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ECOSYSTEM-BASED ADAPTATION MAPPING ANALYSIS REPORT

NOVEMBER 2015

PACC FIJI, PHOTO: JOE HITCHCOCK

ADB	Asian Development Bank
AF	Adaptation Fund
AU	African Union
BCPR	Bureau for Crisis Prevention and Recovery
BMUB	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety', Germany
BMZ	German Federal Ministry for Economic Cooperation
CBZ	Community-based adaptation
CBD	Convention on Biological Diversity
CC	Climate change
CCA	Climate change adaptation
CCAF	Climate Change Adaptation Facility
CIDA	Canadian International Development Agency
COP	Conference of the Parties
DRR	Disaster Risk Reduction
EA	Ecosystem Approach
EBA	Ecosystem-based Adaptation
EBD	Ecosystems and Biodiversity
EC	European Commission
ENSO	El Niño Southern Oscillation
EU	European Union
FAO	Food and Agriculture Organization
FESA	Fire and Emergency Services Authority
FLR	Forest and Landscape Restoration
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (Germany)
ICCRIFS	Integration of Climate Change Risk and Resilience into Forestry Management in Samoa
ICI	International Climate Initiative (Germany)
IFM	Integrated fire management
IGO	intergovernmental organizations
INC	Initial National Communication
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
LDCS	Least Developed Countries
LLDCS	Landlocked Developing Countries
MAF	Ministry of Agriculture and Fisheries
MNRE	Ministry of Natural Resources and Environment
MINAM	Ministry of Environment of Peru
MOF	Ministry of Finance
MWCSD	Ministry of Women, Communities and Social development
NAPAS	National Adaptation Progammes of Action

Non-governmental organization	NGO
Nairobi Work Programme on Impacts, Vulnerability and Adaptation to Climate Change	NWP
Nor Yauyos-Cochas Landscape Reserve	NYCLR
Organization of American States	OAS
Organisation for Economic Co-operation and Development	OECD
Reducing emissions from deforestation and forest degradation	REDD+
Regional Technical Advisors	RTAS
Special Climate Change Fund	SCCF
National Service for Protected Natural Areas	SERNAP
Small Grants Programme	SGP
Small Island Development States	SIDS
Secretariat of the Pacific Community	SPC
Secretariat of the Pacific Regional Environment Programme	SPREP
United Nations Development Programme	UNDP
United Nations Environment Programme	UNEP
United Nations Framework Convention on Climate Change	UNFCCC
United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States	UN-OHRLLS

Countries with UNDP-managed EbA projects

OVERVIEW

The United Nations Development Programme provides support to countries to adapt to climate change in the context of the 2030 Agenda for Sustainable Development, seeking to promote pro-poor and pro-growth adaptation which encourages climate-resilient economic development and sustainable livelihoods in the face of climate change.

UNDP-supported projects and programmes at the country level are organized around six Signature Programmes: Supporting Integrated Climate Change Strategies; Advancing Cross-sectoral Climate Resilient Livelihoods; Fostering Resilience for Food Security; Climate Resilient Integrated Water Resource and Coastal Management; Promoting Climate Resilient Infrastructure and Energy; and Ecosystem-based Adaptation (EbA).

This publication puts the spotlight on UNDP's EbA Signature Programme. It explores and unpacks ecosystem-based solutions to climate risk management, including dealing with climate variability and uncertainty.

In order to provide a working definition of EbA for this particular Signature Programme, and to inform planning and implementation of CCA projects in future, this mapping analysis was undertaken through applying a series of technical tools (database queries, document reviews), coupled with consultations with stakeholders and experts; methodological descriptions are given on pages 6-10 of this report. Given that capacity development lies at the heart of UNDP's approach to climate change, it is hoped that bolstering institutional knowledge of EbA within UNDP – and sharing these lessons learned with interested parties – will serve to increase our ability to address climate change risks globally.

UNDP's EbA programme is aligned with its Ecosystems and Biodiversity (EBD) programme portfolio, through which UNDP is committed to building the capacities of developing countries and economies in transition to manage natural ecosystems in line with their own development priorities and needs.

Two key approaches underpin UNDP's EBD work:

- Developing capacity at the individual, institutional and systemic levels to identify and implement new options for effective democratic governance for biodiversity and ecosystem management; and
- Assisting countries to identify, access, combine and sequence environmental finance for biodiversity and ecosystem management, mobilize pro-poor markets for ecosystem goods and services, and generate sustainable livelihoods.

Within this work, EbA approaches can help vulnerable communities increase their capacity to adapt to the impacts of climate change, and build the resilience of the ecosystems on which their livelihoods and welfare depend. EbA approaches can also generate significant social, cultural and economic benefits. An EbA approach typically forms part of an overall national or regional adaptation strategy, and involves the sustainable management, conservation and restoration of ecosystems to provide services that help people adapt to anticipated impacts of climate change.

MT EBA UGANDA, PHOTO: MONICAH ATURINDA KYEYUNE

INTRODUCTION

UNDP supports countries in incorporating nature-based solutions into their strategies for adapting to and mitigating the negative impacts of climate change. This involves working with communities, governments and civil society to conserve, manage and rehabilitate ecosystems for mitigation of, and adaptation to, climate change. This report outlines UNDP's support to countries in particular on ecosystem-based approaches to adapting to climate change, whilst maximising developmental co-benefits.

The report is a product of the Ecosystems-based Adaptation (EbA) in Mountain Ecosystems Programme, a global partnership jointly implemented by UNDP, UNEP and IUCN from 2011-2016, with the support of the German Government's International Climate Initiative. Similar reports on their EBA work have been produced by IUCN and UNEP. The report forms part of efforts to share information within and beyond the Mountain EBA partnership on an ongoing basis, so as to enable identification of gaps and to promote continued efforts on EbA globally.

ECOSYSTEM-BASED APPROACHES TO ADAPTATION

Ecosystem-based adaptation can be defined as "the use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change"[1] including "sustainable management, conservation and restoration of ecosystems, as part of an overall adaptation strategy that takes into account the multiple social, economic and cultural co-benefits for local communities."[2]

Expanding and connecting protected areas to conserve intact forests, wetlands, mangroves and coral reefs helps provide a natural buffer for communities vulnerable to disasters intensified by climate change. Maintaining natural vegetation in mountain catchments helps ensure continued water supply in the face of changing rainfall patters. And nature also provides ecosystem services such as pollination and soil fertility that are essential for agricultural productivity dspite changes in rainfall and temeperature. Ecosystem-based adaptation measures harness this power of nature to maximise communties' capcity to reduce their vulnerability by adapting positively to climate change, using both traditional knowledge and innovative techniques.

1 Convention on biological diversity, nagoya, 2010, cop 10 decision x/33 on biodiversity and climate change. Accessed on 21 september 2015: https://www.Cbd.Int/decision/cop/?Id=12299.

2 Convention on biological diversity, nagoya, 2010, cop 10 decision x/33 on biodiversity and climate change. Accessed on 21 september 2015: https://www.Cbd.Int/decision/cop/?Id=12299.

PACC FIJI, PHOTO: JOE HITCHCOCK

EBA FOR DEVELOPMENT

As the UN's development agency, UNDP's overall mission is to help countries achieve the simultaneous eradication of poverty and significant reduction of inequalities and exclusion. Approaches to adaptation that put people at the centre and simultaneously harness the power of nature can help vulnerable communities increase their resilience, and the resilience of the ecosystems on which they depend.
Large-scale rehabilitation projects as part of EbA strategies can generate work opportunities through state public works programmes. Various kinds of incentive schemes can provide cash, materials and training for farm households who participate in implementing EbA measures on their own land.

EbA interventions can also be designed to promote the involvement of women and socially marginalised groups in income-generation opportunities, for example through cultivation of indigenous plants that have commercial value as well as stabilising slopes vulnerable to erosion by rains intensified by climate change. A series of photo essays highlighting the range of social, economic and environmental benefits of UNDP's support to countries on climate change adaptation is available at https://undp.exposure.co.

BACKGROUND ON MOUNTAIN EBA PROGRAMME

The Ecosystems-based Adaptation (EbA) in Mountain Ecosystems Programme is a global partnership jointly implemented by UNDP, UNEP and IUCN from 2011-2016, with funding from the Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB). While global in scope, Uganda, Nepal and Peru were selected as pilot countries, due to their significant vulnerability to climate change, coupled with their endowment of fragile mountain ecosystems upon which a multitude of communities and economic activities depend.

The overarching Programme goal is 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.

MT EBA NEPAL, PHOTO: UNDP NEPAL

Human wellbeing and livelihoods cannot be sustained without healthy ecosystems. Mountain ecosystems are particularly important, in that they maintain rich ecological processes and provide essential goods and services, especially water, not only to mountain people, but also to downstream lowlands where demand from population centres, agriculture and industry is high. These ecosystems, however, face severe threats from unsustainable land use practices (overgrazing and non-conservation agriculture), illegal wood extraction, development of large-scale infrastructure (dams, roads) and unsustainable natural resource projects (hydrocarbons, mining).

Climate change further compounds these threats by increasing levels of exposure to droughts, floods (which in turn results in an increase in landslides) and changes in seasonality. These impacts both undermine the resilience of the mountain ecosystems and increase the vulnerability of the local mountain communities, whose livelihoods and wellbeing depend on their services. Mountain people tend to be among the world's poorest and most marginalized populations. Many experience the disadvantages of rural poverty combined with ethnic or religious discrimination. Mountain communities also face additional challenges to agricultural production brought about by elevation, rough topography and severe climate.

SUPPORTING UGANDA, NEPAL AND PERU

Through the global Ecosystems-based Adaptation (EbA) in Mountains Programme, UNDP, UNEP and IUCN, with funding from the German Government, are using sustainable management, conservation and restoration of ecosystems, as part of an overall adaptation strategy, to reduce the vulnerability and enhance the resilience of select fragile mountain ecosystems and their local communities to climate change impacts. It is a global partnership that involves national and regional government agencies, civil society and local communities in three pilot countries: Uganda, Nepal and Peru.

Healthy ecosystems deliver critical goods and services that underpin socio-economic development. However, due to climate change and other impacts, many

mountain ecosystems have become degraded or are likely to be negatively affected, for example, by the melting of glaciers as temperatures increase causing temporary flooding and later droughts; or the devastating impacts on villages of increasing frequent landslides due to more intense rainfall events. Adaptation strategies help society to plan better and minimize negative impacts, even turn new conditions to their advantage. Ecosystem-based approaches to adaptation use sustainable management, conservation and restoration of natural and agro-ecosystems, taking into account anticipated climate change impact trends, to reduce the vulnerability and improve the resilience of ecosystems and people to climate change impacts.

The overall goal of the Mountain EbA Programme is to strengthen the capacity of countries that are particularly vulnerable to climate change impacts, to build ecosystem resilience for promoting EbA options and to reduce the vulnerability of communities, with particular emphasis on mountain ecosystems. The project has four components, as follows:

1. Development of methodologies and tools for EbA decision-making in mountain ecosystems.
2. Application of methodologies and tools at ecosystem level.
3. Implementation of EbA pilots at ecosystem level.
4. Making the case for EbA at the national level.

MAPPING UNDP'S EBA WORK

This mapping report helps to locate UNDP's work on the Mountain EbA Programme within its wider programme of support to countries on adapting to climate change, highlighting the use of nature-based approaches. This complements similar mapping efforts by IUCN and UNEP within the framework of the partnership on the Mountain EbA Programme, supported by the German Government's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and its International Climate Initiative (ICI).

ICI is also a major supporter of EbA work globally through a range of partners. Many

MT.ERA UGANDA. PHOTO: ANDREA EGAN

of these partners are now part of an informal "Friends of EbA" group which aims to meet regularly on the margins of meetings related to the UN Framework Convention on Climate Change (UNFCCC), whose Nairobi Work Programme highlights the importance of EbA, and of synergies with the Convention on Biological Diversity (CBD) and the UN Convention to Combat Desertification (UNCCD). It is hoped that by sharing information within and beyond the Mountain EbA partnership on an ongoing basis, it will be possible to identify gaps and promote continued efforts on EbA globally.

EXTENDING THE KNOWLEDGE FRAMEWORK

During 2014 and 2015, the Mountain EbA Programme was extended to include the development of a Learning and Knowledge Management Framework, with the objective to strengthen learning about EBA at various levels namely; site level (three pilot sites in Nor Yauyos-Cochas, Mount Elgon and Panchase), country level (Peru, Uganda and Nepal), inter-country, regional and global levels. The framework will be used by partners to generate new science, insights and messages that can influence policy and practice on EbA in mountain ecosystems and beyond. In this regard, UNDP is working closely with IUCN and UNEP (as well as UNEP's specialist biodiversity assessment centre, UNEP-World Conservation Monitoring Centre) and IUCN to promote synergy between the various elements of the learning framework.

In support of the Programme objectives, including promotion of EbA learning and making the case for EbA, the three programme partners are each analyzing their global project portfolios to map projects that can be classified as EbA according to agreed criteria. This report details the results of the mapping analysis from UNDP's global climate change adaptation and biodiversity project portfolio, in an effort to determine which projects can be considered as EbA projects.

The goals for the mapping analyses are to:

- Demonstrate the scale, extent and diversity of the three partner institutions' Ecosystem-based Adaptation work in a coherent and strategic manner;
- Initiate a process of providing evidence-based knowledge on

MT EBA PERU, PHOTO: UNDP PERU

EbA and its effectiveness; and

- Provide concrete information to strengthen the case for presenting nature-based solutions for climate adaptation as a business case through effective, efficient and cost effective measures.

The combined results are intended to provide evidence of the scale and scope of EbA activities across the globe. These results can be made available online, and can potentially be extended through the "Friends of EbA" network to other organizations' work in this field.

METHODOLOY USED FOR MAPPING

The UNDP EbA Mapping Analysis exercise consisted of three key steps:

① Initial rapid identification of which UNDP projects "qualify" as EbA projects, from the database of projects managed through the UNDP Global Environmental Finance unit in the Biodiversity and Adaptation portfolios (using internal spreadsheets and an app designed for the adaptation portfolio);

② Expert assessment of initially selected UNDP-managed projects to verify whether they can be accurately described as EbA projects; and

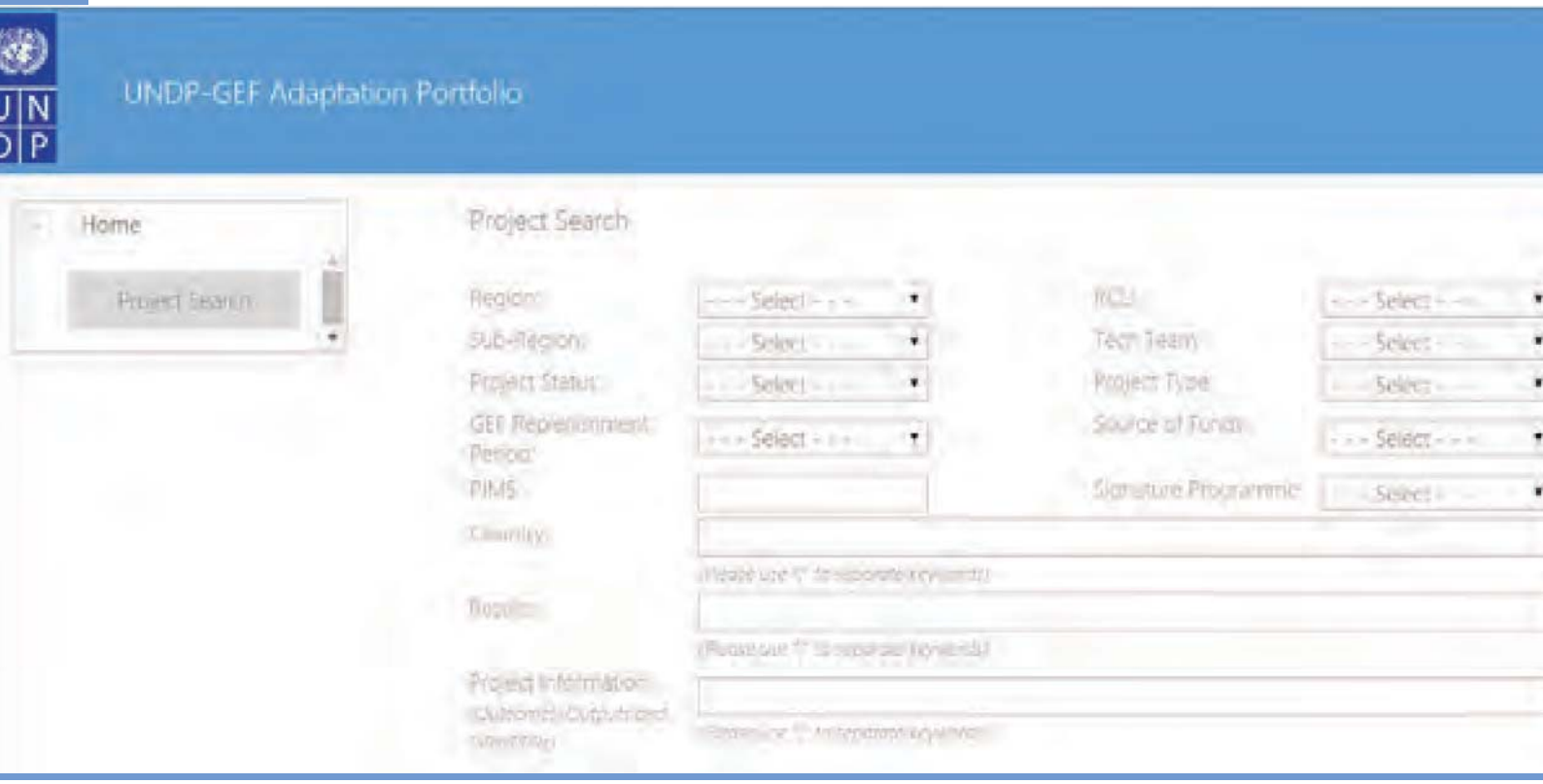
③ Analysis of Project Documents and the designated outcomes and outputs to confirm the identification.

