



Mangroves for the Future
INVESTING IN COASTAL ECOSYSTEMS

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



Food and Agriculture
Organization of the
United Nations

Financing for mangrove protection

*with emphasis on Pakistan, Thailand
and Viet Nam*

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Preface

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 bio-diversity conservation. Mangroves are also valuable in terms of climate change mitigation due to high rates of primary productivity and the large amounts of carbon contained in above- and below-ground biomass and mangrove soils.

In spite of their many values, mangroves in Asia continue to be converted to other land uses and sustainable financing for their protection has not been forthcoming. 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 mangrove areas in relation to the economies of scale necessary to offset costs associated with accessing carbon payments.

This publication was prepared for the 'Income for coastal communities for mangrove protection' project (2015-2016) which aimed to develop a low-cost mechanism enabling public and private entities to responsibly promote mangrove conservation, carbon emissions reduction and sustainable development through the provision of incentives to local communities. The project was funded by the Swedish International Development Cooperation Agency (SIDA) through the International Union for Conservation of Nature (IUCN) and within the framework of the Mangroves for the Future (MFF) initiative. The project was implemented by the FAO Regional Office for Asia and the Pacific (RAP) in partnership with the USAID Lowering Emissions in Asia's Forests (USAID LEAF) Programme and UN-REDD. Pilot activities and information collection took place in Pakistan, Thailand and Viet Nam.

This is the first in a series of four publications intended to be used in conjunction in establishing sustainable financing for mangrove protection in Asia. The titles of the four publications are as follows:

1. Financing for mangrove protection;
2. Mangrove-related policy and institutional frameworks in Pakistan, Thailand and Viet Nam;
3. Mangrove carbon estimator and monitoring guide;
4. Incentive allocation for mangrove protection.

1 Introduction

This report reviews sources of funding for mangrove protection with particular focus on Pakistan, Thailand and Viet Nam. It was compiled through a literature review and consultations with staff from the Food and Agriculture Organization (FAO), the USAID Lowering Emissions in Asia's Forests (USAID LEAF) programme, UN-REDD, Mangroves for the Future (MFF) and the Mangrove Action Project (MAP).¹ Because of the role of mangroves in climate change adaptation, climate change mitigation and disaster risk management, sources of financing targeting these objectives are included along with financing sources aiming specifically at mangrove conservation and restoration.

Fifty four sources of financing are identified and short descriptions of each are provided, together with summary information on relevant projects in Pakistan, Thailand, and Viet Nam. The sources are grouped into four categories of financing:

1. Multilateral public finance;
2. Bilateral public finance;
3. Domestic public finance; and
4. Private-sector initiatives.

Each of the categories has advantages and disadvantages, as described at the beginning of the main sections.

When searching for funding, project proponents should consider that different components of a project may be financed by different funding sources. For example, training of local communities in mangrove planting and rehabilitation may be financed by an international donor working in partnership with a non-governmental organization (NGO), while long-term protection may be financed by a private company as part of a corporate social responsibility initiative.

Where possible, project proponents should also consider developing profitable activities that support mangrove protection as a sustainable source of funding. These might include certified 'mangrove-friendly' aquaculture, sustainable charcoal production, ecotourism activities or results-based payments for protection and conservation of the mangrove.

¹ The authors would like to acknowledge valuable contributions to this study from Ben Vickers, Bui Thi Thu Hien, Ghulam Qadir Shah, Jim Enright, Kenichi Shono and Thuy Phung.

2 Multilateral public finance

Multilateral public finance is provided by a wide range of institutions and may be disbursed to national governments, international development agencies, NGOs or, in some cases, private companies. The scope of international public finance is broad and multi-faceted, and covers many areas relevant to mangrove protection (climate change mitigation and adaptation, disaster risk management, mangrove conservation and mangrove restoration).

International public finance is often provided in the form of grants and concessional loans, and thus can be used to finance investments where market rate financial returns are not expected or guaranteed (Conway *et al.* 2015). However, international public donors generally require compliance with strict eligibility criteria, including proven capacity to prepare and implement programs; the potential to scale-up and replicate such programs; and a good track record of past program implementation and financial management. International public finance also usually entails stringent reporting requirements, meaning that robust measurement, reporting and verification systems and safeguards must be in place for the project (Conway *et al.* 2015).

2.1 GEF Trust Fund²

Eligible countries

Developing countries including Pakistan, Thailand, Viet Nam.

Activities funded

The fund supports the implementation of multilateral environmental agreements and serves as a financial mechanism of the United Nations Framework Convention on Climate Change (UNFCCC). Focal areas include biodiversity, climate change, land degradation and sustainable forest management/REDD+.

Implementation arrangements

The GEF Council is the main governing body of the fund. The GEF Secretariat ensures that Council decisions are translated into effective actions. GEF Agencies are responsible for drafting project proposals, and assisting eligible governments and NGOs in project design, implementation and monitoring. GEF Agencies working in Asia include:

1. Asian Development Bank (ADB)
2. Food and Agriculture Organization of the United Nations (FAO)
3. International Fund for Agricultural Development (IFAD)

² GEF. 2015a. URL: www.thegef.org; accessed 12 March 2015.

4. United Nations Development Programme (UNDP)
5. United Nations Environment Programme (UNEP)
6. United Nations Industrial Development Organization (UNIDO)
7. The World Bank

GEF Project Agencies, which have no corporate responsibilities, include:

1. Conservation International (CI)
2. Foreign Economic Cooperation Office, Ministry of Environmental Protection of China (FECO)
3. International Union for Conservation of Nature (IUCN)
4. World Wildlife Fund (WWF-US)

Financing arrangements

Replenishment of the fund takes place every four years based on donor pledges. The funding is made available for activities within the GEF Focal Areas defined during the replenishment discussions. As of 2015, the fund had received a total of USD 15.2 billion during its five replenishments.

Relevant projects (examples from GEF-4)

- ‘Integrated Community-based Forest and Catchment Management through an Ecosystem Service Approach’, Thailand, United Nations Development Programme (UNDP) – to create an enabling policy and institutional environment for scaling-up of integrated community-based forest and catchment management practices through harnessing of innovative financing mechanisms in Thailand (GEF (2015b).
- ‘Conservation of Critical Wetland Protected Areas and Linked Landscapes’, Viet Nam, UNDP-MoNRE – to establish new wetland protected areas and to create capacities for their effective management to mitigate existing and emerging threats from connected landscapes (GEF 2015c).
- ‘Protection and Management of Pakistan Wetlands’, Pakistan, UNDP – to strengthen government and local capacity to protect and manage the selected representative and globally significant wetland ecosystems (GEF 2015d).

2.2 GEF Small Grants Programme (SGP)³

Eligible countries

Developing countries including Pakistan, Thailand and Viet Nam.

³ GEF Small Grants Programme. 2015a. URL: <https://sgp.undp.org/>; accessed 12 March 2015.

Activities funded

Projects that conserve and restore the environment while enhancing people's well-being and livelihoods, including biodiversity conservation and prevention of land degradation.

Implementation arrangements

The programme is funded by GEF, implemented by UNDP and executed by the United Nations Office for Project Services.

Financing arrangements

Grants of up to USD 50 000 are provided to community-based organizations and NGOs. The grants are channelled directly to the implementing organizations by the UNDP/GEF.

Relevant projects

Four mangrove-related projects are currently being implemented in Pakistan, including 'Mangrove plantation and restoration through community participatory approaches in Kath Waro Island, Union Council Jungo Jalbani, Shah Bunder' (GEF Small Grants Programme 2015b) and 'Mangroves Forestation and Conservation at Kajhar and Seer Creek' (GEF Small Grants Programme 2015c). Thailand and Viet Nam have implemented a number of mangrove-related projects since 2000, but none were active as of 2015. The Mangrove Action Project (MAP; see Box 1) has used SGP to support seagrass conservation and management activities in Thailand (MAP, 2015 Pers. Comm., 28 April).⁴

2.3 Special Climate Change Fund⁵

Eligible countries

Developing countries including Pakistan, Thailand and Viet Nam.

Activities funded

Climate change mitigation and adaptation projects, including coastal zone management, disaster risk reduction, land management, natural resource management, agriculture and forestry.

Implementation arrangements

The fund is financed by GEF. Projects are implemented by GEF agencies (see section 2.1).

⁴ Jim Enright (Asia Coordinator, Mangrove Action Project).

⁵ GEF. 2015e. Special Climate Change Fund. URL: www.thegef.org/gef/SCCF; accessed 12 March 2015.

Financing arrangements

Provides grants, but projects must have co-financing (or a plan for obtaining said funding).

