ADB AND THE CLIMATE INVESTMENT FUNDS

CLIMATE CHANGE INNOVATION AND ACTION IN ASIA AND THE PACIFIC

ASIAN DEVELOPMENT BANK

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ABBREVIATIONS

ADB	Asian Development Bank
CCA	climate change adaptation
CIFs	Climate Investment Funds
CTF	Clean Technology Fund
DMC	developing member country
DRM	disaster risk management
DRR	disaster risk reduction
FIP	Forest Investment Program
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	greenhouse gas
HCMC	Ho Chi Minh City
Lao PDR	Lao People's Democratic Republic
LGED	Local Government Engineering Department (Bangladesh)
M&E	monitoring and evaluation
MDB	multilateral development bank
PPCR	Pilot Program for Climate Resilience
PPP	public–private partnership
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SCF	Strategic Climate Fund
SPCR	Strategic Program for Climate Resilience
SREP	Scaling Up Renewable Energy Program
TA	technical assistance
UNFCCC	United Nations Framework Convention on Climate Change
WICI	weather-indexed crop insurance

WEIGHTS AND MEASURES

km	–	kilometer
MW	–	megawatt
tCO_2e	–	tonnes of carbon dioxide equivalent

The devastation wrought in the Philippines in November 2013 by typhoon Haiyan (local name: Yolanda) was a harsh reminder of the steep human and economic costs of extreme weather events, which are becoming more severe and frequent across Asia and the Pacific.

1

Introduction

The devastation wrought in the Philippines in November 2013 by typhoon Haiyan (local name: Yolanda) was a harsh reminder of the steep human and economic costs of extreme weather events, which are becoming more severe and frequent across Asia and the Pacific. In a region that is particularly vulnerable to the impact of climate change, the Asian Development Bank (ADB) since the early 1990s has been helping its developing member countries (DMCs) to understand the risks of climate change and to take action to reduce those risks. Dedicated financing for climate change risk management has grown dramatically in ADB over the last 2 decades and the bank's operations have increasingly demonstrated ADB's strategic engagement in climate change mitigation and adaptation. ADB's Strategy 2020 identifies environmentally sustainable growth as a strategic agenda, with climate change as a core area of operations.

The establishment of the Climate Investment Funds (CIFs) has produced a step change in the extent of climate change financing that is available to developing countries. Funded by a group of donors and operated by the multilateral development banks (MDBs), including ADB, these funds are a unique set of financing instruments that will provide essential knowledge and understanding of how large-scale climate change financing can help developing countries manage and mitigate the challenges of climate change. Experience with the CIFs will also prepare developing countries for the future flows of climate change financing that are envisaged under the United Nations Framework Convention on Climate Change (UNFCCC), particularly the Green Climate Fund, which is expected to be fully operational within 2014.

ADB will administer 61% of the $1.6 billion in CIFs allocated to Asia and the Pacific through government investment plans that were prepared with the help of ADB and other MDB partners. The plans combine concessional loans and grant investments where CIF funds are strategically deployed to provide needed technical assistance (TA), to support the transformational objectives of MDB funded projects, and, more importantly, to leverage private sector contributions and engagement in climate change action so as to meet global targets for climate change funding.

This document presents ADB's experience in developing CIF programs and highlights innovative transformations expected from or already achieved by ADB projects with CIF funding. In particular, this overview of ADB and CIF activities in the region shows that ADB continues to be committed to building the capacity of its DMCs to address climate change issues by delivering not only finance but also critical knowledge and technology, and by leveraging additional finance, particularly from the private sector.

ADB has been taking action on climate change for over 2 decades, establishing and leveraging additional sources of financing, delivering innovative and effective investments, and contributing to a better understanding among its DMCs of the impact of climate change and the actions that must be taken to adapt to and mitigate its impact.

2

ADB Action on Climate Change

Climate Change in Asia and the Pacific

The effects of climate change, such as a significant rise in sea level, more frequent and unpredictable extreme weather events, and marked fluctuations in water availability, are already discernible in the region and are directly affecting people's livelihood. In some cases, climate change is impeding progress toward the Millennium Development Goals, especially in less developed countries, where persistent pockets of poverty often coincide with areas of high climatic vulnerability, e.g., the coastal areas of Bangladesh. The region's susceptibility to natural disasters, the continuing predominance of natural resource–based livelihood, and rapid economic expansion all make climate change among the most critical issues facing households, communities, governments, and development agencies today.

Although economies in Asia and the Pacific have made unprecedented progress in recent years, more than 60% of the economically active population and their dependents (about 2.2 billion people) still derive their livelihood from agriculture (FAO 2011). As temperatures rise and extreme weather events occur with greater frequency, farmers face declining production potential, particularly for staple crops like maize and rice (ADB 2009a). Critical production zones, such as the large low-lying deltas (Ganges and Brahmaputra, Mekong, Yangtze), the extensive tropical paddy rice systems in Southeast Asia, and areas irrigated by glacial ice and snow melt in Central and South Asia, are particularly at risk from expected changes in water availability. For the region's coastal fishermen, their catch is already changing as a result of damage to habitats, such as coral reefs and seaweed beds, and the decreasing predictability of fish migration patterns. With the region's population poised to grow by more than 30% in the next 35 years, food security and sustainable natural resource management will clearly continue to be critical areas of concern.

The Asia and Pacific region is also especially vulnerable to natural disasters. In South and East Asia alone, such disasters affected nearly 65 million people and cost $15 billion (UNISDR 2012) in 2012. In November 2013, over 6,000 people in the Philippines died and more than 4 million others were displaced because of typhoon Haiyan (local name: Yolanda), the most powerful storm ever to make landfall, in the estimation of experts (OCHA 2014). Climate-related disasters have been much more common in recent years, their impact intensified by high and rising population density in low-lying coastal zones, rapid and poorly managed urban growth, and unsustainable land management practices, such as deforestation. Those living in Asia's coastal mega cities are uniquely at risk, as demonstrated by the regular severe flooding in Asian cities like Bangkok, Dhaka, Guangzhou, Jakarta, and Manila. More and more, the island communities of the Pacific are also likely to be affected by a

higher sea level, storm surges, and extreme weather events. The vulnerability of the region to climate-related disasters highlights the urgency of protecting populations and economic infrastructure, and preparing communities and governments.

Even as the impact of climate change becomes more evident, the rapid growth of the region's economies, particularly the People's Republic of China, India, and the countries of Southeast Asia, is likely to double energy demand by 2030. Rightful access to energy by more people in the region and improving incomes will also increase energy consumption substantially. If current trends persist, this growth in demand will most likely be met with fossil fuels. By 2030, Asia and the Pacific could be responsible for nearly half of the world's carbon emissions. Asia needs energy for growth, but those needs must be met without adding to greenhouse gas (GHG) emissions. Renewable energy innovations and energy efficiency measures will reduce GHG emissions.

ADB's Approach to Dealing with Climate Change

ADB has been taking action on climate change for over 2 decades, establishing and leveraging additional sources of financing, delivering innovative and effective investments, and contributing to a better understanding among its DMCs of the impact of climate change and the actions that must be taken to adapt to and mitigate its impact. Major regional TA programs that explored strategies for mitigating the effects of climate change were a vital aspect of ADB's early response to the growing global environmental concerns. Among these TA programs was a landmark region-wide inventory of GHG emissions, abatement strategies, and related projects and investments, which also built DMC capacity for strategy development in preparation for the implementation of the Kyoto Protocol (ADB 1998).

After the Kyoto Protocol was adopted in 1997, ADB stepped up action on climate change financing, policies, and investments. The bank established major funding facilities, including the Clean Energy Financing Partnership Facility (2007) and the ADB Climate Change Fund (2008), which provided climate change investment projects with TA and grant support. Under ADB's flagship Carbon Market Program, two carbon funds[1] were launched to provide up-front carbon financing to DMCs and enable them to benefit from market-based instruments under the Kyoto Protocol. Climate change became a core area of operations in ADB's Strategy 2020 (ADB 2008) and climate change concerns entered the ADB investment mainstream. In 2009, ADB's new Energy Policy (ADB 2009b) coupled the objectives of energy security, poverty reduction, and transition to a low-carbon economy. A clean-energy investment target of $2 billion per year by 2013 was set.

That target was reached in 2011, 2 years ahead of schedule, and climate change mitigation through investment in clean energy has been a dominant focus of ADB operations in recent years. Investments in renewable energy (solar, wind, small and micro hydro, and biogas) and energy efficiency (efficient buildings, water supplies, and power plants), notably including the pilot application of innovative technologies, such as carbon capture and storage, have taken up the bulk of ADB's investments in clean energy (92% since 2008). Mitigation through sustainable transport and urban development—urban rail and bus rapid transit systems, nonmotorized transport,

[1] The Asian Pacific Carbon Fund and the Future Carbon Fund.

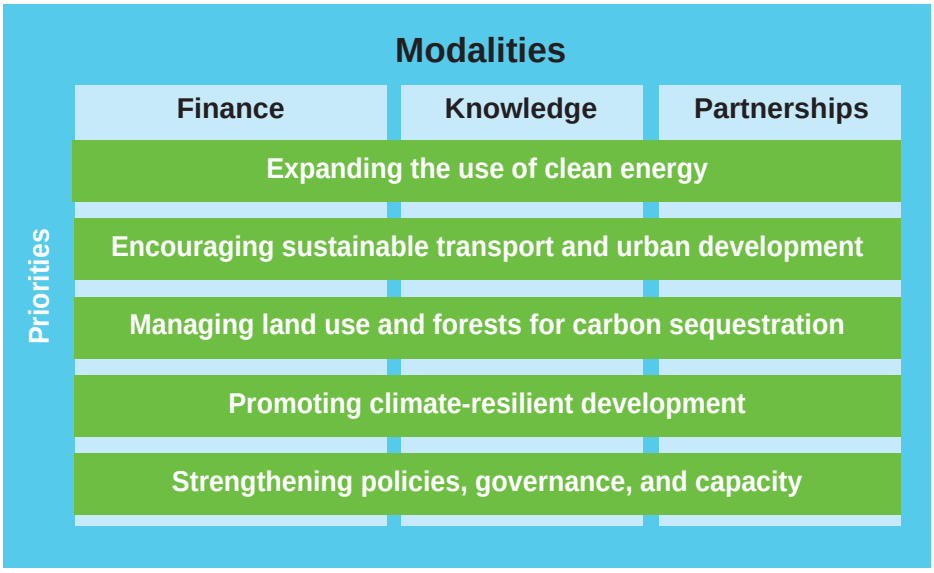
railways and inland waterways, efficient urban heating, and waste-to-energy projects—has also been a feature of ADB's portfolio.

Reflecting the global situation, action on climate change adaptation has taken more time to gather momentum. But ADB did act early in response to the clear threat posed to its Pacific island DMCs, and a milestone TA project (ADB 2006) initiated Pacific-wide work to mainstream climate change adaptation and build consensus on climate change issues, leading ultimately to the development of ADB's Climate Change Implementation Plan for the Pacific (ADB 2009c). This TA was also the starting point for ADB's pioneering work in climate-proofing infrastructure, which is now being integrated across all relevant ADB investments. With focus on adaptation, a recent regional TA project was aimed at boosting regional cooperation toward climate change adaptation, strengthening DMC adaptation planning and measures, and integrating adaptation more fully into ADB policies, processes, and programs.

ADB's climate change strategy has continued to evolve as a result of experience gained in implementation, the developing knowledge base on the impact of climate change, global climate change negotiations, and clearer requirements from its DMCs. In 2010, ADB moved toward a more integrated climate change approach with five region-wide strategic priorities: (i) expanding the use of clean energy, (ii) encouraging sustainable transport and urban development, (iii) managing land use and forests for carbon sequestration, (iv) promoting climate-resilient development, and (v) strengthening policies and institutions (Figure 1).

ADB is now expanding its efforts to mainstream climate resilience and mobilize private sector finance. Besides more adaptation-focused investments and climate proofing across the infrastructure portfolio (Table 1), ADB is integrating climate change adaptation and disaster risk management more firmly into its investments and intensifying efforts to increase climate resilience in urban development through the Urban Climate Change Resilience Trust Fund (established in December 2013). ADB continues to lead innovative approaches

FIGURE 1: ADB CLIMATE CHANGE STRATEGIC PRIORITIES



to mobilizing private sector finance, including the Canadian Climate Fund for the Private Sector in Asia (established in March 2013) and the Climate Public–Private Partnership Fund, to provide commercial investors with investment products that can bring scale and at the same time have a meaningful impact on the market.

TABLE 1 KEY ACHIEVEMENTS OF ADB'S CLIMATE CHANGE PROGRAM

1989–1999	2000–2009	2010–present
• Management Directive on Global Environment Concerns • Regional TA programs launched – Strategies to cope with climate change – Asia Least-cost GHG Abatement Strategy – Capacity Building for the Implementation of the Kyoto Protocol	• Funds and facilities established (Clean Energy, Carbon Funds, Climate Change Fund, Climate Investment Funds) with other MDBs • Climate change implementation plans on a subregional basis • Mainstreaming Climate Change discussion paper • Climate Change Program Coordination Unit established • Strategy 2020 • New energy target set: $2 billion by 2013	• Priorities for Action Climate Change paper • Rio+20: $175 billion commitment of MDBs for sustainable transport • Pilot Asia-Pacific Climate Technology Finance Center • Canadian Fund for Private Sector in Asia, Urban Climate Change Resilience Trust Fund • Enhanced Adaptation Initiative • Integrated Disaster Risk Management Approach • Sustainable Asia Leadership Program

GHG = greenhouse gas, MDB = multilateral development bank, Rio+20 = United Nations Conference on Sustainable Development (June 2012), TA = technical assistance.

ADB and Global Climate Change Financing

ADB has access to global multilateral climate change financing, which is growing in importance as the international architecture for climate change financing develops. ADB has been working in close partnership with the Global Environment Facility (GEF) since the late 1990s, and has had access to the full project resources of the fund since 2002. The partnership provides opportunities for greater impact by blending ADB's baseline resources for sustainable development with GEF grant resources for the global environment. From 1998 to the end of 2013, GEF allocated more than $122 million in grants to ADB for climate change–related projects. ADB is also authorized to use resources from the Adaptation Fund of the Kyoto Protocol to support concrete adaptation projects and programs in developing countries that are particularly vulnerable to the adverse effects of climate change. The funds come from a levy on the sale of emission credits under the Clean Development Mechanism.[2]

In a landmark development aimed at jump-starting climate change financing and climate action in developing countries, the MDBs[3] and a group of development-partner countries proposed the establishment of the CIFs in 2008. The idea was to gain a better understanding of how public finance could be best deployed at scale to support developing countries in initiating transformational change toward low-carbon and climate-resilient development and indicate future directions for climate change financing. CIF funding is centered on investment, and the funds provide a unique opportunity to blend resources from the CIFs, MDBs, government, and the private sector to address climate change mitigation and adaptation in developing countries. So far, 14 donor countries have pledged $8 billion for programs in 48 countries worldwide.

The rest of this document reviews ADB's participation in the CIFs, the added value provided by ADB's "finance-plus" approach, the key challenges experienced so far in making climate change financing through the CIFs work, and anticipated developments in climate change financing.

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[2] The Clean Development Mechanism of the Kyoto Protocol allows a country with an emission reduction or emission limitation commitment to implement an emission reduction project in developing countries. Such projects can earn salable certified emission reduction credits, each equivalent to one tonne of carbon dioxide, which can be counted toward meeting Kyoto targets.

[3] African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter-American Development Bank, and World Bank.

The CIF program has given a major boost to climate change financing in Asia and the Pacific, and built on progress already achieved in clean energy and clean technology.

3

Climate Investment Funds: Jump-Starting Climate Change Financing

The funding contributions to the CIFs are divided between two trust funds—the Clean Technology Fund (CTF), $5.5 billion at present; and the Strategic Climate Fund (SCF), $2.5 billion. The CTF finances the scaled-up demonstration, deployment, and transfer of low-carbon technologies. These technologies consist of renewable energy and other efficient technologies that will reduce carbon intensity in the transport sector and improve energy efficiency in buildings, industry, and agriculture. The SCF, on the other hand, finances the pilot-testing of adaptation and mitigation approaches with the potential for scale-up. The SCF comprises three targeted programs with dedicated funding:

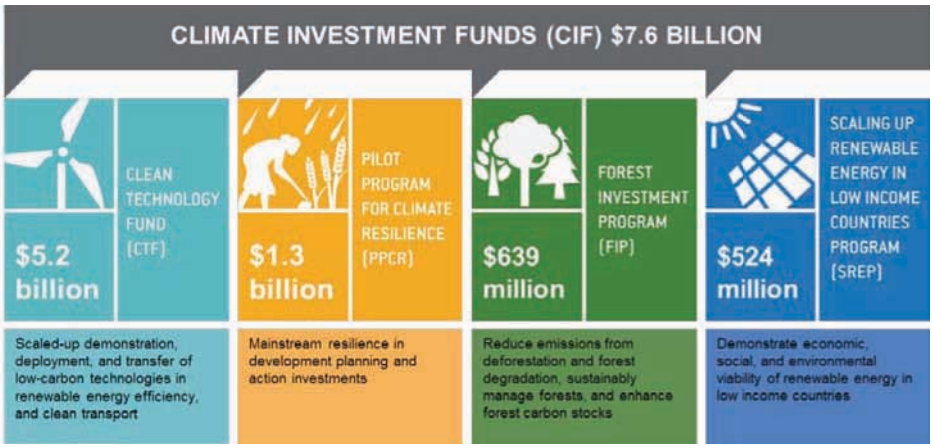
- The Pilot Program for Climate Resilience (PPCR), to support the efforts of developing countries to integrate climate risk and resilience into core development planning and implementation;
- The Scaling Up Renewable Energy Program (SREP), to scale up the deployment of renewable energy solutions and expand renewable markets in the world's poorest countries; and
- The Forest Investment Program (FIP), to support the efforts of developing countries to reduce emissions from deforestation and forest degradation (REDD+) and promote sustainable forest management.

Since the first investment plans were approved in 2009, CIF funding pledges have risen from $6.5 billion to $8 billion with a financial leverage ratio of 1:7.8[4] across the funding windows. In the Asia and Pacific region, 15 countries receive CIF funding (Figure 2)[5] and the region's portfolio accounts for 33% of CIF funds—36% of the CTF, 30% of the PPCR, 15% of the FIP, and 13% of the SREP.

[4] The CIF financial leverage ratio is based on CIF funding approvals as of 31 December 2013.

[5] Bangladesh, Cambodia, India, Indonesia, Kazakhstan, Lao People's Democratic Republic, Maldives, Nepal, Papua New Guinea, Philippines, Samoa, Tajikistan, Thailand, Tonga, and Viet Nam.

FIGURE 2: CIF TARGETED PROGRAMS AND RECIPIENT COUNTRIES

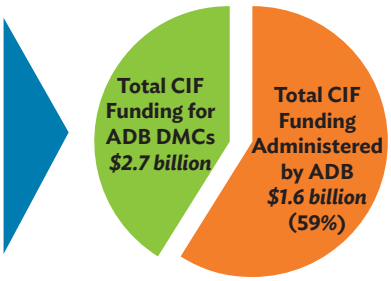


Source: CIF Annual Report 2013.

The CIF program has given a major boost to climate change financing in Asia and the Pacific, and built on progress already achieved in clean energy and clean technology. It has delivered the first significant amounts of funding for adaptation and REDD+ objectives, thus initiating important debates at the country level on the nature and scope of interventions for adaptation and carbon sequestration and facilitating the pilot implementation of a wide range of interventions. ADB is participating in 16 investment plans in 14 countries—6 CTF, 6 PPCR, 2 SREP, and 2 FIP—and a regional investment plan for the Pacific (PPCR). Under these plans, ADB is administering $1.6 billion in funding for 37 projects across the region. Twenty-one percent of the total portfolio is for private sector projects approved under current investment plans (Figures 3 and 4).

