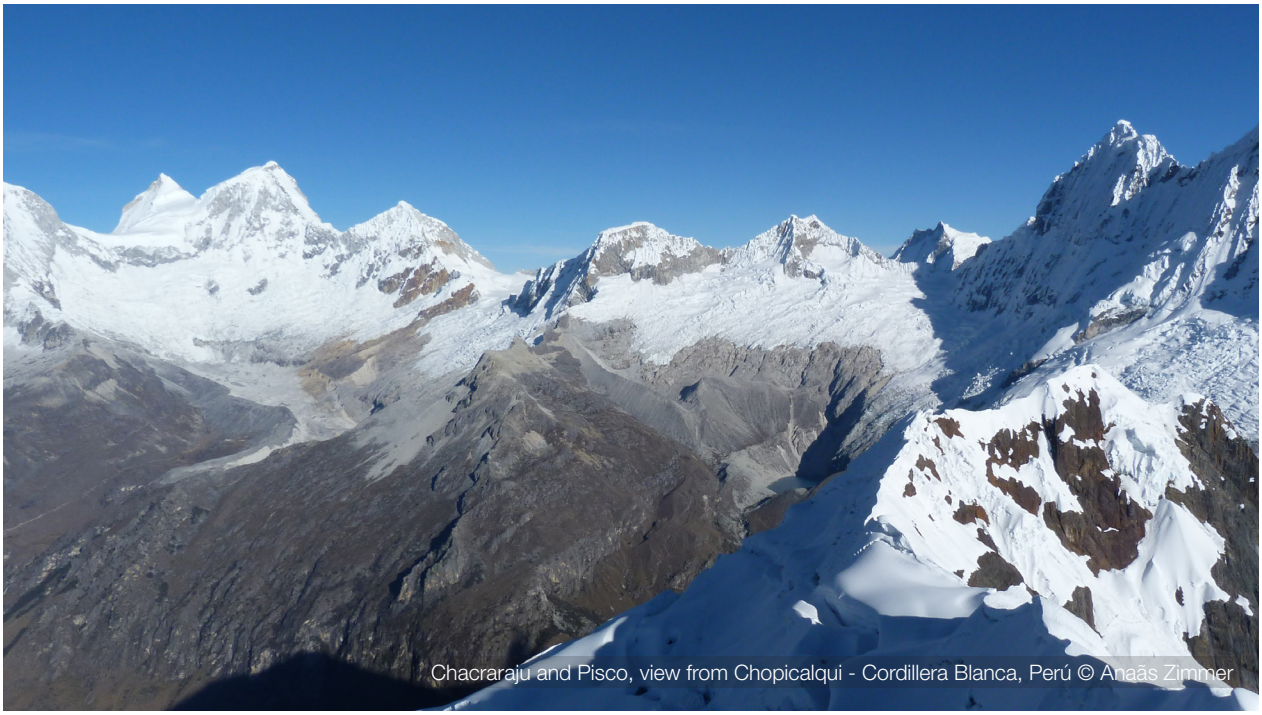
Scaling-up Mountain Ecosystem-based Adaptation

Key findings



Chacraraju and Pisco, view from Chopicalqui - Cordillera Blanca, Perú © Anaäs Zimmer

Background

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' was implemented between 2017–2022.

The flagship project was implemented in Nepal, Perú and Uganda (dubbed the flagship countries). This project added three countries – Bhutan, Colombia and Kenya (named expansion countries) – where effective EbA actions would be replicated. The flagship countries were expected to consolidate, replicate and scale-up their existing EbA actions, as well to add new ones.

The expected outcome for the project was 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'*[1].

In June 2022, IUCN commissioned an impact evaluation of the project, as an appreciative inquiry for the generation of lessons learned. Fifty-eight actors – across the six countries – were interviewed and project documents assessed for the review.

[1] More details of the project are available in Information Briefs 1-7 in this series.

Key findings of the terminal review

1. Effectiveness of the project

i. The project was successful:

The majority of those interviewed stated that the project was successful. Highlights of what respondents thought was successful are shown below:

- "Countries are becoming champions of EbA;
- At the community level, there is both human and economic empowerment through EbA actions;
- Benefits from implemented EbA measures are now measurable;
- This project has been a great success in consolidating effective EbA actions, introducing new measures, ensuring active community participation and seeing that this participation translates into community ownership;
- The project provided a very good platform for generating evidence-based information that has helped in the development of a number of national level programmes; and
- There is as much as possible presence, organisation of different spaces, discussions and sharing of lessons learned".

ii. The project was effective:

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 (see table below).

