URBAN RESEARCH INSTITUTE

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

POLICY PAPER

Mainstream the EbA approaches into strategic planning

ABSTRACT

As identified in the first assessment the EbA approaches is a new concept and need to be mainstreamed into country policies and strategic planning. During this activity the expert together with the project team have prepared this policy paper that can be included in the ongoing policy processes tailored to the concerned policy documents.

URBAN RESEARCH INSTITUTE

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Building climate resilience of forests through Ecosystem-based Adaptation

This page is left blank intentionally

Acknowledgment

This policy paper is developed under the project “Building climate resilience of forests through Ecosystem-based Adaptation” implemented by the Urban Research Institute and financially supported by Federal Government through GIZ Albania under the "NDC Assist II - Strengthening financing and implementation of nationally determined contribution" programme.

The Urban Research Institute would like to thank all the collaborators in the implementation of this project in particular Mrs. Merita Mansaku-Meksi and Mr. Emi Kaduku without whose help the implementation of this project would not have been possible.

This page is left blank intentionally

URBAN RESEARCH INSTITUTE

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Table of content

1 Introduction

The development of this policy paper is made available with the financial support of German Government through Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The aim of the programme is to support developing countries and emerging economies in achieving their climate goals in line with the Sustainable Development Goals of the 2030 Agenda, the German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), together with other partners, launched the global NDC Partnership in 2016.

From 2016 to 2020, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH supported selected members of the NDC Partnership in their efforts to implement their NDCs and, since 2019, to make them more ambitious. For example, the National Climate Change Action Plan was developed in Kenya, the regional NDC Finance Initiative for the Caribbean was established, and Pakistan's Ministry of Climate Change was strengthened. In order to further advance climate action and climate finance, GIZ will continue to support the NDC Partnership from 2021.

1.1 Objective

Member countries and actors of the global NDC Partnership and the private sector are better able to finance and implement Nationally Determined Contributions (NDCs).

1.2 Approach

NDC Assist II supports selected member countries and actors of the NDC Partnership in financing and implementing their NDCs. To this end, the project provides technical assistance and strategic advice on financing strategies and investment plans and/or on integrating climate targets into economic stimulus programmes.

Furthermore, the project provides support for private actors to finance climate change adaptation measures. Small and medium-sized enterprises (SMEs) that offer technologies or services to this end receive tailored support to scale up their business models. Impact Investors receive support to identify and expand business opportunities for climate change adaptation.

2 Country overview

Albania is one of the most vulnerable Western Balkans countries to the changing climate. It is estimated that summer rainfalls will decline by about 10% by 2020 and 20% by 2050. Energy production and agriculture will be acutely impacted with an estimated loss of 60% of hydro-power generation capacity[1]. Climate analysis points to an increasing trend in temperature in Albania. The overall warming trend is evident in all four agro-ecological zones, with average warming over the next 40 years of about 1.5°C, much greater than the increase of less than 0.5°C observed over the last 50

[1] Programme of Cooperation for Sustainable Development UN Sustainable Development Framework 2017-2021: http://www.un.org.al/sites/default/files/POC2021EnSig.pdf

years.[2] Analysis of extreme temperature (carried out as part of the 3rd National Communication to the UFCCC) reveals that these are also expected to increase. For example, data for Tirana indicates that temperatures of 38°C that are reached once every 50 years might occur every 3 years (RCP8.5, 4°C world) or every 7 years (RCP2.6, 2°C world). Taking also into account the simultaneous increase in minimum temperatures, an increase in intensity of heat waves is expected.[3]

The strong linkages between disaster risk management caused by increasing climate change are well acknowledged and magnified by the impact of climate change. The EU Action Plan on the Sendai Framework for Disaster Risk Reduction 2015-2030 explicitly recognizes the positive contribution of green infrastructure can bring to disaster risk reduction and management. Climate change needs to be mainstreamed into the planning documents, and green infrastructure as tool for mitigation as well as adaptation. In Albania, although green infrastructures are embedded in most of the policies and planning documents such as water policy, agricultural policy etc., the concept of green infrastructures, especially ecosystem-based approaches to adaptation, natural water retention measures, ecosystem based disaster risk reduction measures are cost efficient; but they although recognized “on paper”, are not practically mainstreamed and used to their full extent, and as such should be further strengthened.

In the context of natural disasters and climate change, ecosystems are critical natural capital because of their ability to regulate climate and natural hazards. Through the concept of ecosystem services it is largely recognised that ecosystems are important for human well-being. Besides contributing non-material benefits, the economic importance of ecosystems for society is increasingly being documented.

