

54190

Development and Climate Change:
A Strategic Framework for the World Bank Group
Interim Progress Report

April 20, 2010

Washington DC

Abbreviations and Acronyms

ADB	Asian Development Bank	FCPF	Forest Carbon Partnership Facility
AFR	Africa Region	FEC	Fonds d'Equipeement Communal
bcm	billion cubic meters	FIP	Forest Investment Program
BRT	bus rapid transit	GEF	Global Environment Facility
CAS	Country Assistance Strategy	GET-	Global Expert Team on Adaptation to
CAT-	catastrophe deferred drawdown option	CCA	Climate Change
DDO		GFDRR	Global Facility for Disaster Reduction and Recovery
CCDP	Climate Change for Development Professionals	GGFR	Global Gas Flaring Reduction
CCMG	Climate Change Management Group	GHG	greenhouse gas
CCS	carbon capture and storage	IBRD	International Bank for Reconstruction and Development
CDM	Clean Development Mechanism	ICT	information and communication technology
CEIF	Clean Energy for Development Investment Framework	IDA	International Development Association
CER	certified emissions reductions	IEA	International Energy Agency
CF	carbon finance	IFC	International Finance Corporation
CFL	compact fluorescent lamp	IFI	international financial institution
CGIAR	Consultative Group on International Agricultural Research	IUCN	International Union for Conservation of Nature
CIF	Climate Investment Fund	LCR	Latin America and the Caribbean Region
CO ₂	carbon dioxide	LED	light-emitting diode
COP	Conference of the Parties	MDB	multilateral development bank
CPF	Carbon Partnership Facility	MDG	Millennium Development Goal
CPS	Country Partnership Strategy	MIGA	Multilateral Investment Guarantee Agency
CRESP	China Renewable Energy Scale-Up Program	MNA	Middle East and North Africa Region
CSP	concentrated solar power	NAMA	Nationally Appropriate Mitigation Actions
CTF	Clean Technology Fund	ODA	official development assistance
DAC	Development Assistance Committee	OECD	Organisation for Economic Co-operation and Development
DfID	Department for International Development (UK)	PPCR	Pilot Program for Climate Resilience
DPL	Development Policy Loan	PREM	Poverty Reduction and Economic Management Network
DRM	disaster risk management	R&D	research and development
DSM	demand-side management	RBTC	rapid bus transit corridors
EACC	<i>Economics of Adaptation to Climate Change</i>	RDB	regional development bank
EAP	East Asia and Pacific Region	RE	renewable energy
ECA	Europe and Central Asia Region	REDD	reduced emissions from deforestation and degradation
EE	energy efficiency	RF	results framework
EECI	Energy Efficiency Cities Initiative	RMS	results measurement system
ERPA	emission reduction purchase agreement	RTA	Reimbursable Technical Assistance
ESMAP	Energy Sector Management Assistance Program	SAR	South Asia Region
EU	European Union	SCCF	Special Climate Change Fund
FAO	Food and Agriculture Organization	SDLP	Sustainable Development Leadership Program
		SDN	Sustainable Development Network

SFDCC	Strategic Framework for Development and Climate Change	UNEP	United Nations Environment Programme
SME	small and medium-size enterprise	UNFCCC	United Nations Framework Convention on Climate Change
SREP	Scaling Up Renewable Energy Program	UTTP	Urban Transport Transformation Project
SWAP	sector wide approaches	WB	World Bank
TF	trust fund	WBG	World Bank Group
TNA	technology needs assessment	WBI	World Bank Institute
UN	United Nations	WDR	World Development Report
UNDP	United Nations Development Programme		

**Development and Climate Change:
A Strategic Framework for the World Bank Group
Contents**

Executive summary.....	i
1. INTRODUCTION.....	1
2. Implementation Progress: Supporting Country-led Climate Actions.....	5
3. Implementation Progress: Mobilizing Finance and Markets.....	18
4. Implementation Progress: Fostering Innovation, Knowledge, and Capacity	32
5. Implementation Progress: Global Impact through Strategic Partnerships.....	39
6. Institutional Arrangements and Results.....	43
7. Emerging Lessons and Directions.....	46
 Annexes	
Annex 1. Implementation Progress for Key Actions and Deliverables	54
Annex 2. IFC Climate-Positive Investments and Innovation	62
Annex 3. Addressing Climate Change–Related Programs in the World Bank Regions	65
Annex 4. Climate Investment Funds.....	78
Annex 5. Main Climate Finance Instruments the WBG can use	80
 Boxes	
Box 1. Several COP-15 Outcomes Are Important for the WBG’s Development Mandate.....	3
Box 3. Climate Issues in Country Assistance/Partnership Strategies	6
Box 4. Scaling Up Adaptation Efforts Across Sectors and Regions—Highlights from FY09.....	8
Box 5. Disaster Response Management and the Climate Change Adaptation Nexus	9
Box 6. Programmatic Approaches to Addressing Climate Change in Agriculture and Rural Development	10
Box 7. Promoting Urban Energy-Efficient Programs and Sustainable Energy Planning	11
Box 9. Scaling Up Renewable Energy Markets.....	13
Box 10. World Bank Group Experience Financing Energy Efficiency	14
Box 11. Energy Access for Sustainable Development.....	15
Box 12. Flared Gas Reduction for Energy Access in Africa	16
Box 13. Multistakeholder Partnership for the Urban Transport Transformation Project (UTTP) in Mexico	17
Box 14. CTF: Thirteen Investment Plans Endorsed with an Overall Funding Envelope of \$4.4 billion Leveraging additional \$36 billion.....	19
Box 15. Piloting Climate Resilience	21
Box 16. IDA as a Platform for Climate-Smart Development	23
Box 17. Carbon Finance: Building on Experience and Looking Forward.....	24
Box 19. Innovation in Catastrophe Weather-Risk Financing	26

Box 20. Risk-Mitigation Instruments at Work for Low-Carbon Growth in Africa	28
Box 21. Building on Synergies between GEF, Montreal Protocol Funding, and Carbon Finance to Scale Up Climate Action	29
Box 22. Policy and Institutional Reforms Help Scale Up the Impact of Climate Finance Instruments	30
Box 23. New Investment under the Sun: IFC Pushing Solar	32
Box 24. WBG Regional Studies on Climate Impacts and Strategies.....	35
Box 25. Low-Carbon Growth Country Studies Program.....	36
Box 26. An Integrated Investment-Advisory Platform for Tackling Climate Change in ECA	38
Box 27. Kathmandu to Copenhagen: A Regional Climate Change Dialogue	39
Box 28. Global Development Marketplace 2009: 100 Ideas to Save the Planet	41

Figure

Figure 1. The CIF Venture: Scaling Up Partnerships for Climate Action	18
---	----

**Development and Climate Change:
A Strategic Framework for the World Bank Group
Interim Progress Report**

The Strategic Framework on Development and Climate Change was endorsed by the Development Committee on October 12, 2008, providing a roadmap for the World Bank Group's climate action for fiscal 2009-2011. This Interim Progress Report summarizes the implementation progress since its endorsement and outlines directions for the remaining period.

EXECUTIVE SUMMARY

1. Developed through extensive global consultations, the Strategic Framework for Development and Climate Change (SFDC) guides various entities and institutions of the World Bank Group (WBG), including the International Finance Corporation (IFC), the Multilateral Development Guarantee Agency (MIGA), and the World Bank (WB), toward achieving the twin objectives of: (i) effectively supporting sustainable development and poverty reduction in developing countries as climate risks and climate-related economic opportunities arise and (ii) facilitating global action and interactions among all countries. Given evolving knowledge and global climate policy, the WBG's focus, especially at the initial stage, has been on learning and capacity building for scaling up demand-driven support to development investments, programs, and policies with adaptation and mitigation co-benefits. The SFDC six action areas are aligned with the Bali Action Plan adopted by the 13th Conference of the Parties (COP) of the UN Framework Convention on Climate Change (UNFCCC):

1. Support climate actions in country-led development processes
2. Mobilize additional concessional and innovative finance
3. Facilitate the development of market-based financing mechanisms
4. Leverage private sector resources
5. Support accelerated development and deployment of new technologies
6. Step up policy research, knowledge, and capacity building.

2. The Framework's implementation has been influenced by the 2008 global financial crisis and accelerated global climate change dialogue in the run-up to the Copenhagen COP-15. Having originated in developed countries, the financial crisis quickly transformed into a global economic crisis that affected developing countries with dwindling capital flows, large withdrawals of capital that led to losses in equity markets, and skyrocketing interest rates. While temporarily shifting the attention of national leaders away from the climate change agenda, the global response to the financial crisis underscored potential complementarities between the immediate paths to recovery and future economic resilience. In parallel, the world has witnessed a concerted effort by the international community toward concluding a new agreement on enhancing UNFCCC implementation. While reinforcing the primacy of the UNFCCC process, several other processes and forums, such as the Heads of State initiative by the UN Secretary General, the Africa Union conference, and the G20, have given further weight and support for strong global climate action.

3. These developments placed multifaceted and rapidly changing demands on the WBG. Overall, they contributed to the increased awareness of WBG clients, including at the highest decision-making level, of the climate change challenge. Preparation of the *2010 World Development Report (WDR): Development and Climate Change* further elevated the status of the issue—inside and outside the WBG—as a development priority. Even as the financial crisis prompted a massive increase in WBG financing, particularly International Bank for Reconstruction and Development (IBRD) lending, leading to a review of the long-term adequacy of its capital resources, it has highlighted WBG potential to mobilize and leverage resources, increase efficiency, and manage multiple objectives.

4. There has been an increased demand for the WBG to support multiple constituencies to address development and climate change as inter-linked challenges. Expanding engagement with developing countries is evidenced by the impressive uptake of climate-related issues in Country Assistance/Partnership Strategies, with no operational target. A regional climate change strategy for Sub-Saharan Africa, *Making Development Climate Resilient*, outlined a comprehensive and ambitious agenda to help address specific needs and priorities of African countries that have become increasingly vocal and united in the global climate discussions. A new and growing generation of Development Policy Operations (DPOs) is a testimony of developing countries' efforts to integrate climate-related considerations into the broader economic growth and poverty reduction agenda. Fiscal year 2009 marked an all-time record in WBG renewable energy (RE) and energy efficiency (EE) financing, at \$3.3 billion, along with stepped-up support for energy access and reliable supply, and an 88 percent increase in new RE/EE commitments, compared with the SFDCC target of average annual increase of 30 percent over FY09–11.

5. In response to the rapidly expanding client demand, the WBG has stepped up its work across various entities and areas of expertise, building upon the Clean Energy Investment Framework and the long-term partnership with the Global Environmental Facility (GEF), continued innovation in carbon finance, and other prior initiatives. New project and program finance instruments and opportunities opened by the establishment of the Climate Investment Funds (CIFs) through collaborative effort among the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, the Inter-American Development Bank, and the WBG; the Forest Carbon Partnership Facility (FCPF); and the Carbon Partnership Facility (CPF) played a critical role in facilitating progress. Innovative governance arrangements under the CIF and the FCPF, featuring equitable and balanced representation as well as inclusive processes of engagement with a wide range of stakeholders, are contributing to global dialogue. A significant emphasis in WBG work was to produce just-in-time knowledge that can inform the UNFCCC negotiations, with a focus on the needs and on-the-ground realities of developing countries, and to respond quickly to new requests from WBG clients and partners for collaboration and support to understand and manage the risks, trade-offs, and business opportunities related to the climate change agenda. Yet the mainstay of work programs based on longer-term vision and commitments made under the SFDCC sustained its progress.

6. Overall, the first phase of SFDCC implementation solidified climate change work across the WBG, with useful lessons for moving forward. Tangible impacts have been particularly seen on knowledge, capacity, the uptake of country and sector dialogue, the development of innovative pipelines, and collaboration with the United Nations and multilateral development banks (MDBs), as well as within the Bank Group. The creation of “climate change beams” led by climate change coordinators in the Regions and the WBG-wide multisectoral Climate Change Management Group strengthened coordination and knowledge sharing across sectors and regions and between the World Bank and the IFC. The WBG has met or is on track to meet most of the key indicators it has committed to under the SFDCC (see Box). At the same time, several indicators and milestones require reassessment in view of the lessons from implementation experience, including a better reflection of WBG's comparative advantage in country-wide policy dialogue and global convening power.

7. The WBG has intensified its efforts to support climate risk management in core operations, increasingly linking immediate priorities of dealing with climate variability and natural disasters with measures to adapt to longer-term impacts. Projects that address climate risks span a range of interventions across all client countries and use a variety of financial instruments and their combinations. While driven by the economic and social objectives, such as food security, these projects give a heightened attention to current and future climate risks as critical factors for effectiveness and sustainability. Examples range from agriculture and rural development projects considering adaptation to increasing climate variability, such as floods and droughts, in Ethiopia, Malawi, and Nicaragua to natural resources and water resource

management programs dealing with the impact of rapid glacier retreat in the tropical Andes or current and future irrigation water deficits in Morocco. Add to this improving coastal and marine biodiversity to increase resilience in India, the Maldives, and the Gulf of Mexico; strengthening hydromet capacity in Central Asia; supporting adaptation of human settlements in Thailand, Vanuatu, and Vietnam; and addressing the impact of extreme climate events on the health of young children in Sub-Saharan Africa. In parallel, the Global Facility for Disaster Reduction and Recovery provides enabling financing to reduce present and future climate-related disaster risks, enhance regional cooperation, and provide post-disaster recovery facilities.

8. IDA-15 has emerged as a solid development platform to anchor the rapidly evolving financing landscape for climate-resilient action. IDA-15 financial flows to climate-affected sectors such as agriculture, flood protection, water supply, and health reached \$3.3 billion in FY 2009, representing a 17 percent increase over IDA-14 average annual engagement in these sectors (\$2.9 billion) and underscoring the urgency of enabling these development investments to deliver the intended benefits in changing climate conditions. IDA operations leveraged additional adaptation financing from all available sources (such as the GEF and UNFCCC funds and bilateral resources), but the total remained well short of the need. The Pilot Program for Climate Resilience (PPCR) under the CIF's Strategic Climate Fund initiated activities in nine IDA countries, three of which are in Africa and four are in fragile states. Major focus was given to making Clean Development Mechanism (CDM) flows accessible to Africa: the region accounts for one-fifth of active projects in the World Bank's carbon finance portfolios, compared with 2–3 percent share in the overall CDM pipeline. The FCPF is piloting approaches aiming to open financial flows for activities related to forest and land management that are currently outside the scope of the CDM but that have a large potential in African and other IDA countries. To further help IDA countries gain access to additional financing for priority development projects, such as energy services, the CIF's Scaling-up Renewable Energy Program (SREP) for low-income countries was designed and declared operational in December 2009.

9. The WBG has expanded support to climate-resilient and low-carbon investments by packaging and leveraging a suite of financing instruments, technical assistance, and policy advice. WBG has a long tradition of blending GEF resources with IBRD/IDA or combining them with IFC regular instruments to support climate actions. More innovation in packaging “core” financial products with specialized climate and carbon finance resources has taken place over the past few years as the menu of instruments and client needs grew, while climate finance remained scarce and development finance was squeezed by the financial crisis. The Latin America and Caribbean Region alone developed a portfolio of 183 activities in adaptation and mitigation that total \$7.3 billion, spanning the entire spectrum of Bank Group instruments and led by strong analytical work. The IFC has strengthened its engagement with the private sector through advisory services and support for clean production and technology innovation, achieving a leveraging ratio of private sector resources of 5 to 1. The CIF Clean Technology Fund (CTF) has endorsed thirteen investment plans with an overall envelope of \$4.4 billion, leveraging over \$36 billion. An important lever of new and additional climate financing, IBRD is supporting the depth of strategic planning and reform agenda needed to operationalize such financing in real time.

WBG Highlights – SFDCC Implementation

Country-led climate actions in development processes

- ❖ Over 63 percent of all new Country Assistance or Partnership Strategies addressed climate-related issues, particularly adaptation, in FY09, with a positive trend in the first three quarters of FY10
- ❖ Scaled-up support to adaptation in core development programs in water, agriculture, and natural resource management projects, using a combination of instruments and funds
- ❖ 88 percent annual increase in new RE/EE financing between FY08-09, with IFC new renewable energy commitments increasing fivefold
- ❖ \$ 6 billion in DPOs addressing climate change considerations over the period of FY09 and first half of FY10

Partnerships with UN, MDBs, and civil society

- ❖ Development of the Climate Finance Knowledge Platform with the UN Development Programme, as part of coordinated UN-wide response
- ❖ Joint implementation of the Climate Investment Funds by the MDBs
- ❖ Enhanced communication and outreach, including new Web site and blog

Financing

- ❖ Climate Investment Funds rolled out, stimulating new low-carbon or climate-resilient programming in over 20 countries
- ❖ Clean Technology Fund endorsed \$4.4 billion in investment plans, mobilizing some \$40 billion in public and private investment
- ❖ Wider coverage and range of catastrophic risk financing products to deal with climate risks
- ❖ FCPF involves 37 participating countries, 11 readiness grants signed
- ❖ CPF launched in December 2009 and will become operational by end FY10, Carbon Development Fund operational and supporting project preparation
- ❖ Engaging the private sector for more sustainable investment, with a leverage ratio of 5 to 1 by IFC
- ❖ Five issues of climate bonds by Treasury since November 2008, raising \$1.4 billion
- ❖ IFC and World Bank mobilized additional grant financing to catalyze introduction and transfer of emerging clean energy technologies, including solar power and capacity building for carbon capture and storage

Knowledge and Capacity

- ❖ *WDR 2010: Development and Climate Change* launched in September 2009, complemented by the *Economics of Adaptation to Climate Change* global report and several flagship regional, sectoral, and country reports
- ❖ *Climate Change Portal* and a series of *Guidance Notes* delivered to support WBG operations and provide global public knowledge good
- ❖ The *Climate Change for Development Professionals* training program offered over 4,000 participant-hours to over 850 participants in FY08–10; the Sustainable Development Leadership Program reached over 300 managers, senior staff, and external participants
- ❖ The *Climate Change Management Group* brings together the full array of WBG units to coordinate and facilitate climate-related activities within a common vision
- ❖ WBG has reduced office-related emissions from its headquarters and committed to become 100 percent carbon-neutral, including facilities, meetings, and travel in all regions

10. Some of the notable developments include the following:

- *Growing client demand is positioning DPOs as a potential integrating platform for climate finance instruments.* In FY09 alone, a new generation of DPOs addressing climate change considerations amounted to more than \$4.2 billion, including support for an enabling policy environment that increases leveraging of CTF resources (Turkey) or carbon finance (Morocco) or support for weather risk management using a Catastrophe Deferred Drawdown Option (Colombia, Costa Rica, and Guatemala).
- *Among various instruments, technical assistance is emerging as a critical tool.* Demand is increasing for advice on policy and regulatory reforms that facilitate “climate-smart” growth,

including the issues of pricing, taxation, and subsidy. Engagement with middle-income countries, particularly upper middle-income, includes Reimbursable Technical Assistance (RTA), which is now called to support climate-related issues. For example, the new Country Partnership Strategy for Algeria includes combining RTA with climate change instruments in the solid waste sector. The Middle East and North Africa Region is also exploring ways of combining other available instruments, such as the GEF, with RTA. Several RTA programs will address adaptation needs, including for oil-producing countries.

- *Climate change–related challenges support an increasing focus on regional programs and regional coordination.* Issues such as melting glaciers facilitated greater regional dialogue and cooperation in Latin America and Asia. The WBG engaged in designing an African regional forum on agriculture, climate change, and food security in partnership with the Food and Agriculture Organization of the United Nations, the International Fund for Agricultural Development, and the World Food Programme, while the PPCR is supporting two regional programs targeting small island states in the Pacific and the Caribbean. Regional approaches are equally important for enabling countries meet their energy needs through lower-carbon options, such as expanding the concentrated solar power initiative in the Mediterranean or realizing hydropower potential in Africa.

11. Progress to date underscored some challenges, as well as areas for further assessment, including:

- Additional financial resources and instruments provided by the GEF, carbon finance, and the CIF have been an important driver of progress while also *increasing the operational complexity of dealing with multiple instruments*. Reducing the transaction costs of accessing several sources of finance, maximizing complementarities, and helping clients navigate an evolving financial landscape have been an important focus of WBG work, particularly in the context of the CIF programs which are closely aligned with MDB processes, and will be given significant attention in the future. Experience with new initiatives, such as the FCPF, further highlighted technical and capacity challenges that require a major effort to support developing country readiness to take advantage of these resources.
- *Despite a long-term trend towards increasing investment in RE and EE, the results for FY10 will reflect the impact of the global financial crisis manifested in a lower share of RE/EE financing.* This is in large part due to the impact of the crisis on the ability of African countries to finance their conventional energy development programs, necessitating WBG support to coal power projects in Botswana and South Africa. Looking forward, we expect that the demand for WBG engagement in coal power generation will be limited while the demand for RE, EE and clean energy finance will continue to grow. The application of the six SFDCC criteria, within which lending to new coal-based generation can be provided, is resulting in greater selectivity. The process has been strengthened by issuing an operational guidance note to staff and instituting a review of conformity with the criteria by an external panel of experts. Such a panel was first formed for the Eskom power sector project in South Africa (approved on April 8, 2010) and will be convened for each relevant project. A review of the mid-term pipeline of “greenfield” (new capacity) coal power generation projects, as screened to meet the six SFDCC criteria, shows no such projects for middle-income countries in the pipeline, and potential IDA projects in the coming years are very few.
- *Experience with technology commercialization calls for further clarifying WBG comparative advantages and the role of partnerships.* In agriculture, the WBG has been supporting all technology stages, including location-specific research. With respect to novel energy technologies that are much more expensive and serve the global market, the WBG advantage remains with

scaling up and in deployment stage, with the CTF and the SREP providing new opportunities. Specific partnerships, such as the GEF/IFC Earth Fund or a new bilateral Trust Fund for Carbon Capture and Storage, will be further explored.