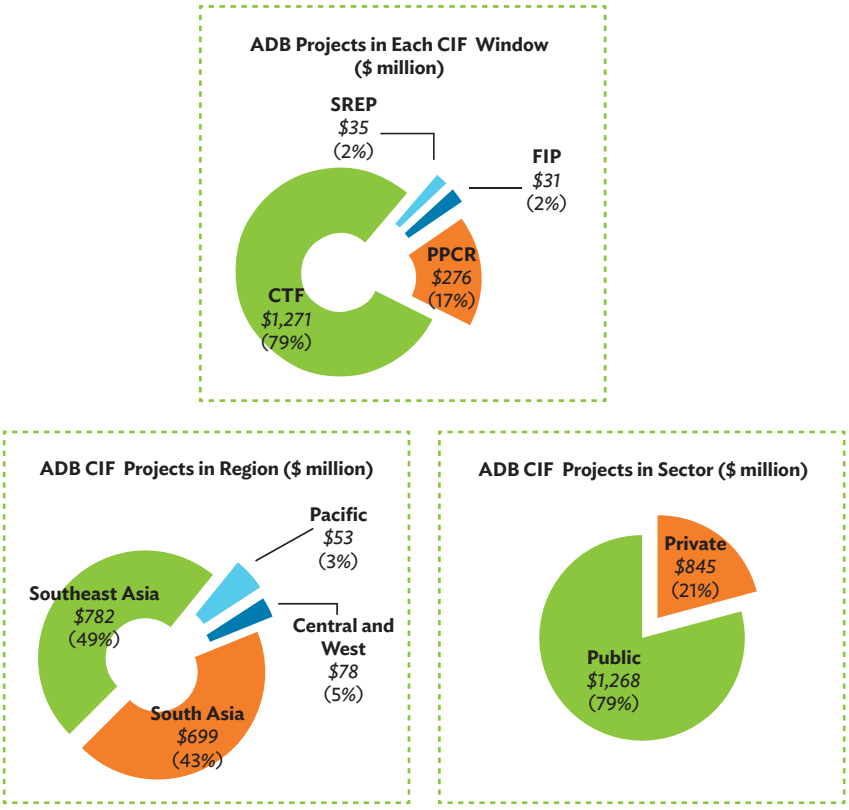
FIGURE 3: OVERVIEW OF CIF COFINANCING ADMINISTERED BY ADB

	Country	Total CTF Funding for IP ($)	CTF Funding Administered by ADB ($)
CTF	IND	775	550
	INO	400	200
	KAZ	189	50
	PHI	250	125
	THA	170	100
	VIE	250	211
	REG DPSP	150	35
CTF Total		2,184	1,271
SCF Window	**Country**	**Total SCF Funding for IP ($)**	**CTF Funding Administered by ADB ($)**
PPCR	BAN	110	72
	CAM	91	91
	NEP	77	32
	PAC	10	4
	PNG	30	30
	TAJ	58	28
	TON	20	20
		396	276
FIP	INO	70	18
	LAO	29	13
		99	31
SREP	MAL	30	13
	NEP	40	22
		70	35
SCF Total		565.17	342.22
	CIF TOTAL		1,613



BAN = Bangladesh, CAM = Cambodia; CTF = Clean Technology Fund; FIP = Forest Investment Program; IND = India; INO = Indonesia; IP = Investment Plan; KAZ = Kazakhstan; LAO = Lao PDR; MAL = Maldives NEP = Nepal; PAC = Pacific Region; PHI = Philippines; PNG = Papua New Guinea; PPCR = Pilot Program for Climate Resilience; REG DPSP= Regional Program under the Dedicated Privated Sector Program; SREP = Scaling Up Renewable Energy in Low Income Countries Program; TAJ = Tajikistan; THA = Thailand; TON = Tonga; VIE = Vietnam.

FIGURE 4: ADB'S CIF PORTFOLIO AT A GLANCE



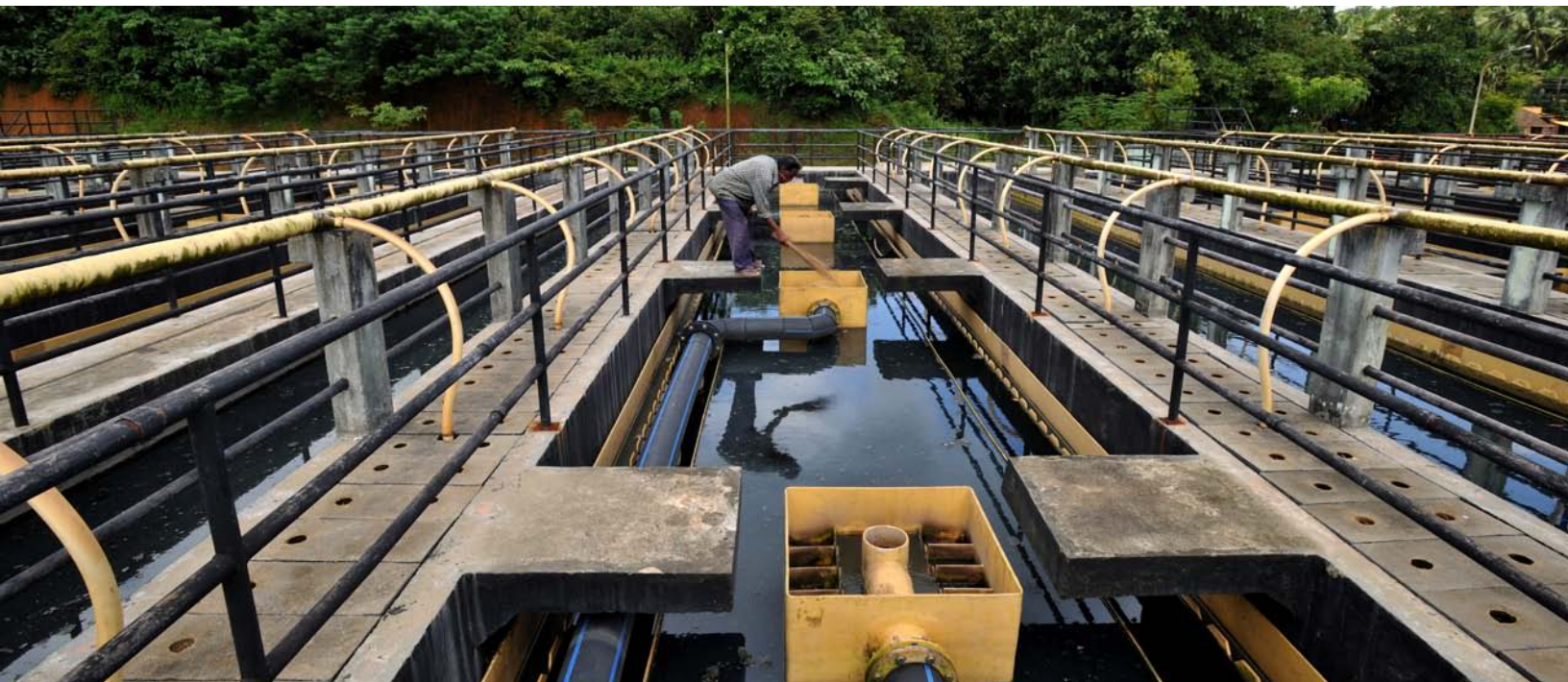
CTF = Clean Technology Fund; FIP = Forest Investment Program; PPCR = Pilot Program for Climate Resilience; SREP = Scaling Up Renewable Energy in Low Income Countries Program

Significant new investments in climate change mitigation and adaptation need more than just financing to be effective.

4

Beyond Financing: Catalyzing Transformation into a Climate-Smart Asia and Pacific Region

These significant new investments in climate change mitigation and adaptation need more than just financing to be effective. In many DMCs, the policy and institutional environment for climate change action at all levels is only starting to develop. Government strategies, capacity, and even the institutional landscape itself must transform in a major way. Moreover, many stakeholders—communities, civil society, and the private sector—have little understanding of climate change and limited engagement and unclear roles in climate change action. A radical change in how they respond to, and get involved in, climate change action is called for. Stakeholders must also be equipped with the knowledge and the tools for accomplishing change, including the ability to develop and deliver transformative technologies. Such transformations are being accomplished under ADB's CIF portfolio through ADB's "finance plus" approach, which both maximizes the leverage of additional financial resources and delivers knowledge, technologies, and institution building.



Transforming Policies and Institutions

As funding for climate change accelerates, governments and other stakeholders must be able to use the available resources effectively, with the help of appropriate institutions for climate change research and policy development, harmonized policies and strategies across government, and clear objectives for climate change action that are well integrated into budgeting and planning. The advent of CIF funding in 2008 presented a significant opportunity to raise awareness, engage stakeholders, and embark on a program of policy and institutional change, especially in countries in Asia and the Pacific where this transformation had barely begun (e.g., Tajikistan). CIF funding also enabled a number of countries to benefit from substantial TA in initiating and stepping up institutional transformation, particularly in mainstreaming climate change into development planning, strengthening knowledge and information management, and implementing sector-specific institution building on a pilot basis. This section highlights some transformative policy and institution-building initiatives under the ADB CIF portfolio.

TABLE 2 SUMMARY OF PPCR TECHNICAL ASSISTANCE FOR MAINSTREAMING CLIMATE CHANGE

Country and Program	Expected Outcome
Bangladesh 45065-001: Climate Change Capacity Building and Knowledge Management	Institutionalized climate change adaptation IKM system, linked to development planning and management
Cambodia 45283-001: Mainstreaming Climate Resilience into Development Planning	Sustained institutional and technical capacity to integrate adaptation concerns into development planning
Pacific Regional 46449-001: Implementation of the Strategic Program for Climate Resilience	Increased resilience of the economic and social sectors, as well as ecosystems, of Pacific DMCs in the face of climate change impact and related extreme events, which can contribute to disasters
Nepal 44168-012: Mainstreaming Climate Change Risk Management in Development	Incorporation into the government's infrastructure development programs and policies of safeguards against the effects of climate change
Tajikistan 45436-001: Building Capacity for Climate Resilience	Incorporation into national development programs and policies of safeguards against the effects of climate change

Source: ADB

MAINSTREAMING CLIMATE CHANGE IN DEVELOPMENT PRACTICE

All DMCs in the Asia Pacific region receiving PPCR funding identified the strengthening of climate change policies and institutions as a priority and included appropriate technical assistance programs as part of their investment plans. Common investment themes in these TA programs included the stronger integration of climate change into development planning at national and subnational levels and improved management of information and knowledge in support of this mainstreaming process (Table 2). The mainstreaming strategies center on the establishment of systems for managing climate change risk, including targeted capacity building, policy review and adjustment, review and revision of planning guidelines, and prioritization of investments in climate resilience. The importance of information and knowledge management in the intended transformation is enhanced through inclusive approaches to storing and sharing climate change knowledge, raising stakeholder awareness, capturing and sharing lessons on adaptation, and building better links between scientific information, experience, and policy development.

The TA programs also address institutional transformation that is specific to the country context. For example, the TA program in Bangladesh will put in place a well-defined and operational information and knowledge management network, including relevant institutions with the capacity to acquire and share the information. In Cambodia, given the opportunity to mobilize civil society and local communities for climate change action, assistance is being provided to build the capacity of both nongovernment organizations and community-based organizations to study ways of adapting to climate change and lead local adaptation initiatives. In Tajikistan, the TA is aimed at developing the PPCR secretariat into a sustainable government unit that will use the knowledge and competencies gained in implementing the Strategic Program for Climate Resilience (SPCR) to leverage additional financial support and to develop and implement future climate change projects.

In recognition of the unique challenges presented by the Pacific island countries in addressing climate change, an approach combining a regional Pacific TA program and individual country TA programs (in Papua New Guinea, Samoa, and Tonga) has been adopted (Box 1). The assistance features the strengthening of a joint approach to climate change adaptation and disaster risk management through a regional technical support mechanism, country-based trust funds, and priority adaptation initiatives.

Box 1 Pilot Program for Climate Resilience in the Pacific

Pacific island countries are especially vulnerable to disasters and the impact of climate change, but have limited human or financial resources for addressing these problems. The integration of both disaster risk management (DRM) and climate change adaptation (CCA) into development processes therefore makes sense from both a technical and a practical perspective, and DRM–CCA approaches have been gathering momentum in the region for some time. PPCR investments in the Pacific have been specifically designed to build on these efforts through a regional SPCR supported by both ADB and the World Bank and linked to country-specific SPCRs in Papua New Guinea and Tonga (both administered by ADB) and in Samoa (administered by the World Bank).

The regional TA supports the mainstreaming of CCA and DRM in policies and development planning in selected Pacific countries. As mainstreaming is already under way at the national level, the TA is focused on integrating CCA and DRM into budgetary and sector development plans at the local and community levels and linking them into national plans. The aim is to deliver locally appropriate capacity building and institutional strengthening through a regional technical support mechanism comprising a network of experts (e.g., on gender, climate change financing, knowledge management, and M&E), who will advise and provide in-country support on resource mobilization and strategic DRM–CCA approaches.

The country TA programs (in Papua New Guinea, Samoa, and Tonga) will strengthen CCA and DRM by building the capacity of communities and subnational institutions, improving access to financial resources for CCA and DRM through national trust funds, and pilot-testing priority climate adaptation activities such as the climate-proofing of priority infrastructure.

BUILDING A COUNTRY RESPONSE TO CLIMATE CHANGE IN TAJIKISTAN

Climate change financing from the CIFs and ADB marked a critical turning point in the development of Tajikistan, whose vulnerability to the impact of climate change is significant and complex. Climate projections for the country indicate higher temperatures, reduced precipitation, and increased frequency of extreme events such as floods, droughts, and storms. The resulting changes in the hydrologic cycle, including those resulting from glacial retreat, could have serious consequences for food security, livelihoods, ecosystems, and hydropower generation in a country with a predominantly rural population. Existing socioeconomic and environmental constraints, such as limited institutional capacity, crumbling infrastructure, land degradation, and increasing feminization of poverty, could in turn worsen (Box 2).

The implementation of phase 1 of the PPCR has already transformed a situation characterized by low awareness and knowledge of the impact of climate change and its inconsistent inclusion in national strategies to a situation where a committed government is gathering evidence, developing a coordinated approach to development, and planning and leading a broadening engagement in climate change in the country. Key evidence-gathering studies have strengthened understanding and commitment across government, and an inclusive coordination structure (Figure 5), including an ADB-supported secretariat and representation across 10 government agencies, is now responsible for climate change collaboration and for fast and effective implementation of SPCR investments.

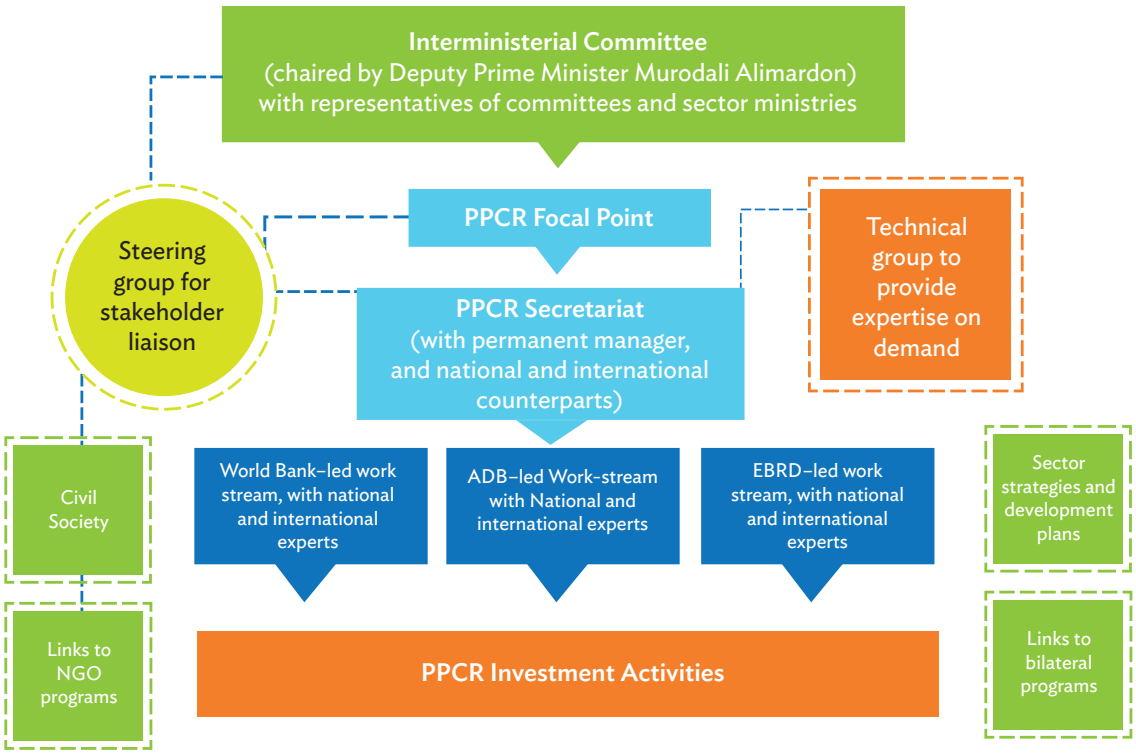
The evidence-gathering studies and the preparation of the SPCR have also led to a dramatic increase in stakeholder engagement and growing numbers of registered stakeholder organizations. However, building wider participation in climate change action has been challenging in a country with a central planning legacy, in which stakeholder consultation is not common practice. While consultation has become more accepted, systematic inclusion, especially in respect of gender, requires further deepening, especially as around 20% of households in Tajikistan are headed by females. Since many of these households will be key agents of change in SPRC investments, activities to strengthen inclusion are an important feature of the PPCR-funded flagship TA project Building Capacity for Climate Resilience, which is already being implemented.

Box 2 Gender, Poverty, and Climate Change in Tajikistan

The promotion of gender equality is an important priority in Tajikistan's National Development Strategy. The strategy acknowledges that gender issues have not been adequately addressed in principal government strategies. Women tend to have unequal access to resources and control over resources, particularly in rural areas, and are therefore more vulnerable to poverty. Climate change could worsen these problems. Almost half of the severely food insecure households in Tajikistan, as well as one-third of households that are moderately food-insecure, are headed by a woman, demonstrating the specific vulnerability of women. These female-headed households, which represent about 20% of total households, have a significantly higher overall incidence of extreme poverty.

The needs, and participation, of vulnerable groups emerged as an important priority during PPCR consultations. These issues will be addressed through the coordination role played by the PPCR secretariat, whose terms of reference include the responsibility for liaison between stakeholders to ensure participation and inclusiveness. Gender concerns are also central to the design of SPCR investments in sustainable land management and river-basin initiatives, which will be strongly supported by gender-disaggregated monitoring and evaluation data and detailed gender action plans.

FIGURE 5 PPCR MANAGEMENT STRUCTURE IN TAJIKISTAN



EBRD = European Bank for Reconstruction and Development, PPCR = Pilot Program for Climate Resilience
Source: Strategic Program for Climate Resilience of Tajikistan

BUILDING CLIMATE RESILIENCE INTO THE RICE VALUE CHAIN IN CAMBODIA

In Cambodia, 80% of the population relies on agriculture for its livelihood and the sector contributes 30% of gross domestic product (GDP). Predictions for climate change indicate higher temperatures in Cambodia, reduced availability of water, and changes in the timing and nature of agricultural seasons, with major impact on agricultural production and therefore on the economy and the society. Rice is the dominant crop, but production is still primarily subsistence and the fragmented value chain and poor infrastructure mean that the country gets little financial benefit from surpluses and food security remains a problem for more than 10% of households.

With PPCR funding support, climate resilience will be built into the policies, institutions, and infrastructure associated with the rice value chain under ADB's Climate-Resilient Rice Commercialization Sector Development Program (ADB 2013b), to improve production and quality and increase the net incomes of stakeholders along the chain (Figure 6). The program will incorporate climate concerns into the legal and regulatory environment for land management and agricultural land use zoning, strengthen the capacity of extension and water management organizations, and pilot-test an innovative crop insurance scheme for rice farmers.

Access to crop insurance would be an important step forward for climate-vulnerable farmers in Cambodia, improving their resilience and reducing the risk of disasters. Using PPCR grant funds the project will pioneer weather-indexed crop insurance (WICI), in which indemnity is based on the realization of a specific set of weather parameters strongly correlated with crop yield (the index) and is paid to all insured farmers in the area affected. The system minimizes bureaucracy since there are no individual policies and field loss assessments are not required. Problems of moral hazard and adverse selection are therefore much reduced.

The first phase of the pilot scheme will consider the feasibility of WICI by assessing the status of weather data and weather monitoring capacity, the availability of agronomic data, the status of local insurance institutions, the policy environment, and the willingness of stakeholders to participate. Options for the operation of WICI will take into account the financial limitations of poor farmers and may include the incorporation of premiums into the cost of relevant input or the establishment of a trust fund, which could be wholly public sector administered, a public–private partnership, or a wholly private sector operation. A favorable outcome from phase 1 and a suitable design for the pilot scheme will be the basis for the implementation of WICI in three target sites in phase 2, including the upgrading of weather stations if necessary.

FIGURE 6 BUILDING A CLIMATE-RESILIENT RICE VALUE CHAIN

Legal and regulatory environment to facilitate rice commercialization and enhance resilience, including land management that integrates climate concerns, a national plan to combat land degradation, and land use zoning, enabling the integration of climate resilience measures at geographic scale.