Relevant projects

To date, two projects have been approved in Viet Nam, one in Thailand and none in Pakistan. Of the three approved, the most relevant to mangrove conservation is 'Strengthening the Capacity of Vulnerable Coastal Communities to Address the Risk of Climate Change and Extreme Weather Events' (Thailand, 2010-2013, USD 870 000), which sought to integrate the climate change vulnerabilities and adaptation options of coastal communities into development planning processes in three provinces of southern Thailand (GEF 2015f).

2.4 UNFCCC Adaptation Fund⁶

Eligible countries

Developing countries that are parties to the Kyoto Protocol and deemed particularly vulnerable to the adverse effects of climate change, including Pakistan.

Activities funded

'Concrete' climate change adaptation and resilience projects.

Implementation arrangements

The Adaptation Fund is supervised and managed by the Adaptation Fund Board. The Board is composed of 16 members and 16 alternates, and holds periodic meetings throughout the year. The World Bank is interim trustee of the Adaptation Fund and projects are implemented by accredited national, regional or multilateral implementing entities.

Financing arrangements

Provides grants to accredited national, regional or multilateral implementing entities. There is no requirement for co-financing.

Relevant projects

One project approved in Pakistan to date: 'Reducing Risks and Vulnerabilities from Glacier Lake Outburst Floods in Northern Pakistan', 2011-2015 (Adaptation Fund 2015b). No projects in Thailand or Viet Nam to date.

⁶ Adaptation Fund. 2015a. URL: www.adaptation-fund.org; accessed 12 March 2015.

2.5 Forest Carbon Partnership Facility (FCPF) Readiness Fund⁷

Eligible countries

Forty seven REDD+ Country Participants, including Pakistan, Thailand and Viet Nam (FCPF 2015b).

Activities funded

FCPF Readiness Fund focuses on capacity development, infrastructure development and strategy development at the national level, and has limited direct scope for financing mangrove projects. Funded activities include adopting national REDD+ strategies; developing reference emission levels; designing measurement, reporting, and verification systems; and setting up REDD+ national management arrangements, including environmental and social safeguards.

Implementation arrangements

The World Bank assumes the functions of trustee and secretariat. The World Bank and UNDP are the delivery partners in Asia and are responsible for providing REDD+ readiness support to member-countries. Countries must submit their Readiness Plan, budget and schedule to undertake REDD+ activities. The FCPF governing body reviews and assesses Readiness Plans and decides on the allocation of FCPF grants.

Financing arrangements

Grants and technical assistance, with USD 110m contributed to date.

Relevant projects

In 2009, Thailand and Viet Nam were accepted as FCPF partner countries and became eligible for USD 3.8m from the Readiness Fund; activities are ongoing in both countries. Pakistan was accepted as a FCPF partner country in December 2013, but activities have yet to commence.

2.6 FCPF Carbon Fund⁸

Eligible countries

Five REDD+ Country Participants that have made significant progress in REDD+ readiness will be selected for participation based on Emission Reduction Project Documents (ER-PDs). Viet Nam has submitted an Emission Reduction Project Idea Note (ER-PIN) document, which was accepted into the pipeline for ER-PD

⁷ FCPF 2015a. The Readiness Fund. URL: www.forestcarbonpartnership.org/readiness-fund-0; accessed 13 March 2015.

⁸ FCPF. 2015c. The Carbon Fund. URL: www.forestcarbonpartnership.org/carbon-fund-0; accessed 13 March 2015.

development in April 2014. Thailand is in process of submitting its ER-PIN for consideration by the FCPF Participants' Committee.

Activities funded

Policies and measures that result in verifiable emission reductions in comparison with the baseline scenario.

Implementation arrangements

The World Bank assumes the functions of trustee and secretariat. The World Bank and UNDP are the Delivery Partners in Asia. The fund has been operational since 2011, and is expected to run until 2020.

Financing arrangements

Performance-based payments for verified emission reductions from REDD+ programmes. The payments are up to ~USD 70m per country and the fund's total capital amounts to ~USD 390m, sourced from public and private sectors (FCPF 2013).

Relevant projects

Projects will commence once ER-PDs are selected. Viet Nam's ER-PD area covers six provinces in the North Central zone, with few opportunities for mangrove-related activities.

2.7 UN-REDD Programme⁹

Eligible countries

Fifty eight partner countries, including Pakistan and Viet Nam. Viet Nam was among the initial nine countries selected to participate. As of 2016, the Government of Thailand had chosen not to join the programme.

Activities funded

The programme supports national REDD+ readiness efforts in two ways: 1) direct support to the design and implementation of UN-REDD National Programmes; and 2) complementary support to national REDD+ action through common approaches, analyses, methodologies, tools, data and best practices. In some countries, key elements of delivering emission reductions – such as REDD+ payment structuring and distribution options – will also be tested (Climate Finance Options 2015).

Implementation arrangements

The UN-REDD Policy Board provides overall leadership and sets the strategic direction. The board comprises representatives from FAO, UNDP, United Nations Environment Programme (UNEP), nine partner countries, one indigenous

⁹ UN-REDD Programme. 2015a. URL: www.un-redd.org/; accessed 14 March 2015.

people's representative, one representative from a civil society organization, and one representative per donor country (up to three). The UN-REDD Technical Secretariat ensures policies and strategies decided by the Policy Board are implemented. Primary partners for Viet Nam are Department of Forestry and Ministry of Agriculture and Rural Development.

Financing arrangements

The programme is funded by the governments of Denmark, Japan, Luxembourg, Norway, Spain and the European Union. To date, donor contributions total USD 215.2m, 91% of which has already been allocated.

Relevant projects

Phase 1 of Viet Nam's UN-REDD Programme (USD 4.38m) was completed in October 2012 and largely focused on training and awareness-raising activities (UN-REDD Programme 2012). A funding agreement for a Phase 2 (USD 30m) was signed with Norway in December 2012. Phase 2 seeks to reduce emissions in six provinces (including Ca Mau), working with provincial, district and commune authorities, local communities, and the private sector (UN-REDD Programme 2015b). A key area of support concerns the development of Provincial REDD+ Action Plans (PRAP) and there is significant potential for inclusion of activities relating to sustainable management and/or restoration of mangrove ecosystems in the Ca Mau PRAP. Phase 2 funds will also be used to initiate implementation of these plans.

In December 2012, Pakistan received funding to develop a REDD+ Readiness Roadmap; targeted support will continue through to 2015 (UN-REDD Programme 2015a). The UN-REDD Programme recently entered a second phase (2016-2020). The strategy includes implementation of REDD+ policies and measures (PAMs) to generate emissions reductions and institutional strengthening to access and disburse REDD+ finance (UN-REDD 2015c).

2.8 Community-Based REDD+ (CBR+)¹⁰

Eligible countries

Although all UN-REDD partner countries (including Pakistan and Viet Nam) are eligible, during its pilot phase (2014-2017) CBR+ will be implemented in six countries: Cambodia, Sri Lanka, Panama, Paraguay, Democratic Republic of the Congo and Nigeria.

¹⁰ UN-REDD Programme. 2015d. Community-Based REDD+ (CBR+). URL: www.un-redd.org/Stakeholder_Engagement/Community-BasedREDDCBR/tabid/1058797/Default.aspx; accessed 22 April 2015.

Activities funded

The programme funds a range of community-level activities, including addressing drivers of deforestation and forest degradation, building the capacities of communities to engage in REDD+ readiness processes, clarifying and improving the definition of land use rights, exploring mechanisms for benefit sharing, and advancing the implementation of safeguards for REDD+, among others.

Implementation arrangements

CBR+ is a partnership between the UN-REDD Programme and the GEF SGP. Grants of up to USD 50 000 will be delivered through SGP's grant-delivery mechanism. The project selection process for CBR+ is open to civil society organizations including national NGOs, indigenous people, community-based organizations and grassroots organizations.

Financing arrangements

UN-REDD's contribution to CBR+'s pilot phase includes USD 400 000 for community grants in each of the six pilot countries. This will be matched by similar co-financing from SGP, which will be provided through in-kind support and through parallel SGP grants that are complementary to CBR+ goals.

Relevant projects

In February 2015, Cambodia and Sri Lanka became the first of six pilot countries to launch their CBR+ initiatives by issuing calls for proposals for CBR+ grants (UN-REDD Programme 2015e).

2.9 Asian Development Bank (ADB) Climate Change Fund¹¹

Eligible countries

ADB developing member countries, including Pakistan, Thailand and Viet Nam.

Activities funded

Clean energy development, climate change adaptation (through enhanced resilience), and reducing emissions from deforestation and land degradation.

Implementation arrangements

The fund is accessed through ADB's operational departments. Project proposals are submitted by ADB's departments to the Climate Change Steering Committee for fund support. The committee reviews and makes recommendations on the applications for allocation six times per year (ADB 2015).

¹¹ ADB. 2015. Climate Change Fund (CCF). URL: www.adb.org/site/funds/funds/climate-change-fund; accessed 15 March 2015.