1

Initial rapid identification of which UNDP projects "qualify" as EbA projects

For the first step, the initial rapid identification of UNDP EbA projects, internal spreadsheets from both the climate change adaptation and biodiversity programme portfolios were used, as well as the UNDP-GEF Adaptation Portfolio "app" as the subject database.

From the internal spreadsheets, projects were identified as possible EbA projects if the project focus and/or project title included: the words "ecosystem" **OR** "ecosystem-



UNDP-GEF Adaptation Portfolio app

based adaptation" **OR** "ecosystem services". For the Adaptation portfolio (in the Low-Emission Climate-Resilient Development Strategies or "LECRDS" programme), projects that were flagged under "Signature Programme on Ecosystem Based Adaptation (use of biodiversity and ecosystem services, sustainable management, conservation and restoration of ecosystems with a local community focus)" were identified as likely EbA projects.

To complement the manual review of the internal spreadsheets, the UNDP-GEF Adaptation Portfolio app was used to search systematically through Project Documents for a set of search terms.

The first set of queries were based on the Munroe et al. 2012 article in the journal *Environmental Evidence*[3] which elucidated a methodology for identifying EbA projects from the academic and grey literature (including UNDP projects).

The Munroe et al. methodology utilised the following search terms/queries:

"climate change" **OR** "climate variability" **OR** "climate hazard" **OR** "extreme weather" **OR** "natural hazard" **OR** disaster **OR** flood **OR** drought **OR** hurricane **OR** storm **OR** cyclone **OR** "sea level rise" **OR** "irregular rainfall" **OR** "intense rainfall"

AND

"ecosystem-based adaptation" **OR** "ecosystem services" **OR** "green infrastructure" **OR** "ecological infrastructure" **OR** "soft infrastructure" **OR** "natural infrastructure"

AND

people **OR** society **OR** community **OR** city **OR** settlement **OR** social **OR** population **OR** livelihood **OR** city[4]

For the purposes of the UNDP EbA mapping analysis, this peer-reviewed search strategy was adapted for use within the subset of UNDP Project Documents, utilising the UNDP-GEF Adaptation Portfolio app[5] as the subject database. Owing to the nature of the database, and given the limitations of the app, the query syntax

3 Co Munroe, Robert, Roe, Dilys, Doswald, Nathalie, et al. 2012. "Review of the Evidence Base for Ecosystem-Based Approaches for Adaptation to Climate Change." Environmental Evidence 1(1)

4 Munroe et al., p. 13

5 https://app.undp-alm.org/ProjectSearch.aspx

PACC FIJI, PHOTO: LUKE MCPAKE

was as follows:

ecosystem-based adaptation; ecosystem services; green infrastructure; ecological infrastructure; soft infrastructure; natural infrastructure; people; society; community; city; settlement; social; population; livelihood

This gave 125 results (117 unique), which were highlighted in the UNDP Adaptation Portfolio Mastermatrix.

Subsequently, an additional three sets of query syntaxes were suggested by the UNDP EbA team and knowledge management subject experts. The query syntax for these three follow-up strings was as follows:

a) climate change; climate variability; climate hazard; vulnerability assessment; risk assessment; resilience; adaptive capacity; climate adaptation

This gave 123 results (114 unique).

b) ecosystem-based adaptation; ecosystem services; green infrastructure; natural infrastructure; ecosystem restoration; ecological infrastructure; landscape

This gave 17 results (all were unique).

c) community; livelihoods; co-benefits; climate resilient; population; people; socio-economic; conservation agriculture

This gave 111 results (104 unique).

Combining the four sets of database queries identified 15 projects which match all 4 query syntax criteria.

PACC SAMOA, PHOTO: LUKE MCPAKE

In addition to the database queries, we also utilised the tagged 'Full Consolidated EBD Portfolio List' spreadsheet managed by UNDP, filtered by the EbA tag, which identified 19 unique projects. There are 7 projects common to the EBD portfolio list and the 4 criteria list, which serves as a validation of the query strategy, insofar as there is a significant degree of overlap between the two lists.

2

Expert assessment of initially selected UNDP-managed projects to verify whether they can be accurately described as EbA projects

Combining the results from the UNDP internal spreadsheets for the Low-Emission Climate-Resilient Development Strategies (LECRDS) programme and Ecosystems and Biodiversity (EBD) programme portfolios, and by utilising the UNDP-GEF Adaptation Portfolio app, there are a total of 27 projects which were identified by matching all 4 query criteria. Once the initial review was conducted, the projects were organised by respective regional lists and were shared with the relevant UNDP Regional Technical Advisors for additional review.

These 27 projects served as the starting point for discussions with UNDP Regional Technical Advisors, who added and removed projects based on their intimate knowledge of project focus and desired outcomes.

After the Regional Technical Advisors' review, a final list of 56 EbA projects was created, which is displayed in table form in Annex 1.

3

Analysis of Project Documents and the designated outcomes and outputs to confirm the identification

MT EBA UGANDA, PHOTO: ANDREA EGAN

The final step in identifying UNDP's EbA projects was by manually reviewing the Expected Outputs detailed in the Project Documents for each of the 56 identified projects.

The analysis of the Expected Outputs confirmed that all 56 projects had been correctly identified. This process also offered insight into the sense in which the identified projects involved an ecosystem-based approach to climate change – in that the project objective is working to reduce human vulnerabilities and enhance adaptive capacity in the context of existing or projected climate variability and changes through sustainable management, conservation and restoration of ecosystems.

This confirms the presence in all 56 projects of all three key elements of the definition of Ecosystem-based Adaptation as

"the use of **biodiversity** and ecosystem services to help **people** adapt to the adverse effects of **climate change**."

Countries with UNDP-managed EbA Projects

RESULTS AND ANALYSIS

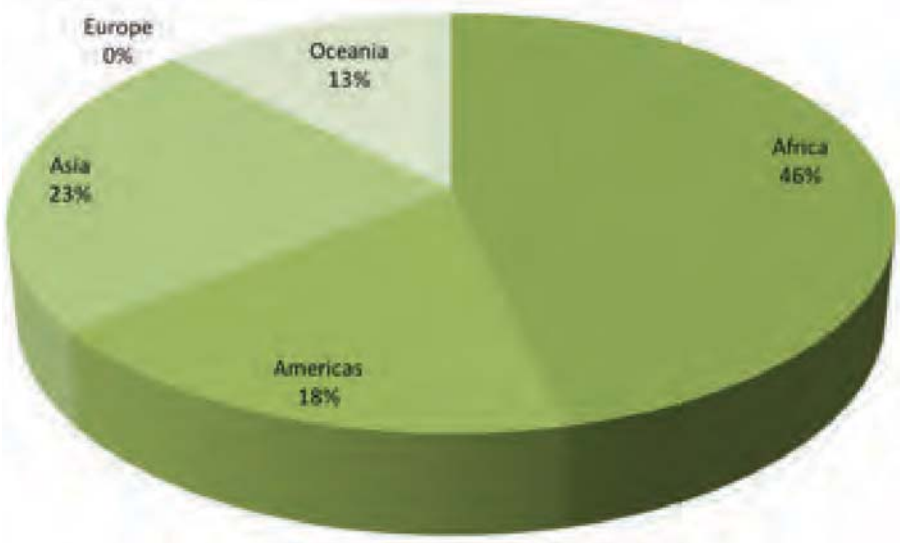
Annex 1 of this report lists the 56 projects managed by UNDP supporting countries across the globe, which can be described as Ecosystem-based Adaptation projects. This section further analyses and breaks down this group for projects.

The EbA project list was analysed across several axes: geographic focus, sectoral focus, development status, and funding source.

GEOGRAPHICAL REGIONS

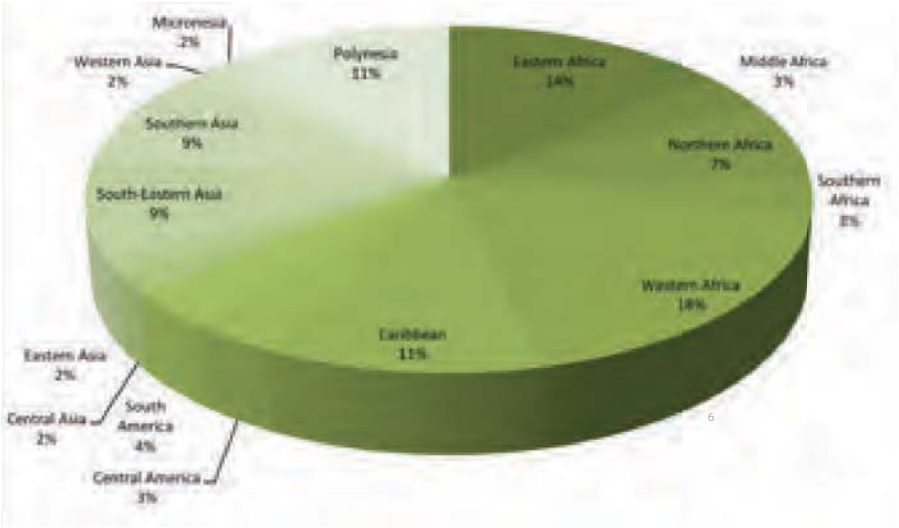
The map above shows the location of the 56 projects geographically, and the pie charts show the distribution by region showing the greatest number of projects in Africa followed by Asia, with a further sub-regional breakdown shown (regions and sub-regions as defined by UN Statistics).

EBA PROJECTS BY UN STATISTICS REGION



PACC SAMOA, PHOTO: LUKE MCPAKE

EBA PROJECTS BY UN STATISTICS SUB-REGION

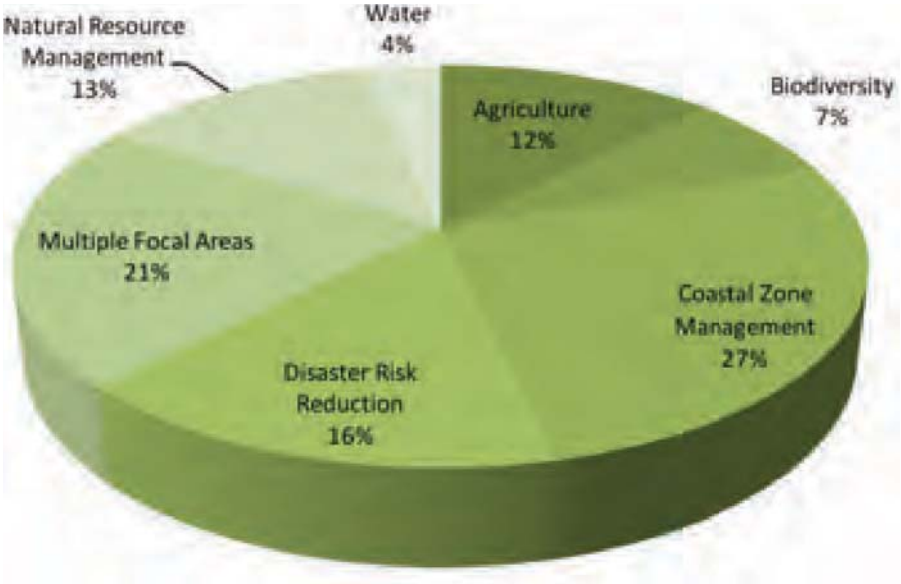


6 Eastern Europe, Northern Europe, Southern Europe, Western Europe, Australia and New Zealand, and Melanesia sub-regions all had no identified EbA projects, and were removed from the chart for graphical clarity.

SECTORAL FOCUS

The sectoral focus of each of the 56 projects was identified in order to enable an analysis of trends, although there is obviously overlap (for example, a Coastal Zone Management project may include elements of Biodiversity work). The pie chart below shows that Coastal Zone Management represents a major portion of UNDP support to countries on EbA, with Multiple Focal Area projects next most common, followed by Disaster Risk Reduction, Natural Resource Management and Agriculture, and smaller proportions relating primarily to Biodiversity and Water.

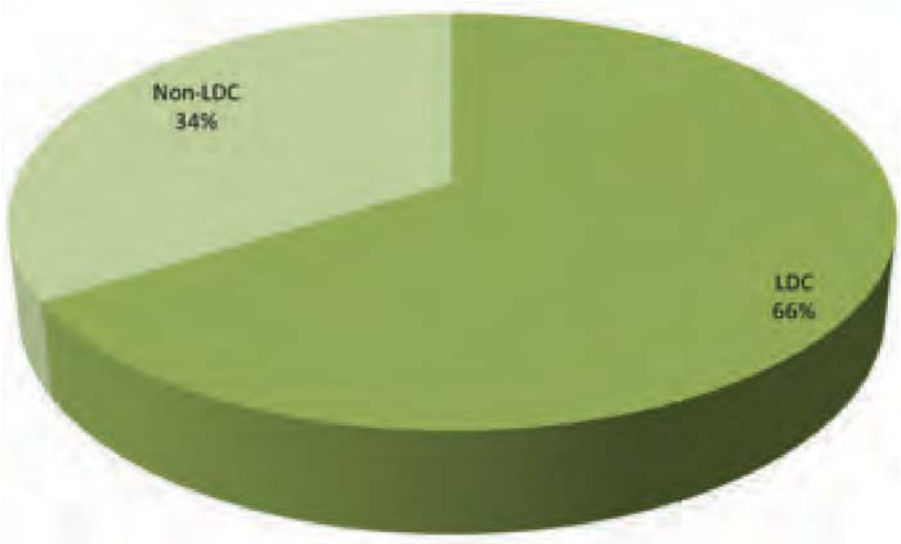
EBA PROJECTS BY SECTORAL FOCUS



COUNTRY TYPE - LDC

An analysis of country type across this portfolio of 56 projects showed that the majority of UNDP EbA projects are implemented in Least Developed Countries (LDCs), i.e. the group of 48 countries which the UN General Assembly has designated as LDCs. Whilst only about 25% of UN member states are LDCs, 66% of UNDP-managed EbA projects are sited in LDCs.