Climate-resilient infrastructure, including irrigation systems (for longer dry seasons), drying facilities (for early or wet harvesting), storage facilities (to minimize weather spoilage), and land leveling (for efficient use of water). All infrastructure conforms to higher design standards to accommodate climate change impact.

Local land use zoning. Local agro-ecosystem analysis is updated with new evidence, including water availability, topography, and the risk of flooding and drought. Alternative cropping windows that can reduce farmers' risk from climate change are considered.

Climate-Resilient Rice Value Chain

Stronger support services, including better-quality seeds (more resilient crops), extension services (guidance on efficient water management, community water scheduling, and better maintenance regimes), and extension materials (more capable farmer response to climate change).

Pilot implementation of weather-indexed crop insurance scheme. The insurance scheme responds to farmers' crop losses due to natural disasters, providing direct income resilience and increasing farmers' confidence to invest in more resilient technologies.

FAST-FINANCING INSTITUTIONS FOR VULNERABLE COMMUNITIES IN TONGA

The small island countries of the Pacific face significant and immediate consequences of climate change that are markedly disproportionate to their contribution to global GHG emissions. ADB's work on approaches to climate change adaptation began early in these countries and has continued with strong support for the planning, financing, and implementation of climate change strategies and initiatives. However, mobilizing resources and using them effectively in the Pacific countries is not easy. Institutions are generally small and low in capacity, and can hardly absorb large tranches of funding. Increasingly, these countries are looking toward national climate change trust funds as an option for faster and more flexible delivery of assistance to where it is needed. In Papua New Guinea and Tonga, ADB and the CIFs are enabling the establishment of trust funds owned and managed by the countries themselves as a key feature of country SPCRs in the Pacific that will support priority action on climate change adaptation and disaster risk management in vulnerable communities and sectors.

In Tonga, the SPCR with funding of $15 million has already been approved and preparations for the trust fund are well advanced (Box 3). The government has agreed to the establishment of the fund under the existing Public Management Act, thus fast-tracking the process, and development partners are lending their valuable support. As part of the SPCR, a $5 million small-grants program linked to the trust fund will provide sustainable, fast-start financing to allow vulnerable communities to meet the objectives of their community climate change and disaster risk management plans. A range of projects, including the following, can be considered:

- Climate-proofing of critical community infrastructure;
- Development of early-warning systems;
- Small-scale water desalination powered by solar energy;
- Water harvesting or water recycling initiatives; and
- Climate-proofing of homes using concessional loans.

Most importantly, funds will reach the communities, local government, and local businesses on the front line of climate change impact and get work on adaptation moving. The program will incorporate best-practice grant management techniques and use existing mechanisms for small grant screening—the secretariat of the Joint National Action Plan on Climate Change Adaptation and Disaster Risk Management, 2010–2015, which will receive capacity-building support under the SPCR. The trust fund component of the SPCR will also provide training for nongovernment organizations, the private sector, and community climate change committees in the design and implementation of pilot adaptation projects.

Box 3 PCR Implementation in Tonga

The project will strengthen the capacity of the government and communities to finance, develop, monitor, and implement investments to improve ecosystem resilience and climate-proof critical infrastructure. Activities will include the following:

- Building capacity for the mainstreaming of climate resilience into development planning in key vulnerable sectors;
- Improving the monitoring and management of climate data and information by establishing national hydrometeorological and coastal monitoring and data dissemination systems, and improving water resource inventories, integrated water resource management, and coastal zone monitoring;
- Establishing a sustainable financing mechanism (the Tonga Climate Change Trust Fund) to support community-based climate-responsive investments; and
- Investing in ecosystem resilience and climate-resilient infrastructure, encompassing increased resilience of coral reefs and mangroves, upgraded evacuation and disaster access roads, enhanced coastal protection, and upgraded schools and other critical infrastructure.

Transforming Stakeholder Engagement in Climate Change

Even with a supportive policy and institutional environment in place, individuals and organizations must themselves be mobilized to take action on climate change and do things differently. The engagement of stakeholders and mobilization of their resources is central to the effective use of climate investments and more effective action on climate change. However, this engagement may require significant transformations in stakeholder behavior, e.g., the greater participation of the private sector and civil society in funding or delivering mitigation and adaptation solutions, the adoption of more climate-resilient resource management by businesses and communities, or more climate-friendly choices made by the general public in day-to-day activities. ADB and DMC governments are innovatively using CIF funding to effect such changes in stakeholder behavior. Some project examples are highlighted below.

MOBILIZING PRIVATE SECTOR RESOURCES FOR RENEWABLE ENERGY IN THAILAND AND INDIA

Thailand's impressive record of economic growth and poverty reduction in recent decades has naturally resulted in an attendant growth in energy consumption: electricity consumption has risen by more than 60% since 2002.[6] Nearly 90% of this electricity is currently generated from fossil fuels (natural gas, coal, and lignite), contributing to more than one-third of GHG emissions in the country. But the government is strongly committed to moving the country toward a low carbon society. Under Thailand's CTF investment plan, ADB is applying an innovative approach that is already increasing private sector participation in renewable energy finance and helping the country achieve its ambitious target of 25% of power generation from renewable energy by 2021.

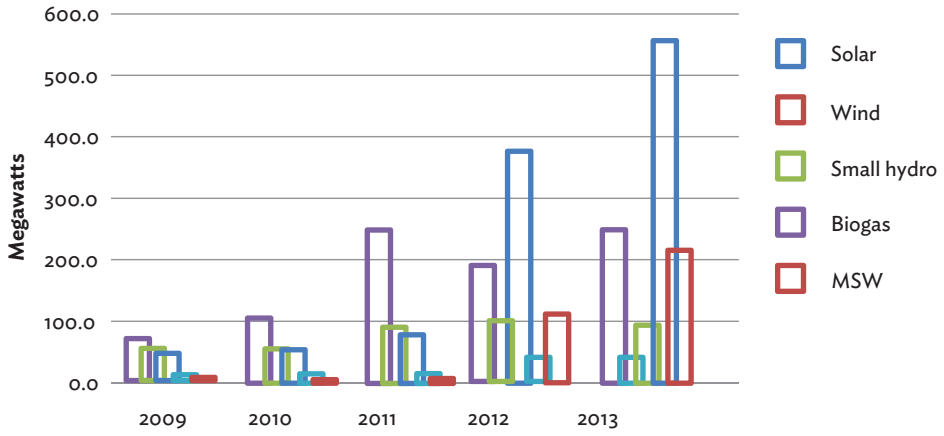
However, while the government has put in place a comprehensive energy policy framework (EGAT 2010; Ministry of Energy, Thailand, 2012), including incentives for private sector investment in renewable energy, investors have remained cautious because of the long amortization period required for the high up-front capital investment and their general unfamiliarity with the business models and risks involved. Building on ADB's strong record in supporting the establishment of commercial large-scale renewable energy installations in Thailand (ADB 2010a), the CTF funding provided an opportunity to transform private sector investment by building a critical mass of successful projects that would strengthen the confidence of investors in renewable energy, particularly solar power, and provide the necessary momentum to reach government targets.

Two major solar power projects and one wind power project received CTF funding: the Central Thailand Solar Power Project (57 megawatts [MW]) with Solarco, the Provincial Solar Power Project (32 MW) with Bangchak Solar Energy, and the Theppana Wind Power Project (7.5 MW) with the Electricity Generating Public Company. Cooperation with Thai banks in structuring these projects was crucial and included a deliberate effort to ask the banks to contribute to the financial viability of the projects by gradually increasing the tenor of their loans. For the first ADB and CTF–funded solar power project, the Thai banks, for the first time, agreed to increase their loan tenor from 10 to 13 years; ADB, on the other hand, reduced its tenor from

[6] Source ADB.

18 to 16 years. As the tenor of Thai bank lending increases from one project to the next, ADB's involvement will be less necessary and the demonstration effect will have been fully achieved. These efforts will continue to contribute to the rapidly expanding renewable-energy sector in Thailand (Figure 7).

FIGURE 7 INSTALLED CAPACITY OF RENEWABLE ENERGY IN THAILAND, 2009–2013



MSW = municipal solid waste.
Source: Department of Alternative Energy Development and Energy Efficiency, Ministry of Energy, Kingdom of Thailand.

CTF Thailand: Renewable Energy Program (Private Sector)

The program, through CTF, will support renewable energy investment projects to help Thailand hasten and expand private sector investment by demonstrating the commercial viability of private sector utility-scale energy generation projects.

PROVINCIAL SOLAR POWER PROJECT WITH BANGCHAK SOLAR ENERGY

The project will install and operate 32 MW of solar power generation.
- Financing: The project's cost is $63 million, of which $12.6 million is from CTF, $25.2 million from ADB, and $25.2 million from local Thai commercial banks.
- Increase in RE supply: 32 MW of solar power capacity.
- GHG emission reduction: 38,000 tCO_2e will be avoided annually.
- Economic and livelihood opportunities: Over 100 people will be employed during construction and over 80 people for the eventual operation of electricity generation facilities.

CENTRAL THAILAND SOLAR POWER PROJECT WITH SOLARCO

The project will install a 57 MW solar power project.
- Financing: The project's cost is $159 million, of which $35 million is from CTF, $52 million from ADB, and 72 million from local Thai commercial banks.
- Increase in RE supply: 57 MW of solar power capacity.
- GHG emission reduction: 66,576 tCO_2e will be avoided annually.
- Economic and livelihood opportunities: At least 50 permanent staff positions will be filled from the start of commercial operations and at least 150 people (full-time equivalent) will be employed during construction.

THEPPANA WIND POWER PROJECT

The project will install and operate a 7.5 MW wind power plant.
- Financing: The project's cost is $13.08 million, of which $4 million is from CTF, $4.54 million from ADB, and $4.54 million from local Thai commercial banks.
- Increase in RE supply: 7.5 MW wind power capacity.
- GHG emission reduction: At least 7,000 tCO_2e will be avoided annually.
- Economic and livelihood opportunities: Over 250 persons (full-time equivalent: 45 persons) will be employed during construction.

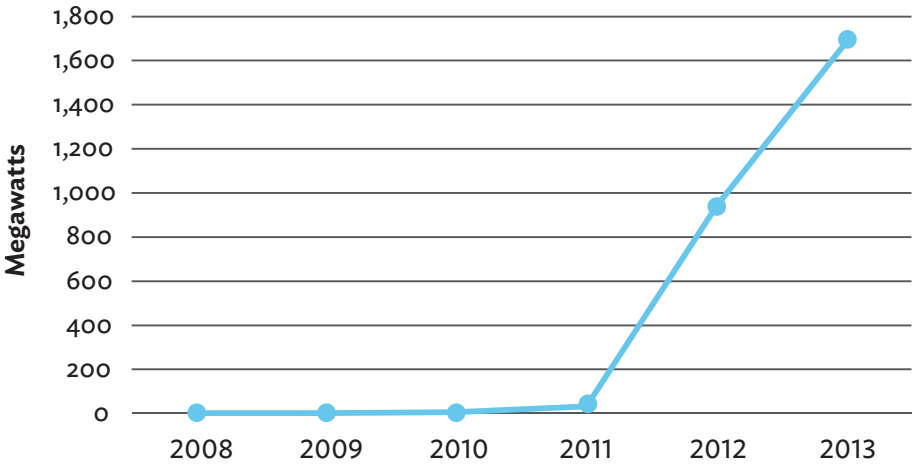
CTF = Clean Technology Fund, GHG = greenhouse gas, MW = megawatt, RE = renewable energy.

In India, energy consumption and GHG emissions per capita remain modest, but projections for continuing strong economic growth, rising urbanization, and ongoing population growth mean that the demand for energy, and particularly electricity, will rise dramatically in the coming decades. Given the country's high dependency on coal for power generation, there are strong incentives to build renewable-energy capacity both from energy security and GHG mitigation perspectives. Under India's CTF investment plan, ADB is facilitating private sector participation in the country's flagship solar energy program, the Jawaharlal Nehru National Solar Mission (JNNSM).

India is endowed with abundant solar radiation resources, especially in the western and southern states of Gujarat, Rajasthan, and Maharashtra, where desert areas adjacent to large urban conurbations are particularly favorable for the development of solar installations. The JNNSM proposes ambitious targets for the expansion of on-grid solar energy building to 10,000 MW by 2017 and 22,000 MW by 2022 through the development of large-scale solar parks. Encouraging private sector investment is difficult because of high up-front costs, first-mover risks, and the challenges of unfamiliar technologies. Moreover, investors are often reluctant to undertake the major land purchases necessary for solar parks, especially if resettlement or related safeguard issues are involved.

ADB has already been assisting the central and state governments in planning solar parks. CTF funding provided an opportunity to broaden this assistance, speed up the solar energy program, and promote the rapid expansion of solar generating capacity in the country (Figure 8). Phase 1 of the CTF plan calls for the construction of solar parks in Rajasthan (1,700 MW) and Maharashtra (1,000 MW), and a second solar park in Gujarat (1,000 MW). The solar parks will comprise utility-scale generating plants, transmission systems, and associated infrastructure. Under the innovative public–private partnership (PPP) approach adopted by the government, the public sector takes up the initial risks and costs by providing or acquiring the land, and building the installation and the transmission infrastructure. The private sector entities then lease the installation to recoup their initial investment costs. Construction is now under way in Rajasthan (see also Box 4). The successful demonstration of these utility-scale solar projects will not only provide business models that can be replicated in India and elsewhere, but also facilitate the development of the local solar thermal industries.

FIGURE 8 SOLAR GENERATING CAPACITY IN INDIA, 2008–2013



Source: Government of India (2013).

Box 4 Rajasthan Renewable Energy Transmission Investment Program (Public Sector) in India

The program will support the development of the in-state transmission network to evacuate and transmit at least 4,300 MW of renewable-energy installations over the period 2012–2018.

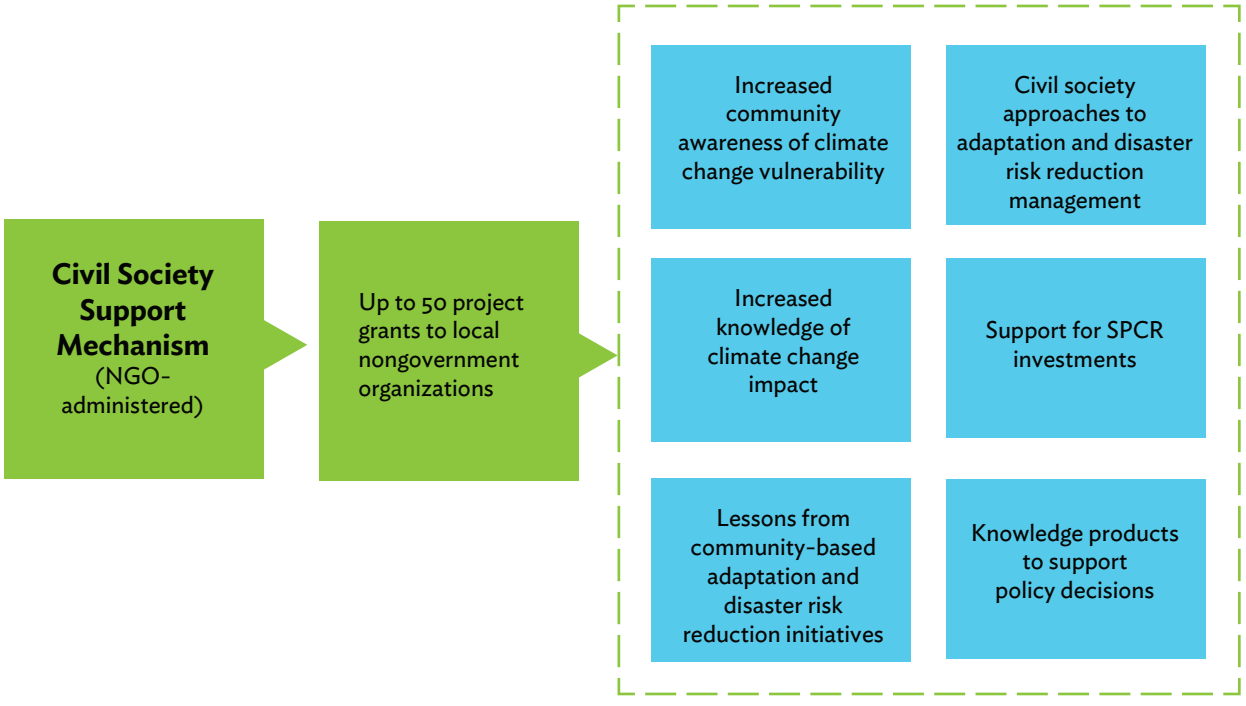
- Financing: Total project cost is $800 million ($200 million from CTF, $300 million from ADB, and $300 million from the state government of Rajasthan).
- GHG emission reduction: 5.4 $MtCO_2e$ yearly.
- Economic and livelihood opportunities: Employment opportunities are expected during the construction and implementation of the projects, and private sector participation (e.g., solar industries, including manufacturing and energy services) will create value-added employment. Communities in Western Rajasthan will benefit from livelihood opportunities identified in the gender action plan.
- Gender and community development: The gender action plan provides for a state-level framework for community-related interventions, and a community development fund for social development and economic rehabilitation projects, a pilot water project, and livelihood opportunities.
- Institutional capacity building: Training for 15 corporate social responsibility champions in private companies and other stakeholders in the government of Rajasthan
- Public–private partnership:
  - The program will demonstrate the commercial and technical viability of developing large-scale projects through public–private partnerships (PPPs). The innovative PPP scheme streamlines the development timeline, reduces development costs, and addresses replication and scale-up issues faced by stand-alone projects.
  - The government, through CTF, will address key investment and technological barriers (site preparation, development of common infrastructure, first-mover risks, etc.) to mitigate perceived risk and promote private sector investment.

BUILDING CIVIL SOCIETY AND COMMUNITY ENGAGEMENT IN CAMBODIA

In Cambodia, ADB is using PPCR funding to build effective climate resilience into a series of major investments in infrastructure and rural development. More than three-quarters of the population lives in rural communities, their livelihoods predominantly derived from agriculture and fisheries and therefore particularly vulnerable to the impact of climate change. Civil society organizations and community-based organizations have played an important role in supporting rural communities in recent decades. The experience they have gained from working with local government, and their growing awareness and capacity with respect to climate change issues, makes them well positioned to play a significant role in addressing climate change adaptation. Civil society was strongly engaged in the preparation of the SPCR, under scoring this emerging capacity and its critical role. A special funding facility for civil society activities was later incorporated into the SPCR (ADB 2013d).

With initial funding of $2 million, the civil society support mechanism will assist grass roots and local organizations operating in Cambodia in conducting studies and engaging communities in practical action on adaptation and disaster risk reduction (DRR). The aim is to help communities understand better their sources of vulnerability, as well as to generate and spread knowledge about the impact of climate change and potential civil society approaches to adaptation and DRR. About 30–50 grants will be competitively awarded and, where possible, projects will be linked with, and will support, the main investments implemented under the SPCR. Community-based projects that directly improve resilience and livelihood diversification of women, children, and marginalized groups in rural and urban areas will receive funding priority (Figure 9).

FIGURE 9 EXPECTED OUTCOMES FROM THE CIVIL SOCIETY SUPPORT MECHANISM IN CAMBODIA



COMMUNITY MANAGEMENT FOR CLIMATE RESILIENCE AND MITIGATION IN NEPAL AND THE LAO PEOPLE'S DEMOCRATIC REPUBLIC

In Nepal, an ADB project funded under the PPCR aims to improve access to more reliable water resources for communities that are particularly vulnerable to climate change. Building Climate Resilience of Watersheds in Mountain Eco-Regions (ADB 2013e), one of five components of the country's SPCR, will support 100 communities in developing water catchment plans that promote water conservation and in managing catchment areas for the development and protection of community water sources. Communities will also develop and implement subprojects that tackle water shortage constraints, especially those that result in additional labor for women or pose difficulties for disadvantaged groups, which have limited access to reliable water sources and often suffer disproportionately in times of water shortage. The project will provide participating communities with training and spread climate-resilient water conservation practices including micro-irrigation, maintenance of soil moisture in agriculture, grazing and fodder management, and regeneration of vegetative cover.

The project will also be an opportunity to build the capacity of the Department of Soil Conservation and Watershed Management (DSCWM) to develop an integrated and inclusive approach to watershed management together with rural communities. A management information system will be designed and expertise in benefit monitoring and evaluation will be provided to strengthen the capacity of the DSCWM to monitor the impact of project interventions. Pertinent matters, such as changes in hydrology due to catchment management measures, water allocation negotiation in communities, behavioral change in the collective management of interventions, and demand management, will also be evaluated.

