

# Outcomes of the Climate Change Implementation Plans: Common Needs and Opportunities Across Asia and the Pacific

Despite their differences, all ADB regions have common issues that call for concerted responses from ADB and its partners. The recommendations in this section of the report include only a few indicative sector and country-level responses (for more detail see later section on Regional Priorities), and capture issues that need to be addressed in all ADB regions to support low-carbon growth and poverty reduction while increasing resilience to climate change. ADB will organize responses to climate change based on the regional analyses provided in the CCIPs on three levels: policy and institutional, organizational, and operational.

## **Policy and Institutional Responses: Enabling Global, Regional, and Developing Member Country Responses to Climate Change**

The agreement on a post-2012 climate regime will affect national climate change policies of DMCs, and, in turn, the investment choices they make. As outlined in the discussion of the Bali Action Plan, the amount of finance provided for mitigation and adaptation, as well as decisions made about technology transfer, can either increase or decrease the transition pace of DMCs to lower-carbon, climate-resilient economies. As a multilateral development bank, ADB does not have a direct role in climate negotiations. However, it will use funding to promote policies

that build DMC institutional capacity to respond to climate change; enable low-carbon, climate-resilient growth; encourage regional cooperation to address climate problems; and support coordinated country-level responses among donors, nongovernment organizations (NGOs), and other stakeholders working to address climate change.

**Building DMC institutional capacity to respond to climate change.** Capacity development for institutions involved in the planning and management of responses in vulnerable sectors and regions is one of the most pressing climate change needs in Asia and the Pacific. Integration of climate change impact and adaptation considerations into development planning is a relatively new policy area. Historically, capacity to respond to climate change has been concentrated in a few ministries responsible for reporting to the UNFCCC or leading negotiations, i.e., ministries of environment and foreign affairs. While many DMCs have national climate change coordinating bodies, capacity to adjust sector planning towards low-carbon growth and climate resilience is not necessarily transferred from these ministries to implementing or line ministries. Limited capacity and strict divisions of labor in ministries of finance, industry, trade, transport, and others is a barrier to climate mitigation and adaptation efforts in many of ADB's DMCs.

In response, ADB has planned support to build the capacity within national institutions addressing climate change. For example, in Central and West Asia ADB plans to support capacity building for the institutions dealing with climate change in 10 countries and has specific support planned to develop capacity for renewable energy in Azerbaijan. In South Asia, ADB will support the governments of India and Sri Lanka in developing adaptation strategies. In Southeast Asia, ADB is supporting the Government of the Lao People's Democratic Republic (Lao PDR) as it drafts its first

climate strategy, and ADB also plans to support climate response capacity building in several ministries in Viet Nam.

In addition to planning support for specific sectors, ADB will provide an economic analysis of climate-related investments. Policy makers in DMCs must select projects for immediate investment, allocating scarce public resources. To help equip decision makers, ADB will provide analyses of the costs and benefits of both adaptation and mitigation measures for individual sectors and regions. For example, ADB's recent study, *The Economics of Climate Change in Southeast Asia* (ADB 2009a), provides policy recommendations based on detailed economic analysis of the projected impacts of climate change on the region, and an updated perspective on greenhouse gas abatement costs by sector and technology. ADB will undertake similar studies in East and South Asia in 2009–2010.

**Providing technical assistance to promote policies that enable low-carbon, climate-resilient growth.** ADB has been actively involved in promoting policies for low-carbon, climate-resilient growth through its support of the Energy Efficiency Law in Viet Nam, water sector reform in Pakistan and Afghanistan, and energy sector reform in India, Pakistan, the Philippines, and Pacific island countries, among others. ADB will continue to support sector reform and increase support where climate change and development priorities meet—for example, with planned support for energy sector development in Afghanistan, greening transport corridors and decreasing emissions in the Greater Mekong Subregion (GMS), and promoting more sustainable transport and urban development policies in the PRC.

