Lessons learned

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

A view of the Andes from Cordillera Huayhuash © Anaãs Zimmer

Background

The project 'Scaling-up Mountain Ecosystem-based Adaptation: building evidence, replicating success, and informing policy' implemented between 2017–2022, was built upon the success of the Mountain EbA Flagship Programme, carried out in Nepal, Perú and Uganda (which were named flagship countries). The project expanded its ambit to include three additional countries – Bhutan, Colombia and Kenya (named expansion countries).

It was expected that in flagship countries, EbA measures already implemented would be consolidated, replicated and scaled-up. In expansion countries, successful EbA actions in flagship countries were expected to be replicated and these countries made EbA-ready, for future, larger investments.

In June 2022, IUCN commissioned an impact evaluation of the project, as an appreciative inquiry for the generation of lessons learned. This brief presents these lessons learned.

Lessons 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. Shown in the table below are some examples.

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.
	Development of home-stays in the Panchase region.	Five homestays from the flagship project now receive money from the 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 ancient dams combined with modern infrastructure and scientific knowledge).	This actions resulted in bio-remediation of water quality and continuous supply of water. After investment by the project, the community now sees the benefits and maintains this infrastructure because they know that otherwise, the water will become silted and affect water security.
	Better communal management of pasturelands	A member of the Miraflores community says she is able to sell dairy products and animals at increased prices.
Uganda	Restoration of riverbanks and on-farm agroforestry	A community member notes that crop harvests have more than doubled, and she is able to stock enough food till 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) per month on buying fodder, which she now grows on her farm.

2. **Building upon existing EbA work and evidence for a longer duration allows for showcasing clear impacts and sustainability.**
The three flagship countries have now had on-the-ground work and policy advocacy since 2011 (omitting the two-year hiatus that was a consequence of an administrative issue and COVID-19 lockdowns). Their results show clearly that these three countries now have measurable outcomes, detailed in brief # 8 of this series. These results indicate that longer project durations are warranted for EbA actions, which require time (for example for restoration) for impacts and co-benefits to show.

It should also be highlighted to donors that in the global south, getting a project approved by an


Broom grass cultivation, Panchase region, Nepal © IUCN


Capacity building in livestock management in Miraflores © IdM


A farmer harvesting potatoes in Kwoti Sub County © IUCN

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 the duration of projects. The expansion countries should also be provided the 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 but were unable to carry out the last step of implementation because of work closure due to an administrative issue and COVID-19. Work on one spring has since been completed and has been welcomed by the Ogiek Indigenous Peoples of the Chepkitale Nature Reserve, which is the project site.

3. **Adaptive management is critical for EbA projects.**

Adaptive management is recommended for EbA projects as there are many external variables in EbA projects that cannot be predicted and are often not controllable. Kick-starting the project after a two-year hiatus in January 2022 was difficult for country teams, as many of them found political changes and personnel changes in local government and government officers.

In Bhutan, prior to 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 deftly changed its course after extensive dialogues with local actors, and collaborated with the Tarayana 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 springshed. The project provided technical support in the preparation of several briefs and in capacity building.

