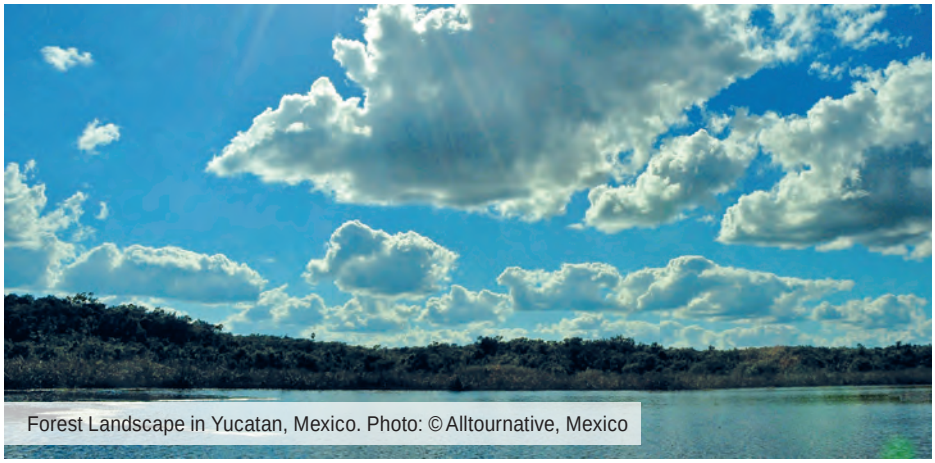
Learning Brief
Evidence of EbA effectiveness

December 2017

2nd EbA Community of Practice Workshop, 21 – 24 August 2017, Bangkok, Thailand

Experiences from practitioners on how to generate evidence of Ecosystem-based Adaptation (EbA) by applying field-proven methods, tools and approaches and on how to use existing evidence effectively.



Forest Landscape in Yucatan, Mexico. Photo: © Alltournative, Mexico

Evidence of EbA effectiveness matters

Ecosystem-based adaptation (EbA) is considered by most actors as a promising and cost-effective option to address the adverse impacts of climate change and which creates multiple benefits. However, when it comes to implementation, **EbA continues to be an underestimated adaptation option**. Although the concept is gaining relevance in political arenas at all levels, potentials are not fully considered and integrated in decision-making processes.

Additional evidence of EbA effectiveness to meet adaptation goals and the clear demonstration of all benefits is required to raise awareness and persuade actors of the potential advantages of taking into consideration and

Key messages ...

- In comparison to 'grey' infrastructure, Ecosystem-based Adaptation (EbA) measures are often underestimated and undervalued options for climate change adaptation. Systematic evidence on EbA effectiveness needs to be strengthened.
- EbA valuation is the process of describing, measuring and analysing how the benefits, costs and impacts of EbA are generated, received and perceived. Around 240 field-proven tools are available to support these processes.
- The impact of decision-making based on the results of EbA valuation is challenging. Experience shows that strengthening evidence does not lead to better-informed decision making per se. Therefore, EbA tools need to be better integrated in planning and decision-making processes.
- Evidence-based communication should adopt the channels and language of the target group, which would in many cases include the relabelling of technical terms such as ecosystem-based adaptation.

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On behalf of

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integrating EbA in climate change and sectoral policies, planning and practical implementation.

The EbA Community of Practice supports exchange on methodological and country experiences with regard to how to measure and compare EbA impacts – including benefits and costs – and how to communicate on EbA advantages for better evidence-based planning and decision-making.

Valuation methods and their application in an EbA context

EbA valuation can be defined as the process of describing, measuring and analysing how the benefits, costs and impacts arising from the implementation of EbA approaches are generated, received, and perceived. In practice, EbA valuation is used to design and implement effective EbA and to highlight the degree to which measures are effective in contributing to adaptation and delivering benefits.

Various methods for demonstrating the value of (ecosystem-based) adaptation measures are currently available to help practitioners and researchers to assess potential costs and benefits of EbA before implementation and to evaluate impacts during and after implementation.