In addition to promoting sector reform, ADB is actively convening decision makers from across Asia and the Pacific to discuss climate solutions

within the UNFCCC context. In June 2009, ADB will host a high-level dialogue on climate change in cooperation with The Energy and Resources Institute to promote regional dialogue in advance of global climate negotiations in December. In August 2009, a dialogue entitled From Kathmandu to Copenhagen will see governments, donors, and other development partners from the South Asian Association for Regional Cooperation (SAARC) convene to advance a collective commitment to a post-2012 regime. ADB will also fund participation of government representatives in UNFCCC negotiations to increase DMC engagement in the post-2012 process.

**Encouraging regional cooperation to address climate problems.** Climate change impacts are not constrained by national boundaries, and regional cooperation is often the only means of addressing impacts and decreasing vulnerability. ADB has a number of ongoing initiatives that are well positioned to address climate change. The Central Asian Countries Initiative for Land Management (CACILM), a five-country program to improve drylands management, provides a valuable platform for planning regional adaptation measures in Central and West Asia. Moreover, initiatives in the Mekong River Basin promoting cooperation for basin-wide environmental management form another important platform for collective action. ADB's GMS Environmental Operations Center supported a climate change policy dialogue in 2008 and will continue to support continued engagement and investment to address policy priorities for the region. ADB is supporting the Coral Triangle Initiative which brings together six countries—Indonesia, Malaysia, Papua New Guinea, the Philippines, Solomon Islands, and Timor-Leste—to implement a regional plan of action for improved coastal and marine resources management, including adaptation to climate change, in the world's most biodiverse marine area.

### **Coordinating country responses among donors, NGOs, and other stakeholders working to address climate change.**

With the rapid proliferation of climate-change-related initiatives in Asia and the Pacific, ADB remains committed to coordination with partners to maximize investment effectiveness. In Bangladesh, Cambodia, Indonesia, Mongolia, Nepal, the Philippines, Thailand, Viet Nam, and the Pacific island countries, ADB participates in country-wide planning sessions with other donors, NGOs, and the private sector. These sessions help direct the interventions of each participating organization to meet DMC needs. The coordination groups are helping to streamline approaches to DMC governments for climate-related project development and to direct applications for climate change finance.

As an implementing agency of the multilateral CIF, ADB is engaging with other development financing partners in joint programming missions that will help countries to determine how to best use funds to mitigate the causes and impacts of climate change. In 2009, ADB will be working to program Clean Technology Fund resources for Indonesia and the Philippines, and the World Bank's Pilot Program on Climate Resilience funding for Bangladesh, Cambodia, Nepal, Tajikistan, and the Pacific region. ADB will help DMCs to access cofinancing sources from the public and private sector to meet investment needs to support national climate change and development strategies.

### **Organizational Responses**

*ADB has the institutional expertise needed to promote a variety of mitigation and adaptation responses in DMCs. In areas where existing resources fall short of DMC needs, ADB will form strategic partnerships, build staff*

*capacity, and develop knowledge that can be shared with the regional and global community.*

ADB's portfolio has focused on climate-related investments to restore degraded lands, improve energy efficiency and water resource management, protect biodiversity, and promote renewable energy. The majority of ADB's work on climate change has been focused on mitigation—and primarily clean energy. ADB will continue to aggressively increase efforts to mitigate climate change in core areas of operation; however, it will also need to dramatically increase adaptation capacity and investment.

### **Strategic Partnerships**

ADB is forming strategic partnerships that complement its operations. These partnerships allow ADB to remain engaged on topics—such as community-based adaptation and clean energy technology—that lie outside of its immediate areas of competence and interests.

**Donors.** ADB is working with other multilateral development banks on the Clean Energy Investment Framework and programming of the CIF. ADB is also working with bilateral donors on several of its mitigation and adaptation initiatives: with the governments of Germany and Sweden on the Cities Development Initiative for Asia (CDIA); and with the Japan International Cooperation Agency (JICA) and the World Bank on studies of climate change impact on coastal cities.