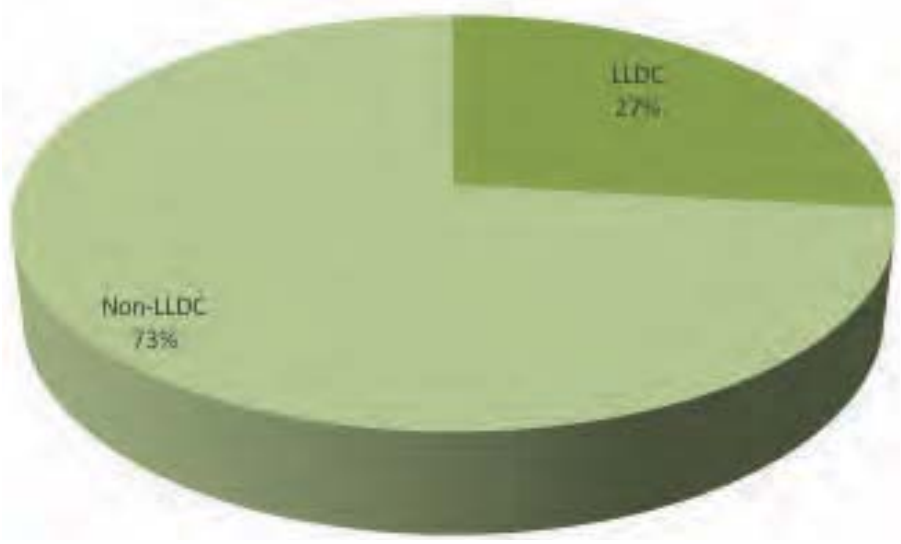
EBA PROJECTS BY LDC STATUS



COUNTRY TYPE - LLDC

The United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) has designated 32 Landlocked Developing Countries (LLDCs). While 16.5% of UN member states are LLDCs, 27% of UNDP-managed EbA projects are sited in LLDCs.

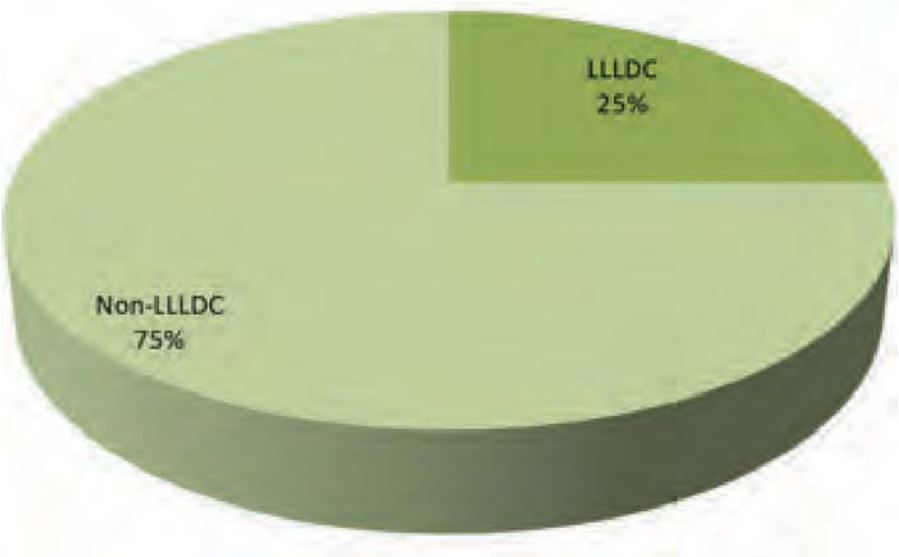
EBA PROJECTS BY LLDC STATUS



UN-OHRLLS further identifies 16 countries as Landlocked Least Developed Countries (LLLDCs). While these comprise only 8% of UN member states; 25% of UNDP-managed EbA projects are sited in LLLDCs.

COUNTRY TYPE - LLLDC

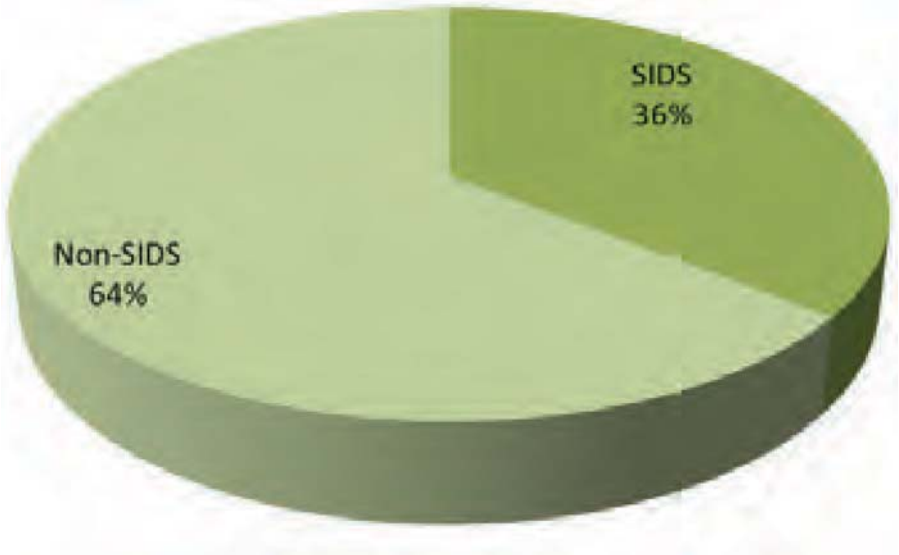
EBA PROJECTS BY LLLDC STATUS



N-OHRLLS identifies 38 countries as Small Island Development States (SIDS), comprising almost 20% of UN member states. Here again, these countries are well represented in the portfolio of UNDP-managed Eba projects. A total of 36% of these projects are sited in SIDS.

COUNTRY TYPE - SIDS

EBA PROJECTS BY SIDS STATUS



PLANTING MANGROVES, PHOTO: UNDP MAURITIUS

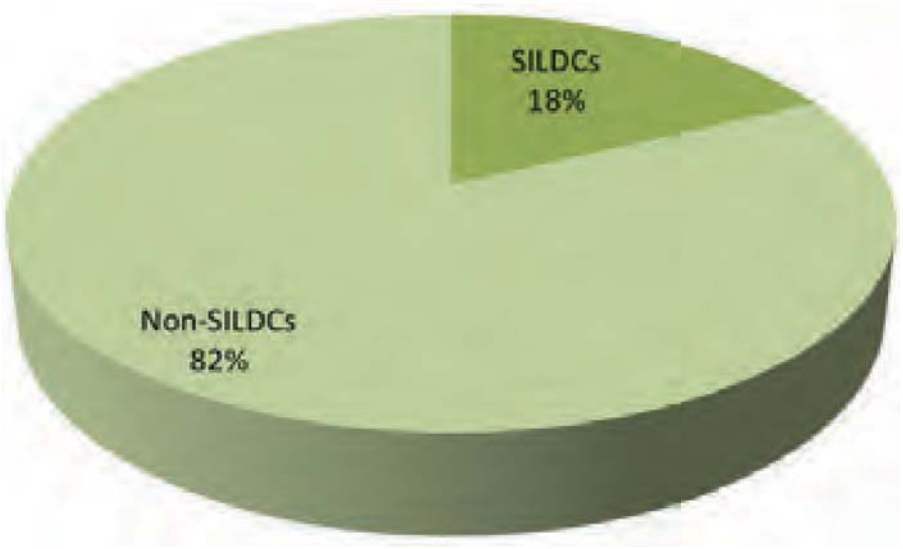
COUNTRY TYPE - SILDC

UN-OHRLLS identifies 9 countries which are both SIDS and LDCs (SILDCs), comprising less than 5% of UN member states; 18% of EbA projects are sited in SILDCs. Thus, EbA project sites are 2.7 times more likely to be LDCs than the UN as a whole, 64% more likely to be LLDCs, 3.125 times more likely to be LLDCs, 84% more likely to be SIDS, and 3.9 times more likely to be SILDCs.

IUCN is in the process of preparing a 'Red List' of threatened ecosystems, which may provide useful information for the identification and siting of EbA projects in future.

Overall it can be seen that there is an emphasis in UNDP's support to countries on EbA, on Least Developed Countries, Landlocked LDCs and Small Island Developing States. These countries tend to be very vulnerable to climate change impacts, such as intensified desertifiication as temperatures increase, or increased seawater intrusion as sea level rises and storm surges increase.

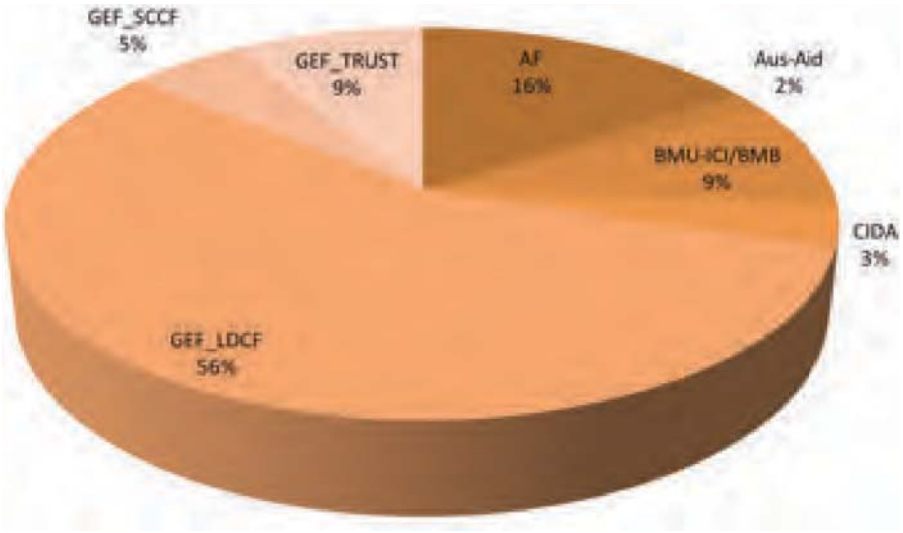
EBA PROJECTS BY SILDC STATUS



CONSERVING LAND WHILE IMPROVING WATER ACCESS AND FOOD SECURITY IN MYANMAR, PHOTO: ANDREA EGAN

COMDEKS SUPPORT IN BHUTAN

EBA PROJECTS BY SOURCE OF FUNDS



FUNDING SOURCES

Over the past five years, UNDP has been able to help countries access financial support for EbA projects from the Governments of Germany, Canada, Japan and Australia. In addition, countries have been supported in accessing the Least Developed Countries Fund and the Special Climate Change Fund of the Global Environment Facility (GEF), as well as the GEF Trust Fund, and the Adaptation Fund for which the GEF provides the secretariat.

As a major Implementing Agency of the GEF, UNDP supports countries to access the funds focused on climate change adaptation - the LDCF, the SCCF and the Adaptation Fund. UNDP has also been accredited as an international implementing entity for the Green Climate Fund, and is assisting countries to make funding proposals for adaptation as well as mitigation efforts. UNDP also supports countries seeking to generate adaptation co-benefits through work

COASTAL ZONE HAITI, PHOTO: UNDP HAITI

funded by the GEF Trust Fund, and adaptation work enabled by bilateral donors such as Germany, Canda, Japan and Australia. The major funding sources behind the portfolio of 56 projects analysed in this mapping are outlined individually below.

The total size of the portfolio of 56 EbA projects managed by UNDP, as identified via this mapping analysis, was just over 297 million USD. It should be noted that one project was still in the development phase, without a finalised budget, and could therefore not be included in these calculations. The average total project amount for the identified EbA projects was approximately 5.5 million USD. The EbA projects also leveraged co-financing from a variety of sources, including national governments, regional IGOs, NGOs, foundations and charitable trusts, and the private sector. The total value of co-financing for the EbA portfolio was 1.055 billion USD. The average value of co-financing per project identified in the EbA analysis was 19.9m USD, reflecting a multiplier of over 3.5 for each UNDP-GEF dollar spent.

THE ADAPTATION FUND

The Adaptation Fund was established to finance concrete adaptation projects and programmes in developing countries that are parties to the Kyoto Protocol and are particularly vulnerable to the adverse effects of climate change The Adaptation Fund was established under the Kyoto Protocol of the UN Framework Convention on Climate Change, and has committed US$ 318 million in 50 countries since 2010 to climate adaptation and resilience activities. The Global Environment Facility (GEF) provides the Secretariat for the Adaptation Fund.

The Fund is financed in part by government and private donors, and also from a two percent share of proceeds of Certified Emission Reductions issued under the Protocol's Clean Development Mechanism projects. UNDP has been accredited by the Adaptation Fund Board to implement programmes and projects and is supporting multiple countries in accessing these funds and implementing a range of projects.

For more information about The Adaptation Fund:
www.adpatation-fund.org/about/

To review the list of UNDP-supported Adaptation Fund project:
www.undp-alm.org/funding-source/adaptation-fund


PACC TUVALU, PHOTO: LUKE MCRAKE

GLOBAL ENVIRONMENT FACILITY

The Global Environment Facility is a partnership for international cooperation where 183 countries work together with international institutions, civil society organizations and the private sector, to address global environmental issues.

The Global Environment Facility's Trust Fund supports the implementation of multilateral environmental agreements, with Climate Change Mitigation as one of the focal areas supported by the GEF Trust Fund. The GEF also administers funds established under the UNFCCC for Climate Change Adaptation, including the Least Developed Countries Trust Fund (LDCF) and the Special Climate Change Trust Fund (SCCF), and provides the secretariat for the Adaptation Fund.

Since 1991, the GEF has provided $13.5 billion in grants and leveraged $65 billion in co-financing for 3,900 projects in more than 165 developing countries. For 23 years, these funds have been used to support activities related to biodiversity, climate change, international waters, land degradation, and chemicals and waste in the context of development projects and programmes. Through its Small Grants Programme (SGP), administered by UNDP, the GEF has made more than 20,000 grants to civil society and community based organizations for a total of $1 billion.

Among the major results of these investments, the GEF has set up protected areas around the world equal roughly to the area of Brazil; reduced carbon emissions by 2.3 billion tonnes; eliminated the use of ozone depleting substances in Central and Eastern Europe and Central Asia; transformed the management of 33 major river basins and one-third of the world's large marine ecosystems; slowed the advance of desertification in Africa by improving agricultural practices—and all this while contributing to better the livelihood and food security of millions of people.

GEF TRUST FUND

The GEF Trust funds operates the System for Tansparent Allocation of Resources (STAR) whereby developing countries may access funds to add incremental value to their own national efforts on biodiversity, climate change, international waters, land degradation, and chemicals and waste, in order to achieve global environmental benefits.

MT EBA UGANDA, PHOTO: ANDREA EGAN

Countries accessing the GEF Trust Fund resources to enable specific Global Environmental Benefits relating to biodiversity, sustainable land and forest management, and climate change mititation, have in some cases been able to achieve additional benefits, including promoting resilience and enhancing the capacity of communities and societies to adapt to climate change impacts. This means that GEFTF projects addressing the Biodiversity, Land Degradation and Sustainable Forest Management strategies of the GEF may also have adaptation benefits, and may use ecosystem-based approaches that have multiple benefits.

For example UNDP's support to countries to access GEF Trust Fund resources for Biodiversity in the Caribbean region includes work to enhace the connectivity of Protected Area systems to help withstand disasters like hurricanes that are expected to intensify with climate change. UNDP's support to countries to access GEF Trust Fund resources for Sustainable land Management in Africa includes work designed expclitly to build resieicne to climate changes and enhance communities' adaptive capacity. A few of the project identified as EbA in the mapping analysis fall into these categories.

LEAST DEVELOPED COUNTRIES FUND

The Global Environment Facility's Least Developed Countries Fund (LDCF) aims to address the special needs of the Least Developed Countries (LDCs) under the Climate Convention. LDCF supports projects that address the urgent and immediate adaptation needs of the least developed countries, focusing on reducing the vulnerability of the sectors and resources that are central to human and national development, such as water, agriculture and food security; health; disaster risk management and prevention; and infrastructure, as identified and prioritized in their National Adaptation Programmes of Action.