- *Matching demand with capacity.* WBG knowledge, skills and capacity have increased visibly – thanks to WDR 2010, other analytical work, the new Global Expert Team for Climate Change Adaptation, dedicated training, and learning by doing. But more structured effort is needed to equip operational staff with the needed knowledge and tools, particularly in country offices. Realism should be built into future efforts, both in terms of the time needed to achieve results that matter for clients and the internal resources to make it happen.

12. Initial implementation experience suggested the need to adjust certain approaches, goals, and respective indicators, consistent with the learning and flexible nature of the SFDC. For example:

- In-depth work on initiating climate-risk screening for water investments with a long life span points to the need for a sector-wide decision-making approach for dealing with the uncertainties of long-term projections that would complement project-level screening.
- Similarly, while project-level energy efficiency screening expands in IFC, the focus on sector-wide policy and regulatory reforms is often more effective for the WB. A comprehensive approach to promoting energy efficiency in World Bank operations is being developed that recognizes different country contexts and different levels of energy sector dialogue.
- Measures of future progress will need to recognize new initiatives and experiences, beyond the agreed key indicators. Among these are a successful dialogue with city mayors on urban poverty and climate change; an increased focus on “green infrastructure,” a growing engagement with institutional investors; and a series of demand-driven activities developed by the regions, such as supporting the Africa Union or facilitating regional cooperation on adaptation in South Asia.

13. Moving forward, a three-pronged approach is essential for effectively supporting developing countries as they tackle poverty in a changing climate: strong IDA-16 replenishment; IBRD capital increase; and predictable, reliable, and adequate flows of additional climate finance. Both development finance and climate finance must be adequate and must complement—not substitute for—each other to ensure sustained progress toward the Millennium Development Goals (MDGs), including MDG-7 for environmental sustainability. The Copenhagen COP-15 underscored the urgent need to make additional financing for adaptation and mitigation available to developing countries, while the Copenhagen Accord sent an important political signal that developed countries are prepared to mobilize \$30 billion in “new and additional” funding by 2012 for developing countries, with a view to increasing resources to \$100 billion per year by 2020. With continued uncertainty about future climate policy and financing mechanisms, including uncertainty about carbon markets, a successful GEF-5 replenishment and other immediate steps to make these additional resources a reality will shape the scale and speed of climate action in developing countries.

14. The Framework was designed to account for evolving global knowledge, policy, and finance. While its guiding principles and broad priorities proved robust, implementation experience and new developments suggest a sharper focus on select activities and outcomes within the agreed operational priorities:

- **Strengthening resilience of communities and economies to climate risk would remain a top priority.** Within this area, the WBG will step up efforts to emphasize the imperative of complementing development assistance through instruments such as IDA with specialized grant-based resources to address additional climate risks. In parallel to advocating strong replenishment of IDA-16 for core development needs, the WBG will explore options for IDA-supported programs to have access to substantial and predictable complementary adaptation funding.

Further attention will be given to helping clients and partners understand and manage the adaptation-development linkages in different contexts, particularly through learning by doing from the PPCR, sharing lessons from other adaptation-related programs, and accelerating the work on methodologies for vulnerability assessments and climate risk screening.

- **Helping countries capture the full range of benefits from sustainable development programs, including global environmental co-benefits, will grow in importance.** WDR 2010 and other evidence indicate that the most effective contribution to climate action in developing countries is sustainable development strategies that are driven by local benefits and business opportunities. The new WBG *Environment Strategy*, under preparation, will emphasize the importance of seeking synergies between local and global co-benefits, as this approach is increasingly embraced and articulated in sectoral applications. As an immediate priority for contributing to the post COP-15 discussions, the WBG will actively share experience with the FCPF, as well as broader experiences in reducing emissions from deforestation and degradation and sustainable forest management (REDD-Plus) while improving livelihoods and development opportunities for local communities. The process of mutual learning with partners and stakeholders through the FCPF has strengthened the basis for such engagement, including the design of a dedicated financing window or mechanism for REDD-Plus. Within the CIF, the Forest Investment Program (FIP), which cooperates closely with the FCPF and the UN-REDD Programme, offers another learning opportunity on how additional grant support for investments can complement capacity-building grants and performance-based incentives to enable transformational programs. Work will also continue with exploring agricultural opportunities for reducing “soil carbon” emissions while enhancing food production, with a view to including this issue in a future climate agreement.
- **The WBG will move to a more strategic engagement with private and public sector clients to take advantage of expanding low-carbon growth opportunities.** By January 31, 2010, 55 countries, developed and developing, submitted information within the UNFCCC about economy-wide emission reduction targets for 2020 and Nationally Appropriate Mitigation Actions (NAMAs) respectively, and the number of submissions has been growing. As developing countries prepare and implement their NAMAs, the WBG can assist with various aspects of this process, building on a solid analytical base through supporting some of the first low-carbon-growth studies; extensive policy, institutional development and investment support in relevant sectors; and expertise in a wide range of financial instruments. These experiences can be put together to engage with interested developing countries on such initiatives as South-South knowledge exchange based on toolkits and knowledge from the low-carbon-growth studies; technical assistance with enabling regulatory frameworks; demonstrations of how IDA, IBRD, IFC, and MIGA instruments together with a growing menu of climate finance instruments like GEF, CTF, CPF, and existing and emerging carbon market mechanisms can support NAMAs; and help to establish transparent monitoring and reporting procedures for the achieved emission reductions, differentiated between domestically and internationally funded reductions. The new *Energy Strategy* in particular will articulate how energy sector assistance will take into account low-carbon options and opportunities.

15. To support these priority actions and outcomes, the WBG will need to make substantive efforts in the following cross-cutting themes:

- **Become a premier provider of a wide range of financial solutions and expertise to help achieve “climate-smart” development.** This is a long-term objective that supports post-crisis directions articulated in the paper *A New World, A New World Bank Group*, while recognizing the essential role of other MDBs, international financial institutions, UN agencies, and private sector groups. In parallel to advocating the imperative of substantial additional climate-related

financing, the immediate priority is to concentrate on delivering resources to the recipients for specific projects through newly established instruments and programs—the FCPF and the CPF under the carbon finance umbrella, and the PPCR, CTF, SREP, and FIP under the CIF umbrella. This experience will provide a major opportunity to all participants for experimenting, learning by doing, and exploring how these instruments can be more directly linked to UNFCCC discussions and directions. Also important is to help developing countries make informed choices as they seek more direct access to climate funding by assessing how different financing programs can complement each other at the country level at reasonable transaction cost and how they perform in terms of efficiency and quick disbursement in support of recipient country priorities. Developing guidelines on how dedicated climate resources can be used to effectively leverage private sector investment will be another priority area, as will enhancing technical expertise on the use and packaging of the entire menu of instruments that are available.

- **Expand the reach of knowledge through targeted analytical and capacity-building services and South-South exchange.** As the WBG continues to increase know-how on the development and climate linkages, we will be shifting to interactive two-way learning and capacity building with developing country counterparts in which comparative advantages and partnerships are key. Greater emphasis will be given to joint efforts with clients and other partners to develop customized knowledge and technical assistance products that can quickly translate into climate action. In line with the *Transforming the Bank's Knowledge Agenda* paper, significant focus will be on sharing global knowledge, with particularly attention to South-South cooperation. Interest in South-South knowledge exchanges is particularly strong in the climate change area, where developed country experience has a limited value complicated by political considerations, while significant innovation is happening in developing countries. There is a need for more emphasis, instruments and incentives for supporting this exchange.
- **Strengthen dialogue and outreach.** The WBG will deepen its dialogue with client countries through stronger engagement by country offices and country teams and through mutual sharing of experiences and lessons. It will work to bring together diverse stakeholders at the global, regional, national, and subnational levels to facilitate integration of different perspectives.

16. SFDC experience has demonstrated the WBG's capacity to deliver and respond to multiple demands, but a stronger enabling environment will accelerate progress. While increasingly prominent, many activities still remain at a pilot or relatively modest scale compared to the overall WBG operations. Increased access by developing countries to dedicated climate-related resources for adaptation and mitigation will be necessary to further scale up WBG support to its clients, including through helping leverage the IDA and IBRD platforms, IFC instruments, and significant private sector resources. But as the knowledge base grows and client demand increases, even making the most of the currently available instruments will require fuller integration of climate-related development work into regular processes and performance indicators, along with investments in institutional knowledge and skills. The World Bank Group has mobilized and will continue harnessing its capabilities to deliver effective support to developing countries and to help the global community tackle the challenges of the twenty-first century.

**Development and Climate Change:
A Strategic Framework for the World Bank Group
Interim Progress Report**

1. INTRODUCTION

- ❖ *Endorsed by the Development Committee on October 12, 2008, the Strategic Framework for Development and Climate Change articulates objectives, guiding principles, areas of focus, and major initiatives to guide the World Bank’s operational response for the next three years*
- ❖ *This interim report summarizes progress made since the Framework’s endorsement, and it updates directions and milestones, taking account of the evolving global context*
- ❖ *A completion report will be prepared for Annual Meetings 2011*

1. Developed through extensive global consultations, the Strategic Framework for Development and Climate Change (SFDCC) guides various entities and institutions of the World Bank Group (WBG)—including the International Finance Corporation (IFC), the Multilateral Development Agency (MIGA), and the World Bank—toward achieving the twin objectives of:

- Effectively supporting sustainable development and poverty reduction in developing countries as climate risk and climate-related economic opportunities arise
- Facilitating global action and interactions by all countries.

2. The Framework’s implementation has focused on the six action areas that are closely aligned with the Bali Action Plan adopted at the 13th Conference of Parties (COP) of the United Nations Framework Convention for Climate Change (UNFCCC) and that support both adaptation and mitigation-related measures:

1. Support climate actions in country-led development processes
2. Mobilize additional concessional and innovative finance
3. Facilitate the development of market-based financing mechanisms
4. Leverage private sector resources
5. Support accelerated development and deployment of new technologies
6. Step up policy research, knowledge, and capacity building.

3. The SFDCC was adopted as a living document, mindful of the dynamically evolving nature of the global climate dialogue and knowledge. Implementation to date has focused on learning and capacity building and on supporting “no-regrets” solutions—that is, actions whose benefits to developing country clients are robust under the uncertainties about future climate policies and impacts. Responding to client demand and in support of the UNFCCC negotiations, the WBG continues to adjust its course of action,

Adhering to the principles, policies, and directions of the UNFCCC process, the SFDCC reaffirms the WBG’s core mandate of supporting growth and overcoming poverty in developing countries while recognizing the added costs and risks of climate change and an evolving global climate policy. Financing for adaptation and mitigation must not divert resources from the core development needs and from actions toward achieving the Millennium Development Goals. Developed countries are to lead the global effort to address climate change by significantly reducing their emissions and transferring finance and technology to support developing country actions. Adaptation is a priority for many WBG clients. The WBG is committed to building partnerships with the other actors in the international climate change arena in order to have a stronger developmental impact.

maintaining flexibility to incorporate new developments and lessons as international negotiations, scientific knowledge, development policy research, and implementation experience evolve.

4. SFDCC adoption facilitated and solidified climate action across the WBG. Its preparation and early implementation phase benefited from the already growing climate-related program across the WBG, with a robust pre-existing pipeline of analytical and investment work based on the Clean Energy Investment Framework (CEIF) and prior initiatives. While this report largely focuses on new developments since the SFDC endorsement, it also attempts to capture its impact on the activities that were under way at that time and for which the SFDC acted as a catalyst by increasing visibility and profile, raising awareness of WBG operational staff and client counterparts, and providing new knowledge and resources for addressing climate change–related risks and economic opportunities in core development operations. This in turn has heightened expectations from our clients for further support, with a focus on moving from a phase of developing strategies and building knowledge to translating such knowledge into specific actions and results on the ground.

5. Two main developments have affected progress and the future direction of WBG support to climate action: (1) the 2008 global financial crisis and the response by the international community and (2) the UN-led process of international climate negotiations.

6. Coming on the heels of the food and fuel crises, the 2008 global financial crisis quickly transformed into an economic crisis for WBG client countries, with a disproportionate impact on the poor and vulnerable. While it shifted attention and resources away from the evolving global efforts to address climate change, it also underscored the potential of climate change to further aggravate the economic impacts, particularly on the poor and vulnerable in developing countries, given their lack of resources and capacity. The crisis affected developing countries through dwindling capital flows, huge withdrawals of capital that led to losses in equity markets, and skyrocketing interest rates. Like climate change, the crisis was a result of market and regulatory failures in developed countries. The financial crisis has profoundly shaken the foundations of global financial and economic governance established in the last century and led to the emergence of the G20—a group of major developed and developing countries and the European Union¹—as the primary global economic forum. It has also focused attention on reform of the multilateral development banks (MDBs), including the WBG, particularly on issues such as governance and capital adequacy. Both of these issues are relevant for the WBG's ability to scale up its role in supporting climate action.

7. The WBG responded to the financial and economic crises by rapidly scaling up support to affected countries, increasing its International Bank for Reconstruction and Development (IBRD) lending from \$13.5 billion in fiscal 2008 to almost \$32.9 billion in fiscal 2009 (with a view to reach \$100 billion over three years), and advancing International Development Association (IDA) resources. The timing of the global financial crisis—which coincided with the growing momentum to address the impending threat of climate change—focused the attention of some national governments and the global development community on seeking complementarities between the respective paths to recovery and future economic resilience. While the crisis led to a substantial increase in demand for Development Policy Operations (DPOs), a special effort was made to ensure that critical infrastructure investments—necessary for sustaining economic recovery and growth in the medium term—were not neglected. Coupled with the availability of additional climate financing, this has placed an emphasis on the so-called greening infrastructure agenda as part of SFDC implementation. Scaled-up lending in response to the crisis has also raised the question of the long-term adequacy of WBG capital resources, notably to provide sufficient underlying finance for blending with the anticipated increased flows of specialized climate

¹ Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Republic of Korea, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, and United States, plus the European Union.

finance in transformational investments and programs, mainly in infrastructure, along a “climate-smart” development path.

8. The year 2009 witnessed a concerted effort by the international community to achieve a strong outcome at the Copenhagen Conference of Parties (COP-15) that would enhance implementation of the UNFCCC, based on the elements of the Bali Action Plan. While the UNFCCC negotiations process has remained the leading forum, several other processes and forums—at the global and regional level—have stepped in to add weight and support for the effort, including a heads of state initiative by the United Nations Secretary-General and the Major Economies Forum by the United States. A notable development was the emergence of Africa as a united and distinct voice in climate negotiations. With the financial crisis increasingly under control, the G20 has engaged in exploring finance options for addressing climate change. Major conferences and other meetings on various aspects of the climate change agenda have been held by a cross-section of stakeholders, such as parliamentarians, city mayors, community leaders, private sector executives, academics, and civil society. All of these have resulted in the rapidly increasing awareness and exposure of many WBG clients, including government counterparts at the highest level, with an increased pressure on the WBG to support these multiple constituencies.

9. The COP-15 in Copenhagen highlighted the complexity of the issues, stressing the value of the WBG’s increasing focus on helping its developing country partners and clients achieve their priority economic and poverty reduction objectives along a lower emission growth path that also strengthens climate resilience and the capability to deal with the impacts of future climate change. It further pointed to the need for continued WBG engagement in facilitating global action and helping articulate the needs and views of developing countries. The unprecedented engagement and participation of heads-of-state further affirmed the importance that climate change is taking in the global development agenda. While not resulting in a legally binding agreement, Copenhagen sent several important signals that can be expected to inform the preparations for the Mexico COP-16 in November 2010 and that have implications for the WBG (Box 1).

Box 1. Several COP-15 Outcomes Are Important for the WBG’s Development Mandate

- Negotiations continue in two tracks: the Kyoto Protocol and the Long-Term Cooperative Action. A significant role will remain for market instruments, including scaled-up mechanisms.
- By January 31, 2010, 55 countries, developed and developing, submitted economy-wide emissions and information about Nationally Appropriate Mitigation Actions (NAMAs) respectively.
- Developed countries pledged to raise a “new and additional” \$30 billion through 2012 for immediate action in developing countries, with a “balanced allocation” between adaptation and mitigation that could be channeled through existing bilateral channels and international institutions.
- Developed countries indicated commitment to mobilize \$100 billion annually for developing countries by 2020.
- There is growing support and funding commitments for a new mechanism to finance REDD-plus.
- There is considerable consensus about the immediate need for a technology transfer mechanism.
- There is continued debate on the definition of what constitutes adaptation costs, NAMAs, and the ways to raise and manage climate finance.

10. In another development, the Global Environment Facility (GEF)—an operating entity of the financial mechanism of the UNFCCC—is in advanced stage of its fifth replenishment, with a final pledging session scheduled for the first part of 2010. Funding scenarios of around 50 percent increase compared with the previous replenishment will allow GEF-5 to expand its support to recipient countries with capacity building, climate-friendly technologies, and sustainable development, opening further opportunities for the WBG-GEF partnership to leverage and augment the impact of its resources.

11. Going forward, progress in making additional climate-related resources that were pledged by developed countries in Copenhagen available to developing countries, the outcomes of the COP-16 in Cancun in November 2010, IDA16 replenishment and IBRD capital review, the WBG voice and participation reform, and internal reforms to improve operational efficiency are all important processes that are relevant for SFDC implementation. The launch of *World Development Report (WDR) 2010: Development and Climate Change* in September 2009 that reaffirmed climate change as a major development challenge, the work on *Post-Crisis Directions* for the WBG, and the new *Knowledge Agenda* have further contributed to refining future priorities.

12. This interim progress report reviews and summarizes the WBG's progress with implementing the SFDC. It further discusses emerging lessons, implications, and challenges associated with relevant global developments and it reviews milestones:

- Sections 2–4 describe implementation progress across six action areas, with a focus on SFDC objective one, to support sustainable development and poverty reduction under climate constraints.
- Section 5 reports on the WBG's work to play a global role, with the focus on strengthened partnerships and strategic engagement to facilitate global climate action.
- Section 6 discusses internal arrangements and results measurement.
- Section 7 summarizes emerging lessons and new directions.

Annex 1 presents the status of main actions and milestones to which the WBG committed under the SFDC, while Annex 2 outlines the IFC climate initiatives and Annex 3 summarizes World Bank (WB) regional climate change–related strategies and major work. Annex 4 outlines the work undertaken under the Climate Investment Funds, and Annex 5 updates information on the main instruments for climate finance.

2. IMPLEMENTATION PROGRESS: SUPPORTING COUNTRY-LED CLIMATE ACTIONS

- ❖ *Over 63 percent of all new Country Assistance or Partnership Strategies substantively addressed climate-related issues in FY09 and there is a positive trend in FY10.*
- ❖ *Scaled-up support to adaptation in core development programs in water, agriculture, and natural resource management, using a combination of instruments and funds; increasing integration with disaster management.*
- ❖ *Eighty-eight percent annual increase in new renewable energy (RE)/energy efficiency (EE) financing between FY08–09, with IFC new RE commitments increasing fivefold.*

2.1 Strategy

13. The Framework’s implementation follows a country-led approach that is driven by the needs of developing country partners and clients. Developing countries are already taking action toward low-carbon and climate-resilient development. The WBG has focused on helping its clients acquire additional financial resources, technology, technical assistance, and knowledge for adaptation and mitigation, as well as internalizing them in their national, regional, and development plans.

14. In response to the intensified interest and requests for support from public and private sector clients, the IFC, MIGA, and all World Bank Regions developed climate change strategies or/and business plans that customize the SFDC umbrella principles and priorities (see Box 2 and Annex 2). Reflecting the diversity of WBG clients, the focus of these operational strategies or business plans ranges from energy efficiency, clean production, and promotion of clean technology in private sector operations by the IFC to the need for strengthening climate resilience and capacity to manage climate risks in Africa. Climate change issues have been addressed by the Sustainable Infrastructure Action Plan and in the WBG’s Urban Strategy, while the new *Energy and Environment Strategies* under preparation are incorporating climate change as a major dimension. A new *Information and Communication Technology Strategy* is exploring how it can support WBG clients in dealing with climate change risks.

Box 2. WBG’s Strategic Approaches to Climate Change: Global Problem, Diverse Clients

Africa and Climate Change. Increasing incidence of extreme weather events poses new risks and challenges, particularly in agriculture, water management, and infrastructure in Africa, impacting food security and the progress toward meeting the Millennium Development Goals (MDGs). The WBG response to climate change in Sub-Saharan Africa is anchored in supporting core development priorities. The climate change strategy for Sub-Saharan Africa, *Making Development Climate Resilient*, calls for supporting climate in country and regional programs along four pillars: (a) making adaptation and climate risk management a core developmental component, (b) taking advantage of mitigation opportunities, (c) focusing on knowledge and capacity development, and (d) scaling up financing opportunities. In-depth analytical work supports the strategy, including on climate change impacts on transport, land and river basin management, and identification of deforestation drivers in the Congo basin.