4. **The three-pronged approach of working**

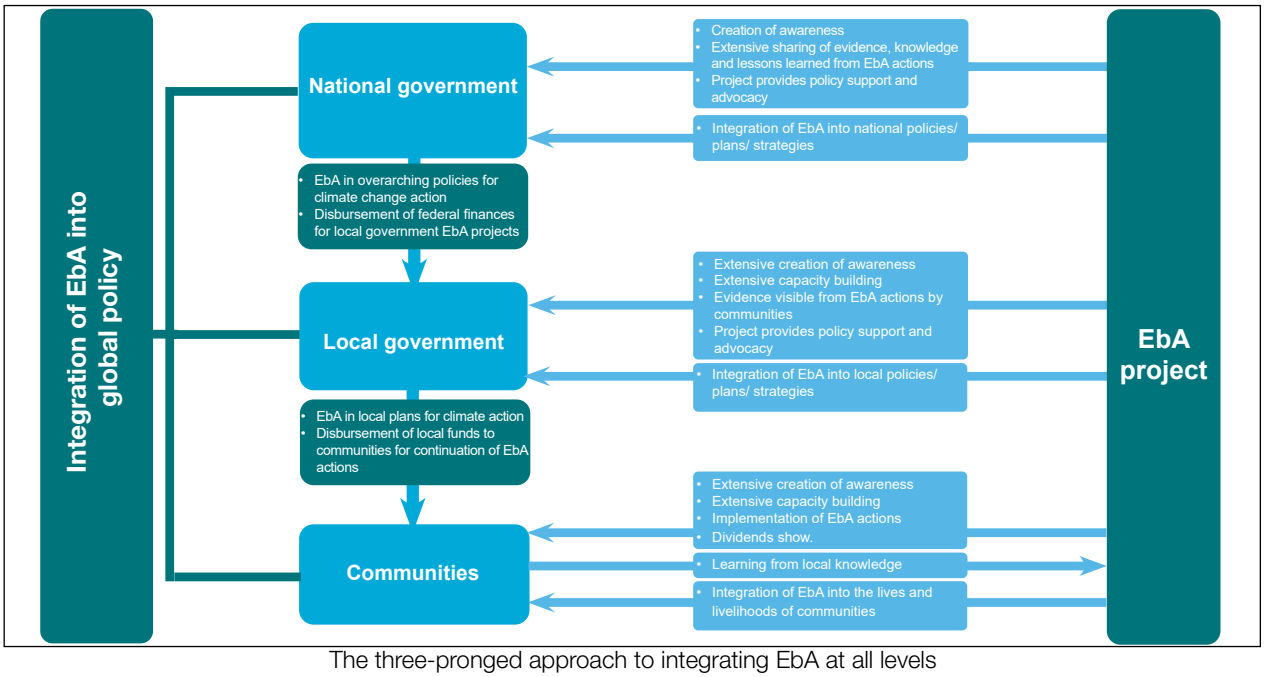

Field visit for spring identification, Chepkital nAture Reserve, Kenya © IUCN


Community visit to the Tsezusachu Spring © IUCN


Training of local officers in Miraflores, Peru © IDM

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



The three-pronged approach to integrating EbA at all levels

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 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 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 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, 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.

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

5. Project actions have showcased 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. Presented below is a table that shows a sub-set of examples from the project that showed clear co-benefits.

Country	Ecosystem restored/better managed	No. of ha or km	No. of species used
Nepal	• Rhododendron and Himalayan oak forests • Roadside vegetation	500 ha 2 km	Gap-filling using these 2 species Broom grass (*Thysanolaena nees*) for roadside restoration
Perú	• Puna grasslands	8,881 ha	Passive restoration through better management
Uganda	• On-farm soil and water conservation • Agro-forestry • Micro-catchment vegetation for river bank protection	A total 1,039.7 ha with the target by close at 2,076 ha	8 including *Sesbania sesban, Calliandra calothyrsus*, Napier grass and bamboo

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 (*Paris polyphylla*) and in Peru (Vicuña) where a specific EbA action and a management plan was implemented, respectively. Other co-benefits included are shown in the table below:

Country	Threatened species conserved as a co-benefit of EbA action	IUCN Red List™ category
Nepal	• Tree fern (*Alsophila spinulosa* formerly *Cyathea spinulosa*)	On Appendix II of CITES (where international trade is restricted),
Perú	• Andean condor (*Vultur gryphus*) • Peruvian guemal/Taruca (*Hippocamelus antisensis*)	Vulnerable

A remarkable co-benefit of the project ensued in Kenya in the Chepkitale Nature Reserve, Mt. Elgon, where the Ogiek Indigenous Peoples live on ancestral lands. In 2000, with the gazetting of the reserve, they were evicted from the area, but returned and sued the government in a long court battle. In this project site, IUCN acted as a broker for peace between the local government and the Ogiek community. The Ogiek recently legally regained their ancestral lands.