Financing arrangements

Grants are provided to projects through technical assistance, or investments in the private and public sectors. As of 31 December 2012, the USD 50m financing for the fund has been fully allocated to 60 projects: USD 30m on clean energy development, USD 14m on climate change adaptation and USD 6m on REDD (ADB 2015).

Relevant projects

‘Reducing emissions from the deforestation and forest degradation in the Biodiversity Conservation Corridors Initiative pilot sites in the Greater Mekong Subregion’ (Cambodia, Laos, Thailand, Viet Nam), USD 1m (Scribd 2015).

2.10 Nordic Climate Facility¹²

Eligible countries

A number of developing countries, including Pakistan and Viet Nam (not Thailand).

Activities funded

The facility funds climate change mitigation and adaptation activities. It promotes technological innovation in areas susceptible to climate change, including agriculture and forestry.

Implementation arrangements

Funds are dispersed based on calls for proposals targeting specific climate change themes related. The applicant must be an active institution, organization, company or authority registered in Denmark, Finland, Iceland, Norway or Sweden, with relevant experience. The applicant must have one or more eligible local partners in the country in which the project is proposed to be implemented. The latest (5th) call for proposals was launched in December 2014 and closed on 30 January 2015.

Financing arrangements

The facility is financed by the Nordic Development Fund and administered by the Nordic Environment Finance Corporation. Proposals may receive grant co-financing amounting to between EUR 250 000 and 500 000.¹³

Relevant projects

Two projects have been implemented in Viet Nam, but none relate to mangroves or REDD.

¹² Nordic Environment Finance Corporation. 2015. Nordic Climate Facility. URL: <http://www.nefco.org/work-us/our-services/climate-funds/nordic-climate-facility>; accessed 14 March 2015.

¹³ USD 1 = EUR 0.89 as of 20 May 2016 (www.xe.com).

2.11 BioCarbon Fund¹⁴

Eligible countries

Developing countries worldwide.

Activities funded

Projects that apply sustainable land management practices to restore and increase the capacity of degraded agricultural and forested lands in developing countries. Half of BioCarbon Fund projects are focussed on environmental restoration of degraded lands, 23% have invested in fuelwood production, 20% in timber production, 5% in conserving forests (i.e. REDD+) and 2% in sustainable agricultural land management. Rehabilitation of abandoned shrimp ponds into mangrove is a potentially eligible activity under the 'degraded land' segment of the BioCarbon Fund (MAP, 2015 Pers. Comm., 27 April 2015).

Implementation arrangements

Housed within the Carbon Finance Unit of the World Bank, the Fund is a public-private sector initiative. Investors currently include six governments (Canada, Ireland, France, Italy, Luxembourg and Spain) and 12 private companies (mostly Japanese). The fund finances projects implemented by NGOs, community groups and companies.

The BioCarbon Fund has developed nine approved carbon accounting methodologies: seven on afforestation/reforestation under the UNFCCC Clean Development Mechanism (CDM), one on REDD+ and one on sustainable land management. The methodologies are publicly available for use by project developers.

Financing arrangements

On behalf of its investors, the BioCarbon Fund pays for land-based carbon emission reductions generated by projects. Investors can either use the resulting carbon credits against their emission reductions obligations, or can retire them.

Results-based emission reductions payments benefit project stakeholders in accordance with the benefit-sharing arrangements agreed as part of each project. Project stakeholders generate additional revenues via increased local incomes and other indirect benefits from sustainable land management practices.

The first tranche of funding (USD 53.8m) became operational in May 2004 and the second tranche was operationalized in March 2007 (USD 29.5m). Both tranches are now closed.

¹⁴ World Bank Carbon Finance Unit. 2015. BioCarbon Fund. URL: <https://wbcarbonfinance.org/Router.cfm?Page=BioCF&ItemID=9708&FID=9708>; accessed 15 March 2015.

Relevant projects

During 2004-2014, 20 projects totalling USD 90m were funded in 16 countries across Africa, Asia, Europe and Latin America (none in Pakistan, Thailand or Viet Nam).

2.12 Global Facility for Disaster Reduction and Recovery (GFDRR)¹⁵

Eligible countries

Viet Nam is a priority core country; Pakistan is a donor-earmarked non-core country.

Activities funded

Mainstreaming disaster and climate risk management policies into country-level strategies. Areas of focus include provision of technical advice and grants in support of larger investments in disaster risk reduction. Two-thirds of assistance provided by GFDRR has focused on climate change adaptation.

Implementation arrangements

GFDRR is global grant-making facility managed by the World Bank and funded by 25 donor partners. Financial resources are administered as grants to World Bank task teams that work directly with government agencies, development partners, technical bodies, NGOs and private actors.

Financing arrangements

GFDRR provides grant financing and technical assistance. In the 2014 financial year, GFDRR's portfolio consisted of 226 operational grants totalling USD 156m. Grants are typically one to three years in duration (GFDRR 2015).

Relevant projects

Viet Nam's Disaster Risk Management Capacity Building Program (GFDRR 2014).

2.13 International Union for Conservation of Nature (IUCN)¹⁶

Eligible countries

IUCN is active throughout Asia, including Pakistan, Thailand and Viet Nam.

Activities funded

IUCN's work focuses on three key areas: 'valuing and conserving nature,' 'effective and equitable governance of nature's use,' and 'deploying nature-based solutions to global challenges in climate, food and development.'

¹⁵ GFDRR. 2015. URL: www.gfdr.org; accessed 15 March 2015.

¹⁶ IUCN (International Union for Conservation of Nature). 2015a. URL: www.iucn.org; accessed 16 March 2015.

Implementation arrangements

IUCN is the world's largest global environmental organization, with more than 1 200 government and NGO members and almost 11 000 volunteers in 160 countries. IUCN's work is supported by over 1 000 staff in 45 offices and hundreds of public and private partners around the world.

Financing arrangements

IUCN is supported by a large network of partners that help fund and implement programme activities and offer knowledge and expertise to support IUCN's work.

Relevant projects

- 'Mangroves for the Future' (MFF) initiative, co-chaired by IUCN and UNDP (MFF 2016a).
- 'Strengthening the Resilience of Coastal Communities, Ecosystems, and Economies to Sea-Level Rise and Coastal Erosion,' Pakistan and Thailand; Jan 2013 – Dec 2014; funded by Sida through MFF, Government of the Republic of Korea and UNEP; USD 440 000; implemented by UNEP, Ministry of Climate Change (Pakistan) and Department of Marine and Coastal Resources (DMCR, Thailand) (MFF 2015a; IUCN 2015b).
- 'Building Resilience to Climate Change Impacts – Coastal Southeast Asia,' Thailand, Viet Nam and Cambodia; Jan 2011 – Dec 2014; funded by the European Union and IUCN; around EUR 3m; implemented by IUCN's Asia Regional Office in Bangkok, MoNRE (Viet Nam) and the DMCR (Thailand) (IUCN 2015c; IUCN 2015d).
- 'Mangroves and Markets', Ca Mau Province in Viet Nam (Viet Nam News, 2014) and Trat, Chanthaburi and Samut Prakan provinces in Thailand (IUCN 2015e; IUCN 2015f).
- 'Mapping and Enhancing Natural Resource Governance in Small Island Communities,' Sri Lanka, Maldives, Seychelles, and Thailand; Jan 2013 - June 2015; funded by Sida through MFF; implemented by UNEP/COBSEA, Maldives National University, Mahidol University (Thailand), Seychelles National Park Authority and IUCN Sri Lanka (MFF 2015b).

2.14 Community-based mangrove reforestation and disaster preparedness programme, International Federation of Red Cross and Red Crescent Societies (IFRC)¹⁷

Eligible countries

Viet Nam.

Activities funded

The project focuses on planting of mangroves, bamboo and casuarina to better protect dykes and communities from hazards such as typhoons, storms and floods, as well as to provide additional income to poor community members (IFRC 2011). In addition, teachers, students and local leaders undertake awareness programmes on disaster preparedness and the protective function of trees.

Implementation and financing arrangements

The programme began in 1994 and as of 2015 was implemented by Viet Nam Red Cross with support from the Danish Red Cross, the International Federation of Red Cross and Red Crescent Societies and the Japanese Red Cross Society.

Between 1994 and 2011, USD 8.9m were disbursed for tree planting, disaster preparedness and awareness raising in 300 communities and 8 961 hectares of mangroves were planted in eight coastal provinces in Northern Viet Nam. In 2011, an additional USD 2.5m was donated by JRC for further planting to be undertaken during 2011-2015 in 10 cities and provinces (Quang Ninh, Hai Phong, Thai Binh, Nam Dinh, Ninh Binh, Thanh Hoa, Nghe An, Ha Tinh, Hoa Binh and Vinh Phuc; Vietnam Business Forum 2011).