IFC and Climate Change: Having designated climate change as a corporate strategic priority, the IFC is actively increasing its climate-positive investing in all sectors of the economy and developing new programmatic and financial innovations. IFC plans to grow its climate change–related activities from 10 percent today to 20 percent of its overall activities by 2012, building on past records in energy efficiency, cleaner production, and renewable energy as well as through leadership in designing climate risk measurement and tools for investors. The IFC’s diverse climate program centers on: (a) promoting climate-friendly investments using commercial funds, (b) catalyzing cleaner production through a combined package of audits and financing to improve energy and resource efficiency, (c) investing in early-stage clean technology companies and private equity funds, and (d) supporting innovative concessional financing, blending GEF and Clean Technology Fund (CTF) financing, to support commercialization of sustainable energy solutions.

15. **The uptake of climate-related issues by client countries in their dialogue with the WBG since FY09 to date has been impressive, with over 63 percent of all new Country Assistance or**

Partnership Strategies (CASs/CPSs) approved in FY09 substantively addressing such issues, particularly adaptation.² There is a positive trend in FY10. Prepared in close consultation with developing country governments and other stakeholders, these strategic documents form the foundation of the WBG's support to country-led reforms and programs. Client country priorities remain focused on climate risks, particularly linked to natural disasters and sustainable natural resource management, as well as energy efficiency, renewable energy, and scaled-up access to climate finance (Box 3). Corporate review functions have been expanded to provide regular input on climate change issues in the CAS review process.

Box 3. Climate Issues in Country Assistance/Partnership Strategies

Guyana. Guyana is a coastal country with about half its population living below sea level. About 85 percent of the country is forested, but the pressures on forests are rising. The new CAS stresses the need for climate change adaptation and the opportunity to contribute globally to climate change mitigation by reducing emissions from deforestation (and getting economic benefits in return for such eco-services). The CAS provides for an IDA Forest, Climate Change, and Communities project that will complement the upcoming Forest Carbon Partnership Facility (FCPF) grant. (Guyana was among the first group of countries to apply and be selected into the FCPF in July 2008.)

Burkina Faso. The CAS for FY10-12 views climate change as integrally relevant due its aggravating impact on the country's development challenges, especially in the agriculture sector. In the longer term, efforts to stem climate change will be important, including through regulatory mechanisms to encourage investments in renewable energy and reduce urban pollution and through the exploration of carbon finance opportunities.

Cameroon. The CAS incorporates climate change as a new area of focus to be addressed over time. While detailed sectoral interventions have not been identified yet, a "vulnerability assessment and adaptation strategy" is included in the CAS. In addition, the CAS program will focus on incorporating hydrologic risk in hydro development, including through the Lom Pangar Reservoir.

India. The India CAS for 2009–12 identifies the following areas of engagement on climate change issues:

(a) Climate Change Adaptation: Priorities focus on enhancing knowledge of sectoral vulnerabilities; increased investments in climate-resilient infrastructure and livelihood; and high vulnerabilities, particularly relating to water resources, agricultural yields, and coastal areas.

(b) Climate Change Mitigation: Enhanced knowledge of mitigation options; increased investments in low-carbon growth; programmatic carbon finance; and the use of carbon finance mainstreamed across WBG operations.

Morocco. The Country Partnership Strategy, currently under preparation, is considering climate change and sustainable development as one of its pillars. The World Bank is supporting the government in developing a multisectoral strategy that enhances climate change resilience and promotes low-carbon growth.

Vietnam. The Country Partnership Strategy Progress Report for FY07-11 highlights Vietnam's vulnerability to floods, typhoons, a rise in sea level as well as changes in temperature and rainfall patterns due to climate change. New areas of engagement include various studies on the economics of sectoral and spatial adaptation to climate change and prioritization of investments for climate change mitigation and adaptation.

Yemen. Facing severe water shortages, in 2009 Yemen's cabinet endorsed a National Adaptation Plan of Action that identifies priority adaptation options, which they can combine with Vision 2025, the country's Poverty Reduction Strategy.

16. The WBG has placed an increasing focus on regional programs and regional coordination.

With issues such as melting glaciers, which impact the availability of water across many geographical boundaries, there is a need for greater regional dialogue as well as cooperation on a programmatic scale that spans a range of projects addressing climate risk management. In Africa, the WBG actively engaged in designing an African regional forum on agriculture, climate change, and food security in partnership

² Examples include Argentina, Armenia, Botswana, China, Costa Rica, Croatia, Djibouti, Egypt, Guatemala, Guyana, Haiti, India, Indonesia, Moldova, Paraguay, Peru, Philippines, Poland, Rwanda, and Yemen.

with the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development, and the World Food Programme to assist ministers of agriculture in the region in responding to the challenges that climate variability and change pose to rural poverty alleviation. A subregional study of implications of climate change in the water and agriculture sector in Yemen and Djibouti has added to cooperation and understanding in the Middle East and North Africa (MNA) Region. The South Asia Water Initiative is a mechanism to coordinate—and harmonize donor interest in supporting—activities in the water sector to address water scarcity, water quality degradation, and uncertainties of climate change, among others, at the international river basin level. Regional approaches are equally important for making possible lower-carbon energy development programs at scale, such as large hydropower projects in Africa, the Concentrated Solar Power (CSP) initiative in the Mediterranean, or expanding gas trade in Asia.

17. Growing client demand is positioning Development Policy Operations (DPOs) as a major vehicle for supporting clients' climate change policy and programmatic initiatives, with reduced transaction costs and simplified access. In FY09 alone, a number of new DPOs include climate change considerations, amounted to \$4.2 billion, increasing to \$6 billion when the first six months of FY10 are added. These include, among others, two environment sector Development Policy Loans (DPLs) in Mexico with a strong focus on policy and institutional measures, whose lending specifically targets climate change at more than \$325 million; the Sustainable Environmental Management DPL in Brazil at \$2 billion, supporting climate change actions at inter-sectoral and intra-sectoral levels, including natural resources, water, sanitation, and energy; a series of Energy and Environment DPLs in Turkey, and the Morocco Solid Waste Management DPL, which is the first development policy operation linked to a carbon finance program. New DPOs focused on climate change-related policies and institutional measures or having components of this nature are being prepared for India, Indonesia, and Nigeria, with more operations expected by the regions.

18. The diverse needs and capacities of different clients have led WBG to utilize a wide range of instruments to provide customized services. In addition to finance, technical assistance emerged as an important tool for working with middle-income countries and the private sector, including through fee-based services. Thus, Reimbursable Technical Assistance plays a significant role under the new Algeria CSP and also includes linking technical assistance on environment issues with climate change instruments, for example, in the solid waste sector. A similar model enables the Bank Group to assist oil-producing client countries in the Middle East to address adaptation needs. Demand is increasing for advice on policy and regulatory issues that facilitate “climate-smart” growth, including the issues of pricing, taxation, and subsidy.

2.2 Strengthening Resilience to Climate Risks

19. The WBG has intensified its efforts to support climate risk management in core operations, increasingly linking immediate priorities with measures to adapt to longer-term impacts. Projects that address climate risks span a range of interventions across all client countries and use a variety of financial instruments and facilities, as well as their combinations. While driven by the priority economic and social objectives, such as food security, these projects give heightened attention to current and future climate risks as critical factors for effectiveness and sustainability. Examples range from agriculture and rural development projects considering adaptation to increasing climate variability, such as floods and droughts, in Ethiopia, Malawi, and Nicaragua to natural resources and water resource management programs dealing with the impact of rapid glacier retreat in the tropical Andes or current and future irrigation water deficits in Morocco. Add to this improving coastal and marine biodiversity to increase resilience in India, the Maldives, and the Gulf of Mexico; strengthening hydromet capacity in Central Asia; supporting adaptation of human settlements in Thailand, Vanuatu, and Vietnam; and addressing the impact of extreme climate events on the health of young children in Sub-Saharan Africa (Box 4).

Box 4. Scaling Up Adaptation Efforts Across Sectors and Regions—Highlights from FY09

Enhancing livelihood protection through drought financing in Ethiopia: The government of Ethiopia, the World Bank, and the World Food Programme collaborated to establish the Productive Safety Net Program, designed to deliver timely livelihood protection to the chronically food insecure.

Increasing productivity and tolerance to climate shocks through sustainable land and rainwater management in Malawi: As part of the Agricultural Development Project Support Program, financed in partnership with GEF, a conservation farming component aims to improve water and nutrient buffering capacities of the soil to increase productivity, as well as increase crop tolerance to climatic variations using fewer resources.

Vanuatu Adaptation Project: This GEF-supported project aims to improve the livelihoods of upland and coastal communities by increasing their climate resilience to the impacts of climate variability and change and weather-related hazards.

Hydromet strengthening in Central Asia: A regional project to strengthen hydro meteorological capacity is planned for end FY2010 to finance management systems, data gathering, and equipment.

Nicaragua National Seed System Strengthening: This will strengthen seed producer organizations, provide technical assistance, develop seed storage capacity, improve seed certification, develop a revolving fund to finance seed production, and enhance seed testing facilities.

Adaptation to Climate Impacts in the Gulf of Mexico Wetlands: This formulates and implements adaptation policy actions in representative systems of Gulf of Mexico wetlands to protect their environmental functions and biodiversity from climate change-related impacts.

Morocco Integrating Climate Change in Development Planning and Disaster Prevention to Increase Resilience of Agricultural and Water Sectors (2010): This will assist the government of Morocco in mainstreaming climate change in the national development planning process by improving the understanding of climate change implications for high-level strategic development planning and through pilot work to enhance climate resilience in the agriculture and water sectors.

Yemen Adaptation to Climate Change in the Rainfed Highlands (FY10): Using traditional knowledge, the project supports enhancing the adaptation coping strategies for farmers who rely on rainfed agriculture in the Yemen highlands through biodiversity conservation and utilization.

Maldives Environment Management Project: This \$13.5 million IDA credit is helping the government to effectively manage environmental risks to coral reefs and other marine habitats.

Technical assistance to Sunderbans, India: This is being provided on economic development and adaptation in the world's largest halophytic mangrove forest.

20. Responding to client priorities, the WBG has strengthened the operational links between climate adaptation and disaster risk management (DRM). Increasingly, risk reduction and risk transfer options are seen as integral to national climate adaptation programs, as reflected in the Climate Change Strategy for Africa. An important partnership of the World Bank, the United Nations International Strategy for Disaster Risk Reduction, and an expanding group of donor governments, the Global Facility for Disaster Reduction and Recovery (GFDRR) has further expanded its support for capacity development, tools, and methodologies, and knowledge sharing and generation activities to facilitate country-led initiatives for improved climate and disaster risk management (Box 5). Close to two-thirds of all GFDRR-financed technical assistance initiatives have a focus on adaptation to climate change, providing more than \$27 million in close to 90 countries across all Bank Regions since the GFDRR's inception in 2006. This support leveraged an additional \$17 million in cofinancing from development partners, as well as much larger amounts in World Bank investments. Increasingly, risk reduction and risk transfer options promoted by GFDRR—such as Catastrophe Risk Insurance Facility for

South Eastern and Central Europe, a catastrophe deferred drawdown option (CAT-DDO), or the launch of the MultiCat platform—are seen as integral to national climate adaptation programs.

Box 5. Disaster Response Management and the Climate Change Adaptation Nexus

The GFDRR serves as a knowledge hub and catalyst to promote the integration of hazard risk management into the World Bank’s development efforts. As such, climate change adaptation is an integral part of GFDRR’s mission and business plan, which includes mainstreaming disaster risk reduction and climate change adaptation in country development strategies and operations by supporting a country-led and managed implementation of sound risk management principles. Disaster risk reduction serves as a first line of defense in adapting to climate change; therefore, GFDRR has been financing disaster risk reduction programs that build adaptive capacities in its 20 priority countries. GFDRR has also been facilitating the development of integrated approaches and coordinated implementation of national disaster risk reduction and climate change adaptation interventions.

In FY09, 12 GFDRR projects of over \$4 million focused on climate change adaptation issues in Africa Region (AFR), East Asia and the Pacific (EAP), Latin America and the Caribbean (LCR), MNA, South Asia (SAR) and at the global level, including the following:

- A \$250,000 grant helps the cities of Casablanca, Tunis, and Alexandria to formulate action plans—a critical first step toward increasing their resilience to climate change and disasters. Disaster risk reduction and climate change adaptation components are managed as one integrated agenda. The resulting risk management approach generates social and economic impacts in the short term, while reducing vulnerability to long-term climate change.
- In Lao PDR, a \$1,215,000 grant is assisting the country to take the next step in operationalizing and implementing the national strategic plan for disaster management (with a focus on droughts and floods).
- Disaster risk management country plans are under preparation in nine African countries, analyzing the natural hazards and institutional environment and proposing tailor-made funding to address disaster risk reduction and adaptation to climate change. The plans are to leverage over \$35 million of implementation financing.
- In early 2008, GFDRR provided grants totaling \$665,000 to the Europe and Central Asia Region to address DRM and climate change adaptation issues in Southeastern Europe. A year and a half later, this initial investment has mobilized nearly \$60 million in World Bank funding for disaster risk mitigation projects in Albania, Croatia, and Moldova and €7 million in funding for DRM projects from bilateral and other multilateral donors. It has catalyzed joint DRM initiatives among countries in the region and has generated innovative approaches to DRM that are being replicated elsewhere.

21. The WBG has advanced its work on assessing and addressing climate risks and uncertainties for projects with long life spans. Early experience pointed to the need for more efforts to translate substantial modeling work and emerging knowledge into operational guidance and tools. There is also increasing understanding of the need to complement risk assessment of select investments with a more comprehensive vulnerability assessment model that is undertaken on a sector-wide scale or that cuts across sectors such as water, energy, agriculture, environment, and social development at the local level. Tools and methodologies are under preparation and testing in the agriculture, water, energy and urban sectors. The IFC has initiated a pilot program to evaluate methodologies for identifying the financial implications of climate risk. Studies of projects in several sectors and regions began in FY09 for completion in FY10.

22. The Water Sector portfolio review suggests an increasing level of attention to climate change. Of all active projects approved in FY06–08, 35 percent (191 projects) are considered strategies to reduce the

impacts of climate variability and change, including adaptation and/or mitigation measures. The primary focus is on adaptation, with 58 percent addressing climate variability and change through adaptation measures, 31 percent considering mitigation measures, and 10 percent focusing on both. At the regional level, LCR had the largest portfolio, with adaptation measures (28 percent), followed by SAR (25 percent) and MNA (25 percent). The pipeline shows increased attention to the adaptation agenda for most regions, with MNA and EAP in the forefront in terms of considering adaptation measures in their overall pipeline of projects. There is also a growing percentage of projects with clearly stated climate objectives, most of which are in LCR, SAR, and EAP.

2.3 Realizing Multiple Benefits

23. Agriculture and rural development work has increasingly focused on supporting climate-resilient economic growth and the linkages between climate risk management and food security. Increasing productivity and reducing risk and variability are among the five focal areas of the Agriculture Action Plan for Fiscal 2010–12, which aims at promoting more and better investments to harness the potential of agriculture for poverty alleviation, economic growth, and environmental sustainability. An integral part of this objective is the development of state-of-the-art knowledge and assessment technologies for reducing emissions and enhancing carbon sequestration in agricultural landscapes (Box 6). While increasing agricultural productivity, food security, and climate resilience, this initiative aims at designing approaches and methodologies that will allow for measuring, reporting, and verifying reductions in greenhouse gases (GHGs) in agricultural landscapes so that agricultural carbon can be included in future international mechanisms. Piloted in the innovative Kenya Agricultural Carbon Project,³ this work is based on the recognition that, as increased soil carbon improves the productivity of agricultural land, this is a win-win opportunity, addressing not only the climate change challenge but also the need to strengthen the agricultural sector in developing countries.

Box 6. Programmatic Approaches to Addressing Climate Change in Agriculture and Rural Development

Hydrological modeling system to address climate change in agricultural and natural resource management projects. The objective of this cross-sectoral and cross-regional initiative is to facilitate land use planning at the watershed and community levels, primarily taking account of changes in the water cycle that will result from climate change. Landscape and land use characteristics as well as hydrological data derived from satellites and site surveys are fed into a computer program for analysis of alternative land use options. This initiative includes the Bhutan Sustainable Land Management Project, the Market-led Smallholders Project in the Zambezi Valley (Mozambique), the Lake Victoria Environment Monitoring Project, the Landscape Management Project in Rwanda, and the Espirito Santo (Brazil) Biodiversity and Watershed Conservation and Restoration Project.

Methane mitigation in agriculture. Through the Black Sea-Danube Nutrient Pollution Control projects, the WBG is working with a number of countries in the Eastern Europe and Central Asia (ECA) Region to identify options for scaling up and supplementing existing manure management composting practices in order to integrate climate change mitigation efforts. These new initiatives build on successful experiences in Georgia and Armenia that demonstrated biogas conversion on a micro-household-level scale. The same projects also invest in re-vegetation and the use of vegetative buffers to control nutrients, which creates additional GHG-reduction co-benefits.

Adaptation in the agriculture sector in Africa. A newly established trust fund for Integrated Land and Water Management for Adaptation to Climate Variability and Change (\$11 million) will support scaling up the development of lessons, guidelines, and best practices for improving adaptation and resilience to climate change of land and water management systems, mainly in the agricultural sector.

24. The WBG's growing engagement in sustainable forest management exemplifies how the climate agenda can help capture the full range of social, economic, and environmental benefits, from local

³ Blending financing from the BioCarbon Fund.

to global. The Bank Group has stepped up its efforts to build partnerships with counterparts such as UN-REDD and The Nature Conservancy to provide incentives and investment finance for REDD-Plus activities that reduce emissions from deforestation and forest degradation and improve forest management.⁴ The Forest Investment Program (FIP) and the Forest Carbon Partnership Facility, described in Chapter 4, are major complementary initiatives that seek to strengthen linkages among sustainable forest management, improved livelihoods, and climate. The WBG is also supporting—working with the International Union for Conservation of Nature (IUCN), FAO, and International Institute for Environment and Development—the development of the Growing Forest Partnerships initiative that is currently being piloted in the Africa Region, Ghana, Guatemala, and Mozambique and that would create networks through which national climate change-related policies and strategies could be discussed and developed in a participatory way.

Box 7. Promoting Urban Energy-Efficient Programs and Sustainable Energy Planning

The *Energy Efficiency Cities Initiative* (EECI) was launched in December 2008 to help promote energy-efficient programs and sustainable energy planning among developing country cities around the world. Supported by the Energy Sector Management Assistance Program, the initiative rests on the recognition that cities are an important engine for economic growth and that rapid urbanization will lead to massive requirements for new energy sources. To this end, EECI supports city-level capacity in identifying and prioritizing energy efficiency interventions by developing and sharing analytical and planning tools; spurs city energy efficiency activities by providing small grants to cities to test new approaches and by sharing good practices; and helps develop large-scale city energy efficiency investments by assisting World Bank operational units to design, package, and finance urban energy efficiency. Project preparation work is complete for two EE urban components in China. New project development efforts in the West Bank, Ukraine, Armenia, India, Mexico, and South Africa are now under way.

Ecological Cities as Economic Cities (Eco² Cities) bridges the urban, transport, energy, water, and environment sectors of the World Bank. The initiative provides cities with an analytical and operational framework that offers strategic guidance on integrated and sustainable urban development. Its objective is to enable cities to harness the many benefits of ecological and economic sustainability. The Bank is now taking a strategic approach toward promoting this initiative in China, Vietnam, Indonesia, and the Philippines. The Eco² framework is flexible and easily customized to the context and priorities of each city, helping cities chart their own unique action plan or "Sustainable City Pathway," consisting of a coordinated and sequential program of important reform, institutional, and policy measures; investments in specific "catalyst" projects; and capacity building of institutions and professional staff. Importantly, many of the actions, reforms, and projects undertaken by a city using this platform can be linked to the availability of new funding for sustainability and climate change through sources such as GEF grants, the CTF funds, and carbon finance.

25. The Bank is pursuing analytical and pilot work to identify ecosystem-based adaptation options and biodiversity mitigation opportunities. Pilot work—such as the Wetlands Carbon Market Development for Funding Coastal Community Adaptation in Sub-Saharan Africa Project—explores opportunities for developing and achieving carbon offsets through wetland protection and restoration that can simultaneously provide incremental funding for adaptation. A new initiative under the PROFISH partnership is directing \$500,000 into research and technical assistance to integrate climate change into fishery reforms in selected developing countries, with some 70 percent of the resources targeting Sub-

⁴ As provided in the UNFCCC Bali Action Plan, REDD-plus refers to “policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation (REDD) in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.”

Saharan Africa. Within the overall strategic approach, the focus of this work is on building healthy marine economies, food security, ecosystem resilience, and marine and wetland carbon capture and sequestration.

26. Urban Environment, Climate Change, and Disaster Management—one of the five core business lines of the new Urban Sector Strategy. The strategy promotes a focus on urban form and design to achieve efficiency gains, reduce a city’s vulnerability to climate risks and carbon footprint, and take advantage of the co-benefits of adaptation and mitigation action. In line with this focus, a Climate Resilient Cities program—which combines climate change adaptation and disaster risk management at the city level—has been piloted by the East Asia Region in three cities in Vietnam. Each city develops its City Information Base and Local Resilience Action Plan, identifying priority adaptation actions to be undertaken in the short, medium, and long term. Significant work, with a focus on adaptation of coastal cities in particular, is being undertaken in Egypt, Tunisia, and Morocco, as well as in EAP and SAR. The Bank Group is also supporting energy efficiency initiatives in cities and integrated approaches to sustainable urban development (Box 7) and is helping pilot a GHG index for cities.