SPECIAL CLIMATE CHANGE FUND

The Global Environment Facility's Special Climate Change Fund (SCCF) was established to support adaptation and technology transfer in all developing country parties to the UNFCCC. The SCCF supports both long-term and short-term adaptation activities in water resources management, land management,

PACC SAMOA, PHOTO: LUKE MCPAKE

For more information about The Global Environment Facility: www.thegef.org/gef/

BILATERAL FUNDS

agriculture, health, infrastructure development, fragile ecosystems, including mountainous ecosystems, and integrated coastal zone management.

UNDP has also helped countries to access bilateral aid, provided on a country to country basis, or through support by a particular donor to a group of countries.

The following provides a source of information on key bilateral development partners in UNDP's EbA work, their geographic outreach, areas of interest and links to more information.

INTERNATIONAL CLIMATE INITIATIVE OF THE GERMAN FEDERAL MINISTRY FOR THE ENVIRONMENT, NATURE CONSERVATION, BUILDING AND NUCLEAR SAFETY

The Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) is responsible for a range of government policies working to protect the public from environmental toxins and radiation and establish an efficient use of raw materials; BMUB has advanced climate action and promoted a use of natural resources that conserves biodiversity and secures habitats.

ICI supports several EbA-related projects, including region-wide initiatives in Micronesia and Melanesia, Mesoamerica, South and South-East Asia, as well as projects specific to watershed, mountain, marine, terrestrial, and coastal ecosystems.

Since the beginning of 2008, additional funding from the auction of emission allowances has been available to the BMUB for the implementation of the International Climate Initiative (ICI). The ICI aims to cost-effectively tap existing potential for emission reductions and advance innovative model projects for climate protection.

The ICI is a key element of Germany's climate financing and its funding commitments in the framework of the Convention on Biological Diversity. The Initiative places supports climate change mitigation, including conserving natural carbon sinks to reduce emissions from deforestation and forest degradation (REDD+), adaption to the impacts of climate change and the protection of biological diversity.

VILLAGE DEVELOPMENT COMMITTEE , UNDP SUDAN

These efforts provide various co-benefits, particularly the improvement of living conditions in partner countries.

By 2015 ICI initiatives in the EbA thematic area are projected to comprise a portfolio in excess of 100m EUR, across six main ecosystems: coasts, terrestrial, watersheds, forests, mountain, and marine. ICI's broader Adaptation funding area complements EbA-specific projects (comprising 45% of the adaptation portfolio) with funding for adaptation strategies and management of climate risks. EbA elements are also frequently present in ICI projects beyond the Adaptation funding area, including climate and biodiversity.

From 2008 to August 2015, ICI/BMUB funded 25 projects with a total funding envelope of approximately 72 million Euro in the thematic area "ecosystem based adaptation". Overall, in all funding areas, the ICI funded 469 projects with 1.4 bn Euros from 2008 until August 2015. (This includes commitments from budgetary sources for all bilateral projects except Energie-und Klimafonds (Energy and Climate Fund, EKF), for EKF and multilateral projects disbursements are counted).

For more information about ICI: www.international-climate-initiative.com/en

AusAID was the agency of the Australian Government responsible for managing the country's development aid programme. AusAID was integrated into DFAT in 2013. Some multi-year programmes were begun under the auspices of AusAID, but are now administered via DFAT. As such, some residual references to AusAID may remain in this analysis.

AUSTRALIAN AGENCY FOR INTERNATIONAL DEVELOPMENT AND THE DEPARTMENT OF FOREIGN AFFAIRS AND TRADE

DFAT funds projects in Afghanistan, Bangladesh, Bhutan, Cambodia, China, Colombia, Cook Islands, Democratic Republic of Congo, East Timor, Fiji, India, Indonesia, Iraq, Kiribati, Laos, Libya, Maldives, Marshall Islands, Mongolia, Myanmar, Nauru, Nepal, Niue, North Korea, Pakistan, Palau, Papua New Guinea, Peru, Philippines, Samoa, Solomon Islands, Sri Lanka, Tokelau, Tonga, Tuvalu, Vanuatu, Vietnam, and West Bank/Gaza. Regional programmes are also in place, for North and Sub-Saharan Africa. DFAT funds EbA-related programmes in Indonesia, Vietnam, Malaysia, Philippines, East

PACC VANUATU, PHOTO: JOE HITCHCOCK

Timor, Papua New Guinea, and the Solomon Islands, as well as supporting a large portfolio of CBA projects throughout the world. DFAT's CBA projects are primarily administered under two projects: the Mekong Asia-Pacific CBA initiative (MAP CBA) in Cambodia, Laos, Sri Lanka, and Vietnam, and the Small Islands Developing States CBA initiative (SIDS CBA) with projects or planning grants in 38 countries.

The Australian Aid Annual Report of 2014 notes that innovations from 50% of the MAP CBA programmes were up-scaled and replicated. A jointly supported AusAID/UNDP-GEF collaboration with the Grand-Sable Women Planters Farmers Entrepreneurs Association in Mauritius (part of DFAT's SIDS CBA portfolio) was recognised by the Global Island Partnership with the 2013 Island Bright Spot Award for its conservation of island biodiversity and promotion of sustainable livelihoods. The award was presented at the Third International Conference on Small Island Developing States in 2014, and served to further showcase the potential for usage in similar EbA projects globally.

The four pillars of Australia's development cooperation are economic growth, state effectiveness, social development, and regional stability, with a cross-cutting focus on gender equality. The thematic areas for financing under DFAT are: disability, disaster risk reduction, economic growth, education, environment, food security, good governance, health, human rights, infrastructure, mine action, regional stability, rural development, and water and sanitation. This includes projects to help societies adapt to climate change, whilst simultaneously addressing several of these thematic areas.

For more information about AusAID and DFAT
www.dfat.gov.au/aid/Pages/australias-aid-program.aspx

CANADIAN INTERNATIONAL DEVELOPMENT AGENCY

The Canadian International Development Agency (CIDA) is Canada's agency for international development assistance in the three priority areas of food security, support to children and youth, and sustainable economic growth.

Although the agency's coverage is global, 80% of bilateral aid is directed towards the following countries and regions: Afghanistan, Bangladesh, Bolivia, Colombia, Ethiopia, Ghana, Haiti, Honduras, Indonesia, Mali, Mozambique, Pakistan, Peru, Senegal, South

SUSTAINABLE FISHING IN GOKOVA BAY, COMDEKS TURKEY

Sudan, Sudan, Tanzania, Ukraine, Vietnam, West Bank/Gaza, and the Caribbean region.

CIDA is committed to providing development assistance in the three priority areas of food security; support to children and youth; and sustainable economic growth. Projects addressing the cross-cutting issues of gender equality, environmental sustainability and good governance are preferred. The Canada Fund for African Climate Resilience is a special fund operated by CIDA in order to achieve economic growth and food security in Africa by promoting initiatives for adaptation to climate change.

The Climate Change Adaptation Facility (CCAF), established by Canada in partnership with UNDP, aims to strengthen climate-resilient approaches to agriculture and water management, with an emphasis on gender-sensitive approaches. This facility incorporates national projects in Cambodia, Cabo Verde, Haiti, Mali, Niger, and Sudan, that scale up or extend projects previously supported by the Global Environment Facility's Least Developed Countries Fund (GEF/LDCF). In addition, a global component of the CCAF promotes south-south cooperation and enhances understanding about initiatives that address adaptation, especially the gender dimensions.

The global Facility collects and analyses information, experiences, and lessons learned emanating from the six national projects to produce and disseminate knowledge that can be shared between the countries and usefully applied in other contexts. The CCAF also helps to broadly inform climate and sustainable development policies at the local, national and global levels, while promoting global exchange of information, experiences, and lessons learned.

The Japan International Cooperation Agency (JICA) is Japan's agency in charge of providing development finance and technical assistance to developing countries worldwide.

The Agency provides technical assistance, grants and loans following an inclusive development framework that focuses on good governance, accountability and

For more information about various national UNDP projects with CIDA:
www.undp-alm.org/projects/ldcf-cambodia
www.undp-alm.org/projects/ldcf-cape-verde
www.undp-alm.org/projects/ldcf2-haiti
www.undp-alm.org/projects/ldcf-mali
www.undp-alm.org/projects/ldcf-niger
www.undp-alm.org/projects/ldcf-sudan

For more information about CIDA:
www.acdi-cida.gc.ca/acdi-cida/ACDI-CIDA.nsf/eng/home

JAPAN INTERNATIONAL COOPERATION AGENCY

PACC COOK ISLANDS, PHOTO: JOE HITCHCOCK

local ownership.

The main thematic areas to receive financing from JICA are: economic policy, education, energy, environmental conservation, fisheries, gender equality, health, natural disaster management, peace-building, poverty reduction, social security, South-South cooperation, transportation, and water and natural resources.

Japan also funds the Satoyama Inititaive, including COMDEKS, the Community Development and Knowledge Management, which is a global effort to empower communities to manage landscapes sustainably with the vision of realising 'societies in harmony with nature' to build their resilience, including to climate change.

For more information about JICA:
www.jica.go.jp

COMMUNITY DEVELOPMENT AND KNOWLEDGE MANAGEMENT

Japan also funds the Satoyama Initiative, including COMDEKS, the Community Development and Knowledge Management, which is a global effort to empower communities to manage landscapes sustainably with the vision of realising 'societies in harmony with nature' to build their resilience, including to climate change COMDEKS was launched in 2011 as the flagship of the Satoyama Initiative, a global effort to promote sustainable use of natural resources in the landscapes worked in and relied upon by rural communities. The COMDEKS Programme is designed to support local community activities to maintain and rebuild critical production landscapes and seascapes.

As the world faces increasingly urgent, complex and intersecting economic, environmental, and social challenges, there has been an increase in the degradation of landscapes and ecosystem processes, exacerbated by a loss of biodiversity and the pressures of accelerated climate change. COMDEKS seeks to reverse these trends by supporting community organizations in 20 countries to revitalize their landscapes through participatory land use planning that builds their capacities for governance and adaptive management.

The target landscapes and seascapes in these countries represent a wide variety

PACC COOK ISLANDS, PHOTO: JOE HITCHCOCK

of ecosystems: watersheds in Cambodia, Ecuador, and Costa Rica; inland water systems such as lakes in Malawi, Niger, and Kyrgyzstan; agropastoral systems in Ethiopia, Cameroon, and Brazil; mountain ecosystems in Bhutan, Ghana, India, and Nepal; coastal seascapes in Fiji, El Salvador, Indonesia, and Turkey; and grasslands in Mongolia and Namibia.

Funded by the Japan Biodiversity Fund, the five-year programme (2011-2016) is implemented by UNDP, in partnership with the Ministry of the Environment of Japan, the Secretariat of the Convention on Biological Diversity, and the United Nations University —Institute of Advanced Studies of Sustainability. Grants are delivered through the GEF Small Grants Programme in each country, encouraging maximum country and community-level ownership and initiative.

Community-based work at a landscape level can be an effective tool to serve local development needs and meet conservation goals simultaneously. COMDEKS employs an integrated landscape approach to development, aimed at increasing the ecological resilience of local ecosystems – including agroecosystems – as well as enhancing the social, economic, and climate resilience of the communities living and working within them. The resilience of ecosystems within the landscape reflects a community's ability to continue to deliver ecosystem services—such as water, soil fertility, pollination, and biological productivity—in the face of human pressures as well as external stressors such as climate change.

For more information about COMDEKS: www.comdeksproject.com

KNOWLEDGE PRODUCTS

Building on UNDP's Knowledge Management Strategy Framework 2014-2017, knowledge products can take many different forms depending on the audience and their information needs. UNDP recognizes that knowledge is both a key output that it delivers to its clients, as well as a key resource that the organization needs in order to deliver its results. Sharing of knowledge and good practice on EbA generated through projects and programmes is emphasized by the German Government's International Climate Inititave (ICI), the Canadian Government's Climate Change Adtation Facility (CCAF), the Japanese Government's Satoyama

PACC COOK ISLANDS, PHOTO: JOE HITCHCOCK

Initiative and COMDEKS, and other EbA interventions.

The knowledge products resulting from identified EbA projects are delineated in the final column of the table comprising Annex 1. Recognising that one of the most important aspects of UNDP-supported projects is the knowledge products developed, a complete compendium of knowledge products from each project has been highlighted. They include project reports, country reports, strategy documents, evaluations and phase assessments, success stories, project briefs, videos, press releases, brochures, ProDocs, consultant reports, monitoring mission reports, posters, factsheets, progress reports, technical reports, maps, National Adaptation Plans of Action (NAPAs), and photo essays.

For meaningful learning and knowledge sharing, knowledge products should be of high quality with a clearly identified audience and purpose. Effective means of dissemination is as important as the development of knowledge products. Effective knowledge management and the delivery of knowledge products means using the resource 'knowledge' more effectively to improve the way UNDP operates and to achieve greater impact in project objectives and development outcomes.

"Learning and sharing thus depend on each other as complementary and mutually re-enforcing elements of a virtuous learning cycle which underpins evidence collection, reflection, knowledge generation, dissemination and use, all the while sharing what was learned and learning from what is shared."[7]

7 UNDP's Knowledge Management Strategy Framework 2014-2017, 2014 Pages 8-9

PACC VANUATU, PHOTO: JOE HITCHCOCK

RECOVERY TO CLIMATE CHANGE RISKS IN SRI LANKA, PHOTO: UNDP SRI LANKA

HIGHLIGHTS OF UNDP'S EBA WORK

Here are ten examples of national-level projects where UNDP has supported countries to access funds from various sources for EbA work. These projects have shown positive reuslts in helping communities and societies enhance their capacity to adapt to increasing climate variability and negative effects of climate change.

INTEGRATION OF CLIMATE CHANGE RISK AND RESILIENCE INTO FORESTRY MANAGEMENT IN SAMOA (ICCRIFS)

ISSUES

Although much has been accomplished in Samoa in disaster risk management during the past 20 years, communities in Samoa are still facing increasing challenges in terms of addressing climate-related disaster risk. There is a need to strengthen the capacity of Samoan communities to build further resilience to the impacts of climate change and extreme weather events, especially in rural areas.

ACTIONS

This UNDP-supported, GEF-LDCF financed project, Integration of Climate Change Risks and Resilience into Forestry Management in Samoa (ICCRIFS), is working to increase the resilience and adaptive capacity of Samoa's forest areas, and the communities that depend on them for livelihoods. The project aims at fostering a shift from current unsustainable forestry and agro-forestry practices towards a more sustainable and climate resilient system, with forestry techniques adjusted to current and anticipated changes in climatic conditions. To this end, the project aims at implementing alternative forestry management approaches and techniques, supported through the creation of an enabling environment to build institutional and technical capacities.

The objective of the project is to strengthen institutional capacities to identify and address climate change risks for the management of native forests and agro-forestry areas. The focus of the project is four-fold: to integrate forest adaptation measures in forestry policy frameworks; to implement community-based adaptation measures across 26 villages with stewardship over upland and lowland forests; to develop National Park and community upland forests adaptation plans and capture, analyse and disseminate lessons learned for adoption across Samoa's communities.

GREENING THE DRY ZONE, MYANMAR, PHOTO: ANDREA EGAN

EXPECTED IMPACTS

This initiative is being implemented through the active engagement of all relevant line ministries including the Ministry of Natural Resources and Environment (MNRE), Ministry of Agriculture and Fisheries (MAF), Ministry of Finance (MoF), Fire and Emergency Services Authority (FESA), Ministry of Women, Communities and Social development (MWCSD) and Ministry of Foreign Affairs and Trade (MFAT), thereby ensuring cross- sectoral coordination throughout the policy-making, capacity building and implementation activities. The community-level implementation is delivered through the engagement of community leaders in the selected project areas, with the support of national Non-Government Organizations (NGOs) active in rural development and environment issues. The active involvement of regional organizations, such as the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Secretariat of the Pacific Community (SPC), ensures provision of regional expertise on the technical and policy aspects of the initiative.