Country	Number of sites expected and achieved
Nepal	1 flagship site (Panchase in the Kaski District) + 1 new site (Chilime, in the Rasuwa District)
Perú	4 flagship sites (Canchayllo, Miraflores, Tanta and Tomas) + 1 new site (in Tomas)
Uganda	2 flagship sites in Sipi-Chebonet micro-catchment and Atari-Kaptokwoi 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 too has been achieved (see table below).

Country	Expected target	Achieved hectarage
Nepal	850	7,000
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.

Country	Expected target	Achieved target
Nepal	12	12
Perú	4	Nearing completion
Uganda	3	3

The final 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.

Country	Expected target	Achieved target
Nepal	3	4 local plans, 4 national plans
Perú	3	3 local plans, 1 national plan
Uganda	3	1 local plan, 2 national plans, 1 law
Bhutan		Through capacity building at 2 local sites
Colombia		Through the development of an EbA e-learning course in Spanish
Kenya		1 national plan

2. Socio-ecological sustainability and impact

i. In flagship countries EbA measures have become self-sustaining:

Nearly four-fifths of the interviewees stated that EbA interventions would continue after project closure. Highlights of stated mechanisms for sustainability are listed below.

- Tangible outputs for local communities and achievement of community ownership of EbA actions: for example, in Miraflores, Perú, improved management of Puna grasslands has resulted in better fodder for livestock, better milk yields, so dairy products sell at an increased price.
- Integration of EbA measures into local government planning: for example, in the Panchase region of Nepal, home stays developed by the flagship project are now legally registered and the local government support for integrated organic farming

and livestock management.

- In Uganda, there are 67 farmers who adopted all project EbA measures, dubbed 'champion farmers'.This pool of community members use knowledge and skills gained from the project, and realise the benefits accrued from the EbA approach. These individuals are ready to share their knowledge and skills with those who want to learn about EbA.
- The establishment of long-term partnerships with local, regional and national governments and with other agencies develops synergies. This is seen in Nepal where a series of EbA-based projects are now being implemented by the Ministry of Forests and Environment, UNEP and IUCN.

ii. All relevant actors were sufficiently and effectively involved:

About 80% of the interviewees responded affirmatively, and said this was possible because:

- The field teams learned, *inter alia*, who was working and whom to work with, who has better linkages.
- There was extensive capacity building and creation of awareness at all levels: community, local, regional and national.
- Identification of locations for implementation of EbA actions used a participatory approach.