EbA is closely related to Community-based Adaptation (CbA), a community-led process, based on communities priorities, needs, knowledge and capacities, which should empower people to plan for and cope with the impacts of climate change and is influenced by an earlier concept, Ecosystem-based Management (EbM), a management approach that tries to balance objectives, such as the sustainable use of resources, guaranteeing equal access to resources and reaching objectives conservation.

This chapter examines the important role of ecosystems and their services in disaster risk reduction and climate change adaptation. It discusses the relevance of adopting ecosystem-based approaches in managing risks brought about by a changing climate. To complement EbA, there is a growing recognition of the benefits of Nature-based Solutions (NbS), a term that refers to projects and actions where natural ecosystems and their services are used in a Different NbS interventions, including in protected areas, have long supported social challenges such as food and water security (Boeleeetal.,2017), disaster risk reduction, and mitigation or adaptation to climate

[2] Looking beyond the horizon: how climate change impacts and adaptation responses will reshape agriculture in Eastern Europe and Central Asia: http://documents.worldbank.org/curated/en/676601468249642651/pdf/761840PUB0EPI00LIC00pubdate03015013.pdf

[3] Third National Communication of the Republic of Albania on Climate Change: https://unfccc.int/sites/default/files/resource/Albania%20NC3_13%20October%202016_0.pdf

change, while improving sustainable livelihoods and protecting ecosystems, food security and biodiversity (Mittermeieretal.,2008; WorldBank,2008;).

Key definitions

Ecosystem-based Adaptation (EbA) is a nature-based solution that harnesses biodiversity and ecosystem services to reduce vulnerability and build resilience to climate change (IUCN, 2016).

Climate change adaptation is the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm, or to exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC, 2022).

Disaster risk reduction denotes both a policy goal or objective, and the strategic and instrumental measures employed for anticipating future disaster risk; reducing existing exposure, hazard, or vulnerability; and improving resilience (IPCC, 2014).

3 Valuation of EbA's benefits

There are four basic benefit components that might be addressed in an EbA valuation study: the main adaptation goal benefits, other adaptation benefits, non-adaptation benefits, and ecosystem service co-benefits.

The primary concern is usually to value the ***main adaptation goal benefits***. These are the adaptation effects that the measure or intervention is concerned with generating in the first place. For example: improvements in farm production from climate-smart agricultural practices, or the reduction in damage to property, loss of human life and incidence of disease that is achieved by urban flood mitigation measures. In order to assess these benefits, it is necessary to have a clear idea of the adaptation goal that the EbA measure seeks to contribute to, as well as of the indicators that are being used to measure progress towards this goal.

In addition, the EbA measure may generate ***other adaptation benefits***, over and above its direct target or goal. For example, climate-smart agriculture interventions that aim to enhance crop yields may be based around sustainable land management, and also result in better water conservation practices which improve farmers' resilience to cope with the effects of drought. In a similar vein, flood control systems may also serve to enhance water storage and thus stabilize dry season water supplies.

A third item to consider is the ***non-adaptation benefits*** that result from the EbA action. For example, by changing crop mix and income, climate-smart agriculture may also result in improved child nutrition and reduced illness. Urban flood mitigation measures may lead to better year-round income security and transport links because of the reduced disruption to people's mobility.

The important role of Ecosystem-based Adaptation (EbA) to enhance local resilience is recognized in city networks concerning the European municipalities, e.g. the Covenant of 24 Mayors for Climate and Energy, C40 Cities (https://www.c40.org), the Making cities resilient campaign (UNDRR), the Resilient Cities annual conferences (Local Governments for Sustainability, ICLEI, http://resilient-cities.iclei.org), and the 100 Resilient Cities (http:// www.100resilientcities.org/, Rockefeller Foundation).

One important – and often unique – feature of EbA measures is that they typically generate a range of ecosystem service co-benefits. Ecosystem services are defined as the benefits people obtain from ecosystems (Millennium Ecosystem Assessment 2005), and include a wide range of valuable services which contribute towards human wellbeing. For example, climate-smart agricultural practices based on sustainable land management may also help to reduce erosion in watersheds and thereby stabilize downstream water flow and quality. Wetland-based flood mitigation measures might also support fishing and recreational activities, store and sequester carbon, or provide habitat for rare or endangered bird and animal species.