Which methods have proven to be suitable for capturing the costs, benefits and impacts in an EbA context? An inventory[i] of 240 EbA-relevant methods, tools and approaches by United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) identifies those steps in the EbA cycle – including planning, assessment, design, implementation, monitoring and evaluation (M&E), and mainstreaming – to which they mainly relate. This analysis showed that:

- 80 % of considered methods, tools and approaches relate to the assessment stage;
- 7 % support cost-benefit analysis in the planning and design stage;
- 18 % relate to economic ecosystem service valuation;
- 8 % would be applied in impact assessments after the implementation phase; and
- 43 % (the majority) are related to M&E.

However, there are common challenges practitioners face while applying these tools:

- Generally, practitioners need to clearly identify the target group and understand their needs and policy context before choosing a method or tool.
- Most impacts and adaptation benefits are generated in the medium- to long-term. Time horizons do very much depend on the ecosystems considered, and non-monetary benefits are hard to quantify.
- For tool application, specific and specialised expertise is required, especially when it comes to the combining tools with other approaches.
- Decision-makers from different sectors might only be interested in making the case for a few particular benefits, which might be different to the priorities and needs of local people.
- Tools are often applied in a non-technical context (e.g. costing nature approach), so data is generated but not adequately processed and communicated to decision-makers and stakeholders.

Although there are documented experiences made in applying tools in an explicit EbA context, there is clearly a need to improve the availability of credible, convincing and policy-relevant information on the value of EbA approaches themselves, and their value in comparison (and in combination) with grey approaches. An EbA Valuation Sourcebook developed by the IKI-funded global project Mainstreaming Ecosystem-based Adaptation (soon available under www.adaptationcommunity.net) provides information on valuation theory and methods with real-world examples, 40 case studies and practical steps for commissioning, designing and implementing EbA valuation studies. It is challenging to obtain standardised tools that are applied in different settings. The importance of communication is often overlooked, implying that many guidance tools are available but lack a communication element.

Country experiences from Peru and Chile

Assessing EbA effectiveness

by Karen Podvin, International Union for Conservation of Nature

Experiences relating to EbA effectiveness in Peru and Chile were gathered by the International Union for Conservation of Nature (IUCN), the International Institute for Environment and Development and UNEP-WCMC using the question-based guidance to assess effectiveness[ii] applied in 12 countries and within 14 EbA initiatives. It covers 40 questions within 4 categories with the key question: Is EbA cost-effective and viable over the next 5 to 10 years? In addition, the IUCN Ecosystems Protecting Infrastructure and Communities (EPIC) method[iii] was applied in Chile's mountain ecosystem. The aim of the EPIC method is to recognise and promote the conservation of ecosystem services. The four components of the EPIC method aim to determine the benefits and EbA effectiveness for humans, ecosystems, and economic and financial systems as well as political, institutional and capacity factors.

A lesson learned is that EbA evidence needs to be generated in all project phases through a systematic process of applying evidence generation tools. The EPIC project commenced without the tool in place so it was really an ex-post evaluation of effectiveness without a clear baseline. Another challenge is to continue applying the tool after a project is phased out. The distribution of benefits is challenging since decision-makers often do not rely on them.

The ways in which valuation tools can support EbA mainstreaming in specific contexts needs to be considered. A combination of qualitative and quantitative tools is often the best option since data availability and access is often limited. A further challenge derived from the Chilean and Peruvian experiences is the need to synthesise results and communicate them properly to the target group.

In many cases, gaining access to data for generating evidence is challenging. In practice, there are different or even conflicting datasets, for example baselines or indicators from different agencies working in silos. A broad range of benefits is ignored as the demonstration of benefits relies on data availability. This often leads to a bias or a narrow perspective relating to data availability, sectors or professions, as particular people favour particular tools. EbA projects established in complex contexts also often tend to fail data prioritization, processing and communication of EbA benefits. This is highly relevant with regard to limited time, financial and human resources.