The reforestation cost for one hectare of mangroves under the programme was calculated at USD 777, which is significantly lower than in government projects. Major external challenges were, however, identified in relation to sustainability (IFRC 2011).

2.15 International Fund for Agricultural Development (IFAD)¹⁸

Eligible countries

Developing countries.

Activities funded

IFAD focuses exclusively on rural poverty reduction in developing countries.

¹⁷ UNEP. 2016. Community-based Mangrove Reforestation and Disaster Preparedness Programme, Viet Nam. URL: <http://web.unep.org/coastal-eba/content/community-based-mangrove-reforestation-and-disaster-preparedness-programme-viet-nam>; accessed 18 May 2016.

¹⁸ IFAD. 2015a. URL: www.ifad.org; accessed 17 March 2015.

Implementation arrangements

IFAD is a specialised United Nations agency. It works with national governments to develop and finance programmes and projects that enable the rural poor to overcome poverty. IFAD-financed projects are implemented by national staff with support and guidance from national and international IFAD staff.

Financing arrangements

IFAD provides low-interest loans and grants to approved projects and programmes. Since starting operations in 1978, IFAD has invested USD 16 billion, reaching over 430m people (IFAD 2014).

Relevant projects

- ‘Rehabilitation and Sustainable Use of Peatland Forests in South-East Asia’, regional (Indonesia, Malaysia, Philippines, Thailand, Viet Nam) – to demonstrate integrated management of peatlands in Southeast Asia through strengthened capacity, multi-stakeholder partnerships, and testing of innovative approaches and rehabilitation in pilot sites and upscale good peatland management practices (GEC 2015).
- ‘Adaptation in the Mekong Delta (AMD) in Ben Tre and Tra Vinh Provinces’ project, Viet Nam (see section 4.1.4 below).

2.16 Green Climate Fund (GCF)¹⁹

Eligible countries

Developing countries.

Activities funded

The fund provides support to projects, programmes and policies in developing countries to limit or reduce greenhouse gas emissions and adapt to climate change impacts.

Implementation arrangements

GCF was formed in 2010 and operates within the framework of the UNFCCC. The fund is governed by a 24-member board, composed of an equal number of members from developing and developed countries. As of March 2016, 33 agencies were accredited to implement GCF projects and programmes (GCF 2016a).

Financing arrangements

GCF is financed through pledges from developed countries. Pledges reached USD 10.2 billion in February 2016 (GCF 2016b).

¹⁹ GCF. 2015a. URL: <http://news.gcfund.org/>; accessed 17 March 2015.

Relevant projects

In 2015 GCF allocated funding to an eight initial projects in Peru, Malawi, Senegal, Bangladesh, East Africa, Latin America and the Caribbean, the Maldives and Fiji (GCF 2015b). The projects included enhancing livelihoods and reducing deforestation in wetland communities (Peru), restoring salinized lands (Senegal) and improving climate resilience (Bangladesh).

3 Bilateral public finance

Bilateral public finance refers to flows of funding from national governments in developed countries to developing countries, rather than via multilateral institutions. Similar to multilateral public finance, bilateral public finance often does not require immediate repayments, and thus can be used to finance investments that do not offer direct financial returns or where the financial case is not clear. Bilateral institutions distribute finance on a much larger scale than multilateral institutions (Conway *et al.* 2015). Access relies heavily on national capacity and regulatory frameworks and reporting burdens may be high. Access is frequently dependent on strong bilateral relationships between donor and recipient countries (Conway *et al.* 2015).

3.1 International Climate Initiative (Germany)²⁰

Eligible countries

Developing and newly industrialising countries and countries in transition that have a high potential for emissions reduction.

Activities funded

Climate change mitigation and adaptation, REDD+ and biodiversity conservation projects.

Implementation arrangements

Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) selects projects annually through a call for proposals. The initiative supports projects carried out in partner countries by federal implementing agencies, NGOs, business enterprises, universities and research institutes, and international and multinational organisations.

Financing arrangements

The initiative is funded from the BMUB's budget. At least EUR 120m is available for use by the initiative annually. Funds are disbursed mainly in the form of grants although some financing may be provided as concessional loans. The financing is intended to encourage private investment. Since 2008, 500 projects with funding totalling EUR 1.7 billion were initiated.

Relevant projects

- 'Improved management of extreme events through ecosystem-based adaptation in watersheds,' Thailand, 2013-2016, implemented by GIZ (International Climate Initiative 2015b).

²⁰ International Climate Initiative. 2015a. URL: www.international-climate-initiative.com/en/; accessed 19 March 2015.

- 'Ecosystems Protecting Infrastructure and Communities' (EPIC), 2012-2017. EPIC involves field case study projects in six countries, including a Community Based Ecological Mangrove Restoration project implemented by MAP and IUCN Thailand (EPIC 2015a, 2015b; see Box 1).
- 'Mapping carbon content in forests, monitoring and REDD+ capacity building,' Thailand, 2011-2014, implemented by WWF (International Climate Initiative 2015c).
- 'Innovative Financing to Enhance Resilience to Climate Change in Coastal Viet Nam,' Nghe An Province, Viet Nam, 2011-2014, implemented by SNV (SNV 2015a).
- 'Delivering environmental and social co-benefits from REDD+ in Southeast Asia,' Laos and Viet Nam, 2010-2016, implemented by SNV (SNV 2015b).
- 'Advancing understanding of forest carbon stock enhancement as part of REDD+,' Laos and Viet Nam, 2011-2014, implemented by SNV (International Climate Initiative 2015d).
- 'Preventing deforestation, forest degradation and leakage,' Laos and Viet Nam, 2011-2014, implemented by KfW Development Bank and WWF (International Climate Initiative 2015e).

Six projects have been implemented in Thailand since 2008, with a grant contribution of USD 13m (ODI 2014).

Box 1. Mangrove Action Project (MAP), Thailand

MAP is a global non-profit network dedicated to mangrove conservation (MAP 2015). Founded in 1992, its international headquarters are in Port Angeles, Washington, USA. MAP has run projects in 31 countries, including Thailand. Its activities include ecological mangrove restoration, youth environmental education programs, natural resource capacity building, sustainable livelihoods projects and community-based tourism projects. MAP has received donations and other support from many sources including BMZ, the International Climate Initiative, USAID, IUCN and UNEP. Its total revenue in 2013 was USD 166 388 (MAP 2013).

In 2001, a regional MAP-Asia office was established in Trang Province, Thailand. MAP-Asia currently operates two projects in Thailand:

- 'Ecosystems Protecting Communities and Infrastructure (EPIC),' Krabi Province, 2013-2017 (EPIC 2015b); and
- 'Mangrove Restoration and Reforestation in Asia, a Project for Knowledge Exchange and Action to Reduce Climate Change, and Conserve Forest and Biodiversity,' Trang and Krabi provinces, 2012-2015 (MAP 2014).

3.2 Germany's REDD+ Early Movers Programme (REM)²¹

Eligible countries

Developing countries which have already taken independent action towards mitigating climate change. By providing financial support for the REDD+ interim phase, REM 'aims to assist in closing funding gaps and actively counter the frustrations of particularly engaged partner countries (Early Movers) related to the pace of the current REDD process' (The REDD Desk 2015).

Activities funded

Avoided deforestation (but not forest degradation) which resulted in demonstrated emission reductions. Emission reduction efforts undertaken at a national, sub-national or biome level and coherently integrated into national strategies and policy goals are supported, while project-level initiatives are not supported.

Implementation arrangements

Established in 2012, REM is commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by KfW Development Bank and GIZ. Cooperation is based on a bilateral agreement between REM and the respective country.

Financing arrangements

Wherever possible, performance-based payments are made ex-post demonstrated emission reductions. Such payments are non-market based and purchased emission reductions are retired by the Government of Germany.

REM can also provide ex-ante incentive payments to promote forest conservation in countries where the establishment of a results-based scheme is foreseeable in the near future. Particular "readiness" gaps directly linked to the implementation of a results-based scheme can be closed via targeted technical assistance. In order to receive non-performance based support, a reference emission level must be set up in the first half of the funding period.

Prior to programme start, REM tries to agree upon a benefit-sharing mechanism linked to existing implementation structures to allow an immediate operative kick-start.

Relevant projects

In 2012, REM engaged in its first transaction, pledging to retire 8m tonnes of carbon dioxide emission reductions over 4 years from avoided deforestation

²¹ The REDD Desk. 2015. Germany's REDD+ Early Movers Programme. URL: <http://theredddesk.org/markets-standards/germanys-redd-early-movers-programme>; accessed 20 March 2015.

generated by the State of Acre, Brazil. The pledged compensation was around USD 26m (GCP, IPAM, FFI and UNEP FI, 2014).

3.3 DEG (Deutsche Investitions- und Entwicklungsgesellschaft, Germany)²²

Eligible countries

DEG funds enterprises based in developing and industrialised countries, or banks providing loans for local companies.