2.4 Supporting Low-Carbon Growth Opportunities

27. Fiscal year 2009 was marked by major progress in scaling up financing for energy efficiency and new renewable energy. New RE and EE financing increased to \$3,128 million from \$1,665 million in fiscal year 2008 — a considerable 88 percent increase that significantly exceeds SFDCC commitment of a 30 percent annual average increase for 2009–11. Adding \$177 million of large hydropower projects brings total RE/EE financing in fiscal year 2009 to an all-time high of \$3,305 million. IFC’s volume of RE/EE investment during that year was the largest so far, at \$1.036 million. The WBG share of commitments for RE and EE has risen steadily relative to total energy commitments, reaching 36 percent in the past five years compared with 13–20 percent in the preceding years and exceeding 40 percent in 2009. The very first CTF project, the Turkey Private Sector Renewable Energy and Energy Efficiency Project, provided another \$100 million of financing for RE. This reporting is not counting growing support for EE/RE through DPOs.

28. Our current goal is to increase RE/EE and other “low-carbon”⁵ commitments to 50 percent of all WBG energy financing by end FY11, with the remaining financing mainly supporting transmission, distribution, and policy reforms. WBG will continue to support natural gas development as an important transitional energy source. Despite a long-term trend towards increasing investment in RE and EE, the WBG results for FY10 will reflect the impact of the global financial crisis manifested in a lower share of RE/EE financing. This is in large part due to the impact of the crisis on the ability of African countries to finance their conventional energy development programs. Global economic recovery and the impact of new instruments such as the CTF are expected to restore an upward trend in RE/EE financing during FY11. To support long-term progress, a five-year RE and EE operational strategy is being developed with a view to being effectively integrated into the broader WBG Energy Strategy (Box 8).

29. WBG support for new renewable energy was strong in fiscal 2009 (Box 9). Overall, WBG new RE financing tripled from \$473 million to \$1.4 billion between FY08-09. IFC investments in new RE quintupled from \$115 million in FY08 to \$587 million in FY09, while WB financing for new RE tripled from \$269 million in FY08 to \$840 million in FY09. To further strengthen work in promoting renewable energy, a Senior RE Adviser is being recruited.

⁵ “Low-carbon” is defined as: renewable energy projects (including all sizes of hydropower projects), energy efficiency, power plant rehabilitation, district heating, biomass waste-fueled energy, and gas-flaring reduction.

Box 8. Energy Sector Strategy

A new WBG Energy Sector Strategy—which is currently going through a consultation process after the concept note was approved by the Committee on Development Effectiveness in July 2009—recognizes climate change among the key drivers transforming the global energy sector. It aims to articulate a way forward to help developing countries achieve the twin objectives of improving access to and reliability of energy supply and facilitating a shift to a more environmentally sustainable energy development path.

The strategy allows the WBG to tailor approaches to different country circumstances. It further proposes to promote the effective use of climate finance. Strategy development is supported by extensive global consultations with all stakeholders to promote complementary roles of the public and private sectors, facilitate the use of innovative blending of various financial products, and provide renewed attention to incentives for EE and RE and to pricing issues. The *Energy Strategy Approach* paper is posted on the Web site, providing a good opportunity for external stakeholders and partners to review the document ahead of the consultations, as well as enabling them to gain a broad understanding of the WBG's engagement in the energy sector. The strategy is expected to be finalized in early 2011.

30. In fiscal 2009, lending to EE increased to \$1,701 million from \$1,192 million in fiscal 2008. The WBG is moving to strategically help identify energy efficiency opportunities and expand its portfolio, acting upon the directions of the SFDCC and the recommendations of the Independent Evaluation Group evaluation (Box 10). The IFC is working to expand its lending for energy efficiency across its activities. For instance, IFC conducted a systematic review of possible opportunities for energy efficiency work/investment among its chemical sector clients. The review produced several proposals for energy efficiency audits and an FY09 IFC investment to enhance the efficiency of the operations of a Russian chemicals company generating savings of 115,432 tons of carbon dioxide (CO₂) equivalent annually through reduced gas and electricity use.

Box 9. Scaling Up Renewable Energy Markets

Guarantee of grid access, sufficient tariff levels, and clear rules to pass through the incremental costs for RE are the key factors to scale up RE market penetration. Integrating GEF, IBRD, and carbon financing can further make a transformational impact to scale up renewable development, as demonstrated in China.

Under the China Renewable Energy Scale-Up Program (CRESP), the WB initiated active policy dialogues with the Chinese government to introduce international best available technologies and practices of RE market policies and to assist the government in developing RE policy frameworks. As a result, China passed an RE law to require mandatory purchase of RE by the grids and to allow the incremental costs to be shared nationwide. The policy dialogue is complemented by an IBRD investment (\$173 million) in 2X100 MW wind farms, a 25 MW biomass power plant, and small hydro projects. These were one of the first such large-scale wind and biomass power plants in China. Similarly, the Bank's carbon financing played a key role in improving the financial viability of the Inner Mongolia wind farm, which is not financially viable at a power tariff at 38 fen/kWh set by the government. In addition, CRESP provided cost-shared research and development (R&D) to domestic wind manufacturers supporting joint design with international design institutes to transfer international wind turbine technologies to China. The market pull approach with favorable tariff policies—together with technology push through cost-shared R&D and the government's requirement of 70 percent local content—has boosted domestic wind manufacturing industry.

31. Ongoing work focuses on identifying new opportunities across all WB sector investments, starting with the upcoming energy projects for integrating feasible energy efficiency components at the project- and/or programmatic level; providing support for low-carbon growth country studies; promoting energy efficiency across other sectors (including urban and transport) through the Energy Efficient Cities

Initiative; and engaging clients during early stages (notably, the CAS stage) on energy efficiency support prospects. In the energy sector, projects under preparation are being reviewed with a view to capturing missed and/or potential EE opportunities, on both the demand and the supply side. This exercise is also feeding into the development of a comprehensive system for supporting energy efficiency in energy projects and sector dialogue, including through assistance with sector-wide policy and institutional frameworks that would achieve larger and more sustainable impacts.

Box 10. World Bank Group Experience Financing Energy Efficiency

The World Bank and the IFC have financed a series of energy efficiency financial intermediary projects. With the Hungary Energy Efficiency Guarantee Fund, the IFC pioneered the use of a guarantee mechanism through selected domestic banks. No guarantee has been called, giving local banks confidence in and familiarity with energy efficiency lending. A similar IFC approach in China has also achieved success.

The World Bank has an ongoing energy efficiency financial intermediary program. In China, the Bank project has played a key role in increasing local banks' confidence and capacity in energy-efficiency financing and creating a robust line of business through learning by doing. The participating domestic banks on-lend IBRD funds (\$200 million) to large industrial enterprises and energy service companies for EE investments, and they use the GEF grant (\$14 million) to prepare the project pipeline and build capacity. For example, a carbon financing deal was reached to recover waste heat for Bao Shan Iron and Steel Company, one of the largest in the world.

One of the key lessons of the experience is the importance of technical assistance, particularly at the beginning, to raise awareness of energy efficiency, to provide training and advisory services to the banks in developing financial structures, and to build the capacity of project developers. In Bulgaria, the transaction cost of institutional capacity building for both financial institutions and energy service companies—from project conception to financial closure—has been around 10 percent of total project costs at the beginning and is expected to decline to around 5–6 percent later on.

32. The WBG continues to scale up its support for energy development, recognizing that reliable and affordable energy services underpin economic growth and improve the welfare of the poor. Annual energy investments more than doubled to an average of \$4.36 billion in fiscal years 2007–2009, compared to \$1.98 in fiscal years 2004–2006. Increasing attention is given to supporting increased access through RE and EE options (Box 11). One of the implications of the financial crisis was an increased demand for WBG lending to coal-based generation, largely in Africa, where average electricity access level is at [12] percent. The WBG has systematically applied the SFDCC screening criteria⁶ for new coal-fired power projects, including an analysis of alternatives that incorporates environmental externalities and consideration of whether assistance has been provided with developing low-carbon projects and accessing additional climate finance. The first example was the Botswana Morupule B

⁶ As endorsed by the Development Committee, the SFDCC provided that, through its traditional financing instruments, the WBG could support client countries to develop new coal power projects by considering the following: (a) there is a demonstrated developmental impact (e.g., the project/program improves overall energy security, reduces power shortages, or improves access for the poor); (b) there is assistance to identify and prepare low-carbon projects; (c) there has been optimization of energy sources by considering the possibility of meeting the country's needs through energy efficiency and conservation; (d) there has been full consideration of viable alternatives to the least-cost options (including environmental externalities), and additional financing from donors for their incremental cost is not available; (e) the project uses the best appropriate available technology, to allow for high efficiency and, therefore, lower GHG emissions intensity; and (f) there is an approach to incorporate environmental externalities in project analysis.

Generation and Transmission Project, which was approved by the Board on October 28, 2009. The WBG also issued a guidance note to staff for applying these criteria and has instituted an external panel expert mechanism to review the conformity with the criteria.⁷ Such a panel was formed for the South Africa Eskom Power Sector Project, approved by the Board on April 8 2010. The projects meets the SFDC criteria and is embedded in an ambitious country plan to stabilize GHG emissions by 2025 and significantly reduce them in the long-term while meeting immediate energy needs using the most advanced technology ever applied in Africa. The review panel is to be convened for each relevant project ensuring that its composition includes experts with in-depth knowledge of the given regional and country context.

Box 11. Energy Access for Sustainable Development

As of June 2009, the Bangladesh Rural Electrification and Renewable Energy Development Project has brought grid electricity to more than 600,000 consumers in Bangladesh, supported in part by GEF grant financing. Access to electricity has increased to about 40 percent from 30 percent in 2002. At the same time, 350,000 consumers have been provided with solar home systems, surpassing the original target of 50,000 with expanded support from the World Bank and others. In 2009, an additional \$130 million in financing was committed to support, for example, increasing off-grid electricity access using solar photovoltaics to over 1 million households to complement carbon financing support provided in 2008 for 1.25 million solar PV systems.

The World Bank–GEF Tanzania Energy Development and Access Expansion Project supports, among others, local renewable energy development to boost the country’s generation capacity and expand access in rural areas, where the electrification rate is below 2 percent. A comprehensive regulatory framework has already been adopted to streamline and simplify procedures for small power projects. An initial project pipeline has been identified for over 60MW of renewable energy investments along with electricity access through mini-grids to about 12,000 customers. In addition, the project is financing off-grid solar PV electricity services to households and essential rural community services such as health care, education, water supply, communications, and street lighting.

In the West African Energy Program, the World Bank Group—in close collaboration with the United Nations Industrial Development Organization, the United Nations Development Programme (UNDP), and the GEF Secretariat—has taken the lead in developing and implementing sustainable transport projects in Nigeria and Burkina Faso, as well as energy-efficient lighting projects in Togo, Benin, and Burundi.

In Uganda, the World Bank Group has collaborated with GEF in financing a new renewable energy project in the amount of \$76 million. The project also aimed to increase energy access in rural areas.

33. Looking forward, we expect that the demand for WBG engagement in coal power generation will be limited while the demand for RE, EE and clean energy finance will continue to grow. The application of the SFDC screening criteria is resulting in greater selectivity. We anticipate a continued demand for “brownfield” (rehabilitation) projects where the rehabilitation of coal-fired plants results in substantial reduction of GHG emissions per unit of power generated due to increased efficiency. These projects also bring dramatic improvements in local environmental quality, with the corresponding public health benefits. On the other hand, a review of the mid-term pipeline of “greenfield” (new capacity) coal power generation projects, as screened to meet the six SFDC criteria, shows no such projects for middle-income countries in the pipeline for the next few years, and potential IDA projects in the coming years are very few.

⁷ Such a panel was formed for the South Africa Eskom Power Sector Project and is to be composed for each relevant project ensuring that its composition includes experts with in-depth knowledge of the given regional and country context.

34. Following on years of WBG work with the Global Gas Flaring Reduction (GGFR) initiative, the latest satellite estimates for gas flaring volumes in 2008 show that reduction efforts are paying off. Global gas flaring has declined by a total of 22 billion cubic meters (bcm) over the past three years to 140 bcm in 2008, with GGFR members being relatively more effective in reducing flaring intensity. The decrease in gas flaring corresponds to a reduction of some 60 million tons of CO₂ emissions between 2005 and 2008. The World Bank–led GGFR partnership will kick off a third phase (2010–12) to step up efforts in improving energy supply efficiency and reducing emissions from flaring (Box 12).

35. The WBG is coordinating the preparation, together with the International Energy Agency (IEA), the Organization of the Petroleum Exporting Countries, and the Organisation for Economic Co-operation and Development (OECD), of the Joint Report requested by the G20 to help these countries with rationalizing and phasing out inefficient fossil fuel subsidies that encourage wasteful consumption and by providing targeted assistance programs. The Joint Report will include a working definition and preliminary estimates of energy subsidies, modeling-based analysis of the implications of phasing out fossil fuel subsidies on the economy, and suggestions for the implementation of phase-out of these subsidies, drawing on selected case studies.

Box 12. Flared Gas Reduction for Energy Access in Africa

Increased use of flared gas in Nigeria and other countries in the Gulf of Guinea presents an opportunity to increase access to energy and support the transition to a low-carbon economy. Currently, GGFR is coordinating flare reduction with the major stakeholders in Nigeria. The planned development of the Nigerian domestic gas market in the medium term to supply the power sector will further contribute to gas flaring reduction and help reduce the unrest in the Niger Delta, where most gas flaring in Nigeria occurs. Essential elements are a gas master plan, a new gas pricing policy, and a regulatory framework for the downstream gas sector—all currently under preparation by the Nigerian government. The use of multiple WBG instruments could address the power sector’s ability to purchase gas and provide payment guarantees in a comprehensive way (Bank guarantees, followed by the involvement of IFC in public-private partnership projects or private financing of an infrastructure network). GGFR is also working with the governments of Angola, Cameroon, Chad, Equatorial Guinea, and Gabon to reduce gas flaring.

36. The Transport Business Strategy, launched in 2008, focused on ensuring the long-run developmental role of the transport sector through the support of low-carbon technologies for mobility, the shift of transport services to low-carbon modes, and the containment of emissions by demand management. To reduce the carbon intensity of the transport sector, efforts are undertaken to change the modal composition of sector activities and to change the quality of project designs within all modes to reduce GHG emissions. Responding to emerging development challenges, a trend increase in support for urban transport has been achieved that also yields GHG reduction co-benefits. Within the urban transport subsector, the expansion of mass transit systems has been emphasized, facilitated significantly by the availability of additional concessional financing and the successful blending of a number of investment sources and instruments (Box 13). Investments in rail projects have increased in Fiscal 2009, lowering emissions by reducing both higher carbon freight transport on roads and congestion in individual car use.

2.5 Looking Forward

37. Growing client demand provides a foundation for scaling up WBG support to climate actions. Stronger emphasis will be placed on vulnerability assessments, linking experience in disaster preparedness with addressing longer-term climate risks and enhancing linkages with human development and social protection as important forms of adaptation. Implementation of programs such as the Pilot

Program for Climate Resilience (PPCR) will contribute to learning at the country level, as the Bank is exploring the operational and developmental implications of robust—as opposed to optimal—decision making, given inherent uncertainties of downscaled climate projections. The major focus will remain on achieving multiple benefits in forestry and agriculture, as well as enabling participation of these sectors in future global mechanisms. Building on the emerging momentum among city mayors, the private sector, and other stakeholders, the WBG is establishing new partnerships with municipalities, where the impact on peoples’ lives and livelihoods is most immediate and multiple benefits are apparent—such as in the case of slum-upgrading, which offers one of the best adaptation measures for the urban poor.

Box 13. Multistakeholder Partnership for the Urban Transport Transformation Project (UTTP) in Mexico

The UTTP seeks to transform urban transport in Mexican cities into a lower carbon growth path. The project will develop 18 new integrated mass transit corridors that will move a total of 3.96 million passengers per day and will result in the avoidance of 1.96 million tons of CO₂ per year once all the investments are in place. Through its transformative impact, the UTTP is expected to significantly reduce the energy intensity of the transport sector by 2020 by about 10 percent from present levels.

To finance this program, a multi-stakeholder partnership has been established between the World Bank, the Clean Technology Fund, the Carbon Partnership Facility (CPF), the Global Environment Facility, the government of Mexico (through SHCP, BANOBRAS, and FONADIN), and Mexican local governments.

CTF will contribute \$200 million in concessional finance to transformational projects that (a) provide positive incentives for demonstration of low-carbon development and mitigation of GHG emissions; (b) promote scaled-up deployment, diffusion, and transfer of clean technologies; and (c) encourage the realization of social co-benefits of low-carbon projects. IBRD funding will complement CTF funding with an additional \$200 million loan. The blending of these two resources enlarges the pool of low-cost available financing, thus reducing the financial barriers associated with these types of investments and facilitating the decision to adopt low-carbon systems. A CPF program will be set up to aid in the purchase of emission reductions produced by the project. The GEF-STAQ regional project will provide cross-reference and experience-sharing for the various cities implementing transformational subprojects. The Mexico GEF-STAQ project will support the preparation of four cities for inclusion in the UTTP. The government of Mexico— through SHCP/BANOBRAS/FONADIN—will support mass transit public investments through a line of grants and credits. Additionally, BANOBRAS is in the position of offering additional financing if needed to municipalities and the private sector.

UTTP is unique in that it brings together the local urban transport agenda, the national poverty reduction agenda, and the global climate agenda, while responding to the government’s voluntary pledge to adopt the UNFCCC principle of “common but differentiated responsibilities” to reduce its GHG emissions.

38. Expecting an increased demand from developing country partners for supporting various aspects of the low-emission growth agenda, particularly as these countries move ahead with Nationally Appropriate Mitigation Actions (NAMAs), the WBG will step up efforts to develop expertise and financial products that will be required. As part of energy sector strategy consultations, we will seek to strengthen the understanding and analysis of opportunities for improving energy access and supply in an environmentally sound manner while achieving reasonable affordability for the poor. The Bank Group will further strengthen its efforts to place the linkages between the transport sector and climate change in a broader developmental context that realistically reflects the importance of transport services for core development and poverty alleviation.

3. IMPLEMENTATION PROGRESS: MOBILIZING FINANCE AND MARKETS

- ❖ *Climate Investment Funds rolled out stimulating new low-carbon or climate-resilient work in over 20 countries*
- ❖ *Mobilizing and facilitating client access to multiple sources of finance for adaptation, including catastrophic-risk financing products*
- ❖ *Continued innovation to scale up impact of carbon finance, broaden its scope, and leverage resources*
- ❖ *Successful engagement of the private sector for more sustainable investment, with a leverage ratio of 5 to 1 by IFC*

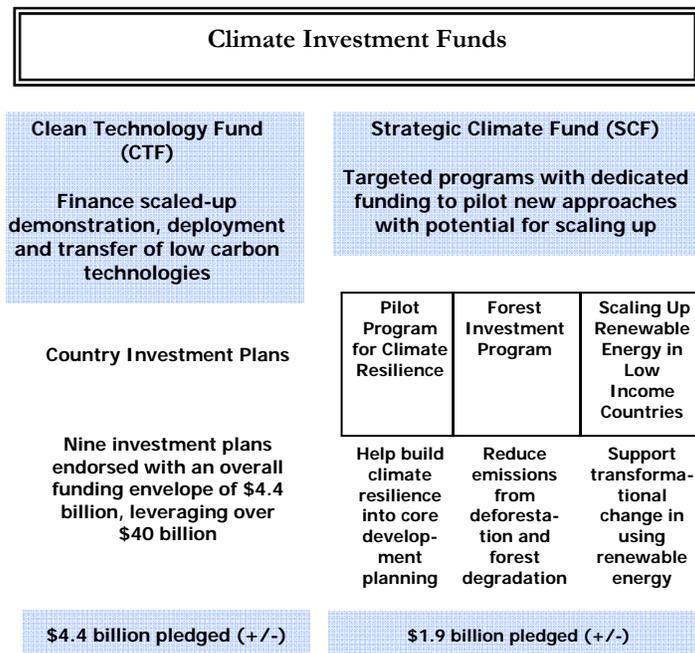
3.1 Mobilizing Additional Concessional and Innovative Finance

39. Combating climate change requires tremendous effort and ingenuity to mobilize resources at scale without delay, coordinate their delivery through a combination of policy and financial instruments, and maximize their leverage on public and private investment flows to effectively catalyze a shift toward climate-smart outcomes. Closely following and respecting the primacy of the UNFCCC negotiations, the WBG is testing, in a collaborative approach with development partners, innovative ways to mobilize additional resources and leverage private sector investment to catalyze climate action.

Climate Investment Funds

40. The major resource mobilization exercise has been the establishment of the **Climate Investment Funds (CIFs)**, a partnership among MDBs, recipients, and contributors, with an innovative and balanced governance model, that has raised \$6.3 billion endorsed by 13 countries (Figure 1 and Annex 3). Within one year of existence, the CIFs have moved from concept to full-scale operations and stimulated new low-carbon or climate-resilient work in over 20 countries, with significant stakeholder engagement and MDB cooperation.

