



Food and Agriculture  
Organization of the  
United Nations

UN-REDD  
PROGRAMME



# MFF-FAO low-cost mechanism for promoting investment in mangrove protection and restoration in Asia

## The challenge

Mangroves provide an array of benefits to coastal communities, including wood and non-wood forest products and environmental services encompassing coastal hazard protection, erosion control, water filtration and biodiversity conservation. Mangroves are also valuable for climate change mitigation due to high rates of primary productivity and large amounts of carbon contained in biomass and mangrove soils.

In spite of their value, mangroves around Asia continue to be converted to other land uses, and sustainable financing for their protection has been limited. This has resulted from limited length project cycles, lack of established payment for ecosystem service (PES) schemes covering mangroves, unclear tenure in many mangrove areas, and the limited size of mangroves areas in relation to the economies of scale necessary to offset costs associated with accessing carbon markets.

## The solution

The regional project 'Income for Coastal Communities for Mangrove Protection'<sup>1</sup> has designed a new low-cost mechanism that enables investors to promote mangrove conservation and restoration through provision of funding to local communities. The new mechanism provides a simple yet credible methodology to ensure mangrove areas are monitored and protected, carbon stocks are assessed, and local communities are involved in and benefit from project activities.

Under the mechanism, mangrove mapping and monitoring are implemented using low-cost tools such as GPS units, smartphones, and free software and online platforms. Carbon stocks are estimated using two simple parameters – plot latitude and standing mean basal area – thus reducing field time and equipment costs. The majority of the tasks can be undertaken by local communities after initial training by mangrove experts, reducing costs and improving project ownership and sustainability. The mechanism clearly identifies involved parties and provides step-by-step instructions on project development, implementation and financing.

By reducing the costs of mangrove monitoring and carbon estimation, the mechanism allows protection and restoration of smaller areas of mangroves that are currently priced out of international carbon initiatives. It is designed to be used by private- and public-sector investors throughout Asia. By providing a simple, standardised yet flexible methodology, it has the potential to significantly increase investment in mangrove protection and restoration.

The mechanism was designed by MFF and FAO over a period of two years, with contributions from international mangrove experts, government agencies and academia. It was informed by visits to mangrove sites in Pakistan, Thailand and Vietnam, which included field-testing and extensive consultations with mangrove communities and local governments. The carbon estimation component was designed in collaboration with Yale University and will be published in PLOS ONE journal in the coming months.

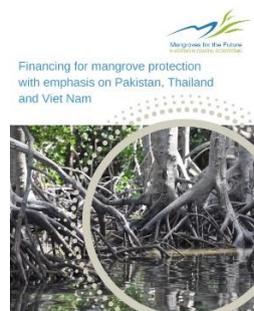
<sup>1</sup> The 'Income for Coastal Communities for Mangrove Protection' project was launched in February 2015 and will be completed in December 2016. The project is part of the Mangroves for the Future (MFF) initiative which is funded by Danida, Norad, Sida and the Royal Norwegian Embassy in Thailand. The project is implemented by the FAO Regional Office for Asia and the Pacific Office, with assistance from the USAID Lowering Emissions in Asia's Forests (LEAF) Program (now completed) and the UN-REDD Programme. Project activities are taking place in Pakistan, Thailand and Viet Nam.



Spatial Informatics Group - Natural Assets Laboratory

## The tools

The new mechanism is presented as a series of four publications, designed to be used collectively to guide the establishment of a sustainable financing for mangrove protection. These reports are outlined below.



Financing for mangrove protection with emphasis on Pakistan, Thailand and Viet Nam

### **‘Financing for mangrove protection with emphasis on Pakistan, Thailand and Viet Nam’**

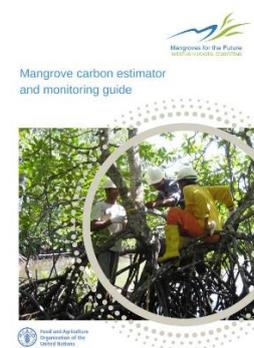
- Identifies and describes 54 sources of financing for mangrove protection and restoration activities in Pakistan, Thailand, and Viet Nam
- Covers four financing categories – multilateral public finance, bilateral public finance, domestic public finance and private-sector initiatives
- Identifies strengths and weaknesses of each category
- Provides summary information on relevant projects for each source
- Intended to be used as a guide for financing the low-cost investment mechanism, as well as a reference for mangrove conservation financing in general



Mangrove related policy and institutional frameworks in Pakistan, Thailand and Viet Nam

### **‘Mangrove-related policy and institutional frameworks in Pakistan, Thailand and Viet Nam’**

- An assessment of policy and institutional settings for mangrove management in three project countries
- Assesses the suitability of these frameworks to incentivise local communities to restore and protect mangroves, and draws on lessons from previous and ongoing projects
- Contains recommendations for establishing a low-cost investment mechanism for mangrove conservation in each country, including parties involved and their respective responsibilities
- Aimed at informing project piloting and long-term implementation in Pakistan, Thailand and Viet Nam, and providing background information for other mangrove initiatives



Mangrove carbon estimator and monitoring guide

### **‘Mangrove carbon estimator and monitoring guide’**

- A low-cost methodology for estimating carbon stocks and monitoring mangroves
- Three components: project area mapping, mangrove monitoring and carbon estimation
- Mapping and monitoring are implemented using low-cost tools such as GPS units, smartphones, and free Global Forest Watch and QGIS platforms
- Carbon stocks estimated using plot latitude and standing mean basal area
- The majority of tasks are undertaken by local communities after initial training by mangrove experts, reducing costs and improving project ownership and sustainability
- Applicable to a wide range of mangrove areas, and has been field-tested
- Includes step-by-step instructions and visual aids



Incentive allocation for mangrove protection

### **‘Incentive allocation for mangrove protection’**

- A simple methodology for establishing arrangements to allow investors to finance mangrove conservation activities undertaken by local communities
- Identifies five parties to be involved in such arrangements – the financier, the local community, the government, the technical assistance body and a third-party auditor
- Contains step-by-step instructions on establishing project implementation and financing arrangements
- Contains a template agreement for use by local communities and financiers
- Cross-referenced with the Mangrove carbon estimator and monitoring guide