Activities funded

DEG seeks to promote business initiatives in developing and emerging market countries via long-term financing and advice to private investors. The focus is on sustainable growth and improved living conditions of the local population.

Implementation arrangements

DEG is a subsidiary of KfW Development Bank. DEG's selection criteria include the common Environmental and Social Guidelines of the European Development Finance Institutions.

Financing arrangements

DEG offers equity capital, mezzanine finance, long-term loans (4-10 years) and guarantees. It relies almost exclusively on its own funds rather than budget funds from the German Government. DEG's current portfolio is around EUR 6.8b, of which over 40% is risk capital finance.

Relevant projects

None in Pakistan, Thailand or Viet Nam.

3.4 International Climate Fund (ICF) (UK)²³

Eligible countries

Developing countries (not including Thailand).

Activities funded

Climate change mitigation and adaptation, and reduced deforestation.

²² KfW DEG. 2015. URL: www.deginvest.de/International-financing/DEG/; accessed 23 March 2015.

²³ UK Government. 2015. Policy paper: 2010 to 2015 government policy: climate change international action. Appendix 8: International Climate Fund (ICF). URL: <https://www.gov.uk/government/publications/2010-to-2015-government-policy-climate-change-international-action/2010-to-2015-government-policy-climate-change-international-action#appendix-8-international-climate-fund-icf>; accessed 22 March 2015.

Implementation arrangements

Management of the ICF is split between three government departments: Department of Energy & Climate Change (DECC), Department for International Development (DFID) and Department for Environment, Food & Rural Affairs (Defra). Proposals must come through DFID country offices or central departments as well as from DECC and Defra. The project delivery partners include the private sector, civil society organizations and academic institutions, but the proposal has to be sponsored and managed by one of the three departments.

Financing arrangements

ICF funds projects through grant finance (for bilateral contributions) and capital contributions/concessional loans (for multilateral funds). ICF funds are typically channelled through global multilateral funds rather than towards specific country initiatives (Conway et al. 2015). GBP 3.87 billion in funding is to be allocated between April 2011 and March 2016.

Relevant projects

‘Viet Nam Climate Innovation Centre’, Viet Nam, 2013-2016 (Development Tracker 2015).

3.5 Norway’s International Climate and Forest Initiative (NICFI)²⁴

Eligible countries

All developing countries. Priority is given to developing countries with REDD+ programmes or where the Norwegian Agency for Aid and Development is already working. NICFI’s activities have focused on four countries: Brazil, Indonesia, Guyana and Tanzania.

Activities funded

REDD+ activities which are consistent with Norwegian development policies.

Implementation arrangements

NICFI funds national governments, international coalitions, civil society organizations, research institutions and NGOs in developing countries. Project agreements are 1 to 3 years.

Financing arrangements

Grants funded through the Norwegian aid budget. USD 1.7 billion was disbursed during 2008-2014, including 44% to Brazil, 11% to FCPF, 11% to UN-REDD and

²⁴ Government of Norway. 2015. Norway's International Climate and Forest Initiative (NICFI). URL: www.regjeringen.no/en/topics/climate-and-environment/climate/climate-and-forest-initiative/id2000712/; accessed 3 April 2015.

9% to civil society. The initiative was set to end in 2015 but has been extended to 2020 (NORAD 2016).

Relevant projects

None in Pakistan, Thailand or Viet Nam.

3.6 FMO Entrepreneurial Development Bank (Netherlands)²⁵

Eligible countries

Developing and emerging countries.

Activities funded

FMO finances businesses, projects and financial institutions in developing and emerging countries with the aim of supporting sustainable private sector development. Focus is on four sectors: financial institutions; energy; agribusiness, food and water, and 'diverse sectors.'

Implementation arrangements

FMO is the Dutch development bank. It is a public-private partnership, with 51% shares held by the Dutch State and 49% by commercial banks, trade unions and other members of the private sector.

Financing arrangements

FMO offers a range of products including equity, loans and guarantees; capital market transactions; mezzanine and other tailor-made solutions; long-term and short-term project financing; and financial advice.

Relevant projects

FMO funds a number of projects in Pakistan, Thailand and Viet Nam, but none relate to REDD+ or mangroves.

3.7 French Global Environment Facility (FFEM)²⁶

Eligible countries

Developing countries.

Activities funded

Development projects with high environmental component in the areas of biodiversity, climate change mitigation and adaptation, international waters, land degradation and desertification, persistent organic pollutants and the stratospheric ozone layer.

²⁵ FMO (Entrepreneurial Development Bank). 2015. URL: <http://www.fmo.nl/home>; accessed 2 April 2015.

²⁶ FFEM (Fonds Francais Pour L'Environnement Mondial). 2015. URL: www.ffem.fr/lang/en/accueil-FFEM; accessed 3 April 2015.

Implementation arrangements

FFEM is a French public fund, governed by five French ministries and the French Development Agency. It works with donors, public entities, private companies, researchers, local authorities, NGOs and foundations.

Financing arrangements

In 2013, EUR 23.1m was provided for 21 new projects; however, only EUR 800 000 was spent in Asia-Pacific.

Relevant projects

No activities in Pakistan, Thailand or Viet Nam.

3.8 SNV REDD+ Energy and Agriculture Programme (Netherlands)²⁷

Eligible countries

Developing countries; no current activities in Thailand.

Activities funded

SNV supports projects involving a) protection of forests by providing incentives for communities to manage these resources; and b) piloting and introducing REDD+ compatible solutions in agriculture and renewable energy sectors.

Implementation arrangements

SNV has over 40 advisors working on REDD+ across 14 countries in Africa and Asia.

Financing arrangements

SNV implements projects funded by external agencies, including BMUB, the International Climate Initiative, USAID and GEF.

Relevant projects

- 'Advancing Understanding of Natural Forest Carbon Stock Enhancement as part of REDD+ (ENRICH)', Viet Nam and Laos (SNV 2015d).
- 'Viet Nam Forests and Deltas Program', Viet Nam (see below).
- USAID 'Lowering Emissions in Asia's Forests' (USAID LEAF) - Cambodia, Laos, Malaysia, Papua New Guinea, Thailand and Viet Nam (USAID LEAF 2015).
- 'Delivering Environmental and Social Multiple Benefits from REDD+ in South East Asia (MB-REDD)', Viet Nam and Laos (SNV 2015e).

²⁷ SNV. 2015c. SNV. URL: www.snv.org; accessed 3 April 2015.

3.9 Viet Nam Forests and Deltas Program (USAID)²⁸

Eligible countries

Viet Nam.

Activities funded

The program focuses on reducing emissions from the forestry and agriculture sectors, and strengthening climate-smart livelihoods and settlements, particularly in rural areas. Addressing long-term climate change risks and gender vulnerabilities in both forest and delta landscapes are key programme objectives.

Implementation arrangements

The five-year programme began in late 2012, is implemented by Winrock International, SNV, American Red Cross, Viet Nam Red Cross, and the Center for Sustainable Rural Development in conjunction with the Viet Nam Ministry of Agriculture and Rural Development and provincial governments.

Financing arrangements

The programme has a budget of USD 26.5m, and is funded by USAID.

Relevant projects

Two projects are currently being implemented under the program. ‘Supporting land-use practices which maintain forest resources and enhance environmental services’ conducts training on sustainable forest management, afforestation and land-use planning in Thanh Hoa and Kon Tum provinces. ‘Increasing resilience of people, places and livelihoods’ supports commune-level disaster risk reduction planning in Long An and Nam Dinh provinces.

²⁸ SNV. 2015f. Viet Nam Forests and Deltas Program. URL: <http://www.snv.org/project/vietnam-forests-and-deltas-programme>; accessed 4 April 2015.

4 Domestic public finance

Domestic public finance refers to funding provided by national governments, including central, provincial and local authorities. Governments in developing countries may also act as intermediaries for finances provided by multilateral and bilateral donors, which can make it difficult to separate these categories. The majority of domestic public finance comes through national budget allocations, which may be passed on in the form of subsidies, grants, concessional loans or tax concessions, often through national development banks (Conway *et al.* 2015). PES – where incentives are offered to individuals or communities in exchange for maintaining or providing services related to biodiversity, water, climate change or other ecosystem functions – are also gaining popularity, with Viet Nam already having a national PES scheme in place.

Domestic public finance usually contains less stringent monitoring and reporting requirements in comparison with international finance and there is no competition with applicants from other countries, which increases the likelihood of gaining funding. However, the amounts of funding available are smaller amounts than those associated with international finance and domestic public finance is also more susceptible to political changes such as election of a new government.

4.1 Viet Nam

4.1.1 *Support Program to Respond to Climate Change (SPRCC)*²⁹

Activities funded

SPRCC is a policy-based budget support programme which aims to incorporate climate change mitigation and adaptation considerations into Viet Nam's development policies.