Meeting with officers of the Ministry of Environment © IUCN

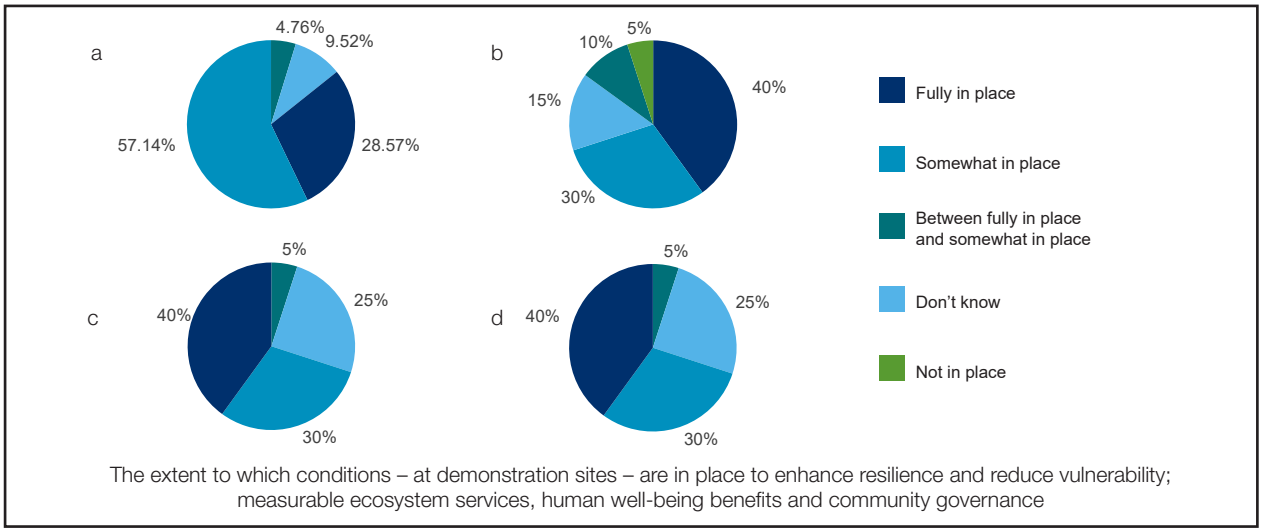

Discussion on next steps for EbA © IUCN

- From the inception of the project, local level authorities were fully involved.
- Different spaces were created, and network of other contexts were forged for EbA work.

iii. On-the-grounds impacts:

- For on-the-ground impacts on communities, in relation to the extent to which conditions at project sites were in place to enhance resilience and reduce vulnerability, nearly two-thirds of the respondents stated that conditions were somewhat in place; while another quarter said that conditions were fully in place. For example, in Uganda, on one side of the river, there may be villages which are not part of the targeted micro-catchment. Therefore, while on one side the river bank is restored, the other is not, which means that conditions are not fully in place. (See graph a, next page.)
- Regarding the enhancement of measurable ecosystem services, human well-being and community governance, 40% of the interviewees responded that this was fully in place while another 30% said that they were somewhat in place. (See graphs b, c, and d, respectively, on the next page.)

It was optimistic to expect that 100% of long-



The extent to which conditions – at demonstration sites – are in place to enhance resilience and reduce vulnerability; measurable ecosystem services, human well-being benefits and community governance

term benefits would show in the short duration of the project.

3. Adaptive management and flexibility

In EbA, there are external factors which often cannot be controlled or managed. For example, a storm can wipe out seedlings that have just been planted during EbA activities. Ecosystems themselves are also inherently complex, often with 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 that resulted in its abrupt cessation. This was followed almost immediately by the pandemic of COVID-19, which resulted in long and repeated lockdowns in the target countries. Shown below are the actions taken by the global and country teams to restart the project.

- IUCN's global team negotiated persistently with the donor to re-start the project under the sole management of IUCN, and ultimately, revived it at the end of 2021.
- Adaptive changes to the results framework and adjustments to work plans were made, for work to recommence in January 2022.
- During a hiatus of two years, work at the global level intensified and knowledge and experience gained were shared at various fora and through FEBA and the EbA Community of Practice.
- Many country teams found that after two years, government re-shuffling meant that they had to re-start creating awareness and conducting capacity building.
- In Bhutan, government re-structuring during the hiatus meant that planned actions could not be effected. The country focal point shifted course from establishing sustainable financing for EBA to supporting the application of EbA measures in two demonstration sites by the Tarayana Foundation and the College of Natural Resources, Royal University of Bhutan.

4. The project contributed 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. The following table shows that EbA actions in flagship countries included these elements.

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
Nepal	√	√	is now integrated into at least one
Perú	√	√	is now integrated into at least one
Uganda	√	√	is now integrated into at least one

- In all flagship countries, Element A, criterion 1 of the framework – reducing social and environmental vulnerabilities – was met. For example, broom grass (*Thysanolaena nees*) cultivation on roadsides, implemented in the Panchase region of Nepal to reduce the impact of erosion and landslides, also diversified livelihoods, increasing annual household income by an average of about 20,000 NPR (157.01 USD). Once fully grown, the grass is cut and sold: for example, leaves for fodder, flowers to make brooms and stems as fuelwood. In Uganda, the restoration of riverbank vegetation and establishment of trenches shows visible measures for flood management.
- The flagship countries fulfil criterion 2 of Element A of the framework – generating societal benefits within the context of climate change adaptation. In Miraflores and Tomas in Perú, the participatory development of a pasture and water management plan has led to more cohesive communities so that critical decisions related to climate change impacts are now made together, benefiting all.
- Criterion 3 of Element B – restoring, maintaining or improving ecosystems and their services – was fulfilled by all three flagship countries. In Uganda, the establishment of agroforestry on farmlands has improved the provisioning ecosystem services (and, in turn, increased food security) for farmers in the Kapchorwa District, as they not only have sufficient food, and fodder for their livestock, but also have excess crops to store for the dry season.
- Criterion 4 of Element C – that EbA is supported by policies at every level (always part of larger adaptation strategy, operates on many geographic scales and in sectoral or multi-sectoral approaches) – is also clearly met in the flagship countries as well as in Kenya, where actions targeted both local governments, as well as national governments, to integrate EbA into local

