

## **EbA South project team**

### **International Ecosystem Management Partnership, United Nations Environment Programme**

C/O

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Call for submission in the area of ecosystems, interrelated areas such as water resources and adaptation under the Nairobi Work Programme

**Ecosystem-based Adaptation through South-South Cooperation (EbA South)** is a full-sized GEF project, funded through the Special Climate Change Fund. Officially known under the title "Enhancing Capacity, Knowledge and Technology Support to Build Climate Resilience of Vulnerable Developing Countries", the project is implemented by UN Environment and executed by the National Development and Reform Commission of China (NDRC), through the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR, CAS). The Project Management Unit is hosted by the UNEP-International Ecosystem Management Partnership (UNEP-IEMP).

The project's overall goal is to build climate resilience in developing countries by increasing their capacity to plan and implement Ecosystem-based Adaptation (EbA). In addition to interregional activities for capacity building and knowledge management, the project is leading concrete, on-the-ground EbA interventions in three pilot countries – Mauritania, Nepal and Seychelles, representing three different vulnerable ecosystems (dryland, mountain and coastal ecosystems, respectively). The project is considered a "first mover" in catalyzing global and regional collaboration on EbA under GEF guidelines, in particular within the framework of South-South cooperation.

## Topic 1: Adaptation planning processes addressing ecosystems and interrelated areas such as water resources

### **Description**

Adaptation planning processes supported by the EbA South project have two innovative features: i) Long Term Research Programmes (LTRPs) are developed in parallel to on-the-ground EbA interventions; a strong South-South cooperation dimension is incorporated in the process.

#### Long term research

LTRPs have been developed for measuring the short- and long term effects (ecological, hydrological and socio-economic) of using climate resilient approaches for mangrove restoration in the Seychelles, community-based watershed restoration in Nepal and multi-use desert greenbelt establishment in Mauritania.

Activities under the LTRP in each country include, *inter alia*: i) Establishing long-term monitoring field sites at intervention sites for measuring the effects of EbA on relevant ecosystem services; ii) Collecting data and conducting participatory vulnerability assessments at the selected pilot sites; and iii) Conducting long-term research (writing research reports, theses and peer reviewed papers) on the effects of EbA.

#### South-South cooperation

South-South cooperation is recognized as an increasingly important dimension of international cooperation on climate change. As developing countries are more dependent on ecosystems and the services they provide, Ecosystem-based Adaptation (EbA) is emerging as one of the key areas of intervention for South-South cooperation on climate change.

The EbA South project has been identified as one of the flagship initiatives for South-South cooperation on climate change jointly developed and supported by UN Environment and China, as part of their mutual commitment to assist countries in the global South adapt to climate change.

In recent years, China has taken leadership in South-South cooperation, promoting capacity building, knowledge sharing and technology transfer amongst developing countries.

EbA South aims to share some of China's experiences and know-how in ecosystem monitoring, ecological restoration and climate change adaptation.

In this context, the Chinese Ecosystem Research Network (CERN) plays a particularly important role. Established by the Chinese Academy of Sciences (CAS) in the 1990s, under the auspices of the Chinese government and World Bank, CERN is now a renowned scientific facility integrating monitoring, research and demonstrations into long-term research frameworks to address ecosystem management, environmental

protection, agriculture, disaster risk reduction and natural resource management, in China and beyond.

Through UN Environment's International Ecosystem Management Partnership (UNEP-IEMP, known as the first UN Environment collaborating centre "in the South and for the South") CERN and CAS provide technical support to EbA South. UNEP-IEMP and CERN experts work on the project activities to efficiently use the knowledge, technologies and good practices developed in China. The expertise of CERN is also drawn upon for developing long-term research frameworks (LTRPs described above) and to synthesize research findings in support of policy setting.

## **Partner institution/s**

### Long Term Research Programmes

- Mauritania: Ministry of Environment and Sustainable Development, Ministry of Higher Education and Scientific Research, École Normale Supérieure de Nouakchott and Institut Supérieur de l'Enseignement Technique
- Nepal: Ministry of Population and Environment and Tribhuvan University
- Seychelles: Ministry of Environment, Energy and Climate Change and University of Seychelles

### Chinese institutions supporting the EbA South pilot countries under the South-South cooperation

- Mauritania: CAS Xinjiang Institute of Geographic and Ecology
- Nepal: CAS Institute of Mountain Hazards and Environment
- Seychelles: CAS and CERN

## **Key results**

A Memorandum of Understanding (MoU) was signed in each pilot country between the Ministry responsible for project implementation and national academic institutions, and detailed research plans and data collection protocols were developed. Each country established at least one monitoring field site and number of research publications are in progress.

Consolidated partnerships between Chinese research institutions and the pilot countries have been established: i) Mauritania is working with the CAS Xinjiang Institute of Geographic and Ecology in designing and implementing EbA interventions; ii) Nepal is working with the CAS Institute of Mountain Hazards and Environment on adaptation in mountain ecosystems. Chinese experiences are being shared not only for EbA implementation, but also for managing post-earthquake operations, addressing both ecosystem restoration and livelihood improvement; iii) Seychelles benefits from lessons learnt from CAS and CERN on ecosystem management and climate change adaptation.

Through EbA South, China is also providing co-financing support (USD 5 million) to the three pilot countries.

### **Lessons learned and good practices**

EbA should be science-based, and calibrated according to local conditions and implemented in a careful manner. Within this project, the experiences and knowledge on ecosystem-based approaches acquired by the Chinese Academy of Sciences (CAS) and the Chinese Ecosystem Research Network (CERN) in the past decades are an important reference for the pilot countries and for the rest of the global South. With the new window of South-South cooperation, developing countries are enabled to learn from each other on EbA technologies and experiences. Furthermore, long-term research frameworks (like the LTRPs developed under this project in the three pilot countries with support from CAS and CERN) play an important role in building institutional capacity and empowering local scientist and practitioners to plan and implement EbA.