Implementation arrangements

SPRCC was set up to mobilise resources from international donors to support the implementation of the National Target Programme to Respond to Climate Change. SPRCC includes a matrix of actions targets and indicators across sectors, including forestry, coastal management and natural disaster risk management. This matrix is agreed between donors and the Government of Viet Nam, including line ministries and other stakeholders. SPRCC is implemented by MoNRE and eight other line ministries.

²⁹ GGBP. 2015. Support Program to Respond to Climate Change. URL: www.ggbp.org/case-studies/viet-nam/support-program-respond-climate-change; accessed 4 April 2015.

Funding arrangements

SPRCC is funded by the French Development Agency, the Australian Government, the Canadian International Development Agency, Korean EXIM Bank, the World Bank and Japan International Cooperation Agency (JICA). The first phase of the programme (2009-2012) received USD 620m.

Financial support is provided in the form of grants and loans. Donors provide concessional loans as un-earmarked budget support with annual contributions released on achievement of actions and outcomes. The government then allocates this through the national budget.

The domestic allocation of SPRCC funds is through a defined process guided by criteria and priorities set by MoNRE. Ministries and localities submit projects and requests for funding. These are compiled into a prioritized list by MoNRE and submitted to the Ministry of Planning and Investment and The Ministry of Finance.

Timeline

Phase 1: 2009-2012; Phase 2: 2013-2015.

4.1.2 Viet Nam Forest Protection and Development Fund (VNFF)³⁰

Activities funded

The VNFF supports implementation of the Viet Nam Forest Development Strategy 2006-2020 by mobilizing and distributing financial resources for forest protection and development activities. Financing is distributed through programmes, projects, provincial-level forest protection and development funds, and non-project activities (MARD 2008).

Implementation and funding arrangements

The VNFF is managed by the Ministry of Agriculture and Rural Development (MARD). The main source of funding is revenue from the national payment for forest environmental services (PFES) scheme. Four environmental services are eligible: 1) watershed protection; 2) landscape and biodiversity protection payments for tourism purposes; 3) forest carbon sequestration; and 4) protection of spawning grounds, sources of feeds and natural seeds, and use of water from forest for aquaculture. To date, most payments generated have been in watershed protection, while payments from tourism have been minimal and institutional mechanisms for the third and fourth services are still under development (Conway et al. 2015).

VNFF channels funds to provincial Forest Protection and Development Funds (FPDFs), which hold contracts with service buyers, collect payments, and

³⁰ VNFF (Viet Nam Forest Protection and Development Fund). 2015. URL: <http://vnff.mard.gov.vn/en>; accessed 5 April 2015.

disburse payments to suppliers. Payments are disbursed to individuals, households, communities, or organizations to conduct forest protection activities. Eligible recipients are those entitled to use and manage forest land. By the end of 2013, 31 out of 63 provinces had established a provincial forest protection and development fund (Conway et al. 2015).

Timeline

VNFF was established in 2008 and became the successor of the Trust Fund for Forest (TFF).

4.1.3 Viet Nam Inclusive Innovation Project (National Foundation for Science and Technology Development)³¹

Activities funded

The objective of the Viet Nam Inclusive Innovation Project is to adopt, upgrade and develop inclusive innovations for the benefit of the ‘base of pyramid’ population. The project supports development of technological solutions to address Viet Nam’s development challenges, and the adoption of these technologies by small- and medium-sized enterprises.

Implementation arrangements

The project was launched in December 2013 and is set to close in November 2018. The National Foundation for Science and Technology Development is the implementing agency. The project is running behind schedule, with the first call for proposals expected in late January / early February 2015.

Financing arrangements

The project provides loans and matching grants to enterprises for upgrading, scaling up and commercialization of inclusive technologies. The project budget is USD 55.62m; USD 55m is provided by the International Development Association (IDA, a member of the World Bank Group) as a Specific Investment Loan. USD 5.61m has been disbursed to date.

³¹ World Bank. 2015. Viet Nam Inclusive Innovation Project. URL: www.worldbank.org/projects/P121643/vietnam-inclusive-innovation-project?lang=en; accessed 5 April 2015.

4.1.4 'Adaptation in the Mekong Delta (AMD) in Ben Tre and Tra Vinh Provinces' project³²

Activities funded

The AMD project seeks to build climate change adaptation capacity in the agriculture and rural development sector and to invest in sustainable rural livelihoods by providing financing and facilities to scale up the results of community-based research and development. The target group is rural households with and without land or other productive assets, including those without marketable skills.

Implementation arrangements

The project is funded by IFAD under its Adaptation for Smallholder Agriculture Programme. It is implemented through Provincial People's Committees in 32 communities in Ben Tre and Tra Vinh provinces.

Financing arrangements

The project budget is USD 49.3m, with includes a USD 22m loan and a USD 12m grant from IFAD. Based on detailed proposals from farming households, household enterprises and cooperatives, the project approves co-financing of up to 50% of the costs of each investment, with a maximum co-financing of VND 30m per household and VND 750m per cooperative.³³

4.2 Thailand

4.2.1 The Environment Fund

Activities funded

The fund aims to acquire and channel financial resources for environmental protection and improvement (Conway *et al.* 2015). It mainly funds air quality projects, wastewater treatment systems and waste disposal systems, but can fund any activity concerning the enhancement and conservation of environmental quality; for example, reforestation capacity building for communities was supported in 2011 (ODI 2014).

Implementation and funding arrangements

The Office of the Environment Fund is responsible for the management and administration of the fund. It is a division under the Office of Natural Resources and Environment Policy and Planning, within the Ministry of Natural Resources

³² IFAD. 2015b. Project for Adaptation to Climate Change in the Mekong Delta in Ben Tre and Tra Vinh Provinces. URL: http://operations.ifad.org/web/ifad/operations/country/project/tags/viet_nam/1664/project_overview; accessed 5 April 2015.

³³ USD 1 = VND 22 316 as of 20 May 2016 (www.xe.com).

and Environment (MoNRE). The Industrial Finance Corporation and Krung Thai Bank serve as the financial intermediaries for the fund's credit facilities.

The fund provides grants to NGOs and local governments, as well as soft loans to local governments and the private sector. Soft loans are given priority. Of the fund's USD 36m disbursed in 2014, 70% was disbursed as soft loans to private sector, and 30% was disbursed as grants to NGOs and communities (Conway *et al.* 2015).

Initial sources of capital include the Fuel Oil Fund (USD 180m), the Revolving Fund for Environmental Development and Quality of Life (USD 20m), and grants from the Thai government (USD 50m). Other revenue sources are soft loans from the Japanese government, service fees and penalties, private donors, international donors and interest from the fund's capital (Conway *et al.* 2015).

Timeline

The fund was established in 1992.

Box 2. Thailand Environment Institute (TEI, Thailand)

Established in 1993, TEI is an NGO focused on environmental issues in Thailand (TEI 2015a). After the 2004 Indian Ocean Tsunami, TEI supported the restoration and management of mangrove forest areas with coastal communities in Pang Nga and Ranong Provinces. This included the development and implementation of mangrove forest management plans based on local data and field surveys (TEI 2015b). TEI has also conducted case studies on community-level mangrove forest rehabilitation in Thailand (Chotthong & Aksornkoae 2005).

4.2.2 Ministry of Natural Resources and Environment (MoNRE)³⁴

According to the 2012 Thailand Climate Public Expenditure and Institutional Review published by the Overseas Development Institute, MoNRE accounts for 55% of the national climate budget (ODI 2014). The Office of Natural Resources and Environment Policy and Planning within MoNRE oversees national climate change adaptation activities. The DMCR within MoNRE is responsible for coordinating coastal communities towards conserving the mangrove forest and preventing coastal damage and coral reef bleaching.

4.2.3 Coastal Area Conservation Project

This Coastal Area Conservation Project is one of the 'flagship projects' under the Thailand Climate Change Master Plan 2012-2050 prepared by the National Economic and Social Development Board (ODI 2014). The project entails infrastructure investment along the coastline to preserve marine life through mangrove planting and rehabilitation of coral and marine life. The estimated

³⁴ MONRE. 2015. URL: <http://webeng.mnre.go.th/main.php?filename=index>; accessed 6 April 2015.

budget is THB 2m over 20 years (2010-2030).³⁵ The first phase (2010-2020) will focus on establishing mangrove plantations and the second (2020-2030) on rehabilitation of marine life and coral (ODI 2014).

4.3 Pakistan

4.3.1 *Possible Role of Mangroves in Curbing Sea Intrusion in Indus Delta*

Activities funded

The project focuses on combating land degradation (water-logging and salinity) caused by sea intrusion in District Thatta (Talukas Ketu Bunder and Khari Chan, Ghorabari) of Sindh Province (FCPF & UN-REDD 2014; IUCN 2015g). Specifically, the project seeks to protect coastal areas from accelerated sea intrusion/erosion via mangrove replanting, simultaneously reclaiming water-logged and saline agricultural areas. The project contains a community development programme, including comprehensive formal and informal training on mangroves planting and disaster risk reduction.