Capture and shearing of vicuñas in the community of Tomas © Christian Vinces

The Ogiek Indigenous Peoples © IUCN

6. 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 a table which presents these projects.

Country	Other projects/synergies
Nepal	• EBA-II project implemented by the Ministry of Forests and Environment • UNEP's Urban EbA project • IUCN's GCF project
Perú	• Nature-based Solutions Initiative of Peru [led by Instituto de Montaña (IdM), with support from the University of Oxford] • GCF 'Resilient Puna' project (powered by GIZ, Profonanpe, MIDAGRI and IdM among other institutions • IKI NDC-Perú project
Uganda	• The International Climate Initiative (IKI) EbA Evidence and Policy Project' • 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
Bhutan	• Living landscapes: securing High Conservation Value (HCV) in the south-western Bhutan
Colombia	• GEF project 'Adaptation to Climate Impacts in Water Regulation and Supply for the Chingaza-Sumapaz-Guerrero Area' by Conservation International • Also, many other projects through extensive capacity building and sharing of knowledge
Kenya	• 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 Sio-Malaba-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.

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

A ToC is a form of result framework that illustrates 'pathways of change', highlighting the assumptions causing change towards the long-term impacts.

The importance of the ToC is that it includes external factors, such as other anthropogenic threats to ecosystems and helps to tease out cause and effect relationships, so that it is clear which result can be attributed to an EbA action.

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 report template from countries is based on the project's results framework and has been developed to capture all the expected targets. However, actual reporting using this template has been uneven and reporting on the EbA targets and progress is also scattered under field reports. Meeting logs maintained online have not been summarised into totals of meetings held and number of participants. For example, the total number of capacity building events and the total number of persons trained is not readily available, and not always disaggregated by gender.

The handbook forms have been formulated excellently, and the form for stage 1 set the stage for the development of the Theory of Change approach (ToC). However, this foundation has not been translated into a ToC.

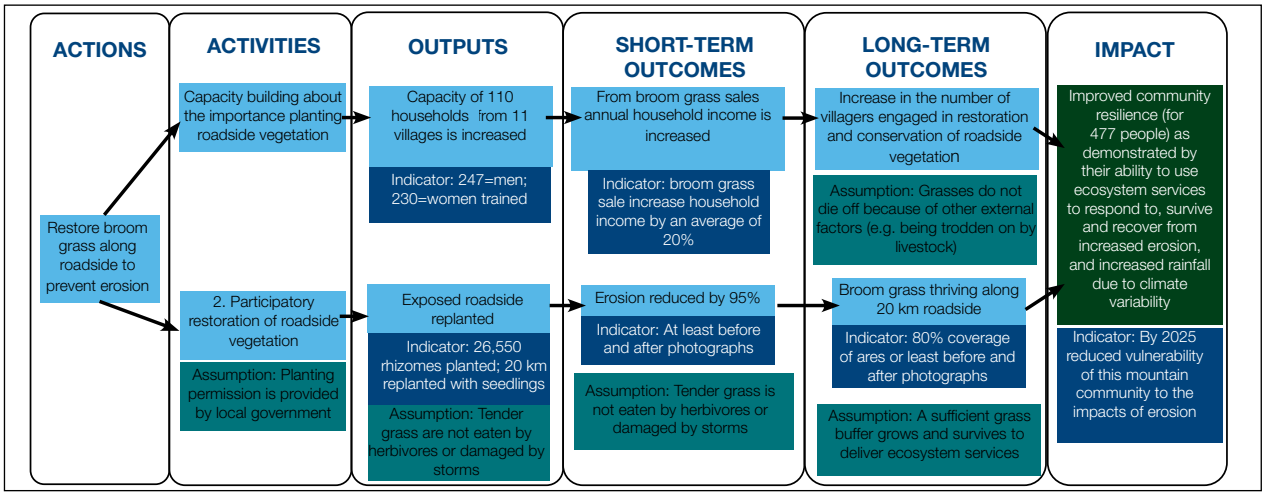
Generally, the quality of reporting across countries has been uneven. Some templates are filled completely and qualified with detailed descriptions, while others are not.