ISSUES

According to the Asian Development Bank, Myanmar is among the region's most vulnerable countries to climate change. In the country's Dry Zone, home to about 18 million people, drought and water scarcity are the dominant climate-related hazards, causing it to become the most food insecure region of the country. Irregular dry spells and drought have resulted in recurring extreme water shortages, which in turn constitute a constant threat to the livelihoods of the rural poor.

ACTIONS

UNDP is supporting efforts to secure water resources and reduce food insecurity in 42,000 households in five of the most vulnerable townships of Myanmar's Dry Zone. With financial support from the Adaptation Fund (AF), UNDP and the Ministry of Environmental Conservation and Forestry are addressing environmental risks through community-based and community-driven adaptation. By reducing the risks and effects from recurring droughts, floods and erosion, the Myanmar government has an ambitious target of supporting nearly 250,000 people in the area.

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UNDP-ALM Project Profile:
www.undp-alm.org/projects/ldcf-samoa-iccrifs

For additional Information:
www.mnre.gov.ws/index.php/divisions/forestry-division/iccrifs

ADDRESSING CLIMATE CHANGE RISKS ON WATER RESOURCES AND FOOD SECURITY IN THE DRY ZONE OF MYANMAR

GREENING THE DRY ZONE, MYANMAR, PHOTO: ANDREA EGAN

This project, Addressing Climate Change Risks on Water Resources and Food Security in the Dry Zone of Myanmar, operates in five townships: Shwebo and Moneywa in the Sagaing region, Myingyan and Nyaung Oo in the Mandalay region, and Chauk in the Magway region. These townships were selected on the basis of observed temperature extremes, frequency of drought over time, and the impacts of these climatic parameters on food security. The direct beneficiaries of the project are marginal farmers and landless workers whose access to arable land is threatened by erosion and land degradation. Special emphasis is being placed on women - particularly female-headed households - within this vulnerable group.

To help the people of the Dry Zone enhance their adaptve capacity, one of the key project initiatives is to enhance water capture and storage in 280 villages, providing continuous freshwater availability. The increase in water availability will be further leveraged by promoting climate-resilient agricultural and livestock practices. These efficiency measures will allow the scarce water of the Dry Zone to go farther and reach more of the most vulnerable households.

Efforts are also underway to rehabilitate 4,200 hectares of micro-watersheds through farmer-managed natural regeneration strategies, and establishing community-based agro-forestry plots on 7,650 hectares of private and communal lands. These initiatives will ensure the conservation of the region's soil and water.

EXPECTED IMPACTS

Taking a strategy based on principles of local empowerment, this project is making key technical investments in targeted townships. Subsistence farmers will benefit from improved water supply on drought-prone fields, access to diversified and improved crops for fields and home gardens, expanded agro-forestry services, diversified livestock rearing, and arrested soil erosion and watershed protection.

The landless will benefit from diversified livestock assets, improved ecosystem services, and greater opportunities for paid work in the water, forestry, and agroforestry related sectors.

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www. undp-alm.org/projects/af-myanmar


PHOTO: UNDP GUINEA

INCREASED RESILIENCE AND ADAPTATION TO ADVERSE IMPACTS OF CLIMATE CHANGE IN GUINEA'S VULNERABLE COASTAL ZONES

ISSUES

Guinea's coastal zone is the most populous region in the country, comprising 38% of the total population of the country. The impacts of climate change on the Guinean coastal zone are predicted to adversely affect agricultural production and economic security. Lower Guinea is expected to experience an increase in temperature ranging from 0.2 to 2.0 °C. The rising temperatures are expected to be coupled with rising sea levels and salt water intrusion, increased rainfall variability, and more frequent drought periods, all of which pose threats to Guinea's long-term development.

In Lower Guinea, mangrove forests are predicted to be highly affected by climate change. Because the mangrove forests depend highly on river flows and surface waters, a reduction in rainfall could greatly reduce their fertility and productivity. This is troubling since the mangrove ecosystem plays a fundamental role in maintaining the coastal zone. Additionally, sea level rise is projected to result in the flooding of an important area of mangrove forests. Agricultural production is also very likely to suffer due to sea level rise. Predicted impacts could include infrastructure destruction, saltwater intrusion, shortages in potable water, loss of agricultural land and decreased crop yield (especially in rice production which accounts for 42% of the entire agricultural sector). Fishing is another sector that will be affected by rising sea levels and temperature. The productivity will greatly reduce, and traditional fish smoking practices will become impossible due to their dependence on mangrove wood.

Further, flooding and rising sea levels could displace approximately 30% of the coastal population while destroying infrastructure and reducing the supply of potable water, which could facilitate the spread of diseases. The forecasted climate change impacts will cause, among other things: loss of income, decrease in the quality of life, population displacement, and decrease in agricultural production.

ACTIONS

In response to these issues, UNDP, with the Ministry of Environment and

Sustainable Development and the National Council for the Environment in Guinea is working to increase resilience to the adverse impacts of climate change in Guinea's vulnerable coastal zones. Funded by the Global Environment Facility's – Least Developed Countries Fund (LDCF), the project is facilitating a programmatic approach to climate change by mainstreaming adaptation into national and sub-national policies and strategies. Additionally, it also aids the implementation of small scale pilot adaptation initiatives at the community level.

This project, Increased Resilience and Adaptation to Adverse Impacts of Climate Change in Guinea's Vulnerable Coastal Zones, recognises that the overall enabling environment must support villages and communities as they adapt to climate change. Its objective is to strengthen the protection of vulnerable Guinean coastal communities against the negative effects of climate change.

The project specific objectives aim to:

1. Improve the capacity to plan for and respond to climate change in coastal areas.
2. Develop the adaptation capacity of key socio-economic groups.
3. Implement local adaptation responses through demonstrations.
4. Disseminate the experience and lessons of the project.

EXPECTED IMPACTS

These and future measures will strengthen the capacities of the coastal zones to be more adaptable to climate change. It is very important that access to information become universal and every participant has a chance to contribute through a decentralised and accessible platform. It is also important that the risks of climate change are addressed systematically and consistently. Thus, the project seeks to integrate long-term planning into national and regional development strategies at all levels. It will also facilitate co-ordination in key areas such as disaster risk management and environmental and development planning.

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UNDP-ALM Project Profile:
www. adaptationlearning.net/project/guinea_ldcf

PACC TUVALU, PHOTO: JOE HITCHCOCK

TUVALU-NATIONAL ADAPTATION PLAN OF ACTION 1 SUPPLEMENT

ISSUES

Tuvalu in the Pacific is experiencing increasing climate change-induced damage to human and economic development, with adverse effects already experienced by its small and dispersed communities living in highly vulnerable, low-lying atolls. There is a high risk of further climate change-related damage including irreversible loss of habitable areas of the country. Tuvalu's natural resource base and the livelihood opportunities of its communities are seriously undermined by the combined effects of sea-level rise, increased frequency and intensity of tropical cyclones, rapidly progressing coastal erosion, increasing crop damage, and reductions of fresh water supply.

While Tuvalu is unlikely to avoid the consequences of climate change, the threat that climate change poses to the country consists, at its root, of limited awareness within civil society and public officials about the dangers climate change poses to traditional lifestyles and livelihoods. At the national level there is little integrated coastal zone management policy that incorporates climate resilience.

ACTIONS

Starting in 2010, the Tuvalu NAPA-I project is the first national project to address the priorities identified in the National Adaptation Programme of Action for Tuvalu. It is a UNDP initiative, implemented in partnership with the Government of Tuvalu, with US$3.3 million in financing from the Global Environment Facility's Least Developed Countries Fund (LDCF).

Through the four years of project implementation, there is one primary objective: to increase the protection of livelihoods in coastal areas from dynamic risks related to climate change and climate variability in all inhabited islands of Tuvalu. To achieve this there are three foci:

1. Climate resilient policy development and capacity building;
2. Implementation of community-based adaptation projects;
3. Knowledge capturing, management and dissemination.

PACC TUVALU, PHOTO: JOE HITCHCOCK

The project is oriented towards helping the national government and each island Kaupule (island council) incorporate climate resilience within its coastal zone management program, budgets and plans. Each individual project has been the result of thorough community-based preparatory work and scientific assessment. These projects are a culmination of specific consultation with island Kaupules in order to generate tailor made projects for each situation and modified to suit current priorities. Some projects initiated at the primary phase include 'greenbelt' coastal protection projects, water security enhancement projects in four target islands, and sustaining local cultivation of taro.

Key stakeholders including public administration, island Kaupules, community members, and NGOs are encouraged to participate in the planning, implementation, and sustainable development of future adaptation plans. They are working in close cooperation with the newly established National Climate Change Advisory Board to co-ordinate ministerial work and guide high-level initiatives. Community participation in managing coastal plantations and long-term agreement with the government is essential to reduce Tuvalu's vulnerability to climate change.

EXPECTED IMPACTS

Through this initiative, the Government of Tuvalu has worked to strengthen institutional capacities and address key institutional gaps in the following areas:

1. Build human resources in all relevant departments;
2. Increase financial resources for implementation of programmes and projects;
3. Improve specific legislative and regulatory instruments along with the necessary technical capacity and resources to support programs and projects;
4. Strengthen coastal management programs that recognise the integrated nature of climate change impacts;
5. Improve co-ordination between government ministries and

PACC TUVALU, PHOTO: JOE HITCHCOCK

departments and the island level Kaupules.

In short, a major focus of the project is to increase the institutional capacity at all levels of public administration, Kaupules and communities with policy support to plan for and respond to climate change related damage. Moreover, the project focuses on implementing community-based adaptation measures and systematic documentation, analysis and dissemination of lessons learnt from the policy processes and adaptation plans. Fundamentally, there needs to be a concerted effort to strengthen public policy to guide climate-sensitive development in coastal areas, organise communities effectively, and channel resources to help communities implement community based-solutions.

The project has been effective in enhancing general awareness on the impacts of climate change and technical understanding of possible adaptation options in the government institutions involved. This consists of a set of initial awareness-raising and consultation activities (including radio programmes and consultations co-ordinated by Community Organizers hired by the projects and placed within Kaupules in each island), as well as direct engagement in the implementation of some initial adaptation actions (especially home gardening and coastal afforestation, etc.).

Institutional capacities and policy processes have been enhanced through establishing a National Climate Change Advisory Committee as an overarching coordination mechanism, and through the initiation of the development of a National Climate Change Policy, an Action Plan on CCA-DRM and a review of climate change integration considerations.

AusAID's contribution of $1 million USD, referred to as "NAPA-I +", is intended to build on existing project delivery mechanisms and national capacities established through the NAPA-I project. The expected impact is to up-scale the practical adaptation measures at the community level and efficiently replicate the current pilot programme through the LDCF-funded project.

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www. undp-alm.org/projects/ldcf-tuvalu

ELMAHARAT, NORTH KORDOFAN STATE, SUDAN

BUILDING CLIMATE-RESILIENCE IN AGRICULTURE AND WATER SECTORS IN SUDAN

ISSUES

Sudan's Initial National Communication identified agriculture, water and health as the highest priority sectors where urgent and immediate action is needed to manage the risks of increasing climatic variability and long-term climate change. Sudan's National Adaptation Programme of Action (NAPA), submitted to the UNFCCC in July 2007, identified 32 urgent priority project profiles in these sectors which, according to widespread local stakeholder consensus, are anticipated to reduce the increasing vulnerability of the rural communities to current and future climate change risks.

ACTIONS

The goal of the project is to enhance Sudan's resilience and reduce vulnerability to climate change impacts. The objective of the project is to implement an urgent set of adaptation measures, building off priority measures identified during the NAPA process which will build the resilience and adaptive capacity of rural communities relative to their agricultural and water resource management practices, and relative to current and future climate risks.

With funding from the Global Environmental Facility's Least Developed Countries Fund, the government of Canada has provided additional funds to scale up and replicate successful approaches. The jointly funded project Building Climate-Resilience in Agriculture and Water Sectors in Sudan targets five critical agro-ecological zones in Sudan in order to encompass the complexity of productive systems and modify current coping strategies that are being undermined by increasing climate variability and reoccurring climatic hazards (such as droughts and floods).

The project is working to introduce concrete innovative adaptation measures, such as water capture, borehole irrigation, in-situ re-introduction of more stress resistant breeds and crop varieties, sand stabilisation, and other land management and agronomic techniques. These will help increase robustness and resilience of highly vulnerable rain fed farming and pastoralist systems to climate change risks. By demonstrating viable and cost-effective adaptation options, the project will also

PRESCRIBED BURN, PHOTO: UNDP SOUTH AFRICA

assist the government of Sudan to improve its food security policies and address critical social vulnerabilities that often underpin resource-based conflicts.

EXPECTED IMPACTS

The project will have three major outcomes. First, the resilience of food-production systems and food-insecure communities will be enhanced. This will achieved principally through the implementation of pilot adaptation measures. Second, institutional and individual capacities to support and promote climate risk management responses in the agriculture sector will be strengthened by capacity building to incorporate climate change risks into on-going and future national development planning. Third, a systematic understanding of lessons learned and emerging best practices will be synthesized in order to provide important lessons on what does and does not work in improving the resilience of vulnerable communities in Sudan.

The first outcome targets the implementation of proactive adaptation measures to enhance the resilience and adaptive capacity of smallholder farmers in the five areas who are particularly vulnerable to the impacts of climate change, especially drought. The second and the third outcomes target the adaptive capacity of the individuals and institutions responsible for integrating climate risks into ongoing development planning.

ISSUES

Wild fire occurrence in South Africa is a function of vegetation (fuel availability), climate conditions (dry spell duration, air humidity, wind speed and air temperature), and ignitions (lightning or human sources). While wild fires are a natural feature of fire-driven ecosystems, changes in climate will have adverse effects through altering the future occurrence of wild fires, and the area burned, in various ways that involve weather conditions conducive to combustion, fuels to burn, and ignition agents.

These influences may be summarized as follows: (i) increased local climate variability and weather extremes are likely to be characterised by decreased intensity of

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REDUCING DISASTER RISKS FROM WILDFIRE HAZARDS ASSOCIATED WITH CLIMATE CHANGE IN SOUTH AFRICA

FYNBOS, PHOTO: UNDP SOUTH AFRICA

rainfall and moisture in the dry period; (ii) the predicted increases in surface air temperatures as a result of climate change will increase rates of evapotranspiration, and desiccate the fuel load; (iii) the increase in spatial and temporal variability in wind patterns are likely to result in hot and dry winds, notably in the interior areas of the country; (iv) an increased incidence of lightning storms; and (v) the increased carbon uptake in vegetation (notably in invasive alien species) will increase the rate of increase of quantity of combustible biomass. Together, these drivers will influence the number of days where the risks of fire are dangerously high.

ACTIONS

The goal of the project, Reducing Disaster Risks from Wildfire Hazards Associated with Climate Change in South Africa, is to reduce the country's environmental, social, and economic vulnerability to the increased incidence of wildfires in order to adapt to climate change effects. This is being achieved through a biome-scale change in the fire management approach in the Fynbos Biome, from reactive fire-fighting to proactive integrated fire management (IFM), including managing the ecosystem through controlled burns.

The Fire Wise Concept teaches people how to adapt to climate change impacts effectively by learning to live with wildfire, encouraging neighbours to work together, and encouraging people to take action now in order to prevent losses later. The programme endeavours to create a paradigm shift from fearing fire to living with fire in a safe way.

The wildland/urban interface zone (areas where human habitation borders and mixes with open veld) is increasing. Under conditions of climate change, with increasing fire-promoting weather and the correspondingly stretched firefighting resources on fire weather days, many of these areas cannot depend upon authorities to protect or respond during a fire and therefore need to adapt behaviour accordingly. Increasing the coping skills and resilience of such communities is an adaptive measure against the likelihood of increased fire risk under conditions of climate change.

PACC VANUATU, PHOTO: ANDREA EGAN

Underpinning the approach to developing fire-adapted communities is the expectation that, under the anticipated conditions of climate change in the Fynbos Biome, communities will need to take ownership of their fire risk potential by taking steps to reduce their risk via responsible action.

