft.



Figure 20. View from Panchase, Nepal

(© IUCN)



Box 3. Other constraints to the evaluation

*1. The lack of personal observation at all project sites:*

Firstly, there is much more to be learned and observed first-hand, on a site visit rather than through virtual meetings/ phone calls and/or emails with a range of people. Secondly, there are associated formal arrangements for gathering community members for focus group discussions coinciding with the site visits of an evaluator, so that interviewing communities becomes easier.

*2. Uneven support from the country focal points in the six countries:*

This may have been a consequence of the truncated completion time for the project in 2022, as well as lack of time and budget for responding to the evaluator, but this affected the progress of the evaluation.

*3. The deviation prior to the hiatus to the formulated results framework:*

These changes meant that analysis across countries was not possible, because some countries had on-the-ground activities with communities, while others did not.

*4. The time provided for the evaluation was far too short:*

- There were delays to the expected response times to obtain nominations for interviews and setting up interviews.
- Responses from many stakeholders also took several rounds of emails and reminders to set up meetings or obtain written responses.
- Some responses were received after the draft report was submitted and the analyses had been completed, which meant that data had to be re-analysed.

*5. Navigation of the necessary documentation on OneDrive was challenging:*

Each folder had many versions of the same document and country activities, reports and presentations were nested in many different folders, making navigation challenging.

*6. The evaluation was carried out before all key country documents (2022 final reports) were received.*

Several country interim reports for August 2022 were received later than expected. It was noted (during a one-one-country contact) that terminal reports for each country were expected after this evaluation was submitted.



Figure 21. The Paramos, Colombia  
(© Javier Crespo)



## Chapter 5: Results



# Results from the impact evaluation

## Results from interviews

This evaluation is structured round six criteria:

1. Effectiveness;
2. Assumptions;
3. Adaptability;
4. Socio-ecological sustainability and impact;
5. Contribution to the FEBA framework;
6. Demonstration of clear linkages from EbA to biodiversity conservation and climate.

The rest of this chapter will be presented under those topics. The questions relevant to each criterion are presented in Annex 2. It should be noted that responses for Kenya were received before the completion of the main action of the project, and this is likely to have affected the direction of the answers.

## Effectiveness of the project

Eighty-three percent of the respondents stated that the project was successful (Figure 22). The most 'popular' perceived percentage of success was between 71% and 80% (Figure 23). Among other local partners and communities, the responses were negative in Kenya.

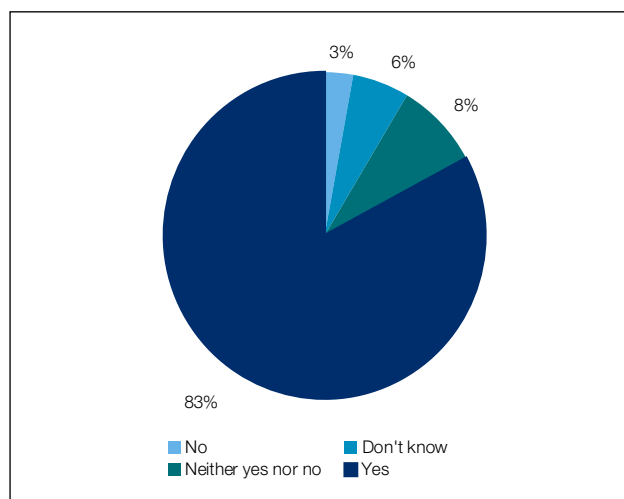


Figure 21. Responses to whether the project was successful or not (Source: compiled by report author from analyses of interviews conducted)

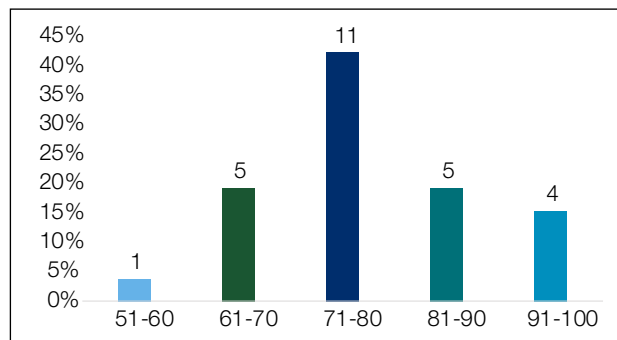


Figure 23. Perceived percentage of success (Source: compiled by report author from analyses of interviews conducted)

Countrywise, again, many of the respondents stated that the project was successful (Figure 24).

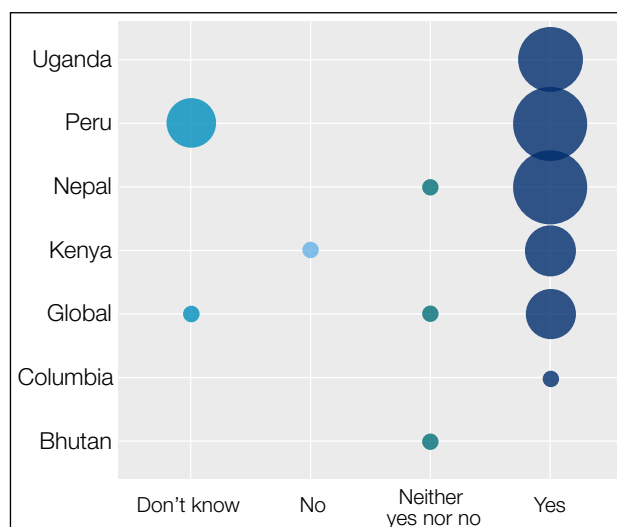


Figure 24. Countrywise: response to whether the project was successful or not

(Source: compiled by report author from analyses of interviews conducted)



Figure 25. Participatory rural assessment, Tomas (© IdM)



Asked what was successful about the project, respondents variously stated the following (repetitions have not been included), as shown below (Table 5).

Table 5. Highlights about what was successful about the project  
(Source: compiled by report author from analyses of interviews conducted)

Office/Country	Comments
DC/HQ	<ul style="list-style-type: none"> <li>• Countries are becoming champions of EbA.</li> <li>• Colombia and Perú have been able to restart the project quicker than others. Colombia had funding from another project and in Perú, TMI had credibility on the ground.</li> <li>• Nepal has been very successful from the community to the policy level;</li> <li>• In Uganda, Perú, and Nepal and to an extent Colombia, there was a very successful building of relationships with local and national governments and influencing policy.</li> <li>• The project has increased awareness of mountain EbA in target countries and has worked in a participatory and inclusive manner with local communities to provide shorter-term benefits, as well as anticipated long-term adaptation benefits.</li> </ul>
Flagship countries	
Nepal	<ul style="list-style-type: none"> <li>• At the ground level, there is both human and economic empowerment through EbA actions, and at the government level, support and inputs for the development of policy.</li> <li>• EbA has now spread all over Nepal.</li> <li>• Continuation of selected EbA measures at the Panchase site and sharing of EbA at different fora and events.</li> <li>• Extensive on-the-ground capacity building.</li> <li>• Benefits from implemented EbA measures are now measurable: for example, scaling up broom grass cultivation has increased the annual household income by an average of about 20,000 NPR (157.01 USD).</li> </ul>
Perú	<ul style="list-style-type: none"> <li>• A real success in terms of learning how to apply EbA and sharing that learning with others, from the local level to the regional level to the national level and to the international level; a big part of the credit on working with the Ministry of Environment and working with the local government and working with the National System of protected areas and scaling up the EbA concepts but working from the field giving examples and evidence from the field.</li> <li>• The EbA approach has been transferred to the management instruments that deal with risk.</li> <li>• Much capacity building at the field level.</li> </ul>
Uganda	<ul style="list-style-type: none"> <li>• This project has provided a very good platform for generating evidence-based information that has helped in the development of several national-level programmes. For example, the national REDD+ strategy that really benefited in terms of selecting best practices, to ensure that some of the priorities within the REDD+ programme are the priorities of the vulnerable communities.</li> <li>• The regional-level platform of stakeholders was strengthened and was nationally recognised as the key platform through which this REDD+ strategy would be shared with the stakeholders at that level.</li> <li>• The NDCs benefited from seeing practical evidence and lessons learned from the EbA project to improve the update of this report.</li> <li>• Soil and water conservation measures have been implemented in four watersheds. These EbA measures have helped improve soil fertility.</li> <li>• The availability of established fodder species for livestock has minimised conflicts between the Ugandan wildlife authorities and the communities adjacent to the National Park.</li> <li>• Capacity building and the creation of awareness have led to collective action.</li> </ul>
Expansion countries	
Bhutan	<ul style="list-style-type: none"> <li>• Gathering interest from stakeholders.</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>• There is as much as possible presence, and different spaces have been organised and to hold discussions about NbS and EbA and to share lessons learned.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>• Community-based vulnerability assessment, from which a feasibility study was carried out to identify which springs needed to be stabilised as well as the support the project gave to the community-based spatial planning process.</li> <li>• Carrying out an initial feasibility study based on the vulnerability assessment meant that the identification of springs which needed protection was precise.</li> </ul>



When asked what challenges were faced in the implementation of the project, interviewees responded as shown below (Table 6) (repetitions have not been included):

Table 6. Highlights about what was challenging during the project  
(Source: compiled by report author from analyses of interviews conducted)

Office/Country	Comments
DC/HQ	<ul style="list-style-type: none"> <li>• Staff and management continuity, in particular loss of global TMI project partners, presented challenges to global project coordination.</li> <li>• The challenges to restart the project and engage government officials to implement a project with little funding (for example, Bhutan).</li> <li>• Countries were measuring impact in different ways.</li> </ul>
Flagship countries	
Nepal	<ul style="list-style-type: none"> <li>• Changes in government officials from the ministry to the province levels.</li> <li>• The time to win the confidence of and establish links with local communities was too short.</li> <li>• The Chilime site was more rugged and steep than Panchase, which made access difficult.</li> <li>• The time for obtaining approvals was too long.</li> <li>• Mainstreaming local-level planning with this EbA concept.</li> <li>• Limited financial resources.</li> </ul>
Perú	<ul style="list-style-type: none"> <li>• Fieldwork was not possible because of the pandemic and also, because the project was paused for other reasons.</li> <li>• From the first phase of the mountain EbA project, there has been much learning. For this phase there was a lot of expectation and focus.</li> <li>• The project landscape is close to the capital, opportunities for local populations for the communities are complex and populations comprise mainly older people.</li> <li>• In the future, to scale up the EbA approach, not only to the protected area system but also to translate it and take it outside to other organisations.</li> </ul>
Uganda	<ul style="list-style-type: none"> <li>• There is a big gap between the plans formulated and the resources allocated to the Natural Resources Department to implement them effectively.</li> <li>• To obtain compliance required much follow-up.</li> <li>• Drought at the beginning of the project and delayed funds retarded the commencement of activities.</li> <li>• Sustainability is constrained by the lack of funds for the local government.</li> <li>• Because of the proximity to Mt. Elgon National Park in Kwoti sub-county, the community had easy access to forest tree products and this made them reluctant to plant trees on their farms.</li> </ul>
Expansion countries	
Bhutan	<ul style="list-style-type: none"> <li>• Problems that are inherent to Bhutan itself such as government commitment, coordination, continual turnover of government staff, and the very small budget, which was not very attractive for the government.</li> <li>• Also, there were big gaps in the progress of work, which added to the above issues.</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>• For the scaling-up countries, the resources were quite limited.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>• The local partner's accountability system and coordination of the activities are not as expected.</li> </ul>

Asked if the approach used was effective in delivering what was wanted, 69% of the respondents said that it was very effective/effective, while the rest said it was moderately effective or not effective (Figure 26).

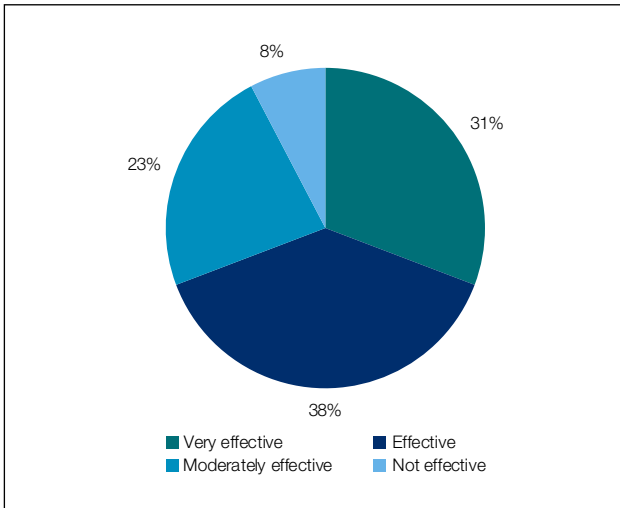


Figure 26. Effectiveness of the approach

(Source: compiled by report author from analyses of interviews conducted)

Countrywise, most of the respondents stated that the approach was either very effective or effective (Figure 27).

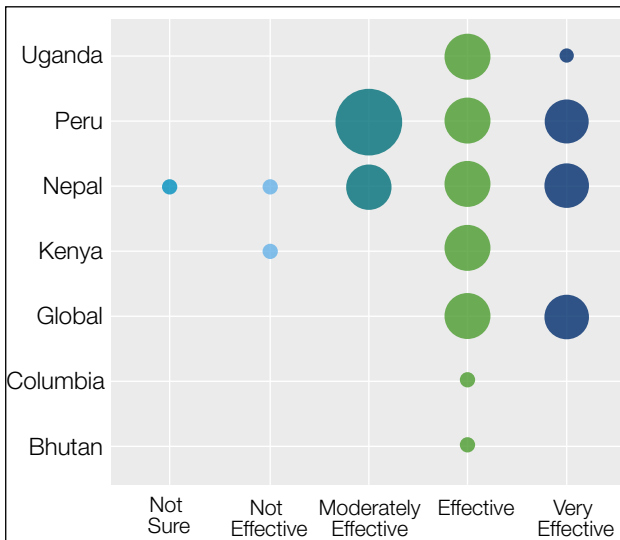


Figure 27. Countrywise: effectiveness of the approach

(Source: compiled by report author from analyses of interviews conducted)

An expected outcome of the project was that Mountain EbA approaches are integrated into at least one local adaptation/watershed management/community development plan. When asked whether this had been achieved almost three-quarters of the respondents said yes (Figure 28).

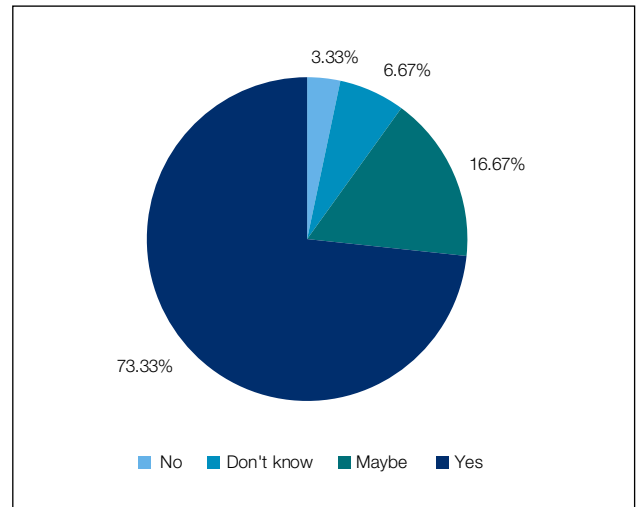


Figure 28. Achievement of the expected outcome of the integration of EbA into a local plan

(Source: compiled by report author from analyses of interviews conducted)

Countrywise, again, most of the respondents stated that the expected outcome of the integration of EbA into a local plan was achieved (Figure 29).

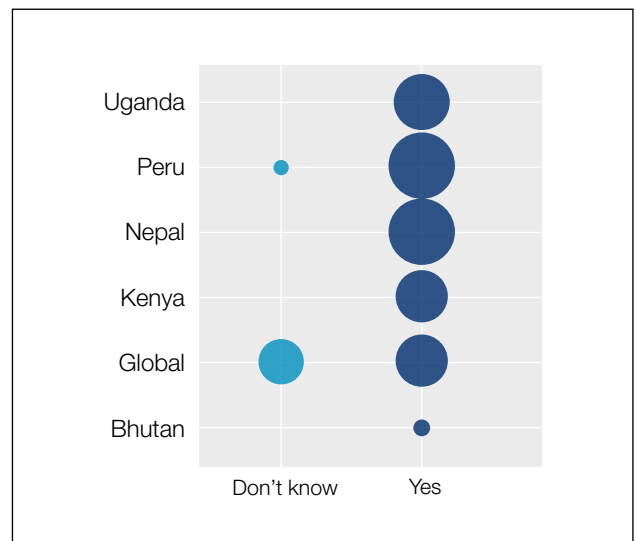


Figure 29. Countrywise: achievement of the expected outcome of the integration of EbA into a local plan

(Source: compiled by report author from analyses of interviews conducted)

The plans mentioned for each country are listed in Table 7.

Table 7. Local plans into which EbA has been incorporated by country  
(Source: compiled by report author from analyses of interviews conducted)

Country	Local plan into which EbA has been incorporated
<b>Flagship countries</b>	
Nepal	<ul style="list-style-type: none"> <li>• Panchase Protected Forest Management Plan;</li> <li>• Community Forest Operational Plan;</li> <li>• Local Community Development Plan; and</li> <li>• Plan for the Bhumlu Rural Municipality, Kavrepalanchowk District.</li> </ul>
Perú	<ul style="list-style-type: none"> <li>• Tanta District Development Plan; and</li> <li>• Nor-Yauyos Cochabamba Landscape Reserve master plan. A new version is already prepared which includes NbS, that encompasses EbA.</li> </ul>
Uganda	<ul style="list-style-type: none"> <li>• Land Care Management Plan of the Kapchorwa district.</li> </ul>
<b>Expansion countries</b>	
Bhutan	<ul style="list-style-type: none"> <li>• The forest management plan of the Namey Nichu watershed.</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>• Not applicable.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>• Not applicable.</li> </ul>

Another expected output was the Mountain EbA approach was scaled up in flagship countries, locally and nationally, and accounted for in planning processes and strategies for application in expansion countries by local governments and other stakeholders. When asked whether this had been achieved a little more than half the respondents said yes, while about one-third were said it was partially achieved (Figure 30).

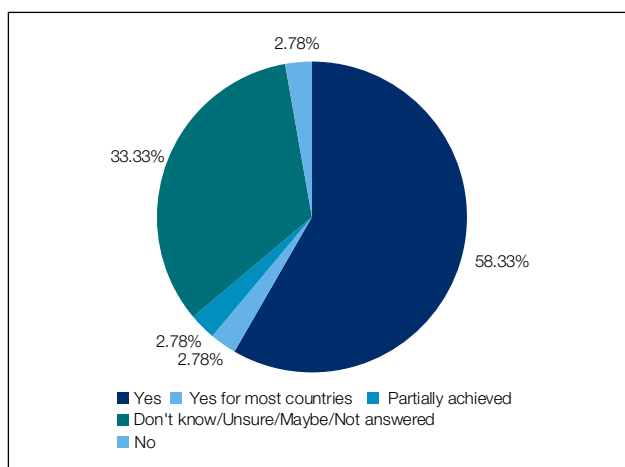


Figure 30. Achievement of the expected outcome of EbA being scaled up in flagship countries and accounted in expansion countries

(Source: compiled by report author from analyses of interviews conducted)

Countrywise, in the flagship countries, the answer was mainly yes. It should be noted that in Kenya on-the-ground work in restoring the spring had not yet commenced, at the time of the interviews, although by the time of writing, work had been executed. In Colombia, the outcome was consolidated as an e-learning course, which also had not been completed at the time of analyses. These are not reasons are not reflected in the graph (Figure 31).

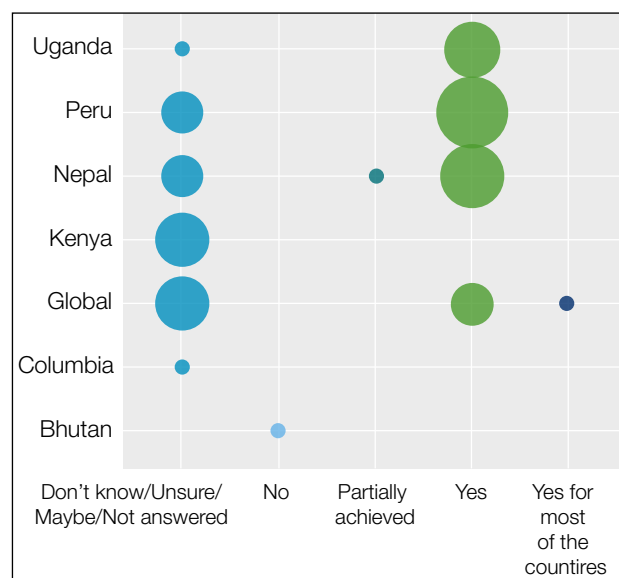


Figure 31. Countrywise: achievement of the expected outcome of EbA being scaled up in flagship countries and accounted in expansion countries

(Source: compiled by report author from analyses of interviews conducted)

The details for each country are listed in Table 8.

Table 8. Scaling up of EbA in flagship countries and accounted for in expansion countries  
(Source: compiled by report author from conducted)

Country	EbA scaled-up /accounted
DC/HQ	<ul style="list-style-type: none"> <li>In flagship countries EbA is one of their top priorities, even at the policy level and investment level being used both in these countries; and</li> <li>In some countries, the narrative and the dialogues around EbA are being influenced at the national level.</li> </ul>
<b>Flagship countries</b>	
Nepal	<ul style="list-style-type: none"> <li>UNEP is supporting the Royal Nepal Government to implement an EbA project in other districts, and knowledge and evidence from this project have been shared with UNEP.</li> <li>The project has also supported the Ministry of Forests and Environment in the preparation of a proposal that includes EbA for a GCF grant.</li> <li>The NAP.</li> <li>The NDCs.</li> </ul>
Perú	<ul style="list-style-type: none"> <li>The ecosystems conservation status monitoring, developed by MINAM and promoted by the project is being mainstreamed in SERNANP as a way to show impacts in National Protected Areas.</li> </ul>
Uganda	<ul style="list-style-type: none"> <li>The National Climate Change Act of 2020.</li> <li>The NDCs.</li> </ul>
<b>Expansion countries</b>	
Bhutan	<ul style="list-style-type: none"> <li>EbA has been scaled up in Bhutan, but because of other organisations such as WWF, although the project contributed to training and workshops.</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>Through the development of a Spanish NbS e-learning course.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>National Wildlife Climate Change Adaptation Strategy for Kenya (2022-2032)</li> </ul>

Yet another outcome for flagship countries (Nepal, Perú and Uganda) is that Mountain EbA measures are continued, tested, monitored, and adapted at local levels by communities, government, and other stakeholders in Flagship Country Sites. Nearly three-quarters of the respondents answered that it was (Figure 32).

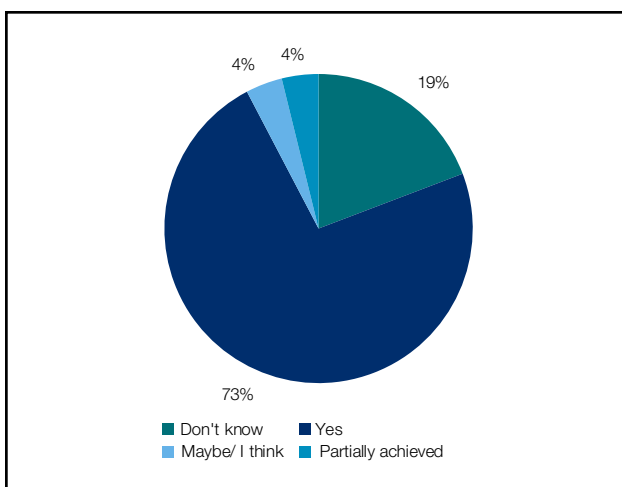


Figure 32. In flagship countries Mountain EbA measures are continued, tested, monitored, and adapted at local levels by communities

(Source: compiled by report author from analyses of interviews conducted)

Countrywise, again for the flagship countries, the responses are mainly in the affirmative, and this outcome was not applicable to the expansion countries but is shown as not answered.(Figure 33).

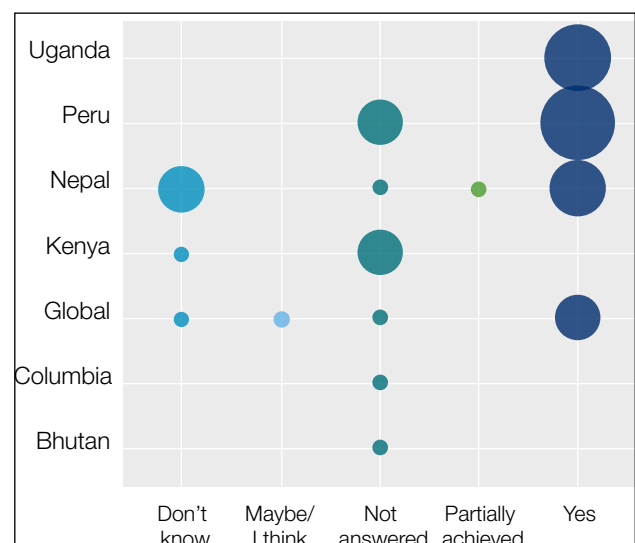


Figure 33. Countrywise: achievement of the outcome that in flagship countries Mountain EbA measures are continued, tested, monitored, and adapted at local levels by communities  
(Source: compiled by report author from analyses of interviews conducted)



When asked about the observed changes that have occurred in implementing ecosystem-based adaptation respondents replied as follows in Table 9.