Implementation and funding arrangements

Project funding totals PKR 698m.³⁶ The project is funded by the Government of Sindh and implemented jointly by the Sindh Forest and Wildlife Department and IUCN Pakistan.

Timeline

2013-2020 (7 years).

4.3.2 *Conservation and Development of Indus Delta Mangroves under the Administrative Control of Sindh Board of Revenue and Port Qasim Authority Coastal Belt of Sindh*

This project is mentioned in the 2014 FCPF Readiness Preparation Proposal (RPP) for Pakistan with reported funding of PKR 80.57m (USD 791 734) FCPF/UN-REDD 2014). The implementation arrangements are, however, unclear. According to the website of the Provincial Assembly of Sindh, 1 000 hectares of mudflats were afforested and 200 000 plants were raised in a nursery by October 2010 (Provincial Assembly of Sindh 2011).

4.3.3 *Conservation Development and Management of Indus Delta Mangroves to Check Sea Intrusion*

This project is mentioned in the 2014 FCPF Readiness Preparation Proposal (RPP) for Pakistan with reported funding of PKR 63 167 000 (USD 620 510) FCPF/UN-REDD Programme 2014). The implementation arrangements are, however, unclear.

³⁵ USD 1 = THB 35.7 as of 20 May 2016 (www.xe.com).

³⁶ USD 1 = PKR 104.7 as of 20 May 2016 (www.xe.com).

4.3.4 Extension of Mangrove Plantation in Coastal Districts of Balochistan

This community-based mangrove conservation scheme is implemented by the Forests and Wildlife Department of Balochistan Province with public funding of PKR 23m. The scheme aims to reforest 2 500 hectares of mangroves along the Balochistan coast, prepare a management plan and establish an endowment fund (Government of Balochistan Province, Pakistan 2016; Shah, 2016 Pers. Comm., 14 April).³⁷

4.3.5 Pakistan Navy Mangrove Plantation Campaign

The Pakistan Navy, under the directive of the Chief of Naval Staff, has initiated the Pakistan Navy Mangrove Plantation Campaign 2016. Under the campaign, the Pakistan Navy has set a target of planting one million mangrove seedlings along the Balochistan and Sindh coasts. This campaign seeks to raise awareness of the importance of mangroves while improving the area and health of mangrove forests in the Pakistan. The campaign was launched on International Day of Forests (21 March 2016) in collaboration with IUCN's MFF initiative (MFF 2016b).

³⁷ S.G.Q. Shah (MFF National Coordinator, IUCN Pakistan).

5 Private-sector initiatives

This section covers private sources of finance including foundations, impact investors, companies engaged in relevant corporate social responsibility (CSR) activities in Pakistan, Thailand and Viet Nam. Neither compliance nor voluntary market carbon finance is covered due to the high project validation and verification costs, which make these financing sources less attractive for mangrove conservation on a small-medium scale (Broadhead 2011). With respect to the Clean Development Mechanism (CDM), the price of carbon credits fell to USD 0.30 in December 2014 compared to over USD 30 in 2009 and the CDM is therefore not expected to be a significant source of financing in the near future (Michael 2014; Conway *et al.* 2015).

The potential scale of private-sector funding is much larger than currently available from the public sector although for large inflows of financing to become available investments that promote mangrove protection would need to generate a financial return. To enable mangrove protection to become a mainstream economic activity, certain public sector instruments, such as loan guarantees, may be used to leverage private sector finance by reducing the risk associated with investment (e.g. in ‘mangrove friendly’ shrimp production). The private sector may also provide funding and support through foundations and CSR activities, which generally do not require direct financial returns.

5.1 Foundations

Foundations are NGOs established for charitable, non-profit purposes. They donate funds to other organisations or fund their own charitable activities (Conway *et al.* 2015).

5.1.1 Climate and Land Use Alliance

The Climate and Land Use Alliance (CLUA) is a collaborative initiative of four major US environmental foundations (ClimateWorks Foundation, the David Lucile & Packard Foundation, Ford Foundation, and Gordon and Betty Moore Foundation). Its objective is ‘to realize the potential of forested and agricultural landscapes to mitigate climate change, benefit people, and protect the environment’ (CLUA 2015a).

Whilst the alliance operates primarily in Brazil, Indonesia, Central America and USA, it also supports global public and private initiatives that ‘help achieve large cuts in greenhouse gas emissions from land use, and improve the land rights of indigenous people and rural communities’ (CLUA 2015a).

During 2010-2013, the alliance awarded 530 grants and contracts totalling over USD 148m. This included a USD 200 000 grant to Community Forestry

International to demonstrate the effectiveness and viability of community-based approaches to REDD in 2013 (CLUA 2015b).

5.1.2 *Plant a Tree Today (PATT) Foundation*

Formed in 2005, PATT is a UK-registered charity and a registered Thai foundation operating throughout Southeast Asia (PATT 2015). PATT initiates, develops and manages large-scale reforestation projects, as well as conducting environmental education programmes for school children across the UK and Thailand.

The foundation has offices in Bangkok and UK, and representatives in India. It is currently implementing tree planting projects in Thailand, India and Indonesia. PATT is funded by long-term members including Standard Chartered Bank, FedEx, Crown Worldwide Group, Citi and Raimon Land, and also collects online donations (PATT 2015).

5.1.3 *The Asia Foundation*

The Asia Foundation is a non-profit international development organization committed to improving lives across developing Asia (The Asia Foundation 2015). Its focus areas include governance and law, economic development, women's empowerment, environment (including climate change adaptation and resilience) and regional cooperation.

Headquartered in San Francisco, the foundation works through a network of offices in 18 Asian countries including Thailand, Viet Nam and Pakistan. Working with public and private partners, it receives funding from bilateral and multilateral development agencies, foundations, corporations and individuals. In 2014, it provided over USD 108m in direct programme support.

5.1.4 *Rockefeller Foundation*

The Rockefeller Foundation is a US-based philanthropic organisation and private foundation which seeks 'to promote the well-being of humanity throughout the world' (Rockefeller Foundation 2015). Established in 1913, it provides grants towards a range of initiatives and causes, including climate change resilience and food security.

The foundation's 'Oceans & Fisheries' initiative seeks to increase the health and productivity of fisheries by 'decreasing unsustainable fishing pressures in a way that puts the needs of poor and vulnerable people at the center of innovative, equitable solutions'. The foundation seeks to explore the opportunity for such impacts 'in part through innovative finance' (Rockefeller Foundation 2015).

5.2 *Impact investors*

Impact investments are investments in companies, funds and projects that are intended to generate measurable social and environmental impact alongside a

financial return. Impact investors target a range of returns, from below-market to market rate (Global Impact Investing Network 2015).

5.2.1 Althelia Ecosphere

Althelia Ecosphere (also referred to as 'Althelia Climate Fund') is an impact investment fund which provides profit-participating loans to projects that generate environmental service assets and sustainable commodities (Althelia Ecosphere 2015). The most common environmental service assets invested in are REDD+ credits, although the fund is also open to investing in other environmental service assets such as biodiversity offsets.

Projects seeking finance must have a solid business plan and present a clear and achievable pathway toward long-term sustainable land use. Projects must also be investment-ready by 2016 and provide returns to investors by 2020 or latest 2021, at which time the fund will close. In addition, projects must meet Althelia's Environmental, Social and Governance Standards and the International Finance Corporation's Performance Standard (Conway *et al.* 2015).

Althelia has total capital of EUR 105m, funded by both public and private sources. Overall, the fund intends to allocate around 20% of total investments to projects in Southeast Asia, the majority of which had yet to be allocated at the time of publication. Average investments to date have been EUR 5-10m (Conway *et al.* 2015).

5.2.2 Global Impact Investing Network (GIIN)

GIIN is a non-profit charity dedicated to increasing the scale and effectiveness of impact investing (Global Impact Investing Network 2015). It is a forum of impact investors which focuses on 'identifying and addressing the systemic barriers that hinder or impede the impact investing market,' arguing that 'individual investors and service providers lack the capacity and mandate to solve infrastructure and market-level challenges alone.'

GIIN has over 200 members and claims to represent 'the largest global community of impact investors [...] and service providers engaged in impact investing.' Established in 2009, it is a sponsored project of the Rockefeller Foundation.

5.3 Corporate Social Responsibility initiatives

This section lists private companies with a history of climate- or mangrove-related CSR activities in Pakistan, Thailand and/or Viet Nam.

5.3.1 Standard Chartered Bank (Pakistan, Thailand, Viet Nam)

Standard Chartered is a British multinational banking and financial services company headquartered in London. It has outlets in over 70 countries including

Pakistan, Thailand and Viet Nam. Around 90% of its profits come from Asia, Africa and the Middle East (Wall Street Journal 2014).