In 2010, Lao PDR was selected as one of eight countries worldwide to participate in the pilot implementation of REDD+ activities funded by the FIP. Through its Greater Mekong Subregion Biodiversity Conservation Corridors Project (ADB 2010b), ADB has led in supporting the government's efforts to address deforestation and degradation, especially in the southern border areas of the country. Funding from the FIP provided the opportunity to deepen this assistance. In particular, FIP funding will enable critical support for conservation "hot spots"—forest areas at risk of high carbon dioxide emissions resulting from shifting cultivation, increasing population pressure, the development of hydropower installations, and illegal logging. The Lao PDR project (Protecting Forests for Sustainable Ecosystem Services) will focus on (i) conserving areas with high carbon stocks, where deforestation would result in high levels of emissions; and (ii) restoring forest cover where the co-benefits from carbon sequestration and from soil, water, and biodiversity conservation can be maximized.

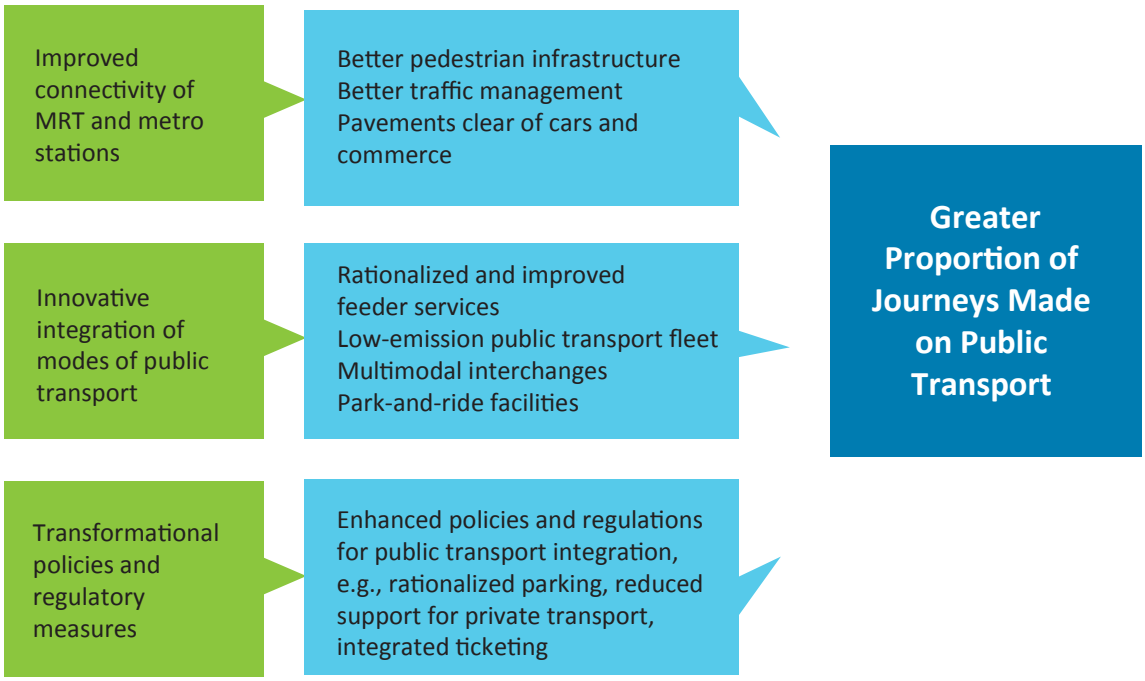
These climate mitigation objectives will be achieved through participatory sustainable forest management, involving local communities in permanent forest boundary delineation, demarcation, and maintenance; forest management; and enforcement of forest protection. In addition, communities will monitor changes in forest carbon stocks, i.e., the reduction in losses and increase in sequestration anticipated as a result of forest restoration. The project will also strengthen the legal, governance, and REDD+ frameworks for these forest areas, leveraging funding for watershed management through payments for environmental services—financially viable mechanisms for remunerating local people and communities for providing and safeguarding ecosystem services such as watershed protection, carbon sequestration, and biodiversity protection.

PROMOTING A SHIFT TO PUBLIC TRANSPORT IN URBAN VIET NAM

The population in the bustling urban areas of Ha Noi and Ho Chi Minh City (HCMC) in Viet Nam generate millions of passenger trips per day (20 million in HCMC alone), and more than 90% of these are made in private vehicles. In these two cities, there are 4.8 million motorbikes, car ownership is escalating, and roads are fast reaching saturation point. In an innovative investment for climate change mitigation, ADB is using CTF funds to augment major investments in urban rail transport, already in progress in the two cities. The additional investment is aimed at improving the quality and energy efficiency of public transport systems, substantially increasing the proportion of journeys on public transport, and achieving a considerable reduction in GHG emissions.

In 2010, ADB approved a $540 million multitranche facility for the construction of Mass Rapid Transit Line 2 in HCMC to improve access and connectivity in six central districts; in the following year, the bank approved a $293 million loan for the construction of Metro Rail Line 3 to serve five districts in Ha Noi. Each of these investments will be backed by a stand-alone CTF-funded project(worth $100 million for Ha Noi, $50 million for HCMC) for better connectivity in the immediate vicinity of metro stations, thus establishing integrated and innovative public transport services with supporting transformational policies and regulatory measures to encourage a modal shift to public transportation (Figure 10). Besides increasing urban mobility, the CTF projects are expected to lower GHG emissions significantly. These projects will be approved in 2014 and implementation will start in 2015.

FIGURE 10 MODAL SHIFT TO PUBLIC TRANSPORT IN VIET NAM



Delivering Transformative Technologies

The development, transfer, and scaling up of appropriate technologies is an important aspect of the global response to climate change. This includes replacing inefficient and dirty technologies with clean, energy-efficient ones, and developing and applying climate-resilient technologies that respond to the myriad demands of adaptation. Across the portfolio, ADB is using CIF funds to drive such technological transformations, including technology innovation and development for clean energy and sustainable transport, demonstrating and facilitating the scaling up of proven mitigation technologies, steadily building a strong knowledge base and expertise in climate-resilient infrastructure, and ensuring that DMCs are technologically equipped to monitor and manage climate change.

TRANSFORMING TRADITIONAL PUBLIC TRANSPORT IN THE PHILIPPINES

The ubiquitous motor tricycle is a popular and cheap form of public transport in both urban and rural areas of the Philippines, where more than 3.5 million motor tricycles ply the streets and highways daily. These tricycles are run entirely by small enterprises and individuals, and provide a vital link as a local feeder service to the wider public transport network. However, the traditional two-stroke engine makes these vehicles major contributors to GHG emissions, very inefficient users of imported fuel, and significant polluters contributing more than 60% of road transport pollution. In a bold initiative, the Philippine government, with assistance from ADB and the CTF, is beginning a major transformation by introducing 100,000 electric tricycles (e-trikes) running on lithium-ion batteries, a cleaner and more efficient technology that could ultimately reduce the GHG impact of traditional tricycles by over 50% (Government of the Philippines 2012). Other developmental benefits of the project include generally better health for drivers, passengers, and urban residents through improved air quality, as well as new skills development, job creation, and the establishment of a vehicle and spare parts supply industry.

The ADB and CTF project (ADB 2012c) builds on the experience of an ADB-financed pilot activity in 2011, in which 20 locally made e-trikes traveled more than 600,000 kilometers (km) in 20 months. Field data from this pilot project indicate that a typical tricycle driver could save up to $5 per day by switching to an e-trike, with an estimated financial internal rate of return of between 17% and 47%. Following the successful pilot run, a nationwide competition was held to design a vehicle for the ADB and CTF project. The three best proposals were selected with a view to developing a final technical design that could easily be manufactured and maintained locally, complied with international safety standards, and integrated important cultural aspects such as rear access to the vehicle. In an important step forward in technology transfer, the e-trike design was made open source so that local designers and manufacturers would have access to the design and could develop their own alternatives based on the central safe module.

The project is pioneering the adoption of new battery and charging technologies. Lithium-ion battery technology is clean and proven, fits the purpose, and, through widespread use, is expected to drive up local safety and environmental standards for

battery handling and disposal. Major international battery manufacturers are actively engaged in project development. Previously focused on the electric car market, these companies are increasingly recognizing the investment potential presented by this project for a nationwide, and ultimately region-wide, shift to electric tricycles. A $4 million CTF grant under the project will support the pilot implementation of solar charging to mitigate upstream GHG emissions from power generation. Although the original objective was to set up 5 x 200 kilowatt stations, ADB, in consultation with private sector stakeholders, has developed an innovative financing model that could leverage enough funds to build more than 3 MW of charging capacity, keeping more than 3,000 e-trikes on the road.

The program takes a local market–driven approach to help leapfrog the gradual take-up phase of technology adoption and ensure that local enterprises are directly involved in the manufacture, maintenance,and financing of e-trikes, as well as the disposal of old tricycles and batteries. This ensures a truly transformational approach in which the program benefits accrue to several different segments of the economy, not solely the operators and riders of tricycles. Technology and environmental risks will be minimized, e-vehicles will be more widely adopted, and more direct and indirect jobs will be created. Crucially the project will both improve the livelihoods of tricycle drivers through higher incomes and a better work environment and generate global environmental benefits from the introduction of new e-trike technologies (Box 5).

Box 5 Market Transformation with Energy-Efficient Electric Vehicles in the Philippines

The project will pioneer 100,000 e-trikes as a first step in the electrification of the public vehicle fleet. It will also initiate the creation of a lithium-ion battery supply chain by procuring at least 300 MWh of lithium-ion batteries.

- Financing: Total project cost is $504 million ($105 million from CTF, $300 million from ADB, and $99 million from the Government of the Philippines).
- GHG emission reduction: 270,000 tCO_2e annually; about three times greater if black carbon is included.
- Access to public transportation: An e-trike can accommodate sevenpassengers, compared with the usual four, for a 75% increase in the potential number of passengers per journey.
- Economic and livelihood opportunities: About 10,000 jobs created by 2015, with employment increasing as the e-trike industry (e.g., domestic e-trike fabrication and assembly) grows.
- Health and environment: Use of e-vehicles and lithium-ion batteries will reduce local pollutant emissions, with substantial public health benefits.
- Gender: Gender concerns were considered in the design of the e-trikes and the project includes targets for female engagement in e-trike operation (at least 30% of charging-station jobs during daytime shifts).
- Institutional capacity development: All project stakeholders (national government agencies and financial institutions involved, local government units, and drivers) will be trained in processes and skills relevant to EEEV project implementation.
- Private sector participation: This pioneering project will mobilize future commercial investments, for replication and scale-up. It will also foster the development of local service industries, e.g., battery suppliers, vehicle maintenance.

CTF= Clean Technology Fund; EEEV= Energy-Efficient Electric Vehicles in the Philippines; MWh = megawatt-hour.

PREPARING FOR CARBON NEUTRALITY IN THE MALDIVES

The stunning coral atolls of the Republic of Maldives islands consist of nearly 1,200 islands (194 inhabited) stretching for more than 750 km across the Indian Ocean. Although the islands and the population are geographically dispersed, there is almost universal access to electricity, each island relying on a self-contained supply from diesel-powered generators. This system is costly: oil imports have already reached more than 30% of GDP, and the government additionally subsidizes electricity generation, imposing a further burden on the national budget ($25 million in 2011). Continued reliance on imported fuels is clearly unsustainable, yet the significant opportunities for renewable energy sources, such as solar and wind, remain largely unexploited. Under the Maldives SREP investment plan, ADB is assisting the government in preparing for a major transition to renewable energy in pursuit of the government's commitment to a carbon-neutral Maldives by 2020.

ADB has been a significant contributor to the development and rehabilitation of the power sector in the Maldives for over 30 years. Under the SREP investment plan, ADB is supporting a rapid transformation to renewable energy in the outer islands and providing extensive TA for the country's renewable-energy scale-up program (ADB 2012e). The successful introduction and scaling up of renewable energy technologies requires preparation on three main fronts, which characterize the main elements of ADB assistance. First, the transformation cannot be financed from public funding alone; private sector investors must be engaged to achieve scale and sustainable implementation. Second, the move to renewable energy requires essential efficiency upgrades to generation and distribution infrastructure to ensure that cost savings are achieved. Third and finally, local capacity to design, implement, monitor, and maintain renewable-energy installations needs to be built and supported for a sustainable outcome.

Field preparation of the Outer Islands for Sustainable Energy Development Project is already under way in the Maldives, forging a strategic approach that addresses three different island scenarios (Table 3).

The project provides innovative and replicable technological solutions for the shift to renewable energy on small islands and lays the groundwork for private sector investments of about 3 MW on 30 larger islands, which would be supported through a feed-in tariff set by the Maldives Energy Authority (Box 6).

TABLE 3 STRATEGIC APPROACH TO RENEWABLE ENERGY DEVELOPMENT IN THE MALDIVES

Scenario 1: 10 small islands where commercial renewable energy is not feasible	**Scenario 2:** 15 larger islands with potential for commercial renewable energy	**Scenario 3:** 15 larger islands recently upgraded with ADB assistance
Approach: Identify and install the best mix of renewable energy for each island in two phases, reaching 70% penetration after 2 years and 100% after 3–4 years. Include electricity storage capacity and measures to address surplus energy generation.	**Approach:** Upgrade infrastructure and equipment to make systems ready for commercial renewable-energy installations of up to 30% of total capacity.	**Approach:** Assess for additional required investments in control systems, and also make ready for commercial renewable-energy installations of around 30% of capacity.

Box 6 Preparing the Outer Islands for Sustainable Energy Development Project in the Maldives

The project will demonstrate 100% renewable energy–based systems on 10 small islands and deployrenewable energy–diesel hybrids on some medium to large islands.

- Financing: Total project cost is estimated at $40.2 million ($12.8 million from SREP, $6 million from ADB, $8 million from the Government of the Maldives, and $13.4 million from other sources).
- GHG emission reduction emissions: About 5,000 tCO_2e per year.
- Increase in renewable energy capacity: 2 MW of renewable-energy generation installed with adequate storage on 10 islands.
- Energy security: The purchase of about 2 million liters of diesel will be avoided per year.
- Economic and livelihood opportunities: The productive use of power supported in small and medium electricity-consuming islands will foster employment creation and business opportunities.
- Institutional capacity development: Support will be given to Fenaka, a state-owned utility company, in designing and implementing the project, including capacity building for staff and international expertise to strengthen and complement the organization's capabilities.

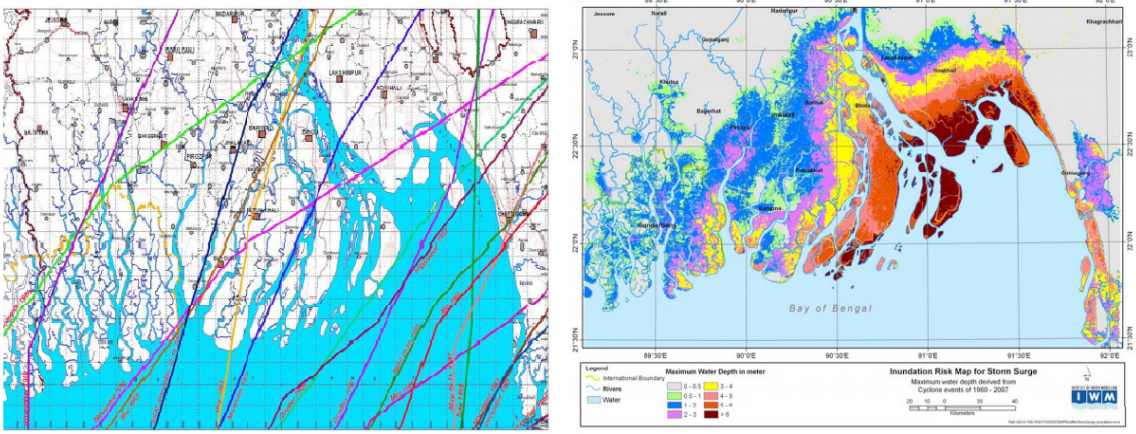
BUILDING CLIMATE-RESILIENT COASTAL INFRASTRUCTURE IN BANGLADESH

Extreme weather and its consequences are part of life in Bangladesh. The country is low lying, has one of the wettest climates in the world, and is periodically subject to intense cyclones causing loss of life and damage to livelihood assets, particularly along its exposed coastline. Climate change is set to deepen this vulnerability, as annual rainfall increases, intense cyclones become more frequent, and sea levels rise. It is estimated that by 2050 such impact could make an additional 14% of the country extremely vulnerable to floods and dislocate more than 35 million people in coastal areas (Figure 11). There is a pressing need for effective and appropriate action to build climate-resilient infrastructure in high-risk areas to preserve the livelihoods and safety of local people. In preparation for the SPCR, the government and ADB agreed to use PPCR funds to increase the climate-resilience of two significant and complementary infrastructure investments developing and disseminating climate-proofing technologies in both rural and urban coastal communities.

The Coastal Climate-Resilient Infrastructure Project (ADB 2012a), already under way in 12 vulnerable coastal districts, is aimed at integrating climate-resilient technologies and DRR into local policies and the development of infrastructure, such as rural roads, markets, and typhoon shelters. Based on ADB's strong experience in climate proofing, it will apply mainstay technologies, including designs that strengthen and raise roads above normal flood levels, bio technical and geotechnical solutions for slope protection, flood- and heat-tolerant road surfacing, and enhanced drainage design to avoid erosion and prevent waterlogging. The project will also deliver active technology transfer and strategy support, including the upgrading of the information systems of the Local Government Engineering Department (LGED), the establishment of a community of practice for climate-resilient infrastructure, the building of LGED staff capacity for revised standards and practices, and support for the preparation of a climate change assessment and adaptation strategy and a climate-resilient rural infrastructure management plan for LGED. (See Box 7.)

The Coastal Towns Infrastructure Improvement Project (ADB 2012b) is a flagship initiative for urban development adaptation in Bangladesh. Climate-related problems are arising in coastal towns, where more frequent droughts and saline intrusion from storm surges are threatening freshwater supplies, drainage congestion is creating serious health risks during flooding, and nonresilient transport infrastructure is deteriorating rapidly because of floods. In an innovative participatory and performance-linked approach, the project will support climate-critical infrastructure development in eight towns. In consultation with the LGED, the towns will develop a two-stage plan, with the first stage focusing on priority climate-resilient investments, including water supply, sanitation, drainage, cyclone shelters, and roads and bridges. Depending on their performance,the towns will have access to further finance for lower-priority investments. An extensive ongoing project preparation TA has already identified core adaptation technologies for urban infrastructure (ADB 2013a) and these will be transferred to the LGED in a capacity-building and governance-strengthening program that complements and builds on the capacity building envisaged under the Coastal Climate-Resilient Infrastructure Project. (See Box 8.)

FIGURE 11 CYCLONE TRACKS AND INUNDATION RISK MAP OF THE BANGLADESH COASTAL ZONE



IWM = Institute of Water Modeling

Box 7 Coastal Climate-Resilient Infrastructure Project in Bangladesh

The project is aimed at reducing poverty and raising incomes in the rural coastal districts of Bangladesh by fostering rural connectivity (rural roads, bridges, culverts, cyclone shelters, and markets) in a sustainable and "climate-proof" way. The project will give rural people in the coastal districts better access to social services, such as health and education and economic opportunities. Widening all-weather access roads to markets and livelihood activity will result in improved earnings for the rural poor, including poor women.

The total project cost is estimated at $81.2 million ($30 million from PPCR, $20 million from ADB, and $31.2 million from the government).

Box 8 Coastal Towns Infrastructure Improvement Project in Bangladesh

The project is intended to strengthen climate resilience and disaster preparedness in eight vulnerable coastal ***pourashavas*** (secondary towns) of Bangladesh. The project takes a holistic and integrated approach to urban development and will (i) provide climate-resilient municipal infrastructure, and (ii) strengthen institutional capacity, local governance, and knowledge-based public awareness, for improved urban planning and service delivery, considering climate change and disaster risks. Key infrastructure investments include:

- Drainage,
- Water supply,
- Sanitation,
- Cyclone shelters, and
- Other municipal infrastructure, including emergency access roads and bridges, solid waste management, bus terminals, slum improvements, boat landings, and markets. Investments will benefit the poor and women.

The total project cost is estimated at $65 million ($40.4 million from PPCR, $23.1 million from the government, and $1.6 million from other sources).

