

Policy pointers

Uganda's Climate Change Bill and other relevant policies must prioritise ecosystem-based adaptation (EbA) approaches, already recognised by many Least Developed Countries as a cost-effective, accessible way to reduce climate risk and poverty, and attain green growth.

At sub-national level, EbA activities — such as practical demonstrations of ecosystem management — should be used to strengthen the capacities of climate-vulnerable communities.

While most policy and legal processes in Uganda recognise the role of ecosystems in addressing climate vulnerability, implementation requires funding through budgetary allocations, payments for ecosystem services and sources such as community environment and conservation funds.

To realise the full potential of EbA approaches, the Ugandan government should assign responsibility for tracking implementation and invest in institutional strengthening, implementation capacity and cross-sectoral collaboration by institutions and government departments.

Ecosystem-based adaptation: the key to reducing climate risk in Uganda

All developing countries must address climate vulnerability and identify the best ways to help their people adapt. Ecosystem-based adaptation (EbA) is one increasingly popular and tested strategy. Uganda — a country already implementing EbA — is at a moment of political opportunity to harness the full benefits of this approach, as its climate change policy evolves into law. As policymakers create the legal frameworks to ensure ecosystems continue to be healthy and provide for communities, evidence for the efficacy of EbA approaches strongly suggests it should be formally prioritised and resourced accordingly. We seek to inform Uganda's decision makers by using a local case study¹ to discuss: the effectiveness of EbA, what is helping or hindering implementation, and how challenges can be addressed in emerging legislation and government planning.

Ecosystem-based adaptation (EbA) approaches comprise the use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change, forming part of an overall national strategy. As EbA becomes a popular response to the linked challenges of climate vulnerability and poverty in developing countries, it is useful to set out the criteria by which we can judge its efficacy:²

- 1) Whether the initiative allows communities to maintain or improve their adaptive capacity or resilience, and reduce their vulnerability in the face of climate change, while enhancing co-benefits that promote wellbeing.
- 2) Whether it restores, maintains or enhances the capacity of ecosystems to continue to produce services for local communities, and allows ecosystems to withstand climate change impacts and other stressors.

Effective EbA should also be economically viable.

As Uganda's policymakers and influencers consider whether EbA should be a formalised, funded element of forthcoming laws, policies and strategies on green growth and climate change, we present findings from one of 13 sites covered by a larger project (the 'Ecosystem-Based Adaptation: Strengthening the Evidence and Informing Policy' project).³ We focus on the Mountain EbA Project ('MEbA Project'), based in Eastern Uganda (see Box 1), to demonstrate the effectiveness of the EbA approach, consider the issues affecting implementation, and make the case for challenges to be addressed in emerging legislation and government planning.

EbA in action

The MEbA Project was created in response to a number of growing environmental issues threatening local livelihoods and land quality in Mount Elgon. Soil erosion, flooding, landslides, drought and poor water management were

exacerbated by overexploitation and poor land management (eg local communities farming in ecologically sensitive areas, deforestation causing soil erosion and degradation).

EbA can be a cost-effective, accessible and inclusive way of reducing climate risk and poverty

In terms of the **first criteria** of EbA effectiveness, outcomes from the MEbA Project in Uganda demonstrate that EbA can indeed be an excellent way to help people adapt to climate

change impacts and reduce future vulnerability. Just one practical initiative of the project, improved nature-based agricultural practices (eg soil and water conservation, organic fertilisers, crop diversification, hedgerows, agroforestry, mulching, and rainwater harvesting and storage), led to increased crop yields and incomes, improved diets and reduced flood risks. The project's broader capacity building element strengthened local governance and left the community with enhanced ability to manage climate change impacts. One interesting story of change concerns Sanzara Parish, of Kapchorwa District (see Box 2).

Looking at the **second criteria**, the MEbA Project did significantly enhance the local ecosystem's capacity to produce services and to withstand climate change, by addressing soil and water supply issues and overexploitation of the land. Successful ecosystem service improvement initiatives included:

- Soil conservation measures that enhanced soil productivity, fertility and moisture retention, and reduced erosion
- Agroforestry measures that reduced landslides
- Fuel-efficient cooking stoves, which reduced deforestation and air pollution
- The planting of indigenous drought-tolerant grass, enhancing the grasslands' capacity to store carbon.

Furthermore, improvements in ecosystem resilience and ecosystem services from the MEbA Project were felt beyond its borders: upstream watershed activities improved flood control and water quality in lower areas and localised beekeeping activities helped pollination more broadly.

Beyond meeting the two stated EbA success criteria, **social co-benefits** from the MEbA Project were extensive and worthy of note. These included better and more diverse livelihoods, improved social cohesiveness, enhanced knowledge about how best to adapt to climate change and sustainable water provision — the latter meaning women and children no longer trek long distances to fetch water. More children go to school and health improvements are emerging thanks to the stable water supply, availability of enough food, better nutrition and reduced indoor air pollution.