Monetising benefits and EbA values is a challenge and their communication alone might not create necessary change, although key decision-makers might demand it. The calculation of opportunity costs might also play against EbA if only an economic perspective is used, with benefits based on market prices only.

Success factors identified include communicating benefits through, in addition to scientific evidence, pictures showing a situation before and after implementation and personal stories of beneficiaries. Beneficiaries or involved stakeholders should present their stories and impressions.

With regard to methods, contingent valuation and surveying of local people about their willingness to pay can be useful but depends on the sample. Unevenly distributed benefits have to be considered. In summary, ensuring effective communication of EbA benefits to decision-makers and gaining access to field-proven examples of relevant valuation methods are common challenges. In practice, the most relevant EbA benefits that persuade decision-makers have proven to be (i) the reduction of climate and disaster risk; (ii) the reduction of loss of life; (iii) strengthening of the adaptive capacity of human and natural systems; and (iv) the demonstration of cost-effectiveness.

Moving from EbA valuation to leveraging change

There are a variety of methods and tools to assess costs and benefits of adaptation infrastructure and ecosystem services. Studies undertaken on valuing EbA benefits, costs and impacts focus mainly on monetary assessments, whereas economic and livelihood impacts, biophysical effects and social and institutional outcomes of EbA measures are still underestimated. Many valuation methods arise out of the decision-making process. Hence, it is necessary to define the purpose of an EbA-related valuation study and identify the kind of information policy-makers need for decision-making. When it comes to the distribution of benefits, few studies bring in multiple values. Main gaps in existing valuations study thus are: valuing multiple values and assessing distributional effects of the costs and benefits, as well as lacking impact of such valuation studies on real-world decision-making processes.

Even if detailed valuation studies are undertaken, EbA impacts quantified, and the time horizon and geographic scope specified, it may not lead to more evidence-based decision-making.

Findings in the above-mentioned EbA Valuation Sourcebook based on expert interviews, questionnaires and a literature review showed that many EbA-relevant valuation studies are available worldwide. The studies were clustered according to purpose and/or research gaps. This demonstrated that very little EbA measuring fed into influencing decision-making, compared to grey infrastructure measuring. The challenge is not to identify the best methods but determine why EbA valuation studies do not have an impact on decision-making. EbA tools are generally not integrated in decision-making processes as a default in ministries of environment or planning and financing departments, whereas grey infrastructure measures often are in comparison.

These experiences highlight that there is a need to move beyond preoccupation with finding the ‘best’ methods and evidence towards ensuring fit-to-(policy)-purpose and leveraging change through decision-making.

Country experiences from India

From ecosystem services assessment and valuation under The Economics of Ecosystems and Biodiversity (TEEB) India initiative to leveraging change