**Clean energy technology research and development.** ADB is working to understand the advantages and disadvantages of emerging technologies in order to provide sound policy advice to DMCs on available options. For example, despite increasing investment in renewable energy, many ADB DMCs will remain dependent

on coal for energy for the foreseeable future, a fact that could hinder efforts to stabilize global emissions at between 450 ppm and 550 ppm, as recommended by the IPCC. Carbon capture and storage is one of the most promising options to reduce the impact of coal use; ADB is therefore partnering with the Government of Australia to launch the Global Carbon Capture and Storage Institute, which will establish pilot commercial-scale carbon capture and storage facilities and promote cooperation between research institutes, governments, and the private sector to advance research, development, and deployment of carbon capture and storage.

**Strategic adaptation partnerships.** ADB is preparing a partnership framework agreement to cover cooperation with a range of development agencies and specialized groups. This framework will help to coordinate adaptation efforts in the region, and give ADB access to the latest findings regarding climate change impacts and effective risk management approaches. As an active member of the GEF Adaptation Task Force, ADB stays abreast of all financing matters and technical developments. Through the Poverty Environment Forum, ADB and donor partners are supporting environment and climate change experts in Bangladesh, the PRC, the Lao PDR, Pakistan, and Viet Nam to help these highly vulnerable countries evaluate the impacts of climate change on the environment and guide future investments.

**Climate resilience in the agriculture sector.** The impacts of climate change will necessitate shifts in crop production and land management for many countries, and precipitate changes in water usage. ADB is working with the International Center for Agricultural Research in the Dry Areas (ICARDA), the Consultative Group on International Agriculture Research, and with the International Food and Policy Research Institute (IFPRI) to develop regional knowledge on the links between climate

change impacts and food security, and on drylands management, among other things.

**Land-use, soil carbon sequestration, and REDD.** The estimated potential greenhouse gas reductions from forestry measures are up to 6.7 gigatons of carbon dioxide (CO<sub>2</sub>) (IPCC 2007b). ADB will partner with leading institutions, including the Center for International Forestry Research, to increase the capacity of DMCs to manage forests to decrease emissions.

**Modeling the causes and consequences of climate change.** Global climate models are appropriate for understanding the wider impacts of climate change. However, to plan investments, ADB will need to work with partners to generate information appropriate for Asia and the Pacific, individual countries, river basins, and coastal cities. In the water sector, ADB is already engaged with a broad network of partners working to strengthen downscaled modeling capacity and adaptation on river basins (Box 1).

### Box 1: Water and Climate Change: Regional Partnership for Project Implementation and Knowledge Sharing

Higher temperatures speed the natural water cycle causing downstream flashfloods, deterioration of watersheds, and more intense storms. As a result, between 120 million and 1.2 billion people are predicted to experience increased water stress as a result of climate change by 2020—making water the most critical element for climate adaptation efforts.

ADB has long been active in the water sector, providing support for improved water and sanitation systems in urban areas and cleaner, more reliable irrigation and drinking water in rural areas, and improved river basin management. However, the predicted scale of climate change impacts on the water sector in Asia and the Pacific requires collaborative action.

In December 2008, the Regional Workshop on Developing Partnerships for Water and Climate Change Adaptation identified specific country needs for better climate change projections, impact assessments, and adaptation strategies. A regional knowledge hub for water and climate change was launched by the National Hydraulic Research Institute of Malaysia under the auspices of the Asia-Pacific Water Forum, with the support of ADB; the Network of Asian River Basin Organizations; the Ministry of Land, Infrastructure, Transport and Tourism of Japan; the International Centre for Water Hazard; the Japan International Cooperation Agency; and the University of Tokyo.

In the next 2 years, the newly formed Water and Climate Change Knowledge Hub will take on projects to achieve shared objectives including (i) developing a water and climate change public awareness campaign; (ii) compiling an assessment of climate change projection and impact assessment results for dissemination to decision makers; (iii) developing guidelines for adaptation, including a review of design standards; (iv) launching training of trainers on Integrated Water Resources Management as a Tool for Climate Change Adaptation; (v) launching a hosting program for on-the-job training; and (vi) developing a hub website to contain a compilation of good practices in water and climate change projection, impact assessment, and adaptation.