The economic case. The MEbA Project's cost-benefit analysis showed that not only were the EbA practices economically viable, but that this viability could be sustained over a 15-year projection period. Projected benefits were highest in Bugitimwa sub-county, Sironko District, where gains equated to an estimated US\$14,743 per farm household over 15 years.⁶ Comparing the hypothetical 'business as usual' option with the adoption of EbA farming practices showed that investing in EbA was a worthwhile undertaking and likely to increase the income of most participating crop farmers. In fact, for some farmers, failure to adopt EbA practices could result in their farming activities becoming economically unsustainable. The landscape for farmers is literally changing — results of an additional study assuming a ten per cent annual increase in soil loss (as the effects of climate change exacerbate erosion) added weight to the necessity of adopting preventative EbA farming practices.

As with social and environmental outcomes, a number of broader economic benefits from the MEbA Project were apparent but were not captured by the project's monitoring or cost-benefit analysis:

- Soil and water conservation increased income, due to increased productivity and reduced expenditure on agricultural inputs
- Drought-resistant seed varieties increased productivity and income
- Fuel-efficient cooking stoves reduced household expenditure
- Consistent water provision improved livelihoods and income from the sale of a wider variety of crops

Box 1. The Ecosystem-Based Adaptation in Mountain Ecosystems Project (MEbA Project)

The MEbA Project was created as a response to climate change and carried out in Uganda, Peru and Nepal between 2011 and 2015, with funding from the German government. In Uganda, the research site comprised the montane grasslands and shrublands of the Mount Elgon region, in the districts of Kapchorwa, Kween, Sironko and Bulambuli. Approximately 582,400 people live in these four districts, the population is entirely rural and dependant on subsistence agriculture.

Key project partner institutions at this site included: the United Nations Development Programme, United Nations Environment Programme, International Union for Conservation of Nature, and the Ugandan Ministry of Water and Environment.^{4,5}

- Land value increased
- The ability to leverage additional funds was gained, for example from district government budgets, the sale of watershed and carbon services through voluntary markets, and a community environment conservation fund (around 2,850 households directly benefited through community funds and cash grants).

For balance it should be noted that, while economic costs were few, they were not absent. Those we are aware of include the 'opportunity costs' associated with possible land uses that were rejected; for example, communities could no longer grow vegetables on the riverbanks.

Implementing EbA: lessons, enablers and challenges

The outcomes of the MEbA Project demonstrate that EbA can effectively and economically reduce climate vulnerability — and poverty — in Uganda. But beyond meeting the success criteria described above, this project generated lessons and considerations that can inform the planning of all future EbA projects. Advocates of this approach must be aware that a range of policy, institutional and capacity-related issues must be taken into account, as they are able to influence whether implementation is effective.²

The following lessons and policy, institutional and capacity-related issues helped support the MEbA Project implementation, enough to ensure that its benefits were potentially sustainable over a long period:

- **Highly participatory approaches** are vital for project success. For example, involving local communities in decision making, planning and implementation helped identify and prioritise problem areas for implementing MEbA options, and local knowledge of crops and indigenous trees informed project planning.
- **Working at a broader scale** helps in terms of securing sustainable landscape-wide EbA benefits and engaging district level governments and protected area managers.⁷ In the MEbA example, this was at the watershed scale.
- **Appropriate incentives to motivate local action** are needed; these must balance short-term livelihood needs with long-term ecosystem needs. Communities will often have a more immediate interest in short-term economic and social benefits than long-term environmental ones (for example, beneficial indigenous tree species may take years to grow). The MEbA Project's short-term incentives included a specific community environment conservation fund, local service procurement, market outlets

Box 2. Revitalising the forgotten parish

Commonly referred to as the 'forgotten parish' because of its heavy reliance on food aid, Sanzara became self-reliant as a result of the MEbA Project. In addition to improved agricultural practices, Sanzara was also the site of the 'Gravity Flow Scheme': a nature-based, inexpensive and sustainable solution to drought, which (among other benefits) allows the community to harvest vegetables during the 3–4 month annual dry spell. The scheme also supplies clean water to the heart of the community for domestic use, which has had an especially positive impact on the lives of women and children who previously collected water from the river.

for produce, the Gravity Flow Scheme (see Box 2) and provision of water stands.

- **Local, district and national level government prioritisation** helps champion EbA as a possible response to climate vulnerability. For example, the Ministry of Finance Planning and Economic Development has directed all accounting officers to ensure that climate change is integrated into development plans and budgets.
- **Strong and fair local and district governance and bylaws** help by providing a supportive framework for EbA and sustainable natural resource management, and promoting social cohesion (for example, the Mount Elgon Stakeholders Forum provides a platform for coordinating ecosystem-based activities). This can be further supported by the integration of EbA into district development plans and planning tools.
- **Incorporating EbA into existing local institutions** improves effectiveness. The management of the Gravity Flow Scheme, for example, is linked to community governance structures including farmers' associations, local community-based organisations, and local savings and loan associations.
- **Working with government technical and extension services** strengthened links between communities and local government and built capacity within both.
- **Embedding EbA in strong national policy and legislation** — including the Second National Development Plan and the National Climate Change Policy⁸ and its costed implementation plan — is key. This puts the issue centre stage in planning and development in Uganda, and also facilitates the prioritisation of EbA at lower levels of planning and implementation.
- **Support from existing strong national institutions**, such as the Climate Change Department (under the Ministry of Water and Environment), helps with cross-sector coordination, information flow, awareness raising and resource mobilisation to support implementation.