The focus is to establish four selected Fire Wise communities within fire protection areas which would be trained, empowered, and mentored to put prevention plans in place and thus to be better prepared when wildfires occur. The intervention plan encourages a 'fire wise' approach for communities living within registered Fire Protection Associations who are vulnerable to wildfire. The primary desired outcome of the plan is to motivate and encourage self-help projects, aimed at building capacity and resilience to living within a fire–adapted landscape.

EXPECTED IMPACTS

To reduce the country's environmental, social and economic vulnerability to the increased incidence of wildfires in order to adapt to climate change effects, by catalysing a biome-scale change in the fire management approach from reactive fire-fighting to proactive IFM, including managing the ecosystem through controlled burns.

This is being achieved through:

1. Early warning and hazard risk information system put in place to deal with the additional fire hazard risks associated with climate change.

2. Paradigm Shift from reactive firefighting to integrated fire management system to cope with climate change-induced fire hazards and capacity built at local level to manage the predicted increased incidence and extent of fire, leading to the reduction of fire risk over 150,000 km2 in the Western Cape, Eastern Cape, and Free State Provinces.

3. Innovative risk reduction interventions implemented, in close cooperation with the insurance industry, with coverage of no less than 20,000 km2.

4. Good practices on adaptive management of fire risks disseminated.

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TSEREN DASHTSEREN, MONGOLIA

ECOSYSTEM BASED ADAPTATION APPROACH TO MAINTIAINING WATER SECURUTY IN CRITICAL WATER CATCHMENTS IN MONGOLIA

ISSUES

Mongolia is a land-locked nation covering 1.564 million km2, sharing extensive borders with Russia and China. It has several major eco-regions, and is a globally important watershed with three major water systems. Unsustainable agriculture and development practices already inflate Mongolia's natural resource use beyond sustainable limits. If current trends continue and unsustainable management practices persist, the vulnerability of Mongolia's rural communities will increase in tandem with the deterioration of land and water resources and associated ecosystem services. As such, the additional impacts represented by climate change will be very problematic for Mongolia's already vulnerable ecosystem services.

In the grassland landscapes of the Altai and Eastern Steppe regions, both part of the 'Global 500 Ecoregions' characterised by unique ecosystems and biodiversity, the older generations have witnessed clear environmental changes over recent decades. Wildlife numbers have decreased significantly and the pasture conditions are much poorer. Many streams and lakes have dried up. The proximate cause of pasture degradation is overgrazing, resulting from a doubling of livestock numbers in the last 30 years, spurred by the transition from communism to a market-oriented economy in 1990. Fewer herders practice traditional rotational grazing (consisting of moving seasonally in search of good pasture, thereby leaving time for other pasturelands to recover).

Herders have noticed a marked change in rainfall patterns and an increase in temperatures. The hydrological regime has also changed, altering the volume and timing of river flow and flood regimes. The soil infiltration rate and water storage capacity have declined, resulting in deteriorating pasture quality and quantity, and vice versa. In addition, the occurrence of summer droughts and extremely severe winter weather events called 'dzud' has increased. The 2010 'dzud' killed more than 25% of the entire country's livestock, impacting 700,000 people. Changes in climatic patterns are already having noticeable impacts on herders, exacerbating serious land degradation problems.

PHOTO: UNDP MONGOLIA

For people living in this landscape, there can be no livelihood if the surface water and pasture disappear. And for these resources to continue to be available for present and future generations, it is essential to ensure that the ecosystems in these remain healthy and resilient enough to cope with climate change.

ACTIONS

The project Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia, funded by the Adaptation Fund and supported by the Government of Mongolia and UNDP, addresses exactly this. It aims to support the government and local communities to maintain water provisioning services supplied by mountain and steppe ecosystems by internalising climate change risks within land and water resource management regimes. The project applies the principles of Ecosystem-Based Adaptation (EbA) - a range of strategies for managing ecosystems to increase resilience and maintain essential ecosystem services and reduce the vulnerability of people and the natural environment to climate change impacts.

Two eco-regions are targeted: the Altai Mountain/Great Lakes Basin and the Eastern Steppe. The Altai Mountain/Great Lakes Basin covers nearly 288,000 km2. The Eastern Steppe covers nearly 445,000 km2. Local level interventions are targeting two watersheds within these broader eco-regions. The target landscapes represent a significant portion of Mongolia's water resources and encompass an array of representative ecological, social and economic samples in the country, with the potential for generating a variety of outputs and lessons. Both eco-regions and watersheds are emblematic of Mongolia's barriers to resilience and challenges to concrete adaptation, e.g., over-grazing, riparian disturbance, and over-appropriation. The specific project locations were selected because they are: (1) distinct, offering two very different ecological zones for establishing EbA practices; (2) representative of key climate change challenges; (3) appropriately scaled, both in terms geographic size and population, to allow for substantial, landscape level improvements within budget constraints; and, (4) strategic in that the locations are priorities for government action and allow for building upon and/or coordinating with on-going programming.

MT EBA PERU, PHOTO: UNDP PERU

ECOSYSTEMS BASED ADAPTATION IN MOUNTAIN ECOSYSTEMS IN PERU

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The project design is guided by the notion that societal adaptation is best achieved by ensuring the continued provision of ecosystem services and establishing the capacities required to identify and address newly arising challenges. It seeks to demonstrate a range of local and landscape level strategies while achieving meaningful, replicable, and sustainable results within time and budget constraints.

EXPECTED IMPACTS

Working with communities, local and national governments, and NGOs in the Altai and Eastern Steppe landscapes, the project supports the integration of ecosystem resilience into land use and water resource planning and management at the landscape level. It supports evidence-based decision making through improved knowledge and understanding of ecosystem dynamics, and resilience and impact of different land uses. The project also assists community actions to implement EbA principles and practices for the long-term sustenance of their livelihoods. At the national level, the project supports mainstreaming of the EbA approach in the country's adaptation framework and related sector policies.

ISSUES

Peru currently faces various climate hazards, such as droughts, heavy rain, floods, landslides, frost and hailstorms; many of these events are related to occurrences of the El Niño Southern Oscillation (ENSO). Over the rest of this century, temperatures in Peru are expected to increase by 2- 3°C, depending on the region. Rainfall projections vary widely by region, with increases or decreases of up to 30 per cent expected as early as 2030 in some areas.

Responding to these projections, Peru has developed two National Communications to the United Nations Framework Convention on Climate Change (UNFCCC) that outline its adaptation needs and priorities. Its First National Communication highlights the vulnerability of Peru's freshwater resources and glaciers, marine ecosystems, agriculture, infrastructure and, in particular, concerns related to human health and wellbeing. It is worth noting, however, that the main hazard highlighted

MT EBA PERU. PHOTO: UNDP PERU

in the analysis is El Niño, whereas climate change is only prominently mentioned in the context of water and glaciers. In its National Climate Change Strategy, released between the two National Communications, Peru mentions the sectors of health, agriculture, coasts and fisheries, infrastructure, forests, and ecosystems in the context of vulnerability and adaptation. The Second National Communication presents vulnerability and adaptation studies for water, biodiversity and the Amazon, agriculture and fisheries, as well as services, energy, and transport.

Through its First National Communication, Peru proposed the following adaptation measures:

- Infrastructure: Construction of dams and tunnels to avoid glacier lake outburst floods; prevention and preparedness for risks to infrastructure.
- Health: Use of technology transfer; identification of vector diseases; development of vaccination and related capacity building.

Moreover, the Second National Communication proposes a series of actions that are meant to flow into the forthcoming National Adaptation Plan. These actions include: climate scenarios at smaller scale, taking stock of and exchanging experiences, risk analysis, cost analysis, adaptation mainstreaming, pilot projects on vulnerability reduction, proposals for action in the areas of tourism and aquaculture, land use planning, inter-sectoral and inter-institutional coordination (especially in the domains of education and health), and ecosystems conservation.

ACTIONS

The Nor Yauyos-Cochas Landscape Reserve in Peru is located in the Lima and Junin regions in the high Andean area of the upper Cañete and Pachacayo river basins. The reserve is a living landscape of significant conservation value, in which local communities maintain their ancestral ways in harmony with nature. The climate is variable due to altitude (2300-6000 metres above sea level) and annual rainfall varies 500-1000 mm. The population living in the Reserve is confined to 12 communities with an estimated population of 10,390. The main economic activity


MT EBA PERU. PHOTO: UNDP PERU

of these communities is agricultural and livestock production for local subsistence.

The Mountain Ecosystem-based Adaptation programme (EbA) is a collaborative initiative of the United Nations Development Programme (UNDP), the International Union for Conservation of Nature and Natural Resources (IUCN) (through its implementing partner, the Mountain Institute (TMI) and the United Nations Environment Programme (UNEP), funded by the Federal Ministry for the Environment, Nature Conservation, Public Works and Nuclear Safety of the German Government (BMUB). In Peru, the programme is run by the Ministry of Environment of Peru (MINAM) and is implemented in the Nor Yauyos-Cochas Landscape Reserve (NYCLR), with support from the National Service for Protected Natural Areas (SERNANP).

EXPECTED IMPACTS

The objective of the Peru pilot project is to reduce the vulnerability of Peru to climate change impacts through piloting EbA options, with particular emphasis on mountain ecosystems in the Nor Yauyos-Cochas Landscape Reserve.
It is working to specifically support 4 outputs:

- The development of decision making tools for ecosystem based adaptation for assessing ecosystem resilience.
- Field testing the tools in the pilot countries.
- Making investments in and building capacity for EbA at select demonstration sites.
- Establishing the economic benefits and financial costs of EbA, to guide national policies.

Three EbA measures that are being implemented in the reserve include: a) Vicuña management to produce animal fibre, b) Community-based sustainable native grasslands management, including livestock management, and c) Community-based sustainable water management, including (ancestral) hydrological infrastructure, and wetland and grasslands restoration. These measures, prioritised

FARMING IN BURKINA FASO

using different methods, approaches and processes, aim at developing a sustainable livestock management regime that facilitates resilience of both ecosystem and people to climate change. This would benefit mainly natural grasslands known as bofedales (wetlands) and pajonal/ puna grassland, which supply the largest amount of ecosystem services for the population, as these support livestock production — the major economic activity in the area, and also help maintain and regulate downstream water supply. Likewise, both ecosystems are the ones most pressured by livestock grazing, and are potentially the most seriously threatened by the adverse effects of climate change, according to the Vulnerability and Impact Assessment conducted. Sustainable livestock management can improve the economy of the NYCLR population, and protect the water catchment, increasing the people's adaptive capacity under the future scenario of a changing climate.

ISSUES

Environmental issues are evident throughout Burkina Faso. The eastern and south-western parts of the country, which generally have more favourable weather, are increasingly hit by high temperatures and periods of drought. The government is helping villagers dig wells and build small water reservoirs to better utilise the country's scarce water resources.

Human activities like excessive cutting of trees, overgrazing of livestock, and more intensive farming, deepen the problems. Burkina Faso's NAPA identifies the vulnerability of the agriculture sector to climate change, including variability, as a key national priority for economic development.

Assessments undertaken during the NAPA process and the Initial National Communication (INC) demonstrated that the regions of Sahel, Middle -West, Mouhoun, Cascade and Middle -North, all located in the Sahelo-Soudanian climatic zone (where the annual rainfall ranges from 200 to 750 mm) , are likely to be worst affected. Two major long-term risks have been identified, including (i) the reduction of the annual rainfall by 3.4% (2025) to 7.3% (2050) (this includes the reduction of

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IMPROVING SERVICES AND FUNCTIONS DELIVERED BY ECOSYSTEM THROUGH A CHANGING CLIMATE AND INCREASED CLIMATE VARIABILITY IN BURKINA FASO

WATER COLLECTION, BURKINA FASO

precipitation levels by 20-30% (by 2050) between July and September, key months for crop growth); and (ii) the increase of average temperature by 0.8° C (2025) to 1.7° C (2050). Despite a number of autonomous measures to overcome current climate pressures, anticipated climate change, including variability, is likely to compound problems facing the sector even further. Given the dominance of the agriculture sector, with 86% of the working population engaged in pastoral and agro-forestry activities (accounting for 40% of the national GDP), adaptation is of paramount importance to Burkina Faso.

ACTIONS

This project, 'Strengthening Adaptation Capacities and Reducing the Vulnerability to Climate Change in Burkina Faso', recognises that measures to adapt to climate change must first and foremost be taken at the household and village level. The project therefore takes the community as a key entry point, and as the key drivers for change. The project also recognises that in most parts of rural Burkina Faso the agriculture, livestock, and agro-forestry sectors are fully integrated and must be developed as a whole - it is not possible to address either agriculture, livestock, or forestry in isolation. Furthermore, in rural Burkina Faso, the combined agriculture, livestock-raising and agro-forestry sector is by far the most important element in the socio-economy, and there is a large equivalence between community development and development of this sector. Accordingly, it is valid to take community development as an initial entry point for development of the agriculture, livestock-raising, and agro-forestry sectors.

EXPECTED IMPACTS

The project is working to improve local capacity to plan for and respond to climate changes in the agro-silvo-pastoral sector. These efforts include revising the legislative, policy and planning/programming framework to account for adaptation to climate change, training community level extension agents with the knowledge and tools for integrating climate change into farm level agro-silvo-pastoral activities, and strengthening the capacity to collect and manage climate data in order to


UNDP BURKINA FASO

provide accurate forecasts to local areas.

Specifically, in the Mounkuy Village, Mouhoun Province, the project is assisting the natural regeneration of forestland, and developing 30 hectares of land for fodder production each year. Wells and water troughs for livestock have been established and in-depth trainings on the practices and measures to adapt agriculture, livestock raising and forestry to climate change adaptation have been conducted.

In the Souri Village, of the Mouhoun Province, the project is developing and testing new crop varieties (e.g. of corn, sorghum, sesame, black-eyed peas) to be trialled on local farm-experimental plots

In Safi Village, Namentenga Province, the project is developing and promoting family 'African vegetable gardens', based on drip irrigation and introduction of new crops (palm dates, vegetables, jujube), and intensifying production of Baobab leaves, as a nutritional supplement and as fodder.

In Kobouré Village, Namentanga Province, the project is establishing a multi-use nursery garden for use by local vulnerable and under-privileged groups. The aims of this nursery is to provide a supply of seeds and seedlings to the village for renovating fodder production plots, protecting river banks and watering points from sand invasion and degradation

In Tin-Akoff Village, Oudalan Province, the project is working to protect river and pond banks through bush and tree planting and protection, establishing fodder gardens and a solar powered community centre.

In order to ensure that lessons learned and best practices are collected and disseminated, the pilot villages are working to regularly exchange information and experiences. This information will also be shared with local partners and international agencies (including the scientific community).

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MOMBIN VILLAGE NURSERY, UNDP HAITI

STRENGTHENING ADAPTIVE CAPACITIES TO ADDRESS CLIMATE CHANGE THREATS ON SUSTAINABLE DEVELOPMENT STRATEGIES FOR COASTAL COMMUNITIES IN HAITI

ISSUES

The combination of environmental destruction, extreme poverty and rapid population growth raise the risk of new challenges in the island republic. According to a 2015 report on climate vulnerability , Haiti was ranked the 6th most vulnerable country in the world to climate change.

Anticipated increases in sea levels and sea surface temperatures, as well as a higher frequency of natural disasters (droughts, floods, and hurricanes), are likely to cause increased beach erosion, salinisation of fresh water aquifers and estuaries, coastal erosion, and increased coral reef bleaching across the island. This poses a serious threat to the socioeconomic development and wellbeing of Haiti's ever-growing coastal populations.

With the second longest coastline of any country in the Antilles, and with a high concentration of populations settled in vulnerable costal zones, Haiti's National Adaptation Programme of Action (NAPA) identified sustainable coastal development as a top priority.

ACTIONS

The project, Strengthening Adaptive Capacities to Address Climate Change Threats on Sustainable Development Strategies for Coastal Communities in Haiti, was designed to implement these vital measures. Championed by the Government of Haiti and supported by UNDP, this project focuses on the south and southeast regions of the country.
With funding from the Global Environmental Facility's Least Developed Countries Fund, the government of Canada has provided additional funds to scale up and replicate successful approaches in the south.