System	Nature-based solution	Societal benefit
Forests	Preservation	Carbon sequestration in biomass in vegetation and soils; biodiversity protection; flooding, drought, and erosion protection, recreation and tourism, water infiltration and storage
	Restoration	
	Enhanced management of wood fuel harvest	Carbon sequestration in biomass in vegetation and soils; provision of fuel and forest products to local users; flooding, drought, and erosion protection
	Production	Carbon sequestration in standing biomass and harvested products; sustainable income; water infiltration and storage; reduced pressure on natural forests
Grassland	Preservation	Carbon sequestration in biomass in vegetation and soils; biodiversity protection; slope stabilization
	Restoration	
	Grazing management	Carbon sequestration in biomass in vegetation and soils; slope stabilization
Coastal/ riparian	Preservation	Protecting lives and property from storms and flooding; carbon sequestration; enhancement of biodiversity and fisheries production
	Restoration	
	Maintenance of slope vegetation	Reduced erosion and slope stabilization
	Maintenance of coastal, floodplain and riverine vegetation	Protecting lives and property from storms and flooding; carbon sequestration
Agriculture	Agroforestry	Carbon sequestration in soils and biomass; reduced erosion; maintenance of soil fertility; pollinator habitat; storm protection; shading
	Reduced tillage and carbon restoration practices	Carbon sequestration in soils; maintenance of soil fertility
	Agricultural intensification	Enhanced food security; reduced pressure for conversion of other areas.

3.1 Key points

- ✓ EbA valuation can be defined as the process of describing, measuring and analysing how the benefits, costs and impacts arising from the implementation of ecosystem-based adaptation approaches are generated, received and perceived.
- ✓ There are three basic elements of EbA value: benefits, costs and impacts. Benefits are the advantages or positive effects of EbA measures; costs are the resources required to deliver EbA measures, and the disadvantages or negative effects caused by them; and impacts are the effects or changes in situations or circumstances that arise as a consequence of EbA measures having been undertaken.
- ✓ It is not necessary to always assess or value each and every type of cost, benefit and impact. What is included in any given valuation study will vary, depending on its purpose and context.
- ✓ EbA valuation almost always involves dealing with multiple, often divergent and sometimes conflicting values that cannot be reduced to a single metric or numeraire. Wherever possible, valuation studies should attempt to adopt the concept of multiple values.
- ✓ EbA valuation is not an end in itself, but a means to an end — better-informed decision-making which results in the delivery of more effective, sustainable and inclusive climate adaptation actions.

4 Costs

Costs are the resources required to deliver EbA measures, and the disadvantages or negative effects caused by them. There are four basic cost components that might be addressed in an EbA valuation study: direct implementation expenses, core institutional and enabling costs, opportunity costs and social/environmental losses.

- ✓ The **direct implementation expenses** are the immediate physical costs of carrying out the EbA measure, including both capital and recurrent costs. They will usually be calculated based on the budget that has been prepared for the action or project under consideration. For example, climate-smart agriculture interventions might involve the purchase of tractors, hoes and seeds, as well as farmer training and the establishment of model farms. Wetland-based flood mitigation measures could include the restoration and rehabilitation of degraded marshes, labor to carry out the removal of invasive alien species, as well as investments in basic infrastructure and spending on conservation management activities that are required to establish and run a wetland reserve.
- ✓ **Core institutional and enabling costs** are the outlays that must be made on establishing broader support structures for the EbA activity. These can be significant, because EbA (and adaptation more generally) often requires the establishment of new agencies, capacities, laws, policies and incentive systems. These costs are often not included in the direct budget for the adaptation measure or action, because they are not being financed by the main project proponent, donor or investor. The introduction of climate-smart agriculture may, for example, also require that local extension agents are trained in new techniques and that farm subsidies are reoriented. The establishment of a wetland reserve might also necessitate the development of new legal instruments and management plans, and the deployment of additional field staff.

- ✓ **Opportunity costs** are the potential gains from other, alternative, activities that are foregone or diminished by choosing to implement an EbA measure. This may be felt as a loss in output, income, jobs, food, fuel or any other product or service. Opportunity costs are often particularly relevant to EbA, because many ecosystem-based approaches involve restoring, conserving or setting aside a natural area which is being used for other purposes (or might have the possibility of being used in the future).

5 The legal framework for mainstreaming EbA into national policies

5.1 European legal framework

As part of the European Green Deal, the European Commission adopted the EU Biodiversity Strategy 2030, which acknowledges nature restoration as a key contribution to both climate change mitigation and adaptation, and also promotes its integration into urban planning.