In addition to these broader regional projects, the regional workshop agreed to pursue 11 projects at the county or basin level to be implemented immediately by network members. A major output of these projects will be downscaled models for each project country. These models will analyze the impact of different climate change scenarios on water, ecosystems, food, coastal areas, and health. The projects will also provide training and advice to improve the capacity of in-country participants to develop and interpret climate change and water models.

## Box 2: WWF and ADB: Shared Commitment to Climate Change Action— Locally, Nationally, and Regionally

ADB and WWF, the global conservation organization, are actively involved in climate change policy dialogue leading up to the 15th United Nations Climate Change Conference in Copenhagen in December 2009. Both institutions share a commitment to helping developing countries in Asia and the Pacific reduce emissions and implement adaptation measures to reduce the impact of climate change on the region's resources.

ADB and WWF are currently working together to promote climate change resilience in the Greater Mekong Subregion, Coral Triangle, and Heart of Borneo region. Each of these programs is a multicountry initiative designed to improve environmental management and conservation by mobilizing local communities and working with local decision makers. By strengthening local capacity to manage natural resources and improving governance, ADB and WWF are enhancing resilience to climate change; developing specific adaptation policies; and funding, establishing, and managing key conservation areas locally, nationally, and regionally.

The ADB–WWF partnership has proved effective in building consensus between large groups of stakeholders. This is evidenced by the Coral Triangle Plan of Action, which brings together the governments of Indonesia, Malaysia, Papua New Guinea, the Philippines, Solomon Islands, and Timor-Leste to implement a series of adaptation measures and share scientific data on coastal and marine management, including responses to climate change.

### **Strengthening links with civil society.**

As part of these important partnerships, ADB will continue engagement with civil society to evaluate and implement adaptation and mitigation measures. Cooperation is particularly critical to identify community vulnerabilities and to help ensure bottom-up ownership of climate risk management actions. In several ADB programs, civil society groups are an integral part of service delivery. Recent ADB efforts to protect the Coral Triangle—the so-called Amazon of the Seas—from the impacts of climate change, overfishing, and unsustainable fishing methods, are made possible through partnerships with civil society partners, including Conservation International, The Nature Conservancy, and WWF (the global conservation organization), who are working with the governments of Indonesia, Malaysia, Papua New Guinea, the Philippines,

Solomon Islands, and Timor-Leste to allocate the more than \$300 million in resources pledged by the ADB, Australia, GEF, the United States and other development partners.

**Partnerships for outreach.** To help raise public awareness and promote solutions to climate challenges, ADB is partnering with the Asia Pacific Broadcasting Union on a regional training program and multimedia campaign: Climate Change Impacts and Responses. The program will train more than 40 journalists from 12 ADB DMCs about the causes and potential solutions to climate change. Journalists will produce more than 100 stories on climate change in 2009 and report on developments in climate change technology, science, and policy. ADB will expand outreach from multimedia to print journalists and will develop an online climate change learning center to provide policy makers and



ADB and Asia Pacific Broadcasting Union work with a TV journalist in PRC on a Climate Change Story, L. Sorkin 2009.

the public with up-to-date information on proven solutions to climate challenges.

### *Knowledge Development*

Through the implementation of climate change programs, ADB is constantly gathering knowledge which can help DMCS move onto low-carbon growth paths and adapt to unavoidable climate change impacts. As part of Strategy 2020, ADB is committed to using knowledge services to address its clients' immediate knowledge needs, while determining and passing on best practices. ADB is developing knowledge showcases—briefs that describe good practices in mitigation and adaptation in a clear and concise manner—for DMCS.

ADB funds have supported several landmark studies to help understand how to limit the causes and deal with the consequences of climate change in Asia and the Pacific, including Asia Least-Cost Greenhouse Gas Abatement Studies (1998); Promotion of Renewable Energy, Energy Efficiency and Greenhouse Gas Abatement Studies (2002); and Climate Proofing: A Risk-based Approach to Adaptation (2005).

ADB will continue to capitalize on its unique position to identify and develop knowledge in Asia and the Pacific, and is supporting in-depth analysis that can be shared with the wider regional and international community to enhance climate responses. Planned analyses reflect regional and ADB climate change priorities, outlined in Table 1.