Table 9. Observed changes that have occurred in implementing ecosystem-based adaptation

(Source: compiled by report author from analyses of interviews conducted)

Country	Observed changes that have occurred in implementing ecosystem-based adaptation
DC/HQ	<ul style="list-style-type: none"> <li>Overall, there has been a good uptake of EbA at both policy and practice levels in project countries.</li> <li>Some sharing of lessons – for example, in Nepal, the Kathmandu metropolitan city action plan includes lessons from the Mountain EbA project, which was in a rural area.</li> <li>In Perú there is a clear enhancement of water quality that has had a direct positive impact on livestock management, as well as the enhancement of ecosystem services. The same applies to Nepal where there has been a diversification of community livelihoods opening new opportunities for economic incomes, hence supporting social security.</li> </ul>
Flagship countries	
Nepal	<ul style="list-style-type: none"> <li>The main thing is the level of understanding and after that, the consequent result of that increased level of knowledge – many activities which were implemented and adapted.</li> <li>The local government has realised the importance of EbA.</li> <li>Received a new GCF grant where EbA is incorporated.</li> <li>On a national scale, adaptation is a priority for a country like Nepal.</li> <li>Now there is an awareness that EbA should be prioritised.</li> </ul>
Perú	<ul style="list-style-type: none"> <li>Learning how to apply EbA and sharing this learning with others, from the local level to the regional level, to the national level and the international level; and</li> <li>There is now a better way to organise future interventions using the EbA approach.</li> </ul>
Uganda	<ul style="list-style-type: none"> <li>There has been a visible change in soil conditions, where the project has been implemented.</li> <li>Then riverbank restoration has reduced the extent of flooding in areas, which were previously prone to flooding.</li> <li>There is improvement in livelihoods – such as improved fodder for livestock, and cash from selling produce from farms.</li> <li>Improved water quality within Kaptokwoi and Chebonet Rivers as a result of restored river buffers.</li> <li>Increased tree cover in the Atari-Kaptokwoi and Chebonet micro-catchments.</li> </ul>
Expansion countries	
Bhutan	<ul style="list-style-type: none"> <li>Not measured at the time of the interviews.</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>A presence for EbA has been created and different spaces have been organised to discuss NbS and EbA and to share lessons learned.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>Too early to tell.</li> </ul>

## Validity of assumptions

This was assessed using the results framework.

## Adaptive management and flexibility

Most respondents said that the Project had been flexible in adapting to on-the-ground issues (Figure 34). The hiatus and COVID were the main issues presented, but the issue of staff changes because of government changes was also mentioned. Kenya referred to a drought that had dried up a spring that had been identified for establishing grey-green EbA solutions.

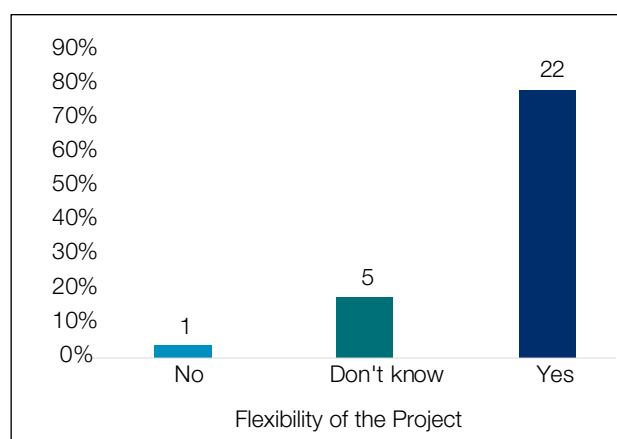


Figure 34. Flexibility of the project

(Source: compiled by report author from analyses of interviews conducted)

Countrywise, most answers were affirmative related to flexibility and adaptive management (Figure 35).

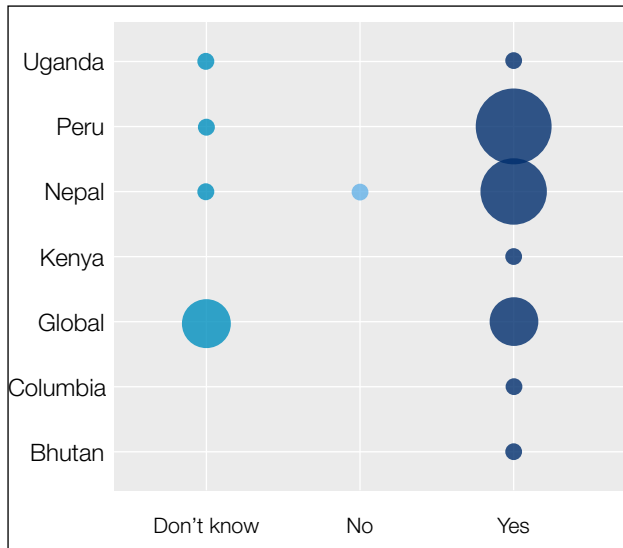


Figure 35. Countrywise: flexibility of the project

(Source: compiled by report author from analyses of interviews conducted)

Skype and phone calls were the means of communication most mentioned during the hiatus, although at the global level virtual meetings and presentations related to knowledge from the project at global fora were continuing.

### Socio-ecological sustainability and impact

When asked if the EbA interventions would continue after the project is completed, the majority of the replies were affirmative, while at the other end of the scale, one person said that they would not (Figure 36).

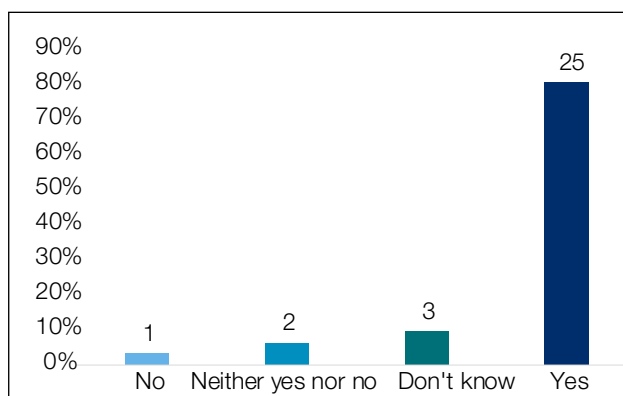


Figure 36. Sustainability of the project

(Source: compiled by report author from analyses of interviews conducted)

Countrywise, most respondents felt that the sustainability of EbA actions of the project is assured (Figure 37). Highlights of mechanisms for sustainability stated are in Table 10.

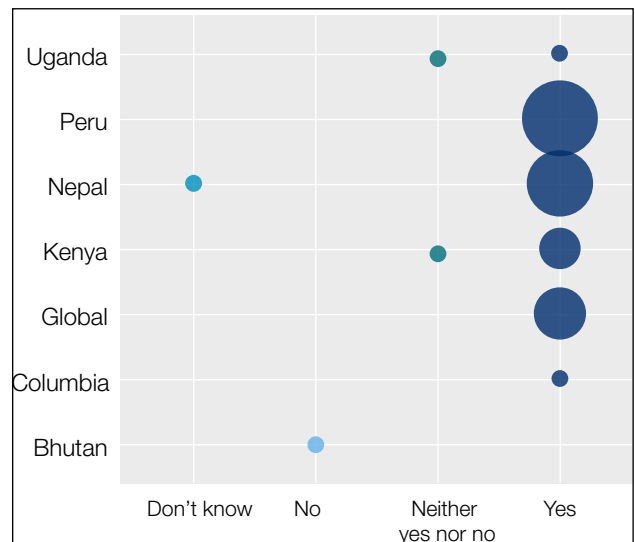


Figure 37. Countrywise: sustainability of the project

(Source: compiled by report author from analyses of interviews conducted)



Figure 38. Woman carrying broom grass, Nepal

(© IUCN)

Table 10. Highlights of stated mechanisms for sustainability  
(Source: compiled by report author from analyses of interviews conducted)

Country	Mechanism for sustainability
DC/HQ	<ul style="list-style-type: none"> <li>Tangible outputs for local communities.</li> <li>Communities are not dependent on project funding.</li> <li>EbA approaches have been mainstreamed and shared by global policy advocacy (such as FEBA and the Global EbA Fund) and will continue to be represented across global climate, biodiversity, and sustainable development frameworks.</li> </ul>
Flagship countries	
Nepal	<ul style="list-style-type: none"> <li>Local government has the power of decision-making and disbursement of funds. The project focuses not only on the communities but also on these elected local government officers, to create awareness about EbA, and collaborate with them. Now local government integrates EbA measures into their plan and business strategies and invests funds into EbA activities. For example, the project started homestays but now the local ministry calls for proposals and the homestay families apply. This money is disbursed by the national government.</li> <li>Through different projects and programmes at the national and local levels such as the MoFE EBA-II project and the UNEP Urban EbA project.</li> <li>Actions which generate income for communities through EbA actions (for example, cultivation of broom grass) will continue as there are tangible short-term benefits.</li> </ul>
Perú	<ul style="list-style-type: none"> <li>The communities own the measures, they manage the measures and the local partner of the Nor Yauyos Cochas Landscape Reserve is also fully involved.</li> </ul>
Uganda	<ul style="list-style-type: none"> <li>Sustainability is guaranteed in two ways. Firstly, there is a large base of individuals with knowledge and skills gained from the project, living in project sites. This base also realises the benefits of the EbA approach and will continue to use it in daily agricultural activities. Those who did not join the project are now seeing that some of their neighbours are already reaping benefits. Because there are now champion farmers who are ready to share their knowledge and skills with those who want to learn, people will continue to acquire the skills necessary to continue the interventions.</li> </ul>
Expansion countries	
Bhutan	<ul style="list-style-type: none"> <li>For sustainability to be achieved, it will be necessary for IUCN to invest in Bhutan.</li> <li>Also financial resources need to be considerably higher for Bhutan.</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>The synergies with a project that was ongoing (for example, with Conservation International), have established a partnership and helped integrate EbA into their project.</li> <li>At the end of the project, there will be a tangible outcome of an e-learning course for NbS, which will generate momentum of its own.</li> <li>Establishment of relationships with the Ministry of Environment which will be long-term.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>What was started must be finished by obtaining an extension and funding from another donor or the government.</li> </ul>



Figure 39. Demarcating the riverbank buffer zone, Sipi-microcatchment, Uganda  
(© IUCN)

Asked whether all actors were sufficiently and effectively involved 68.75% of the respondents said that they were while 12.50% said they were not (Figure 40).

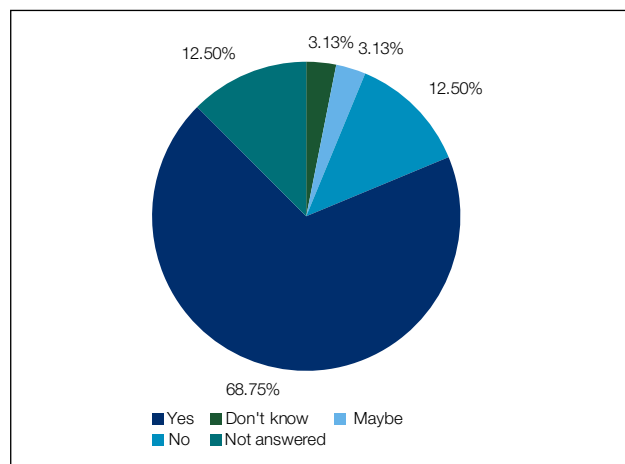


Figure 40. Involvement of actors sufficient and effective  
(Source: compiled by report author from analyses of interviews conducted)

Countrywise, as above, most respondents stated that all actors were sufficiently and effectively involved (Figure 41).

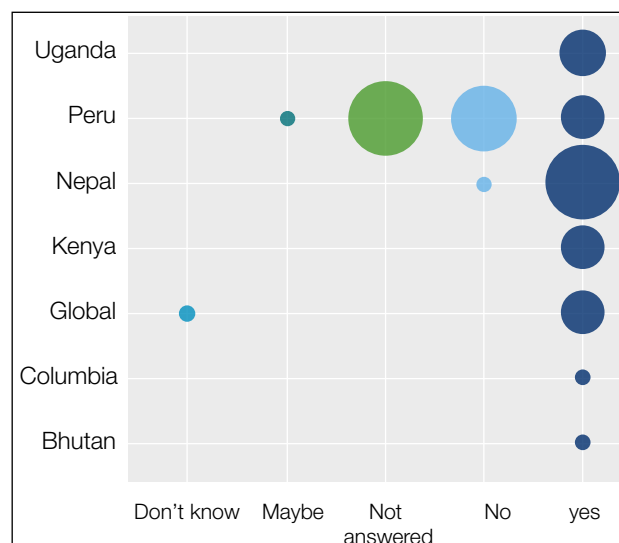


Figure 41. Countrywise: involvement of actors sufficient and effective  
(Source: compiled by report author from analyses of interviews conducted)

Descriptions of how actors were involved are presented in the table below.

Table 11. How were actors sufficiently and effectively involved  
(Source: compiled by report author from analyses of interviews conducted)

Country	How were actors sufficiently and effectively involved
DC/HQ	<ul style="list-style-type: none"> <li>Learning who was working; whom to work with, who has better linkages etc. – and over time, the stakeholders have come together well.</li> </ul>
Flagship countries	
Nepal	<ul style="list-style-type: none"> <li>Capacity building for key stakeholders, such as communities and local government, as well as information dissemination for national stakeholders.</li> </ul>
Perú	<ul style="list-style-type: none"> <li>Difficult, because of continual political changes.</li> <li>At the local level, at community levels, communities are involved directly with EbA actions; at the level of the Nor Yauyos Cochas Landscape, SERNAM is in charge of the area and they were also fully involved. At the regional government level, there have been many internships and meetings that have allowed for sharing of knowledge and experiences.</li> </ul>
Uganda	<ul style="list-style-type: none"> <li>The entry point was to ensure that the relevant identification was carried out in a participatory manner through the districts. Then this process was cascaded down to the sub-county level authorities. At the community level, it is mostly the sub-county level authorities, together with the district, that spearheaded implementation. Both governments but also like-minded NGOs were involved from the beginning.</li> <li>In communities, local leaders and recognised opinion leaders within each village were engaged fully.</li> </ul>
Expansion countries	
Bhutan	<ul style="list-style-type: none"> <li>Bhutan is a small country and it is easy to connect with everyone.</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>The project created different spaces, and a network of other contexts for involving a range of actors.</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>For communities, through a local NGO that works closely with them; and others through involvement from the beginning.</li> </ul>



To assess the impact of the project, a series of questions were posed to the interviewees. The first was to understand to what extent conditions – at demonstration sites – are in place to enhance resilience and reduce vulnerability. Of the respondents, 28.57% stated that conditions were fully in place, while the majority (57.14%) felt that they were somewhat in place (Figure 42, top left).

The second was to understand to what extent conditions – at demonstration sites – are in place to enhance measurable ecosystem services. Forty percent of the respondents stated that conditions were fully in place, while 30% and 10% said they were between somewhat in place and fully in place respectively, and 5% felt they were not in place (Figure 42, top right).

For the negative response obtained, the explanation given was that for understanding the direct chain of benefits

derived from ecosystem services, much more time and monitoring is required.

The third question was to understand to what extent conditions – at demonstration sites – are in place to enhance human well-being benefits. Forty percent of the interviewees said that conditions were fully in place, while 30% and 5% stated they were somewhat in place and between fully in place and somewhat in place, respectively (Figure 42, bottom left).

The final question was to understand to what extent conditions – at demonstration sites – are in place to enhance community governance. Twenty-five percent of the respondents said that conditions were fully in place, while 40% and 5% stated that they were somewhat in place and between fully in place and somewhat in place, respectively (Figure 42, bottom right).

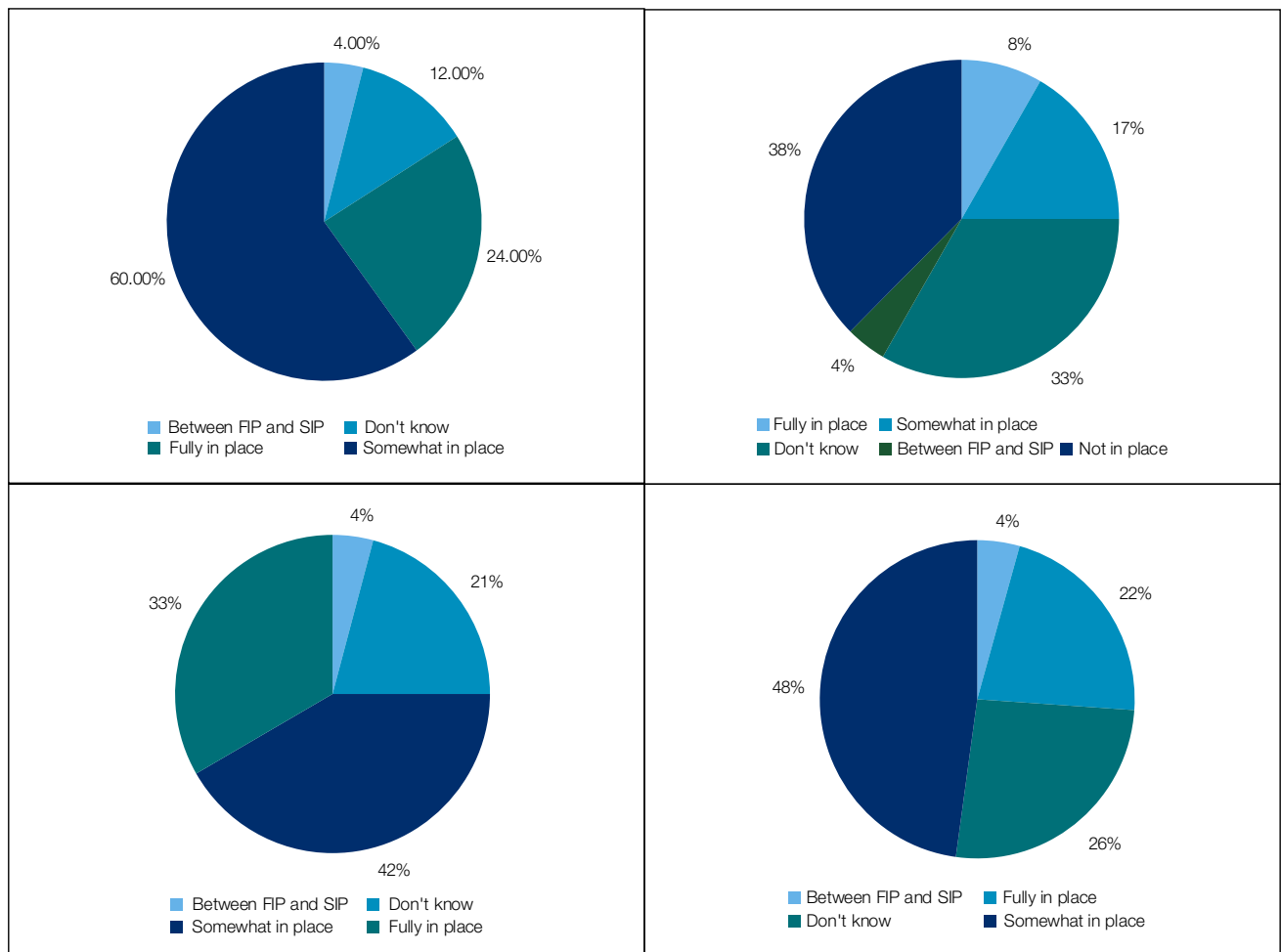


Figure 42. The extent to which conditions – at demonstration sites – are in place to enhance top left: resilience and reduce vulnerability; top right: measurable ecosystem services; bottom left: human well-being benefits; and bottom right: community governance (Legend: FIP: fully in place; SIP: somewhat in place; source: compiled by author from analyses of interviews conducted)

By country, responses mostly centred on two categories – somewhat in place and fully in place (Figure 43).

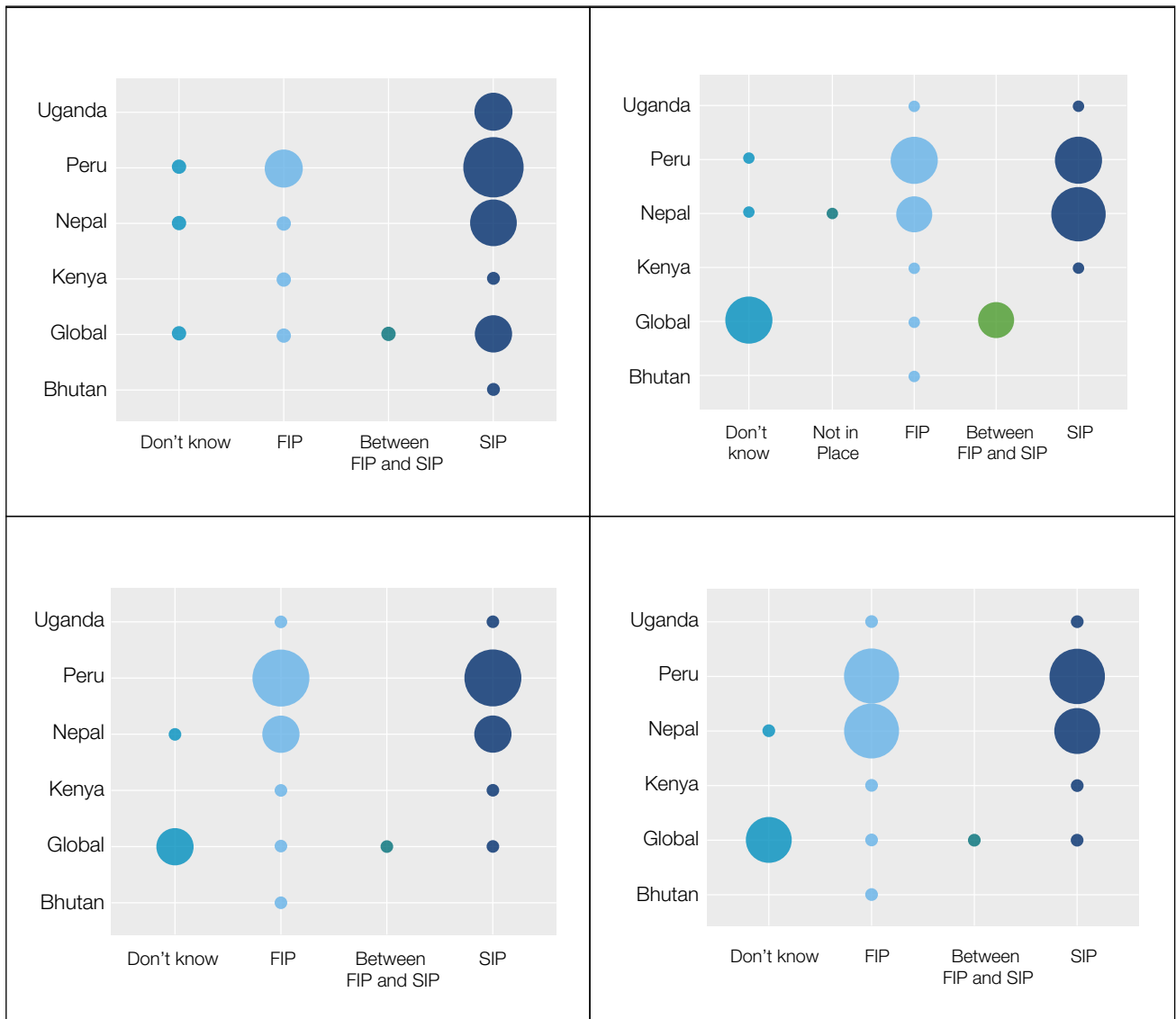


Figure 43. Countrywise: the extent to which conditions – at demonstration sites – are in place to enhance top left: resilience and reduce vulnerability; top right: measurable ecosystem services; bottom left: human well-being benefits and bottom right: community governance (Legend: FIP: fully in place; SIP: somewhat in place; NIP=Not in place; Source: compiled by report author from analyses of interviews conducted)

## Contribution to the FEBA framework

The FEBA framework defines EbA with three elements. It 1) helps people adapt to climate change; 2) uses biodiversity and ecosystems; and 3) it is part of a broader climate change adaptation strategy (Figure 44). Whether each country's actions included these three elements or not is presented in Table 12 and shows clearly that the flagship countries' actions in the project included these elements.

Table 12. The elements of EbA as described in the FEBA framework, by country  
(Source: compiled by report author from analyses of interviews conducted)

Country	EbA element A: helps people adapt to climate change	EbA element B: uses biodiversity and ecosystems	EbA element C: it is part of a broader climate change adaptation strategy
<b>Flagship countries</b>			
Nepal	√	√	is now integrated into one
Perú	√	√	is now integrated into one
Uganda	√	√	is now integrated into one
<b>Expansion countries</b>			
Bhutan	Through capacity building at local level	Contributed to a larger programme through capacity building	×
Colombia	Through capacity building at a national level and e-learning course	×	Through capacity building and the e-learning course, can indirectly influence climate change adaptation strategies
Kenya	Through an initial community-based vulnerability assessment	Restored a spring	is now integrated into one

Within defining these three elements are five criteria (Figure 44).

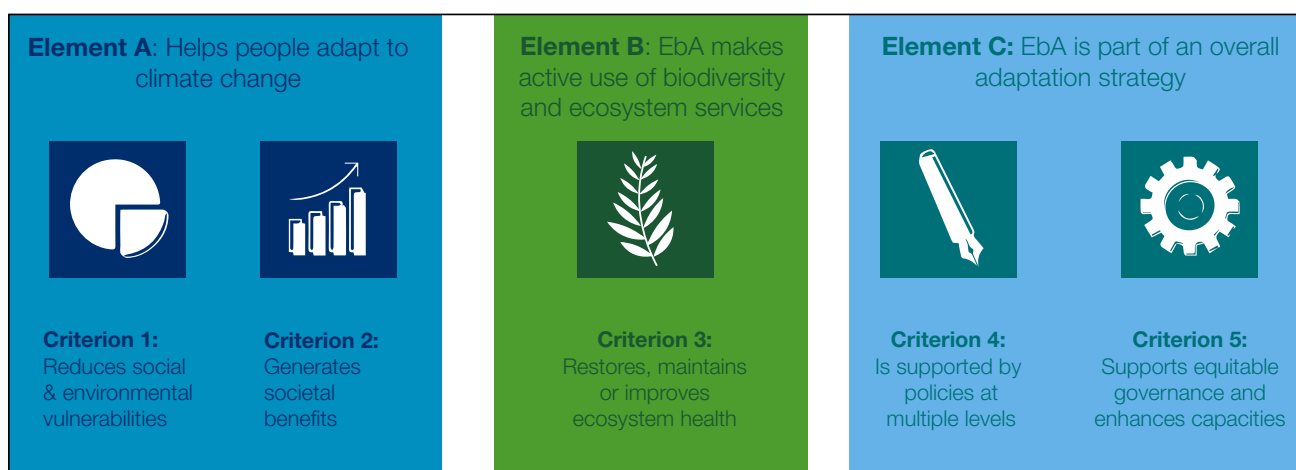


Figure 44. FEBA framework elements and criteria  
(Source: FEBA, 2022)

The responses to whether the criteria were fulfilled in the project, by country are presented in Table 13 and Figures 45 and 46. Countrywise, all these criteria are fulfilled in the flagship countries (Figure 47 and Figure 48).