Climate change and environmental degradation are an existential threat to Europe and the world. To overcome these challenges, the European Green Deal will transform the EU into a modern, resource-efficient and competitive economy, ensuring:

- ✓ no net emissions of greenhouse gases by 2050
- ✓ economic growth decoupled from resource use
- ✓ no person and no place left behind

The new EU Biodiversity Strategy 2030 aims to halt the loss of biodiversity and sets the EU on a path to recovery by 2030. The strategy proposes how the EU could contribute to the upcoming international negotiations on global post-2020 biodiversity framework and aims to put the EU in a leading position in the world in addressing the global biodiversity crisis.

Biodiversity loss and the climate crisis are interdependent and they exacerbate each other. Thus, the Biodiversity Strategy 2030 is a core part of the European Green Deal. Biodiversity and ecosystems provide us with food, health and medicines, materials, recreation, and wellbeing. It is essential for life. The Biodiversity Strategy supports the EU societies´ resilience to threats such as climate change impacts.

Within the last 40 years the population of global wild species has fallen by 60%. Unsustainable human activities, such as changes in land use, led to the fact that we are losing nature like never before. The EU-wide strategy aims to establish protected areas for at least 30% of land and 30% of sea in Europe. At least a third of these protected areas will be strictly protected and all protected areas will be effectively managed by defining clear conservation objectives, measures and monitoring. Degraded ecosystems at land and sea will be restored by sustainable land use and agriculture, reducing pesticides, halting and reversing the decline of pollinators and restoring at least 25 000 km of rivers. Natural capital and biodiversity should be integrated into business practice, EU funds and national and private funding.

In the post-COVID context, nature restoration will be a central element of the EU's recovery plan, which will be the compass for EU recovery. When restarting the economy, it is crucial to avoid falling back into damaging old habits. Investment in the

protection and restoration of nature has been identified as critical for Europe's economic recovery in the coming years[4].

The new EU Strategy on Adoption to Climate Change identifies ecosystem-based approaches as a cross cutting priority. Their implementation is for example instrumental for integrated river basin management under the Water Framework Directive.

The 2019 review of the Green Infrastructure Strategy emphasizes the economic, social and other co-benefits arising from green infrastructure and ecosystem-based solutions.

The EU Guidance document on a strategic framework for further supporting the deployment of EU-level green and blue infrastructure (2019) focuses on guidance for scaling-up investments in EU-level GI projects. Supporting tools and instruments are presented and explained, including (i) financing instruments to support strategic investments in EU-level GI projects; (ii) prioritized Action Frameworks (which are planning tools specifying the financing needs for the implementation of Natura 2000 and GI)); and (iii) scientific or technical tools, such as the EU initiative on mapping and assessment of ecosystems and their services (MAES), and geographical information system (GIS) tools. More detailed information on existing EU funding sources, on co-benefits and on several relevant case studies are provided within the Annex of the guidance document. Two recent guidance documents on ecosystem services and green infrastructure focus on the implementation for decision makers of EU-level green and blue infrastructure: the EU Guidance document on a strategic framework and the EU Guidance document on integrating ecosystems and their services in decision-making.

At the global level, the Convention on Biological Diversity has explicitly supported ecosystem-based approaches setting associated targets and recently adopting voluntary guidelines for their design and effective implementation. Also the Sendai Framework for Disaster Risk Reduction 2015 – 2030 encourages ecosystem-based approaches to build resilience and reduce disaster risk[5].

5.2 Albanian legal framework

Climate adaptation was eventually integrated in Albania at the levels of:

- ✓ The policy statement and annual objectives for the Management of Drainage and Irrigation Infrastructure program;
- ✓ The annual objective, project, output and activity level for the Water Management program;
- ✓ The annual objective for the Agricultural Advisory and Information program;
- ✓ The annual objective and at the project level for the Rural Development by Supporting Agriculture, Livestock, Agro-industry and Market program;
- ✓ The annual objectives and outputs for Civil Emergencies program;
- ✓ The output level of Urban Planning and Housing program;
- ✓ The policy statement, objectives and outputs of the Environmental Protection.