Conversely, a number of policy, institutional and capacity-related issues can create challenges for EbA implementation, many of which were observed in the MEbA Project:

- **Financial resources shortages** mean that while district development plans are in place, and include budgeted activities, limited funds are made available for EbA-relevant activities. A plan for managing the Mount Elgon region has been developed, but lacks funds for implementation. Financial resources for implementing the National Climate Change Policy are inadequate and the Ministry of Water and Environment has insufficient resources to coordinate delivery across all government agencies and levels.
- **Weak institutions, insufficient implementation capacity and limited technical skills** all affect EbA project outcomes. Technological resources for implementing the National Climate Change Policy are currently inadequate, developing appropriate climate change policy (including the Climate Change Law) requires legislators and parliamentarians with sufficient knowledge and field experience. To begin to address this, capacity building should be included and budgeted for in district and national development plans. Local government extension services function particularly badly, making integrating EbA into their work a challenge.
- **Insufficient cross-sectoral collaboration**, for example between different ministries (agriculture, trade, environment and others), presents challenges to operationalising the National Climate Change Policy and Second National Development Plan. EbA planning presents an opportunity for stronger collaboration across sectors, and should be integrated into ongoing policy preparation and review in all sectors.
- **Individual customary land ownership** means that some farmers were unwilling to sacrifice short-term income for longer-term benefits (for example, from tree planting), so securing landscape-level change was challenging.
- **Market access and poor infrastructure** had an impact. EbA practices improved income levels most when farmers chose crops with strong

value chains, such as coffee, bananas, rice and potatoes, but for other crops market access was problematic. Poor infrastructure, such as bad roads in Kapchorwa District, further limited market access and isolated Mount Elgon districts from each other. Some areas lacked necessary water supply systems.

- **Limited value placed on environmental protection and conservation** by rural communities, who can also be resistant to adopting a savings culture and relinquishing a learned reliance on handouts.

Overcoming challenges through informed policy

The MEbA Project demonstrates that, with the right support, EbA can be a cost-effective, accessible and inclusive way of reducing climate risk and poverty, and building resilience. It also indicates that a range of implementation challenges remain. To establish EbA as a powerful tool in Uganda, we recommend that policymakers and influencers should:

1. **Prioritise EbA within all relevant emerging national policies or policy responses.** This includes the ongoing reviews of the Climate Change Bill and National Environment Policy, as well as implementation of other high profile policy priorities, such as the Green Growth Strategy, disaster risk reduction and catchment-based natural resources management.
2. **Grow understanding of EbA approaches and relevant technical skills at national and sub-national levels.** An investment in greater capacity will increase policymakers' ability to support the implementation of EbA approaches and improvements to its economic evidence base.
3. **Create allocations for EbA in government budgets and develop funding models** in order to provide opportunities for financing, replicating and upscaling EbA practices more broadly in Uganda.

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Knowledge Products

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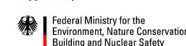
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Notes

¹ Reid, H, Kutegeka, S and Busingye, E (forthcoming) Ecosystem-Based Approaches To Adaptation: Strengthening The Evidence And Informing Policy: Research Results From Uganda. IIED, London. / ² See: Reid, H et al. (2017) Ecosystem-based adaptation: question-based guidance for assessing effectiveness. IIED, London. / ³ The 'Ecosystem-Based Adaptation: Strengthening the Evidence and Informing Policy' project is coordinated by IIED, IUCN and UNEP-WCMC, and brings in findings from 13 sites over 12 countries. See full project description at: www.iied.org/ecosystem-based-approaches-climate-change-adaptation / ⁴ Ministry of Water and Environment (2013) Ecosystem Based Adaptation in Mountain Elgon Ecosystem: Vulnerability Impact Assessment (VIA) for the Mt Elgon Ecosystem. Directorate of Environment Affairs, Republic of Uganda. / ⁵ Mumba, M et al. (2016) Ecosystem Based Adaptation (EbA) of African Mountain Ecosystems: Experiences from Mount Elgon, Uganda. In: Salzmann, N et al. (eds) *Climate Change Adaptation Strategies – An Upstream-downstream Perspective* (pp. 121–140). Springer International Publishing, Switzerland. DOI 10.1007/978-3-319-40773-9_7. / ⁶ Ministry of Water and Environment (2015) Natural Resource Economic Assessment for Ecosystem Based Adaptation in the Mt. Elgon Ecosystem. Republic of Uganda. / ⁷ United Nations Development Programme (2015) Making the Case for Ecosystem-Based Adaptation: The Global Mountain EbA Programme in Nepal, Peru and Uganda. / ⁸ Ministry of Water and Environment (2015) Uganda National Climate Change Policy. Republic of Uganda.