Table 13. Criteria defining EbA elements as described in the FEBA framework, by country  
(Source: compiled by report author from analyses of interviews conducted)

Country	Element A, Criterion 1: Does it reduce social and environmental vulnerabilities?	EbA element A, Criterion 2: Does it generate societal benefits within the context of climate change adaptation?	EbA element B, Criterion 3: Did it restore, maintain or improve ecosystems and their services?	EbA element C, Criterion 4: Supported by policies at every level	EbA element C, Criterion 5: Supports equitable governance and enhances capacities						
					Enhances capacities	Participatory	Consensus-oriented	Accountable	Transparent	Inclusive	Equitable
<b>Flagship countries</b>											
Nepal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Perú	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Uganda	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Expansion countries</b>											
Bhutan	Through capacity building at the local level	x	Contributed to a larger programme through capacity building	✓	✓	✓	✓	✓	✓	✓	✓
Colombia	Through capacity building at a national level and e-learning course	Not directly, only through knowledge dissemination	Not directly, only through knowledge dissemination	✓	✓	NA	NA	NA	NA	NA	✓
Kenya	Through an initial community-based vulnerability assessment	✓	Provided protection to the source of a spring and improved water supply	?	✓	✓	✓	✓	✓	✓	✓



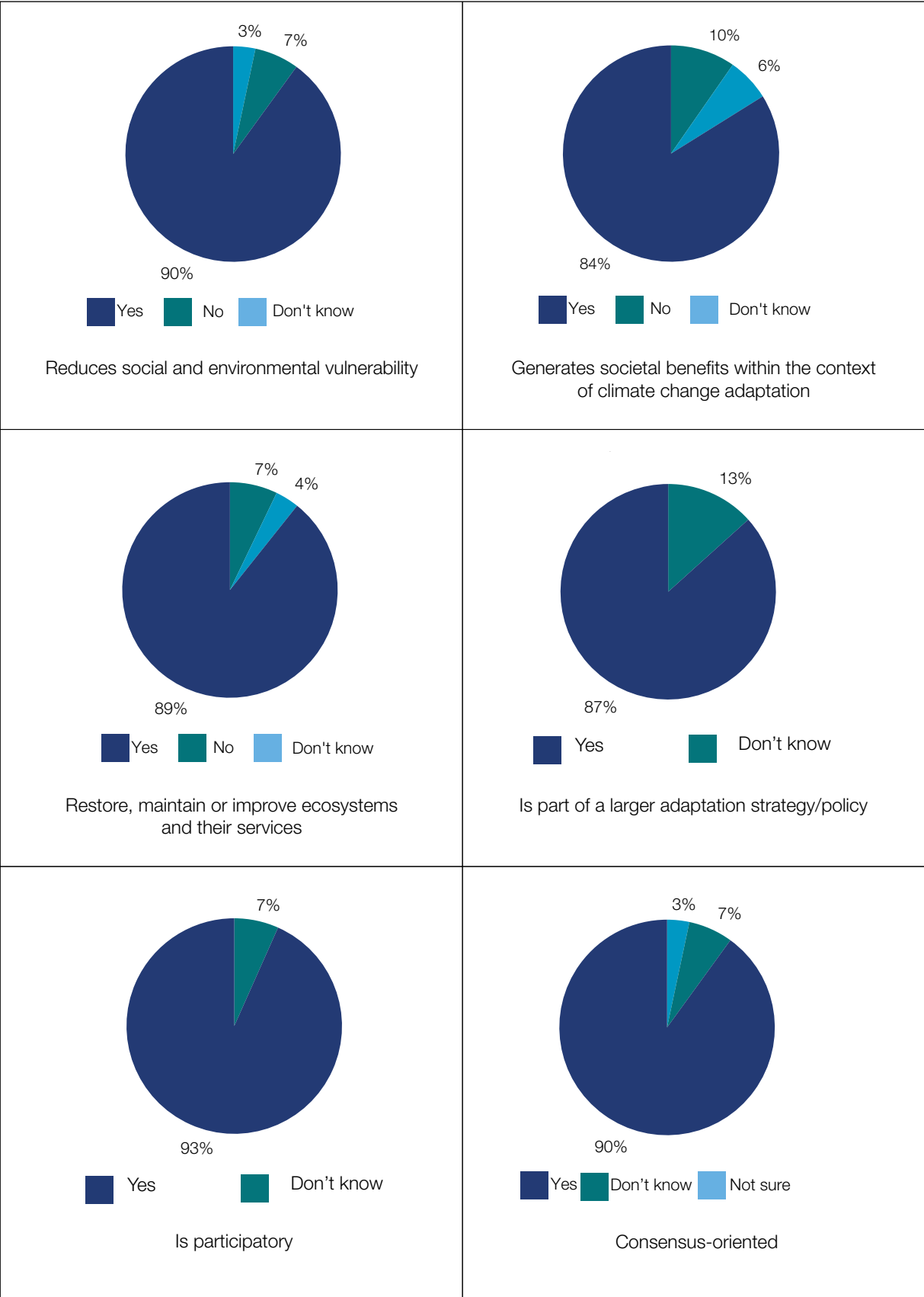


Figure 45. Contribution to the FEBA framework (part 1 of the visuals)  
 (Source: compiled by report author from analyses of interviews conducted)

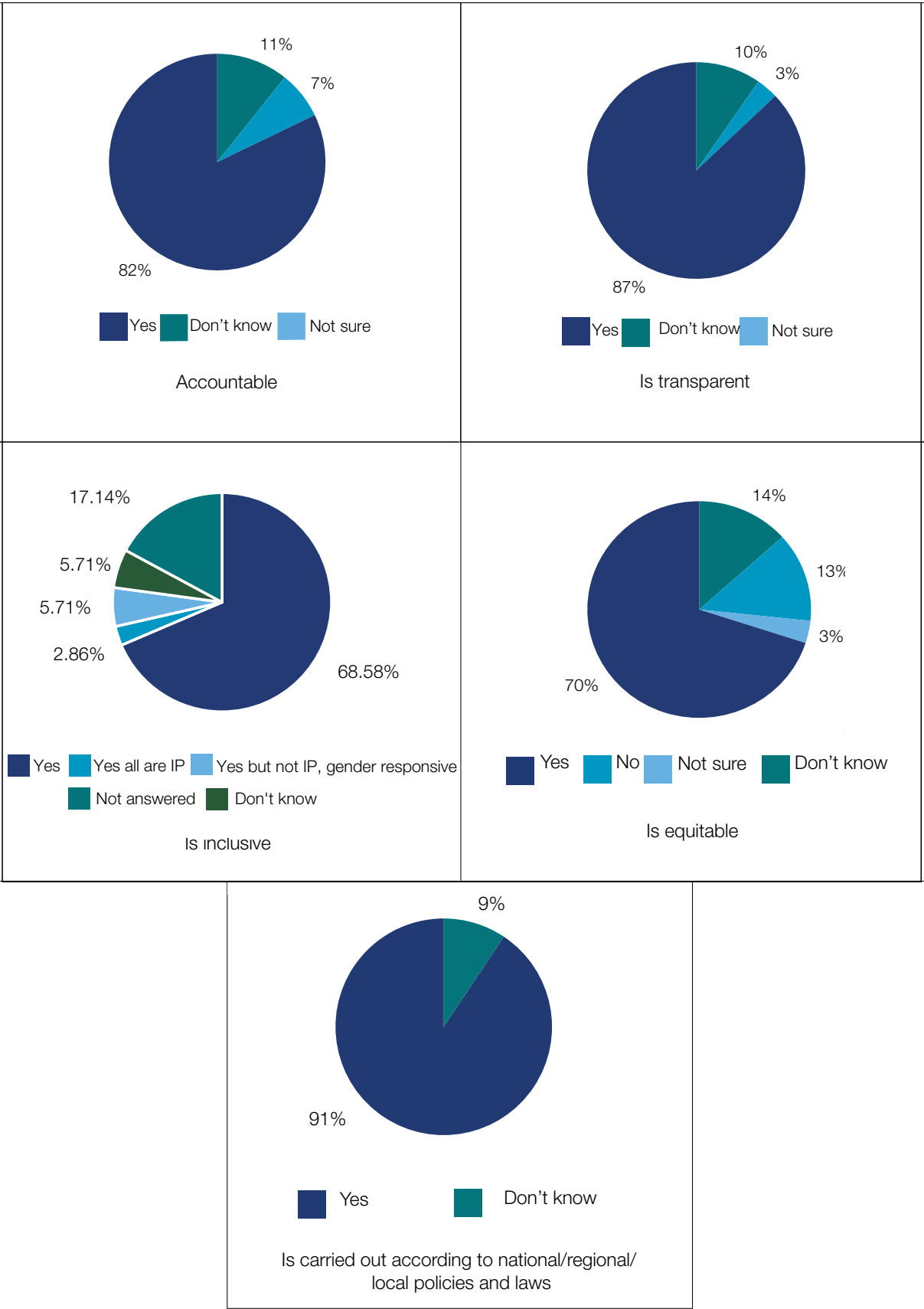


Figure 46. Contribution to the FEBA framework (part 2 of the visuals)  
 (Source: compiled by report author from analyses of interviews conducted)



Figure 47. Countrywise: contribution to the FEBA framework (part 1 of the visuals)  
 (Source: compiled by report author from analyses of interviews conducted)



Figure 48. Countrywise: contribution to the FEBA framework (part 2 of the visuals)  
 (Source: compiled by report author from analyses of interviews conducted)



## Demonstration of linkages to biodiversity conservation and climate change

Asked whether the project conserved biodiversity by restoring degraded ecosystems 90% of the respondents said yes, while 3% said no (Figure 49).

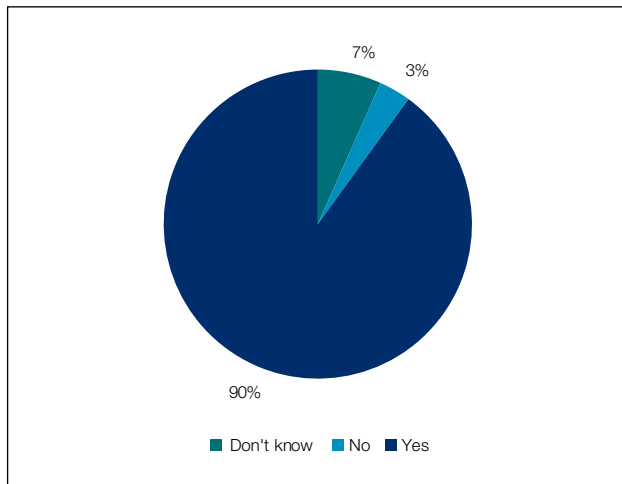


Figure 49. Conserved biodiversity by restoring/managing ecosystems

(Source: compiled by report author from analyses of interviews conducted)

Countrywise, most of the responses were affirmative (Figure 50).

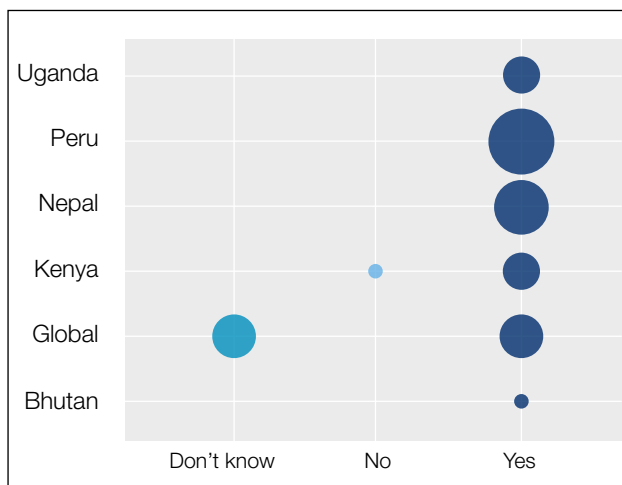


Figure 50. Countrywise: conserved biodiversity by restoring/managing ecosystems

(Source: compiled by report author from analyses of interviews conducted)

Although anecdotal, indirect evidence was given in response to whether there was an increase in the number of wild species, quantitative or even focused qualitative assessments were not carried out.

Contribution to the conservation of threatened/conservation-dependent species was targeted both in Nepal (*Paris*

*polyphylla*) and Perú (*Vicugna vicugna*) where specific EbA actions and a management plan were implemented and formulated, respectively (Table 14).

Table 14. Contribution by project actions to the protection of a threatened species of plant/animal

(Source: compiled by report author from analyses of interviews conducted)

Country	Threatened species conserved as a co-benefit of EbA action	IUCN Red List™ category
Nepal	Tree fern ( <i>Alsophila spinulosa</i> formerly <i>Cyathea spinulosa</i> )	Not listed but on Appendix II of CITES (where international trade is restricted)
Perú	Andean condor ( <i>Vultur gryphus</i> )	Vulnerable (VU)
	Peruvian guemal/ Taruca ( <i>Hippocamelus antisensis</i> )	Vulnerable (VU)
	Vicuña ( <i>Vicugna vicugna</i> )	Least Concern (LC) <sup>5</sup>

Whether the project contributed to climate change mitigation (that is, how much carbon will be sequestered by the extent of ecosystem restored) had not been assessed.

For the final question related to whether the project actions contributed to reducing the impacts of extreme weather events such as floods/landslides/drought most interviewees replied in the affirmative (80%) while 5% said that they did not (Figure 51).

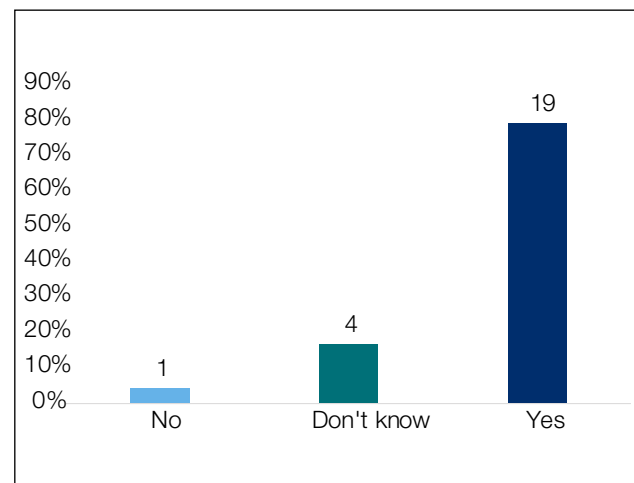


Figure 51. Project actions reduced the impact of extreme weather events

(Source: compiled by report author from analyses of interviews conducted)

<sup>5</sup> The Vicuña has a High Conservation Legacy. Without past conservation actions, it would almost certainly be close to extinction today (Acebes & Gonzalez, 2021)

## Results extracted from project reports and comparison with the amended results framework

The project achieved the expected outcome. The first indicator anticipated for this outcome was that there would be a total of nine sites – a defined area in a watershed/catchment in each flagship country in which community-based EbA measures (at least one specific intervention) are being applied. This has been achieved (Table 15)

Table 15. Achievement of outcome indicator 0.1  
(Source: compiled by report author from analyses of interviews conducted)

Country	Expected target	Achieved result
Nepal	1 original site and one additional site	1 flagship site (Panchase in the Kaski District) + 1 new site (Chilime, in the Rasuwa District)
Perú	1 original site and one additional site	4 flagship sites (Canchayllo, Miraflores, Tanta and Tomas) + 1 new site (in Tomas)
Uganda	1 original site and one additional site	1 flagship site in the Atari-Kaptokwoi micro-catchment and 1 new site in the Sipi-Chebonet micro-catchment

The second indicator for this outcome was that by September 2022, forests, wetlands, and/or grasslands in flagship country sites would show improved coverage and condition due to effective EbA measures. This has been achieved and exceeded in two countries (Table 16)

Table 16. Achievement of outcome indicator 0.2  
(Source: compiled by report author from analyses of interviews conducted)

Country	Expected target	Achieved result
Nepal	850	7,000 ha (watershed forest management+ broom grass cultivation) (final expected ~10,000 ha)+ expected 10,400 ha improved pollination because of bee keeping.
Perú	3,000	8,881
Uganda	2,076	1039.7; 2,076 expected at close

The third indicator for this outcome was that by September 2022, nine EbA measures, three indicating long-term effectiveness (for ecosystem services) and sustainability (affordability, socioeconomic benefits, and stakeholder buy-in) and six with early indications of effectiveness and sustainability, are available and being implemented in the three flagship countries. This outcome also has been achieved (Table 17).

Table 17. Achievement of outcome indicator 0.3  
(Source: compiled by report author from analyses of interviews conducted)

Country	Expected target	Achieved result
Nepal	12	12
Perú	4	3 EbA measures indicating long-term effectiveness and sustainability and 1 with early indications of effectiveness and sustainability: 4 in total.
Uganda	3	2 measures indicating long-term effectiveness and sustainability and 1 with early indications of effectiveness and sustainability: 3 in total

The fourth outcome indicator was the number of national or sub-national policy documents and processes in flagship and expansion countries that, by September 2022, included information on Mountain EbA approaches, principles, and/or methods generated by the project. The expected values, as shown below, have been achieved successfully (Table 18).

Table 18. Achievement of outcome indicator 0.4  
(Source: compiled by report author from analyses of interviews conducted)

Country	Expected target	Achieved result
Nepal	3	4 local plans, 4 national plans (NAP, NDC)
Perú	3	1 local plan, 1 national plan (Through SERNANP, protected area management)
Uganda	3	local plan, 1 national plan and 1 law (National Climate Change Act of 2020 and NDCs)
Bhutan		1 local plan
Colombia		Through expensive capacity building and the e-learning course
Kenya		1 national plan (National Wildlife Climate Change Adaptation Strategy for Kenya, 2022-2032)

Table 19 lists the knowledge products and international events at which knowledge was shared (see also Figure 51). This table complements the expected and achieved results based on the revised results framework presented in Table 20, Table 21, Table 22 and Table 23.

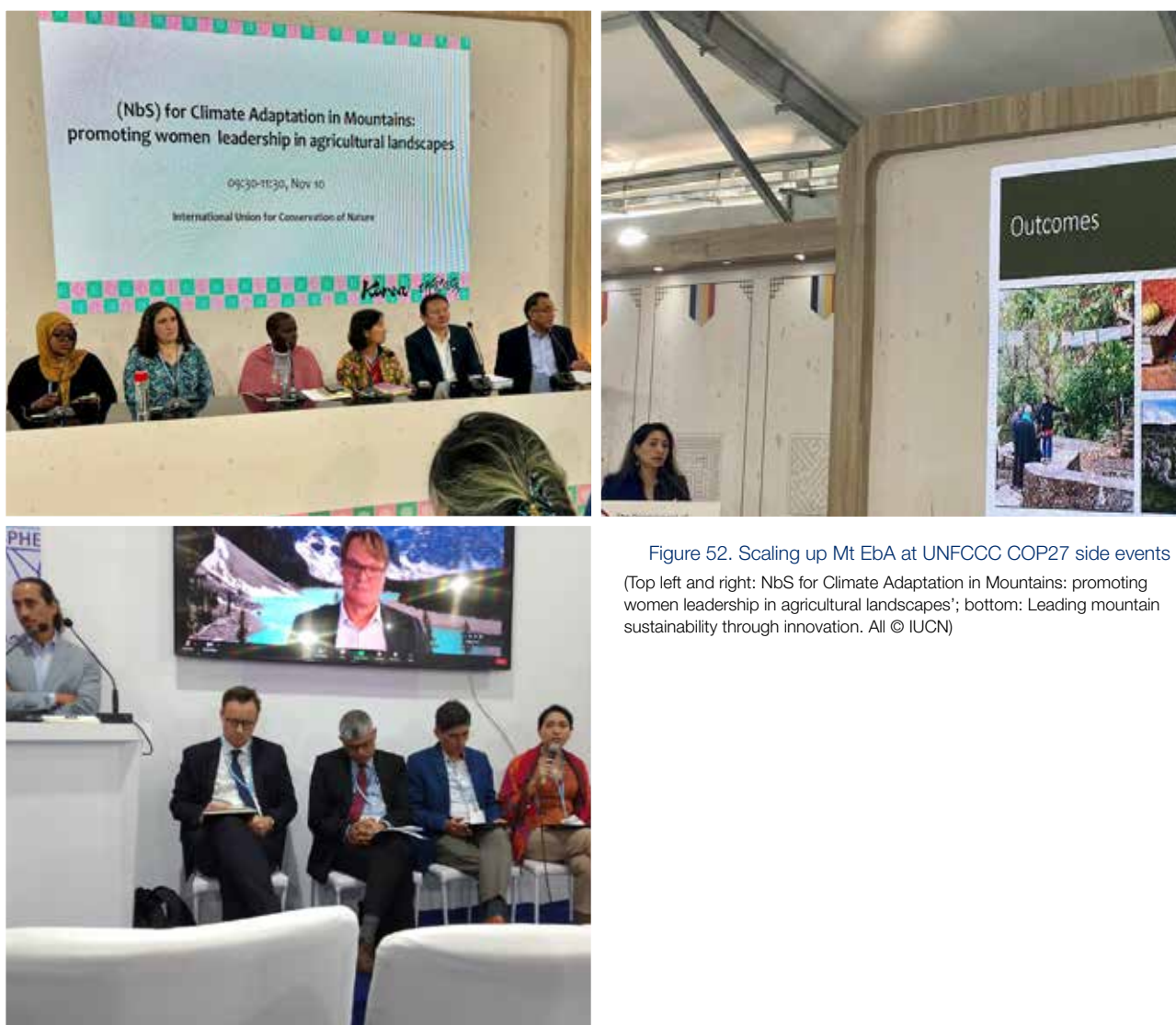


Figure 52. Scaling up Mt EbA at UNFCCC COP27 side events  
(Top left and right: NbS for Climate Adaptation in Mountains: promoting women leadership in agricultural landscapes'; bottom: Leading mountain sustainability through innovation. All © IUCN)

Table 19. Knowledge products, national and international knowledge-sharing  
(Source: compiled by report author from project reports)

Country	Knowledge products	National fora	International policy fora
Nepal	<ul style="list-style-type: none"> <li>3 EbA solutions in PANORAMA (2022a, 2022b, 2022c);</li> <li>1 information brief; 1 map.</li> <li>For this evaluation, 1 information brief. 1 map and 1 video clip (IUCN, 2022).</li> </ul>	~25 national and regional presentations	2021 <ul style="list-style-type: none"> <li>IUCN World Conservation Congress in September 2021 (IUCN, 2021)</li> <li>The Nature+Zone Pavilion – a central hub for the nature and climate conversation at the UNFCCC COP 26, 2021 (FEBA, 2021).</li> <li>14th Nairobi Work Programme (NWP) Focal Point Forum on Biodiversity and Climate Change Adaptation (United Nations Climate Change Secretariat, 2021a).</li> <li>At the SBSSTA informal event on the Nairobi Work Programme on Closing adaptation knowledge gaps through partnerships (UNFCCC, 2021a and UNFCCC, 2021b).</li> </ul>
Perú	<ul style="list-style-type: none"> <li>3 EbA solutions in PANORAMA SOLUTIONS (PANORAMA 2022d, 2022e, 2022f)</li> <li>1 information brief; 1 map in progress.</li> <li>For this evaluation, 1 information brief. 1 map and 1 video clip (IUCN, 2022).</li> <li>Many products on social media</li> </ul>	14 national presentations	
Uganda	<ul style="list-style-type: none"> <li>1 PANORAMA solution (PANORAMA, 2022g);</li> <li>1 information brief; 1 map.</li> <li>For this evaluation, 1 information brief and 2 video clips (IUCN, 2022).</li> </ul>	<ul style="list-style-type: none"> <li>National Advisory Committee on Climate Change</li> <li>National ENR CSOs Network annual performance review</li> </ul>	2022
Bhutan	<ul style="list-style-type: none"> <li>1 information brief; 1 book titled 'Springshed Management: Nature-based Solutions (NbS) for Water Security and Climate Adaptation'</li> </ul>	<ul style="list-style-type: none"> <li>UNDP, Department of Forests, 2 local administrations, Bhutan Water Partnership, Royal Society for Protection of Nature Bhutan and Bhutan Ecological Society</li> </ul>	<ul style="list-style-type: none"> <li>FEBA Knowledge day with presentations from Perú and Bhutan.</li> <li>6<sup>th</sup> Global Mountain Partnership Meeting, participation in the high-level event and hosting one session on sustainable development in mountain ecosystems.</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>Virtual course on 'Nature-based Solutions for a sustainable and resilient development in Colombia'</li> <li>For this evaluation, 1 information brief (IUCN, 2022).</li> <li>Many products on social media</li> </ul>	<ul style="list-style-type: none"> <li>NbS and EbA, plus Peru case study shared widely at national fora</li> </ul>	<ul style="list-style-type: none"> <li>UNFCCC COP27 events on Mountain EbA               <ul style="list-style-type: none"> <li>'Leading mountain sustainability through innovation' organized by the Mountain Partnership at the Cryosphere Pavilion (FAO, 2022b).</li> </ul> </li> </ul>
Kenya	<ul style="list-style-type: none"> <li>1 information brief (IUCN, undated)</li> <li>For this evaluation, 1 information brief. 1 map and 1 video clip (IUCN, 2022).</li> <li>Many products on social media</li> </ul>	<ul style="list-style-type: none"> <li>Bugoma County Government (several times)</li> <li>Kenya Wildlife Service</li> </ul>	<ul style="list-style-type: none"> <li>NbS for Climate Adaptation in Mountains: promoting women leadership in agricultural landscapes' organized by IUCN at the Korean Pavilion</li> <li>Handbook for planning EbA measures shared with the UNFCCC Adaptation Knowledge Portal</li> </ul>



Table 20. Achieved results compared to expected results, for the outcome  
(Source: compiled by report author from project reports)

Outcome	Indicator	Expected target value	Results	Target achieved	Means of verification
Effective and sustainable EbA measures for mountains are applied and scaled-up in flagship countries; planned for application in other mountainous regions in South America, East Africa, and South Asia ("expansion" countries); and shared globally by key actors.	Outcome indicator 0.1: Number of sites, i.e. defined area in a watershed/catchment (size and number of communities in each may vary) in each Flagship country in which community-based EbA measures (at least one specific intervention) are being applied.	Six (6) total. Two (2) per Flagship country: one original and one additional site in each country	<ul style="list-style-type: none"> <li>Nepal= 1 flagship+ 1 new</li> <li>Peru= 4 flagship + 1 new)</li> <li>Uganda=1 flagship + 1 new</li> </ul>	Yes	Project reports, annual reports, interviews.
	Outcome indicator 0.2: By 09/2022, Forests, wetlands, and/or grasslands in Flagship country sites show improved coverage and condition due to effective EbA measures.	Target value for ha with improved coverage and condition will be set after new sites and measures are determined and baselines are established per indicator I.1. (by PM 12). Preliminary estimates are: Peru: 3,000 ha Nepal: 850 ha Uganda 4,000 ha, revised to 2076 ha in 2018 Planned date of achievement according to project proposal 09/2022	<ul style="list-style-type: none"> <li>Peru: 8,600 ha</li> <li>Nepal: 7,000 ha (final expected ~10,000 ha)<sup>6</sup></li> <li>Uganda: 1039.7 final expected 2,076 ha</li> </ul>	Yes, more than expected	Project reports, annual reports, interviews.

