

Uganda

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



Background

Mount Elgon is an enormous, single, volcanic mountain between Uganda and Kenya, spreading over 80 kilometres, 772,300 hectares and rising to 3,070 metres. It is a major water tower in the region, providing a transboundary water resource for these two countries.

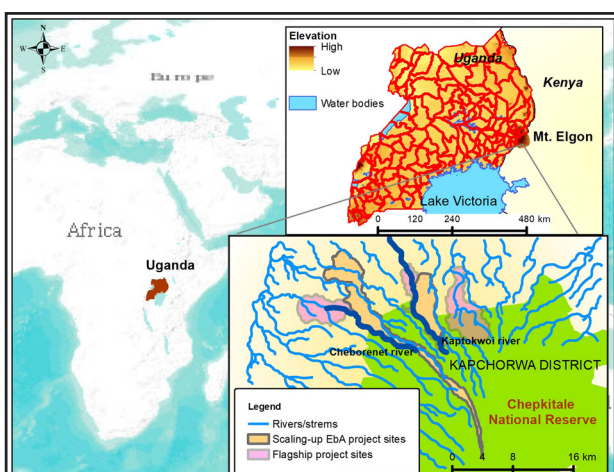
The upper, forested slopes of this mountain are protected as national parks both in Kenya and Uganda. These forests serve as catchments for the drainage systems of Lakes Victoria, Turkana and Kyoga.

In a country whose population density is 229 people per km², the density in Mt. Elgon was estimated, a decade ago, to be 1,000 persons per km², with a population

growth rate of 3.4% per year. 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.

Currently, average temperatures are expected to increase by 0.70°C-1.50°C by 2020. There is also an overall increase in unpredictable patterns of rainfall. Considerable deforestation of catchment forests and river banks, 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 drought.

SCALING-UP MOUNTAIN ECOSYSTEM-BASED ADAPTATION



Scaling-up Mountain Ecosystem-based Adaptation in Uganda

Local-level EbA measures (consolidation and replication)

Following on the success of the flagship mountain EbA project from 2011-2016, the Scaling-up Mountain EbA Project was implemented by the IUCN Country Office of Uganda and partnered with the Ministry of Water and Environment of Uganda, in the Kapchorwa District in two sites in the micro-catchments of Kaptokwoi and Chebonet rivers, to consolidate and replicate actions, respectively.

The predominant ecosystems in these sites are wetlands and rivers. The main livelihood is small-holder farming.

Community-based EbA measures actions

Cultivation on river banks and poor agricultural practices on farms exacerbate flooding and erosion, respectively. EbA actions focused on 1) restoring river bank vegetation and establishing a buffer zone (where there would be no cultivation) to reduce flooding and 2) reducing on-farm erosion through the establishment of agroforestry.

1. Restoring river bank vegetation.

- In the Kaptokwoi micro-catchment, 15 km of river bank vegetation was restored using indigenous species. Re-training 308 participants from the flagship phase and 400 new community members was the focus in this site.
- For the Chebonet river (a replication site) participatory mapping and marking of the buffer zone involved 747 community members (with 48.3% women). Fifteen training programmes for 1,529 people were carried out during this process.
- The landowners (500 households) in both sites were provided with Napier grass (*Pennisetum*

purpureum), bamboo shoots and tree saplings – including Sesban (*Sesbania sesban*), red calliandra (*Calliandra calothyrsus*), and *Flemingia* sp. to plant within the buffer.

- To date, 48 km of riverbanks have been restored, benefitting 2,889 people. There has been a visible change in soil conditions where the project has been implemented.
- This restoration has reduced the extent of floods in areas which, previously, were prone to flooding.
- Visible also is less siltation and thus, improved water quality within the two rivers.
- The observed tree cover has also increased in these micro-catchments.

2. Establishing on-farm agroforestry and woodlands

- For the management of downstream flooding, a



total of 20.76 km of contour trenches were cut, involving a total of 2,889 community members in both sites. To reduce soil erosion, contour bands were stabilised with grass and sustainable agriculture practices (such as contour planting, crop rotation and mulching with crop residues) were promoted to reduce nutrient mining, increase organic matter and improve soil structure.