**Table 1: Sample Knowledge Products Addressing Regional and ADB Climate Change Priorities**

Theme	Titles
<b>Mitigation in Asia and the Pacific</b>	
Sustainable Transport	<ul style="list-style-type: none"> <li>• Transport and CO<sub>2</sub> emissions</li> <li>• Guidance for post-2012 transport policy development</li> </ul>
Energy Security	<ul style="list-style-type: none"> <li>• Energy and Climate Change, with The Energy and Resources Institute</li> <li>• Sustainable Transport and Fuel Security</li> </ul>
Biofuels	<ul style="list-style-type: none"> <li>• Biofuels in Southeast Asia, with the Southeast Asia Regional Center for Graduate Study and Research in Agriculture.</li> </ul>
<b>Adaptation</b>	
Infrastructure	<ul style="list-style-type: none"> <li>• Under the Weather and the Rising Tide: Adapting to a Changing Climate in Asia and the Pacific</li> </ul>
Agriculture	<ul style="list-style-type: none"> <li>• Coastal Mega-Cities Adaptation, with the World Bank and JICA</li> <li>• Building Climate Resilience in the Agriculture Sector, with the IFPRI</li> </ul>
Migration	<ul style="list-style-type: none"> <li>• Impacts of Climate Change on Migration in Asia and the Pacific, with the University of Adelaide</li> </ul>
<b>Adaptation and Mitigation</b>	
Economic Impacts and Costs	<ul style="list-style-type: none"> <li>• The Economics of Climate Change in Southeast Asia: A Regional Review</li> <li>• The Economics of Climate Change in South Asia</li> <li>• The Economics of Climate Change in East Asia</li> </ul>

CO<sub>2</sub> = carbon dioxide, IFPRI = International Food and Policy Research Institute, JICA = Japan International Cooperation Agency.  
Source: ADB 2009

***Strengthening ADB’s Capacity to Address Climate Change***

To ensure that investments promote climate resilience and low-carbon growth, ADB staff must be equipped to design responsive projects and provide technical assistance. Where climate change expertise was previously concentrated in a central department (the Regional and Sustainable Development Department), reorienting ADB lending requires staff in all ADB operations departments to have the capacity to design programs with climate considerations in mind. To build in-house capacity, ADB has launched a biannual training program on

climate change, appointed focal points for climate change in each regional department and resident mission, started a climate change information sharing network, and established the Climate Change Program Coordination Unit. The Regional and Sustainable Development Department will also continue to support operations departments.

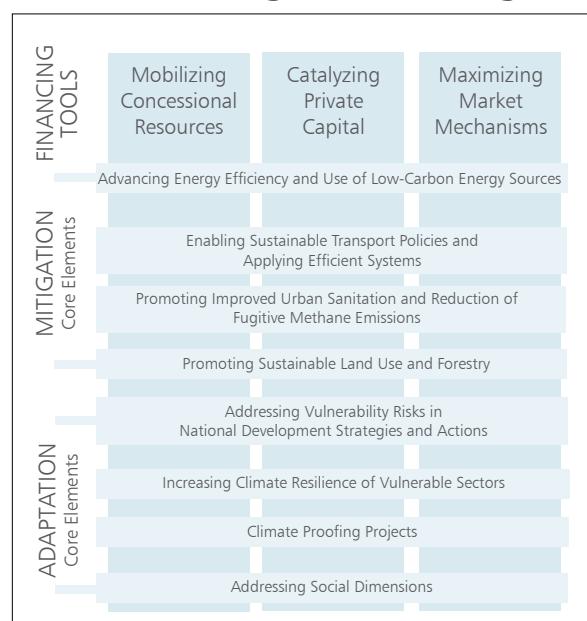
**Headquarters operations.** ADB currently tracks greenhouse gas emissions of headquarters operations, and these increased slightly in 2008 due to increased staff travel and goods shipment. ADB is working to reduce emissions as part of its overall resource conservation efforts and is

currently exploring options for becoming carbon neutral. Detailed information is provided in ADB’s *Sustainability Report* (ADB 2009b).