DELIVERING AND TRANSFERRING TECHNOLOGIES FOR EVIDENCE AND DECISION MAKING IN NEPAL AND TAJIKISTAN

Preparing the first round of CIF investment plans and projects highlighted the gaps in climate change data in many countries and in the capacity to collect and analyze, store, and use such data in preparing, implementing, and monitoring interventions. Preparatory TA for investment plans and projects has therefore been an important vehicle for delivering and transferring technologies for evidence gathering and decision making, and a number of investment plans have incorporated components aimed at enhancing country capacity for climate change monitoring and measurement.

In Nepal, the preparation of the SPCR coincided with the final planning stage of the National Adaptation Program of Action.[7] This activity, which included a nationwide vulnerability assessment, provided key information on climate change risks and program priorities that was needed to prepare the investment plan, but did not provide adequate scientific data to inform more detailed project designs under the plan. Comprehensive evidence on vulnerability was required that would provide a higher spatial resolution and could be geared toward management interventions at the local level. Through an ongoing ADB TA project (ADB 2012d) downscaled climate change models were developed and the vulnerability assessment framework of the United Nations' Intergovernmental Panel on Climate Change applied to develop geographic information systems (GIS)–based vulnerability maps for the middle and high mountain regions of Nepal. A further study, which was more geographically focused on the most vulnerable river basin, used the soil and water assessment tool to model the impact of various possible resilience interventions, which in turn fed into the design of the ADB-administered project under the SPCR.

Under the Nepal SPCR, an ADB-administered TA project aimed at mainstreaming climate change risk management into development, is already well under implementation and includes further work and capacity building on climate data, risk management, and vulnerability assessment (ADB 2011). Some examples of the proposed activities are given below:

- Continually analyzing climate science using downscaled climate change model projections;
- Conducting hydrologic and impact assessment modeling;
- Developing a national vulnerability assessment and adaptation planning methodology;
- Preparing sectoral vulnerability and adaptation planning assessments;
- Ensuring that line agencies have ready access to the data they need for climate risk management within their sectors;
- Providing training in community-based vulnerability assessment at the district level;
- Updating the secondary and tertiary curriculum to incorporate climate science;
- Documenting traditional and indigenous adaptation practices; and

[7] A process for least developed countries to identify priority activities that respond to their urgent and immediate needs to adapt to climate change under the United Nations Framework Convention on Climate Change.

- Supporting a small-grants research fund that will encourage academic research into climate and environmental management issues in Nepal, supporting the Ministry of Science, Technology and Environment in the results management of the overall PPCR program and three other adaptation projects.

In Tajikistan, it was recognized early on in preparing the SPCR that climate change impact data and expertise were fragmentary and insufficient. As part of a cluster of basic studies under phase 1, ADB implemented a critical TA (ADB 2010c) that developed the country's first set of statistically downscaled hydro-climate models, providing a strong basis for future climate resilience work in the country. The TA comprised two main activities. First, the Climate Science and Impact Modeling Partnership, a panel of international and Tajik climate experts, was formed. The partnership assessed capacity for climate change modeling at all levels in the country and provided recommendations for developing a comprehensive capacity development program. In the second activity, downscaled climate models were developed with a resolution of 11 km, the finest applied in Tajikistan to date. The models were used in developing climate risk assessments based on the main river basins in the country, in accordance with the anticipated approach of ADB's investment project under the SPCR (Government of Tajikistan 2011). Essential climate adaptation options for the short and medium term were then identified.

The capacity development and technology transfer support for climate modeling in Tajikistan will be further strengthened by a major ADB-administered TA under the SPCR (ADB 2012f; Transforming Policies and Institutions, see section on page 20). This TA, already under implementation, will establish a climate modeling facility in the Hydromet[8] forecast department that can apply high-resolution forecasting and modeling techniques and interpret the output from climate models in preparing climate change projections and climate impact assessments for key sectors. Training in how to generate and use climate data and information will be provided to local experts, and additional technical skills will be sustained through enhanced higher education curricula comprising climate science and glaciology modules. The climate modeling facility will be gradually handed over to government and fully supported with a national budget after TA completion, in alignment with the state program.

[8] Hydromet, the State Hydrometeorological Service in Tajikistan.

The CIFs consistently emphasize government leadership and country ownership as critical factors in the development of investment plans and projects.

5

MEETING THE CHALLENGES: MAKING CLIMATE CHANGE FINANCING WORK

Achieving Country Ownership

The CIFs consistently emphasize government leadership and country ownership as critical factors in the development of investment plans and projects. In practice this has been a considerable challenge to achieve particularly because of the influence of stakeholder capacities in respect of climate change issues and the level of stakeholder participation achieved (including government) in the process. Table 4 gives some examples of the issues and how they were addressed in processes in which ADB participated.

TABLE 4 SUPPORTING GOVERNMENT OWNERSHIP IN THE PREPARATION OF CIF INVESTMENT PLANS

ISSUE	RESPONSE
Capacity:	
Key Stakeholders with Limited Awareness or Knowledge of Climate Change Issues	Tajikistan PPCR: Phase 1 focused activities on building awareness and a major study on adaptive capacity and awareness
Competing Agendas from Other Initiatives	Nepal PPCR: Development was in parallel with NAPA process so PPCR team heightened engagement and support for government, built on NAPA data and structures where possible, and directed their efforts at addressing NAPA gaps
Lack of Institutional Structures to Support Government Ownership	Tajikistan: PPCR established a comprehensive structure for PPCR management, linking government departments, civil society, and bilateral development partners, supported by teams of MDB-led national and international experts
Participation:	
Limited Coordination and Communication Across Relevant Government Agencies	Nepal SREP: Clear roles established and a broad-based steering committee formed to represent all relevant government agencies, subcommittees created to facilitate the consultation process, effective leadership of interministerial discussions by MOE
Inadequate Stakeholder Engagement in the Preparation of Plans and Projects	Cambodia: Early and sustained consultation with civil society, civil society engagement, and private sector components included in phase 1

PPCR = Pilot Program for Climate Resilience, NAPA = National Adaptation Programmes of Action, MDB = Multilateral Development Bank, MOE = Ministry of Environment, SREP = Scaling Up Renewable Energy in Low Income Countries Program

An additional challenge in respect of country ownership has been the nature of the investment plan preparation process itself, which provided a fairly limited time for the preparation of plans and, hence, the establishment of ownership, and centered the process on visiting joint MDB missions, inadvertently accentuating the MDBs' role in the process. In addition, guidance in preparing investment plans did not indicate any explicit monitoring or assessment of the extent of country ownership of the process.

Significant lessons have already been learned and in many DMCs country ownership has been significantly improving over time, particularly as project preparation and implementation progresses. Experience shows that better communication, coordination, and consultation among stakeholders are the most important elements in enhancing country ownership, and CIF has already been working on measures to improve these aspects, focusing on strengthening country coordination structures, supporting improved planning, implementation, and monitoring of stakeholder consultations, and requiring reporting on the status of country ownership in investment preparation. However, more remains to be done, particularly in adopting more innovative consultation approaches, improving stakeholder understanding of climate finance and MDB processes, improving in-country collaboration between development partners including MDBs, and increasing transparency in decision making.

Instituting Results-Based Monitoring

Both the MDBs and the CIFs place a high priority on learning from results, and as the first round of investment planning is completed, effective monitoring systems are being put in place. Project-level monitoring frameworks will accord with normal MDB practice and integrate with both the country-level frameworks for each investment plan and a global-level monitoring and evaluation (M&E) framework currently being finalized by the CIFs. ADB, together with other MDBs and stakeholders, has contributed to the development of these global frameworks (CTF, PPCR, SREP, and FIP),[9] which will facilitate meaningful reporting on achievements at the fund level and will also guide the further development of M&E activities at the country and project level. Each of these frameworks includes a number of core indicators that all countries must report on annually, with the support of the MDBs. Core indicators have been finalized for CTF, PPCR, and SREP, while those for FIP are still being discussed. Toolkits and guidelines for applying the core indicators have already been prepared for CTF, PPCR, and SREP.

ADB has also been playing a facilitative role, assisting program teams in the technical and organizational aspects of M&E at the country level. In both the Cambodia PPCR and the Nepal SREP, the preparation of the country results framework is prioritized as an opportunity to raise awareness of climate change M&E and strengthen climate monitoring at the national and sectoral level. In Cambodia, ADB is building the capacity of a PPCR M&E working group comprising nine government agencies working on baselines and targets for core PPCR indicators, harmonizing adaptation indicators for the national monitoring system, and mainstreaming the PPCR results framework into the next phase of national development planning. In Nepal, a showcase for the development of M&E in SREP, ADB has supported a review of government and key donor M&E approaches in the light of SREP M&E requirements, and identified gaps, challenges, and opportunities for integration. The challenges of M&E vary greatly from country to country; Table 5 summarizes common themes that were highlighted in Cambodia and Nepal. ADB is also undertaking a comprehensive needs assessment for developing national M&E systems for CIF projects and programs.

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[9] See Climate Investment Funds. *Measuring Results*. https://www.climateinvestmentfunds.org/cif/measuring-results

TABLE 5 CHALLENGES FOR THE DEVELOPMENT OF COUNTRY-LEVEL MONITORING AND EVALUATION FRAMEWORKS FOR CIF INVESTMENTS

Source	Examples of Monitoring and Evaluation Challenges
Institutional	• Climate change not yet integrated into national development planning or M&E systems • Limited capacity and commitment of central and local government to M&E • Low level of harmonization between donor programs on M&E systems and approaches • Overlapping mandates between government agencies on basic data M&E
Technical	• Baselines measured at the transformative impact level and baseline indicators aggregated at the program level • Establishment of "what would have happened without the intervention" • Attribution of development outcomes to adaptation interventions
Data/Information	• Lack of reliable data and poor data management • Lack of harmonization of data collection efforts between ministries and between national and subnational institutions • Limited access to existing adaptation data
Financial	• Low levels of financial resources committed to M&E by government or CIF

Source: ADB.

Dealing with the Impact of Changing Priorities

In all countries in the Asia and Pacific region, policies, plans, and regulations related to climate change have been evolving rapidly during the preparation of CIF investment plans. In some countries, the options for sourcing climate change financing have also changed. This dynamic environment is positive, but it presents a challenge to maintaining the relevance of some investment proposals, particularly for CTF plans, and some have ultimately required revision, thus prolonging the preparation phase and delaying implementation.

- In **Indonesia,** the government constructed an institutional framework under which the bulk of project development, financing, and implementation would be carried out by the private sector, and facilitated these projects by announcing more favorable tariffs for renewable energy and by using its own capital for certain schemes. As a result, the government determined it would be more effective to shift additional CTF funds to the private sector and state-owned enterprises.
- In the **Philippines,** slow implementation of the Renewable Energy Act 2008 constrained the investment environment for solar energy, a focus of the original plan. Given the increasingly volatile oil prices and positive in-country developments in electronic vehicle technology, the government therefore suggested a shift in CTF funding to include a major electronic vehicle project and a more strategic approach to solar development.
- In **Thailand,** the increasing availability of public financing at low rates made concessional funds unnecessary. Moreover, a more stringent approval process for sovereign borrowing agreements, which required two parliamentary approvals, led the government to propose a reallocation of CTF funds from public to private sector investments in renewable energy in order to accelerate proposed CTF programs.

Engaging the Private Sector in Climate Change Investment

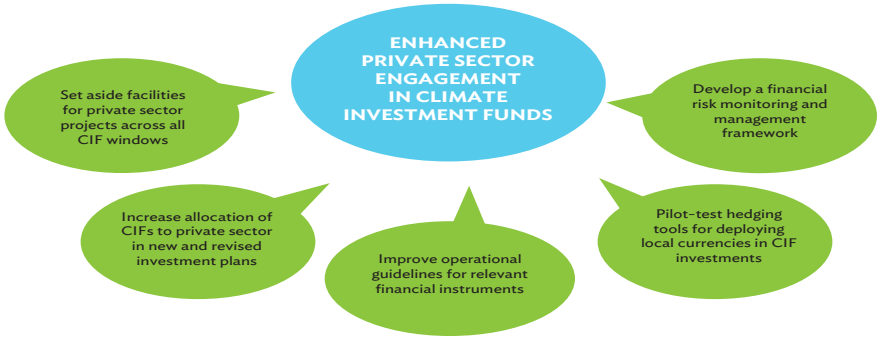
The extensive financial needs of the DMCs for addressing climate change cannot be provided solely by public sector investment. The challenge is to find a way to deploy public funds to catalyze private sector investment alongside it. From their inception, the CIFs included the private sector as a key partner in the design and implementation of investments, both as a source of financing and as a source of innovation and transformational change in markets. However, many proposed mitigation investments are considered risky by the private sector. The main concerns consistently raised in developing countries include high up-front capital costs, uncertain regulatory environment, poor technology performance, and insufficiently short debt financing markets. With respect to adaptation, the most effective role of the private sector is not yet clear, especially since the output and benefits generated by adaptation investments often have the characteristics of public goods.

On the funding side, internal studies (CIFs 2012) have suggested a number of factors that have limited the engagement with the private sector: (i) the CIFs and the MDBs continue to be somewhat risk averse to financial structures that would maximize the catalytic effect (e.g., subordinated financing, first-loss guarantees); (ii) it is unclear what share of CIF funds should be allocated to the private sector; (iii) governments are more likely to favor public sector investments when planning and designing investments (partly because of funding needs well in excess of the supply of concessional climate finance); and (iv) guidance in engaging the private sector has been weak.

ADB has endeavored to improve private sector participation within, and also outside, its CIF portfolio by using concessional public sector funds to leverage private sector participation (e.g., PPP for solar parks in India) and by direct engagement through ADB's Private Sector Operations Department (e.g., underwriting exploration risks under the Sarulla Geothermal Power Development Project in Indonesia [ADB 2013c]). The CIFs are also pursuing a number of strategies to enhance private sector engagement on the basis of experience gained so far (Figure 12).

The CIFs have recently established two dedicated funding streams for the private sector, encompassing both the SCF and the CTF. In April 2013, the CIFs launched a call for innovative proposals that engage the private sector in FIP, PPCR, and SREP programs, and set aside over $200 million in concessional funding to advance investment plans under the three programs. Eighteen project concepts have already been endorsed and ADB is developing projects for PPCR to be considered in the next round of deliberations. In November 2013, the CTF trust fund committee approved in principle $150 million in funding for two dedicated private sector programs: (i) the Utility Scale Renewable Energy Program ($115 million), in which the MDBs will deploy funds for private sector geothermal projects in selected countries; and (ii) the Renewable Mini-grids and Distributed Power Generation Program ($35 million), specifically for distribution generation projects in Asia (the program to be implemented by ADB). The goal of the two funds is to determine whether new private sector business models can be de-risked, proven successful, and scaled up in the future.

FIGURE 12 STRATEGIES FOR ENHANCING PRIVATE SECTOR ENGAGEMENT IN CLIMATE INVESTMENT FUNDS



Tracking Climate Change Financing

As the pace of climate change financing and climate action builds, resources will be mobilized from a wide range of sources, including public and private, bilateral and multilateral, and alternative. It is therefore increasingly important to track and report financial flows that support climate change mitigation and adaptation to ensure accountability to climate finance commitments, monitor trends and progress in financing, and provide transparency and clarity. To address this, ADB is working with other MDBs to develop a harmonized approach to tracking and reporting on mitigation and adaptation finance (AfDB et al. 2011a, 2011b, and 2012) (Figure 13).

This process has also increased clarity in the reporting of ADB's climate change financing and geared ADB reporting on climate-related investments and TA to multilateral processes, especially the UNFCCC (Table 6).

TABLE 6 ADB'S CLIMATE CHANGE INVESTMENTS, 2011–2013

Year	Mitigation			Adaptation			Total		
	Investments	TA/Others	Subtotal	Investments	TA	Subtotal	Investments	TA/Others	Total
2011	2,211.33	123.84	2,335.17	494	65	559	2,705	189	2,894
2012	2,286.30	101.63	2,387.92	867	29	896	3,153	131	3,284
2013	2,223.29	64.26	2,287.56	942	25	967	3,165	89	3,254
Total	6,721	290	7,011	2,303	119	2,421	9,024	408	9,432

Year	Mitigation			Adaptation			Total		
	ADB Resources	External Resources	Subtotal	ADB Resources	External Resources	Subtotal	ADB Resources	External Resources	Total
2011	2,196.20	138.97	2,335.17	455	103	559	2,652	241	2,894
2012	2,001.44	386.48	2,387.92	821	75	896	2,822	462	3,284
2013	1,939.28	348.28	2,287.56	880	87	967	2,819	435	3,254
Total	6,137	874	7,011	2,156	265	2,421	8,293	1,138	9,432

Notes:
* ADB resources include OCR, ADF and CCF; external resources include bilateral sources, CIF, GEF, etc., and carbon-financed contracted projects.
* Mitigation TA/Others includes carbon financing.

FIGURE 13 JOINT REPORTING ON CLIMATE CHANGE FINANCING BY MULTILATERAL DEVELOPMENT BANKS

JOINT MDB REPORT ON ADAPTATION FINANCE 2011

A report by a group of Multilateral Development Banks (MDBs) comprising the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank (IDB), the World Bank (WB), and the International Finance Corporation (IFC)

December 2012

INTRODUCTION

The international community recognizes the need to join forces to avert dangerous climate change. This requires mobilizing financial resources from a wide range of sources, public and private, bilateral and multilateral, including alternative sources. This makes it increasingly necessary to track and report financial flows that support climate change mitigation and adaptation, to build trust and accountability with regard to climate finance commitments and monitor trends and progress in climate-related investment. Yet there is currently no precise internationally-agreed definition of climate finance and current efforts to track climate finance lack transparency, comparability and comprehensiveness.

This report sets out the joint MDB approach for adaptation finance reporting, developed by a group of MDBs to work towards better tracking of climate finance. It responds to the particular context of the activities that the MDBs carry out in developing and emerging economies and is built on the premise that climate adaptation and sustainable development are closely aligned. A separate report on mitigation finance is being published in parallel to this report.

This harmonized methodology has emerged from a process to find commonalities between existing MDB approaches to adaptation finance, each reflecting a different set of sectoral, geographic and investment mandates.

The joint approach is also a work in progress aimed at assisting the MDBs, as well as other organizations that might want to follow a similar approach, in gradually converging towards a harmonized approach for the tracking of climate change finance.

JOINT MDB APPROACH FOR ADAPTATION FINANCE REPORTING

The joint MDB approach for adaptation finance reporting is based on the following principles:

- **It is purpose, context and activity based:** A project activity must fulfill three design process criteria for finance to be reported. It must:
  - Set out a context of climate vulnerability (climate data, exposure and sensitivity), considering both the impacts from climate change as well as climate variability related risks;
  - Include a statement of purpose or intent to address or improve climate resilience in order to differentiate between adaptation to current and future climate change and good development;
  - Link project activities to the context of climate vulnerability (e.g., socio-economic conditions and geographical location), reflecting only direct contributions to climate resilience.

The three criteria need to be included in the Project Appraisal Report or equivalent and/or its technical annexes but no specific section or explicit inclusion in the project development objective[1] or equivalent is required. Table 1 provides some illustration of the application of these three criteria.

- **It follows a conservative approach** to prevent the mislabeling of development activities as adaptation. Activities that do not explicitly meet all the above criteria are not included in reporting.
- **Project activities should reflect at least one of the following adaptation categories**, reflecting the broad range of mandates of the MDBs[2]. These are:

[1] It refers to a very short description of what the key development objective of the project is.
[2] These categories are developed from work undertaken by WRI on the 'adaptation continuum'.

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A report by a group of Multilateral Development Banks (MDBs) comprising the African Development Bank (AfDB), the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the Inter-American Development Bank (IDB), the World Bank (WB), and the International Finance Corporation (IFC)

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The international community recognizes the need to join forces to avert dangerous climate change. This requires mobilizing financial resources from a wide range of sources, public and private, bilateral and multilateral, including alternative sources. It is increasingly important to track and report financial flows that support climate change mitigation and adaptation, to build trust and accountability with regard to climate finance commitments and monitor trends and progress in climate-related investment. Yet there is currently no precise internationally-agreed definition of climate finance and current efforts to track climate finance lack transparency, comparability and comprehensiveness.

This report is based on the joint MDB approach for mitigation finance reporting, developed by a group of MDBs to work towards better tracking of climate finance. It responds to the particular context of the activities that the MDBs carry out in developing and emerging economies and are built on the premise that climate mitigation and development are two sides of the same coin. A separate report on adaptation finance is being published in parallel to this report.

Each MDB's methodology for tracking mitigation finance[1] differs, but the joint MDB approach tries to find commonalities and is an attempt to jointly report on resources mobilized for a set of commonly-agreed mitigation activities (see below). The joint approach is also a work in progress aimed at assisting the MDBs, as well as other organizations that might want to join or more clearly understand their engagement in mitigation. This will lead to gradual convergence towards a harmonized approach for the tracking of climate change finance.