- Trees were planted on boundaries, contours grown with leguminous shrubs (for soil enrichment) and fruit trees – such as avocado, passion fruit and mango – were grown on farmlands.
- A range of native trees species – such as Acacia, African teak or mvule (*Milicia excelsa*), *Albizia coriaria*, Elgon teak (*Olea welwitschii*), Nile tulip (*Markhamia lutea*) and other fast-growing species such as *Croton macrostachyus*, Sudan teak (*Cordia africana*) and *Podocarpus millinjanus* – chosen by the community were planted to increase tree cover as woodlands adjacent to farmlands to increase the biodiversity of these farms. Increasing tree cover will contribute to stabilisation of the loose soils, reduce vulnerability to erosion and also provide timber and fuelwood. This action was coupled with capacity building on less destructive methods for harvesting wood.
- Existing tree stumps of native tree species (which can be coppiced) were regenerated through the farmer managed natural regeneration (FMNR) approach.
- To date, 2,076 ha of farmlands and woodlands have been planted benefitting 2,889 people (with 45.6% women).
- A community member notes that her family now has food security, as crop harvests have more than doubled, and she is able to stock enough food till the next planting season. She now sells excess crops, milk and fodder.
- Another community member who owns four dairy cows is able to save 1,440,000 UGX (~ USD 397) per year on buying fodder, which she now grows on her farm.
- A total of 30 training events for river bank restoration and on-farm flood control and soil conservation measures, involving 2,889 community members has been carried out under the aegis of the project.
- An added benefit is that the availability of fodder for livestock has minimised conflicts between the Ugandan wildlife authorities and the communities adjacent to the Mt. Elgon National Park, who, previously, used to graze their animals within the Park.



Farm soil before Project interventions © IUCN



Farm soil after Project interventions © IUCN



A farmer harvesting bananas © IUCN

- Extensive capacity building of communities has led to collective action.
3. **Establishing 'Champion Farmers'**
An innovative approach used during implementation was the selection of 'champion farmers' (43 men and 24 women).
- These are farmers who adopted all the river bank and on-farm EbA measures.
 - These champion farmers have participated in training programmes, implemented these actions, reaping the benefits of achieving food security for their families, and increasing their household incomes by sale of excess crops and fodder.
 - This skilled group of farmers, is, therefore, able to train other farmers who did not join the project, but

who are now seeing the benefits of EbA action through the champion farmers' model farms.

- This innovation of setting up within-community training, will allow for continuation of the EbA approach beyond the life of the project.

Local government engagement and horizontal replication

The project worked very closely with the Kapchorwa District local government officers.

- These officers provided training (30 training programmes for 2,889) for establishing flood control measures, while community members implemented the actions.
- The Third Northern Ugandan Social Action Fund is a government programme, which seeks to improve livelihoods through funding capacity-building projects. They were involved in providing alternative livelihoods, to engage communities in on-farm income generation activities.
- Also involved in the project from the beginning were non-governmental organisations. The Center for International Forestry Research, in partnership with the Uganda Association of Professional Women in Agriculture and Environment, was involved in restoring river banks in another one of the streams which feeds the Sipi River.
- All of the above have translated into the integration of EbA into the Land Care Management Plan of the Kapchorwa district.

Scaling-up: integration of EbA at the National Level

The scaling-up of EbA in Uganda has provided a very good platform for generating evidence-based information that has helped in the development of several national level programmes.

- The national REDD+ strategy benefited, in terms of selecting best practices, to ensure that some of the priorities within the REDD+ programme paralleled the priorities of vulnerable communities. Through the project, the regional level platform of actors was strengthened and was recognised nationally as the key platform through which this REDD+ strategy would be shared with actors.
- The Nationally Determined Contributions had practical evidence and lessons learned from the project to improve their required updates.
- The revision of the National Climate Change Act of 2021 to include the EbA approach also benefitted from project experiences.
- Ensuring the integration of EbA into the annual review of the Natural Resources, Environment, Climate Change, Land and Water Management programme.
- Ensuring the inclusion of EbA into the draft wetland bill and policies.

Advancing the spread of the EbA approach in Uganda through the sharing of knowledge and experience

- The Project supports members of the Climate Action Network Uganda by providing expertise on Nature-based Solutions, including EbA.
- IIED, IUCN and Uganda's Ministry of Water and Environment are using the practical experience of EbA from both the flagship and scaling-up projects to improve the integration into the national climate change policy and law through the IKI-funded project 'EbA Evidence and Policy'.

Conclusions

The project on 'Scaling-Up Mountain Ecosystem-based Adaptation: building evidence, replicating success, and informing policy' implemented in Uganda has been very successful at the local level to increase the adaptive capacities of rural mountain communities to address issues of flooding and soil erosion. Their lives and livelihoods have now improved. The novel action of establishing champion farmers – a base of trained individuals, successfully implementing EbA actions – will ensure that their farms will serve as models and their skills will be transferred to other farmers, long after the cessation of the project. This on-the-ground experience has been transferred vertically across many national plans and programmes as well.

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On-farm Sorghum (*Sorghum bicolor*) cultivation © IUCN