## Operational Responses

Future ADB investments will promote low-carbon growth and build climate-resilient economies by means of eight priority approaches outlined in Figure 2. ADB will promote low-carbon growth by improving energy efficiency; expanding the use of clean energy sources; reducing fugitive greenhouse gas emissions, such as methane released from landfills; modernizing public transport systems; and promoting sustainable land use and forestry.

**Figure 2. ADB’s Strategic Approach for Addressing Climate Change**



Source: ADB 2009

ADB will also help DMCs adapt to the unavoidable impacts of climate change—including those related to health—through national and municipal planning, investments in defensive measures, support for insurance and other risk-sharing instruments, and “climate-proofing” projects. Disaster risk management will be a vital part of the adaptation process and cost-effective precautionary measures will be promoted through infrastructure investments. Sustainable management of forests and other natural resources for provision of clean water supplies, protection of biological diversity, and sequestration of carbon from the atmosphere to offset greenhouse gas emissions will also be part of ADB’s assistance to address climate change.

ADB is one of the only donors in Asia and the Pacific that provides technical assistance, grants, and loans, and when this is combined with ready access to global mitigation and adaptation technical expertise, ADB is well placed to help DMCs to access funds for climate-change-related investment, expand its role in donor coordination, and mobilize cofinancing.

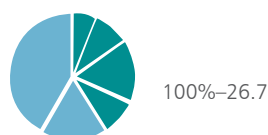
### *Promoting Low-Carbon Growth Strategies*

As a development finance institution, ADB’s most important and straightforward contribution to reducing the underlying causes of global climate change will be to invest as much as possible in programs and projects that will help mitigate greenhouse gas emissions from their major sources in Asia and the Pacific. Existing scientific, technological, and economic analysis shows that more than half of so-called low-cost potential emissions reductions (i.e., below €40, or approximately \$56 per ton) by 2030 are in developing countries and in sectors not well addressed by current policy and financial measures, including agriculture, buildings, forestry, and transportation (Enkvist et al. 2007).

**Figure 3: Regional GHG Abatement Potential**

**Developing economies will play an important role**

Abatement potential for greenhouse gases by region, GtCO<sub>2</sub>e<sup>1</sup> per year by 2030 (costing up to €40 per ton)



		% of global emissions	
		'Business as usual,' <sup>3</sup> 2030	After Abatement
Eastern Europe <sup>2</sup>	1.6	9	11
Western Europe <sup>2</sup>	2.5	8	7
North America	4.4	15	14
Other developed countries	2.5	11	13
<b>China</b>	<b>4.6</b>	<b>18</b>	<b>18</b>
Other developing countries	11.1	39	37

<sup>1</sup> GtCO<sub>2</sub>e = gigaton of carbon dioxide equivalent.

<sup>2</sup> Eastern Europe includes former Soviet Union and Balkans; Western Europe includes EU<sub>25</sub> plus Iceland, Norway, Switzerland, Turkey, minus Baltic states.

<sup>3</sup> "Business as usual" based on emissions growth driven mainly by increasing demand for energy and transport around the world and by tropical deforestation.

Source: McKinsey 2007.

ADB is already mobilizing over \$2.5 billion per year to catalyze low-carbon development through several funds accessible to all DMCs: the Clean Energy Financing Partnership Facility, the Climate Change Fund, and the Carbon Market Initiative (CMI). In future ADB will expand and complement these efforts by promoting improved environmental and energy management in cities (through the CDIA and the Sustainable Transport Initiative), and exploring additional opportunities to leverage carbon finance from REDD. ADB will help DMCs access global funds

for mitigation; for example, along with the World Bank, ADB will access the Clean Technology Fund of the CIF to transform the energy and transport sectors in Indonesia and the Philippines.<sup>10</sup>

ADB efforts to promote low-carbon growth in Asia and the Pacific help to realize mitigation targets under the Bali Action Plan. By providing the technical support and finance to help DMCs achieve nationally appropriate mitigation actions (NAMAs), ADB will help DMCs to move their economies onto

<sup>10</sup> For an explanation of the referenced climate funds, please see the glossary.

low-carbon growth paths and assure that resulting emissions reductions are “measurable, reportable, and verifiable.”<sup>11</sup>

**Energy efficiency and clean energy.** In 2008, ADB leveraged more than \$1.7 billion in clean energy financing and allocated \$19.8 million in grants to 12 climate change mitigation projects. These projects mobilized more than \$250 million of investment, more than 90% of which is focused on clean energy. The mitigation projects alone are projected to reduce emissions by more than 2 million tons (t) of CO<sub>2</sub> annually and save more than 7 terawatt-hours of energy.