JOINT MDB APPROACH FOR MITIGATION FINANCE REPORTING

The joint MDB approach for mitigation finance reporting is based on the following principles or attributes:

- It is **activity-based**, namely, it focuses on the type of activity to be executed, and not on its purpose, the origin of the financial resources, or its actual results.
- The classification is **ex-ante** project implementation.
- An activity can be a project or a project component: the joint approach aims to report on mitigation activities disaggregated from non-mitigation activities through a reasonable level of data **granularity** by dissecting projects into main components. For example, a project with a total cost of $100 million may have a $10 million component for energy efficiency improvements – only the $10 million would be reported.
- The joint approach measures **financial flows**, rather than greenhouse gas (GHG) emissions reduced by the investment.
- An activity can be labeled as contributing to climate change mitigation if it promotes "efforts to reduce or limit greenhouse gas (GHG) emissions or enhance GHG sequestration."[2] In the absence of a commonly-agreed method for GHG analysis among MDBs, mitigation activities considered in this joint approach are assumed to lead to emission reductions, **based on past experience** and/or technical analysis. Ongoing efforts to harmonize GHG analysis among MDBs will bring more consistency regarding the identification of mitigation activities in the long-term.
- The purpose of this joint approach is to enable **practical**, harmonized climate finance classification categories without having to resort to long, complex studies or highly specialized experts.
- The approach covers both MDBs' own resources as well as external resources managed by the MDBs (such as funding from the Global Environment Facility, the Climate Investment Funds, or Carbon Funds). To prevent double counting (in particular as some external resources may already be covered in bilateral reporting), **external** resources managed by the MDBs are clearly **separated** from MDBs' own resources.

[1] Such as the WB's climate finance tracking system (http://bit.ly/wbcfts) and the IFC's GHG Portfolio Accounting (http://bit.ly/ifcghgpa).
[2] OECD DAC. Definition of the Rio Marker on climate change mitigation. http://bit.ly/RioMit.

ADB and the Emerging Architecture for Climate Change Financing

Under the Copenhagen Accord of 2009 (UNFCCC 2009), developed countries pledged funds approaching $100 billion per year by 2020 to help developing countries finance a transition to green energy and adaptation to the impact of climate change. It was also agreed to provide $30 billion in "fast-start" financing for the period immediately following the agreement (2010–2012). During this period, ADB and other multilateral banks delivered commitments commensurate with the accord to harmonize efforts in addressing climate change, scale up financing for adaptation and mitigation, increase private sector participation in addressing climate change, and provide knowledge, advice, and support for policy development. The establishment and development of the CIFs during this period was an important focus for ADB's commitments and a major channel for "fast-start" financing in Asia and the Pacific.

To provide a long-term, robust mechanism for delivering climate change financing, the 2010 UNFCCC Conference of the Parties (COP) meeting in Cancun, Mexico, agreed on the establishment of the Green Climate Fund (GCF).[10] The aim of the fund

[10] For further information see http://gcfund.net/home.html

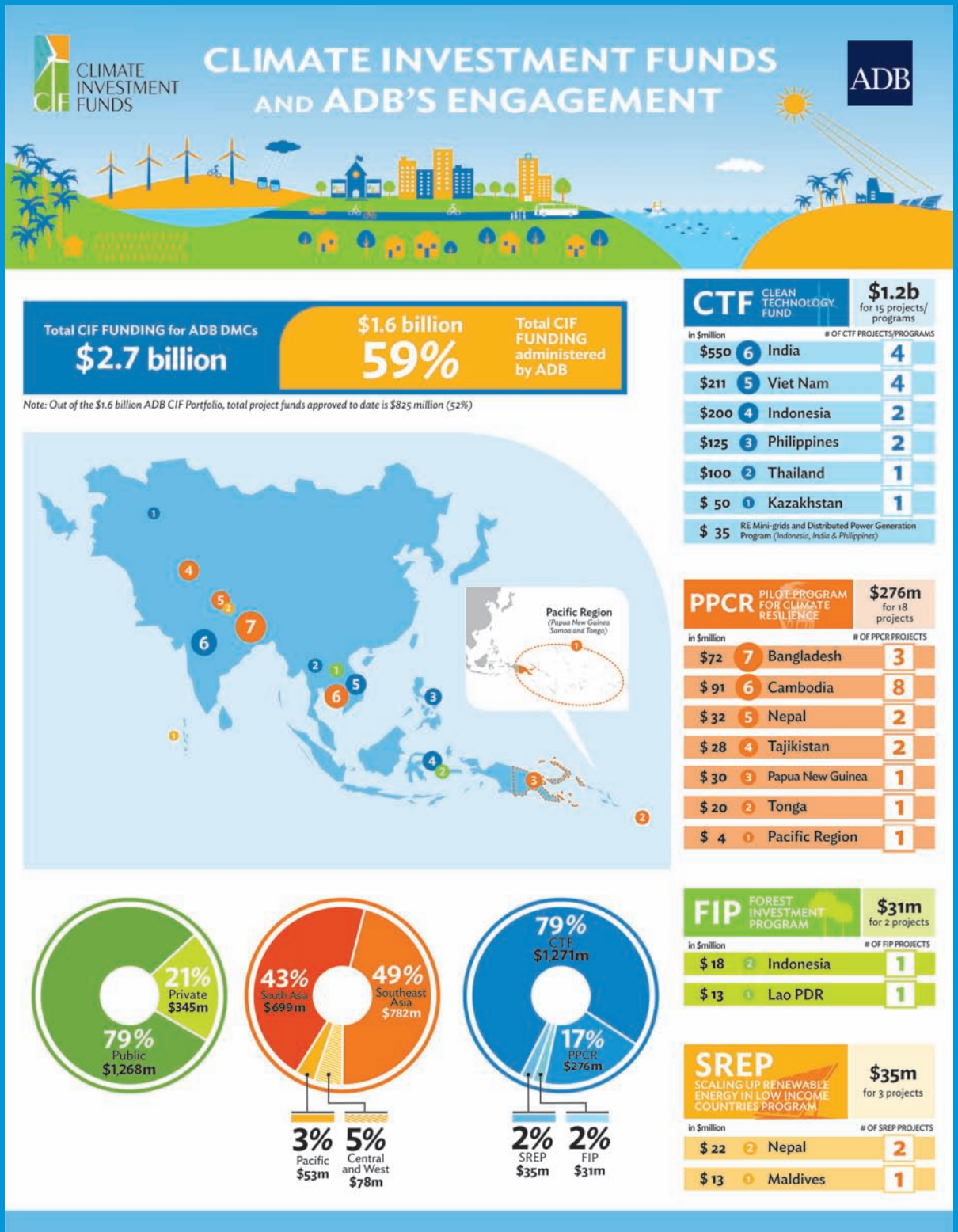
is to catalyze both public and private finance at international and national levels. Drawing on the experiences of the CIFs, the GCF will be country driven, involve wide stakeholder participation, and include a clear gender-sensitive approach. ADB participated vigorously in setting up the GCF, providing assistance to the unit charged with developing the governing instrument for the fund, which was finally approved by the 2011 COP in Durban. Although the full operationalization of the GCF is a work in progress, the fund will commence by operating through accredited national, regional, and international intermediaries and implementing entities and focus initially on grants and concessional lending. ADB continues to support the development of the GCF and, with its strong experience and record, is ready to participate directly in operational support for the fund.

The continued expansion of climate change financing and the expected emergence of the GCF as the primary entity for its delivery will necessarily affect current sources of financing,such as the GEF, the Adaptation Fund, and the CIFs. The GEF has always had a broader remit beyond climate change, including biodiversity, land degradation, and chemical pollutants, and it is likely that total resources reserved for climate change activities (historically around 30%) will decrease while proportions set aside for other focal areas will increase. With negotiations on the 6th GEF replenishment already under way, ADB has been providing input on future programmatic directions, but given the high competition for GEF funds, the bank will need to effectively use its resources to leverage additional GEF grants. As envisaged, the CIFs have acted both as fast-start finance and as an essential pilot providing lessons, readiness, and inspiration for the development of climate change financing. As ADB investments move from planning to implementation, they will contribute to the deepening CIF focus on learning and stakeholder participation. Since progress toward full operational status of the GCF may take time, ADB is ready to ensure a flexible transition and provide continued support for any extension of CIF funding that may be necessary.

If the growing flows of international climate change financing are to be effective, there must be appropriate and capable national institutions to access and manage climate change financing and ensure the optimal use of both international and national funding. Through the CIF investment planning process, policy dialogue, and TA programs with its member countries, ADB has already provided strong assistance for the establishment and capacity building of such institutions. However, further institutional strengthening is needed. The main challenges for national climate change finance institutions are achieving direct access to international climate funds and leveraging private sector investment. While the former is an issue of achieving fiduciary requirements that can be addressed through capacity-building support, the latter requires the participation of national development banks to use their knowledge of the local private sector and greater potential to take risks to increase the demand for investment in climate-related projects and provide the necessary incentives to mobilize private sector resources. ADB will continue using the resources mentioned to assist countries in building this essential component of climate change financing and ensure that developing countries in the Asia and Pacific region are ready for the scaling up of climate change financing.

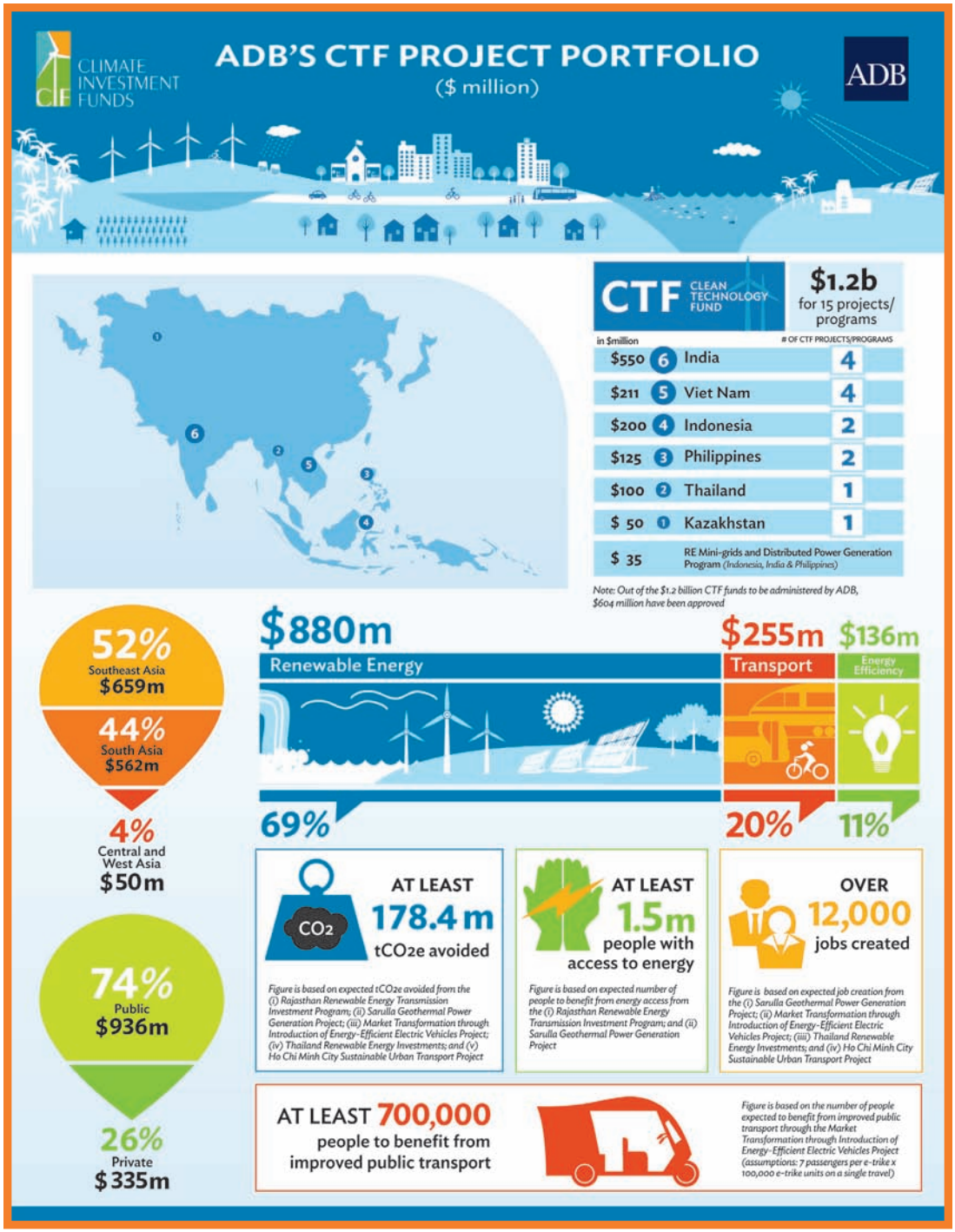
APPENDIXES

CIF Investment Plans and Projects in Asia and the Pacific



Clean Technology Fund (CTF)

ADB's current CTF portfolio will include investments of $880 million in renewable energy projects, and $255 million in sustainable transport projects. In terms of regional distribution of ADB CTF programs, Southeast Asia has the most, with $659 million (52%), followed by South Asia with $562 million (44%), and Central and West Asia with $50 million (4%). Public sector projects amount to $936 million (74%), and private sector projects, $335 million (26%).



INDIA

Rajasthan Renewable Energy Transmission Investment Program (Public Sector). The program will support the development of an in-state transmission network to evacuate and transmit at least 4,300 megawatts (MW) of renewable energy (RE) installations.

- Increase in RE supply and energy savings: At least 4,300 MW installed capacity by 2018 with expected energy savings calculated at 7,761 gigawatt-hours" (GWh)/h per year design output.
- GHG emission reduction: 5.4 million tonnes of carbon dioxide equivalent (tCO_2e) annually.
- Energy security: About 3.1 million tons per year of coal consumption will be avoided. As a net importer of fossil fuels, India will benefit from complementary effects of avoided fuel imports.
- Access to RE: Over 1 million households, including local industries and businesses
- Employment and livelihood opportunities: Employment opportunities are expected during the construction and implementation of the projects. Private sector participation (e.g., solar industries, including manufacturing and energy services) will create value-added employment; and target communities will benefit from livelihood opportunities identified in the Gender Action Plan.
- Health and environment: Conventional pollutants and other toxic compounds present in coal and coal ash from power plant emissions will be avoided. Switch to electricity for cooking will benefit women.
- Gender and community development: The Gender Action Plan includes a state-level framework for community-related interventions, a community development fund for social development and economic rehabilitation projects, a pilot water project, and livelihood opportunities.
- Institutional capacity building: Training of 15 corporate social responsibility (CSR) champions and other government stakeholders.
- Public–private partnership (PPP): The program will demonstrate the commercial and technical viability of developing large-scale projects through partnership between the public and private sectors. The innovative PPP scheme streamlines development timeline, reduces development costs, and addresses some replication and scale-up issues faced by stand-alone project approaches; and the government, through CTF, will address key investment and technological barriers to mitigate perceived risk and advance investment from the private sector (e.g., solar technology manufacturing utilities).

RAJASTHAN RENEWABLE ENERGY TRANSMISSION INVESTMENT PROGRAM FINANCING

Source	Amount ($million)
ADB	300
CTF Loan	198
CTF Grant	2
Government	300
Total	**800**

CTF Pipeline Projects in India	CTF Loan Amount ($ million)
Integrated Solar Hybrid Project	50
Solar Park: Gujarat	150
Solar Park: Maharashtra	150

INDONESIA

Geothermal Investment Program (Private Sector). Over the next 3 years, the program will support multiple private sector geothermal projects, which face common development and financing barriers.

- Increase in RE supply and energy savings: 750 MW of geothermal capacity, with output of 5,913 GWh/year.
- GHG emission reduction: 4.4 million tCO_2e annually.
- Access to RE: More than 1 million households will benefit from the program.
- Employment and livelihood opportunities: More than 4,000 jobs will be created, including substantial indirect jobs.
- Health and environment: Power plant emissions of conventional pollutants present in petroleum fuels, coal, and coal ash will be avoided.
- A gender action plan will be developed for individual projects.
- Private sector participation: The projects will demonstrate a viable private sector business model for geothermal power, which will establish cost and performance benchmarks.

FINANCING

Source	Indonesia Geothermal Investment Program	Subproject: Sarulla Geothermal Development ($ million)
ADB	350.0	250.0
CTF Loan	150.0	80.0
Government	400.0	
Private	1,100.0	355.7
Other Sources	600.0	553.6
Total	**2,600.0**	1,239.3

Sarulla Geothermal Development Subproject. The project will develop steam resources in the Sarulla concession area and construct, operate, and maintain three geothermal power generation units with a total capacity of about 320 MW.

- Increase in RE supply and energy savings: about 320 MW of geothermal capacity with output of 2,925 GWh/year.
- GHG emission reduction: 1.3 million tCO_2e annually.
- Energy security: The project will help displace fossil fuel-generated power.
- Access to RE: Approximately 500,000 households will benefit from the project.
- Employment opportunities: At least 1,600 persons will be employed during construction (802 skilled or semiskilled and 822 full-time unskilled) and 100 full time skilled or semiskilled workers during operations. Women and indigenous people will compose at least 20%–30% of the unskilled/semiskilled positions.
- Health and environment: Pollutants (i.e., (carbon dioxide [CO_2], nitrogen oxide [NO_x], sulfur oxide [SO_x]) and total suspended particulates (including black carbon) will be reduced.
- Gender: Assistance for vulnerable women affected by the land acquisition, employment facilitation for women and indigenous people (IP), and collection of sex-disaggregated data during surveys.

Pipeline Project

Energy Efficiency and Renewable Energy Investment Program (Private Sector). The program, through the Clean Technology Fund (CTF), will create and implement new financial intermediation and risk reduction measures and will mobilize commercial financing for the Energy Efficiency/Renewable Energy/CP market coupled with advisory services components. The investment pipeline comprises: energy efficiency in existing and new commercial and residential buildings; energy efficiency and cleaner production in industries, including cogeneration; and biomass energy, small hydropower, solar, and wind projects. The prototype investments will use a learning-by-doing approach; this early experience can then be transferred to financial institutions on an expedited learning curve.

ENERGY EFFICIENCY AND RENEWABLE ENERGY INVESTMENT PROGRAM FINANCING

Source	Amount ($million)
ADB	50
CTF Loan	50
Others	150
Total	**250**

KAZAKHSTAN

Pipeline Project

Karaganda District Heating Network Rehabilitation (Public Sector). The project will strengthen and modernize the Karaganda District Heating sector and will improve the financial, operational, and technical performance of the implementing agency. The project is expected to create energy savings and reliable heat supply to benefit households.

KARAGANDA DISTRICT HEATING NETWORK REHABILITATION FINANCING

Source	Amount ($ million)
ADB	110
CTF Loan	50
Government	90
Total	**250**

PHILIPPINES

Philippine Market Transformation with Energy-Efficient Electric Vehicles (Public Sector). The project will pioneer 100,000 e-trikes as the first step in the electrification of the public vehicle fleet, and will initiate the creation of a lithium-ion battery supply chain by procuring at least 300 megawatt-hours (MWh) of lithium ion batteries.

- Access to public transportation: E-Trike can accommodate seven passengers, compared with an ordinary tricycle, which can usually accommodate only four passengers. Thus, for the 100,000 target number of vehicles, there will be three additional passengers per vehicle, or a minimum of 300,000 passengers on a single trip.
- GHG emission reduction: 270,000 tCO_2e/MWh annually. If black-carbon emission reduction is included, GHG emission reductions are estimated to be three times greater.
- Economic and livelihood opportunities: Creation of about 10,000 jobs by 2015, with employment increasing as the e-trike industry grows (e.g., domestic e-trike fabrication and assembly).E-trike drivers' daily take-home pay is expected to increase because of fuel savings.
- Health and environment: Use of e-vehicles and lithium-ion batteries can reduce local pollutant emissions with substantial public health benefits.
- Gender: The e-trikes were designed with women's needs in mind and are aimed at engaging women in operations (i.e., at least 30% in charging-station jobs for daytime shift).
- Transparency: Information on e-trike operations (i.e., loan proceeds) will be available on the website.

- Institutional/Capacity development: All project stakeholders (i.e.,national government agencies and financial institutions involved, Local Government Units (LGUs), and drivers) will be trained on processes and skills relevant to EEEV project implementation.
- Private sector participation: energy efficient electric vehicles (EEEVs) pioneering project will mobilize future commercial investments, mainly from private sector entities, for replication and scale-up. It will also foster the development of local battery suppliers and maintenance/service industries.