Currently, activities include strengthening food security of local farmers, enhancing watershed management in the face of climate change, and reforestation of mangroves and forests to protect against climate induced hazards, erosion, and sea

For more information about COMDEKS:
www.comdeksproject.com

level rise. The project demonstrates that ecosystem management and biodiversity conservation can play a key role in reducing human and natural vulnerability to the multiple threats of climate change. Key activities of the project include: capacity building to maintain economic and ecological safety nets as coping mechanisms during climate change events; adaptation measures implemented in the agriculture, forest and water management sectors in coastal areas to reduce vulnerability and maintain ecosystem services; and knowledge sharing across different development actors: Ministry of Environment, Ministry of Agriculture, civil society (international and local NGOs) and local populations living in coastal areas.

To address issues of food security and food sovereignty, the project supports farmers to develop individualised farming plans, starting with an analysis of family needs, as well as of the vulnerabilities, problems, and opportunities presented at each farm. Once this analysis has been done, the farmer (supported by a project facilitator) produces a vision of what he or she wants to achieve on their farm in the next three to five years.

Project activities also focus on enhancing watershed management in the southern region. This helps to address issues of soil degradation and erosion, limited water availability, sustainable natural resource management, and vulnerability to extreme climate-induced events.

Finally, the project is also engaged in reforestation of both mangroves and surrounding forests.

EXPECTED IMPACTS

The project aims to promote development that protects the local communities from climate change impacts. This includes creating resilient economies and societies while reducing risks for vulnerable populations in Haiti. The project is the first of its kind in Haiti, and contributes to the achievement of Haiti's overall development goals at the country level (including food and water security), by


SLM KEFRAYA TRIAL SITE PLANTED

maintaining ecosystems resilience.

To date, the project has succeeded in actively engaging different actors across central and local governments to ensure sustainable development by addressing climate change threats. The project has provided regular institutional capacity-building support to the Ministry of Environment, Agriculture and Finance to integrate climate change adaptation measures in national policies and local development plans. Country-wide vulnerability and adaptation assessments for the water and agriculture sectors have been developed, and field studies were undertaken to determine the best adaptation measures to increase ecosystem resilience for water and food sectors in the southern Haiti, the most vulnerable region in the country.

The project is helping to reduce the vulnerability of local populations, while at the same time providing opportunities for economic development and poverty reduction in the Southern Department of Haiti.

As part of the Canada-UNDP Climate Change Adaptation Facility (CCAF), the project is aligned with the CCAF's aims to strengthen climate-resilient approaches to agriculture and water management, with an emphasis on gender-sensitive approaches. The Facility, supported by the Government of Canada, works to document results and share experiences between the Canada-UNDP portfolio of projects in Cambodia, Cape Verde, Haiti, Mali, Niger and Sudan, which all scale up or extend projects previously supported by the Global Environment Facility's Least Developed Countries Fund.

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UNDP'S WORK RELATED TO EBA

The UNDP-managed Equator Initiative, GEF Small Grants Programme (SGP), the Integrated Drylands Development Programme and the COMDEKS inititaive also support local, community-level efforts towards sustainable land management and rehabilitation. Many of these efforts use an ecosystem-based approach to enhancing communities' capacity to adapt to anticipated cliamte change impacts.

AREA REPLICATION IN GUISA, PLANTINGS IN CONTOUR HEDGEROWS

INTEGRATED DRYLANDS DEVELOPMENT PROGRAMME

The UNDP Global Policy Centre on Resilient Ecosystems and Desertification (formerly the Drylands Development Centre) leads the organisation's policy and advocacy work on sustainable development in drylands and fragile ecosystems, and manages the Integrated Drylands Development Programme, providing policy formulation and capacity development support to build the resilience of the drylands poor to external shocks and stresses, including climate change, through enhanced living conditions and improved management of natural resources. The IDDP was inaugurated in 2001, implemented in 19 countries across Sub-Saharan Africa, the Middle East, and West Asia. In 2010, a second round of dryland ecosystem projects was initiated, and is currently operational in 17 countries across Sub-Saharan Africa and the Middle East.

An exemplar of the IDDP EbA approach is the Mainstreaming Sustainable Land Management (SLM) project in six districts of Uganda. The major livestock production region of Uganda is along a strip of dry country known as the cattle corridor, supporting 90% of the national cattle herd. Despite a significant amount of agricultural activity, poverty indicators show that the drylands constitute a severe poverty hotspot.

SLM practices include efforts to improve water use efficiency, enhance soil fertility and the abundance of indigenous flora and fauna through more efficient and sustainable management. SLM efforts improve knowledge of the micro-climate, planning for and managing livelihoods, managing ecosystems and improving biodiversity; and the prevention, mitigation and rehabilitation of land degradation.

In Uganda, 90% of the population depends on natural resources for their livelihoods. The high dependency on rain-fed agriculture and exploitation of natural resources makes the country very vulnerable to climatic variability. In response to this challenge, the Government of Uganda in its National Development Plan has recognised land degradation as a major impediment to sustainable growth in agriculture, natural resources productivity, the forestry sector and national economic development.

IDDP EBA APPROACH MAINSTREAMING SUSTAINABLE LAND MANAGEMENT

In support of this action, UNDP, together with the Ministry of Agriculture, Animal Industry and Fisheries, with the financial support from the Royal Norwegian Government, has mainstreamed SLM principles into district and local development plans and budgets, and identified and implemented priority SLM interventions to improve livelihoods of local communities in six Cattle Corridor Districts.

Based on priorities identified in the resulting District Environmental Action Plans (DEAPs), the programme has supported small scale farmers to promote various SLM technologies. These technologies constitute important components within the climate change adaptation strategies of small scale farmers to unsustainable use of land resources in crop and animal production, and deforestation for fuel wood to meet their energy needs and charcoal production for economic purposes. This has helped to offset some of the severe impacts of climatic variability, poor natural resources management practices, inappropriate farming systems and, reduced soil fertility.

THE EQUATOR INITIATIVE

The Equator Initiative is a UNDP-led partnership that brings to¬gether the United Nations, governments, academia and civil society organisations ranging from international NGOs to grassroots and indigenous peoples' organisations to build capacity and raise the profile of local efforts to reduce poverty through sustainable natural resource management. The Equator Prize recognizes outstanding community work by shining a spotlight on successful initiatives on both national and international stages. To date, the prestigious international prize has been awarded to 187 local and indigenous communities, many of which are active in sustainable land management in dry¬land ecosystems, often addressing adaptation to climate change.

The 2014 Winner of the The Equator Prize for Sustainable Land Management (SLM) in Sub-Saharan Africa Utooni Development Organization from Kenya, uses the innovative, low-investment "sand dam" technology in the communities of southern Kenya to help communities adapt to drier conditions. Over 80 self-help groups were formed and 2700 farmers trained in water management, food security, sustainable agriculture, tree planting, and alternative income generation. Over 1500 sand dams have been built - concrete walls

COASTAL COMMUNITIES FIJI, PHOTO: ANDREA EGAN

built around seasonal rivers that store water in sand, raising the water table, and increasing the size of local aquifers and availability of clean water. This low-cost technology hedges against droughts so communities can manage water resources in harmony with local ecosystems. Tree cover, bird populations, fish stocks, and farmer incomes have all increased as a result.

GEF SMALL GRANTS PROGRAMME

Funded by the GEF as a flagship programme, the GEF Small Grants Programme (SGP), implemented by UNDP, was launched in 1992. The SGP supports activities of non-governmental and community-based organisations in developing countries aimed at the GEF focal areas of biodiversity conservation, climate change mitigation and adaptation, protection of international waters, reduction of the im¬pact of chemicals, and prevention of land degradation, all while generating sustainable livelihoods.

One of the areas of work of the SGP is helping communities who want to implement sustainable land and forest management practices to combat desertification and deforestation, processes intensified by climate change. SGP helps developing countries imple¬ment and understand the UN Convention to Combat Desertification and its 10-year Strategic Plan at the community level, in synergy with work to implement the UNFCCC and the CBD. To date, SGP has focused on supporting activities that create and demonstrate good practices of adaptive community-based land management, using indigenous knowledge and modern practices to address the degradation and destruction of agricultural lands, rangelands, and forests landscapes while also improving and enhancing the capacity of the civil society to implement integrated approaches for pastoral, agricultural and forestry management.

In Sri Lanka, SGP is supporting work on "Minimizing land degradation to adapt to climate change impacts in Serupitiya village". In the central province of the Nuwara Elida District, the 1,100 villagers (200 families) of Serupitiya rely on vegetable farming for their livelihoods. Situated on steep slopes and much eroded lands with little access to potable and irrigation water, the villagers are extremely dependent on rainfall for agricultural yields. Their crop cultivating season is a 4-month window (November to February). The dry season sets in

MANGAIA HARBOUR, COOK ISLANDS, PHOTO: ANDREA EGAN

thereafter and lasts until mid-September. Climate change-induced rainfall variability and unpredictability during the harvest season has diminished agricultural reliability. The strong winds during the dry season along with prolonged droughts and floods exacerbate water scarcity and land degradation in the area. 98% of the village population are in debt from borrowing funds for cultivation purposes, with 60% relying on a governmental welfare programme at various times of the year.

UNDP-GEF COMMUNITY-BASED ADAPTATION PROJECTS

Since 2008, the UNDP-Global Environment Facility (GEF) Community-Based Adaptation (CBA) Programme has been championing local-level adaptation work by piloting small-scale project/policy laboratories in 10 developing countries. The CBA Programme is a multi-partner initiative, designed, led and implemented by UNDP. It is largely funded by the GEF through its Strategic Priority to Adaptation (SPA) fund, with contributions from the Governments of Australia, Japan, Switzerland and UN Volunteers (UNV). The combination of expertise and participation from the various partners is mutually reinforcing and contributes to the CBA Programme's success; the strong presence and capacity at the local level bolsters the resiliency of the participating communities and their ecosystems.

For many communities, existing problems associated with unsustainable development practices and frequent climate change-induced events provide a natural starting point for the pilot adaptation measures. It is through the implementation of the projects that communities improve their skills, increase their knowledge on climate change and its impacts, and improve their ability to adapt in a sustainable way. Incrementally, the web of activities surrounding the implementation of the measures develops indirect capacities such as community mobilisation, financial management and entrepreneurship, gender main¬streaming and social inclusion. When combined, these increased capacities produce results and benefits in terms of natural resources and ecosystem management (agriculture, biodiversity and water), socio-economic development, gender equality and community development. An exemplar of this approach is the UNFCCC Momentum of Change winning project, CBA Namibia.

COMMUNITY-BASED ADAPTATION IN NAMIBIA, PHOTO: UNDP NAMIBIA

CBA Namibia: A holistic approach to community-based adaptation

Namibia is plagued with a dry climate and poor soils, and the country's small-scale farmers produce the lowest agricultural yields in the world. With an estimated population of around two million, Namibia has the world's second lowest population density. As global climate change impacts become more common, Namibia is likely to be one of the most severely affected areas. The (now-completed) CBA Namibia project was located in Northern Namibia and consisted of five regions: Omusati, Ohangwena, Oshikoto, Oshana and Kavango. The majority of the community members are subsistence farmers who are highly dependent on rain-fed dry land crops and livestock rearing both for subsistence and income. These areas confront significant climate change-related challenges, such as food and water security, which jeopardise the communities' livelihoods. The poor and marginalised communities in the project areas are particularly vulnerable, including orphaned children from families affected by HIV/AIDS. In this regard, the CBA project 'Approaching community adaptation to climate change holistically by using multiple coping strategies' designed and implemented adaptation measures responding to climate change to reduce the vulnerability of the communities and protect lives.

Environmental Adaptation Measures and Results

This CBA project used six local and interlinked climate change coping strategies to create a holistic approach to community-based adaptation. The strategies included 1. ensuring water and food security through flood and rain harvesting for agricultural irrigation, livestock and fish farming; 2. using harvested flood and rain water to irrigate vegetable production and to support families affected by HIV/AIDS; 3. improving dry land crop production through composting, biochar, crop rotation, and conservation agriculture; 4. increasing use of improved drought-resistant pearl millet varieties; 5. using rice, mushroom, and sweet stem for human nutrition and fodder security to boost availability of protein nutrition and incomes; and 6. using energy efficient stoves and agro-forestry combined with general reforestation techniques to help sustain food security and income generation with no adverse impacts to the land or to other natural resources.

The project focused primarily on the promotion and application of a distinct method of conservation tillage agriculture (CONTILL) specific to the Namibian agricultural

LOFEAGAI, TUVALU, PHOTO: ANDREA EGAN

circumstances. The CONTILL method practices minimum soil disturbance, maximum soil cover and crop rotations to reverse soil degradation. The ripping and furrowing of the soil allowed water retention and deep root penetration below the hard alkaline layer, and allowed the feeder roots to reach nutrients located below 30 cm depth in the soil. At the same time, rainwater collected by furrows was channelled to the plants basal area. During flooding, excess water found its way to the ripped compaction layer, infiltrating deep into the soil and preventing water logging. As a result, plant roots became stronger, biomass increased, and soil quality was improved, leading to an increase in agricultural yields up to 500 percent in the project areas.

Community Mobilization and Socio-economic Benefits

Namibia's baseline yield is lower than 300kg per hectare. In June 2010, the first pearl millet harvest increased from an average of 70 kg per hectare to 570 kg per hectare. The community also grew other crops for income such as maize and sunflowers. The increase in the millet harvest guaranteed food for the community, which opened up income-generating options for the maize and sunflower harvests. In April 2013, the Ministry of Agriculture, Water and Forestry (MAWF) recorded, despite drought conditions, a bumper crop of 4,550 kg per hectare of pearl millet at a farm in one of the CBA project sites (Oshikoto region).

Upscaling and Replication

This project received attention from the national government, which opened up opportunities to upscale the project activities. Training youth in the area - future farmers or heirs of land - on sustainable practices and improved farming methods is critical for food security and promoting enterprise creation. The CBA project was 'out-scaled' to local schools to foster integration of sustainable practices learned from the project into school curricula. Ninth and tenth graders worked with their Life Science and Agriculture teachers to learn about climate change and its impacts, conservation agriculture (CONTILL) for dry land crops, soil improvement techniques, and micro-drip irrigation (for vegetables).

The project also worked with Orphan and Vulnerable Children (OVC) organizations,

COMMUNITY PLANNING IN VANUATU, PHOTO: UNDP VANUATU

which integrated sustainable adaptation practices as they work with 440 OVCs and their guardians. Due to its successful results, this project was replicated at the local and national levels. Neighbouring communities, government institutions, and NGOs replicated the sustainable adaptive practices applied to this project and have benefitted from the lessons learned by project participants.

COMMUNITY-BASED ADAPTATION (CBA) TO CLIMATE CHANGE IN SIDS

In Small Island developing states (SIDS), local communities are highly vulnerable to climate change impacts due to their small land area, susceptibility to natural disasters, geographical isolation, limited natural resources and sensitive ecosystems. Responding to this critical need, the UNDP-implemented GEF Small Grants Programme (SGP) supports 37 countries with community-based climate change risk management.

The project objectives are three-fold:

I. To improve the adaptive capacity of local communities and to reduce the vulnerability of local communities to the adverse effects of climate change, and its variability.

II. To provide countries with sustainable, concrete ground-level experience with local climate change adaptation, and

III. To provide clear policy lessons and mainstream into national processes.

As a result of the CBA programme's support, vulnerable communities and civil society organizations (CSOs) in SIDS are able to reduce their vulnerability and improve their adaptive capacity to climate change impacts. They are able to improve management of their fragile ecosystems, share sustainable and concrete ground-level experience in climate change adaptation, and provide clear policy lessons and mainstream CBA innovations into national processes on climate change adaptation.

LOFEAGAI, TUVALU, PHOTO: JOE HITCHCOCK

CONCLUSISONS

In cross-checking the results of the mapping analysis, it is useful to revisit the definition of Ecosystem-based Adaptation as "the use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change", with all three of these being key definitional elements. All these three elements are present in the 56 projects identified in this mapping report, and summarised in Annex 1.