In keeping with its energy policy,<sup>12</sup> ADB will continue to mobilize a broad range of public and private resources and will focus on diversifying the regional distribution of funds for clean energy and energy efficiency investment. This is especially the case in Central and West Asia which is home to some of the most carbon-intensive economies in the world, and in Southeast Asia, where mega cities are fast becoming significant sources of greenhouse gas emissions. Under its Energy for All initiative, ADB is also helping DMCs to increase access to modern energy services with a goal of providing 100 million people with access to clean, reliable energy by 2015. ADB’s proposed clean energy investments for 2008–2011 are estimated at around \$6.7 billion.

**Sustainable transport.** Transport is the largest volume sector of ADB’s operations, accounting for 33% of commitments made during 2000–2006—about 80% of which was focused on

road construction. While road and vehicular transportation is important to meet the objectives of growth and poverty reduction, the transport sector is the fastest-growing source of greenhouse gas emissions in Asia. In response, ADB recently approved the Sustainable Transport Initiative which will provide technical and financial support across all ADB regions; help plan transport investments that reduce greenhouse emissions; and address concerns over local air quality, congestion, and safety. In addition, ADB’s transport projects will promote less energy-intensive construction and the use of recycled and long-life materials to improve project efficiency and reduce carbon emissions.

**Urban initiatives and climate change mitigation.** ADB has initiated programs to promote reductions in greenhouse gas emissions in Asia’s cities while accommodating their continued growth (as well as their adaptation to climate change). Most notably, the CDIA has created a pipeline of sustainable urban investments, with 18 city-specific interventions identified throughout the region. Independently of the CDIA, efforts to reduce urban greenhouse gas emissions derived from transport, residential and commercial buildings, industry, and waste are ongoing in all ADB regions, and many of the waste management projects are now being considered for carbon finance.

**Reduced emissions from deforestation and degradation (REDD).** Improving land use management, including avoiding deforestation, could provide emissions reductions at a relatively low cost. ADB is already cooperating with several

<sup>11</sup> Measurable, reportable, and verifiable is a term from the Bali Action Plan of the UNFCCC that applies to mitigation actions taken by countries to reduce emissions. For a definition please see the glossary.

<sup>12</sup> ADB’s recent W-Paper on Energy Policy prioritized promoting energy efficiency and renewable energy as one of the three main focus areas of ADB’s energy sector operations. This is in recognition of global concerns of climate change and the important role its DMCs have to play in mitigating global warming.

international partners through the global Poverty and Environment Partnership to examine how to apply the REDD concept in its DMCs, and is supporting several pilot projects through its Climate Change Fund in Cambodia, the PRC, and Indonesia.

### *Adaptation to Reduce Vulnerability*

ADB will dramatically increase its efforts to help countries in Asia and the Pacific adapt to the impacts of climate change. It will build the capacity of government partners to plan climate responses, as well as internal capacity of staff to develop projects that are climate resilient. However, where authorities, vulnerable sectors, and communities are facing threats from climate extremes, ADB will apply the Precautionary Principle for adaptation and invest in climate-proofing for both hard and soft infrastructure investments. Where feasible, ADB project investments will immediately introduce cost-saving climate-proofing measures to minimize current and expected impacts. To avoid creating unevenness between stage 1 and stage 2 adaptation (planning and preparation) and stage 3 (project-oriented adaptation programming), both levels of adaptation climate-proofing will often be designed and implemented in tandem.