Figure 1. The CIF Venture: Scaling Up Partnerships for Climate Action



Figures as of March 17th 2010

41. Since its first year of operations, the CTF has endorsed thirteen investment plans—in Colombia, Egypt, Indonesia, Kazakhstan, Mexico, Morocco, Philippines, South Africa, Thailand, Turkey, Ukraine, Vietnam, and a regional plan for the Middle East and North Africa—for a global envelope of about \$40 billion (Box 14). This will leverage on average eight times CTF funding through MDBs and bilateral financing, as well as climate finance instruments (carbon finance) and the private sector, which is engaged on average 30 percent across the proposed investments, including through MDBs and bilateral intervention. These plans consider scaled-up financing for renewable energy, including biomass, hydro, solar concentrated power, solar water heaters, and wind power; energy efficiency, including power transport and distribution; transport, including rapid bus transit and light rail; and several low-carbon financial intermediary projects.

Box 14. CTF: Thirteen Investment Plans Endorsed with an Overall Funding Envelope of \$4.4 billion Leveraging over \$40 billion

(Figures as of March 17, 2010)

Country/ Region	CTF (US\$ million)	Total (US\$ million)	Ratio CTF to other funding	Highlights
Colombia	150	2,995	1:18	Sustainable Transport Systems: Allow the National Urban Transport Policy to include additional measures to increase the reduction of GHG emissions. Energy Efficiency Program: Identify great efficiency potential in electricity and thermal end-uses
Egypt	300	1,921	1:5	Urban Transport —Six rapid bus transit corridors (RBTC) and five light rail routes Wind Power —From <1,000 MW to 2,500 MW
Indonesia	400	3,110	1:7	Geothermal Power: CTF support will have the transformational impact of reducing dramatically the country’s emissions. Energy Efficiency and Renewable Energy: support to SMEs and end users and the same time that triggers local bank’s confidence to jump into EE/RE business opportunities.
Kazakhstan	200	1,269	1:5	Renewable energy development: especially small hydroelectric, wind power generation and solar energy. Associated gas flaring reduction and fuel switching to gas to reduce reliance on coal for heat and electricity generation. District heating system modernization including both supply and demand side interventions Demand side management and end-user efficiency in SME
Mexico	500	6,197	1:12	Energy Efficiency —Program to replace inefficient lighting and appliances with expected annual emission reductions of 4 MtCO ₂ Renewable Energy - To accelerate and scale-up recent commitments towards implementation of a comprehensive national RE program Urban Transport —20 RBTC with low-carbon bus technologies
MNA	750	5,604	1:7	Concentrated Solar Power expansion programs in Algeria, Egypt, Jordan, Morocco, and Tunisia: 900 MW (twice current installed global capacity)
Morocco	150	1,650 – 1,950	1:12	Energy Efficiency —in cement, phosphates, and sugar Urban Transport —Rapid bus transit/tramway/light rail Wind Power —Goal of 600% increase in wind power to reach 20% of power generation and Energy Efficiency improvements
Philippines	250	2,780	1:10	Energy Efficiency —Smart grid and demand-side management Renewable Energy —Scaled-up private sector power generation Solar —30,000 commercial buildings equipped Urban Transport —two bus rapid transit (BRT) systems
South	500	2,350	1:4	Energy Efficiency —through financial intermediation

Africa				Solar Power —100 MW concentrated solar power plant and 500,000 households with solar water heaters Wind Power —100 MW first utility-scale wind farm and private sector projects adding up to 100 MW
Thailand	300	4,263	1:13	Energy Efficiency and Renewable Energy — through public utilities (for scaled-up RE, and efficient public lighting) and financial intermediation (several mechanisms) for RE and EE Urban Transformation —BRT and city energy efficiency improvements in Bangkok metropolitan region
Turkey	250	2,100	1:7	Renewable Energy —Smart grid management and control systems to support large-scale integration of wind power Renewable Energy and Energy Efficiency —through credit lines to local development banks
Ukraine	350	2,605	1:6	Energy Efficiency and Renewable Energy Smart grids: Design and implementation of the next generation of modern grid management and control systems Zero Emissions Power from Gas Network —The replication of such technologies has the potential to displace coal-fired power.
Vietnam	250	3,445	1:13	Energy Efficiency —in cement, small and medium-size enterprises (SMEs), and commercial Transmission and Distribution , including smart grid and demand-side management (DSM) Renewable Energy — small hydropower, geothermal power, wind, solar, biomass (bagasse, paddy straw, rice husk), wood residue, landfill gas and other waste conversion Urban Transport in Hanoi and Ho Chi Minh City

42. In addition to attracting financing, all CTF plans focus on improving the enabling policy and regulatory environment for sustainable growth. Approved projects include the Turkey Private Sector Renewable Energy and Energy Efficiency Project (\$100 million concessional loan from the CTF blended with \$500 IBRD loan), the Mexico Urban Transport Transformation Project (\$200 million CTF concessional loan co-financed by a \$150 million IBRD loan), and the Mexico Private Sector Wind Development Project (IADB/IFC). CTF-cofinanced IBRD operations are under preparation for South Africa and Egypt for submission to the Board in FY10, while other MDBs are also developing projects.

43. Work is well underway under the PPCR, with US\$ 967 million in pledges, to start activities in nine counties, three of which are in Africa and four are in fragile states, and under two regional programs targeting small island states (Box 15).⁸ The two other programs under the SCF were declared operational in 2009 and are expected to initiate in-country activities in the first half of calendar 2010. The Forest Investment Program has US\$ 558 million in pledges and selected an initial set of countries to provide support while the Scaling-up Renewable Energy Program in Low Income Countries (SREP) raised US\$292 in pledges.

44. **The CIFs are explicitly designed to strengthen the knowledge base for low-carbon and climate-resilient growth, providing practical lessons in support of the UNFCCC deliberations.** Lessons to date have focused mainly on the novel design process and innovative governance structure, confirming that inclusion and openness are key for successful operationalization. Learning from their initial experience, the CIFs revised their governance structure to include civil society observers and

⁸ Countries targeted for assistance under the SCF are identified by an independent governance panel, with country selection based on vulnerability as well as on completion of National Adaptation Programs (in the PPCR case), or on the importance of the forest sector and the interest of the countries in participating in REDD initiatives (for the FIP). The SDFs also aim to achieve a regional balance and a variety of geographical vulnerabilities and opportunities in order to maximize lesson-learning opportunities.

incorporated lessons into the FIP design process. To catalyze dialogue among all relevant stakeholders and harvest learning from experiences to date, the CIFs hold an annual Partnership Forum to openly assess existing programs and to promote feedback and an exchange of ideas among stakeholders. A study on lessons learned from the CIF design process and operational experience was released at the second Partnership Forum in March 2010.

Box 15. Piloting Climate Resilience

The Pilot Program for Climate Resilience was the first of the three SCF-targeted programs to become operational. Based on the recommendations of an independent expert group, the PPCR Subcommittee approved nine countries and two regions to take part as pilot programs to be financed under the PPCR. Approved country programs are in Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, and Zambia. Regional programs include the Caribbean and South Pacific Islands. Funding to date for PPCR has reached \$967 million, of which about half can be provided as grants and half as highly concessional loans.

Joint MDB programming missions have been completed in all participating countries, and the development of strategic programs to be financed by the PPCR is ongoing. The work has highlighted the diversity of issues faced by the individual countries but has also brought out some common themes. In most countries there was consensus that integration of the adaptation and disaster risk management agenda, particularly management of floods, droughts, and coastal storms, is a key element in climate resilience. Improved land, forest, and water management also rank as priority intervention areas for some of the PPCR participants. There are also emerging country specificities: for Bolivia, Tajikistan, and Nepal, changes in the pattern of glacier melt and river flows require special attention; for Niger and Zambia, there are interlinkages between woodland and charcoal management and broader energy supply issues. For some small-island developing states, climate change presents uniquely disproportionate threats to their economies despite their relatively high income; for example, recent hurricane damages in Grenada, situated traditionally south of the hurricane belt, equal 200 percent of gross domestic product.

Most participating countries have already undertaken substantial planning and analytical work related to climate resilience in the context of National Adaptation Plans of Action, disaster preparedness plans, or broader poverty reduction and growth strategies. There are challenges in balancing the need to move quickly to achieve results on the ground, and the need for strategic and planning work to fine-tune priorities. A second challenge relates to broader resource availability in countries with severe budget and capacity constraints. A third relates to the balance between simplicity in the design of programs—necessary if they are to succeed on the ground—and the complexity of interlinked climate resilience issues.

In October 2009, a first meeting of PPCR pilot countries was convened to build a community of practice among the pilot countries in order to exchange experiences, promote South-South learning, and document good practices and early lessons. In this regard, important lessons and considerations emerged from countries' initial involvement in the program, including selecting the right mix of planning, capacity building, technical assistance, and financing, as well as the valuable role of MDB coordination in the planning process.

Raising and Facilitating Client Access to Multiple Sources of Finance for Adaptation

45. To increase support for climate resilience and adaptation, the WBG has been using a growing menu of resources to complement IDA and IBRD investments in climate-affected sectors. These include dedicated adaptation finance instruments, such as the GEF Adaptation Program, the Least-Developed Countries Fund, and the Special Climate Change Fund (SCCF). For example, the GEF-financed India Land and Ecosystem Management Project includes adaptation funding of \$5 million (from the Strategic Priority for Adaptation), with a total project funding of \$30 million. In Kenya, an incremental SCCF grant for Adaptation to Climate Change in Arid and Semi Arid Lands would complement an estimated IDA contribution of \$40 million that focuses on improving service delivery and drought rehabilitation. Further assistance comes from strengthening synergies and integrating disaster risk reduction and climate resilience, notably with support of the GFDRR, and extending partnerships and mobilizing new bilateral and multilateral donor funds, such as the multidonor Maldives Climate Change

Trust Fund, established in December 2009, which will support the development and implementation of the climate change strategy and action plan for the Maldives.⁹

46. This experience underscores the urgency of additional technical and financial assistance to help IDA countries make development investments resilient to increasing climate risks. Consistent with its core mandate of poverty reduction and economic growth, IDA-15 provided a solid development platform in a rapidly evolving financing landscape for climate-resilient action (see Box 16). Through its first year, IDA-15 financial flows to climate-affected sectors, such as agriculture, flood protection, water supply, and health, reached \$3.3 billion, a 17 percent increase above IDA-14 average annual financing for those sectors (\$2.9 billion). Yet with an increasing number of sources, available financing to help “climate-proof” these investments, assist communities already affected by a changing climate, and build capacity for “climate-smart” development planning is well below the need.

47. Expanding the pool of adaptation financing, the World Bank is fulfilling its role in monetizing certified emission reductions (CERs) as trustee for the Adaptation Fund. The fund’s main source of funding comes from a 2 percent share of proceeds on CERs issued to Clean Development Mechanism (CDM) projects. Depending on CDM project performance and CER pricing, the Adaptation Fund could manage between \$300 million and \$600 million by 2012. By early February 2010, the Adaptation Fund had already received 7.5 million CERs, of which about 2.4 million have been monetized by the World Bank, raising close to \$40 million. The inaugural sale (600,000 CERs) took place during the third week of May 2009 raising close to \$10 million. The World Bank’s role as trustee for the Adaptation Fund reflects the priority it attributes to supporting innovative approaches to meet adaptation needs in developing countries.

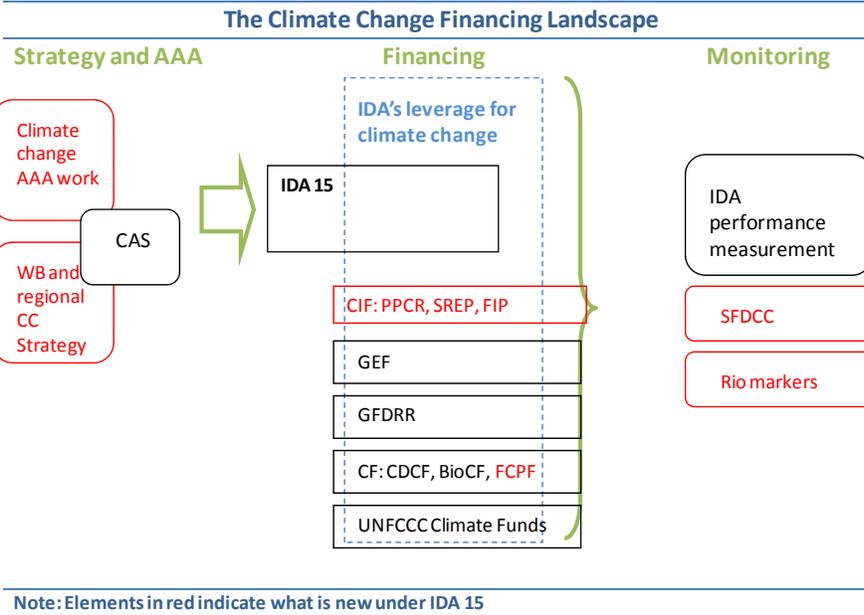
3.2 Facilitating the Development of Market-Based Financing Mechanisms

Expanding Carbon Markets

48. The World Bank has continuously sought to strengthen the capacity of developing countries to benefit from carbon asset transactions and has played a catalytic role in building, sustaining, and expanding the carbon market. From pioneer activities in 2000 with the Prototype Carbon Fund (the first global carbon fund, with \$180 million in capital), carbon finance operations at the World Bank have grown to \$2.5 billion under management, through 10 funds pooling resources from 16 governments and 66 private companies. The current World Bank carbon finance portfolio consists of more than 200 projects and programs in 57 countries representing quite diverse technologies. As of February 1, 2010, a total of 136 emission reduction purchase agreements (ERPAs) have been signed, while 52.4 million Kyoto compliance units (assigned amounts units, certified emission reductions, and emission reduction units) have been generated. As the international community searches for effective and practical solutions to the challenge of climate change, the World Bank is looking through its 10 years of experience in carbon finance to analyze success and challenges in working with carbon markets for development and global GHG mitigation. Emerging findings are highlighted in Box 17.

⁹ Initial capitalization of €6.5 million from the European Community, with more donors expressing interest.

Box 16. IDA as a Platform for Climate-Smart Development



- ❖ Stronger emphasis on climate change risks in CASs, with focus on disaster management, flood protection and natural hazard response
- ❖ Starting operations under the PPCR; continued efforts and innovation in DRM and catastrophe financing (e.g., Malawi weather derivative)
- ❖ Doubled core funding for energy efficiency and renewable energy, at \$233 million (IDA-14 annual average was \$103 million); further opportunities with SREP
- ❖ Continued efforts toward improved forest and land management; further opportunities under existing FCPF and recently operational FIP
- ❖ Increased knowledge program: Six analytical and advisory assistance products dealing specifically with adaptation and vulnerability to climate change during the first year of IDA-15 and 14 planned activities for FY10 (compared with about two per year on average during IDA 14).

49. Africa accounts for one-fifth of active projects in the World Bank’s carbon finance portfolio (projects that are registered / finally determined, in validation / determined or active in the World Bank pipeline), much beyond its 2–3 percent share of projects in the CDM pipeline, reflecting the World Bank’s concerted efforts to increase the region’s access to the carbon market, notably through land-based carbon opportunities and projects or programs bringing additional community benefits. Among ERPA’s closed in FY10, the World Bank contracted the first-ever CDM project in the Democratic Republic of Congo (half a million CERs from a 4,200 ha reforestation project) whose carbon revenues will generate resources for health, education, and agroforestry for local communities. The World Bank’s BioCarbon Fund played a pivotal role in helping the project sponsor obtain loans from private firms to finance up-front investments. This project is also promoting South-South collaboration with a similar initiative in Brazil. Another initiative is the partnership with the ECOWAS Bank, which the WBG is working with to establish the Africa Carbon Fund for Biofuels and Renewable Energy. At the same time, significant reforms in CDM are needed to enable Africa realize its lower carbon development potential.

Box 17. Carbon Finance: Building on Experience and Looking Forward

Carbon finance is an important revenue stream for greenhouse gas mitigation projects. It has so far played a catalytic role in leveraging other sources of finance in support of low-carbon investments. However, there is still room for improvement. As we enter the second decade of carbon finance, the World Bank is taking stock of its experience and progress to date to inform future development and implementation of the mechanisms.

- The CDM and Joint Implementation market mechanisms are an important tool for private sector action on climate mitigation, which should be further encouraged.
- There are significant developmental and social co-benefits associated with market mechanisms, and these need to be valued.
- An obstacle to maximizing the leverage potential of carbon finance for low-carbon investments is insufficient predictability in the CDM.
- A supportive enabling environment and overall investment climate is key to attracting CDM investments.
- Some CDM decisions have resulted in limiting access to carbon revenues by low-income countries.
- Environmental integrity is essential for both the overall climate regime and the carbon market. However, the additionality requirement remains a challenge.
- Improvements to the CDM are needed to scale up emission reductions. Measures are already being taken and must be sustained and stepped up.

50. Progress has been achieved in developing operations of the Forest Carbon Partnership Facility and the Carbon Partnership Facility, two new facilities focusing on piloting post-2012 carbon finance options (Box 18). The FCPF has grown to include 37 tropical and subtropical countries, compared with its original design target of 20. To support their REDD readiness efforts, the target of the Readiness Fund (with about \$110 million in contributions by 11 donor countries) was raised to \$185 million. Current plans call for assessing 10 Readiness Preparation Proposals and signing 15 readiness grants by the end of FY10. In parallel, the FCPF Carbon Fund (\$50 million in pledges to date) works to pilot performance-based transactions for countries that have readied themselves for REDD-Plus, reducing emissions against their reference scenario. As meeting the initially adopted indicators proved to require more time due to extensive technical and capacity challenges, additional capacity-building activities and learning have been carried out. In turn, this is nurturing a strong tradition of candid exchange and learning-by-doing, supported by South-South transfers of experience.

Box 18. Progress in Implementing the New Carbon Partnerships

Forest Carbon Partnership Facility (FCPF)



reducing emissions from deforestation and land degradation (REDD)

Assist developing countries in reducing emissions from deforestation and forest degradation, forest carbon stock conservation, sustainable management of forests, and enhancement of forest carbon stocks (REDD-Plus):

- Readiness Fund to support capacity building, including elaborating a REDD strategy, developing a reference scenario and setting up a monitoring system
- Carbon Fund to pilot payments for verified emission reductions

Balanced Participants Committee: 10 developing countries, 10 financial contributors, observers (indigenous peoples, private sector, CSOs and IGOs)

* * *

Carbon Partnership Facility (CPF)



programmatic and sector-wide carbon finance interventions

Scale up impact of carbon finance on mitigation actions and poverty reduction through programs of investment and sector-based approaches

Promote introduction of new methodologies and advanced technologies

* * *

Launched in Dec. 09, at COP15 (Copenhagen)

- €7 million in Carbon Asset Development Fund (CADF) for programs preparation (operational)
- €100 million in the Carbon Fund (will become operational by end FY10)

Operational in June 2008:

- \$110 million in the Readiness Fund (target \$185 million)
- \$50 million in Carbon Fund (target \$200 million)

Rapid progress in implementation

- 37 countries selected
- 11 Readiness Grants signed (\$200,000) and 5 Readiness Proposal Plans assessed for Ghana, Guyana, Indonesia, Panama and Suriname
- Active discussion with other mechanisms (UNREDD, FIP)

Substantial progress in developing a pipeline of operations, in combination with other sources of finance (IBRD, GEF, CTF):

- Three Seller Participation Agreements signed: Brazil & Morocco (Waste Management), Vietnam (Renewable Energy)
- More than 10 other programs under preparation in all regions to cover EE (Appliances, CFLs, possibly LEDs, Buildings), RE (Biogas, Concentrated Solar Power, Geothermal), Transport, Waste Management, and City-wide approach for urban transformation

51. Launched at COP-15, the CPF is developing a pipeline of programs to assist developing countries and economies in transition to implement programmatic and sector-wide carbon finance interventions with significant and durable impact on emissions trajectories. The programs are linked to Bank investment operations and other instruments such as the CTF. Significant CPF-related work is being carried out on developing methodologies for programs of activities to scale up the impact on investment decisions, including for citywide applications—a potential not yet reached by the market. The latter will enable aggregation of GHG mitigation impacts across various sources and activities, expanding the World Bank’s already substantial contribution to opening new potentials for market innovation. So far, the World Bank has submitted, alone or in combination, 52 new methodologies, 33 of which have been approved (out of 124 globally) and 7 of which are currently being processed.

52. IFC’s role in carbon finance focuses on providing services and financial products that contribute to generating carbon revenues and unlocking greater amounts of low-carbon investment. Carbon market participants still face challenges addressing the need for up-front financing of mitigation investments in addition to other business risks that may deter project sponsors or potential investors. By offering a carbon delivery guarantee product, IFC helps maximize the value of carbon credits and enhances the impact of carbon finance on low-carbon investment. The IFC has also launched a carbon finance advisory product for financial institutions to build carbon finance capacity at local banks and facilitate more investment in smaller emission-reducing projects. The product’s first client was the Industrial Bank China. IFC is also actively offering training to financial institutions interested in expanding their activity in the realm of carbon finance, including, more recently, to institutions in Armenia and Georgia.