UNDP wil continue to support countries' work on ecosystem-based approaches to climate change, working closely with partners such as BMUB, UNEP and IUCN. Through the informal "Friends of EBA" network launched in Bonn in July 2015, these and other partners can continue to share experiences and lessons learnt, discuss challenges and identify gaps.

GOALS FROM THE "FRIENDS OF EBA" NETWORK

OVERALL ROLE

Promoting EbA integration into international climate change adaptation negotiations, policies, strategies, and action planning.

Information dissemination of EbA related work amongst Members and stakeholders including knowledge sharing on project specific implementation processes, tools, methodologies, impact on ground etc.

Collaboration for participation and showcasing EbA work at international and regional fora.

SPECIFIC IMMEDIATE ACTIONS

Working together for ensuring recognition of the role of ecosystems in the Paris COP21 Agreement.

Supporting the integration of ecosystems into National Adaptation Plans.

FARMING IN FIJI, PHOTO: ANDREA EGAN

Promoting the role of healthy ecosystems in reducing the incidence of Loss and Damage during the UNFCCC negotiations and for the implementation of the agreed two-year workplan of the Warsaw International Mechanism for Loss and Damage.

LONG-TERM

Enhancing collaboration for building on existing work while mobilizing new initiatives for efficiency, cost-effectiveness and to avoid duplication (reinvention of the wheel!).

Bridging the gap between academia and practice to make informed and science based decisions for sustainable climate resilience.

Developing EbA standards including standardized tools, guidelines and M&E mechanisms.

Joint technical papers to promote and integrate EbA into international adaptation and development planning processes including post 2015 development agenda.

REGION	COUNTRY	PROJECT TITLE
Asia	Bangladesh	Integrating Community-based Adaptation into Afforestation and Reforestation Programmes in Bangladesh
Africa	Burkina Faso	Improving Services and Functions delivered by Ecosystem through a Changing Climate and Increased Climate Variability in Burkina Faso
Africa	Burundi	Community disaster risk management in Burundi
Africa	Cabo Verde	Top up addressing food security in the face of climate change
Africa	Chad	Community based climate risks management in Chad
Africa	Chad	Chad National Adaptation Plan
Africa	Comoros	Strengthening Comoros resilience against climate change and variability related disaster
Americas	Cuba	A landscape approach to the conservation of threatened mountain ecosystems
Americas	Cuba	Cuba EBA
Africa	Djibouti	Developing agro-pastoral shade gardens as an adaptation strategy for poor rural communities
Americas	Dominican Republic	Mainstreaming BD conservation in vulnerable mountain landscapes of the Dominican Republic
Africa	Egypt	Adaptation to Climate Change in the Nile Delta through Integrated Coastal Zone Management
Africa	Eritrea	Ecosystem based approaches to managing climate risks to critical watersheds
Africa	Gambia	Enhancing Resilience of Vulnerable Coastal Areas and Communities to Climate Change in the Republic of Gambia

FOCUS	STATUS	KNOWLEDGE PRODUCTS
Natural Resource Management	SOF Approval/ Endorsement	United Nations Development Programme (UNDP), Bureau for Crisis Prevention and Recovery (BCPR). (2013). Climate Risk Management for Agriculture Sector in Bangladesh. New York, NY: UNDP BCPR
Natural Resource Management	Implementation	
Disaster Risk Reduction	SOF Pipeline Entry	http://www.preventionweb.net/files/EAC_DRRMS%282012-2016%29version_1.4%5B1%5D.pdf
Agriculture	Implementation	
Multiple Focal Area	UNDP Pipeline	http://reliefweb.int/sites/reliefweb.int/files/resources/REACH_CHD_Report_BRACEDEvaluationPhaseAssessment_Sept2014.pdf
Multiple Focal Area	UNDP Pipeline	
Disaster Risk Reduction	UNDP Pipeline	
Biodiversity	Under Implementation	
Multiple Focal Area	Under Implementation	
Agriculture	Under Implementation	Project Brief: http://www.undp-alm.org/resources/project-brief-fact-sheet/project-brief-developing-agro-pastoral-shade-gardens-adaptation, https://www.adaptation-fund.org/project/developing-agro-pastoral-shade-gardens-adaptation-strategy-poor-rural-communities-djibouti
Multiple Focal Area	Development	
Coastal Zone Development	Under Implementation	
Natural Resource Management	Pipeline	
Coastal Zone Development	Under Implementation	

REGION	COUNTRY	PROJECT TITLE
Africa	Georgia	Developing Climate Resilient Flood and Flash Flood Management Practices to Protect Vulnerable communities of Georgia
Africa	Guinea	Increased Resilience and Adaptation to Adverse Impacts of Climate Change in Guinea's Vulnerable Coastal Zones
Africa	Guinea	Ecosystem-Based Adaptation in the prefectures of Mandiana, Kouroussa and Kissidougou
Africa	Guinea Bissau	Strengthening the resilience of vulnerable coastal areas and communities to climate change in Guinea
Americas	Haiti	Strengthening adaptive capacities to address climate change threats on sustainable development strategies for coastal communities in Haiti
Americas	Haiti	Strengthening Haiti´s marine and coastal protected areas
Americas	Haiti	Building resilience of the water sector through EBA approaches
Oceania	Kiribati	Enhancing National Food Security in the Context of Global Climate Change
Asia	Lao	Effective Governance for Small Scale Rural Infrastructure and Disaster Preparedness in a Changing Climate
Africa	Lesotho	Mainstreaming adaptation into SLM
Africa	Liberia	Enhancing Resilience of Vulnerable Coastal Areas to Climate Change Risks
Africa	Malawi	Ecosystems Approach to Adaptation
Asia	Maldives	Integrating Climate Change Risks into Resilient Island Planning in the Maldives
Africa	Mali	Pilot Programme on Integrated Adaptation Strategies in Mali

FOCUS	STATUS	KNOWLEDGE PRODUCTS
Water	Under Implementation	Success Story: http://www.ge.undp.org/content/georgia/en/home/ourwork/environmentandenergy/successstories/after-the-flood/
Coastal Zone Development	Under Implementation	Project Brief: http://www.undp-alm.org/resources/project-brief-fact-sheet/undp-alm-guinea-project-brief-guinea-october-2011
Biodiversity	SOF Pipeline Entry	
Coastal Zone Development	UNDP Pipeline	
Coastal Zone Development	Implementation	Multiple: http://www.undp-alm.org/projects/ldcf2-haiti/reports-and-publications and http://www.undp-alm.org/projects/ldcf2-haiti/videos
Multiple Focal Area	SOF Pipeline Entry	http://www.unep.org/newscentre/Default.aspx?DocumentID=2791&ArticleID=10888, http://www.unep.org/newscentre/default.aspx?DocumentID=2791&ArticleID=10886
Water	Development	Multiple: http://www.undp-alm.org/projects/ldcf2-haiti/reports-and-publications and http://www.undp-alm.org/projects/ldcf2-haiti/videos
Agriculture	SOF Pipeline Entry	
Disaster Risk Reduction	Under Implementation	Project Brief: http://www.undp-alm.org/resources/case-study/project-brief-lao-pdr
Multiple Focal Area	Undergoing CEO clearances	
Coastal Zone Development	Under Implementation	
Multiple Focal Area	Prodoc to be signed/ Implementation to start	
Coastal Zone Development	Under Implementation	United Nations Development Programme (UNDP), Bureau for Crisis Prevention and Recovery (BCPR). (2013). Climate Risk Management in Maldives. New York, NY: UNDP BCPR,
Multiple Focal Area	SOF Pipeline Entry	

REGION	COUNTRY	PROJECT TITLE
Africa	Mali	Flood hazard and climate risk management to secure lives and assets in Mali
Americas	Mexico	Biodiversity conservation and climate risk mitigation through conservation of priority forest ecosystems in Mexico
Asia	Mongolia	Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia
Asia	Myanmar	Addressing Climate Change Risks On Water Resources And Food Security In The Dry Zone Of Myanmar
Asia	Myanmar	Mangrove forest management for adapting to climate change
Asia	Nepal	Community Based Flood and Glacial Lake Outburst Risk Reduction
Asia	Nepal	Ecosystem Based Adaptation in Mountain Ecosystems
Asia	Nepal	Developing climate resilient livelihoods in the vulnerable watershed in Nepal
Americas	Nicaragua	Reducing Risks and Vulnerability to Flooding and Drought in Nicaragua
Americas	Peru	Ecosystem based Adaptation in Mountain Ecosystems

FOCUS	STATUS	KNOWLEDGE PRODUCTS
Natural Resource Management	UNDP Pipeline	
Biodiversity	Implementation	
Natural Resource Management	Implementation	United Nations Development Programme (UNDP), Bureau for Crisis Prevention and Recovery (BCPR). (2013). Climate Risk Management for Animal Husbandry Sector in Mongolia. New York, NY: UNDP BCPR
Agriculture	Under Implementation	http://www.mm.undp.org/content/myanmar/en/home/presscenter/pressreleases/2015/02/17/climate-change-adaptation-project-kicks-off-in-myanmar-s-dry-zone-.html
Coastal Zone Development	Pipeline	
Disaster Risk Reduction	Under Implementation	United Nations Development Programme in Nepal (UNDP Nepal), United Nations International Strategy for Disaster Reduction (UN ISDR). (2009). Nepal Country Report: Global Assessment of Risk. UNDP Nepal, ISDR, http://www.undp-alm.org/sites/default/files/downloads/glof_risk_reduction_activities_in_nepal_-_icimod_-_2011.pdf
Multiple Focal Area	Under Implementation	http://cmsdata.iucn.org/downloads/iucn_EbA_mountains_challenges_and_opportunities.pdf
Disaster Risk	UNDP Pipeline	http://www.adb.org/sites/default/files/project-document/73085/44214-023-nep-tacr.pdf
Disaster Risk	Implementation	https://www.adaptation-fund.org/project/1331-reduction-risks-and-vulnerability-based-flooding-and-droughts-estero-real-river-watersh http://www.undp.org/content/rblac/en/home/ourwork/environmentandenergy/successstories/nicaraguan-communities-are-adapting-to-climate-change.html https://www.adaptation-fund.org/sites/default/files/AFB.EFC_.14.4.Report_of_the_Portfolio%20Monitoring_Mission_in_Honduras%20and%20Nicaragua.pdf
Multiple Focal Area	Under Implementation	United Nations Development Programme (UNDP), Bureau for Crisis Prevention and Recovery (BCPR). (2012). Climate Risk Management for Agriculture in Peru: Focus on the Regions of Junín and Piura. New York, NY: UNDP BCPR

REGION	COUNTRY	PROJECT TITLE
Americas	Peru	Transforming Management of Protected Area/Landscape Complexes to Strengthen Ecosystem Resilience
Oceania	Samoa	Integration of Climate Change Risk and Resilience into Forestry Management in Samoa (ICCRIFS)
Oceania	Samoa	Enhancing resilience of communities reliant on tourism sector to climate change and disaster risks
Oceania	Samoa	Enhancing resilience of coastal communities of Samoa to climate change
Africa	Senegal	Building the resilience of livelihoods resilience of coastal communities affected by salinity-induced climate change in Senegal
Africa	Seychelles	Ecosystem Based Adaptation to Climate Change in Seychelles
Africa	South Africa	Reducing Disaster Risks from Wildfire Hazards Associated with Climate Change in South Africa
Africa	Sudan	Climate risk finance for sustainable and climate resilient rainfed farming and pastoral systems
Africa	Sudan	Implementing Priority Adaptation Measures to Build Resilience of rainfed farmer and pastoral communities of Sudan, especially women headed households to the adverse impacts of Climate Change
Asia	Timor Leste	Strengthening the Resilience of Small Scale Rural Infrastructure and local government systems to climate variability and risk

FOCUS	STATUS	KNOWLEDGE PRODUCTS
Natural Resource Management	Development	United Nations Development Programme (UNDP), Bureau for Crisis Prevention and Recovery (BCPR). (2012). Climate Risk Management for Agriculture in Peru: Focus on the Regions of Junín and Piura. New York, NY: UNDP BCPR
Natural Resource Management	Under Implementation	http://www.undp-alm.org/resources/brochures-posters-communications-products/vanuma-project-constructs-community-nurseries
Disaster Risk Reduction	Under Implementation	Project Brief: http://www.ws.undp.org/content/dam/samoa/docs/Factsheets/UNDP_WS_TourismProjectBrief-Aug2014.pdf
Coastal Zone Development	Under Implementation	http://www.undp-alm.org/resources/quarterly-updates/adaptation-fund-progress-report-samoa-2nd-quarter-2013
Coastal Zone Development	Pipeline	
Biodiversity		http://www.unep.org/wed/SIDS/Building-Capacity-for-Coastal-Ecosystem-Based-Adaptation-in-SIDS.asp#.VR2zueH55M4
Disaster Risk Reduction	Implementation	
Agriculture	SOF Approval/ Endorsement	
Agriculture	Implementation	
Disaster Risk Reduction	Under Implementation	http://www.undp-alm.org/projects/ldcf-timor-leste/reports-and-publications, United Nations Development Programme in Timor-Leste (UNDP Timor-Leste), National Disaster Management Authority - Pakistan (NDMA Pakistan), Asian Disaster Preparedness Center (ADPC). (2012, October). A Comprehensive National Hazard Assessment and Mapping in Timor-Leste: Technical Report on the Methodology for Hazard Assessment. UNDP Timor Leste, NDMA Pakistan, ADPC, http://www.tl.undp.org/content/timor_leste/en/home/operations/projects/environment_and_energy/climate-risk-resilience--scale-rural-infrastructure-and-local-go.html

REGION	COUNTRY	PROJECT TITLE
Asia	Timor Leste	Building shoreline resilience of Timor Leste to protect local communities and their livelihoods
Africa	Tunisia	Introducing innovative coastal adaptation practices in Tunisia to address threats of sea level rise
Oceania	Tuvalu	Increasing Resilience of Coastal Areas and Community Settlements to Climate Change
Oceania	Tuvalu	Tuvalu-NAPA1 Supplement
Oceania	Tuvalu	Effective And Responsive Island-Level Governance To Secure And Diversify Climate Resilient Marine-Based Coastal Livelihoods And Enhance Climate Hazard Response Capacity
Africa	Uganda	Ecosystem Based Adaptation in Mountain Ecosystems
Africa	Uganda	BD and REDD Plus Strategy for the Albertine Rift
Asia	Uzbekistan	Developing climate resilience of farming communities in the drought prone parts of Uzbekistan

FOCUS	STATUS	KNOWLEDGE PRODUCTS
Coastal Zone Development	SOF Pipeline Entry	
Coastal Zone Development	SOF Pipeline Entry	
Coastal Zone Development	Under Implementation	Poster and Maps: http://www.undp-alm.org/projects/ldcf-tuvalu/reports-and-publications and Videos: http://www.undp-alm.org/projects/ldcf-tuvalu/videos, https://unfccc.int/files/adaptation/napas/application/pdf/35_tuv_pp.pdf
Coastal Zone Development	Under Implementation	Poster and Maps: http://www.undp-alm.org/projects/ldcf-tuvalu/reports-and-publications and Videos: http://www.undp-alm.org/projects/ldcf-tuvalu/videos
Coastal Zone Development	Under Implementation	http://www.fj.undp.org/content/fiji/en/home/operations/projects/environment_and_energy/TuvaluNAPA2.html
Multiple Focal Area	Implementation	http://cmsdata.iucn.org/downloads/iucn_EbA_mountains_challenges_and_opportunities.pdf
Multiple Focal Area	Implementation	United Nations Development Programme (UNDP), Bureau for Crisis Prevention and Recovery (BCPR). (2013). Climate Risk Management for Sustainable Crop Production in Uganda: Rakai and Kapchorwa Districts. New York, NY: UNDP BCPR
Agriculture	Under Implementation	http://www.uz.undp.org/content/uzbekistan/en/home/operations/projects/environment_and_energy/developing-climate-resilience-of-farming-communities-in-the-drou.html

MT EBA NEPAL, PHOTO: ANDREA EGAN

UNDP

UNEP

IUCN

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

www.undp-alm.org/projects/mountain-eba