ADB's adaptation response will concentrate on climate-proofing hard infrastructure projects with some focus on building ecosystem resilience through investments in improved management in the agriculture and water sectors.

**Mainstreaming adaptation in DMC development planning.** ADB is now helping DMCs develop national and sub-national adaptation plans and policies so they are more responsive to future climatic conditions. ADB is currently supporting adaptation planning in Southeast Asia, and will soon provide support to Sri Lanka and India. Climate change impact and adaptation needs are being considered and incorporated into ADB's country

policies, policy dialogues, capacity development activities, and investment pipeline.

**Mainstreaming adaptation in the ADB project cycle.** A screening tool has been developed to assess risks (i.e., glacial melting, sea-level rise, and extreme weather events) in all ADB projects. DMCs will need to consider climate-proofing their investments through the application of similar screening tools. As adaptation planning expands, the incorporation of climate change risks into investment planning can be expected to progress from the project level to the subnational and national levels. ADB will assist DMCs with this process.

**Increasing resilience of sector strategies.** Sector road maps at the country level are being adjusted to incorporate climate change and disaster risk assessment considerations. The most vulnerable sectors are agriculture and natural resources, urban development, health, water supply and sanitation, transport (including coastal roads and ports), and energy (especially hydropower).

**Disaster risk reduction to build resilience and support adaptation.** Disaster risk management and disaster risk reduction approaches are areas for immediate adaptation intervention to ensure project resilience against anticipated climate impacts. Proposed ADB adaptation interventions will be strengthened and expanded in line with its *Disaster and Emergency Assistance Policy* and the Hyogo Framework for Action 2005–2015, an international commitment to reduce disaster risk. The \$40 million Asia Pacific Disaster Response Fund has been established to ease the impacts of weather-related natural disasters on DMCs. ADB is seeking contributions to this fund from all development partners.

**Addressing the social impacts of climate change.** There are a number of social impacts of climate change faced by DMCs.

**Gender.** Children, women, and the elderly are already the most vulnerable within poor communities, and women constitute the largest percentage of the world's poorest people. By enabling women to take a more active role in decision making, opportunities to increase both women's empowerment and the effectiveness of measures for climate change adaptation and mitigation at the community level will be strengthened. Gender participation will be addressed in climate change programs during project design, particularly where ADB and partners are investing in responses to climate change for subsistence sectors primarily managed by women, such as agriculture, water, and household energy.

**Migration.** Where people decide to relocate as a result of climate-related factors, ADB will support governments to develop strategies to respond, particularly in infrastructure development, education, and regional cooperation, as they are consistent with the core operational areas in Strategy 2020. ADB will consider options for providing the financing needed to improve the absorptive capacity of areas that receive migrants, improve the skills and education of migrants, and help with migrants' resettlement costs.

**Human health.** The serious implications of climate change for human health in Asia and the Pacific may well require development of a comprehensive suite of human health policies to address waterborne diseases and other sicknesses that are related to

climate-induced change, including those arising from poor water quality and nutrition. Adaptation options for the effective control of dengue fever include eradication of artificial breeding sites (e.g., litter, solid waste, and water containers), and preventing entry of mosquitoes by strengthening quarantine regulations and border surveillance. ADB will continue to invest in infrastructure to improve reliability and safety of water supply, and to improve sanitation infrastructure and services to reduce climate-change-related increases in the incidence of diarrheal disease.

### ***Adaptation and Mitigation Synergies***

Land conservation, rehabilitation, and sustainable soil and water resource management have significant mitigation potential in several ADB regions. ADB will support more sustainable land management in the rangelands of Central Asia and on farmlands and forestlands in Southeast Asia and East Asia. Regional institutions, including CACILM and the GMS Environment Operations Center, will share lessons learned from combined mitigation and adaptation projects across the region. ADB is already working to promote carbon sequestration in soil and forests by developing and spreading knowledge and by using pilot projects to test innovative financing mechanisms. New technical assistance will be provided to ADB DMCs to develop domestic expertise to support projects such as REDD. Furthermore, grants provided by ADB's Climate Change Fund will support a minimum of four pilot REDD projects during 2009–2012.