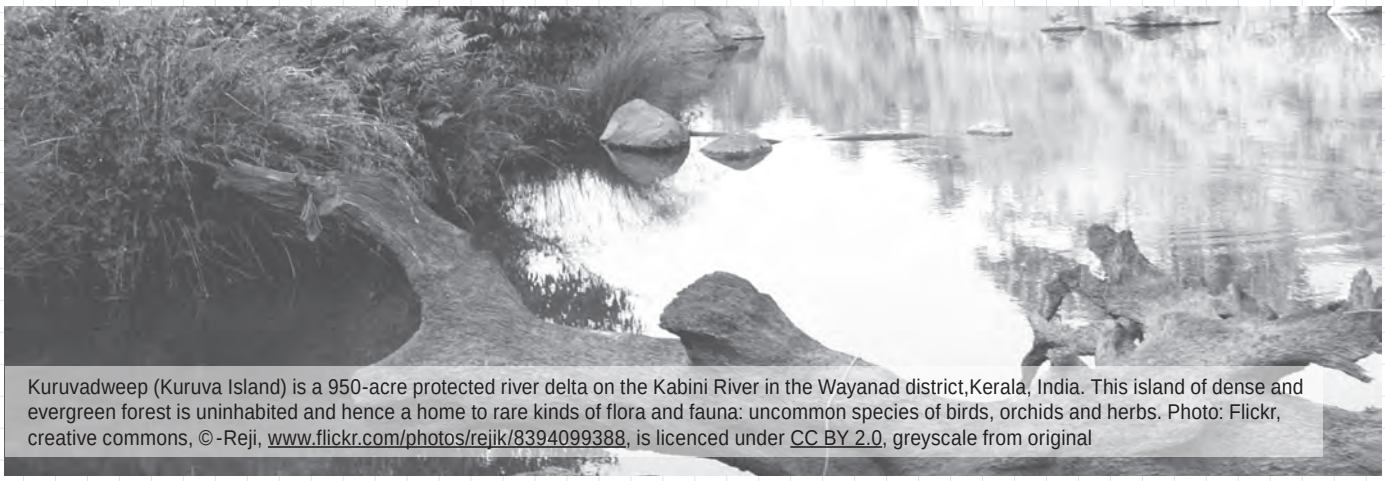
by Ravindra Singh, GIZ India

Mainstreaming biodiversity services in decision-making in India was the aim of a case study on the economic feasibility of willow removal for the restoration of Wular Lake, Jammu and Kashmir. Wular Lake and its surrounding ecosystems play an important role in reducing flood risks for people in the region. The problem is that the surface of Wular Lake – including the provision of ecosystem services such as water regulation and flood risk reduction – was reduced by 50 % between 1911 and 2007 because of the development and expansion of willow tree plantations and cricket areas. The study undertaken does not include multiple values, but assesses economic and environmental costs and benefits. It highlights that benefits from the hydrological restoration of about one quarter of the lake would outweigh the costs of removal of willow plantations, even at high rates of discount.

Although a management plan to restore wetlands was established under consultation with the stakeholders (including a public hearing), convincing decision-makers remained challenging.

A success factor was using the probability of flood events as a strategic window of opportunity to raise awareness. To successfully use upcoming windows of opportunities, it is key to be prepared and develop concrete proposals like this cost-benefit analysis beforehand. Identifying windows of opportunity requires different and flexible frameworks such as legal flexibility, administrative flexibility, financing and/or awareness-raising measures.

The involvement of the media is key for success as it communicates results and is constantly looking for people-oriented headlines. Key messages for communication need to be clearly defined, such as 'increase hydropower generation potential worth USD 60 million/year' or 'willow removal and lake restoration could save USD 1.05 billion in flood damages'. Experiences from India highlight that EbA as a concept is not easy to sell as most practitioners tend to use very technical terms while addressing stakeholders instead of clearly communicating EbA values. Evidence at various scales from concrete examples can be eye-opening.



Kuruvadweep (Kuruva Island) is a 950-acre protected river delta on the Kabini River in the Wayanad district,Kerala, India. This island of dense and evergreen forest is uninhabited and hence a home to rare kinds of flora and fauna: uncommon species of birds, orchids and herbs. Photo: Flickr, creative commons, ©-Reji, www.flickr.com/photos/rejik/8394099388, is licenced under CC BY 2.0, greyscale from original

How to communicate existing evidence

While the number of studies on the benefits, costs and impacts of EbA measures is growing, the level of inclusion of such studies in real world policy-making is often challenging. How can we use and communicate evidence of EbA to adequately support decision-making processes? What kinds of arguments exist on EbA benefits for global and national policy-makers as well as for technical staff at national and subnational level? What 'channels' are promising and how can they be used to communicate EbA evidence?

Practitioners agree that communication to all actors, particularly decision-makers, string actors or leaders at community level, donors and the private sector, is key to making an EbA measure a success and to make understand and sustain EbA.

Country experiences from Thailand

Five tools for successful communication

by Roland Treitler, GIZ Thailand

The ECOSWat project in Thailand, funded by the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)/International Climate Initiative (IKI), successfully communicated EbA as an option for improved management of extreme events in watersheds through five tailor-made tools.