[4] EU Biodiversity Strategy for 2030, COM (2020) 380, EUR-Lex - 52020DC0380 - EN - EUR-Lex (europa.eu)

[5] European Commission, Ecosystem services and Green Infrastructure, Green Infrastructure - Environment - European Commission (europa.eu)

It results that in law no.155/2020 Ecosystem based Adaptation is found in the:

- ✓ the fight against deforestation and degradation of forest ecosystems to restore them to their previous state, to expand land areas with vegetation and organic carbon content, by implementing sustainable management practices in agricultural areas;
- ✓ development of programs for sustainable management and restoration of forest, wetland and coastal-marine ecosystems;
- ✓ inclusion of as many ecosystems in conservation plans;
- ✓ in the field of nature protection: adaptation management practices for protected areas, assessing the importance of biodiversity in relation to the capacity of ecosystems to adapt to climate change, while ensuring, at the same time, the level of services ecosystems, on which human society depends, assessment and analysis of the impacts of climate change adaptation and mitigation measures on biodiversity

Up until 2019, Albania is the only country in the Balkan region to have developed a NAP document (produced in 2017). Albania has continued to advance the NAP process through its involvement in sector-based projects supported by multilateral and bilateral agencies. The NAP and its financing strategy became an integral part of the National Strategy on Climate Change, and related action plans on mitigation and adaptation, which was approved by the government on July 2, 2019. The NAP document serves as a risk-management plan (which includes identification of priority actions and assessment of adaptation) and as the main reference to the budget and policy officers during the revision of MTBP of the respective sectors.

Albania was the first country to organize a NAP Assembly with the crucial assistance of the NAP Global Network. It was designed to foster local capacities for the NAP process, to ensure that the priority adaptation actions identified during the process will be implemented and to promote the coordination of development assistance at the national level. The partnership between Albania and the NAP Global Network (since 2016) has been successful in pushing the country's adaptation agenda forward. For example, it has helped to mainstream adaptation into midterm budget planning and defined climate-proof indicators for regional infrastructure projects. Another example is the support to Action 12 of the NAP to develop and implement municipal climate change adaptation plans.

Given the capacity constraints that Albania already faces, identification and mapping of EbA and Gender Equality expertise must go well beyond the country to include world-wide expertise in the Mediterranean and include eco-system oriented and gender-based climate risk management. Where possible, consideration shall be given towards including examples where important gender aspects can be included into the upscaling design for the possible up-scaled sites will consider, inter alia, whether the future intervention site:

- ✓ Addresses climate change as a threat multiplier for inequalities.
- ✓ Fosters:
  - i. convergence,
  - ii. coherence,
  - iii. neither or
  - iv. partial efforts with other policies (gender, equality, environment, DRR).
- ✓ Addresses gender in the context of: (i) women in development (ii) gender and development or (iii) both.
- ✓ Reflects that climate change could (or is changing) gender roles and decision-making.

Approaches to be considered for EbA application in case of interventions:

- Restorative (Ecological restoration, Forest landscape restoration, Ecological engineering;
- Issue-specific (Ecosystem-based adaptation (EbA); Ecosystem-based mitigation (EbM); Ecosystem based disaster risk reduction (Eco-DRR); Climate adaptation services (CAS));
- Infrastructure (Natural infrastructure (NI); Green infrastructure (GI));
- Management (Ecosystem-based Management (EbMgt) which can include Integrated coastal zone management; Integrated water resources management);
- Protection (Area-based conservation approaches, including protected area management and other effective area-based conservation measures (AbC))

6 Implemented EbA and its impact

6.1 Case studies of EbA in the region

Conversion of forests to adapt to climate change in Bavaria

In 2006, the Bavarian Forest Administration started its work to develop its climate change plan, which is a part of the Bavarian Climatic Program (2008-2011) preceded by extensive study, to make its forests fit for climate change. For example, research was undertaken to develop climate change maps of the region and climate models for different species. Forests will be made more resilient and adapted to climate change by converting 260,000 ha private and community owned conifer stands into mixed stands, 100,000 ha until 2020. (Furthermore about 165,000 ha in state forests will be converted and stabilized between 2008 and 2033 by Bayerische Staatsforsten – public enterprise Bavarian State Forest).

More specifically, it is replacing Norway spruce and pine stands to mixed stands with broadleaf's, such as beech and oak, to promote more future climate tolerant species. Moreover, it is making forests more natural and managing these in such a way that increases and protects biodiversity. Also a special set of measures are planned for the adaption of the alpine forests in Bavaria to climatic change. The former Bavarian State Forest Administration (split up in 2005 in Bavarian Forest Administration and Bayerische Staatsforsten) has been undertaking this type of conversion since the mid-seventies as these mixes are more resilient to both abiotic and biotic stress as well as being economically beneficial (Ammer et al. 2008; Matthes & Ammer 2000).