<sup>6</sup> Adhikari, person. comm.

Outcome	Indicator	Expected target value	Results	Target achieved	Means of verification
	<p>Outcome indicator 0.3: By 09/2022, Nine (9) EbA measures, three indicating long-term effectiveness (for ecosystem services) and sustainability (affordability, socioeconomic benefits, and stakeholder buy-in) and six with early indications of effectiveness and sustainability, are available and being implemented in the three Flagship countries.</p>	<p>Three (3) Flagship EbA measures indicate effectiveness and sustainability. Six (6) other continuing or new EbA measures have early indications of effectiveness and sustainability. Perú: 4 Nepal: 12 Uganda: 3</p>	<ul style="list-style-type: none"> <li>Perú: 3 EbA measures indicating long-term effectiveness and sustainability and 1 with early indications of effectiveness and sustainability: 4 in total.</li> <li>Nepal: 12</li> <li>Uganda: 2 measures indicating long-term effectiveness and sustainability and 1 with early indications of effectiveness and sustainability: 3 in total.</li> </ul>	Yes	Interim reports
	<p>Outcome indicator 0.4: Number of national or subnational policy documents and processes in Flagship and Expansion countries that, by 09/2022, include information on Mountain EbA approaches, principles, and/or methods generated by the project.</p>	<p>At least three (3) in countries (e.g. Uganda, Bhutan, Perú) where national or subnational plans are at a stage where contributions are made during project term</p>	<ul style="list-style-type: none"> <li>Nepal: 4</li> <li>Perú: 2</li> <li>Uganda: 1</li> <li>Bhutan: 1</li> </ul> <p>(See also Table 7)</p>	Yes	Interviews and interim reports

Table 21. Achieved results compared to expected results, for Output I  
(Source: compiled by report author from project reports)

Output	Indicator	Expected target value	Results	Target achieved	Means of verification
Mountain EbA measures are being continued, tested, monitored, and adapted at local levels by communities, government, and other stakeholders in flagship country sites.	Indicator I.1: Impact of continuing and newly established measures on ecosystems and/or ecosystem service provision is being monitored by the project with local partners in sites in flagship countries by 09/2022.	Target (09/2022) Perú: 4 measures Nepal: 12 measures Uganda: 3 measures	<ul style="list-style-type: none"> <li>Perú: 4 EbA measures were monitored by the project with local partners.</li> <li>Nepal: 12</li> <li>Uganda: 2</li> </ul>	Yes	Interim reports
	Indicator I.2: Number of people directly involved and/or directly benefitting from Mountain EbA measures in flagship countries by 09/2022.	Perú: 2,200 (50% women) Nepal: 600 (70% women) Uganda: 1,500 (55% women) + 500 in Kenya	<ul style="list-style-type: none"> <li>Perú: 1,676 (46% women)</li> <li>Nepal: 8,650</li> <li>Uganda: 2,889</li> <li>Kenya: 500 expected to benefit from water security</li> </ul>	Yes	Interim reports
	Indicator I.3: Number of Mountain EbA measures in flagship sites that have been adapted and improved as assessed annually by the project partners	Three (3) by PM-12, three (3) by PM 24, and three (3) by PM 36 (to be refined in first year depending on results of baseline studies) Target by 09/2022 Perú: 4 Nepal: 12 Uganda: 3	<ul style="list-style-type: none"> <li>Perú: 4</li> <li>Nepal: 12</li> <li>Uganda: 3 EbA measures have been adapted and being continued for implementation</li> </ul>	Yes	Interim reports, interviews

Table 22. Achieved results compared to expected results, for Output II  
(Source: compiled by report author from project reports)

Output II	Indicator	Expected target	Results	Target achieved	Means of verification
The Mountain EbA approach is being up-scaled in flagship countries, locally and nationally, and taken into account in planning processes and strategies for application in Expansion countries by local governments and other stakeholders.	Indicator II.1: By 09/2022, 13 knowledge products have been developed, including a Mountain EbA catalogue and, for each of six (6) countries, a map and at least one (1) information brief or report per country on the benefits, application, and policy implications of Mountain EbA.	1 catalogue of EbA measures with selection guidance 6 country maps, 1 per country 6 info briefs, 1 per country Target (09/2022) 6 PANORAMA Solutions submitted 6 country maps 6 info briefs 1 infographic	<ul style="list-style-type: none"> <li>Perú: 3 EbA solutions in PANORAMA, 1 information brief, 1 map in progress.</li> <li>Nepal: 3 EbA solutions in PANORAMA;</li> <li>Uganda: 1 PANORAMA solution; for this evaluation</li> <li>Bhutan: 1 information brief; 1 book titled 'Springshed Management: Nature-based Solutions (NbS) for Water Security and Climate Adaptation'</li> <li>Colombia: virtual NbS course in Spanish</li> <li>Kenya: 1 information brief.</li> </ul>	Yes, more than expected in some countries, but not in all countries	Interim reports, PANORAMA solutions Sharepoint
	Indicator II.2: By 09/2022, benefits, application, and policy implications of Mountain EbA have been shared with key actors in each of six (6) countries (Flagship and Expansion).	18, three (3) in each country Target (additional by 09/2022) Perú: 6 Colombia: 3 Kenya: 2 Uganda: 2 Nepal: 8 Bhutan: 5	<ul style="list-style-type: none"> <li>Perú: 9 presentations in national and international events.</li> <li>Nepal: 25 events;</li> <li>Uganda: 2;</li> <li>Bhutan: 7;</li> <li>Colombia: many events</li> <li>Kenya: several</li> </ul>	Yes	Interim reports and interviews



Output II	Indicator	Expected target	Results	Target achieved	Means of verification
	<p>Indicator II.3: By 2022 Mountain EbA measures are being applied in new sites by the project in at least one (1) additional site in each flagship country + Kenya. In Expansion countries Colombia and Bhutan, Mountain EbA measures, including a funding strategy, are planned for application by others in at least one (1) site.</p>	<p>Four (4) applied, one (1) in each flagship country and Kenya by Mountain EbA project  Two (2) planned, one (1) each in Colombia and Bhutan, for implementation (or integration) by others</p>	<ul style="list-style-type: none"> <li>Perú: 1 in Tomas</li> <li>Nepal: 1 in Chilime</li> <li>Uganda: 1 in the Chebonet micro-catchment</li> <li>Kenya: 1 in Laboot</li> <li>Bhutan: 2 in the Gawa Phuntsum and Tsezusachu springsheds</li> <li>Colombia: N/A</li> </ul>	Yes	Interim reports and interviews
	<p>Indicator II.4: Mountain EbA approaches are integrated in at least one (1) local adaptation, watershed management, or community development plan in at least five (5) countries.</p>	<p>One (1) in each of five (5) countries</p>	<ul style="list-style-type: none"> <li>Nepal= 4</li> <li>Perú= 2</li> <li>Uganda=1</li> <li>Bhutan= 1</li> <li>Kenya= 2 (national)</li> </ul>	Yes	Interim reports and interviews

Table 23. Achieved results compared to expected results, for Output III

Output III	Indicator	Expected target	Results	Target achieved	Means of verification
EbA as an adaptation strategy for mountain regions is taken into account by key actors in national and international policies and planning processes	Indicator III.1: Number of government and non-governmental organisations in Expansion countries that, by 11/2022, include Mountain EbA concepts, approaches or measures generated by the project in their strategy papers and planning documents	3 governmental and 3 non-governmental organisations, with at least one of each in each Expansion country by 11/2022.	Kenya: 2 governmental, 2 non-governmental Bhutan: Pre 2019, 1 government; 2022= 2 non-governmental Colombia: 1 government and many non-government through the NbS e-learning course	Yes	Interim reports and interviews
	Indicator III.2: By 11/2022, Three (3) international policy processes or forums have incorporated information on Mountain EbA approaches generated by the project.	Six (6) by 11/2022	4 events in 2021; 3 events in 2022. • UNFCCC COP27 events on Mountain EbA • 'Leading mountain sustainability through innovation' organized by the Mountain Partnership at the Cryosphere Pavilion (FAO, 2022b). • NbS for Climate Adaptation in Mountains: promoting women leadership in agricultural landscapes' organized by IUCN at the Korean Pavilion. • Doing it Better: Unpacking evidence from the field and lessons learned from NbS for Adaptation   UNFCCC Paris Committee on Capacity Building Hub, organized by IUCN at the Capacity Building Hub	Yes	IKI interim report
	Indicator III.3: Number of international, EbA-relevant communities and initiatives that, by 11/2022, promote Mountain EbA through sharing information and expertise as a consequence of the project.	Three (3) by 11/2022	Nepal: 3 Peru: 3 Uganda: 2 Bhutan: 1 Colombia: 1 + many other others through capacity building and e-learning course Kenya: 1	Yes, more than expected	Interim reports and interviews

One of the five criteria of the impact evaluation was the validity of assumptions – the extent to which the implied hypotheses in the project documentation related to change held during implementation. There were 14 targets in the results framework and these targets were all met, with three exceeding the set targets (Figure 53).

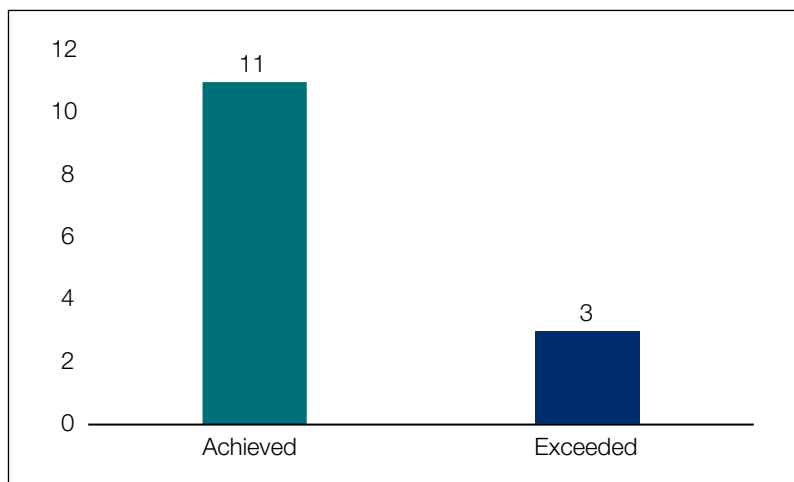


Figure 53. The achievement of the targets in the results framework  
(Source: compiled by report author from analyses of interviews conducted)

## Results from the handbook forms

These forms have been filled fully by the flagship countries and mostly by Kenya. These forms did not apply to both Bhutan and Colombia, which diverted from the given results framework.

Table 24. Status of the handbook forms, by country  
(Source: Country handbook forms)

Handbook form	Nepal	Perú	Uganda	Kenya
Form for Stage 0 - Flagship measure status report	√ 4	√ for 5 sites	√	NA
Form for Stage 0 – Site selection criteria	√ for 3 sites	√ for 5 sites	√ for 2 sites	√
Form for Stage 1 – EbA goals	√ 2 (TMI/IUCN)	√ for 5 sites	√	√
Form for Stage 2 – Assessing climate risks and adaptive capacity	√ 2 (TMI/IUCN)	√ for 3 sites	√ for 2 sites	√
Form for Stage 3 - Rapid ecosystem appraisal	√ 2 (TMI/IUCN)	√ for 3 sites	√ for 2 sites	√
Form for Stage 4 – EbA strategy	√ 2 (TMI/IUCN)	?	√	
Form for Stage 4,5 & 6 – Consolidation measures	√3	√ Miraflores	√	partly
Form for Stage 4,5 & 6 – Replication measures	√ 4	√ Tomas	√	
Form for Stage 7 – Policy influencing	√	√	√	√

## Summary of evaluation criteria by country

The following table summarises the results based on the evaluation criteria.

Table 25. Summary of evaluation criteria by country (Source: compiled by report author from analyses of interviews conducted)

Country	Effectiveness	Sustainability	Flexibility	Contribution to the FEBA framework			Links to biodiversity and climate change
				Helps people adapt to climate change	Uses biodiversity and ecosystems	Is part of a broader climate change adaptation strategy	
<b>Flagship countries</b>							
Nepal	Yes, at local, regional and national levels	Yes. Several EbA actions (for example, broom grass cultivation) will be sustainable as they have significantly improved livelihoods; replication and scaling-up are achieved.	Yes	Yes, watershed forests and roadside vegetation	EbA is now part of NAP, NDC, and several local level plans.	<ul style="list-style-type: none"> <li>Yes, focused conservation actions on threatened and trade-restricted plants (biodiversity link) but changes in species diversity as a consequence of better watershed forest management has not been assessed.</li> <li>Roadside broom-grass cultivation reduces erosion, thereby reducing landslides (climate change link).</li> <li>Mitigation impacts of improved ecosystem management have not been calculated (climate change link).</li> </ul>	
Perú	Yes, at local and national levels	Yes. Improved pastureland management will be sustainable as it has significantly improved livelihoods; replication and scaling-up are achieved.	Yes	Yes, mainly Puna grasslands and to a lesser extent high Andean wetlands or peatlands (locally known as <i>bofedales</i> ).	EbA is now part of NDC, and NYCLR management plan.	<ul style="list-style-type: none"> <li>Yes, focused conservation actions on a conservation-dependent species (biodiversity link);</li> <li>Better pastureland management reduces erosion</li> <li>Mitigation impacts of improved ecosystem management have not been calculated.</li> </ul>	

Country	Effectiveness	Sustainability	Flexibility	Contribution to the FEBA framework			Links to biodiversity and climate change
				Helps people adapt to climate change	Uses biodiversity and ecosystems	Is part of a broader climate change adaptation strategy	
Uganda	Yes, at local and national levels	Yes. Several EbA actions – such as on-farm sustainable agriculture practices – will be sustainable as they have significantly improved livelihoods; replication and scaling-up are achieved	Yes	Yes	Yes wetlands (riverbanks)	EbA is now part of the NDC and the local district land care management plan	<ul style="list-style-type: none"> <li>Selected native species were introduced but increase in other species has not been assessed.</li> <li>Riverbank protection and on-farm improvement of agricultural practices shows more vegetation cover on land and therefore less likelihood of erosion</li> <li>Mitigation impacts of on-farm woodlots have not been calculated.</li> </ul>
<b>Expansion countries</b>							
Bhutan	Yes, at local level	Project actions must be continued built upon to ensure sustainability	Exceptionally	Yes, through capacity building at a local level	Through capacity building to protect springsheds	EbA is now part of a local forest management plan	Not applicable
Colombia	Yes, at national level	Will be assured with the e-learning course	Yes	Yes, through capacity building at a local level	Through capacity building and dissemination of information from other project countries	The project has widely shared EbA concept through capacity building and spaces created	Not applicable
Kenya	Yes, more at local level	Other springs must be protected and the process built upon to ensure sustainability	Yes		Wetland (river) but the focus was establishing grey infrastructure not green-grey.	The project has implemented actions of the National Wildlife Climate Change Adaptation Strategy for Kenya (2022-2032)	The protect focused on grey infrastructure to protect a spring and ensure water supply.



## Results of the generation of knowledge and communication assets

Knowledge and communication assets were generated as follows and are available at IUCN ([2022a](#)).

### Infographics

Two infographics – one on the importance of mountain ecosystems and the other on the achievements of the scaling up projects – were designed.

### Information briefs

Nine information briefs – one introductory information brief, six country briefs, one brief on the key finding of the evaluation and another on lessons learned – were developed.

### Video clips

Video clips were developed of

- brief discussions with community members (two from Uganda and one from Perú) talking about project benefits,
- brief discussions with a local government member and a governing council member (one from Nepal and one from Kenya, respectively) talking about the project and its impacts,
- the impacts of climate change,
- the importance of ecosystems, and
- whether the project was successful.



Figure 54. Chingaza paramos, Andes mountain range, Colombia  
(© Matthieu Cattin)

# Chapter 6: Lessons learned



Vista of the Tsezusachu Springshed forest and rice cultivation, Bhutan © IUCN



Detailed below are some lessons derived from this evaluation.

## General lessons learned

### Lesson learned 1: EbA measures which deliver tangible dividends are the most effective.

Often, the impact of EbA activities, such as ecosystem restoration that generates ecosystem services to benefit human well-being, takes many years to become measurable and visible. For communities, such concepts of abstract, long-term benefits are, often, not easy to grasp.

When the impact becomes quickly evident and there are tangible benefits, EbA actions are successful and sustainable (Table 26 and Figure 55).

Table 26. Examples of successful EbA actions that delivered tangible benefits  
(Sources: compiled by report author from analyses of interviews conducted; country interim reports)

Country	EbA action	Benefit
Nepal	Restoration of roadside vegetation to reduce the impacts of erosion and landslides, using broom grass.	Scaling up broom grass cultivation in the Panchase region has increased the annual household income by an average of about 20,000 NPR <sup>7</sup> .
	Development of homestays in the Panchase region <sup>8</sup> .	Five homestays now receive money from (Ministry of Forests, Environment and Soil Conservation (10,000 USD) and from the Ministry of Agriculture and Land Management (5,000 USD) for integrated organic farming and livestock management.
Perú	In the Nor Yauyos Cochas Landscape Reserve (NYCLR), establishing green-grey infrastructure (by restoring ancestral Yanacancha dams combined with modern infrastructure and technologies).	Bioremediation of water quality. After investment by the project, the community now sees the benefits and maintains this infrastructure as they know that otherwise, the water will become silted and affect water security.
	Better management of pasturelands.	A member of the Miraflores community can sell dairy products at double, and animals at five times the previous price.
Uganda	Restoration of riverbanks and on-farm agroforestry.	A community member notes that her family is now 'food secure'. Crop harvests have more than doubled, and she can stock enough food till the next planting season. Excess crops, milk and fodder are now sold.  Another community member who owns four dairy cows is able to save 1,440,000 UGX (~ USD 397) <sup>9</sup> per year on buying fodder, which she now grows on her farm.

### Lesson learned 2: The project's evidence, its extensive capacity building and creation of awareness now provide greater opportunities for replication and scaling up.

There is now a body of evidence, clear impacts and collaborations in three flagship countries, as well as strong foundations in expansion countries that provide great opportunities for EbA upscaling and replication (see Table 5, Table 7, Table 8, Table 9, and Table 10). This foundation and the strong collaboration with the governments at local and national levels, provide excellent opportunities for the sustainability of EbA efforts.

<sup>7</sup> Baseline average household income (before the project) is not available.

<sup>8</sup> The waters of the Panchase region drain to Pokhara's famous Phewa Lake. The Panchase area is also known for trekking. Therefore, the development of homestays will generate income from tourists.

<sup>9</sup> Baseline household income (before the project) is are not available.

### Lesson learned 3: The project showcases the generation of co-benefits from EbA actions.

When EbA measures are implemented, these often lead to a range of additional benefits or co-benefits – such as the conservation of biodiversity; increase in biodiversity and increase in carbon sequestration.

Whether the project contributed to climate change mitigation (that is, how much carbon will be sequestered by the extent of ecosystem restored or better managed) has not been assessed.

Contribution to the conservation of threatened/conservation dependent species was targeted both in Nepal (with a focus on *Paris polyphylla*), and the conservation of the tree fern (*Alsophila spinulosa* formerly *Cyathea spinulosa*), which is not threatened but is listed on Appendix II of CITES (where international trade is restricted) as well as in Perú (for *Vicugna vicugna*) where a specific EbA action and a management plan were implemented, respectively.

Co-benefits included the added conservation of the globally Vulnerable Andean condor (*Vultur gryphus*) and Peruvian guanaco/Taruca (*Hippocamelus antisensis*) because of the improved management of the Puna grasslands, in the NYCLR, Perú .

A remarkable co-benefit of the project ensued in Kenya in the Chepkitale Nature Reserve, Mt. Elgon, where IUCN worked with the local NGO Chepkitale Indigenous Peoples' Development Project (CIPDP) and the Ogiek Indigenous People. In 2000, part of the Ogiek people's ancestral lands was annexed into the Chepkitale National Reserve. The CIPDP filed legal action and for years between the Ogiek and local government there was dispute and distrust. During the project, IUCN played the role of a peacekeeper, communicating with the local government administration and supporting the community to build trust between the two. The Ogiek won this landmark case in September 2022. This is a remarkable example of an EbA initiative contributing towards peacebuilding and safeguarding rights of the Indigenous Peoples. A selection of photographs is provided in Figure 55.

▼ Figure 55. A selection of EbA actions with tangible dividends  
(1<sup>st</sup> row left: Broom grass cultivation in Panchase, Nepal (© IUCN); right: Homestays, Panchase, Nepal (© IUCN); 2<sup>nd</sup> row left: Green-grey infrastructure, NYCLR, Perú (© IdM); right: Improved pasturelands NYCLR, Perú (© IdM); 3<sup>rd</sup> row left: Restoration of riverbank vegetation, Sipi-catchment, Uganda (© IUCN); right: harvesting potatoes, on-farm, Sipi-catchment, Uganda (© IUCN).

### Lesson learned 4: The three-pronged approach of working simultaneously with local communities, local government and national government achieves impacts that can be showcased easily in global arenas.

In the flagship countries, particularly, the three-pronged approach is clearly successful, as strong relationships have been built at every level, which allow, in turn, for the integration of EbA into each level. At the community level, the extensive creation of awareness, training and implementation of EbA actions, lead to dividends and the achievement of sustainability for those actions. In turn, the project gains traditional knowledge practised in the target sites. The result is the integration of suitable EbA actions into the lives and livelihoods of communities. When communities start experiencing benefits, this leads to sustainability.

At the local government level, extensive creation of awareness, capacity building and policy support and advocacy provided by the project, leads to the building of trust between the local government and the field team. Evidence from the EbA actions of communities becomes visible. Local governments, observing the impacts of the actions integrate EbA into local policies/plans and strategies.

At the national level, the creation of awareness and the provision of policy support and advocacy leads to the building of trust between the local government and the country field team. The team extensively shares evidence, knowledge and lessons learned from EbA actions. Seeing the benefits and impacts of the approach, the national government integrates EbA into its national plans/policies and strategies. When the finances and prioritisation for projects are decided at the national level, fund allocations are disbursed to the local government. The local government then supports EbA actions carried out by communities, further strengthening sustainability. This process has been exemplified in the Panchase region, Nepal, where the local ministry calls for proposals and the families who have engaged in EbA actions during the project apply. This money comes from the national government.











▲ Figure 56. Direct biodiversity conservation actions and other co-benefits generated from EbA actions

1<sup>st</sup> row left: Conservation of a Vulnerable species (*Paris polyphylla*), Nepal (© Alisia Rai); right: Conservation of the tree fern (*Alsophila spinulosa*), on CITES Appendix II, Panchase region, Nepal (© IUCN); 2<sup>nd</sup> row left: Better management of the conservation dependent Vicuña and grasslands, Tomas, Perú (© IdM); right: the Vulnerable Andean condor (*Vultur gryphus*) which benefits from better grassland management in Perú; (© Scott Nelson); 3<sup>rd</sup> row left: the Vulnerable Taruca (*Hippocamelus antisensis*) also benefits from better ecosystem management (© Alain Escóbar); right: the co-benefit provided to the Ogeik when IUCN served the role as a peacekeeper (© IUCN)

The evidence, knowledge and lessons learned at all three levels of implementation are then showcased easily in global arenas and integrated into global policy (Figure 57).