Tool 1 Design a catchy project title and adjust key messages based on stakeholder values

Successful communication starts with a catchy title related to the local set of values. As 'wat' is the Thai word for temple, the project's name is understood as 'Eco Temple' and fosters positive associations and acceptance. This is crucial to raise awareness on flood risk in the selected pilot watersheds and to promote ecosystem-based solutions. A project should start with listening to stakeholders' perceptions, feelings and problems on problems at local level whereas the communication of solutions designed by consultants proved to be challenging.

Tool 2 Involve modern technologies to visualize EbA from the beginning

Projects face the pressure to communicate from the very beginning. For a target group-oriented communication, drones were used as a new technology for remote sensing to bring a different 'bird's eye' perspective into the discussion. Showing high-quality aerial photos meant that erosion and flood problems become more apparent. Drone technologies proved to be entertaining and piqued emotions, which is crucial for communication.

Tool 3 Communicate concrete numbers on EbA effectiveness at an early stage

A project should make a paradigm shift for EbA and communicate clearly that it has brought benefits and co-benefits since the beginning. A powerful communication tool is a cost-effectiveness analysis, for example comparing dredging versus sediment ponds, broken down to the local level with actual numbers. An example key message could be: 'The measures secure water supplies for 1,600 additional people in the watershed from year 1.'

Tool 4 Raise awareness through study tours

Awareness-raising through study tours to other countries with similar problems can be an important communication tool. The ECOSWat project organised a study tour to Brandenburg to raise awareness and tour examples of natural retention areas in river watersheds in Brandenburg. Benefits and co-benefits, such as the new Elbe cycling route, which generates income through outdoor tourism, must be communicated.

Tool 5 Involve national staff for all activities and communication

Project activities should be undertaken by national colleagues trained for this task. They are in fact the language and communication experts in their countries since they know the culture best.

A visit to study the proposed EbA pilot sites and to talk to farmers whose land will be affected in Huay Sai Bat sub-river basin, Khon Kaen province. Exchange of knowledge, experience and insightful information among public, civil society and academia. Photo: © GIZ Thailand, 2015

Country experiences from Peru

Communicating EbA effectiveness within the Mountain EbA Project

by Erin Gleeson, The Mountain Institute

The Ecosystems-based Adaptation in Mountains Flagship Programme ran from 2011–2015 and was implemented jointly by UNDP, UNEP and IUCN. The overarching goal of the Flagship Programme was to strengthen capacities of the involved governments and local communities to reduce vulnerability and increase resilience to the effects of climate change using EbA measures in targeted mountain ecosystems in Uganda, Nepal and Peru.

In Peru, field activities under IUCN's responsibility were implemented by The Mountain Institute to design and develop EbA measures in the communities of Miraflores and Canchallyo in the Nor-Yauyos Cochas Landscape Reserve. TMI's ability to successfully communicate and implement the project was aided by the fact that the government of Peru was already very interested in seeing EbA applied in both policy and practice. The Nor-Yauyos Cochas Landscape Reserve was in fact chosen by the Peruvian government because it represents a good example of human-nature interaction. This protected area is mainly classified as a direct-use protected area – it falls within IUCN's protected area category V – in which natural resource extraction and use are allowed, primarily by the local populations in the areas defined in the management plan. During the entire project, the government remained very supportive; the Ministry of Environment was on the project board, and the protected area team worked closely with TMI.

In working with communities and local institutions, TMI emphasized co-creation. Community members were fully engaged in the entire EbA process, from the identification and selection of potential measures to their implementation and evaluation. Local perspectives and priorities were key to identifying measures that supported and were supported by the community. Ultimately, a number of the applied measures combined modern science with ancestral wisdom, a combination that would not have been possible without dialogues between local knowledge and science.