MARKET TRANSFORMATION WITH ENERGY-EFFICIENT ELECTRIC VEHICLE FINANCING

Source	Amount ($million)
ADB	300
CTF Loan	100
CTF Grant	5
Government	99
Total	**504**

Pipeline Project

Solar Energy Development (Public Sector). The project will support 40 MW of new solar photovoltaic (PV) capacity installed at commercial, government offices, and large residences. The project will improve the technology credibility through the actual operations of rooftop systems and will encourage other building owners and electricity customers to switch, as the market transforms and prices fall.

SOLAR ENERGY DEVELOPMENT FINANCING

Source	Amount ($ million)
ADB	80
CTF Loan	20
Government	20
Total	**120**

THAILAND

Renewable Energy Program (Private Sector). The program, through CTF, will support RE investments to help Thailand hasten and expand private sector investment by demonstrating the commercial viability of private sector utility-scale energy generation projects.

- Increase in RE supply: 520 MW capacity.
- GHG emission reduction: 1.073 million tCO_2e annually.

FINANCING

Source	Thailand Renewable Energy Program	Subprojects, Amount ($ million)		
		Provincial Solar Power Subproject (Bangchak Solar Energy)	Central Thailand Solar Power Subproject (Solarco)	Theppana Wind Power Subproject (Theppana Wind Power)
ADB		25.2	52.0	4.54
CTF Loan	100.0	12.6	35.0	4.00
Private Sector		25.2	72.0	4.54
Others				
Total	**100.0**	**63.0**	**159.0**	**13.08**

Provincial Solar Power Subproject (Bangchak Solar Energy). The project will install and operate 32 MW of solar power generation.

- Increase in RE supply: 32 MW of solar power capacity.
- GHG emission reduction: 38,000 tCO_2e will be avoided annually.
- Energy security: Diversification of energy mix through addition of RE capacity.
- Employment opportunities: Over 100 people will be employed during construction and over 80 people in the eventual operation of electricity generation facilities.

Central Thailand Solar Power Subproject (Solarco). The project will install a 57 MW solar power project.

- Increase in RE supply: a 57 MW of solar power capacity.
- GHG emission reduction: 66,576 tCO_2e will be avoided annually.
- Employment opportunities: At least 50 permanent staff positions will be filled from the start of commercial operations and at least 150 people (full-time equivalent) will be employed during construction.
- Private sector participation: Successful implementation of the project and viable returns will attract private sector investors in solar energy projects.

Theppana Wind Power Subproject (Theppana Wind Power). The project will install and operate a 7.5 MW wind power plant.

- Increase in RE supply: 7.5 MW wind power capacity.
- GHG emission reduction: At least 7,000 tCO_2e will be avoided annually.
- Employment opportunities: Over 250 persons (full-time equivalent: 45 persons) will be employed during construction.

VIET NAM

Ho Chi Minh City Sustainable Urban Transport. The project will support access to low-carbon mobility services in HCMC by financing MRT2 station accessibility measures, public transport information systems, and sector development and implementation support.

- Access to transport services: Targets 15% of motorized trips by public transport by 2022 and 30% share by 2038. Majority of project beneficiaries are likely to be the poorest 60% of households in HCMC.
- GHG emission reduction: More than 586,500 tCO_2e over project lifetime, or about 0.12–0.16 ton CO_2e per daily rider per year (attributable to MRT Line 2, including the project financed by the CTF).
  - Additional 9.5 M TCO2e reductions from black carbon are estimated.
  - Policy measures and introduction of new vehicle technologies and renewable fuels will further reduce emissions.
- Energy security: 18 million liters/year of transport fuel will be avoided
- Employment opportunities: Substantial employment opportunities will be available during construction and operations (bus drivers, ticket takers, security at stations); while indirect employment arising from improved access to transport services is expected.
- Health: Vehicle accident rates will be reduced and vehicle emissions of conventional pollutants (particulate matter [PM], black carbon [BC], NOx, SOx) and other toxic compounds present in petroleum vehicles will be avoided.
- Gender: Gender action plan covers employment, infrastructure designs, women's role, equal access, etc.
- Policy and regulatory environment: Policy reforms and regulatory measures will encourage modal shift from private to public transportation (i.e., street management system, parking policy, policy framework for pricing public and private transport).
- Institutional development: Capacity building and training for transport agencies to enable them to implement and enforce new urban transport policies and regulations. Equipment and consulting services will be provided to establish comprehensive multimodal transport and traffic management modeling systems.

HO CHI MINH CITY SUSTAINABLE URBAN TRANSPORT FINANCING

Source	Amount ($million)
ADB	10.00
CTF Loan	48.95
Government	6.05
Total	**65.00**

Pipeline Projects

Strengthening Sustainable Urban Transport for Ha Noi Metro Line 3 (Public Sector). The project will support the development of Metro Line 3 and CTF will provide infrastructure for improving accessibility to stations, and implement feeder bus links, a public transport management system, integrated multimodal stations with "park and ride" facilities, and a comprehensive parking plan for the city. The project is expected to create jobs during construction and for routine maintenance. Policy reform and regulatory measures will be developed to encourage a modal shift from private to public transportation. The gender action plan will ensure that gender aspects and issues are considered (i.e., physical design features, employment targets, resettlement plan).

STRENGTHENING SUSTAINABLE URBAN TRANSPORT FOR HA NOI METRO LINE 3 FINANCING

Source	Amount ($million)
ADB	393.0
CTF Loan	100.0
CTF Grant	267.0
Government	876.9
Total	**1,636.9**

Ha Noi and Ho Chi Minh City Power Grid Development Sector Project (Public Sector). The project will support investments in smart-grid systems in Ho Chi Minh City and Ha Noi. The CTF cofinancing is proposed to cover the additional costs of distribution automation systems (DASs), and high temperature/low-sag (HTLS) components. These systems, especially HTLS conductors, are technically viable and commercially available, and offer the potential for large-scale GHG emissions. Development impact from such investments would accrue from improved system reliability (reduced grid outages), improved power quality (stable voltage and frequency), reduced energy losses, and reduced consumption of fossil fuels.

HA NOI AND HO CHI MINH CITY POWER GRID DEVELOPMENT SECTOR PROJECT

Source	Amount ($million)
ADB	172.7
CTF Loan	46.0
CTF Grant	1.0
Government	169.7
Others	100.0
Total	489.4

Monitoring and Evaluation Technical Assistance (TA) (Public Sector). The TA will assist the Government of Viet Nam in improving its national framework for coordination, capacity building, and monitoring and evaluation of climate change mitigation investments. The funds can also support impact evaluations and the generation of lessons learned from IP implementation, which may also help Viet Nam to scale up its investments in the priority sectors.

MONITORING AND EVALUATION TA FINANCING

Source	Amount ($ million)
CTF Grant	1.0
Total	1.0

Dedicated Private Sector Program

Renewable Energy Mini-grids and Distributed Power Generation (India, Indonesia, and Philippines). The program will deploy $30 million of investment capital over a period of about 3 years to several private sector companies and will be supported by a $3.5 million technical assistance advisory program, administered in collaboration with ADB's existing Energy for All Partnership.

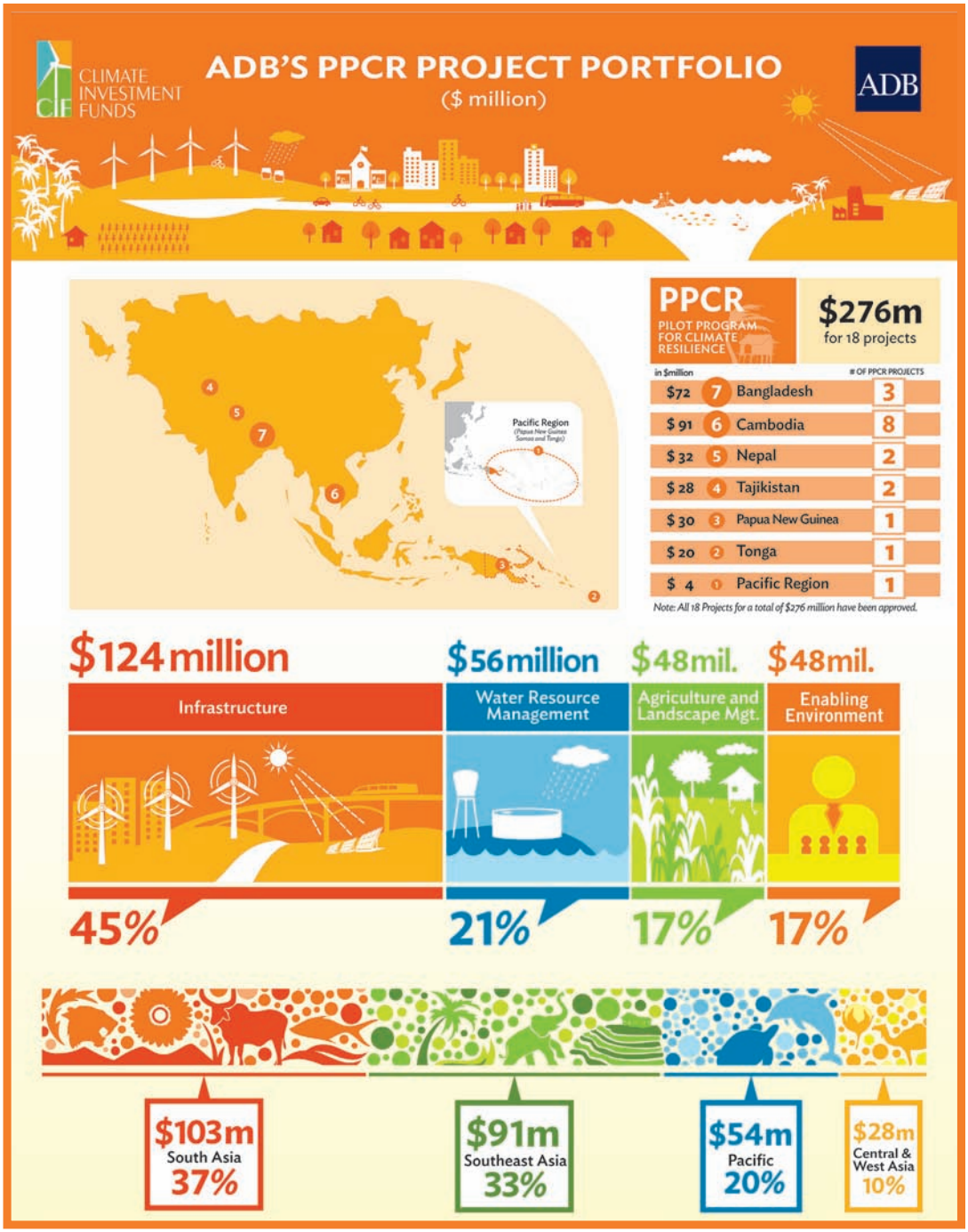
- Increase in RE supply and energy savings: Up to 10 MW of installed mini-grid capacity with output of 29.2 GWh/year.
- GHG emission reduction: 31,500 tCO_2e per year (630,000 tCO_2e for 20-years project life).
- Access to RE: An estimated 50,000 to 100,000 households will benefit from the program.
- Employment opportunities: About 300 direct and 600 indirect jobs.
- Other development impact: Increasing access to reliable modern energy services using clean energy is directly linked to achieving four of the eight Millennium Development Goals, including the following:
- Liberating women and girls from time-consuming tasks such as collecting fuel, thereby increasing the time available for education and economic activity; and
- Ensuring environmental sustainability through the reduction of GHG emissions.

DEDICATED PRIVATE SECTOR PROGRAM RENEWABLE ENERGY MINI-GRIDS AND DISTRIBUTED POWER GENERATION (INDIA, INDONESIA, AND PHILIPPINES)

Source	Amount ($million)
CTF Grant	34.325
Total	**34.325**

Pilot Program for Climate Resilience (PPCR)

ADB's current PPCR portfolio will include investments of $124 million in climate-resilient infrastructure projects (45%), $56 million in water resource management projects (21%), $48 million in agriculture and landscape management projects (17%), and $48 million in enabling environment projects including capacity development, policy, and regulatory work (17%). In terms of regional distribution of ADB PPCR programs, South Asia has the most with $103 million (37%), followed by Southeast Asia with $91 million (33%), Pacific with $54 (20%), and Central and West Asia with $28 million (10%). PPCR constitutes the core of financing for ADB's current adaptation program.



BANGLADESH

Climate Change Capacity Building and Knowledge Management. This technical assistance (TA) is the outcome of a wide-ranging stakeholder consultation process that led to the development of the Government of Bangladesh's Strategic Program for Climate Resilience (SPCR) under the Pilot Program for Climate Resilience (PPCR). The TA supports the generation, dissemination, and application of information and knowledge products to effectively mainstream climate change adaptation into development planning and management.

CLIMATE CHANGE CAPACITY BUILDING AND KNOWLEDGE MANAGEMENT FINANCING

Source	Amount ($ million)
PPCR	0.50
Total	0.50

Coastal Climate-Resilient Infrastructure Project. The project is aimed at reducing poverty and raising incomes in the rural coastal districts of Bangladesh by fostering rural connectivity (rural roads, bridges, culverts, cyclone shelters, and markets) in a sustainable and "climate-proof" way. The project will enhance the access of the rural people in the coastal districts to social services, such as health and education and economic opportunities. Widening the all-weather access to markets and livelihood activity will result in improved earnings for the rural poor including the poor women.

COASTAL CLIMATE-RESILIENT INFRASTRUCTURE PROJECT FINANCING

Source	**Amount** ($million)
ADF	20.00
PPCR Loan	20.00
PPCR Grant	10.00
Government	31.20
Total	81.20

ADF = Asian Development Fund, PPCR = Pilot Program for Climate Resilience

Coastal Town Infrastructure Improvement Project. The project is intended to strengthen climate resilience and disaster preparedness in eight vulnerable coastal *pourashavas* (secondary towns) of Bangladesh. The project takes a holistic and integrated approach to urban development and will (i) provide climate-resilient municipal infrastructure, and (ii) strengthen institutional capacity, local governance, and knowledge-based public awareness, to improve urban planning and service delivery considering climate change and disaster risks. Key infrastructure investments consist of (i) drainage, (ii) water supply, (iii) sanitation, (iv) cyclone shelters, and (v) other municipal infrastructure including emergency access roads and bridges, solid waste management, bus terminals, slum improvements, boat landings, and markets. Investments will benefit the poor and women. The Ministry of Local Government, Rural Development and Cooperatives (MLGRDC), acting through its Local Government Engineering Department (LGED) and the Department of Public Health Engineering (DPHE), will be the executing agencies for the project, prioritized as a least-cost option where groundwater salinity levels are within government standards. A detailed design consulting firm will screen all subprojects for climate resilience, conduct technical surveys and detailed studies, and prepare all engineering designs, and bidding and safeguard documents.

COASTAL TOWN INFRASTRUCTURE IMPROVEMENT PROJECT FINANCING

Source	Amount ($million)
PPCR Loan	30.00
PPCR Grant	10.40
Government	23.10
Other	01.60
Total	65.10

PPCR = Pilot Program for Climate Resilience

CAMBODIA

Provincial Roads Improvement Project. The project will rehabilitate the pavement of about 157 kilometer (km) of roads in Kampong Chhnang, Kampong Speu, Prey Vang, and Svay Rieng provinces. The rehabilitation program will provide a safer, climate-resilient, and cost-effective provincial road network with all-year access to markets and other social services for provincial centers in southeastern and midwestern Cambodia. A new cross-border facility will be constructed in Prey Var, Svay Rieng, to facilitate efficient cross-border transport and trade between Cambodia and Viet Nam. The project will support a sustainable road maintenance regime, community-based road safety measures, an HIV/AIDS and human trafficking prevention program, climate-resilient measures, and efficient project management in the Ministry of Public Works and Transport (MPWT). The project also supports road design and planning for climate resilience and disaster management, including emergency preparedness, mitigation, and response.

PROVINCIAL ROADS IMPROVEMENT PROJECT FINANCING

Source	Amount ($million)
ADF	52.00
TASF	00.50
PPCR Loan	10.00
PPCR Grant	07.00
Government	09.85
Total	79.35

ADF = Asian Development Fund, PPCR = Pilot Program for Climate Resilience,
TASF = Technical Assistance Special Fund

Mainstreaming Climate Resilience into Development Planning. The TA project will promotes synergies between climate change adaptation and disaster risk reduction, set up a common framework for the monitoring and evaluation of all SPCR projects, and develop a knowledge and communications plan for each component that will be critical to sustaining the impact and effectiveness of current and future climate resilience investments. The TA project will (i) strengthen capacity to coordinate all SPCR investments, and to mainstream adaptation concerns into national and sub-national planning, budgeting, and development in Cambodia; (ii) conduct feasibility studies for priority projects of the National Adaptation Program of Action (NAPA) with a view to securing additional funds from sources such as the Adaptation Fund and the Green Climate Fund; (iii) establish a civil society support

mechanism to fund community-based the adaptation activities and strengthen the capacity of civil society organizations (CSOs) and nongovernment organizations (NGOs) to mainstream climate resilience into their operations; and (iv) generate and disseminate knowledge for climate change adaptation (CCA) in various sectors. The expected impact of the TA project is enhanced resilience to climate change in Cambodia, leading to improved livelihoods, especially for vulnerable groups including women and children.

MAINSTREAMING CLIMATE RESILIENCE INTO DEVELOPMENT PLANNING FINANCING

Source	Amount ($million)
PPCR	10.00
Total	**10.00**

PPCR = Pilot Program for Climate Resilience

Greater Mekong Subregion Southern Economic Corridor Towns Development Project. The project will enhance the competitiveness of towns along the Southern Economic Corridor (SEC). It will transform the corridor towns of Battambang, Bavet, Neak Loeung, and Poipet in Cambodia into economic hubs by improving urban-environmental infrastructure and strengthening the institutional capacity of provincial and local authorities. The productivity of economic enterprises in these towns will be significantly improved since flood control measures will increase resilience through flood control measures. The environment will be improved through wastewater treatment, disposal of solid waste, and enhancement of mobility on improved urban roads. The project will provide environmental infrastructure for wastewater treatment and solid waste management, which will, among others, help to reduce the carbon footprint of these towns, making them cleaner and greener, and more livable. The project will finance 10 subprojects in these towns.

GREATER MEKONG SUBREGION SOUTHERN ECONOMIC CORRIDOR TOWNS DEVELOPMENT PROJECT FINANCING

Source	Amount ($ million)
ADF	37.00
UFPF	01.50
PPCR Loan	05.00
PPCR Grant	05.00
Government	06.88
Total	**54.78**

ADF = Asian Development Fund
UFPF = Urban Financing Partnership Facility

Greater Mekong Subregion Flood and Drought Risk Management and Mitigation Project. The project supports the Government of Cambodia as it undertakes structural and nonstructural measures to prepare for and manage disaster risks linked to floods and droughts. Project interventions will (i) enhance the regional data, information, and knowledge base for the management of floods and droughts; (ii) upgrade or develop water management infrastructure; and (iii) prepare communities to manage disasters such as floods and droughts, and adapt to climate change. Improved drought management and irrigation water structures in Cambodia will benefit farmers on about 16,000 hectares (ha) of agricultural lands, and at least 10,000 people will benefit from improved flood management.

GREATER MEKONG SUBREGION FLOOD AND DROUGHT RISK MANAGEMENT AND MITIGATION PROJECT FINANCING

Source	Amount ($ million)
ADF	35.00
PPCR Loan	04.00
PPCR Grant	05.80
Government	02.95
Total	**47.75**

ADF = Asian Development Fund, PPCR = Pilot Program for Climate Resilience,

Climate Resilient Rice Commercialization Sector Development Program. The program comprises a policy-based loan and a project loan. Its impact will be increased net incomes of stakeholders along the rice value chain. The outcome is enhanced production of high-quality rice in Cambodia while preserving the natural resource base. It will address key high-priority and strategic measures stated in the Rice Policy to improve national food security and expand rice export by using PPCR funds to: (i) Improve water use efficiency by upgrading irrigation infrastructure designs to accommodate more rapid flow of floodwater induced by climate change, essentially by increasing the capacity of reservoirs, delivery and drainage canals, and off-take and water management structures, and by imparting knowledge about climate resilience to those responsible for operating the irrigation facilities; (ii) demonstrate the benefits from land leveling in conserving water and improving irrigation water use efficiency (an essential adaptation strategy to cope with drought and flood); (iii) undertake a feasibility study, and design and pilot-test a weather-indexed crop insurance scheme to assist farmers to reduce climate risk associated with rice production (the scheme will be pilot-tested in three provinces—Battambang, Kampong Thom, and Prey Veng—to try out its application under local conditions); and (iv) assist in building the capacity of millers to accommodate the seasonal fluctuations imposed by climate change into their milling operations by improving stock management and efficiencies of mill operations.