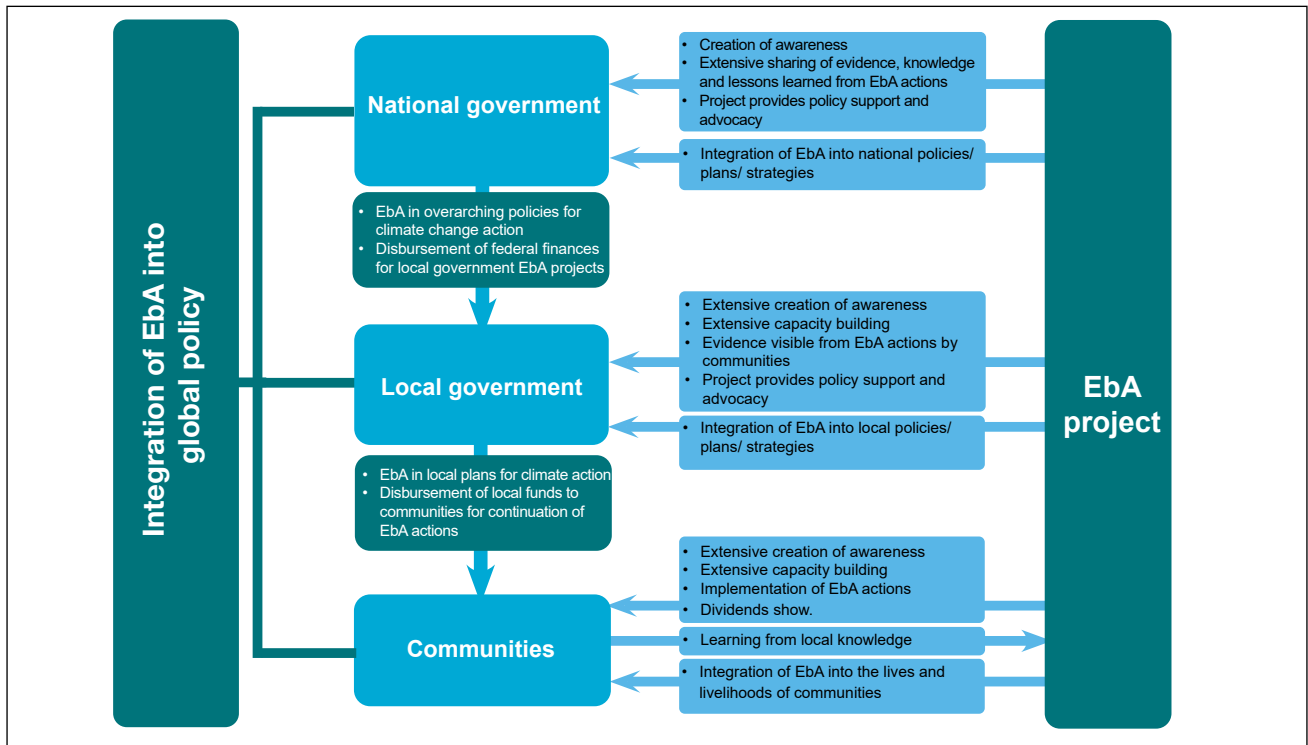


Figure 57. The three-pronged approach to integrating EbA at all levels  
(Source: compiled by report author from analyses of reports)

### Lesson learned 5: Knowledge shared by project countries has supported the development of other EbA projects and networking with existing projects has boosted EbA efforts.

Sharing knowledge and experience from the project has facilitated the dissemination and prioritisation of the EbA approach into other regional projects within target countries. Shown below is Table 27 which presents these projects.

Table 27. Other regional EbA projects

(Source: compiled by report author from analyses of interviews conducted)

Country	Other projects/synergies
Nepal	<ul style="list-style-type: none"> <li>EBA-II project implemented by the Ministry of Forests and Environment</li> <li>UNEP's Urban EbA project</li> <li>IUCN's GCF project</li> </ul>
Perú	<ul style="list-style-type: none"> <li>Nature-based Solutions Initiative of Perú [led by Instituto de Montaña (IdM), with support from the University of Oxford</li> <li>GCF 'Resilient Puna' project (powered by GIZ, Profonampe, MIDAGRI and IdM) among other institutions</li> <li>IKI NDC-Perú project</li> </ul>

Country	Other projects/synergies
Uganda	<ul style="list-style-type: none"> <li>The International Climate Initiative (IKI) EbA Evidence and Policy Project<sup>1</sup></li> <li>Implementation of the Scaling up Mt. EbA project has been integrated with the Sipi Integrated Water Resources and Management project, which is building on the achievements of the flagship EbA project within some of the old sites</li> </ul>
Bhutan	<ul style="list-style-type: none"> <li>Living landscapes: securing High Conservation Value (HCV) in southwestern Bhutan</li> </ul>
Colombia	<ul style="list-style-type: none"> <li>GEF project 'Adaptation to Climate Impacts in Water Regulation and Supply for the Chingaza-Sumapaz-Guerrero Area' by Conservation International</li> <li>Also, many other projects through extensive capacity building and sharing of knowledge</li> </ul>
Kenya	<ul style="list-style-type: none"> <li>The Intergovernmental Authority on Development (IGAD) in Eastern Africa, in collaboration with the IUCN Eastern and Southern Africa (ESARO) programme, with funding from Swiss Development and Cooperation's BRIDGE initiative is working in the SioMalaba- Malakisi (SMM) sub-basin of the Nile (downstream of the Chepkitale Nature Reserve). This project has been facilitating the implementation of the transboundary water governance</li> </ul>

## Lesson learned 6: Knowledge management is about internal, as well as external management.

More knowledge sharing and learning opportunities among partners about project actions, achievements and the project as a whole, would have been beneficial. Many respondents of the interviews conducted, for several questions answered, 'Don't know' (see Chapter 5). Also, there was a missed opportunity to connect with many respondents in the interviews planned and with the interviews conducted, there were some gaps regarding the information they possessed about the project. TMI's field and global staff leaving because of the project interruption in 2019, as well as COVID-19, were major contributing factors to these gaps. Communicating project goals and objectives, as well as outputs, results and most importantly, achievements, is ultimately beneficial to the project. To this end communication using social media, and field tours would be valuable.

## Operational lessons learned

### Lesson learned 7: The project has exemplified adaptive management, which is critical for EbA projects.

In EbA, there are external factors which often cannot be controlled or managed. For example, an unpredicted storm can wipe out seedlings that have just been planted during restoration activities. In addition, ecosystems themselves are inherently complex, often with unknown and unexpected variables compounding the restoration of the ecosystems' full functionality. Adaptive management is, therefore, essential for EbA.

At the end of 2019, the project was overwhelmed by an unexpected administrative issue (described in Chapter 1) that resulted in its abrupt cessation. This was followed almost immediately by the global pandemic of COVID-19, which resulted in long and repeated lockdowns in the target countries.

The resolve and persuasiveness of IUCN's global team in negotiating with the donor to restart the project, under the sole management of IUCN, ultimately revived it at the end of 2021. Adaptive changes to the results framework and adjustments to work plans were made, and work was recommenced in January 2022.

During the long hiatus, work at the global level intensified and knowledge and experience gained were shared at various conferences of parties and through FEBA and the EbA Community of Practice.

The role that the country focal points played in spurring work after the long pause and continuing to endeavour to build relationships with new government officers<sup>10</sup>, is also laudable.

In Bhutan, before the hiatus, a review of the environmental policy framework had been completed, ready with recommendations for improved integration of EbA within different policies. After the hiatus, it was found that there had been government re-structuring, which meant that the Ministry with which the country focal point had worked for two years, would likely no longer exist.

Exemplifying admirable adaptive management, the project in Bhutan modified its course as a result of the consultations with the actors and collaborated with the Tarayana

<sup>10</sup> as frequent political change is often experienced in the Global South

Foundation and the College of Natural Resources, Royal University of Bhutan, to enhance their ongoing programme on springshed management in the Gawa Phuntsum and Tsezusachu springsheds. The project provided technical support in the preparation of several briefs and in capacity building (Figure 58).

The efforts of the project teams (both at the global and country level) in restarting the project under conditions of a 'perfect storm' is an excellent example of adaptive management.



Figure 58. Adaptive management in Bhutan

(Top: Before 2019 – working with Watershed Management Division of the Royal Government of Bhutan to support programmes in the Chamgang Watershed and the Namey Nichu Watersheds; bottom: 2020 – working with the Tarayana Foundation and the College of Natural Resources in the Tsezusachu springshed (© IUCN)

### Lesson learned 8: Projects with a longer duration that build upon existing EbA work and evidence show clear impacts and sustainability.

The three flagship countries have now had on-the-ground work and policy advocacy since 2011 (not counting the hiatus). The results show clearly that these three countries now have measurable outcomes. These are presented in Table 20, Table 21, Table 22 and Table 23. These results

indicate that longer project durations are warranted for EbA actions, which require time for – for example, restoration – impacts and co-benefits to show.

It should also be highlighted to donors that in the Global South, getting a project approved by the incumbent government often takes 12-18 months. Also, often government changes and the resulting reshuffling of government officers reset the project clock. These realities should also be accommodated in decisions made about project durations.

The expansion countries should also be provided with opportunities to build upon the foundation that they have achieved in this phase. For example, Kenya carried out community-based vulnerability assessments, spatial mapping and a feasibility study to identify a suitable spring for green-grey infrastructure and only just managed to carry out the last step of the construction of spring protection. The community appears to want more springs protected as these springs will then provide more of them with water security.

### Lesson learned 9: A shift to a Theory of Change approach would have ensured more streamlined monitoring and reporting.

The current results framework used in the project has been converted to a work plan to track and capture administrative issues (deliverables) such as 'flagship countries develop detailed work plans and 'All countries submit mid-year updates detailing their implementation activities, challenges, plans, delays, staff changes, new opportunities, etc.'

The expected reporting template from countries is based on the project's results framework and has been developed to capture all the expected targets. However, reporting on the EbA targets and progress is also scattered under field reports and meeting logs. It would have been beneficial if details of the total number of capacity building events and the total number of persons trained were readily available, and always disaggregated by gender. Some countries would have also benefitted from improved reporting.

To ensure effective monitoring and periodic evaluation, as well as course-correction (as needed) for adaptive management, using a Theory of Change (ToC) is recommended, because a ToC will provide an immediate snapshot of all the EbA actions proposed, at any given time, if used as a tool for project management, capturing quantified information before and



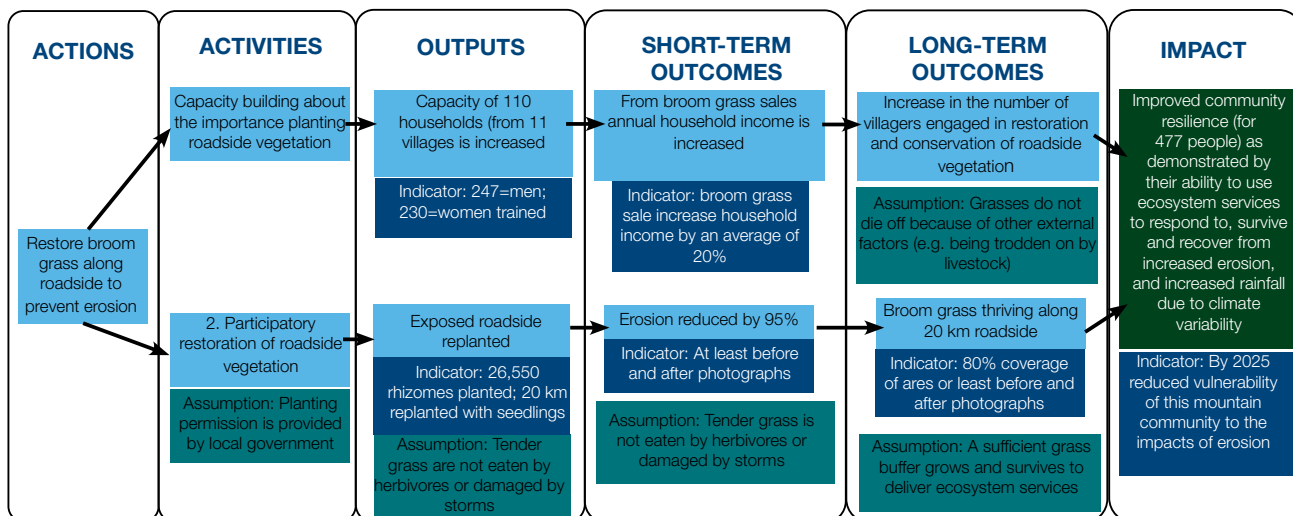


Figure 59. Two simple pathways of change illustrated for Nepal's broom grass-growing EbA action  
(Source: compiled by report author from project reports analyses)

after EbA interventions<sup>11</sup>. It should be noted that ToCs are recommended over other results framework and approaches for adaption, as in the shown in the next page.

*'The ToC approach is one of the most robust results frameworks to be used in the context of adaptation because it is particularly well-suited for the design, monitoring and evaluation of complex, multifaceted and long-term interventions' (GIZ, IUCN and IISD, 2022; and GIZ, UNEP-WCMC and FEBA, 2020).*

Even though all elements of the ToC were included in project reports, using a diagram onto which immediate, interim, and final results, as well as externalities that retarded progress and the number of beneficiaries for each action were logged in periodically, would have provided a clear summary of the project in one place at any given time, and not have data scattered in different places.

Such diagrams clearly illustrate 'pathways of change', highlighting the assumptions causing change towards the long-term impacts, establishing a more robust and rigorous internal monitoring and evaluation system from the very beginning of the project. These diagrams can be updated periodically, as project results and achievements become available, for sharing and dissemination at any point of time during the project.

Two simple pathways of change using the broom grass example from Nepal is shown in Figure 59.

Even Bhutan and Colombia, which had diverged from the given results framework (Table 2) could have developed their own ToCs at the beginning of the project to track progress against expected targets. For example, in the case of Colombia, the outreach of the capacity building that was carried out could have been tracked very easily through a ToC. Only Perú had developed at least a climate change impact chain (Figure 60).

Cross-continent learning is essential for country focal points and implementing partners. For future projects, it would be highly beneficial if budgetary allocation is made for at least two study tours (not meetings) to a neighbouring country, as well as one to one other continent, including at least one field visit in each country.

To buttress actual study tours, virtual meetings for sharing lessons learned could be interspersed. Virtual meeting can be difficult, in practice, across different times zones in different continents, but if quarterly meetings are held annually, each country can take a turn to be present at a virtual meeting at a difficult time to overcome this problem.

<sup>11</sup> There are many references to an increase in household income but the baseline household income is not available for identification of the percentage increase.

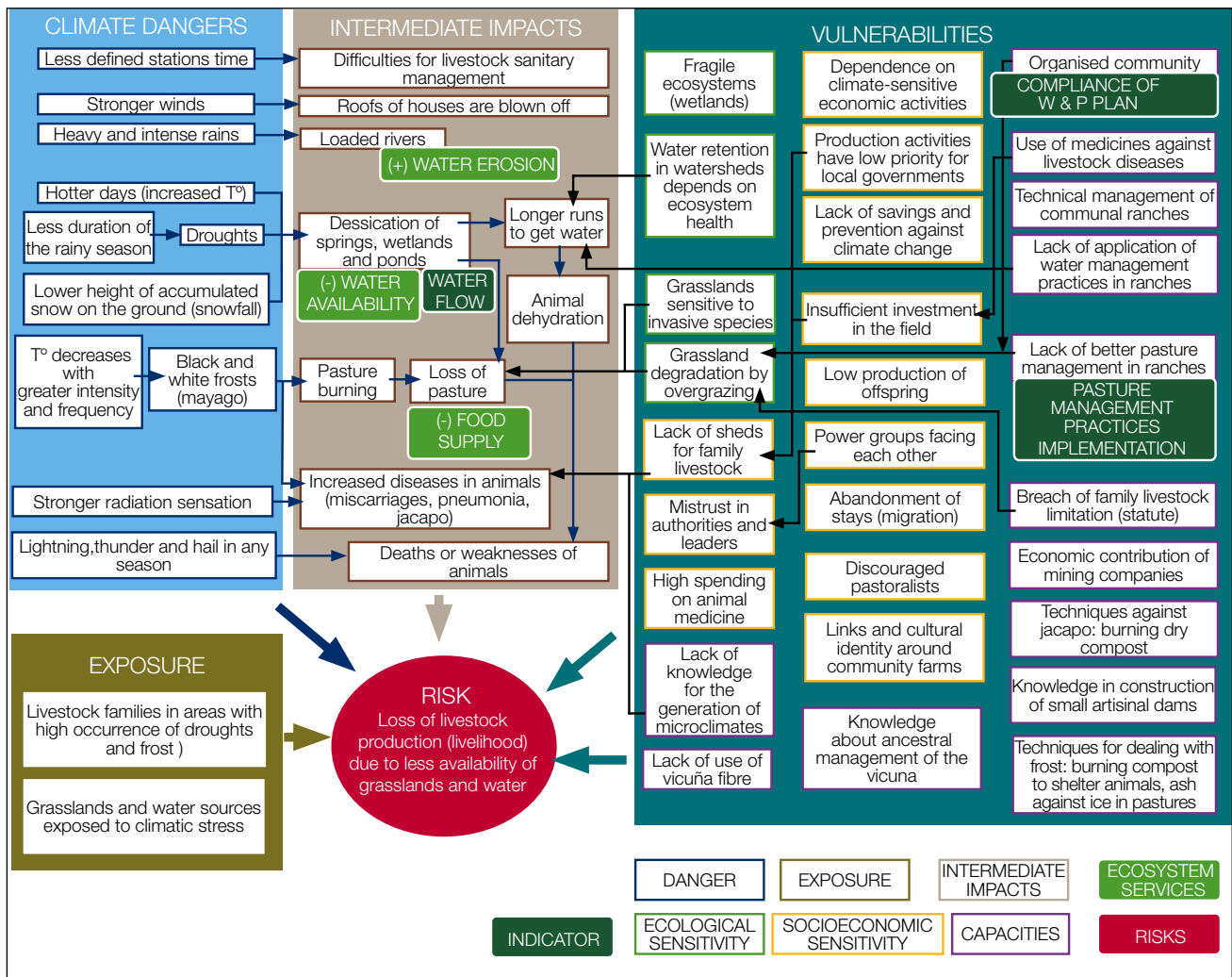


Figure 60. A climate change impact chain developed by Perú  
(Source: project reports)

### Lesson learned 10: Emulating a model which allows for a project preparation phase would allow for discussions with proposed partners during the design phase

The Global Environment Facility (GEF) proposal model is one in which a skeleton project information form (PIF) is drawn up with brief consultation and a given general direction of the project – a somewhat detailed concept note. After this, there is money provided by GEF to hire a team of consultants to flesh out the project document (ProDoc) and a results framework with extensive stakeholder, field and other consultations in project regions. This process takes up to six months, but when there is a validation of what is expected, every partner has agreed to what is to be done and a common results framework is available for tracking the progress of the funded project.

In the design phase of the project, it will be productive if discussions could be held with proposed government partners and country focal points as is done in the GEF model. This will generate ownership of the project among government officers and allow country focal points to highlight what is possible and not. This would also allow for the design across countries of actions that can be achieved in practice and the development of a common results framework for all countries. (It should be noted that once the project started, county focal points made considerable efforts to forge relationships with partners and work closely with them and managed to kick-start project actions even after the hiatus. However, this was after the results framework was drawn up, the project developed and the money received.)

If this model of proposal writing is not practicable with other donors, alternatively, after a general project proposal is

developed and funded, the programme officer could work – one-on-one with each country focal point – to develop a ToC specific to the country, but within a general framework, to make it more meaningful for each country.

### Lesson learned 11: Setting up a project in (an expansion) country with in-country project staff is important for effective implementation.

The project in Bhutan would have benefitted from an on-site project office or an officer, as the focal point had to fly from the Asian Regional Office in Bangkok to Paro and back (~ 1923 km and emitting 363.8 kg of CO<sub>2</sub>) for project activities.

The same was applicable to Colombia as well, where the implementing partner was IUCN's regional Office for South America, located in Quito, Ecuador.

## Lessons learned towards the achievement of core EbA objectives

### Lesson learned 12: There is a need to re-evaluate the overlap between the FEBA criteria for EbA and the NbS global standard criteria to avoid confusion among actors.

The terms NbS and EbA were often used interchangeably during interviews and in some project documentation. Adding to the confusion related to terminology, EbA is also known as NbS for adaptation.

As noted in Box 1 not all NbS are EbA actions, as they might not be targeting climate vulnerabilities per se, though the reverse that EbA is NbS holds true.

Table 28. Overlap between the FEBA criteria for EbA and the NbS Global Standard

(Sources: [FEBA, 2020](#); [IUCN, 2020](#))

FEBA element	FEBA criterion	NbS Global Standard criterion
A: helps people adapt to climate change	Criterion 1: Does it reduce social and environmental vulnerabilities?	Criterion 1: NbS effectively address societal challenges
	Criterion 2: Does it generate societal benefits within the context of climate change adaptation?	
B: uses biodiversity and ecosystems	Criterion 3: Did it restore, maintain or improve ecosystems and their services?	Criterion 3: NbS result in a net gain to biodiversity and ecosystem integrity
C: it is part of a broader climate change adaptation strategy	Criterion 4: Supported by policies at every level	Criterion 8: NbS are sustainable and mainstreamed within an appropriate jurisdictional context
	Criterion 5: Supports equitable governance and enhances capacities	Criterion 5: NbS are based on inclusive, transparent and empowering governance processes

The FEBA framework has five criteria, while the NbS Global Standard has eight (FEBA, 2020, IUCN, 2020)(Table 28).

The clarification regarding which criteria must be used for assessing project actions must be provided, at the very earliest, by IUCN, so that this confusion is resolved.

Whichever criteria are to be used, a more stringent application of the selected standard (to be used throughout the project, not just at the beginning) is needed.

It should be noted that the reviewer was specifically requested to assess the project's contribution to the FEBA framework, and not assess the project actions against IUCN's NbS global standard.

### Lesson learned 13: Assessing linkages to biodiversity conservation and climate change needs improvement.

EbA is centred on ecosystems and their services. Healthy ecosystems provide a suite of services for human well-being. Ecosystems are the sum of all living organisms and their interconnections with their non-living environment, in a given space, at a given time. The healthy functioning of these ecosystems and the delivery of ecosystem services depend on these interconnections. For example, for many food crops, for the ecosystem service of pollination, insects and nectar-feeding birds are essential. Without these species, this service will not be provided by ecosystems.

In biodiversity conservation, the increase in species diversity (i.e. increase in the number of species) is used as a proxy to measure the improvement of ecosystem health (and in turn, the delivery of ecosystem services). Such increases have been assessed anecdotally during the project, although they could have been assessed more robustly using established methods.

In addition, EbA that involves restoration/better management of ecosystems will generate not only climate adaptation benefits but also carbon sequestration and therefore, ecosystem-based mitigation (Figure 61). These linkages need strengthening in future projects. Shown in Box 4 is a very approximate calculation of the likely increase in carbon stock.

Box 4. Estimation of carbon stocks

For Perú, a very rough assessment using a number provided as average carbon stocks for different biomes (Gorte, 2009), assuming that all other variables (such as temperature, soil type, plant species diversity and soil microorganism diversity) between the temperate grassland biome and the Puna grasslands correspond, is shown in Table 29. However, to assess the actual impact of the EbA action, a baseline assessment of the carbon stock is necessary.

Table 29. Rough estimate of climate change mitigation in two sites

(Source: Estimate is based on carbon stocks listed in Gorte, 2009)

Ecosystem restored/ under better management regimens	Number of hectares	Very approximate estimation of current carbon stock when fully grown (tonne) <sup>12</sup>	Baseline stock	Increase in carbon stock as a consequence of EbA action
Puna grasslands	8,881	2,150,125.624	Not known	Quantity in column 4- quantity in column 5



▲ Figure 61. Grassland in Miraflores, before and after EbA interventions

(Left: Grassland, Yanacancha, Miraflores, in 2013, before EbA interventions right: The same grassland after 2019, after EbA interventions (© IdM)



▼ Figure 62. Knowledge-sharing at national and international levels

(1<sup>st</sup> row left: At a national workshop in Katmandu, Nepal (© IUCN); right: Regional Symposium on Research Advances in Sustainable Use of the Vicuña (© IdM); 2<sup>nd</sup> row left: end of EbA project exit and sustainability stakeholders workshop, Mbale district, Eastern Uganda (© IUCN); right: a lecturer at the College of Natural Resources, Royal University of Bhutan provides an introduction to springsheds during the workshop on Springshed Ecosystem-based Adaptation in Punakha, Bhutan (© IUCN); 3<sup>rd</sup> row left: IUCN Colombia at the Stand Pavillion Colombia, COP25, Madrid (© IUCN); right: Sharing experiences among target countries, Pokhara, Nepal (© IUCN)

<sup>12</sup> Assumption: Carbon stock temperate grassland biomes= 108 ton/acre (Gorte, 2009)







# Chapter 7: Recommendations



The information gleaned from this impact evaluation and the October 2022 workshop were distilled along with the author's opinions and presented in this report as recommendations for consideration in future projects. It should be noted that these recommendations are interconnected.

The October 2022 workshop notes are appended as Annex 4, containing the participants' opinions on the way forward, both from global and country perspectives.

### Recommendation 1: Use IUCN's strengths to develop larger projects with higher investments.

The budgetary allocations for the scaling up phase of the Mountain EbA project were viewed as being inadequate, limiting EbA actions (Baig, 2022) and much larger investments are required for policy interventions at the global level.

IUCN is a union of 1,400 government and civil society member organisations and 15,000 volunteer experts in six commissions. Of these expert commissions, is the Commission on Ecosystem Management with over 1,300 members and a group focused on Nature-based Solutions. These experts should be called upon to support project design, while members can implement project actions, so that IUCN can not only ensure quality work on-the-ground but also strengthen work at the global policy level.

Secondly, another one of IUCN's strengths has always been facilitation, and this strength of bringing diverse actors together could be used in the implementation of recommendations 2-7.