Expanding Catastrophe Risk Financing

53. The WBG has expanded its work on climate risk management and capital markets, broadening its product offerings and working toward integration of disaster risk management strategies at country or regional levels (Box 19). Over the past decade, there has been an increase in the intensity and damage caused by natural disasters worldwide, with developing countries suffering the most. The WBG is offering two complementary lines of catastrophe risk financing products and advisory services to countries, as part of their broader disaster risk management strategies: sovereign risk financing for direct budget support (to provide immediate liquidity should a disaster occur while other resources are being mobilized) and advisory services to strengthen domestic property catastrophe insurance markets (to facilitate increased penetration of insurance in developing countries and access to re-insurance markets). Progress over the past 18 months included extension of index-based agriculture insurance to help farmers hedge against weather risk. For instance, the successful scaling up of coverage under the Central American Weather Risk Management Program in Nicaragua went from inaugural transactions, covering 181 ha of groundnuts crops in 2007, to 16,000 ha covered for some 400 farmers with total value insured at \$7–10 million in 2009. Follow-up feasibility studies are in preparation for Belize, Bolivia, Grenada, Haiti, Jamaica, and Mexico.

Box 19. Innovation in Catastrophe Weather-Risk Financing

Contingent Financing in Guatemala. Building on GFDRR support, in March 2009 the World Bank provided to Guatemala a DPL with a catastrophe deferred drawdown option totaling \$85 million. This is a contingent credit line, disbursed upon the declaration of a state of emergency. In order to have an impact on disaster reduction, the condition for eligibility for a CAT-DDO includes an acceptable Disaster Risk Management Framework. Two other countries in Latin America have requested CAT-DDOs recently: Colombia (\$150 million in December 2008) and Costa Rica (\$65 million in September 2008).

Weather derivatives in Africa. The WBG approved mediation for the first weather risk (drought) management derivative in Malawi and has pilots (related to livestock) under development in Cameroon, Ethiopia, and Kenya. During the 2008/09 season, about 2,600 farmers in Malawi were covered with a sum insured at \$2.5 million.

MultiCat Program. MultiCat is a catastrophe bond issuance platform that gives governments and other public entities access to international capital markets to insure themselves against the risk of natural disasters. This is the first time a platform has been designed specifically to help governments from developing countries access affordable insurance coverage through the capital markets. In developing MultiCat, the World Bank worked closely with the government of Mexico (building on a GFDRR grant), one of the most experienced sovereign issuers in the catastrophe bond market. Mexico's successful use of the MultiCat platform to issue a \$290 million series of notes is the first offering utilizing the new World Bank platform.

Putting Capital Markets to Work for Climate-smart Investment

54. The World Bank Treasury is engaging investors looking for climate-related, long-term sustainable investment opportunities in the capital markets. FY09 saw the launch of the World Bank Green Bonds, which dedicate funding raised to a specific development purpose by supporting projects or programs that finance low-carbon or climate-resilient development activities in client countries. To date, more than \$1.4 billion in Green Bonds equivalent has been mobilized in the capital markets. Five World Bank Green Bonds have been issued: the first in Swedish kronor (inaugural issue in November 2008 primarily for Scandinavian pension funds, with two additional tranches later on), the second and third in U.S. dollars (April and December 2009, purchased among others by the State of California Treasury and European and American pension funds), the fourth in NZ dollars (January 2010, designed for Japanese investors), and the fifth in Swedish kronor (February 2010 for European investors). In addition, Nikko Asset Management is setting in cooperation with the World Bank the World Bank Green Fund for the Japanese market, investing in World Bank Green Bonds offered in a variety of currencies. The second World Bank Green Fund will soon be launched, this time targeting European and Middle Eastern institutional investors. Examples of the types of projects supported by World Bank Green Bonds include new energy-efficient and solar thermal technologies in Montenegro, expansion of renewable energy in rural markets in Argentina, and biogas programs in rural areas in China. Other issuances of similar magnitude could be expected over the next year.

55. The IFC and Treasury are working with the P8, a group of the world's largest pension funds, to explore ways in which institutional financing can be directed to climate-friendly investment in emerging markets. Recognizing the role that MDBs can play in channeling funds and in financial structuring, the WBG was asked to participate in the group's meetings, and does so together with selected other representatives of the financial community. In March 2009, IFC hosted the third summit meeting in Washington, DC. Given the somewhat different investment and risk profiles of these pension funds, bilateral follow-up is taking place between the WBG and individual pension funds to identify tangible collaboration possibilities. The IFC has also engaged with Standard & Poors to develop the first Global Emerging Market Carbon Efficient Index. Launched in December 2009 at COP-15 in Copenhagen, the new index aims to encourage carbon-based competition among emerging-market companies and give carbon-efficient companies access to long-term investors.

3.3 Leveraging Private Sector Resources

56. With the IFC in the lead, the WBG is continuing its engagement of the private sector for more sustainable investment. FY09 was the first year in which more than 50 percent (both in numbers and dollar amounts) of IFC power projects committed represented renewable energy projects. Importantly, IFC direct investment in FY09 has attracted more than \$5 billion in co-financing, or a leverage ratio of 5 to 1. Building on its experience in the hydropower sector, IFC is now actively growing its financing of wind-power projects and expanding into the solar, biomass and geothermal sectors. More generally, IFC investments in clean energy often open new markets by introducing innovative technologies or financial products—for example, a “merchant” wind power project in Chile in which power is sold on the spot market without price guarantees. Programs with local financial institutions to support specialized financial products for energy efficiency lending are now operating in Russia, China, the Philippines, and several other countries, with commitments of more than \$400 million in IFC funds. IFC seeks to expand this business with financial intermediaries to the level of \$500 million in new commitments per year, supporting more than twice the level of lending by other partner banks. New programs aimed at creating markets for financing energy efficiency and renewable energy through local banks have recently started in several East European countries.

57. To expand further engagement of the private sector, the WBG has continued developing innovative application of its instruments to address financial and other barriers, including:

- Financing packages enabling the conversion of anticipated carbon revenues into finance flows (see examples from Chile and Brazil in Annex 2).
- A combined package of cleaner production audits and financing by the IFC to implement recommendations for improving energy and resource efficiency through low-cost, high-return measures. Following a successful pilot program, a \$125 million facility is now available with a streamlined process for approving related loans, and programs are under implementation or being developed in Eastern Europe, South Asia, Latin America, and Africa.
- An arsenal of concessional instruments through the CTF investment plans to scale up participation of the private sector in climate action with replication potential, notably through efforts targeting direct lending to renewable energy projects as well as expansion of lending by domestic financial institutions for energy efficiency and renewable energy (Mexico, Turkey, Thailand and South Africa).
- Risk-management products, such as technology risk or noncommercial risk guarantees, and their combination with WBG project risk-mitigation instruments may help mobilize additional (long-term) capital for climate action and may lower borrowing costs by mitigating (perceived) performance and repayment risk, linked for instance to currency, interest rate, or commodity price risk. Box 20 highlights recent examples of successful application of such products in Africa.

58. A new strategic approach to the use of guarantees by the WBG, currently under design, aims at facilitating sustainable investment through more systematic detection of opportunities where such risk-management products can make a difference. This work is expected to enable scaled-up applications of the guarantee instrument for a range of operations, including innovative “climate-smart” investments that may involve higher risks. A subnational finance group provided financing for projects with climate change co-benefits, such as water or wastewater services, bus rapid transit, and other public transportation with important energy efficiency elements. Three such projects were approved in fiscal year 2009.

Box 20. Risk-Mitigation Instruments at Work for Low-Carbon Growth in Africa

A \$400 million IDA partial risk guarantee, along with a \$200 million IDA credit for the Nigeria Electricity and Gas Improvement Project, helps reduce GHG emissions through substitution of captive generation with cleaner grid-based generation. The guarantee mitigates the risk to international firms from supplying gas to the Nigerian market (instead of exporting it all from the Niger delta region). An increased use of gas in Nigeria in turn reduces the use of inefficient back-up diesel generators.

The African Rift Geothermal Energy Development Program, a five-year \$18 million region-wide multi-country facility to tap geothermal resources, provides regional technical assistance (\$5 million from GEF with approximately the same amount in co-financing, administered by the United Nations Environment Programme (UNEP)) and offers partial insurance to project promoters/investors against the short-term, up-front risk of geological exploration through the Risk Mitigation Fund (\$13 million from GER, administered by the World Bank). The Risk Mitigation Fund proposes contingent grants. As opposed to a direct grant, this arrangement may support a greater number of projects as non-allocated resources (if projects are successful) and can be reutilized for new projects on a revolving basis. Projects are under preparation in Djibouti, Eritrea, Ethiopia, Kenya, Tanzania, and Uganda.

59. MIGA's contribution focuses on supporting private sector investment in green infrastructure projects in developing countries. These investments expand renewable energy capacity, encourage resource conservation and distribution efficiency, improve sanitation, and thus also generate climate benefits. Since FY90, MIGA has provided guarantees totaling over \$2.7 billion for 72 infrastructure projects in all regions of the world. In FY09, MIGA issued guarantees in excess of US\$120 million, facilitating investment in power distribution (Brazil), water treatment and wastewater management (China), or modernization and expansion of existing production lines in such energy-intensive sectors as steel and aluminum, including state-of-the-art technology transfer (Nigeria and Ukraine). Through its noncommercial risk guarantees, MIGA has added value in green infrastructure development, including projects on (a) mitigation of risks and dispute resolution, often at the subsovereign level, keeping investments on track; (b) support for projects that address resource scarcity and waste issues in middle-income countries such as China, where the prospect of working with untested local governments often inhibits investment; and (c) longer loan tenors and reduced costs, including for projects in frontier markets.

3.4 Increasing Innovative Use and Combination of Instruments

60. The scarcity of both development and climate finance against the multitude of urgent needs in developing countries is propelling WBG efforts to leverage its menu of financing instruments, including innovative use of and combination with climate-change-dedicated instruments. The WBG is working toward an effective combination of instruments to reduce transaction costs in an increasingly diversified landscape of climate finance and to maximize synergies between instruments, each addressing specific barriers, risks, or needs (see Annex 5). The WBG has a long tradition of blending GEF resources with IBRD/IDA or IFC regular instruments. More innovation has taken place over the past few years. Box 21 details a recent example (already being replicated) of an innovative combination of several dedicated environmental sources of funding to support programs with multiple benefits, thereby maximizing the effective use of resources, their leverage on public and private domestic investments, and their impact on climate action. An analysis of practical experiences in blending and packaging different instruments, as well as difficulties in doing so, and in providing operational guidance has been prepared.

Box 21. Building on Synergies between GEF, Montreal Protocol Funding, and Carbon Finance to Scale Up Climate Action

The India Chiller Energy Efficiency Project seeks to improve energy efficiency of building chillers (a major source of power demand) and accelerate phasing out of ozone-depleting substances by providing an incentive to overcome the upfront capital cost barrier of replacing and upgrading older CFC-based chillers with more-efficient non-CFC-using ones. Despite a potential 40 percent improvement in energy consumption, most building owners/managers have not embraced early timely replacement of outdated chillers, given higher up-front capital requirement, perceived technology risks, and high opportunity costs. The objective is to replace a total of 370 chillers (out of a total market size of about 1,200 chillers) over three years, with an average incentive of 20 percent, leading to an estimated (direct and indirect) 13 MtCO_{2e} reduction in GHG emissions over 20 years.

The project draws on an innovative combination of GEF and Multilateral Fund for the Implementation of the Montreal Protocol resources (upfront subsidy for early adopters of new chiller technology) and carbon revenues (contributing to a revolving fund to support replacement of additional chillers). This project illustrates how a limited upfront provision (less than 10 percent) of highly concessional resources (mostly from GEF) can potentially mobilize a much larger amount of resources (total cost of replacement estimated at \$90 million) with greater transformation impact (more than 25 percent of chillers are targeted), building on synergies and maximizing effectiveness of resource use and increasing their leverage. A similar project operates in the Philippines (with KfW purchasing the carbon credits) and is under consideration in Indonesia.

61. With new climate finance instruments and mounting experience in this field, DPOs are emerging as potential integrating platforms. A series of programmatic energy sector DPLs in Turkey illustrates a successful leveraging of CTF resources to promote inclusion of sustainable development principles, including climate change considerations, in sectoral policies and programs (Box 22). Three DPOs with a CAT-DDO, totaling \$300 million, were approved in FY09 in Colombia, Costa Rica, and Guatemala, increasing support for weather risk management. This new generation of DPOs tackling climate change together with earlier operations, such as the FY07 Morocco Energy Sector DPL, the FY08 Himachal Pradesh (India) DPO (assisting the state government in building its capacity to adapt to the melting of Himalayan glaciers triggered by climate change), and the FY08 Agriculture DPO in Ghana, are setting an example of a developing country's efforts to integrate climate risk management into the broader economic growth and poverty reduction agenda.

3.5 Improving Monitoring of Financial Flows

62. Throughout 2009, WBG has maintained a dynamic dialogue with OECD Development Assistance Committee (DAC) and the UNFCCC secretariat on the issue of monitoring and reporting climate finance. After a trial period during 2005–07, the Rio Marker for climate change (focusing on mitigation) was approved for inclusion in the OECD DAC data collection system and made mandatory from 2010. An adaptation marker is being introduced for use by all OECD DAC countries. WBG participated in the work on Rio Markers, as well as prepared the paper *Monitoring and Reporting on Financial Flows Related to Climate Change*, with inputs by OECD DAC and the UNFCCC Secretariat. The paper provides a comprehensive picture of various types of financial flows for climate action, with the focus on the relationship between public climate finance and official development assistance, and it provides recommendations for improved transparency and consistency in reporting. It complements the continued production of annual reports on the *State and Trends of Carbon Market*.

63. The Climate Finance Knowledge Platform, currently under development through a partnership between UNDP, the UNFCCC Secretariat, and WBG, is expected to play an important role in assisting developing countries, NGOs, and civil society to navigate the complex—and often compartmentalized—existing system of available financing for climate actions. It will further include examples of how an enabling policy environment can leverage public and private funds and present successful cases of bundling different types of grant and concessional funds to leverage commercial resources.

Box 22. Policy and Institutional Reforms Help Scale Up the Impact of Climate Finance Instruments

Morocco Solid Waste DPL: Connecting carbon finance and sectoral policy reform. The DPL supports the government of Morocco in implementing its program of reforms aimed at improving the financial, environmental, and social performance of the municipal solid waste sector. Carbon finance was introduced at an early stage to improve financial sustainability and promote sound environmental practices. Additional resources resulting from the sale of certified emission reductions generated by investment in landfill gas elimination or reuse projects creates an incentive for municipal investment in such projects. Fonds d'Equipement Communal (FEC), the municipal bank in Morocco mandated to help municipalities develop CDM projects and access carbon markets, received World Bank assistance to develop a CDM program of activities. Approved by the CDM Executive Board in 2007, the program facilitates CDM access for individual project developers and helps scale up carbon finance.

FEC signed the first Seller Participation Agreement for the Carbon Partnership Facility in October 2009. FEC will coordinate the program of activities and sell the CERs to the CPF through a 10-year purchase contract, running much beyond 2012. The program could attract up to 11 landfill gas projects—including those developed by major Moroccan municipalities during the first phase of the reform program (2008–12)—and generate average emission reductions of up to 7.6 million tCO₂ equivalent over 10 years. This operation illustrates the synergies between World Bank lending and carbon finance activities with the packaging of different financing instruments to support a policy reform and an investment program in the solid waste sector. The involvement of a local bank to coordinate the program and channel the carbon finance revenues could help leverage more financing for the sector.

Turkey DPL and CTF Investment Plan. The Turkey Environment Sustainability and Energy Sector DPL is the second project in a programmatic series that commenced with the Programmatic Electricity DPL operation approved in June 2009. The Government of Turkey requested that the scope of the First Programmatic Electricity DPL be expanded to cover climate change and environmental management. The broad objective of this program is to balance socioeconomic development with environmental protection by (a) integrating principles of sustainable development, including climate change considerations, in sectoral policies and programs of key development sectors, and (b) improving the effectiveness and efficiency of environmental management processes and the supply and consumption of energy. This energy efficiency—energy security—environment nexus reflects the energy, climate, and environmental goals of the European Union (EU) and effectively contributes to Turkey's EU accession process.

The CTF Investment Plan for Turkey will provide and leverage additional resources to support expansion of energy efficiency, notably through intermediation with domestic financial institutions to promote the engagement of the private sector. These two examples are part of a much broader energy reform, for which Turkey has utilized Bank's support strategically through a combination of instruments to put growth on a sustainable path.

3.6 Looking Forward

64. The WBG will continue to work toward increased mobilization of climate-dedicated resources and fulfillment of the Copenhagen pledges by developed countries. The WBG will continue emphasizing that climate finance must complement and strengthen, not erode, development assistance, as well as working with the OECD DAC and UNFCCC Secretariat to improve monitoring and reporting of climate-related financial flows. Our top priority will remain the replenishment of the IDA-16 for core (non-climate-related) development assistance, while emphasizing the importance of complementary financing for adaptation as key for sustaining poverty reduction outcomes in a more hostile climate. As climate finance seeks to catalyze development finance for achieving country-led sustainable development outcomes, an increase in IBRD capital will be important for helping WBG clients undertake sustainable development investments they will need.

65. Recognizing the potential of market mechanisms to commit increasing amounts of capital to sustainable investments, the WBG will continue innovating with carbon finance and capital markets. With growing engagement on disaster risk management and climate adaptation, there are opportunities to further expand coverage, depth, and efficacy of catastrophic risk financing. Future work will include further exploring and articulating linkages between the suite of existing WBG's instruments and emerging

climate finance, public and market-based. In case of REDD-Plus, for instance, capacity-building grants from the Readiness Fund of the FCPF can be followed by concessional and innovative finance, notably through FIP, to support the creation of an enabling environment and required investment, with further performance-based incentives through the Carbon Fund of the FCPF. Similarly, pipeline operations under the CPF look into combining carbon finance and other sources of finance (IBRD, GEF, or CTF) to enhance the impact of carbon finance on supporting sustainable development investment. Attention will be given to sharing lessons on such topics as innovative governance, efficient access to financing, and maximization of the leverage impact of dedicated climate funding that will be needed under any future funding scenarios.

4. IMPLEMENTATION PROGRESS: FOSTERING INNOVATION, KNOWLEDGE, AND CAPACITY

- ❖ *WBG broadened its reach to mobilize additional concessional and grant financing to catalyze the introduction and transfer of emerging energy sector technologies*
- ❖ *WDR 2010 on Development and Climate Change, with a series of flagship global, regional, and country reports*
- ❖ *A suite of global common goods: Climate Change Web and Data Portal, Guidance Notes, High Demand Training Programs*

4.1 Support Accelerated Development and Deployment of New Technologies

66. In support of country adaptation priorities, the WBG is investing in science and technology development, engaging both the public and the private sectors to introduce efficient agricultural inputs (improved varieties and seeds, fertilizers) and knowledge delivery systems. The Consultative Group on International Agricultural Research, in cooperation with the Earth Systems Science Partnership, has initiated a Challenge Program on Climate Change, Agriculture, and Food Security that focuses on vulnerability reduction and capturing climate change-associated opportunities in the Indo-Gangetic plains, East Africa, and West Africa.

67. The WBG continues its partnership with the GEF in pioneering RE and EE work. The GEF-WBG partnership has invested significantly in the pre-commercial development of solar thermal power over the years, with another two new projects soon to become operational in Egypt and Morocco. The WBG is supporting the GEF technology needs assessments (TNAs) by helping to develop and implement new TNA methodologies. In parallel, IFC continues to actively engage in both introducing and scaling up the deployment of new RE technologies, through investments such as a grid-connected solar cell facility in the Philippines, a fuel cell project in South Africa, and a biomass power technology in Brazil. The pilot \$40 million IFC/GEF Earth Fund is building partnerships with the private sector to promote clean technology, with \$7.8 million invested in five projects to date that have leveraged another \$37.2 million.

68. After a successful initial experiment with donor funds, IFC is now investing from its own account in early-stage clean tech companies and private equity funds. Investments in early stage climate-friendly technologies are centrally coordinated with overall targets, across all sectors and industries. The IFC's Cleantech Investment Program supports the growth of early-stage clean technology companies in developing countries with initial investments in energy efficiency in China and Russia, as well as in clean drinking water in India. IFC is also engaged in an investment strategy across the solar value chain, investing in materials, manufacturing, solar applications, and power generation (Box 23).

Box 23. New Investment under the Sun: IFC Pushing Solar

IFC's \$50 million equity investment and \$25 million loan to Russian polysilicon producer Nitel Solar in southeastern Siberia promotes solar cell technology, thus contributing to the growth of the country's renewable energy sector. Nitel Solar's projected output of 3,700 tons annually equals about 9 percent of global polysilicon supply as of 2007, or about 300MW of solar power per year.

IFC investments of \$110 million in two solar PV manufacturers in China provided critical support for overcoming the severe growth constraints imposed by the 2008 financial crisis. With IFC's help, the two companies have been able to move forward, with aggressive plans to launch a new line of highly efficient solar modules, making use of its cutting-edge, proprietary crystalline silicon technology, and with plans for a new solar thin film facility. This contributes to making solar energy a more cost-competitive power alternative—part of IFC's overall strategy to help solar industry players achieve “grid parity” with conventional power sources without subsidies. Leveraging \$1,355 million from the private sector, the IFC's investment also helped to create new jobs, promote economic growth for the frontier regions, and contribute to global CO₂ reduction.

69. A new multi-donor trust fund for supporting the introduction of carbon capture and storage (CCS) technologies has been established at the World Bank and will provide technical assistance to clients. This work further complements the WBG's long-standing cooperation with the IEA to enhance international collaboration on clean energy technology, including a joint WBG-IEA workshop on CCS held in September 2009.