### **Key challenges**

Data collection related to EbA interventions is not always adequate to the needs of long-term research. Challenges in collecting data are related to: i) limited experience in EbA monitoring; ii) limited understanding of data collection methodologies; iii) delays in compiling rigorous monitoring and data collection plans with clear allocation of responsibilities and budgeted; iv) lack of coordination between the local institutions in charge of developing LTRPs and national teams responsible for implementation on-the-ground; v) intervention sites' limited accessibility; v) general administrative constraints.

In some cases, finding the balance between the rules and principles of a global project and political interests at the national level has been problematic. Furthermore, the views of local communities and interest groups have not always been in line with those of international scientists and technical experts.

### **Planned next steps**

LTRPs are expected to continue produce publications and also to guide the revision of national policies plans and strategies for climate change adaptations.

South-South cooperation (between the three countries and China and among the countries themselves) is expected to continue beyond the duration. It will be facilitated by the newly launched flagship programme on Climate, Ecosystems and Livelihoods (CEL) – UN Environment's major South-South cooperation initiative supported by China.

## Topic 2: Monitoring and evaluating the implementation of ecosystem-based adaptation

### **Description**

In the monitoring and evaluation (M&E) framework developed by the EbA South project, adaptation interventions are assessed by measuring: i) vulnerability changes, ii) awareness changes and iii) survivorship of plantations (percentage).

A vulnerability index is developed to indicate the extent to which households at the project sites are susceptible to sustaining damage from climate change. Indicators of vulnerability are defined around the three components of vulnerability (i.e. exposure, sensitivity and adaptive capacity) but tailored to the context of each site covering both the biophysical conditions of the regions and the socioeconomic conditions of the local communities. Climate change awareness is calculated as a composite index of three indicators, i.e. conceptual awareness, experiential awareness, and engagement. Both indexes are obtained by undertaking household surveys to monitor changes in awareness and vulnerability indexes. While the measurement unit of the former is at household level, the latter one is at individual level. To assess how climate change vulnerability and awareness are changing over time, household surveys are periodically repeated.

Survival rate of seedlings propagation and plantation in the field is regularly monitored by each country team.

### **Partner institution/s**

See Topic 1.

### **Key results**

Household surveys to monitor climate change awareness and vulnerability changes were conducted in the baseline studies and at project mid-term. Monitoring of survivorship was conducted regularly at each pilot site.

### **Lessons learned and good practices**

Plant survivorship can vary significantly and depends on different factors. Monitoring survivorship results in adaptive management; plant species with relatively high survivorship are being favoured over the more sensitive ones.

When analyzing the relative influence of sensitivity and adaptive capacity on overall climate change vulnerability, there was an emerging question: "By how much do we need to change the adaptive capacity, versus changing the sensitivity score?". For each country, a graph was drawn to show the results of the analysis. The most important point derived was that in order to achieve the project targets of reduced vulnerability, it is most effective to aim at increasing the adaptive capacity, compared to lowering the sensitivity.

Conducting household surveys helps to build skills and capacity of the local teams who are involved in the data collection and analysis, through the training provided by the project's experts and the on-the-ground practices.

### **Key challenges**

As described under Topic 1, data collection presents a number of operational difficulties.

Furthermore, as EbA is a long-term adaptation approach, monitoring and evaluation of its impacts (ecological, as well as socio-economic) during a 4-year project cycle is very challenging.

### **Planned next steps**

M&E activities will continue till the end of the project.

### Topic 3: Tools for assessing the benefits of adaptation to enhancing resilience that ecosystem-based adaptation provides

#### **Description**

The EbA South project has partnered up with the International Institute for Sustainable Development (IISD) and the International Union for the Conservation of Nature (IUCN) for developing an ecosystem-based adaptation (EbA) planning tool to help drive greater uptake of EbA approaches. The tool aims to support climate resilience building activities at the local level, for the benefit of vulnerable communities that rely on healthy, well-functioning ecosystems for their livelihoods. The launch of a user-friendly tool to support the design and implementation of EbA interventions aims to help to overcome the current gap between understanding the potential benefits of EbA approaches and their uptake by adaptation practitioners and other user groups. The consideration of the role of ecosystems and ecosystem services for communities and the impact of climate change on these relationships adds value to adaptation planning and informs adaptation initiatives.

The new tool will build on the framework underlying the existing Community-based Risk Screening Tool – Adaptation and Livelihoods (CRiSTAL). CRiSTAL guides users to a decision, drawing on their existing expert knowledge, input from local stakeholders, consultation with experts in relevant fields and access to secondary sources. Its decision-support framework will be modified to enable adaptation of communities and ecosystems by looking at the relationship between livelihood resources, ecosystem services and climate change. IISD will lead the development of the tool, while IUCN will facilitate the pilot testing at two local IUCN offices in Nepal and Senegal. The tool will be a desktop application and will be compatible with Windows and Apple operating systems. It will be available in English.

#### **Partner institution/s**

The International Institute for Sustainable Development (IISD) and the International Union for the Conservation of Nature (IUCN) are jointly developing an ecosystem-based adaptation (EbA) planning tool for the EbA South project. Other stakeholder organizations are supporting the development of the tool by participating in an Advisory Committee.

#### **Key results if the tool has been tested and challenges (as appropriate)**

The tool is still in the development phase.

#### **Planned next steps**

The next planned steps include the completion of a conceptual framework, the development of the desktop application and also pilot-testing in Nepal and Senegal.