### Recommendation 2: Include the private sector in project design and activities.

Many businesses – from small and medium scale to large corporates – depend on ecosystems and ecosystem services. However, their actions often concurrently result in damage to ecosystems. These businesses may be part of the problem, but it is now evident that they are also part of the solution (IUCN, 2022c). Corporate Social Responsibility (CSR) – as the means for the private sector to 'acknowledge and take responsibility for its actions that affect the market' (Książaka, & Fischbach, 2017) – became popular in the 1990's, and the triple bottom line (of people, planet and profits) became the three pillars of CSR. Many

businesses now report on the triple bottom line. Therefore, actively engaging the private sector in EbA project will allow for unlocking private investments.

Here too, the support of IUCN's thematic work programme 'Business, finance and economics' should be elicited.

The involvement of the private sector will also ensure that livelihood alternatives are not only environmentally sustainable but also economically viable. Ensuring value chains that include the entire product life cycle and are nature- and climate-smart, as well as sustainable, will also be supported through such partnerships.

### Recommendation 3: Engage development partners.

Twinning with Recommendation 2, engaging development partners – such as multi-lateral or bi-lateral development banks and partners – will ensure that new green-growth business models and investment vehicles for EbA are formulated to support not only national governments in implementing recommended policy changes but also IUCN, to achieve essential global policy reforms

### Recommendation 4: Greatly improve innovative practices.

IUCN's strengths lie in building upon tried and tested practices. However, there is a need for re-assessing known issues from a different perspective (D'hoedt Meyer, 2022), to develop innovative approaches for EbA (see Climate Action, 2022) and radical shift in thinking and project design.

One such innovation is blended finance. 'Blended finance uses capital from government sources to attract private sector investment'. Blended finance 'has an important role to play in supporting the development of proof-of-concept business models and making their risk-return profiles more competitive, as well as expanding the more commercially viable models to new sectors and locations' (WB, 2021).

The ultimate aim of this and Recommendations 2 and 3 is that development becomes nature- and climate-smart, practising blended finance, improving value chains, and 'tipping the economic policy balance in favour of sustainable investments and practices and away from supporting business-as-usual' (WB, 2021).

Other innovations of technology such as climate-smart agriculture, GIS mapping to visualise and communicate

changes in ecosystems before and after EbA interventions, remote sensing of environmental drivers and using civil society for the collection of data, should also be included in project design.

### Recommendation 5: Promote transformative multi-stakeholder platforms.

Recommendations 2-4 lead logically to the need for multistakeholder platforms in designing, financing and implementing EbA projects. Multistakeholder platforms are crucial for implementing EbA because they engage different government sectors, include multidisciplinary technical experts, and leverage financial resources. For example, even within the government sector, to ensure water security to communities using EbA, there is a need to engage not only the government officers related to the environment but also water supply and irrigation as well as land use. Such platforms should also include non-governmental and other civil society organisations, as well as, importantly, rights holders.

Such diverse multistakeholder platforms will generate transformative thinking, out-of-the-box project designs, and technically sound implementation.

### Recommendation 6: Build upon existing knowledge to develop transboundary projects.

The Mountain EbA project is now well-positioned to transition to transboundary projects. The siting of the target countries from the flagship and scaling up phases next to each other in South America, Africa and Asia (Figure 4) allows for a shift from project site-based actions to working in transboundary basins – for example, for the formulation of transboundary policies.

In Asia, about 210 million people living in the Hindu Kush Himalayan mountain range and 1.3 billion people living downstream of this range are dependent on freshwater from the rivers and their tributaries originating from this mountain range (GRID-Arendal, 2015). Development of policies regarding the use of this water will necessarily be transboundary.

### Recommendation 7: Develop projects that link issues of concern.

Linking issues of concern in project design will allow for

access to financial resources which are not allocated only for climate change adaptation – for example, linking food security, climate change and biodiversity, as well as nature, health and climate change.

### Develop projects on the food security-climate-change-biodiversity nexus.

‘Humankind is facing a perfect storm of climate change, biodiversity loss<sup>13</sup> and multiple forms of malnutrition (stunting, wasting, micronutrient deficiencies and obesity) coexisting in the same country, community, household and even individual. Each of these is well known and well recognized’ (FAO, 2021). However, in today’s sectoral world they are studied and projects are implemented as if these are silos (FAO, 2021) (Figure 63).

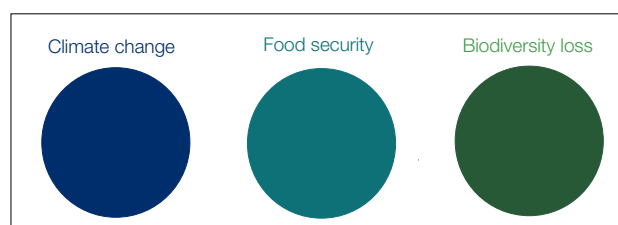


Figure 63. Issues of climate change, food security and biodiversity loss are seen as silos

(Source: compiled by the author from FAO, 2021)

However, all three of these issues are linked in multiple ways. For example, climate change is one five major drivers of biodiversity loss and is known to worsen the impacts of all other drivers (IPBES, 2019). Conversely, the destruction of ecosystems weakens nature’s ability to regulate greenhouse gas emissions and protect humans against extreme weather (Horizon, undated). Agriculture is the leading cause of habitat destruction and one million species are threatened by extinction because of this (IPBES, 2019). In addition, 75% of deforestation is a result of ecosystem clearance for crop cultivation and this damages the ability of ecosystems to remove carbon from the atmosphere (IPBES, 2019) (Figure 64).

EbA is a climate change adaptation approach known to address food security by restoring or better managing ecosystems and the services they provide (USAID, 2017). The time is opportune for IUCN and its partners to expand their purview to formulate projects that are framed by understanding and addressing the food security-climate-change-biodiversity nexus (Figure 65).

<sup>12</sup> Used here as a proxy for the degradation of ecosystem services



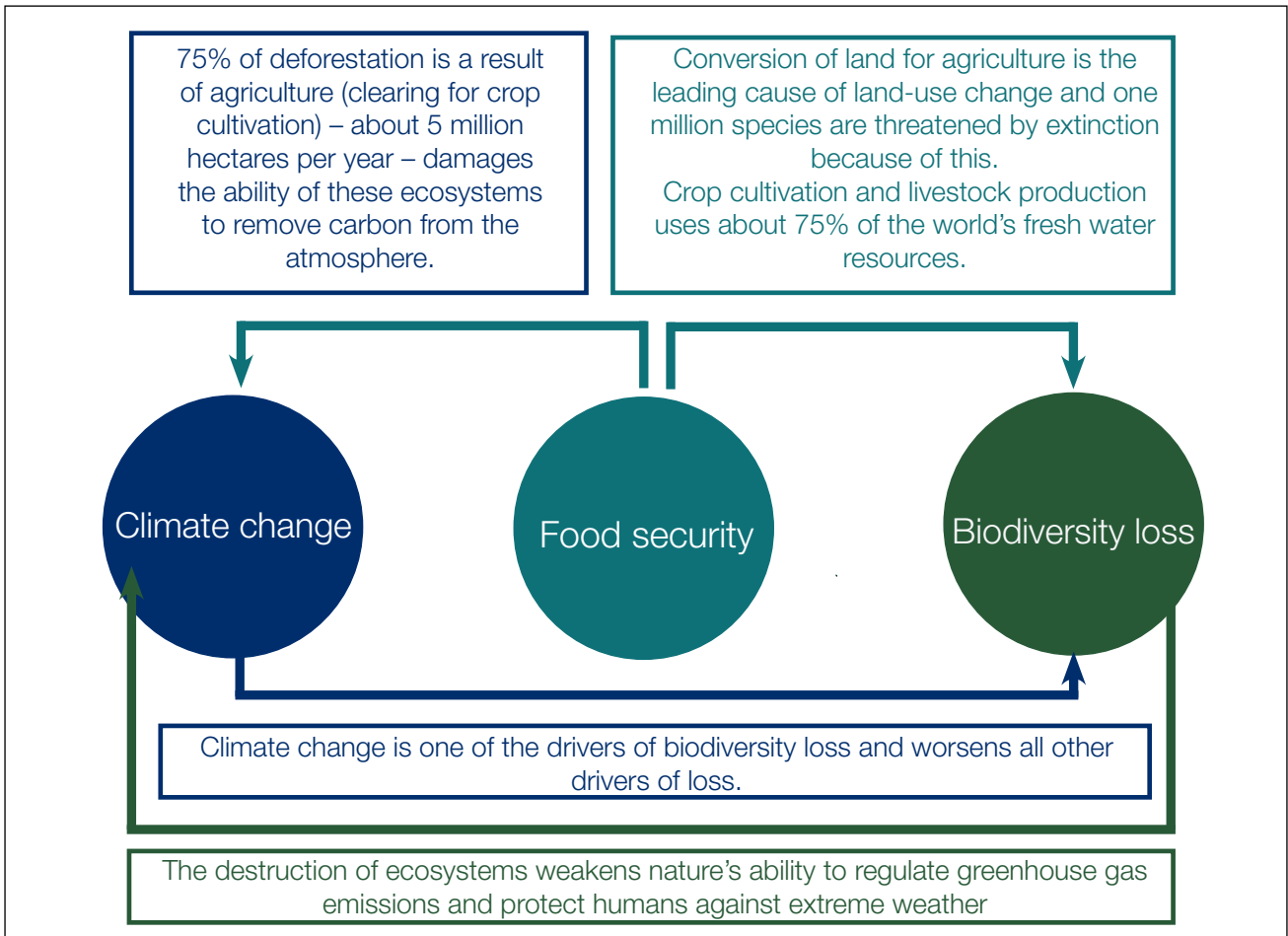


Figure 64. The linkages among climate change, food security and biodiversity loss  
 (Source: compiled by report author from [FAO, 2021](#))

### Develop projects on the nature-health-climate nexus.

The COVID-19 pandemic alerted the world to the emergence of zoonotic<sup>14</sup> diseases ([Roe et al., 2020](#)). Since the turn of the century, apart from COVID-19, there have been outbreaks of

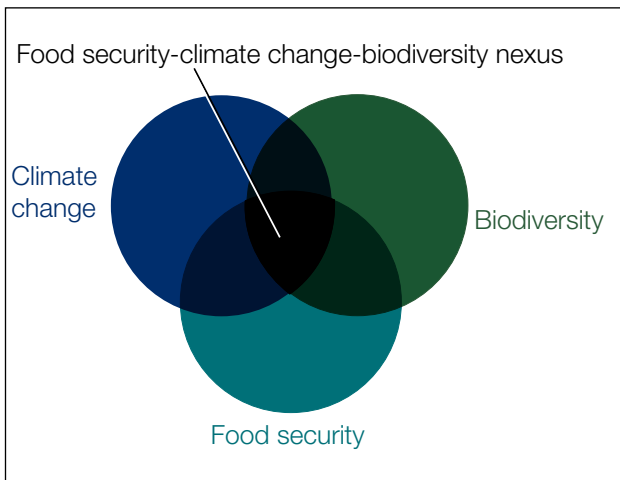


Figure 65. The food security-climate-change-biodiversity nexus  
 (Source: compiled by author)

the 2003 severe acute respiratory syndrome coronavirus, the 2009 swine flu, the 2012 Middle East respiratory syndrome coronavirus, the 2013–2016 Ebola virus and the 2015 Zika virus disease ([Baker et al., 2022](#)). It is reported that the triad of climate change, rapid urbanisation and habitat destruction will increase the risk of emerging diseases in the coming years ([Baker et al., 2022](#)). Climate change is likely to alter the global distributional range of pathogens, allowing infections to spread to new areas ([Baker et al., 2022](#)). Habitat destruction has also been identified as the key driver of the emergent zoonotic diseases ([Roe et al., 2020](#)).

Given this, projects that examine and address not only the nature-health nexus but the nature-health-climate nexus could also be formulated.

<sup>14</sup> is an infectious disease caused by an infectious agent such as a virus or a bacterium that is transmitted between animals (usually vertebrates) and humans

## Recommendation 8: Carry out integrated assessments to ensure all linkages are studied.

One of the areas of project actions that could have received more input was the scientific assessment of improvement of biodiversity as a consequence of better management/conservation/restoration of a given ecosystem.

The incorporation and implementation of integrated assessments (instead of rapid ecosystem assessments) are needed acutely for assessing impacts before and after project interventions. Integrated assessments should assess a) the type of ecosystems and their services; b) threats to those ecosystems and their services; c) the diversity of species (selected groups of animals and plants); d) socio-economic assessments (such as number of households, income levels, livelihoods); e) economic valuation of ecosystem services identified and f) the amount of carbon sequestered. Templates for such an assessment are available in [Miththapala \(2009\)](#) and can be adapted to suit country contexts.

## Recommendation 9: Use a more streamlined method of project reporting that includes stringent self-monitoring and evaluation.

This has been discussed under lessons learned but is worth repeating in this chapter as well. Self-monitoring and continual evaluation are needed critically. To the date of submission, the author of this report has been unable to elicit from all target countries, the total number of capacity building events and the breakdown of participants by gender. Such data must be readily available for sharing at any given time during project implementation and at the end of the project.

## Conclusions

Despite the overwhelming administrative issue that assailed the project in late 2019, and the pandemic of COVID-19 that followed, project staff leaving at this juncture, as well as government reshuffles in many countries, the project has shown considerable strength and flexibility to continue on-the-ground work and policy advocacy to ensure that EbA – as an approach to climate change adaptation – has been consolidated and scaled-up in Nepal, Perú and Uganda.

The lessons from long-term project sites (the flagship sites)

show the effective sustainability of project and community ownership, showing that longer durations for project implementation are needed for EbA. The three-pronged approach of the creation of awareness and capacity building at the community, local and national government levels has been unparalleled in achieving results.

In Bhutan, project actions have been course-corrected skilfully. In Kenya, after detailed preliminary participatory work before the hiatus, the protection of a spring has been completed. In Colombia, after extensive capacity building, a Spanish e-learning course on EbA for the region will be launched shortly.

These efforts have ensured that flagship countries have now become champions of EbA and the extension countries have laid the ground work for commencing EbA implementation in other projects.



Figure 66. Natural and built infrastructure against forested mountains, Bhutan  
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Riverbank buffer zone demarcation, Sipi-catchment, Uganda (© IUCN) ►



# Annexes

## Annex 1. Original results framework

### Expected outcomes and indicators

Outcome	Indicator	Stated baseline	Actual baseline	Target value	Means of verification
Effective and sustainable EbA measures for mountains are applied and up-scaled in Flagship countries; planned for application in other mountainous regions in South America, East Africa, and South Asia ("Expansion" countries); and shared globally by key actors.	Outcome indicator 0.1: <i>Number of sites, i.e. defined area in a watershed / catchment (size and number of communities in each may vary) in each Flagship country in which, by PM-18, community-based EbA measures (at least one specific intervention) are being applied.</i>	3; 1 per flagship country		Six (6) total. Two (2) per Flagship country: one original and one additional site in each country by PM-18	Project reports documenting application of Mountain EbA measures in an additional site in each Flagship country.
	Outcome indicator 0.2: <i>By Project Month (PM) 36, forests, wetlands, and/or grasslands in Flagship country sites show improved coverage and condition due to effective EbA measures.</i>	Baseline in hectares will be determined by PM 9 (see Indicator 1.1).	TBD	Target value for hectares with improved coverage and condition will be set after new sites and measures are determined and baselines are established per indicator 1.1. (by PM 12). Preliminary estimates are: Peru: 3,000 ha Nepal: 850 ha Uganda 4,000 ha Kenya 5,000 ha Targets to be reached by PM-36	Baseline data, and data collected throughout the project, on ecosystem conditions, collected by direct measurement (see Output 1.1).  Assessment reports on each EbA measure's respective extent of application and effectiveness, i.e. impact on ecosystems and/or ecosystem services.
	Outcome indicator 0.3: <i>By Project Month (PM) 36, nine (9) EbA measures, three indicating long-term effectiveness (for ecosystem services) and sustainability (affordability, socioeconomic benefits, and stakeholder buy-in) and six with early indications of effectiveness and sustainability, are available and being implemented in the three Flagship countries.</i>	Zero measures have been evaluated for effectiveness and sustainability.		Three (3) Flagship EbA measures indicate effectiveness and sustainability, Six (6) other continuing or new EbA measures have early indications of effectiveness and sustainability by PM-36	Effectiveness of measures will be indicated by extent of improvement in ecosystems and/or ecosystem services (see O.2);  Sustainability will be a qualitative assessment, combining effectiveness, cost, socioeconomic benefits (assessed compared to baseline measures of appropriate indicators, e.g. household incomes and improved technical capacity); and stakeholder buy-in (assessed based on e.g. stakeholder participation levels in project activities, number of community initiatives in area of influence of EbA measure, and level of management practices applied.)

Outcome	Indicator	Stated baseline	Actual baseline	Target value	Means of verification
	Outcome indicator 0.4: Number of national or subnational policy documents and processes in Flagship and Expansion countries that, by PM-36, include information on Mountain EbA approaches, principles, and/or methods generated by the project.	Zero (0) N.B. some integration of Mountain EbA exists from Flagship Programme but limited to date.	TBD (Flagship)	At least three (3) in countries (e.g. Uganda, Bhutan, Peru) where national or subnational plans are at a stage where contributions are made during project term by PM-36	National or subnational policy and climate change planning documents that incorporate information from this project. Attribution documented by citations, correspondence, meeting notes, media, report acknowledgements, etc.

### Output 1, related activities and results

Output	Indicators	Milestone	Activities	Stated baseline	Actual baseline	Target value	Means of verification
Output 1: Mountain EbA measures are being continued, tested, monitored, and adapted at local levels by communities, government, and other stakeholders in Flagship Country Sites.	Indicator I.1: Impact of continuing and newly established measures on ecosystems and/or ecosystem service provision is being monitored by the project with local partners in sites in Flagship Countries by PM-36.	Milestone MI.1: Knowledge management strategy developed (PM-3)	Activity AI.1: Evaluate all EbA measures within Flagship sites for possible continuation, based on their potential to provide evidence of medium to long-term effectiveness, through collaborative process between TMI and IUCN during project inception.	To be determined by PM 9, after new sites and measures are determined and baseline measurements of environmental conditions and ecosystem service provision are taken.	TBD	To be determined based on initial assessments by PM 12, Planned attainment PM 36.	<ul style="list-style-type: none"> <li>Direct measurement of forest, grassland, and wetland coverage and condition using standardized methodologies as a proxy for ecosystem service provisioning related to specific EbA measures</li> <li>Where possible, and/or where initiated by the Flagship Programme, we will measure direct impacts of EbA interventions on ecosystem services, e.g. down-stream dry-season baseflow, water quality, or reduced risk of flood and/or land-slide.</li> <li>Application of IUCN &amp; IISD's EbA effectiveness tool.</li> <li>Project annual assessment and final reports.</li> </ul>
		Milestone MI.2: Establishment/ updating of EbA baselines at Flagship sites (PM-7)	Activity AI.2: Establish environmental, social, and economic baselines using existing or new data as needed in the Flagship sites according to standard criteria. Supervised by TMI.				

Output	Indicators	Milestone	Activities	Stated baseline	Actual baseline	Target value	Means of verification
	Indicator I.2: Number of people directly involved and/or directly benefiting from Mountain EbA measures in Flagship countries by PM 36.		Activity AI.3: Support continued implementation of selected EbA measures under the principles of adaptive management.	Perú: 1800 Nepal: 300 Uganda: 1000	TBD	Perú: 2,200 (50% women) Nepal: 600 (70% women) Uganda: 1,500 (55% women) + 500 in Kenya by PM 36	<ul style="list-style-type: none"> <li>Baseline studies will refine these baseline and target values.</li> <li>Project annual assessments and reports.</li> </ul>
	Indicator I.3: Number of Mountain EbA measures in Flagship Sites that have been adapted and improved as assessed annually by the project partners by PM-12, 24, and 36.	Milestone MI.3: Effectiveness and sustainability of EbA measures assessed against the environmental, social, and economic baselines for the Flagship sites (PM-36).	Activity AI.4: Assess the effectiveness and sustainability of EbA measures against baseline indicators, building on existing monitoring systems, and using standardized approach developed by TMI.  Activity AI.5: Develop and implement a knowledge management strategy that will collate, analyse, and share findings including integrating past knowledge products from the Flagship Programme, to be led by TMI.	Zero (0) measures assumed to adapt and improve in absence of new phase of Mountain EbA project (to be refined in first year depending on results of baseline studies)	TBD	Three (3) by PM-12, three (3) by PM 24, and three (3) by PM 36 (to be refined in first year depending on results of baseline studies)	Project annual assessments and reports.



## Output II, related activities and results

Output	Indicators	Milestone	Activities	Stated baseline	Actual base-line	Target value	Means of verification
Output II: The Mountain EbA approach is being up-scaled in Flagship countries, locally and nationally, and taken into account in planning processes and strategies for application in Expansion countries by local governments and other stakeholders.	Indicator II.1: By PM-36, 13 knowledge products have been developed, including a Mountain EbA catalogue and, for each of six (6) countries, a map and at least one (1) information brief or report per country on the benefits, application, and policy implications of Mountain EbA.	Milestone MII.1: Catalogue of Mountain EbA measures available online, to be improved and refined at project's completion (PM-6 and 36).	Activity AII.1 Develop and refine a catalogue of tested and potential Mountain EbA measures and their supporting interventions, based on science (biophysical, social, economic, policy) and traditional knowledge for actual and potential users in project countries and other mountain countries. Led by TMI with inputs from IUCN. Catalogue to be hosted on an appropriate web platform (e.g., adaptationcommunity.net, weadapt.org).	Zero (0)		1 catalogue of EbA measures with selection guidance 6 country maps, 1 per country 6 info briefs, 1 per country by PM-36	Availability of Mountain EbA knowledge products (web-based, printed, etc.)
	Indicator II.2: By PM-36, benefits, application, and policy implications of Mountain EbA have been shared with key actors in each of six (6) countries (Flagship and Expansion).		Activity AII.2 Develop an interactive map and database for each Flagship and Expansion country of Mountain EbA potential and existing Mountain EbA relevant projects to influence local action as well as national government priorities. Led by TMI with inputs from IUCN. Map and database to be hosted long-term on web platform(s) (TBD) accessible to target audiences (policy makers, natural resource managers, NGOs, etc.), with maps and other project information materials printed and disseminated to target audiences (in local languages where appropriate).				

Output	Indicators	Milestone	Activities	Stated baseline	Actual base-line	Target value	Means of verification
	Indicator II.3: By PM-36, Mountain EbA measures are being applied in new sites by the project in at least one (1) additional site in each Flagship country + Kenya. In Expansion countries Colombia and Bhutan, Mountain EbA measures, including a funding strategy, are planned for application by others in at least one (1) site.	Milestone MII.2: Mountain EbA measures being initiated in a new site in each Flagship country and in Kenya (PM-12).	Activity AII.3 Evaluate potential sites, select new EbA project sites and stakeholder partners, and develop thorough up-scaling plans in consultation with BMUB (where, with whom, resources, etc.) in Flagship countries and Kenya.	Zero (0)		18, three (3) in each country by PM-36	Meeting and workshop reports.
	Indicator II.4: Mountain EbA approaches are integrated in at least one (1) local adaptation, watershed management, or community development plan in at least five (5) countries by PM-36.		Activity AII.4 Conduct outreach and workshops for local stakeholders and technicians and otherwise build capacity in technical planning, local adaptation planning, decision support, financing, and implementation at the newly selected sites in Flag-ship countries and Kenya.	Zero (0)		Four (4) applied, one (1) in each Flagship country and Kenya by Mountain EbA project Two (2) planned, one (1) each in Colombia and Bhutan, for implementation (or integration) by others by PM-36	Project reports or site visits, target organisations' planning documents.
			Activity AII.5 Implement new Mountain EbA measures that show promise for being self-sustaining (establishing baselines for long-term effectiveness monitoring) in Flagship country sites and Kenya.	Zero (0) (to be verified)		One (1) in each of five (5) countries by PM-36	Review of Local Adaptation Plans.
			Activity AII.6 In Expansion countries, promote incorporation of mountain EbA into other promising on-going projects and initiatives, including development of Local Adaptation Plans, through workshops and other means as resources permit, undertake project visits, and provide technical assistance and advice to potential projects (will be further enabled by work under AIII.1 and AIII.2).				

## Output III, related activities and results

Output	Indicators	Milestone	Activities	Stated baseline	Actual baseline	Target value	Means of verification
Output III: EbA as an adaptation strategy for mountain regions is taken into account by key actors in national and international policies and planning processes.	Indicator III.1: Number of government and non-governmental organizations in Expansion countries that, by PM-36, include Mountain EbA concepts, approaches or measures generated by the project in their strategy papers and planning documents.	Milestone MIII.1: Three (3) policy-oriented knowledge-sharing products produced by (PM-24).	Activity All.1: Supplement Mountain EbA knowledge-sharing products (see Output II) with additional products designed to influence specific national and international policy audiences. These will include policy briefs (integrating legal and economic analysis), guidance on integrating Mountain EbA into local to national adaptation plans, and short videos that incorporate lessons learned, as well as products generated by the Mountain EbA Flagship Programme and other EbA initiatives.	Zero (0)	Three (3) governmental and three (3) non-governmental organizations, with at least one of each in each Expansion country by PM-36	Three (3) governmental and three (3) non-governmental organizations, with at least one of each in each Expansion country by PM-36	Strategy papers and planning documents from government entities like environment ministries, agriculture ministries, water authorities, forest authorities, and national non-governmental organizations that explicitly refer to Mountain EbA (citing/acknowledging project products like websites, maps, database, documents, etc.).
	Indicator III.2: By PM-36, three (3) international policy processes or forums have incorporated information on Mountain EbA approaches generated by the project.	Milestone MIII.2: Hosting, organizing, and/or participating in a major international policy conference through a mountain-themed side event or other means (e.g., COPs of UNFCCC, CBD, UNCDD). Once per year (by PM-12, 24, and 35).	Activity All.2: National-level policy engagement in Flagship and Expansion countries. In Flagship countries, this will be through dissemination of knowledge-sharing products, workshops, policy dialogues, and direct advocacy of the benefits of Mountain EbA to build support for policy change, local to national upscaling, and financing. In Expansion countries, will focus on information-sharing knowledge products, workshops, and other means to build national-level awareness of the potential of Mountain EbA. Target audiences include national-level policy makers, government agencies, donors, and other stakeholders.	Zero (0)	Three (3) by PM-36	Three (3) by PM-36	International policy and climate change planning documents that incorporate information from the project. Attribution documented by citations, correspondence, meeting notes, media, report acknowledgements, etc.