The TMI team worked with community members, external researchers, the protected area team and local authorities to identify a set of adaptation options according to a clear set of criteria. Once a set of options was finalized, the options were communicated in clear and straightforward language to all relevant stakeholders, with a comparison of their pros and cons. Thus, the adaptation options that were ultimately chosen were chosen by the stakeholders themselves, with their full support and understanding. This co-creation, and hence ownership, is essential to ensuring the effectiveness and sustainability of EbA measures. It is also an important step in strengthening local organization and capacities, which are critical components of EbA implementation.

TMI found that another essential ingredient of effective EbA is measures that have short-, medium- and long-term benefits. Ecosystems take time to heal: trees may take decades before they yield fruit or can be harvested for timber, and even grasslands take several years to regain their equilibrium. For many people, waiting years for a positive result is not an option: they have mouths to feed and school bills to pay now. Thus, projects that yield benefits over multiple time scales are most effective, and will be met with the most support.

In conclusion, TMI found that some of the most important ingredients for both communicating and implementing effective EbA are the full involvement of all relevant stakeholders, processes for identifying and implementing measures that simultaneously engage stakeholders and help to strengthen local organization and capacities, and measures that offer benefits over the short-, medium- and long-term.

Country experiences from South Africa

Communication of adaptation responses

by Mpfunzeni Tshindane, South African National Biodiversity Institute (SANBI)

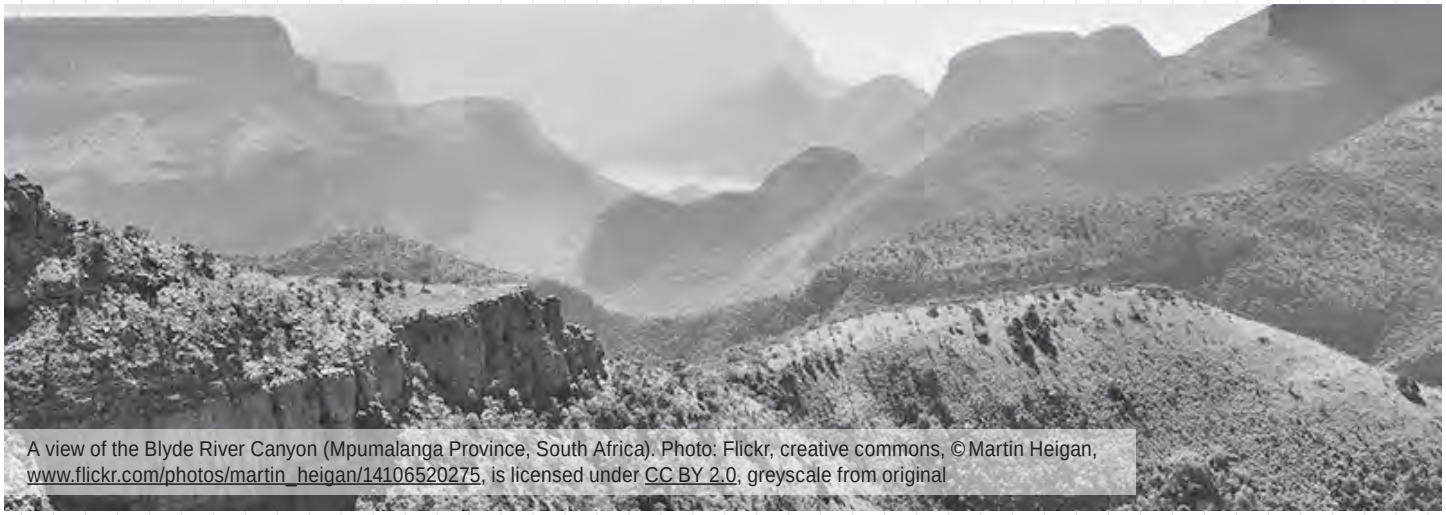
Recent experiences from EbA-related communication were derived mainly from two recent Adaptation Fund projects:

1. The Small Grants Facility, which has an objective to enable local-level response by providing small grants in three investment windows;

2. The Umngeni Resilience Project, which focuses on EbA, climate-proof settlements, early warning systems and climate-resilient agriculture in the Greater Umngeni Catchment.