CLIMATE-RESILIENT RICE COMMERCIALIZATION SECTOR DEVELOPMENT PROGRAM FINANCING

Source	Amount ($ million)
ADF*	55.0
PPCR Concessional Loan	5.0
PPCR Grant	5.0
GAFSP**	14.6
Total	**79.6**

ADF = Asian Development Fund, PPCR = Pilot Program for Climate Resilience, GAFSP = Global Agriculture and Food Security Program

* The ADF total comprises $24 million for the program and $31 million for the project.

PPCR Cambodia Pipeline Projects	PPCR Amount ($, Million)
Promoting climate-resilient agriculture, forestry, water supply, and coastal resources in Koh Kong and Mondulkiri provinces	8
Flood-resilient infrastructure development in Sisopohon, Siem Reap, Kampong Thom, Battambang, Pursat, and Kampong Cham	10
Climate resilience of rural infrastructure in Kampong Cham province as part of the Rural Roads Improvement Project	16

PPCR = Pilot Program for Climate Resilience

NEPAL

Mainstreaming Climate Change Risk Management into Development. An assessment of the capacity of stakeholders in Nepal to adapt to climate change was undertaken, as part of the Strategic Program for Climate Resilience (SPCR) planning and preparation process. This TA addresses the following issues identified: (i) climate change risk management is not institutionalized in government, academe, civil society, and vulnerable sectors, municipalities, districts or communities; (ii) no training, database, information, or guidance exists to help in planning or constructing climate-resilient development; and (iii) development planning in key sectors (especially water and physical planning) does not consider risks associated with climate change and there are no methods of facilitating such transformational change in development planning. The TA project will also provide support to the government in managing Nepal SPCR for results. The three TA output items will cover (i) integration of climate change risks into infrastructure development planning, (ii) developing and applying knowledge management tools, and (iii) managing the SPCR and Nepal's climate change adaptation program for results.

MAINSTREAMING CLIMATE CHANGE RISK MANAGEMENT INTO DEVELOPMENT FINANCING

Source	Amount ($ million)
PPCR	07.16
Nordic Development Fund	00.60
Total	**07.76**

PPCR = Pilot Program for Climate Resilience

Building Climate Resilience of Watersheds in Mountain Eco-Regions. As the first large-scale ADB intervention in watershed management in Nepal, the project will demonstrate participatory watershed management planning and build the capacity of all levels of government for integrated watershed development, specifically focusing on water resources. Access to and reliability of water resources will be improved through a participatory program of integrated watershed management with interventions in upland areas to increase surface water storage and groundwater recharge. The project will demonstrate ways of protecting water sources while at the same time developing them for efficient use. Major beneficiaries will be women and disadvantaged groups. Lessons from this project are intended to influence the ways into which rural water supply and irrigation projects are designed.

BUILDING CLIMATE RESILIENCE OF WATERSHEDS IN MOUNTAIN ECO-REGIONS FINANCING

Source	Amount ($ million)
PPCR Grant	23.54
Nordic Development Fund	04.63
Total	**28.17**

PPCR = Pilot Program for Climate Resilience

PACIFIC REGION

Implementation of the Strategic Program for Climate Resilience: Pacific Region. The regional capacity development technical assistance (R-CDTA) will support the implementation of the Regional Strategic Program for Climate Resilience (SPCR) for the Pacific Region. It will facilitate more effective integration of CCA and related

disaster risk reduction (DRR) in Pacific island countries to make them more resilient to climate change and climate-related disasters and to complement and build on country-track SPCRs in the Pacific region (PNG, Samoa, Tonga). It will provide countries with support that is the most cost-effectively provided on a regional, instead of national, basis, and will complement, not duplicate, major ongoing CCA and related DRR initiatives being implemented with assistance from the region's development partners. Technical assistance will be delivered through existing regional institutions, which will apply approaches and methodologies that have been proven successful through the delivery of CCA/DRR programs and previous regional experiences.

IMPLEMENTATION OF THE STRATEGIC PROGRAM FOR CLIMATE RESILIENCE: PACIFIC REGION FINANCING

Source	Amount ($ million)
PPCR	3.4
Total	**3.4**

PPCR = Pilot Program for Climate Resilience

PAPUA NEW GUINEA

Implementation of the SPCR. A project preparation grant for the PPCR project in PNG is ongoing. The project is aimed at making PNG's development investments climate resilient and supporting the country's transition to climate compatible development, as outlined in its national medium- and long-term development strategies. The project will facilitate the integration of climate resilience into development processes by (i) enhancing access to financial resources dedicated to climate change adaptation; (ii) developing and disseminating of knowledge products and adaptation tools; (iii) improving understanding of climate change vulnerabilities and adaptation options; (iv) increasing adaptive capacity at the sectoral, national, district, and community levels, thereby building climate-resilient communities and addressing climate change risks to food security; and (v) developing climate-resilient infrastructure—all prerequisites for effective social development, food security, and poverty reduction.

IMPLEMENTATION OF THE SPCR: PNG FINANCING

Source	Amount ($ million)
PPCR	30
Total	**30**

PPCR = Pilot Program for Climate Resilience

TAJIKISTAN

Building Capacity for Climate Resilience. This TA projects will enhance planning capacity for climate change adaptation at national and local levels, and within vulnerable sectors and vulnerable population groups. It will: (i) establish a climate modeling facility in the national hydrometeorological agency; (ii) develop climate change projections (dynamic downscaling) and climate impact assessments of water resources, energy, agriculture, transport, and social development; (iii) Introduce climate change science modules into the academic curriculum at one university; (iv) train government officials of which 30% women on climate change risk management; (v) support the formulation of national and local adaptation plans; (vi) develop a

knowledge management system to collate and disseminate data and information about climate change; (vii) Establish a small-grant facility to support adaptation initiatives in local communities; (viii) develop and implement a monitoring, reporting, and evaluation system to monitor progress and results under the PPCR; and (ix) establish a national implementing entity to leverage funds for and implement adaptation projects.

BUILDING CAPACITY FOR CLIMATE RESILIENCE FINANCING

Source	Amount ($ million)
PPCR	06.00
Total	**06.00**

PPCR = Pilot Program for Climate Resilience

Building Climate Resilience in the Pyanj River Basin. The project is aimed at increasing resilience to climate change among communities in the Pyanj River Basin. The project's expected impact will be the improvement of livelihoods of Pyanj River Basin communities that are vulnerable to climate variability and change. The expected outcome will be a reduction in the adverse effects of climate variability and climate change in 59 villages in 19 *jamoats* in the Pyanj River Basin. The project output will comprise the following: has four outputs (i) climate-proofed flood protection infrastructure; (ii) climate-proofed irrigation systems; (iii) Climate-proofed water supply infrastructure; and (iv) micro credits and micro deposits made available to promote climate resilience in the Pyanj River Basin.

BUILDING CLIMATE RESILIENCE IN THE PYANJ RIVER BASIN FINANCING

Source	Amount ($ million)
PPCR	21.55
Total	**21.55**

PPCR = Pilot Program for Climate Resilience

TONGA

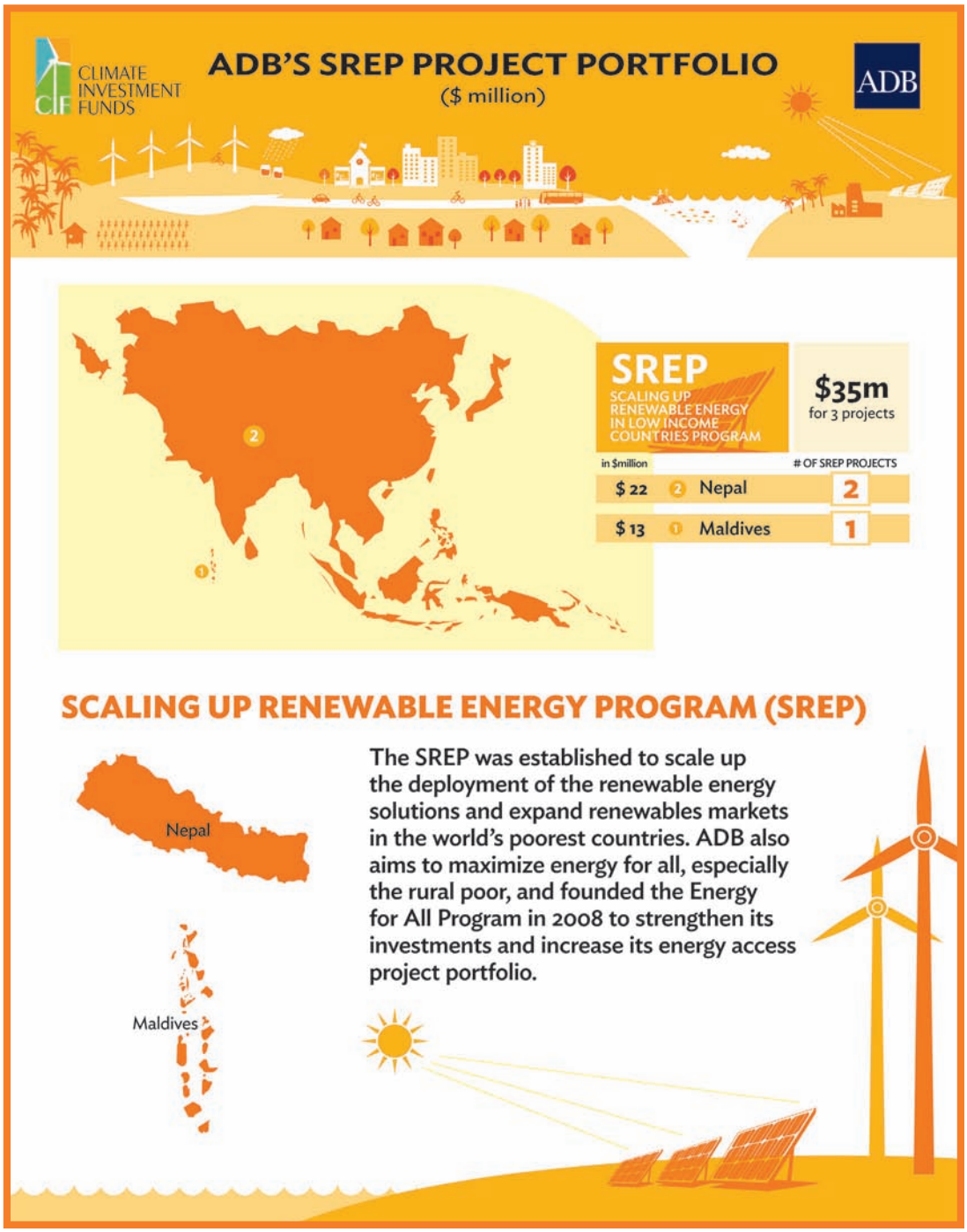
Implementation of the SPCR. The project will strengthen the capacity of government and communities to finance, develop, monitor, and implement investments to improve ecosystem resilience and climate-proof critical infrastructure. Activities will include the following: (i) Capacity building to facilitate climate resilience mainstreamed into development planning of key vulnerable sectors; (ii) improved monitoring and management of Tonga climate data and information through the establishment of national hydrometeorological and coastal monitoring and data dissemination systems, and improvement of water resource inventories, integrated water resource management (IWRM), and coastal zone monitoring; (iii) the setting up of a sustainable financing mechanism to support community based community-based, climate-responsive investments including the establishment of the Tonga Climate Change Trust Fund (CCTF); and (iv) investments in ecosystem resilience and climate-resilient infrastructure to increase the ability of coral reefs to recover after climate-related events, improve the management of mangroves for climate adaptation, upgrade evacuation and postdisaster access roads, enhance coastal protection, and upgrade schools and other critical infrastructure.

IMPLEMENTATION OF THE TONGA SPCR: TONGA FINANCING

Source	Amount ($ million)
PPCR	20.00
Total	**20.00**

PPCR = Pilot Program for Climate Resilience

Scaling Up Renewable Energy Program (SREP)



NEPAL

Subcommittee Approved Project

Small Hydropower Development Program (Private Sector). The program will provide financing and advisory services to local financial institutions and technical service providers to develop a portfolio of technically feasible and financially viable small hydropower projects.

- GHG emission reduction: 120,000 tCO_2e annually.
- Increase in RE supply: 50 MW capacity addition.
- Institutional/Capacity development: (i) Strengthening capacity among local financial institutions and local technical service providers (i.e.,energy service companies and training institutions that serve SMEs) to ensure the long-term impact of market transformation; and (ii) raising awareness, disseminating information and lessons through conferences, seminars, and workshops, and conducting media promotion campaigns.
- Private sector participation: The program will help address market barriers and will catalyze the scale-up of SHP investments in Nepal. The demonstration of its commercial viability will attract private sources of capital, thereby increasing the availability of long-term financing.

SMALL HYDROPOWER DEVELOPMENT PROGRAM FINANCING

Source	Amount ($ million)
SREP Loan	9.50
rene Grant	0.50
Private Sector	17.28
Others	29.38
Total	**56.66**

SREP = Scaling Up Renewable Energy Program

Pipeline Project

Mini- and Micro-Hydropower (Public Sector). The project is expected to increase electricity access in rural areas by installing additional aggregate MMH capacity of up to 4.0 MW through mini- and micro-hydropower projects, as well as solar and solar-wind hybrid-power mini-grid projects. Capacity building among stakeholders will ensure the sustainable operation of these projects. The project interventions are designed to benefit the poor by increasing their economic opportunities, knowledge, and rights.

MINI- AND MICRO-HYDROPOWER FINANCING

Source	Amount ($ million)
ADB	20.0
SREP Grant	11.4
Government	24.6
Others	84.0
Total	**140.0**

SREP = Scaling Up Renewable Energy Program

MALDIVES

Pipeline Project

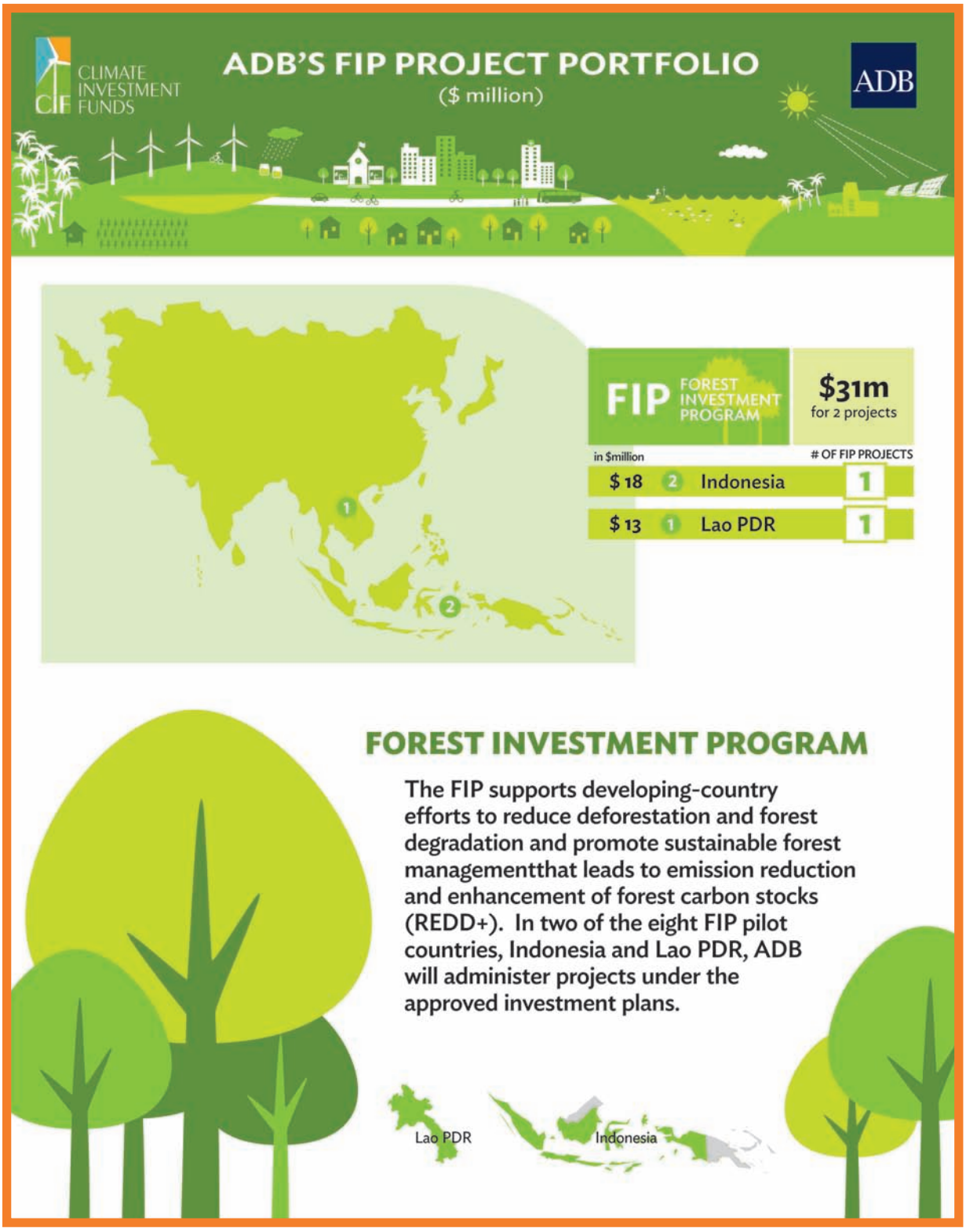
Preparing Outer Islands for Sustainable Energy Development Program (Public Sector). The program will demonstrate 100% RE-based systems by installing about 2 MW RE capacity in 10 small electricity-consuming islands and deploying RE-diesel hybrids on some medium to large electricity-consuming islands. The productive use of power will foster employment creation and business opportunities on those islands.

PREPARING OUTER ISLANDS FOR SUSTAINABLE ENERGY DEVELOPMENT PROGRAM FINANCING

Source	Amount ($ million)
ADB	6.00
SREP Grant	12.75
Government	8.00
Others	13.40
Total	**40.15**

SREP = Scaling Up Renewable Energy Program

Forest Investment Program (FIP)



INDONESIA

Community-Focused Investments to Address Deforestation and Forest Degradation. This project will address sub-national barriers to the implementation of REDD+ in West Kalimantan province and contribute to the goals of the National Action Plan for Greenhouse Gas Emissions Reductions (RANGRK) and the National REDD+ Strategy. The carbon emissions savings potential of the project is estimated to be between 17.7 and 22.1 $MtCO_2$ over 5 years.

INDICATIVE FINANCING

Source	Amount ($ million)
FIP Grant	17.5
Total	**17.5**

FIP = Forest Investment Program

LAO PEOPLE'S DEMOCRATIC REPUBLIC

Protecting Forests for Sustainable Ecosystem Services. This project will be based on the ADB-funded Biodiversity Conservation Corridors Project and complemented by the Greater Mekong Subregion Core Environment Program and Biodiversity Conservation Initiative. It will work closely with other donors undertaking similar activities in other regions of the country, especially the Japanese government, the German Agency for International Cooperation (GIZ), the German development finance institution KfW, and the new US Agency for International Development–Lowering Emissions in Asia's Forests (USAID-LEAF) project, as well as the international NGOs Wildlife Conservation Society (WCS) and World Wide Fund for Nature (WWF).

INDICATIVE FINANCING

Source	Amount ($ million)
FIP Grant	12.8
Total	**12.8**

FIP = Forest Investment Program

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ADB and The Climate Investment Funds

Climate Change Innovation and Action in Asia and the Pacific

Since the inception of the Climate Investment Funds (CIF), the Asian Development Bank (ADB) has participated in the preparation of 16 investment plans in 14 countries. Under these plans, ADB is administering $1.6 billion in funding for 37 projects across the region. This document presents ADB's experience in the development of CIF programs and highlights some of the innovative transformations anticipated or already achieved by ADB projects using CIF funding. In particular this overview of ADB/CIF activities in the region demonstrates ADB's continuing commitment to build the capacities of its DMCs to address climate change by delivering not only finance, but also critical knowledge and technology as well as leveraging additional finance, particularly from the private sector.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to approximately two-thirds of the world's poor: 1.6 billion people who live on less than $2 a day, with 733 million struggling on less than $1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

CLIMATE INVESTMENT FUNDS

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