Output	Indicators	Milestone	Activities	Stated baseline	Actual baseline	Target value	Means of verification
	Indicator III.3: Number of international, EbA-relevant communities and initiatives that, by PM-36, promote Mountain EbA through sharing information and expertise as a consequence of the project.	Milestone MIII.3: Participating and presenting at an international scientific or technical conference (e.g., World Mountain Forum, World Conservation Congress). Once per year (PM-4, 16, and 28).	Activity All.3: International-level engagement and advocacy to influence development and implementation of multi-lateral environmental agreements and other processes through dissemination of policy briefs, side-events at COPs and other forums, and direct advocacy to country negotiators.  Activity All.4: Share learning and knowledge with other EbA-relevant communities and initiatives including EbA-specific IKI-funded projects; adaptation sharing communities (e.g., <a href="http://adaptationcommunity.net">adaptationcommunity.net</a> , <a href="http://weAdapt.org">weAdapt.org</a> ); and the mountain science community (e.g., <a href="http://mountainsentinel.org">mountainsentinel.org</a> ). We will specifically focus outreach on the UN's Mountain Partnership as a means to reach 57 national governments and over 200 NGOs and other organizations through web-based communications, its 2017 General Assembly, and initiating a mountain EbA interest group (potential Community of Practice).	Zero (0)	Three (3) by PM-36	Three (3) by PM-36	Websites and documents relating to discussions forums, document exchanges, sessions at international conferences and meetings of the Mountain Partnership, Friends of EbA, Mountain Sentinels group, WeAdapt, AdaptationCommunity.net, etc.



## Annex 2. Questionnaires for interviews

### For IUCN global/country staff and partners

#### Effectiveness of the project

1. What is the role you played in this project?
2. Has this project been successful so far in your opinion? (Yes/ No/Don't know)
  - i. If yes, estimate how successful it is to date. (Rough percentage)
  - ii. If yes, what was successful about the project? (Please provide a statement or a list)
  - iii. What are/were the challenges you faced in implementing this project? (Please provide a statement or a list)
  - iv. If the answer to the main question was no, what did not work in the project?
  - v. Why did it not work? (Please provide a statement or a list)
3. How effective is the approach in delivering what was wanted? (Very effective/ Effective/ Moderately effective/ Not effective)
  - i. If moderately effective or not effective, how can they be improved? (Please provide a statement or a list)
4. Were all activities listed in work plans so far been carried out? (Yes/ No)
  - i. If not, why? (Please provide a statement or a list)
5. One expected output of the project is that Mountain EbA approaches are integrated in at least one local adaptation, watershed management, or community development plan. Has this been achieved? (Yes/No/ Don't know) Or partially achieved?
  - i. If yes, please provide the name of the plan
  - ii. If no, why not? (Please provide a statement or a list)
  - iii. If partially achieved, please explain
6. Another expected output is that the Mountain EbA approach has been scaled-up in Flagship countries, locally and nationally, and accounted for in planning processes and strategies for application in Expansion countries by local governments and other stakeholders. Has this been achieved? (Yes/No/Don't know) Or partially achieved?
  - i. If yes, please provide the name and level of the plan (national/regional/local).
  - ii. If no, why not? (Please provide a statement or a list)
  - iii. If the answer to the main question was maybe, please explain further.
7. For flagship countries (Nepal, Perú and Uganda), an expected output is that Mountain EbA measures are continued, tested, monitored, and adapted at local levels by communities, government, and other stakeholders in Flagship Country Sites. Has this been achieved? (Yes/No/ Don't know) Or partially achieved?
  - i. If yes, please provide the name of the plan.
  - ii. If no, why? Please provide a statement or a list)
  - iii. If partially achieved, please explain further.

#### Validity of assumptions

8. There are 14 targets in the project results framework. How many of these targets have been achieved so far in your country's results?
  - i. Out of 14, the number of targets fully achieved.
  - ii. Out of 14, the number targets half achieved.
  - iii. Out of 14, the number targets not achieved.

#### Socio-ecological sustainability and impact

9. Will the interventions continue after the project is completed? (Yes/No/Maybe)
  - i. If yes, what is the mechanism for continuation? (Please provide a statement.)
  - ii. If no, what is needed for sustainability? (Please provide a statement or a list)
  - iii. If maybe, please explain.
10. Are all key actors sufficiently and effectively involved? (Yes/No/Maybe)
  - i. If no, what is needed to get them more involved (Please provide a statement or a list)
  - ii. If yes, how did you achieve this? (Please provide a statement or a list)
11. What is the extent to which conditions – at demonstration sites – are in place to enhance
  - i. resilience and reduce vulnerability? (Fully in place/somewhat in place/ not in place)
  - ii. measurable ecosystem services? (Fully in place/somewhat in place/ not in place)
  - iii. human well-being benefits? (Fully in place/

somewhat in place/ not in place)

- i. community governance? (Fully in place/ somewhat in place/ not in place)

12. What changes in implementing ecosystem-based adaptation have been observed so far? (Please provide a statement or a list)

### Adaptive management and flexibility

13. Has the project been flexible in adapting in relation to on-the-ground issues? (Yes/No/ Don't know)

- i. What actions (if any) did the project take to adapt to the changes in the global team and the suspension of activities from 2019 to 2021? (Please provide a statement or a list)
- ii. What actions (if any) did the project take to adapt to the COVID-19 pandemic (Please provide a statement or a list)
- iii. Are there any other external factors that slowed/ impeded the progress of the project? (Yes/No/Don't know)
- iv. If yes, please provide a statement or a list

### Contribution to the FEBA framework

14. Is the project contributing to the FEBA framework?

#### Element A, criterion 1

- i. Does it reduce social and environmental vulnerabilities? (Yes/No/Don't know)
  - a. If yes, how does it do so? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)

#### Element A, criterion 2

- ii. Does it generate societal benefits within the context of climate change adaptation (Yes/ No/ Don't know)
  - a. If yes, what are they? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)

#### Element B, criterion 3

- iii. Did it restore, maintain or improve ecosystems and their services (Yes/No/ Don't know)
  - a. If yes, can you please list the ecosystem and the services targeted?
  - b. If no, why not?

#### Element C, criterion 4

- iv. Is it a part of a larger adaptation strategy/ policy? (Yes/No)
  - a. If yes, can you please name the strategy/policy and the level? (national/regional/local)
  - b. If no, why not?

#### Element C, criterion 5

- v. Was the approach participatory (Yes/No)
  - a. If no, why not? (Please provide a statement or list)
- vi. Was the approach consensus-oriented? (Yes/ No)
  - a. If no, how were decisions made? (Please provide a statement)
  - b. Who had a voice in making these decisions? Implementing partners/ stakeholders/rights-holders
- vii. Was the approach accountable to all actors? (Yes/No)
  - a. If yes, how? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)
- viii. Was the approach transparent? (Yes/No/Don't know)
  - a. If yes, how? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)
- ix. Was the project design inclusive: were all community groups (women, youth, marginalised groups) in project sites involved in the project? (Yes/No/ Don't know)
  - a. If yes, how? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)
- x. Are the project activities equitable: did all community groups (women, youth, marginalised groups) in project sites get the benefits they needed? (Yes/No/ Don't know)
  - a. If yes, how? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)
- xi. Was the project carried out according to

national/regional/local policies and laws? (Yes/ No/ Don't know)

- a. If no, why not? (Please provide a statement or a list)

## Linkages to biodiversity conservation and climate change

15. Does the project increase biodiversity in the study sites?

- i. Does it restore degraded ecosystems? (Yes/ No/Maybe)
  - a. If yes, please provide the name of the ecosystem and extent restored.
  - b. If no, please explain what you did instead.
- ii. Increase the number of wild species (fungi/ plants/animals): in restoration, did the project use different species for propagation? (Yes/ No/Don't know)
  - a. If yes, how many species did you plant for restoration?
  - b. What were the number of species (plant/selected animal groups such as birds and insects) observed at the end of the project?
- iii. Contribute to the protection of a threatened species of plant/animal? (Yes/No/Don't know)
  - a. If yes, please provide the name of the species and the IUCN threat status (Critically Endangered/ Endangered/Vulnerable)

16. Does the project contribute to reducing the impact of climate change in the study sites?

- i. How much did the project contribute to climate change mitigation: how much carbon will be sequestered by the extent of ecosystem restored (when fully grown)?
- ii. Did project actions contribute to reduce extreme weather events such as floods/ landslides/drought? (Yes/No/Don't know) (Please add any other extreme event)
  - a. If yes, please explain.

## For government officers

Please fill the following and answer as much as you can.

Name: .....

Designation .....

Country .....

District if applicable .....

Date .....

### Definitions of terminology used:

- A **rights-holder** as someone who is entitled traditionally, culturally or legally to use natural resources (directly or indirectly) in the project site(s).
- A **stakeholder** is someone with a firm interest in the actions to be planned and carried out in the project site(s).
- An **actor** is used here as a term for both stakeholders and rights-holders.

## Effectiveness of the project

1. What is the role you played in this project?
2. Has this project successful so far in your opinion? (Yes/ No/Don't know)
  - i. If yes, estimate how successful it was. (Rough percentage)
  - ii. If yes, what was successful about the project? (Please provide a statement or a list)
  - iii. What were the challenges that were faced in implementing this project? (Please provide a statement or a list)
  - iv. If the answer to the main question was no, what did not work in the project?
  - v. Why did it not work? (Please provide a statement or a list)
3. How effective is the approach in delivering what was wanted? (Very effective/ Effective/ Moderately effective/ Not effective)
  - i. If moderately effective or not effective, how can they be improved? (Please provide a statement or a list)
4. One expected output of the project was that Mountain EbA approaches are integrated in at least one local adaptation, watershed management, or community

development plan. Has this been achieved? (Yes/No/Don't know)

- i. If yes, please provide the name of the plan.
  - ii. If no, why not? (Please provide a statement or a list)
  - iii. If partially achieved, please explain.
5. Another expected output is that the Mountain EbA approach has been scaled-up in Flagship countries, locally and nationally, and accounted for in planning processes and strategies for application in Expansion countries by local governments and other stakeholders. Has this been achieved? (Yes/No/Don't know)
- i. If yes, please provide the name and level of the plan (national/regional/local).
  - ii. If no, why not? (Please provide a statement or a list)
  - iii. If the answer to the main question was maybe, please explain.
6. For flagship countries (Nepal, Perú and Uganda), an expected output is that Mountain EbA measures are continued, tested, monitored, and adapted at local levels by communities, government, and other stakeholders in Flagship Country Sites. Has this been achieved? (Yes/No/ Don't know)
- i. If yes, please provide the name of the plan.
  - ii. If no, why? Please provide a statement or a list)
  - iii. If partially achieved, please explain further.

### Socio-ecological sustainability and impact

7. Will the interventions continue after the project is completed? (Yes/No/Maybe)
- i. If yes, what is the mechanism for continuation? (Please provide a statement.)
  - ii. If no, what is needed for sustainability? (Please provide a statement or a list)
  - iii. If maybe, please explain.
8. Do you think that all key actors were sufficiently and effectively involved? (Yes/No/Maybe)
- i. If no, what is needed to get them more involved (Please provide a statement or a list)
  - ii. If yes, how was this achieved? (Please provide a statement or a list)
9. What is the extent to which conditions – at

demonstration sites – are in place to enhance

- i. resilience and reduce vulnerability? (Fully in place/somewhat in place/ not in place)
  - ii. measurable ecosystem services? (Fully in place/somewhat in place/ not in place)
  - iii. human well-being benefits? (Fully in place/ somewhat in place/ not in place)
  - iv. community governance? (Fully in place/ somewhat in place/ not in place)
10. What changes in implementing ecosystem-based adaptation have been observed so far? (Please provide a statement or a list)

### Adaptive management and flexibility

11. Has the project been flexible in adapting in relation to on-the-ground issues? (Yes/No/ Don't know)
- i. What actions (if any) did the project take to adapt to the changes in the global team and the suspension of activities from 2019 to 2021? (Please provide a statement or a list)
  - ii. What actions (if any) did the project take to adapt to the COVID-19 pandemic (Please provide a statement or a list)
  - iii. Are there any other external factors that slowed/ impeded the progress of the project? (Yes/No/Don't know)
  - iv. If yes, please provide a statement or a list

### Contribution to the FEBA framework

12. Does the project contribute to the FEBA framework?

#### Element A, criterion 1

- i. Does it reduce social and environmental vulnerabilities? (Yes/No/Don't know)
  - a. If yes, how did it do so? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)

#### Element A, criterion 2

- ii. Does it generate societal benefits within the context of climate change adaptation (Yes/ No/ Don't know)
  - c. If yes, what are they? (Please provide a statement or a list)
  - d. If no, why not? (Please provide a statement or a list)

#### Element B, criterion 3



- iii. Does it restore, maintain or improve ecosystems and their services (Yes/No/ Don't know)
  - c. If yes, can you please list the ecosystem and the services targeted?
  - d. If no, why not?

Element C, criterion 4

- xii. Is it a part of a larger adaptation strategy/policy? (Yes/No)
  - a. If yes, can you please name the strategy/policy and the level? (national/regional/local)
  - b. If no, why not?

Element C, criterion 5

- xiii. Was the approach participatory (Yes/No)
  - a. If no, why not? (Please provide a statement or list)
- xiv. Was the approach consensus-oriented? (Yes/No)
  - a. If no, how were decisions made? (Please provide a statement)
  - b. Who had a voice in making these decisions? Implementing partners/stakeholders/rights-holders
- xv. Was the approach accountable to all actors? (Yes/No)
  - a. If yes, how? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)
- xvi. Was the approach transparent? (Yes/No/Don't know)
  - a. If yes, how? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)
- xvii. Was the project design inclusive: were all community groups (women, youth, marginalised groups) in project sites involved in the project? (Yes/No/ Don't know)
  - a. If yes, how? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a

statement or a list)

- xviii. Are the project activities equitable: did all community groups (women, youth, marginalised groups) in project sites get the benefits they needed? (Yes/No/ Don't know)
  - a. If yes, how? (Please provide a statement or a list)
  - b. If no, why not? (Please provide a statement or a list)
- xix. Was the project carried out according to national/regional/local policies and laws? (Yes/No/ Don't know)
  - a. If no, why not? (Please provide a statement or a list)

**Linkages to biodiversity conservation and climate change**

- 13. Does the project increase biodiversity in the study sites?
  - i. Does it restore degraded ecosystems? (Yes/No/Maybe)
    - a. If yes, please provide the name of the ecosystem and extent restored.
    - b. If no, please explain what you did instead.
  - ii. Increase the number of wild species (fungi/plants/animals): in restoration, did the project use different species for propagation? (Yes/No/Don't know)
    - a. If yes, how many species did you plant for restoration?
    - b. What were the number of species (plant/selected animal groups such as birds and insects) observed at the end of the project?
  - iii. Contribute to the protection of a threatened species of plant/animal? (Yes/No/Don't know)
    - a. If yes, please provide the name of the species and the IUCN threat status (Critically Endangered/Endangered/Vulnerable)
- 14. Does the project contribute to reducing the impact of climate change in the study sites?
  - i. How much did the project contribute to

climate change mitigation: how much carbon will be sequestered by the extent of ecosystem restored (when fully grown)?

- ii. Does project actions contribute to reduce extreme weather events such as floods/ landslides/drought? (Yes/No/Don't know) (Please add any other extreme event)
  - a. If yes, please explain.

## For communities

1. Please introduce yourself and tell me what role you played in this project?
2. How have climate change impacts (unpredictable rain/ excessive heat/ floods/ drought/ landslides) personally affected you?
  3. Has this project helped to reduce those impacts? (Yes/No/Don't know)
4. Was this project successful in your opinion? (Yes/ No/ Don't know)
  - i. If yes, can you estimate how successful it was? (Rough percentage)
  - ii. If yes, what was successful about the project? (Please provide a statement or a list)
  - iii. If the answer to the main question was no, what did not work in the project?
  - iv. Why did it not work? (Please provide a statement or a list)
5. What were the difficulties you faced in implementing this project? (Please provide a statement or a list)
6. What was done through the project was what you and your family needed? (Yes/Somewhat/No)
7. How did it benefit you and your family? (Please provide a statement or a list)
8. Were your ideas included in the project design? (Yes/ Somewhat/No)
9. Was everything about the project clearly explained to you? (Yes/Somewhat/No)
  - i. If not, what was not clear? (Please provide a statement)
10. Were all community groups equally involved in the project? (Yes/No)
11. What can be improved in the project?
12. Once the project finishes, will you and your community maintain the activities started by the project? (Yes/No/

Maybe) (Please provide a statement and list)

- i. If yes, how will you do this?
  - ii. If no, why not?
  - iii. If maybe, please explain.
13. Why are ecosystems (name the relevant ecosystem) important to you and your family? (Please provide a statement)
  14. What do you get from ecosystems? Food/Medicines/ Fuelwood/water/what else?

## Annex 3. List of persons interviewed

	Interviewee	Designation	Country	Mode of interview
1	Ali Raza	Programme manager	DC	Virtual
2	Verónica Ruiz Garcia	Programme manager, Eco-DRR	HQ	Virtual + email
3	Adriana Vidal	Project manager (2022)	DC	Virtual
4	Wendy Atieno	Project manager (2017-2020)	DC	Virtual
5	Emily Goodwin	Programme Officer, Climate Change	DC	Questionnaire filled
6	Annika Min	Programme Assistant - Ecosystem Based Adaptation	DC	Questionnaire filled
7	Anu Adhikari	Country focal point	Nepal	Virtual
8	Mirella Gallardo	Country focal point	Perú	Virtual
9	Florencia Zapata	Country focal point	Perú	Virtual
10	Harriet Drani	Country focal point	Uganda	Virtual
11	Raphael Glemet	Country focal point	Bhutan	Virtual
12	Karen Podwin	Country focal point	Colombia	Virtual
13	John Owino	Country focal point	Kenya	Virtual
14	Narendra Man Babu Pradhan	Programme coordinator, IUCN Nepal	Nepal	Virtual
15	Amit Poudyal	Communication officer, IUCN Nepal	Nepal	Virtual
16	Meeta Sainju Pradhan	Former head, Himalayan programme, TMI	Nepal	Virtual
17	Ichhya Thapa	Former intern/Programme officer/Senior programme officer, TMI	Nepal	Virtual
18	Alisa Rai	Former senior programme officer, TMI	Nepal	Virtual
19	Pem Narayan Kandel	Secretary, Ministry of Forests and Environment	Nepal	Questionnaire filled
20	Buddhi Sagar Poudel	Joint Secretary, Ministry of Forests and Environment	Nepal	Virtual
21	Dinesh Raj Bhuj	Fellow, Nepal Academy of Science and Technology (NAST)	Nepal	Virtual
22	Dil Bahadur Bhattarai	Local partner Machhapuchhre Development Organisation (MDO)	Nepal	Virtual
23	Ram Kaki Gurung	Ward Chairperson of Ward- 23, Pokhara Sub Metropolitan city.	Nepal	Virtual
24	Lizzy Kanashiro,	Technical officer, MINAM	Perú	Virtual
25	Marco Arenas Aspilucuet	Technical officer, MINAM	Perú	Virtual
26	Diana Sanchez	Regional government, Lima	Perú	Questionnaire filled
27	Arora Guerra		Perú	Virtual
28	Walter Lopez	Regional government, Junin	Perú	Questionnaire filled
29	Samuel Edwin Pizarro Carcausto	Consultancy assistant, UNALM	Perú	Questionnaire filled
30	Hulfer Lazaro Reyes	Territorial manager, Nor Yauyos Cochas Landscape Reserve	Perú	Questionnaire filled
31	Elmer Benito Segura Jimenez	Territorial manager, Nor Yauyos Cochas Landscape Reserve	Perú	Questionnaire filled
32	Abdias Villoslada Taipe	Territorial manager, Nor Yauyos Cochas Landscape Reserve	Perú	Questionnaire filled
33	Chemtai Redempta	Climate Change Officer, MWE	Uganda	Questionnaire filled
34	Chemangei Awadh	District Natural Resource Officer - Kapchorwa District	Uganda	Questionnaire filled

	Interviewee	Designation	Country	Mode of interview
35	Nyangas Simon	Kapchorwa Land Care Chapter (KADLACC) Coordinator - CBO, Kapchorwa District	Uganda	Questionnaire filled
36	Jaffer Kamwania	Campion farmer, Kapchorwa District	Uganda	Virtual
37	Patricia Bejarano	GEF Project, Conservation International	Colombia	Questionnaire filled
38	Peter Kitelo	Chepkitale Indigenous People Development Project, local partner	Kenya	Virtual
39	George Chilli	Water Resources Authority, National Government	Kenya	Virtual
40	Robert Juma	Senior Natural Resources Officer, Bungoma County Government	Kenya	Questionnaire filled
41	Cosmas Chemwotei Murunga	Chairman Ogiek Governing Council	Kenya	Virtual



## Annex 4. Global workshop Oct 24-25, workshop notes :

Scaling-up Mountain Ecosystem Adaptation (EbA): building evidence, replicating success, and informing policy

Final Workshop Notes October 24-25

Saima Baig<sup>15</sup>

### **Introduction**

The Mountain EbA Flagship Programme called *Global Ecosystem-based Adaptation (EbA) in Mountain Ecosystems*, was implemented in Peru, Uganda, and Nepal (flagship sites) from 2010-2016, and its second phase called *Scaling Up Mountain Ecosystem-based Adaptation: building evidence, replicating success, and informing policy*, was implemented during 2017-2022 in the flagship countries, as well as in Colombia, Bhutan and Kenya.

As part of scaling up project, Peru, Nepal, and Uganda (flagship sites) continued to generate data and lessons for mountain EbA, informing new demonstrations and influencing plans and policies. Kenya's program replicated EbA approaches on Mount Elgon (Kenyan side). Bhutan and Colombia programs identified existing development or conservation projects into which mountain EbA can be shared and infused to build a base for national mainstreaming.

At the culmination of the programme a final two-day workshop was held on October 24-25, 2022, in Washington DC, in which members of the project teams participated, along with the global Climate Change Team.

### **Purpose of the Workshop**

To **validate** the project Evaluation Report and the Country Briefs and envisage future strategies for scaling up Mountains EbA.

To **finalize and produce knowledge products** that capture the project impacts through web stories, summaries, briefs, presentations, or video recordings.

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**Provide insight on making mountains more resilient**, based on the learnings from the Flagship Programme, the Scaling up Project, and project teams' / workshop participants' individual and group experiences.

### **Team involved & Intended Use**

Participants of the workshop included IUCN's Climate Change Team, IUCN regional and country offices staff involved in the project and the Andean Program of the Mountain Institute (implementing partner), and an independent EbA consultant.

### **Participants**

Ali Raza Rizvi  
Adriana Vidal  
Valerie D'hoedt Meyer (Facilitator)  
Saima Baig (Independent Consultant)  
Anu Adhikari  
Florencia Zapata  
Mirella Gallardo  
Karen Podvin  
John Owino  
Zoe Jafflin  
Wendy Atieno  
Katie Bimson  
Nathalie Suarez  
Harriet Drani

### **Day 1 – October 24, 2022**

The workshop commenced with a brief introduction by Adriana Vidal and Valerie D'hoedt Meyer, who explained the objectives of the workshop.

Valerie Meyer also provided an explanation about the online tool known as Mural. This tool was used throughout the workshop to capture participant's input, activities, and ideas and forms the basis for this document.

The first half of Day 1 was utilised in validating the Evaluation Report. Participants were provided the Evaluation Report prior to the workshop and each participant came prepared to discuss and provide input into specific questions as described below.

### **What evidence, analysis and lessons in the Evaluation Report can be used to design future strategies and/or projects for scaling up Mountain EbA?**

According to the participants the following aspects represented important evidence, analyses, and lessons learned.

#### **What went well?**

For policy influence: Identifying the best practices for communication with partners to influence national and sub-national policies on EbA.

In terms of partnerships: Establishing and strengthening networks and multistakeholder platforms to exchange NbS (Nature-based Solutions) and EbA experiences and lessons learned on policy.

Local knowledge and societal dimension: Local engagement in the project is crucial and traditional knowledge is important to promote EbA and NbS more widely. Furthermore, participatory climate risk assessments can serve as a foundation for community-based work.