This work takes place within Bavaria forest policy. The plan undertaken by the Bavarian Forest Administration is science-based, based on good assessments and models and extensive long-term research. Furthermore, it is actively aiming to manage forests in a way that promotes biodiversity, whilst maintaining the forestry sector objectives. It also helps the forest itself be more resilient to climate change, as well as aiding climate change mitigation, thus maximizing benefits to people. The work follows a long-term plan at a large scale that ensures sustainability. Furthermore, it involves the relevant stakeholders (forest owners) to help implementation of the plan through subsidies. Finally, community outreach and education are being undertaken.

The Wildlife Trust

The great fen project19 aims to restore over 3,000 ha of fenland habitat in South East England UK. The project is undertaken by a partnership involving The Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough, Natural

England, Huntingdonshire District Council, the Environment Agency, and the Middle Level Commissioners.

The project will result in a multi-functional landscape, providing flood risk protection to the surrounding communities and help mitigate climate change through carbon storage and sequestration. It is a long-term project, which started early 2000s. Restoration work is currently being undertaken. In 2010, it completed its master plan for the project, which won a prestigious UK planning award. This plan outlines the vision for the future.

The Great Fen project is collaborative project with a dedicated project team. Stakeholder involvement includes public consultation, the use of volunteers and a wide outreach programme, which includes education events. The project involves land use planning, and is based on thorough assessments, including socio-economic studies and climate change assessments. It is a long-term project, including management and monitoring plans, which promotes sustainability. This project encompasses ecosystem-based adaptation and mitigation as well as adaptation for nature conservation. The project therefore has numerous benefits to both people and nature.

Biotope Area Factor (BAF) programme

Initiated more than two decades ago, the Biotope Area Factor (BAF) programme is an innovative landscape planning regulation, which requires a certain proportion of development area to contain green space. The programme is administered by the Senate Department for Urban Development in Berlin, and forms part of the city‘s wider policy (Landscape Programme including Nature Conservation).

The premise behind the BAF is that decentralized and incremental green infrastructure can have a positive impact on urban ecology (Ahern 2007). There are different BAF targets according to the land-use purpose. Developers then have the choice of selecting a variety of greening techniques, each of which are weighted based on the individual technique contribution to the programme goals and calculated as a percentage of site area to give the resulting BAF (Ahern 2007), which should meet or exceed the assigned BAF target. Implementing the BAF into development projects is mandatory in certain zoned sections of the city centre; outside these areas the programme is voluntary.

The programme has involved collaboration between both landscape planning and land use planning government departments (Kazmierczak & Carter 2010). Public consultation was undertaken prior to implementation, and Department website features information and tools on the BAF. The programme is implemented at the individual building scale, which allows for a flexible urban greening approach combining individual developers needs and circumstances with overarching city level goals for improvements in green space area and urban ecology. The long-term viability and sustainability of the BAF programme is well documented through its continued operation for more than 25 years. The city also conducts monitoring of the urban climate, urban species diversity, and water quality and runoff to determine collective effectiveness of greening techniques (Ahern 2007).

The BAF programme was not initially implemented as an EBA measure; the primary driver for the programme was nature conservation and improved urban ecology. Over time a recognized further benefit of the programme has been its role in enabling adaptation of the city to impacts associated with climate change. Finally, the concept of the BAF has led many other cities36 to adopt similar approaches to urban greening (Cloos 2009).

6.2 Case study in Albania

BUILDING THE RESILIENCE OF KUNE-VAINI LAGOON THROUGH ECOSYSTEM-BASED ADAPTATION (EbA)

This project is helping climate-vulnerable coastal communities by using ecosystem-based adaptation (EbA) – the use of nature and ecosystem services to reduce the impacts of climate change on people.

- The project is located in three sites at the Kune-Vain Lagoon system in the Lezha region of Albania, which hosts stunning biodiversity.
- The main approaches include: opening a tidal channel to allow the free circulation of sea water, which regulates the salinity of the lagoon and reduces flooding; and dune rehabilitation to mitigate coastal erosion and reduce habitat loss. As a result, fish stocks and bird species will recover, leading to positive economic benefits for fisheries and ecotourism businesses.

Technologies and methods used

The project is rehabilitating 2,000m of coastal dunes within the Kune-Vain Protected Area by planting indigenous climate-resilient plant species, including more than 65,000 seedlings.