70. The World Bank has undertaken extensive analytical work and consultations to identify barriers to technology commercialization and possible programs to address them.¹⁰ The Bank is using its core competencies, leveraging past technology successes in agriculture and vaccines, and partnering with complementary organizations to contribute to global efforts in this area. The Bank has also developed programs to gather and disseminate to developing countries objective, cutting-edge knowledge on key emerging technologies (e.g., concentrated solar power, CCS, and smart grids). Among the Bank's technology acceleration efforts, InfoDev launched the Climate Technology Program in September 2009. The program explores the feasibility of climate technology innovation centers in developing countries as a way to stimulate locally relevant climate technologies and harness economic opportunities at the SME level, with its first centers already under development in Brazil, India, and Kenya (see infodev.org/climate).

71. Moving forward, growing experience in supporting new technologies underscores the WBG's comparative advantage in deployment and scale-up of relatively tested and mature technologies, where the main barriers are financing, market penetration, and business growth, as opposed to an early R&D stage. The WBG's efforts in the technology area will be focused accordingly, expanding its partnership with the GEF, which is better positioned to take on early R&D risks. Reflecting the continuing disparity between available climate financing and ambitions for new technology research, development, and transfer to developing countries, emphasis should be given to supporting early-stage deployment of technologies like CCS in interested developing countries and bringing down costs rather than R&D itself. Through the CIF/CTF, the WBG is already supporting technology scale-up with the help of innovative financing, a process that is expected to expand as the SREP and FIP funds gain momentum.

72. Information and communication technologies (ICT) emerge as an area of growth and innovation for enabling climate-smart solutions in sectors like water, transport, and electricity. The WBG should build on its strength in assisting clients to set up the policy environment for the enabling ICT technologies and making applications like remote sensing and mobile applications more real and tangible for a client's routine decision making and economic activities.

4.2 Scaling Up Policy Research, Knowledge, and Capacity Building

73. Knowledge and capacity building are crucial in enabling investments, markets, and technologies. The WBG has massively stepped up its analytical work across sectors, issues, and countries and is using new knowledge for informed decision making. There is an effort to bridge the knowledge gap that exists in adaptation in developing countries through the Global Expert Team on Adaptation to Climate Change (GET-CCA) and the PPCR. The WBG is focusing on increasing climate change awareness and the skills of development practitioners.

Knowledge and Policy Research at the Global Level

74. The 2010 WDR on Development and Climate Change was launched on September 15, 2009. It points to massive funding requirements for mitigation, adaptation, and technology that dwarf official

¹⁰ Technical Briefing Accelerating Commercialization of Advanced Energy Technologies for Developing Countries was delivered to EDs on January 27, 2009.

development assistance of roughly \$100 billion a year. Moreover, current efforts to mobilize funding for mitigation and adaptation stand at less than 5 percent of projected needs. The report shows that a "climate-smart world" is possible if the world decides to "act now, together and differently." The WB is launching a follow-up flagship analytical work and a knowledge platform on *Infrastructure and Climate Change* to fill knowledge gaps on key economic and operational issues that climate change raises for infrastructure.

75. The Development Economics Group has also engaged in systematic investigations of critical cross-cutting as well as sector- and country-specific climate change issues. Examples include development work with the FAO and the UK Foresight Initiative on the climate change impacts on agriculture, including potential sector shifts and the impacts on food self-sufficiency. Other research topics address the implications of potential border tax adjustment policies, including carbon leakage, and the structural impacts of international mitigation policies on developing country manufacturing.

76. The importance of adaptation in Bank programs is reflected in a series of global flagship reports produced over the last year, which have helped client countries improve their understanding of science and the economics of climate change adaptation, as well as possible solutions and tools.

- The *Economics of Adaptation to Climate Change* (EACC) global report, released in September 2009, identifies development as a critical imperative in scaling down adaptation financing needs. The global report estimates that the cost for developing countries to adapt to climate change in a 2 degree warmer world would be \$75–\$100 billion per year during the period 2010–50. Seven country studies—Bangladesh, Bolivia, Ethiopia, Ghana, Mozambique, Samoa, and Vietnam, as well as the synthesis report, have been completed in the spring of 2010.
- *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World* explores the role of equity and socially differentiated vulnerabilities, migration, conflict, gender, indigenous knowledge, and local institutions in adaptation.
- A report on *Adaptation in Agriculture* addresses an area of growing importance, looking to develop a state-of-the-art assessment of agricultural carbon sequestration knowledge, evolved methodologies, and emerging technologies to overcome constraints in soil carbon trade.
- *Biodiversity, Climate Change, and Adaptation*, launched at the IUCN Congress this year, reviews the Bank's biodiversity portfolio, emphasizing how activities primarily contributing to biodiversity can also support climate change adaptation and mitigation.
- *Water and Adaptation to Climate Change: Implications on Investment and Project Design* set the foundation for a larger programmatic initiative to assess the impact of climate change on water sector investments and develop screening methodologies and tools.
- *Emerging work on health and climate change* points to the additional cases of diarrhea and malaria in the developing world, the impact of extreme rainfall and temperature events on the incidence of diarrhea, malnutrition and mortality in young children in Sub-Saharan Africa, and increased vector-borne disease burdens in South Asia, including in previously unaffected regions.
- Analysis of the linkage between *climate change and human rights* is being pursued in close collaboration with partners, such as the UN Office of the High Commissioner for Human Rights.

77. Analytical work on low-carbon growth has focused on understanding CO₂ emissions growth drivers, distributional impacts of mitigation policies, and financing instruments and policy options to affect them, as well as on accelerating technology innovation. Renewed attention is given to policy work on energy subsidies and associated social impacts, and how they can be addressed in a way that improves economic and social welfare while supporting low-carbon development. New work on carbon

footprinting and food systems analyzes possible trade impacts of current GHG accounting methodologies, which may put developing countries at a disadvantage.

78. In parallel, the WBG is moving to improve data availability and indicator reporting. The annual *Green Book* publication has been augmented in 2009 to offer climate change–related data on cities. The WDR 2010 report widely publicized selected global and country-specific indicators on energy-related emissions and carbon intensity; land-based emissions; total primary energy supply; countries’ exposure to natural disasters and sea-level rise; land, water, and agriculture, including projected physical and agricultural impacts by 2050; and the wealth of nations, including natural capital.

Region and Country-Specific Analytical Work

79. The Bank Group works closely with client countries to inform and support national, sectoral, and local development policy and planning and extend similar support to its private sector clients. All WB regions have substantially scaled up analytical work responding to the needs of their clients. Highlights are summarized in Box 24; details on region-specific analytical work are provided in Annex 2.

Box 24. WBG Regional Studies on Climate Impacts and Strategies

The World Bank works, in collaboration with developing country governments and research institutions, on a suite of regional studies on climate impacts and strategies for building resilience. A few can be mentioned here:

Climate Change and Africa’s Water: What are the Operational Implications? focuses on the economic impact of climate change and adaptation costs and benefits in Ethiopia, Sudan, Mozambique, South Africa, and Ghana. Ongoing work also addresses climate change impact on smallholder agriculture in Kenya and related options for carbon sequestration, as well as coastal adaptation in Senegal. In the transport sector, the report *Making Transport Climate Resilient* builds on case studies in Ethiopia, Mozambique, and Ghana to identify potential engineering, planning, and resource impacts on road development and maintenance in Sub-Saharan Africa.

Meeting East Asia’s Growing Energy Needs in a Sustainable Manner Flagship Report is now available, and a regional study on *Climate Impact and Adaptation in Asian Coastal Cities* is under way with the Asian Development Bank. The Poverty Reduction and Economic Management Network (PREM) is undertaking a program on Economic Policy and Climate Change in APEC Economies consisting of three major studies: Using Trade and Investment Policies to Promote Climate Friendly Technologies (Indonesia, Thailand, China, and Vietnam); The Impact of Extreme Climate Events on the Poor and Policy Responses (Indonesia, Mexico, and Vietnam); and Using Fiscal Policies to Respond to Climate Change.

Adaptation to Climate Change in Europe and Central Asia Flagship Report is also available and a follow-up *Pilot Program on National Adaptation to Climate Change* aims to help clients understand likely climate change impacts on vulnerable subregions and develop cost-effective adaptation approaches.

Low Carbon, High Growth, Mitigating and Dealing with Climate Change in Latin America and Caribbean, Flagship Report focuses on the development and climate change nexus, while another pioneering study explores the social impacts of climate change.

The Economic and Social Impacts of Climate Change on Agriculture in Middle East and North Africa: A Regional Analysis aims to improve the understanding of the regional impacts of climate change on agriculture in order to improve the design of adaptation initiatives and promote their integration into sector policies and programs.

Climate Change Impacts in Drought and Flood Affected Areas in India informs adaptation choices in India, while similar analysis in Bangladesh explores the implications of climate change for food security and adaptation strategies for Bangladesh.

80. Underscoring the nexus between climate change and sustainable economic growth, **low-carbon growth studies in seven countries**—Brazil, China, India, Indonesia, Mexico, Poland, and South Africa—are undertaken in close collaboration with the respective governments, agencies, and local stakeholders. These studies are targeted to the specific needs and priorities of each country. Collectively,

analysis covers energy efficiency in end user applications, the power sector, transport, land use, and bio-energy, complemented by policy and implementation advice (Box 25). Three studies were completed in 2009 and four more are expected to be finalized in 2010.

Box 25. Low-Carbon Growth Country Studies Program

Studies in China, India, Indonesia, Mexico, Poland, and South Africa have reinforced some broad messages (e.g., the need for renewable energy and energy efficiency support) and also returned some surprises (e.g., low-cost transport options and cogeneration investments). The studies have also fostered in-country ownership of mitigation strategies. Some highlights are as follows:

In *Brazil*, the impacts are evident. Detailed sector methodologies are in use, yielding technical results, improved information-sharing across sectors and within the public sphere, and stronger linkages between technical research groups and corresponding government ministries and agencies. The study was delivered to the Brazilian government in November 2009 and will be disseminated through early 2010.

China's study provides policy support to better understand renewable energy and energy efficiency targets and low-carbon growth. Final outputs from analytic work for three policy papers on renewable energy, power dispatch efficiency, and cement sector efficiency were delivered in October 2009.

India's study reveals that the country has a relatively low-carbon economy. The priority remains to meet energy demand and sustain high economic growth despite energy shortages, problems with access, and poverty concerns.

The *Indonesian study* offers insight into fiscal and financial policy instruments—and tax and spending policies—used to promote movement toward a lower-carbon economy, consider strategic investment approaches and financing sources, and improve fiscal incentives in forestry.

Mexico's study provides a body of knowledge about prospective low-carbon “wedges,” specific low-carbon projects, and the continuing policy reform agenda. The primary energy savings identified arise from cogeneration and improved industry energy efficiency. The untapped mitigation potential in the forestry sector is highlighted.

The *Polish study* aims at formulating an integrated strategy for GHG mitigation on the basis of a methodology that integrates detailed “bottom-up” sectoral work with “top-down” macroeconomic modeling.

South Africa's study is helping to create an environment for implementing energy efficiency and DSM by reviewing long-term mitigation scenarios and developing implementation strategies in key sectors.

Tools, Methodologies, and Guidance Notes

81. The WBG has been developing a wide range of analytical approaches and instruments to inform its policy dialogue, technical assistance, and financing at the project, sector, and country level:

- *The Climate Change Data Portal* (<http://sdwebx.worldbank.org/climateportal>) has been developed to provide Bank staff and development practitioners' with access to climate change and climate-related spatial datasets and tools for operationalizing climate resilience and low-carbon opportunities in development projects. This portal also serves as a launching point for region-specific data on land use, the Bank's screening tool “ADAPT,” and UNDP's Adaptation Learning Mechanism.
- *Guidance notes to help with climate risk management and adaptation in development projects* have been developed for a number of sectors, including a suite of analytical tools for understanding the role of local institutions in climate change adaptation, new transport sector assessment tools to reflect external costs and co-benefits, a series of eight guidance notes to assist with “climate proofing” in agriculture and natural resource management, and gender dimensions of climate change.
- Extensive legal analysis is being carried out on all aspects of the WBG's climate change-related work with complex legal implications, devoted to legal issues that may potentially arise.

82. The WBG is advancing pilot work on GHG analysis of its investments.¹¹ As the methods for GHG analysis for the WB differ from those for the IFC, concurrent and coordinated work is carried out in each institution. The IFC has begun measuring the GHG footprint of its real sector investments since February 2009 and is now developing methodologies and tools to be applied to financial intermediaries and advisory services. In parallel with the IFC, the WB has initiated a number of complementary initiatives, including (a) development of citywide approaches for assessing the GHG footprint, including a common GHG Index for cities, and assisting cities to generate carbon finance revenues under the CDM; (b) technical inputs to a GEF-led process aimed at improving ex-ante estimates of urban transport project emissions; and (c) development of project-specific approaches in the energy, transport, and forestry sectors, as part of lending operations in EAP, AFR, and SAR.

83. Looking ahead, it is envisaged that the ongoing work at IFC and the WB will help identify applicable methodologies and tools for GHG analysis taking into account the nature and scale of activities, further the understanding of the GHG implications of the respective portfolios, and inform the dialogue with clients in accordance with the principles agreed in the SFDCC. The IFC and World Bank are also initiating analytical work to explore the role of carbon pricing in analysis of project feasibility, with a particular focus on emission-intensive projects and sectors.

Capacity Building

84. Climate change competencies are being built and the knowledge base enhanced within the WBG. There has been a rapid growth in CC-related seminars with the total monthly average of events doubling every year for the last three years, from 5 (2007) to 11 (2008) and 20 (2009). Dedicated new programs were developed for staff with the stated objective of strengthening the WBG's internal capacity to provide quality advice and timely support to our clients across sectors and regions. They target WBG practitioners and leaders as well as development partners outside the Bank group:

- *Climate Change for Development Professionals (CCDP)* is a comprehensive knowledge, learning, and capacity-building initiative for WBG staff. With more than 4,000 participant hours delivered in training sessions and 1,300 in knowledge-sharing events, this initiative is furthering staff skills and improving their understanding of climate change complexities and challenges.
- *The Sustainable Development Leadership Program (SDLP)* targets WBG senior management and team leaders. Its objective is to develop a common view on sustainability and ensure literacy on cutting-edge topics, with several modules on climate change. More than 300 leaders have been trained and an additional 50 will participate in the next cohort. Results are already visible in the consideration given to sustainability and climate change issues across operational WBG units.

85. Responding to client demand, the WBG has initiated a number of country-specific and regional technical assistance programs. Collaborative analytical and advisory work with clients contributes to capacity building and is already influencing national climate action plans, exemplified by partnership with Turkey and a program on climate-resilient cities with pilot implementation in Vietnam, Indonesia, and China. Other examples include support to the Ministry of Finance in India and a regional technical assistance program for countries in the Middle East and North Africa, including knowledge exchange and identification of project ideas. Client countries continue to actively seek the service of CF-Assist, the Bank's corporate program for carbon finance capacity development, which designs and implements programs focused on strengthening regulatory institutions, setting up procedures, and

¹¹ SFDCC provided for pilot work on GHG analysis meant to (a) build staff and client capacity to understand and apply the analytical tools to prepare for a carbon-constrained future; (b) gather information to better understand the implication of possible new approaches; (c) identify low-cost mitigation opportunities across operations; (d) facilitate analysis of alternatives; and (e) help promote efficient use of emerging climate funds. Such work should further be demand-driven, undertaken as an analytical exercise, and not used for decision making.

assisting in project portfolio development. To date, it has reached more than 3,000 professionals across 20 countries. In parallel, legal capacity-building efforts focus on how climate change either triggers or intensifies the threats faced by developing countries.

86. The IFC Advisory Services makes significant contributions to addressing climate change. Relevant advisory interventions include those that improve the enabling environment for climate-friendly approaches by the private sector, as well as direct capacity-building support to firms and financial intermediaries. Advisory services focusing on climate change are projected to increase from less than 5 percent of total advisory project expenditure in FY09 to nearly 20 percent by FY13. Box 26 provides an example of such services in the ECA region.

Box 26. An Integrated Investment-Advisory Platform for Tackling Climate Change in ECA

Through extended partnerships, IFC has implemented an integrated investment-advisory platform for addressing climate change in Russia (source of 60 percent of the region's GHG emissions):

- Providing advisory services and financing to financial institutions on developing and rolling out energy efficiency lending products and to real sector clients seeking to improve energy efficiency and reduce GHG emissions and other waste
- Joining forces with the government, IBRD, and the European Bank for Reconstruction and Development to promote new policies that stimulate private sector investments in energy efficiency, cleaner production, renewable energy, and, most recently, residential energy efficiency
- Engaging with a broad range of stakeholders to provide sector benchmarking and disseminating best practices—educating the market about the benefits of investments in energy efficiency and cleaner production
- Building the capacity of local technical experts to effectively cooperate with financial institutions, companies, and governments on their climate change-related pipelines and programs.

Similar programs are being introduced in Ukraine (cleaner production and residential energy efficiency), the Balkans (renewable energy), and the Caucasus (energy efficiency finance).

87. South-South knowledge-sharing has emerged as a priority. To promote learning across regions facing similar challenges, the World Bank Institute (WBI) has initiated a series currently focusing on a system of rice intensification for “producing more with less water and farm inputs for adaptation.” In 2009, the Global Development Learning Network linked practitioners and government officials from Africa (Kenya, Madagascar, Rwanda) and South Asia (India), enabling them to synthesize and share effective practices for reducing the adverse agricultural impacts of present-day extreme climate variability. South-South exchange is also undertaken by the regions and is a priority activity for the GET-CCA.

88. Moving ahead, climate change is increasingly emerging as a strategic knowledge priority, building on the wealth of analytical and capacity-building work. Future knowledge and capacity-building programs will be closely aligned with the new Knowledge Agenda, with particular focus on joint learning and working with developing country institutions, sharing of best global expertise, and South-South knowledge exchange. Together with a greater emphasis on the integrated management of the emerging vast body of climate change-related knowledge, priority will be given to developing customized knowledge and capacity-building products that can be quickly translated into climate action and integrated in operations. Work will also expand on developing stronger monitoring and evaluation systems, allowing for real time learning and assessing operational applications.

5. IMPLEMENTATION PROGRESS: GLOBAL IMPACT THROUGH STRATEGIC PARTNERSHIPS

- ❖ *The growing partnership among MDBs is exemplified by the Climate Investment Funds, while the Climate Finance Knowledge Platform demonstrates the UN system-wide effort*
- ❖ *Regional partnerships and a dialogue with mayors on cities and climate change show broad range of engagement*
- ❖ *An enhanced communication strategy is reaching out to external and internal audiences*

89. No one institution or group of stakeholders can address the climate challenge alone. The World Bank Group is therefore working to broaden and deepen a variety of partnerships with governments, sister agencies, the private sector, and civil society in all aspects of climate action. Particular attention is given to building collaborative relationships with developing country governments and stakeholders and to addressing the impacts on the poorest and the most vulnerable groups, while remaining neutral to the negotiation positions of various member countries. The examples below are indicative of the overall approach of the WBG to supporting global climate action.

90. Led by the Africa Region, the WBG has supported the Africa Union to understand and address climate change issues in the context of its members' development needs. In addition to a body of sector- and country-specific analytical work, the WBG has provided strategic advice on an as-needed basis regarding Sub-Saharan Africa's options for advancing its developmental objectives in the face of climate change. The Bank is engaged with other developing country groups—including the least developed countries and small island developing states—that are among the most vulnerable to climate impacts and also capacity-constrained. In partnership with other development agencies, the WBG facilitated and supported the government of Nepal in hosting the first conference of South Asian countries on climate change, which concluded in a joint statement endorsed by the governments of Afghanistan, Bangladesh, India, Kyrgyz Republic, Maldives, Nepal, Pakistan, and Sri Lanka (Box 27).

Box 27. Kathmandu to Copenhagen: A Regional Climate Change Dialogue

The government of Nepal, with the support of WB and other donors, hosted the 2009 South Asia regional ministerial climate change conference—"From Kathmandu to Copenhagen: A Vision for Addressing Climate Change Risks and Opportunities in the Himalaya Region." The conference provided a forum for the countries of the South Asia Himalayas and other countries in the region to share knowledge and experience about common climate change risks and the development opportunities that could be fostered and develop a common message to the global community regarding the climate change challenges faced by the region.

The Kathmandu conference concluded with a joint statement that South Asia, including the Hindu Kush-Himalayan region, is a climate change hot spot. The declaration further affirmed the need for the countries in the region to accelerate sustainable social and economic growth and to come together to enhance their climate change responses through capacity building, the generation of required data, and adaptation at all levels. It called for the provision of special strategies and financial support to address the specific vulnerable communities of the region.

91. Responding to a call by the government of Indonesia to help nurture a dialogue among ministers of finance, economy, and development on climate change issues, the World Bank Group has continued the Bali Dialogue Series. The four events organized so far, linked to annual and spring meetings, focused on various aspects of financing needs and options for climate action, adaptation, and mitigation. These events provided a forum for finance, economic, and development ministers to engage in informal and open discussions, raise awareness, and increase understanding of challenges, solutions, and strategic choices.