Some successful outputs and outcomes were identified as below:

- Engaging community from the beginning
- Building capacity of households to address soil and water conservation challenges, for agroforestry and tree growing, as well as riverbank rehabilitation
- Implementing the Wildlife Climate Change Adaptation Strategy worked well for Kenya
- Collaborative virtual course to share EbA uptake, experiences and lessons learned in Colombia
- Opportunities for using ancestral technologies for climate change adaptation (adapting to the current social and environmental context)
- Adapting ancestral technologies to current social and environmental context
- Sharing evidence on effective green-grey infrastructure proved constructive
- Facilitating and participating in diverse spaces to promote NbS, EbA and green-grey infrastructure
- Stronger local organization, communication, and improved coordination with federal government

- Flexibility to plan during the project, on demand progress made from introduction of concept to upscaling
- Influencing national and sub-national policies to integrate EbA

#### **Ideas for future strategies / projects to scale up mountain EbA?**

Continuing and upscaling from local to global networks and alliances to support EbA including:

- Alliance with Mountain Partnership and its members
- Alliance with governmental entities in flagship countries
- Linking public and private investment
- Supporting and monitoring the implementation of NDCs and M&E
- Opportunities to work with national-level NGOs to better integrate EbA in their development work
- Extensive reach throughout the countries now exist that can be built on and upscaled
- FEBA country / regional chapters can be explored

Upscaling EbA approaches:

- Improve on the popularisation and understanding of EbA as an approach to reduce societal vulnerabilities to the impacts of climate change
- Include processing and commercialization of products for better livelihoods in future design

#### **How should we take action?**

- 1) Fulfilling and consolidating the plan:
  - Maintain achieved momentum to strengthen partnerships. It is also important to plan regular meetings to discuss ways to build on project outcomes, and leverage existing networks to promote EbA further into existing development work
  - Continue linking livelihood enhancement with climate change adaptation
  - Resource mobilisation for implementing actions that were not implemented
  - Continuations of all the initiatives beyond this project

## 2) Upscaling the programme:

- Recognition of NBS Champions
- Reconvene with government partners once restructuring is complete and identify new EbA champions with whom to work
- Alliance with Mountain Partnership and its members
- Work on GCF and GEF proposals
- Involve private partners

### **What went wrong?**

#### Organisational weaknesses

- Discontinuation of the project activities for a two-year period
- Outbreak of Covid-19, which limited physical interaction to undertake documentation
- When the project resumed it was like starting a new project
- Change in partnership structure when the project resumed, and the project implementation role changed. There were changes in the government departments and partner projects ended
- Project interruption made progress very difficult without in-country support, especially since it was hard to regain traction and interest
- Common methodologies among the countries were not implemented
- Time period after resumption of the project was shorter

#### Budgetary constraints

- Limited budgetary allocation for natural resources departments to support continuity of the project
- Limited sub-national / regional budgetary advocacy
- Limited budget for many sites, regional and national counterparts

### **What evidence and lessons can be shared with partners that can inform their work?**

#### **What went well?**

The responses to this part were the same as the ones for **What evidence, analysis and lessons in the Evaluation Report can be used to design future strategies and/or projects for scaling up Mountain EbA?**

#### **Ideas for future strategies / projects to scale up mountain EbA**

Continuing and upscaling local to global networks and alliances to support EbA, including:

- Form alliance with Mountain Partnership and its members including government entities
- Explore opportunities to integrate EbA work into changing country contexts
- Explore opportunities to improve partnership for upscaling best practice
- Explore opportunities to work with stakeholders at different levels, including NGOs, to better integrate EbA in their development work
- Current extensive reach throughout the countries can be built on and upscaled
- Supporting and monitoring NDCs implementation and M&E
- FEBA country / regional chapters
- Undertake national level policy advocacy
- Link public and private investment

#### Upscaling EbA approaches

- Integrate EbA and climate change knowledge into both formal and informal educational systems
- Integrate EbA approach into productive governmental and private projects and programmes in the context of climate change (from the assessment, design, implementation, monitoring and evaluation)

### **How should we take action?**

- 1) Fulfilling and consolidating the plan:
  - There are larger funders for EbA who can fund governments rather than individual projects.

Current learnings should be used to design solid programmes that uptake on-ground experiences of project teams. Advantages exist due to partnerships with governments and when new programmes are designed there is ownership by the government, with higher chances to uptake policy recommendations into project design

- Continue linking livelihood enhancement with climate change adaptation
- Important to maintain momentum to strengthen partnerships. Plan regular meetings to discuss ways to build on project outcomes and leverage existing network to promote EbA further in existing development work
- Continuation of these initiatives beyond this project
- Take action by utilising networks for uptake of EbA lessons from the local to the national level

## 2) Upscaling the programme:

- Alliance with Mountain Partnership and its members
- Work on GCF and GEF proposals and other funding agencies
- Involve private partners
- Reconvene with government once restructuring is complete and identify new EbA champions to work with
- Recognition of NBS Champions
- EbA on the ground has proven successful to increase resilience to climate change impacts, hence these measures should be continued and upscaled

### **What went wrong?**

#### Organisational weaknesses

- With COVID-19 communication and coordination were impacted but remote work with diverse tools were adopted to maintain communication and coordination with the diverse stakeholders
- The suspension of the project went terribly wrong and when the project resumed it was like starting anew

- Adaptive management and flexibility are crucial
- Change in partnership structure when the project resumed, and the project implementation role also changed
- As an opportunity: even though the project had an involuntary disruption, the activities and collaborative work resumed due to the work dynamics established in the previous phase

#### Budgetary Constraints

- With the available budget, the project optimized resources to implement various activities such as synergies with counterparts, other ongoing efforts, and for the use of virtual tools, etc.
- A shorter time-period after restarting or resumption of the project
- Limited budget for many sites, regional and national counterparts
- Limited budgetary allocation for the natural resources departments to support continuity of the project

### **How can the lessons, evidence and knowledge in the Evaluation Report be used to inform FEBA, work of the Climate Change Team and Making EbA Effective Framework?**

In general, the participants considered the following as important factors, especially considering that the project was halted for some time due to Covid and other factors:

- Share lessons on adaptive management and flexibility in terms of institutional and personal commitment. Even though the project was disrupted, global and country teams continued specific activities to keep communication with government and local partners open, as well as to monitor the situation at local and national levels, to build a bridge between the two phases of the project
- Share evidence on EbA potential for building resilience and pandemic recovery: This should include evidence on EbA measures that supported local, vulnerable communities to cope with the pandemic
- Capitalizing work and resource optimization: Synergies with counterparts and



other organizations and ongoing efforts are key for effective EbA. Use of virtual tools / remote work, etc. to maintain communication, and increase participation is important for adaptive management and flexibility, especially in times of disruption (however, skills are needed for facilitating these types of spaces)

### **Informing FEBA**

- Generate and provide best practices and lessons learned to all stakeholders and the wider community
- Country specific information or examples from FEBA countries should be a part of FEBA work
- Identify or explain the role of different network members within FEBA
- Improve / update the EbA handbook including updated experiences, lessons learned and knowledge
- Increase outreach to Bhutan partners on EbA National Climate Adaptation Strategy and in Kenya share on-ground case studies

### **EbA Effectiveness**

- Generate evidence to showcase EbA effectiveness more widely
- Including next steps for long-term effectiveness should form an important part of any EbA programme or project
- Continue working with local to global counterparts to showcase evidence
- Strengthen capacities and EbA knowledge in local and vulnerable communities
- Re-evaluate the overlap between EbA and NbS standard criteria to avoid confusion amongst stakeholders

### **Climate Change Team**

- Should collate knowledge, information, evidence, and lesson learned
- Country specific evidence and examples including scientific and indigenous knowledge and information should be available to the Team

- It is crucial to prioritize the roles of different actors / stakeholders (this can make a project successful / unsuccessful)
- Effectiveness, impact monitoring and evaluation progress should be part of the work of the Team
- Scaling EbA Effectiveness: scaling up, scaling wide, scaling deep
- For Kenya, implement more EbA interventions and share proof of concept more widely
- For Bhutan, there is a lot of interest at national level to engage with IUCN on EbA. It is important to increase communication and collaboration from ARO to IUCN Bhutan office
- It is important to harmonize NbS / EbA criteria and work

### **What technical knowledges and policy lessons are generated that can be used to inform IUCN Policy influencing work at COP27?**

Indicate the design, mechanisms, strategies, and innovative solutions that ensured effectiveness in delivering output  
{Each participant was requested to indicate 5 points}

- 1) Indigenous knowledge, rights and ownership of the natural resource is a prerequisite for EbA effectiveness
- 2) Integration of indigenous knowledge to strengthen scientific knowledge to increase resilience to climate change adaptation is key
- 3) Highlighting effectiveness of EbA and its contribution to overall adaptation, as well as into NDCs and impact monitoring is important
- 4) Seek to improve communication about project goals, objectives, outputs, results and achievements with academic partners and government officers, using interactive tools as well as field visits
- 5) Need to better understand and address conflicting sectoral policies, particularly on agriculture, water use and EbA
- 6) Need to integrate EbA into other sectors beyond "green" sectors. This needs collaboration with ministries of planning, development, and / or finance
- 7) Integration of EbA into other project and programme design

- 8) It is important to establish monitoring and evaluation systems (including the selection of indicators) from the very beginning
- 9) Highlight experiences on climate risk assessment for EbA
- 10) Use experiences from the field, inform the EbA community of practice on what works, and the lessons learned, and inform policies at local and national levels
- 11) Showcase lessons learned on EbA implementation
- 12) Provide evidence of EbA effectiveness and impact at local and national levels
- 13) Showcase evidence on the key role of traditional-scientific knowledge for designing and implementing effective EbA
- 14) Develop process-oriented guidebooks to implement EbA, which can be tailored to needs of specific countries / sectors
- 15) The project made important conceptual and methodological contributions on EbA (Handbook and forms), as a basis for future initiatives in mountain ecosystems (or adapted to others). The handbook would be an excellent product to be finalized within another future initiative
- 16) Showcase examples of green-grey infrastructure for EbA in mountains (i.e., adapting ancestral technologies to current context)
- 17) Highlight evidence of the key role of the participatory approach and societal dimensions of EbA
- 18) Share lessons learned via study tours to promote cross-country learning and sharing information with focal points and implementing partners
- 19) Promote that combining green / grey infrastructure is effective strategy for demonstrating EbA on the ground
- 20) Highlight the effectiveness of cross-learning opportunities
- 21) Cross-learning on EbA among various stakeholders within each country (with a diversity of contexts) was a huge part of the programme and worked effectively. This can be used to for future up-scaling
- 22) Explore multistakeholder public private partnerships
- 23) Strengthen effective utilisation of EbA lessons for programme development and implementation

- 24) Collaboration and synergies: Establish and strengthen networks and multi-stakeholder spaces / platforms to exchange NbS and EbA experiences and lessons learned on the ground and in policies

### **What are 3 successful results that can be shared with donors?**

Participants indicated successful results from the Mountain EbA Flagship Programme as well as the Scaling-up

- Green / grey infrastructure that was implemented through spring protection and water supply for local communities, livestock and wildlife, demonstrated EbA effectiveness at the local levels
- Increased tree cover in the micro catchment
- Restored riverbanks have significantly reduced incidences of flooding
- Improvement in soil conditions have led to improved agricultural productivity and improved livelihoods
- Sale of fruit and fodder has also increased livelihoods
- There is now increased evidence on EbA effectiveness and impact at local and national levels, including on ecosystems and ecosystem services, on improving livelihoods, and on adaptation capacities
- The programme helped to develop increased knowledge and understanding of EbA at the local and national levels
- Lessons and best practices were shared with different actors
- Participatory processes were adopted, which promoted community involvement and ownership of the outputs
- A Payment for Ecosystem Services scheme was implemented for watershed management in Bhutan
- The first national-level workshop on spring-shed EbA was held in Bhutan
- In terms of policy impacts, EbA approaches were included in Climate Change Law and NDCs in Peru, as well as in the local adaptation plan

- Collaborative work was established to showcase the relevance of EbA and lessons learned from EbA programme (e.g. through exchanges within and between countries, workshops, and training)
- There was effective promotion of EbA integration and / or strengthening in NDCs and climate change instruments (e.g., in Colombia's NDCs, and long-term Climate Change Strategy)
- Socioeconomic analysis of EbA measures can be helpful in providing on-ground evidence
- Upscaling of EbA best practices was adopted by different stakeholders in Nepal
- In terms of capacity building and knowledge management, various materials were generated on EbA and its integration in policies and case studies (e.g., Colombia)

**What can be added to the specific points in the Lessons Learned section of the Evaluation Report?**

This question related specifically to what could be improved or added to in the Evaluation Report.

Participants provided feedback into the Evaluation Report, indicating certain aspects that could be **highlighted** within the document. These included:

- Understanding social organization, conflict levels and governance is key to assess the success rate of project and to design tailored strategies
- A key lesson is that it is important to integrate local livelihoods dimensions, working in partnership with field level organizations
- There is now a basis of important work, evidence, and collaborations in six countries (three flagship ones with more progress and longer-term implementation) with great opportunities for EbA upscaling and replication
- Excellent opportunity for sustainability of EbA efforts with the strong collaboration with the governments at local and national levels
- Information and knowledge sharing for capacity building and awareness on EbA efforts are key for stakeholders' engagement, replication, and sustainability
- Improve project design, planning (realistic logic framework considering the resources available)

and implementation processes with practical tools and mechanisms for monitoring, evaluation, and learning

- Alternatives for better ecosystem management need to build upon economic viability of livelihoods
- Economic viability is critical as a criterion to design project, taking into account the entire value chain
- Knowledge management is about internal as well as external management
- Existing knowledge management strategy should be built upon
- Colombia's state of the art training material should be highlighted

**Comments on specific lessons:**

*Lesson 5: Project actions have showcased the generation of co-benefits from EbA actions:*

- Co-benefits are generated indirectly (additional funding, synergies towards scaling up activities), so there is a need to include reduction of climate hazards that were not foreseen at the time of the design of the measure. However, the restoration of an ecosystem is a direct benefit since it was part of the design of measure

*Lesson 7: A shift to a Theory of Change approach would have ensured more streamlined monitoring and reporting*

- Instead of connecting the Theory of Change with a better monitoring framework, it should be connected to the design of EbA measures that address climate risks

*Lesson 8: Sharing lessons learned along the way is important*

- Seems a bit obvious, instead move monitoring from Lesson 7 and elaborate here
- Instead of stating that "Sharing lessons learned along the way is important" focus on developing the M&E system from the very beginning.

**General comments:**

- Titles from the report should be shorter using keywords and summarizing the ideas of each section

- The table of contents should prioritize the most important topic from each section of the report
- The lessons learned can be disaggregated by continent and by different perspectives (e.g., project management, finance, technical vision)
- Add country specific results, putting the name of the country in the table of contents
- After the lessons learned a section called 'Recommendations' can be included where the expert can give an opinion
- Add a summary section at the beginning of the report
- Add an acronym section at the beginning of the report

## **Day 2 – October 25, 2022**

The first part of Day 2 was spent on reviewing country briefs.

Participants were asked to review the country briefs and each country was asked to make a two-minute pitch about their project. This was commented upon and reviewed by the other participants.

After the participants had validated the country briefs, the remainder of the day was utilised for:

### **Making mountains more resilient and the future of mountain EbA – Roadmap design**

Countries from each continent were requested to work together to present a road map based on specific questions. This is outlined below.

#### **Latin/ South America**

*How can this project contribute to the EbA fund design for potential future phases?*

- Peru: Experiences that generated evidence on the effectiveness of EbA, based on more than 10 years of working in the NYCLR, can be used as a basis for future phases to continue scaling-up and contributing to policy targets (e.g., NDC)
- Colombia: There is an excellent basis of work dynamic with the government and other collaborators, which can be explored for future funding possibilities, as well as vast interest of diverse stakeholders on these topics to continue scaling-up.

*In light of participants' individual and group experiences, what future projects can be undertaken to make mountains more resilient in the specific regions?*

- Peru: Explore possibilities with GEF to continue and up-scale mountain EbA experiences (and the other IKI initiatives on EbA). Continue / expand EbA at the community level with strong policy advocacy, contributing to implementing country's targets (climate change, biodiversity and Disaster Risk Reduction), and strengthening policies under development (e.g., Finance Strategy, Long-term Climate Change Strategy)
- Colombia: Work on a GCF proposal for the Magdalena River floodplains (jointly with TNC); explore other GEF projects.

*Based on experiences of this project, who are the actors that can be involved in future mountain EbA projects?*

- Peru: Governmental agencies (MINAM, SERNANP, MIDAGRI /AGRORURAL and Sierra Azul, MEF, and others), regional governments, local communities, private sector, academia; international cooperation such as GIZ, FAO, etc.
- Colombia: Collaborators such as FFLA, IAvH (IUCN members)

*What are the potential regions where new mountain EbA projects can be implemented?*

- Peru: Northern-Eastern Andes (Amazonas, San Martin; Piura, Cajamarca, Ancash, Huancabamba depression)
- Colombia: Collaborating at sites where there are other projects or previous IUCN -IdM initiatives such as 'Comunidades de los Paramos', 'La Gran Ruta Inca - Qapaq ñan'

*What are some of the issues that can be targeted to make mountains more resilient and increase adaptability?*

- Water regulation and storage
- Sustainable grassland, water, and livestock / agriculture management
- Strengthening community organization
- Strengthening capacities and knowledge management (based on dialogue of knowledge – 'Diálogo de saberes')



- Working closely on planning instruments from local (Master Plans, Regional CC Plans) to national levels (e.g., NDC)
- Local knowledge and traditional technologies for NNRR management
- Alliances and networks among local communities
- Collaboration with other stakeholders

*What are the conceptual and institutional priorities in the specific regions in terms of the future of mountain EbA?*

- Develop a handbook for mountain EbA implementation
- Develop a catalogue of interventions
- Infographic on NbS and EbA - with a chapter for mountains
- Support NDC design and implementation to integrate and strengthen the EbA approach; and in Colombia also in the EN50

*What opportunities are available to develop education, training and communication capabilities of actors and stakeholders in EbA?*

- Interest of governmental partners as well as vast group of diverse actors in both countries
- Network of initiatives and organizations that are working on EbA with interest to collaborate for these types of actions
- Existing experiences: EbA virtual courses in Peru (I, II), NbS virtual course (EbA Effectiveness Project, and IKI), NbS virtual course in Colombia
- Community of Practice of Regatta
- NbS experiences

*What potential future challenges does mountain EbA face?*

- Rapid changes:
  - Climate change impacts on water and vegetation cover
  - Migration and other social drivers of change
- Political instability in the region that could challenge upscaling

*What are the potential funding sources / designs that can be utilized for future mountain EbA projects?*

GCF:

- Proposal on Resilient Punas being developed by IdM and other partners in Perú
- GCF EbA Magdalena in Colombia
- Regional GCF building upon Resilient Puna and/or Paramos

IKI:

- Global EbA Fund: partners in Colombia; IdM in Peru
- Potentially for a follow-up project in Colombia (or regionally joining efforts with ongoing Scaling-up EbA in Ecuador, Guatemala, and Costa Rica).

GEF can be further explored, in addition to the Canadian Government and Japan Biodiversity Fund

Eco-DRR design could also be explored

Private sector: agro-export, tourism, water companies, food & drink, hydro-energy and others can be further explored

### **Africa**

*How can this project contribute to the EbA fund design for potential future phases?*

- Strengthen the involvement of the private sector to tap into the existing nature-based value chain opportunities
- Strengthen livelihood options and food security component as a core aspect of the EbA approach
- Synergies and collaboration with the local, district, county, and national governments for sustainability already exist and can be explored for future phases
- One lesson from the project is the need for a comprehensive project design to take into account the M&E component and include adequate funding for its implementation

*In light of participants' individual and group experiences, what future projects can be undertaken to make mountains more resilient in the specific regions?*

- Improve the integration of grey / green infrastructure to ensure security, use and sustainability of the EbA interventions

*Based on experiences of this project, who are the actors that can be involved in future mountain EbA projects?*

- Local community
- Private sector / Media
- Local governments
- National governments

*What are the potential regions where new mountain EbA projects can be implemented?*

- Mt. Elgon - Kenya/Uganda
- Rwenzori region - Uganda/DRC
- Kilimanjaro - Kenya/Tanzania

*What are some of the issues that can be targeted to make mountains more resilient and increase adaptability?*

- Livelihood options
- Strengthening nature-based value chain and incomes
- Catchment / watershed management and restoration
- Soil and water conservation
- Riverbank restoration
- Agroforestry
- Strengthening multistakeholder platforms / forums
- Awareness and capacity building for micro-level advocacy, sub national and regional advocacy

*What are the conceptual and institutional priorities in the specific regions in terms of the future of mountain EbA?*

- Strengthen transboundary institutional and policy frameworks and their implementation, including:
  - o East Africa water policy,
  - o East Africa forestry policy
  - o East Africa wildlife management plan
- Future EbA projects should be transboundary based around the mountain ecosystem instead of country specific

- Implement long-term programming not piecemeals and short-term solutions to realise effectiveness and sustainable impacts

*What opportunities are available to develop education, training and communication capabilities of actors and stakeholders in EbA?*

- EAC Secretariat,
- Inter-university council for East Africa,
- National and regional level CSOs Network
- National Training Centres

*What potential future challenges does mountain EbA face?*

- Long-term financial funding mechanism

*What are the potential funding sources / designs that can be utilized for future mountain EbA projects?*

- GCF
- GEF
- African Protected Areas Fund
- Africa Development Bank

## **Asia**

*How can this project contribute to the EbA fund design for potential future phases?*

- It can be upscaled into a regional call focusing on the Hindu Kush and Himalayas, and by building on the project results in further expansion countries
- Also explore country specific calls

*In light of participants' individual and group experiences, what future projects can be undertaken to make mountains more resilient in the specific regions?*

- Focus on water availability and access, particularly on understanding the dynamics at the spring-shed scale and how they interact with the watershed and transboundary level (Bhutan)
- Focus on country specific climate change issues, as well as transboundary governance on EbA

*Based on experiences of this project, who are the actors that can be involved in future mountain EbA projects?*

- International and regional organisations: ICIMOD and UNEP

- National level actors: government agencies focused on climate change, agriculture, environment, and natural resource management organisations, national CSOs and universities
- Provincial level actors: provincial government
- Local level actors: community organisations, indigenous peoples' organisations, women's groups, local government, and politicians, local CSOs, and local education institutions

*What are the potential regions where new mountain EbA projects can be implemented?*

- Hindu-Kush Himalaya region: understanding EbA and upscaling project results throughout this region and at the transboundary level

*What are some of the issues that can be targeted to make mountains more resilient and increase adaptability?*

- Mountain road construction and impacts of infrastructure (e.g., hydropower) on water source drying and connectivity
- Glacial lake outburst floods (GLOFs), other floods, landslides, and drought

*What are the conceptual and institutional priorities in the specific regions in terms of the future of mountain EbA?*

- Institutional priorities include integrating EbA in mountain development activities, such as road development and construction, and providing access to water for mountain communities
- Cross sectoral collaboration and coordination
- Link livelihood / food security with EbA

*What opportunities are available to develop education, training and communication capabilities of actors and stakeholders in EbA?*

- Develop mountain EbA materials for formal and informal education systems in local languages.
- Cross-site / cross-country learning between policy makers and implementers
- Outreach to universities for capacity building and research

*What potential future challenges does mountain EbA face?*

- Developmental shift from lower income to middle income countries, with the associated infrastructure and technology development

- Plastic-based technologies in agriculture and development, as well as associated their impacts
- Increased reliance on grey infrastructure
- In Bhutan, policies that promote water intensive rice and prevent communities from shifting to less water-intensive crops, which impact both food security and local livelihoods

*What are the potential funding sources/ designs that can be utilized for future mountain EbA projects?*

- Private sector
- GEF
- GCF
- IKI
- Adaptation Fund
- USAID
- EU
- Asian Development Bank
- Asian Disaster Preparedness Centre (ADPC)- partnership
- UNEP- partnership

The Global Team also participated in this exercise and indicated the following road map at the global level,

*How can this project contribute to the EbA fund design for potential future phases?*

- Based on the learnings from this project we can design a solid Theory of Change that includes impacts at different levels (bottom up), with a results framework that measures impacts effectively

*In light of participants' individual and group experiences, what future projects can be undertaken to make mountains more resilient in the specific regions?*

- Water availability and transboundary NRM (Asia)

*Based on experiences of this project, who are the actors that can be involved in future mountain EbA projects?*

- The Mountain Partnership
- ICIMOD

*What are the potential regions where new mountain EbA projects can be implemented?*

- Countries and related to country priorities

*What are some of the issues that can be targeted to make mountains more resilient and increase adaptability?*

- Food security & poverty
- Partnerships with mainstream development agencies
- Conservation without linking human development / human development without linking nature
- Data & data-driven adaptation planning
- Out-migration

*What are the conceptual and institutional priorities in the specific regions in terms of the future of mountain EbA?*

- Climate Change; NbS

*What opportunities are available to develop education, training and communication capabilities of actors and stakeholders in EbA?*

- GIZ, IUCN and IISD e-learning course, developed based on experience from Mt. EbA, developed to scale up EbA work and to target cross-sectoral linkages

*What potential future challenges does mountain EbA face?*

- The specificity of the context (mountains) tends to limit the sharing of lessons and development of linkages

*What are the potential funding sources/ designs that can be utilized for future mountain EbA projects?*

- For Mt. EbA, local and project partners (non-governmental), the Global EbA Fund.
- Explore new calls in 2023
- IKI (but with awareness that they have already funded 2-3 phases of this specific project)
- Thematic calls - EUR 5-20 million
- Small Grants - EUR 60-200K
- Global Affairs Canada – a potential proposal for expanding and continuing with mountain EbA building on this project.
- A proposal that brings together landscape approaches for mitigation and adaptation, supporting NDC implementation (policies and monitoring of impacts).
- Adaptation Fund

The formal workshop concluded after this discussion.

### **Video recordings**

The final part of the workshop was spent in capturing video interviews with participants to capture brief talking points to be used as knowledge products. The interviews were based on the following questions:

- What do you think were the key success factors within the project?
- What were the best practices that contributed to the effectiveness of the project.
- Was there any local/ indigenous knowledge that was used in the project but was not part of the initial proposal?
- What were, if any, technologies applied to increase adaptation within the project?
- How did the project adapt to changes, such as those during Covid 19?
- Did the project help people adapt to climate change?
- What biodiversity and ecosystem services formed a part of the project?
- Was the project able to become a part of an overall adaptation strategy?
- Was there any regional collaboration undertaken as part of the project?
- Were the mountain EbA practices promoted by the project mainstreamed into development and conservation policies?
- Are there any anecdotal experiences you have had regarding innovative technologies and/ or indigenous knowledge and practice?
- What future projects can be undertaken to make mountains more resilient in the specific regions?
- What are some of the issues that can be targeted to make mountains more resilient and increase adaptability?
- What are the conceptual and institutional priorities in the specific regions in terms of the future of mountain EbA?
- What potential future challenges does mountain EbA face?



These video clips will form part of the digital story to be produced by an independent consultant; both products will be uploaded to the website.





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