- The sand dunes are separating the lagoon from the sea. Once the sand dune erodes, the lagoon will turn to sea and disappear. The planting activities strengthen the sand dunes against erosion by holding the soil in place, helping to preserve the Kune-Vain Lagoon ecosystem.
- 7 hectares of riparian forests are also being reforested with over 14,500 seedlings.
- A new tidal inlet channel between the Ceka Lagoon and the Adriatic Sea is being constructed and maintained. The channel allows the exchange of water between the lagoon and the sea, which significantly improves the water quality of the lagoon.
- The embankment at Shëngjin Island is being raised and maintained to protect adjacent agricultural land and population areas from flooding and storm surges.
- The project is also increasing the capacity of Albania to carry out EbA measures in the future by training at least 30 government staff and 250 local community members on how to implement, monitor, and evaluate EbA strategies.
- A maintenance strategy and an upscaling strategy are being developed to sustain the impacts of the project's EbA interventions.
- Technical guidelines and protocols are being produced on the implementation of EbA, and at least 40 national and local staff are being trained on the application of these guidelines.

7 Strategy to mainstream EbA into

Mainstreaming climate change is not a new concept in many countries, but it has become increasingly popular since the late 1990s as a means to (more effectively) tackle increasing development issues such as environmental degradation. And yet in Albania, it is a new and needed concept to be addressed.

The most effective route to mainstreaming is believed to be achieved through an integrated 'whole-of government' approach, preferably coordinated at the highest level

of government. Good governance, reflected in vision, commitment, transparency and accountability, provides a vital foundation for climate change mainstreaming. EbA can provide a structure to ensure mainstreaming which leads to an integrated and holistic approach that promotes an effective way to respond to climate change.

Through the mainstreaming of EbA into national strategies and plan it will enhance the resilience of local people living around the forests, wetlands, watersheds by strengthening the capacity of local communities – as well as local and national government – to implement Ecosystem-based Adaptation (EbA) interventions. This will be achieved by demonstrating on-the-ground EbA interventions in pilot sites in forests, wetlands and watersheds in selected ecosystems in Albania and by providing training to local and national government to implement EbA as a tool to adapt to climate change.

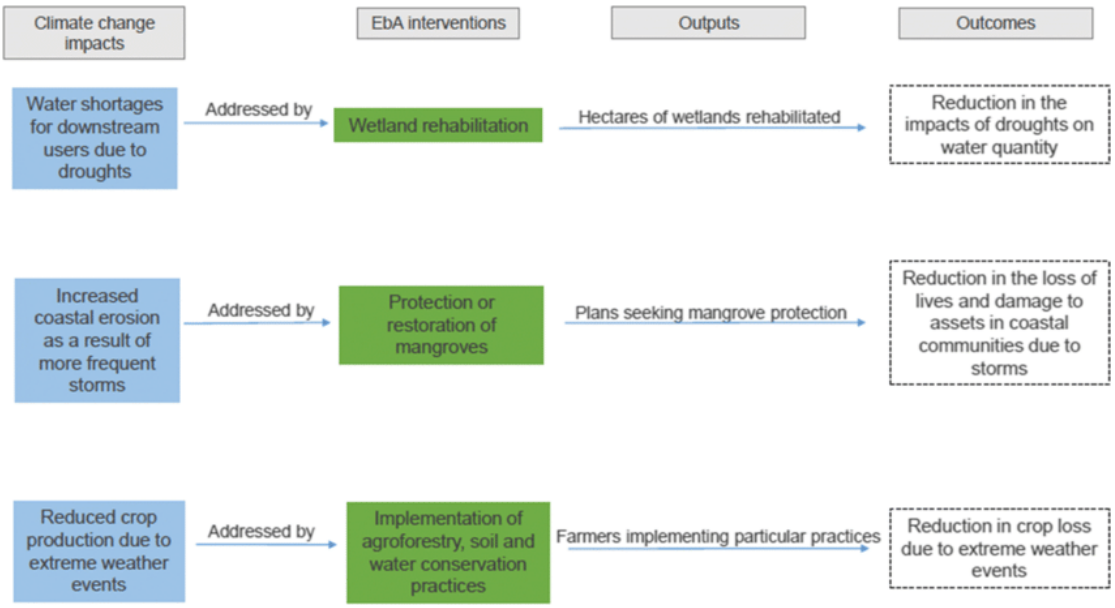
The incorporation of EbA into forest wetland and watershed management plans to facilitate an integrated approach to environmental management. **EbA provides a low-cost inovative and effective way to reduce vulnerability to climate change** while enhancing multiple ecosystem benefits for vulnerable communities.