The bank's climate change position statement states 'To play our part in tackling this global issue, we [...] promote financing for climate change adaptation measures, including efforts to build climate-resilient infrastructure and business operations' (Standard Chartered 2015a). Its environmental initiatives to date include launching a car-pooling website 'Share a Ride' in numerous Asian cities in order to reduce vehicular emissions, and investing in water and energy efficiency projects (Standard Chartered 2015b).

5.3.2 Engro Polymer & Chemicals Limited (Pakistan)

Engro Polymer & Chemicals Limited (EPCL) is a subsidiary of Engro Corporation, a Pakistani public multinational corporation, and a member of the MFF National Coordinating Body of Pakistan (Engro Polymer & Chemicals 2015a). According to its website, EPCL runs a mangrove rehabilitation programme, which develops mangrove plantations. By 2014, over 150 000 saplings had been planted along the shorelines of the Arabian Sea (Engro Polymer & Chemicals 2015b).

5.3.3 UBL Fund Managers (Pakistan)

UBL Fund Managers is an asset management company operating in Pakistan that has participated in mangrove planting in collaboration with WWF-Pakistan since 2011 (UBL Fund Managers 2015). In November 2014, it planted 250 mangrove trees in WWF's Wetland Centre, Sandspit Beach, and reviewed the progress of previously planted mangroves (UBL Fund Managers 2014).

5.3.4 Pakistan International Bulk Terminal Limited (PIBTL)

PIBTL is developing a terminal for coal, clinker and cement at Port Qasim (50 km from Karachi, Sindh Province). In 2013, PIBTL and IUCN Pakistan signed an agreement to restore mangroves in the Indus Delta, under the 'IUCN Pakistan and Pakistan International Bulk Terminal Mangrove Plantation Project.' PIBTL's contribution includes planting 500 hectares of mangroves in the Port Qasim area and promoting sustainable use of mangroves among the local communities (IUCN 2013).

5.3.5 Sui Southern Gas Company Limited Pakistan (SSGC)

SSGC is Pakistan's largest integrated gas company. In April 2016, SSGC approved a proposal to provide PKR 4 200 000 to IUCN Pakistan for planting approximately 6 000 mangrove saplings in a LPG terminal under SSGC's jurisdiction in the Port Qasim area (Shah, 2016 Pers. Comm., 14 April).

5.3.6 Charoen Pokphand Foods Public Company Limited (CPF, Thailand)

CPF is an agro-industrial and food conglomerate in Thailand (CPF 2015a). Its core business activities include livestock and aquaculture, including marine shrimp

and fish production. According to its website, CPF has supported mangrove restoration for 10 years, including:

- Reforestation activities in Samut Sakhon (CPF 2015b), and
- Financial support to a group of nursing students from Mahidol University towards a project 'Royal Growing Forest #13' at mangrove development area 6, Bang Leam, Petchaburi (CPF 2015c).

CPF launched a mangrove reforestation campaign in 2011, with the first activity involving a group of students from Ramkhamhaeng University planting mangrove forest on a 300-rai (48 ha) area in Rayong's Klaeng District (The Nation 2011).

According to a presentation delivered by CPF representatives in May 2015, the company planted over 300 000 mangrove trees across 17 provinces between 1993 and 2013. CPF's ongoing 'Grow Share Protect the Mangrove' project aims to conserve and restore over 320 hectares of mangrove, and establish mangrove learning centres in five provinces by 2018. The project is implemented in collaboration with Department of Marine and Coastal Resources (DMCR), the Biodiversity-Based Economy Development Office (BEDO) and Civic Network (CPF 2015d).

5.3.7 PTT (Thailand)

PTT Public Company Limited (PTT) is a state-owned oil and gas company and one of the largest corporations in Thailand (PTT 2015a). Between 1994 and 1999, PTT pledged one million rai (160 000 ha) for forest plantation establishment across 48 provinces in Thailand as part of the 'One million rai project in honor of His Majesty the King' and has continued its reforestation efforts since (Suksuphak and Pokapun 2012; PTT 2015b). In 2004 PTT established the Sirinath Rajini Mangrove Ecosystem Learning Center in Prachuab Kiri Khan Province. The centre includes a large area of abandoned shrimp ponds within which mangrove rehabilitation was undertaken and provides educational facilities for improved knowledge of mangroves and local ecology (Suksuphak and Pokapun 2012; PTT 2015b).

PTT Exploration and Production, a PTT affiliate, is implementing a Tree Planting in the Human Heart project monitored by the Kasetsart University, which includes:

- Providing support to King Mongkut's University of Technology Dhonburi to rehabilitate the mangrove ecosystem of Bang Khun Thian (PTT 2015c); and
- Funding communities to participate in forest rehabilitation activities in national parks and wildlife sanctuaries around Thailand, in cooperation

with the Department of National Parks, Wildlife and Plant Conservation (PTT 2015d).

5.3.8 Kasikornbank (Thailand)

Kasikornbank Public Company Limited is a leading Thai banking group, with over 1 000 branches in Thailand and 14 overseas offices (Kasikornbank 2015a). As a member of the Thai CSR Network, the company was involved in mangrove reforestation as part of the 'One million rai project in honor of His Majesty the King' (see section 5.3.7). In 2010, Kasikornbank employees contributed to the project by planting over 18 rai (2.88 ha) of mangroves in Phang Rat Sub-district, Klaeng District, Rayong (Kasikornbank 2015b).

5.3.9 Nokia-WWF Partnership (Thailand, Viet Nam)

Nokia is a Finnish multinational communications and information technology company. Nokia and WWF have been collaborating on various environmental initiatives since 2003.

In November 2012, WWF and Nokia commenced planting of 23 000 mangrove trees across 20 hectares in a coastal lagoon area of Ru Cha forest, Thua Thien Hue province, central Viet Nam. The 2012-2014 the project also trained 300 local people in plantation management (WWF 2012; Vietnam Breaking News 2014).

In 2014, WWF-Thailand partnered with Nokia to launch a mangrove planting campaign in Khao Sam Roi Yot National Park, Prachuap Khiri Khan Province, Thailand (WWF-Thailand 2014).

5.3.10 Minh Phu Seafood Corporation (Viet Nam)

Minh Phu Seafood Corporation is a Vietnamese public company involved in seafood processing and export, and a member of the MFF Viet Nam National Coordinating Body (Minh Phu 2015). In 2013, it signed an agreement with SNV to purchase all certified-organic shrimp produced under the 2012-2016 Mangroves and Markets project, at a premium price (IUCN 2015h). As of 2014, 200 farmers had been supported in planting 40 hectares of mangroves, and support for planting of another 50 hectares was planned in 2015.

5.3.11 Holcim Viet Nam Limited (Viet Nam)

Holcim Vietnam Limited is a subsidiary of the Holcim Group, one the world's largest cement producers (Holcim Vietnam 2015a). The company has invested in efforts to preserve natural wetlands and other habitats located near its quarry sites, thus avoiding legal risks due to environmental damage from limestone extraction and enhancing the company's reputation (Holcim Vietnam 2015b).

In 2007, Holcim Vietnam Limited signed a five-year agreement with IUCN, titled 'IUCN - Holcim Cooperation Programme in Viet Nam'. The partnership sought to integrate environmental considerations across the Holcim chain in Viet Nam and

implement related pilot projects (IUCN 2008). The outcomes of the partnership included creation of a Biodiversity Advisory Panel, development of an integrated Biodiversity Management System and revised corporate policies and tools related to biodiversity. A second, three-year phase beginning in 2011 built on the achievements (IUCN 2015i).

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Mangroves provide a wide array of benefits to coastal communities, including wood and non-wood forest products and a wide range of environmental services encompassing coastal hazard protection, erosion control, water filtration and bio-diversity conservation. Mangroves are also valuable in terms of climate change mitigation due to high rates of primary productivity and the large amounts of carbon contained within above- and below-ground biomass and mangrove soils. In spite of their many values, mangrove areas continue to diminish in size around Asia and sustainable financing for their protection has not been forthcoming.

This publication was prepared for 'Income for coastal communities for mangrove protection' project (2015-2016) which sought to develop a low cost mechanism enabling investors to responsibly promote mangrove conservation, carbon emissions reduction and sustainable development through the provision of funding to local communities.

This is the first in a series of four publications intended to be used in conjunction in establishing sustainable financing for mangrove protection in Asia. The titles of the four publications are as follows:

1. Financing for mangrove protection with emphasis on Pakistan, Thailand and Viet Nam
2. Mangrove-related policy and institutional frameworks in Pakistan, Thailand and Viet Nam
3. Mangrove carbon estimator and monitoring guide
4. Incentive allocation for mangrove protection



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