Key steps in successful communication proved to be the following:

- Identify the target groups that need to be reached to ensure the success of your project. This is often a very diverse group covering civil society, non-governmental organisations (NGOs), municipalities, governments, the private sector and international donors, all with very different information needs.
- Design tailor-made communication materials for different target groups on the ground with simple language and facts and figures. This is especially required for the engagement of the private sector by showing numbers and developing special materials. Participatory approaches and local peer-to-peer communication should be used for communication with locals. Local NGOs and students are good communicators for breaking down knowledge to locals.
- Several communication channels should be used, such as flyers, participatory food exchange workshops and dialogues, factsheets, monthly eSnippets (newsletters), trainings, games and video communication.
- Include communication elements in studies and guidelines. The South African EbA Guidelines have useful communication elements such as an EbA glossary with key components, criteria and safeguards.



A view of the Blyde River Canyon (Mpumalanga Province, South Africa). Photo: Flickr, creative commons, © Martin Heigan, www.flickr.com/photos/martin_heigan/14106520275, is licensed under CC BY 2.0, greyscale from original

Conclusions and recommendations

EbA potentials are in most cases not fully assessed and therefore not yet considered and integrated in many decision-making processes. As EbA evidence does not lead to the consideration and integration of EbA in decision-making per se, processes on how actors take decisions need to be analysed.

Complementary, evidence-based communication is required to leverage change. On the ground, it is fundamental to clarify key concepts and terminology before talking with project partners about values, valuation, benefits, costs, impacts and effectiveness.

Regarding the communication tools and channels, cooperation with media that reflects the voices of beneficiaries and other stakeholder has proven to be a powerful communication tool.

The EbA Community of Practice compiled examples of arguments that supported successful EbA communication and leveraging change.

Technical terms such as 'EbA' itself hardly conveys the concept and should therefore be simplified while addressing actors less versed in international climate policy. A successful message at local level was that individuals' livelihoods are closely linked to ecosystems. This argument can be strengthened by promoting socio-ecological system thinking. EbA's multiple benefits and its positive influence on human well-being are convincing.

Arguments for national governments and decision-makers focus on comparison with other cases and especially on the increasing relevance of EbA in international settings. At national level, communicating the natural capital and short-term benefits to livelihoods have proven convincing. Private actors are mainly persuaded through the risk-reducing potential of EbA and tend to follow good examples of big and successful companies.

About the EbA Community of Practice

The EbA Community of Practice, supported by the Global Project 'Mainstreaming EbA', which is funded through the International Climate Initiative of the German Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and implemented by GIZ, is a knowledge and exchange network of EbA practitioners primarily from governments and international organisations as well as civil society and research institutions with an interest in strengthening ecosystem-based adaptation in planning and decision-making.

This learning brief is a result of a learning and dialogue workshop, including three technical sessions, held within the 2nd international EbA Community of Practice Workshop that was conducted between 21 and 24 August 2017 in Bangkok, Thailand.

The following members have been involved in its development:

Andrea Bender (GIZ, Germany), Lucy Emerton (EcoConsult), Erin Gleeson (The Mountain Institute), Charlotte Hicks (UNEP-WCMC), Alexandra Köngeter (GIZ, Germany), Karen Podvin (IUCN, Ecuador), Ravindra Singh (GIZ, India), Roland Treitler (GIZ, Thailand) and Mpfunzeni Tshindane (SANBI, South Africa).

Intact Coastal Landscape, Indonesia. Photo: © GIZ / Mathias Bertram

Endnotes

i. An inventory of 240 EbA-relevant methods, tools and approaches by United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), www.iied.org/call-for-feedback-inventory-tools-support-ecosystem-based-adaptation
ii. Question-based guidance to assess effectiveness, http://pubs.iied.org/17606IIED
iii. EPIC method, www.iucn.org/theme/ecosystem-management/our-work/environment-and-disasters/ecosystems-protecting-infrastructure-and-communities-epic

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