As part of an integrated adaptation approach, EbA has been shown to require comparatively small investments relative to the long-term social, economic and environmental benefits. The mainstream of EbA interventions will address urgent climate change adaptation needs of vulnerable communities living around forests, wetlands, watersheds. This is in alignment with the priorities of the **National Strategy for Development and Integration (NSDI) 2016-2020** approved by Decision of Council of Ministers no. 348, on 11.5.2016, identifies and recommends intervention for the key environmental challenges in Albania such as: (i) contamination of water resources (ii) soil erosion as a result of unsustainable forestry, agricultural and pastoral practices, (iii) waste management which constitutes to be a major source of pollution etc.

Taking into consideration the 2030 Agenda for Sustainable Development and the Sustainable Development Goals; the Paris Agreement building upon the United Nations Framework Convention on Climate Change to strengthen the relationship with the private sector, including the adoption of more innovative approaches to promote private sector sustainability, the project intends to engage the private sector.

Therefore, the stimulation of investments will be initiated through seeking and mobilizing local resources that may see opportunities in investment in production on land locally (agriculture, farming, etc.), where partnership principles can be applied between the private sector and local government or local land owners. The private sector will be involved in project implementation through using economic instruments that mobilize locally available resources to ensure investment in EbA initiatives.

An example of the kind of EbA interventions that can be implemented to address different climate change issues, their outputs and outcomes are shortly described in the figure below:



Significant barriers for implementing EbA in Albania exist. These include: i) limited technical capacity to develop and implement climate change adaptation activities, including EbA; ii) absence of policy and legal frameworks; iii) weak institutional coordination between government departments and institutions; iv) minimal understanding of EbA and the benefits provided by ecosystem services as a result of limited on-the-ground examples; v) inadequate tools for the monitoring of climate change; vi) insufficient knowledge and financial resources to integrate EbA into management plans; and vii) few alternative livelihoods to reduce the vulnerability of local communities to climate change.

The mainstreaming of the EbA interventions into national strategies and plans will overcome these barriers by: i) strengthening the capacity of local and national governments to support local communities to plan and implement EbA; ii) transferring knowledge on EbA to local communities and government at national, sub-national and local level across the pilot sites; iii) updating forest/vulnerability maps to assist decision-makers on climate-resilient forest/watershed/wetland management; iv) integrating EbA into forest management plans; and v) implementing EbA and promoting climate resilient livelihoods to increase the adaptive capacity of local communities around wetlands and forests to climate change.

8 Conclusions and Recommendations

→ **EbA should be based on inclusive, transparent and empowering governance.** Inclusive and transparent governance is key to effective and sustainable EbA outcomes for climate change adaptation and disaster risk reduction. Transparent, inclusive governance not only raises awareness regarding nature and climate change hazards but can also lead to improved outcomes in urban planning. Inclusive governance can be enhanced through the designing and implementing processes for data collection and analysis that actively engage citizens and raise their awareness of the issues addressed by EbA. Indeed, there are a number citizen science approaches emerging that can support this.

→ **EbA design should incorporate the need to balance trade-offs**. Such trade-offs must be approached transparently through credible assessments of trade-offs, with full disclosure and agreement among the most affected stakeholder about how these

trade-offs should be addressed. One aspect of addressing trade-offs involves fair and transparent negotiation regarding these trade-offs, while also safeguarding the integrity of ecosystems and their properties that ensure long-term stability of ecosystem services. Such fair and transparent negotiation can however provide a sound basis for the long-term sustainability of the EbA by ensuring that all affected stakeholders buy-in to the process. A number of new and innovation analytical tool are emerging to evaluate such trade-offs and support inclusive decision-making processes regarding trade-offs and safeguards.

→ **EbA design should incorporate mainstreaming and sustainability considerations.** It is important to ensure that EbA are aligned with other relevant and sectoral policy frameworks, and account for long-term sustainability in order to ensure that outcomes last beyond the limited timeframe of a specific intervention. Further, EbA should be mainstreamed so that they facilitate further uptake of EbA in enabling policy frameworks. This involves promoting public awareness of EbA, ensuring collaboration between relevant stakeholders, and promoting that local communities co-invest in EbA.