In order to ensure effective monitoring and periodic evaluation, as well as course-correction (as needed) for adaptive management, using a ToC is recommended, because a ToC will provide an immediate snapshot of all the EbA actions proposed, at any given time. When used as a tool for project management, a ToC captures quantified information before and after EbA interventions. For example, there are many references to an increase in household income but the baseline household income is not available for identification of the percentage increase. Two simple pathways of change using the broom grass example from Nepal are shown below.

8. **Sharing lessons learned along the way is important.**
Study tours and cross-country learning is essential for country focal points and implementing partners. For future projects, it would be best 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.

9. **Improved communication 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'. These



Rice terraces in the Punakha Valley, Bhutan © IUCN

included academic partners and some government officers. A few did not know about project in countries outside theirs.

Communicating project goals and objectives, as well as outputs, results and most importantly, achievements, to *all* partners and indeed, to a wider audience is ultimately beneficial to the project. To this end communication using all tools available, as well as field tours will be invaluable.

10. **Setting up a project in a country without a project office or at least a project officer for implementation retards progress.**
The project in Bhutan suffered from the lack of an on-site project office or an officer, as the focal point had to fly from Bangkok to Paro and back (about 1,923 km and emitting 363.8 kg of CO_2) for project activities. This was not practicable.

11. **Linkages to biodiversity conservation and climate change were not assessed adequately**
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 the interconnections that occur among living organisms and 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 is used as a proxy to measure improvement of ecosystem health (and in turn, the delivery of ecosystem services). Such increases have not been assessed (except anecdotally) during the project.

In addition, EbA that involve restoration/better management of ecosystems will generate not only climate adaptation benefits but also carbon sequestration and therefore, ecosystem-based mitigation. Again, this linkage has not been assessed. Shown in the table below is a very approximate calculation of likely increased in carbon stock.

For Perú, a very rough assessment using a number provided as average carbon stocks for different biomes based on published literature, 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 the table below. However, in order to assess the actual impact of the EbA action, a baseline assessment of the carbon stock is necessary. (Assumption: Carbon stock temperate grassland biomes= 108 ton/acre[1].)

Hectarage restored/ under better management regimens	Approximate estimation of current carbon stock when fully grown (kg)	Baseline stock	Increase in carbon stock because of EbA action
8,881	2,150 million	Not known	# in column 2- # in column 3

[1] Gorte, 2009

Conclusions

Although beset with major issues that resulted in a two-year hiatus, the 'Scaling-up Mountain Ecosystem-based Adaptation: building evidence, replicating success, and informing policy' has yielded several valuable lessons. 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 community, local and national government levels has been unparalleled in achieving results.

The undeterred resolve of the global mountain EbA team in negotiating with the donor to re-start the project and the country teams efficiency and effectiveness in kick-starting the project after the hiatus and achieving what they have is laudable.


Workshop on Springshed EbA Punakha, Bhutan © Taranya Foundation


EbA and Eco-DRR training for the GEF project, Lima, Colombia © IUCN


Training for the Ogiek IP on spatial mapping, Chepkital NR, Kenya © IUCN


Training of local government officials, Panchase, Nepal © IUCN


Workshop on livestock health management in Tanta © IDM


Training on climate change in mountains, Sipi micro-catchment, Uganda © IUCN

However, the method and quality of reporting must be improved, through the use of a theory of change approach that allows for more effective self-monitoring and evaluation.

For more information contact

Ali Rizvi Raza
Head, Climate Change Team
Centre for Economy and Finance
IUCN (International Union for Conservation of Nature)
Email Ali.Raza@iucn.org
https://www.iucn.org/our-work/topic/ecosystem-based-adaptation/scaling-mountain-eba