The special case of Colombia

The focus of the Project in Colombia veered from the other countries - as work was focused on

- Collaborating with the GEF-funded project 'Adaptation to Climate Impacts in Water Regulation and Supply for the Chingaza-Sumapaz-Guerrero Area';
- Contributing to capacity building processes and the exchange of experiences: developing spaces for capacity building both at local and national levels; and
- Developing an e-learning course on EbA adapted to the Colombian context.


One of the many community meetings, Canchaylo, Perú © IdM


EbA capacity building, local agencies, Bhutan © IUCN


On-farm agroforestry, Uganda © IUCN


Training of local government officers,Panchase, Nepal © IUCN


Participatory spatial mapping, Chepkitale NR, Kenya © IUCN

EbA training, GEF project workshop, Bogota, Colombia © IUCN

and national policies and plans.

- The final criterion of Element C – supporting equitable governance and enhancing capacities – has been achieved in all target countries. In Kenya, spatial mapping of project sites, vulnerability analysis, and identification of sites intervention were all participatory, engaging the Ogiek Indigenous people of the Chepkitale Nature Reserve and using their traditional knowledge. In all countries, extensive capacity building was carried out, as well as the creation of awareness about EbA.

5. Linkages to biodiversity and climate change were observed qualitatively but mostly not measured quantitatively

i. Conserving biodiversity

Nearly 90% of the interviewees stated that the project had conserved biodiversity by restoring/better managing degraded ecosystems. The extent of ecosystem and the ecosystem restored/better managed is shown in the table below.

Country	Ecosystem restored/ under better management regimens	Unit	No. of species used
Nepal	Rhododendron (*Rhododendron arboreum*) and Himalayan oak (*Quercus lanata*) forests	500 ha	Gap filling using the two species
	Roadside vegetation	2 km	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 of 1039.7 ha with the target by close at 2076 ha	8 including Sesban (*Sesbania sesban*), red calliandra (*Calliandra calothyrsus)*, *Flemingia sp*; Napier grass (*Pennisetum purpureum*) and bamboo

Anecdotal evidence provided by interviewees in response to the question whether there was an increase the number of wild species.

Contribution to the conservation of threatened/conservation dependent species was targeted in Nepal where specific EbA actions were formulated for the Vulnerable love apple (*Paris polyphylla*), and the flying spider-monkey tree fern (*Alsophila spinulosa*), which is on Appendix II of CITES (where international trade is restricted). In Perú a management plan was formulated and implemented for the Vicuña (*Vicugna vicugna*). Additionally, in Perú, better management of Puna grasslands has contributed to the protection of some threatened species such as the vulnerable Andean condor (*Vultur gryphus*) and the Perúvian guemal/Taruca (*Hippocamelus antisensis*).

ii. Climate change

The contribution from project actions (specifically restoration/better management of ecosystems) – to

Paris polyphylla, a high value. Vulnerable medicinal plant © Alisia Rai

Vicuñas, with very high value wool © IDM

Andean condors benefitted from grassland management © Scott Nelson

climate change mitigation has not been assessed. However, the majority of respondents stated that project actions had contributed to the reduction of the impacts of extreme weather events. Broom grass cultivation along rural roadsides has been proven to be effective in reducing erosion from landslides[4]. In Uganda, before and after photographs, shown on page 4, can be used to qualitatively examine the reduction in erosion.

6. **A range of co-benefits have ensued from Mountain EbA actions**

When EbA measures are implemented, these often lead to a range of additional benefits – co-benefits – such as those detailed under point 5. A co-benefit worthy of mention is from Kenya, 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.

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. In Bhutan, project actions have been course-corrected skilfully. In Kenya, after detailed preliminary participatory work before the hiatus, protection of a spring has been completed. In Columbia, 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.

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Mt Elgon – view from Chepkitale Nature Reserve, Keyna © IUCN

[4] The project Ecosystems Protecting Infrastructure and Communities (EPIC) conducted from 2012-2017, showed empirically that in Tilahar, in the Parbat District of Nepal, broom grass cultivation along roadsides reduced soil erosion by 95%.