92. The WBG is actively participating in the UN's system-wide effort—initiated by the UN Secretary-General—to provide a coordinated response to climate change. The WBG formed part of the Climate Change Team that advises the UN Secretary-General on matters related to the role of the UN system, helping to conclude a successful new global agreement on climate change. The WBG has engaged in the initiative spearheaded by the UN Chief Executive Board to present the wider UN system as “Acting as One on Climate Change,” including a joint UN thematic side event in Copenhagen on climate finance. In their function as co-conveners of the UN-wide working group on climate finance, the WBG and UNDP, in close collaboration with the UNFCCC Secretariat, are developing a Web-based Climate Finance Knowledge Platform (see Chapter 3). The WBG is contributing to the UNEP-led effort to develop a *Green Economy* Report that seeks to support and advise governments on green investment approaches across a number of sectors.

93. Strategic partnership with GEF continues. As of FY09, the WBG had mobilized \$4.29 billion from GEF since its inception, with 40 percent concentrated in the climate change focal area. This has leveraged close to \$4 billion in IBRD and IDA investments. IFC has mobilized nearly \$2 billion in private sector additional investment (leveraging GEF 1 to 13). The WBG, as both trustee and implementing agency of the GEF, has joined other organizations in support of a strong GEF-5 replenishment and will continue to facilitate greater leveraging of GEF resources through a wider use of programmatic approaches packaged with other instruments, such as carbon finance and the CIF. Supported by the GEF and bilateral donors, the IFC worked with Standard & Poors to develop the first Global Emerging Market Carbon Efficient Index that enables large institutional investors to send a powerful signal to companies to improve their emission performance.

94. The new FCPF and CPF exemplify important partnership efforts and platforms for dialogue and cooperation. Supported by 14 contributing countries, the FCPF is a partnership with 37 developing countries and organizations that provides technical and financial assistance to country participants for analyzing the drivers of deforestation and forest degradation, designing monitoring systems, defining reference scenarios of land use change and emissions, devising REDD-Plus strategies, and setting up national management arrangements for REDD-Plus. Together with the CPF facility, it provides partners with “learning by doing” opportunities and provides critical space for experts from various sectors and countries to build the understanding needed to advance the UNFCCC decision-making process.

95. The CIFs further elevated partnership and coordination among the MDBs. Building on the CEIF foundation for scaling up collaboration in the area of climate change, the MDBs combined efforts to design and operationalize the CIFs. They now work together to provide coordinated support to country-driven programs, allowing countries to select assistance from each MDB based on its comparative advantages. A separate MDB committee, with a representative from each bank, serves as a conduit of the MDBs, functioning as a facilitator and adviser, harmonizing MDB climate change portfolios, linking programs with CIF-supported initiatives, and engaging outside actors—bilateral development agencies and development partners—to promote cofinancing. The heads of several MDBs and the IMF signed a joined statement calling for an ambitious global climate action prior to the Copenhagen COP in December 2009 and agreed to coordinate future efforts.

96. The WBG has been strengthening partnerships to address local dimensions of climate change. The Global Development Marketplace is an annual competitive grant program that identifies and funds innovative, early-stage development projects that have high potential for replication and development impact. The 2009 theme was Climate Change Adaptation, made possible by a WBG partnership with the GEF, the International Fund for Agricultural Development, and the government of Denmark. It attracted a pool of 1,755 applicants from 47 countries (Box 28). The Mayors Taskforce on Urban Poverty and Climate Change is a new high-level initiative that brings together mayors of

megacities to develop concrete programs to address urban poverty in a “climate-smart” way. Results and lessons learned will inform deliberations in international meetings of city and climate change leaders, such as the C40 biannual summit. The Bank Group is also working with UN-HABITAT and UNEP to prepare citywide vulnerability assessments and a pilot GHG emissions index for the world’s 40 largest cities.

Box 28. Global Development Marketplace 2009: 100 Ideas to Save the Planet

In Peru, an innovative forest fire management program prevents the risks of more fires with rising temperatures. In Kenya, communities share experiences with multipronged approaches to managing climate risks, combining indigenous knowledge with modern technologies. In India, women and youth use reality-show methods to describe climate options. In the Philippines, a mangrove restoration initiative helps improve livelihoods and the crab catch during storms and also protects against longer-term climate change impacts. These are just some of the “100 ideas to save the planet” featured at the 2009 Development Marketplace, which focused on innovative solutions for climate change.

Out of these 100 great ideas, 26 winners were announced in three categories—Resilience of Indigenous Peoples Communities to Climate Risks; Climate Risk Management with Multiple Benefits; and Climate Adaptation and Disaster Risk Management. Each winner receives a grant of up to \$200,000 to implement its project over two years. Making the selection was tough because of so many wonderful ideas and dedicated people behind them. But the most important “take-away” message from the 2009 Marketplace was that the ingenuity of people has no limits. It is this ingenuity that will define our planet’s future.

5.1 Communication and Outreach

97. The SFDC consultations dialogue continues with a range of stakeholders, including civil society, indigenous groups, the private sector, and the most vulnerable communities. These stakeholders were instrumental in framing the action areas of the SFDC. They continue to inform its implementation through a Web-based discussion forum, as well as in direct discussions at the UNFCCC meetings in Poznan (December 2008) and Bonn (March and June 2009). The WBG’s commitment to such dialogue is further exemplified by the annual CIF Partnership Forum, a broad-based meeting of stakeholders, including contributing and eligible recipient countries, MDBs, UN and UN agencies, GEF, the UNFCCC Secretariat, the Adaptation Fund, bilateral agencies, NGOs, indigenous peoples, private sector entities, and scientific and technical experts. Its first meeting took place in Washington in October 2008, and the second meeting was held in Manila in March 2010.

98. A **Climate Change Communication Plan is in place** that maps out priorities and directions to increase synergy and harmonization of climate change initiatives across the WBG. One of the cornerstones of the plan is to communicate the priorities of developing countries on climate change. A concerted effort to “speak with one voice on climate change” within the WBG, which was initiated in the lead-up to Copenhagen, is now being scaled up to better reach country offices. A cross-sectoral climate change communications team has been organized that holds weekly consultations to coordinate climate change-related communication approaches, messaging, and products. As the institution builds knowledge and expertise, the WBG staff is actively engaging in a wide range of national and major international forums addressing climate change issues. The WBG has substantially contributed to several high-level climate change events, such as the UN General Assembly. The WDR 2010’s detailed communication strategy helped in successfully disseminating key messages to country offices and a worldwide audience.

99. A **new climate change Web site was launched in July 2009** as the first pilot of a larger World Bank strategy to upgrade its Web services. This has improved Web search functions and usability as well as increased the effectiveness of Bank messaging on the subject. The Web site has also become a vehicle for soliciting feedback, reporting the latest news and comments on climate change, and disseminating

various knowledge products. The new site has seen a 74 percent increase in monthly visitors in one year, with page views increasing by 99 percent. The site has shown even greater increases in traffic from developing countries, with a 93 percent increase in monthly visitors and a 127 percent increase in page views in one year, starting in September 2008. A service account, Climate Change Help, has been created and is now servicing 1,800 self-selected members every week with event listings, relevant articles on climate change, and upcoming conferences and other meetings.

100. While communication has improved—internally as well as externally—a number of challenges remain. Because of the cross-sectoral and interdisciplinary nature of climate change work, the flow of information does not fully reflect the true range of work being done within the WBG, nor does it reach all relevant constituencies. In particular, communication with the country offices needs to be strengthened in order to help them become familiar with the work done across other regions and sectors of the WBG. This is becoming a top priority, as it is the regions that will ultimately operationalize technical research, tools, and guidance, as well as integrate the latest science and economics of climate change in their mainstream development work for WBG clients.

5.2 Looking Forward

101. Extensive experience gained in working with others creates a stage for deepening collaborative efforts by better recognizing comparative advantages of each institution and defining their roles in a common endeavor. Among the MDBs, the WBG's unique strength is global convening power, as well as knowledge and experience across all countries and development stages, while the regional development banks (RDBs) may have simpler processes and business products that are tailored to regional contexts. UNDP has an advantage of wider presence at the local level, particularly in smaller and poorer countries, which is important, for example, for community-based adaptation work, while UNEP is well suited for innovating changes in business behavior using small funding. Developing and demonstrating practical models of support services in which these institutions play complementary roles—building on emerging experiences from the CIF programs, FCPF, and analytical work—would benefit the recipients and also help a broader process of designing the architecture for delivering future climate finance flows.

102. The WBG will expand its dialogue with client countries to continue active learning about their priorities and expectations from the WBG in order to build more effective partnerships. There will be an effort to bring together diverse stakeholders at the national level (e.g., ministers of finance and environment) and subnational levels (private sector, city officials, local governments, and communities) to facilitate integration of different perspectives. These opportunities would be used to undertake a more systematic outreach about WBG's policies and products as part of an enhanced communication strategy.

6. INSTITUTIONAL ARRANGEMENTS AND RESULTS

- ❖ *WBG has created or strengthened dedicated climate change entities and coordination mechanisms, including the WBG-wide Climate Change Management Group*
- ❖ *SFDCC's focus on learning and innovation is paying off, but scaling up operations will take more time—and will require simpler procedures*
- ❖ *The development of a comprehensive results framework is coordinated with similar processes and allows more precise monitoring of climate change–related investments*

6.1 Institutional Arrangements

103. Several steps have been taken to provide institutional support to growing climate change–related work while recognizing its cross-cutting nature.

104. The WBG-wide Climate Change Management Group (CCMG), involving representatives from all sectors (all Sustainable Development Network (SDN) sectors, PREM, Human Development, Concessional Finance and Global Partnerships unit), regions, and entities (IFC, MIGA, Development Economics Group, WBI, Treasury) has been established and emerged as an effective coordination mechanism. Its objective is to coordinate the cross-sectoral work on climate change, facilitate the development and implementation of a common corporate vision, and help create a “community” or a “mega-network” of “climate change concerned” development professionals. Its functions include serving as a platform for communication—sharing up-to-date information on WBG activities in climate change, coordination—exchanging work programs and plans across units to minimize duplication, and facilitation—based on a review of implementation of the SFDCC and taking account of new developments, identifying and supporting action areas that require increased attention or emerge as new priorities.

105. Over the past year, most regions have built “climate change beams” led by the climate change coordinator and including several other staff from key sectors. A network of climate change coordinators has been developed that complements and works closely with the CCMG. Each region and anchor unit /entity has a senior staff member responsible for facilitating, monitoring, and reporting climate change activities in the respective region/unit, for developing a climate change strategy or action plan, coordinating with other sectors and regions, and for working with the CCMG and its secretariat. Climate change coordinators/focal points also have been appointed for countries with significant programs in climate-relevant sectors and an interest in WBG support in this area. Recognizing the importance of helping client countries adapt to climate risks and significant knowledge and capacity gaps, one of the 10 Global Expert Teams, established under a new knowledge initiative, is on Adaptation to Climate Change (GET-CCA). The team focuses on supporting priority operations with the best available expertise, sharing knowledge, and supporting South-South partnerships.

106. The WBG has also created or strengthened dedicated climate change entities.

- Following the establishment of the Climate Investment Funds, a *CIF Administration Unit* was created and housed within the World Bank (SDN Anchor). This unit serves all participating MDBs (yet another unique institutional arrangement), acts as a secretariat for the governing bodies of the various funds under CIF, and reports on progress.
- The *Carbon Finance Unit* (Environmental Department) has significantly expanded its operations, including on REDD and in the area of programmatic and sector-wide carbon finance, and has aligned carbon finance activities with the overall country programs to maximize leverage and impact.

- The *Climate Change Team* (Environment Department) work program has grown substantially, reflecting increasing external and internal demands. Today the team serves as a secretariat to the CCMG and the network of climate change coordinators; supports the implementation of the SFDCC and is responsible for monitoring and reporting its progress; develops and disseminates knowledge products, training modules, and analytical tools on cross-cutting issues; provides technical advice and support to operations and other anchor units; monitors and supports UNFCCC negotiations; and coordinates with UN agencies and other external partners.
- The *IFC Climate Change Unit*, established as the SFDCC was being prepared, helps ensure implementation of IFC climate change-related priorities, alignment with the SFDCC, and enhanced coordination between IFC and World Bank work on climate change. The unit has provided leadership on analytical issues of shared corporate interest, including carbon accounting and evaluation of climate risk from a private sector perspective.
- Recently, the IFC announced a new *Climate Business Group* under the leadership of the IFC Global Head of Climate Business Solutions whose function is to spearhead the implementation of the IFC's climate change strategy into investment development, advisory services, and industry knowledge.
- Dedicated *Climate Change Practice* at WBI has been created in response to increasing demand for capacity building by clients. WBI's Climate Change Practice includes four key capacity-building programs: leadership and coalition building for climate change; mitigation-innovation in carbon finance; cities and climate change; and water, agriculture and natural resources management, and climate adaptation. The practice has made cities a special priority, given their role in terms of emissions, mitigation potential, and adaptation needs.

107. As a demonstration of its corporate commitment to addressing climate change, the WBG continued and deepened its efforts to be “carbon-neutral” in its offices and travel. The World Bank is well on target to meet its commitment of a 7 percent emission reduction from headquarters-based operations. Moreover, in 2009 the Bank joined the IFC in committing to become "carbon-neutral" for its global day-to-operations, including facilities, key meetings, and trackable business travel in all regions. This would be a 35 percent increase in emission offsets, compared with its current practice of achieving carbon neutrality for its Washington-area facilities and associated staff travel. The WBG has also started reporting its operational footprint through the Carbon Disclosure Project, a not-for-profit organization that is the recognized standard for detailed corporate reporting on emissions data and other climate-related disclosure information.

108. Looking forward, reducing transaction costs in an increasingly diversified landscape of climate finance—and maximizing synergies among a number of instruments—entails an effective combination of financing instruments, each addressing specific barriers, risks, or needs. Enabling operational staff to deliver such innovative financing solutions requires new skills. While innovative task teams grow, there is still limited knowledge of climate finance opportunities or experience with a combination of resources. Continuous support, training and guidance documents, examples of successes from early innovators, simplification of procedures, and increased experience in blending resources will be needed to promote innovative solutions in programming and lending at the country level. Internal coordination will be strengthened with other networks like Human Development, PREM and FPD. Cooperative work on financial instruments and products will similarly become more systematic across IFC, MIGA and the WB. Addressing regional and cross-regional issues continues to be difficult and should receive further attention, while the truly global nature of GHG emission mitigation needs to be better recognized in analyses driven by a country and even regional level perspective.

6.2 Measuring Progress

109. The SFDCC adopted a dual-track approach to developing a results framework. Annex 1 presents the progress to date on the set of key actions, deliverables, and indicators adopted by the Board to monitor the WBG's progress during fiscal years 2009–11 and proposed additions.

110. In consultation with development partners, the WBG has started the process of developing a comprehensive results framework (RF) for the WBG's climate action in the longer term. Following the preparation of a design approach note, it is now working on specific indicator development, in close coordination with the development of results measurement systems (RMS) for the Climate Investment Funds. Reflecting on the SFDCC umbrella function and to avoid duplication the RF is expected to use existing WBG corporate and sectoral RMSs. This includes incorporating (to the extent possible) relevant elements of the IFC RMSs, as well as those that are being designed and tested by the CIFs. The CTF, in particular, is expected to provide a model for monitoring the extent to which client countries benefit from WBG investments that help transition to lower GHG emission development while delivering economic and social benefits. PPCR, on the other hand, offers a learning platform for defining and measuring country-level adaptation actions and impacts.

111. Looking forward, it is expected that the RF indicators will be used and reported in linkage with and as a supplement to the core MDG indicators and in conjunction with the models developed as part of the ongoing RMS standardization work. The latter are also the appropriate source for the RF's sector-specific indicators to track WBG's progress in building a more climate-resilient and sustainable investment portfolio. As part of this process, the WBG is also improving its portfolio tracking and monitoring system to better track investments that yield climate-related benefits and analytical and advisory activities that address the impacts of climate change and related policies on development. At present, the WB and the IFC are systematically tracking and reporting on clean energy and climate-friendly projects. Work is ongoing to expand such tracking to other relevant sectors and to integrate it with the WBG's core corporate systems, taking account of ongoing relevant work in the OECD. The development of sector-specific guidance notes is ongoing and will be piloted in Q3–4 of FY10.

7. EMERGING LESSONS AND DIRECTIONS

- ❖ *Continued importance of learning, knowledge sharing, capacity building and strengthening partnerships with WBG clients, with particular attention to the most vulnerable*
- ❖ *Three-pronged approach of strong IDA-16 replenishment, IBRD capital increase, and predictable, reliable, and adequate flows of additional climate finance essential for effective support to developing countries as they tackle poverty in a changing climate*
- ❖ *Priorities for the remaining implementation period informed by lessons from implementation, growing climate demand, and evolving global context*

7.1 Taking Stock: Clarifying Achievements and Challenges

112. WDR 2010 and growing operational experience reaffirm the premise of the SFDCC that development efforts can no longer ignore the risks of climate change or the local and global benefits of sustainable solutions. As this progress report shows, the IFC, MIGA, and World Bank operations to support climate-related actions and initiatives are gearing up. The IFC has invested more than \$1 billion in RE/EE energy in fiscal 2009, while the WB estimates \$7.3 billion in active and pipeline operations yielding adaptation and mitigation co-benefits in the Latin America and the Caribbean Region alone. Africa emerged as a major global player on climate change supported by the Bank Group through a comprehensive regional strategy to help the continent achieve sustained climate-resilient growth. As WBG's regional operations and various entities have engaged in addressing climate change issues relevant to the development goals or business interests of their clients, significant new initiatives included a successful dialogue with cities, expanding work on "soil carbon," an increased focus on "green infrastructure," and a growing engagement with institutional investors, in addition to a series of demand-driven activities developed by all regions (see Annex 3).

113. Overall, progress was made across all areas of action and all parts of the WBG, with useful lessons going forward. A tangible impact has been particularly evident on knowledge, capacity, uptake of country and sector dialogue, developing innovative pipelines, and collaboration with UN and MDBs, as well as within the Bank Group. New knowledge and finance undertakings have improved WBG capacity to support its clients on a range of issues related to development and climate change, as well as contribute to the global dialogue. The institution has met or is on track to meet most of the key indicators it has committed to under the SFDCC (see Annex 1). At the same time, several indicators and milestones require modifications to better assess the WBG's performance and recognize some challenges. WB's comparative advantage of a strong country-level policy dialogue and global convening power could be better reflected.

114. For example, while a major effort was made to initiate climate-risks screening for water investments with a long life span, in-depth analytical work revealed the need for a new decision-making framework that helps the water sector deal with wide uncertainties of long-term projections at the project scale, rather than simply modifying the engineering design for a new level of a particular climate risk. This was reinforced by the WDR 2010, which advocated a shift from "optimal" to "robust" decision making. A program of analytical work is being developed to tackle this issue.

115. Operationalization of screening for energy efficiency opportunities highlighted the importance of WB's engagement at the country-wide and sector-wide policy level. Project-level screening further progressed at the IFC. At the WB, many regional and country energy teams felt that the level of engagement they had established with government counterparts warrants—and would achieve a greater impact through—working on improving a sector-wide policy framework for promoting energy efficiency, as opposed to screening a particular project that happens to be WB-financed (and represents a very small

amount of investments in a sector, a typical situation in middle-income countries and larger countries). This observation is consistent with broader ongoing efforts to reform WB processes toward supporting sector-wide approaches and country systems, and emphasizes the importance of factoring the unique strengths of a particular international financial institution (IFI) when “transferring” other IFI experiences. Analytical work has commenced to assess and articulate a comprehensive approach to this issue in the context of different countries with a different level of energy sector dialogue.

116. The WBG demonstrated an ability to respond, adjust, and deliver in a very volatile political environment, reconciling strategic priorities with tactical considerations. SFDCC implementation efforts were influenced by global climate change dialogue in the run-up to the Copenhagen COP-15 in December 2009. A significant emphasis in WBG work was to produce and share relevant knowledge to inform and help the negotiations. The external environment of intense preparations for COP-15 placed multiple new demands and requests on clients and partners, often at very short notice. This led to frequent reassessments of work program priorities, particularly for the anchor units, but increasingly for the regions, as exemplified by a request for support from the Africa Union. Yet the mainstay of the work programs, based on a longer-term strategic vision and commitments, sustained its progress.

117. **The initial stage of SFDCC implementation offers the following observations and lessons** that are relevant for further action under the Framework, as well as related WBG strategies:

- *Continued consultation, learning, and dialogue with all key partners, making adjustments as necessary and ensuring broad ownership, remains critical.* An extensive process of global consultations and consensus building, with particular attention to listening to and understanding the views of developing countries, has paid off. The Framework evolved very significantly during the preparation process to better reflect and balance the diverse perspectives, which has fostered partnerships. Similarly, a bottom-up internal process involving almost all parts of the WBG and building on their initiatives—while facilitating a coherent corporate vision and offering new tools—galvanized creativity and action.
- *Responding to client demand with customized support is a way forward.* A strategic decision to put a country-based assistance model and client demand at the center of the SFDCC—while respecting the primacy of the UNFCCC negotiations—was essential in building trust and scaling up engagement with developing countries, as evidenced by an impressive uptake of climate-related issues in CASs and a growing portfolio of investments and technical assistance in just one year, with no operational target.
- *The climate risk management and adaptation agenda has become a call of duty across the WBG.* As a major financier of long-term development investments in locations vulnerable to current and future climate risks, the WBG is faced with an urgent challenge to address climate risk management and adaptation needs in the projects and programs it supports. It also faces an increasing demand from its clients to help them understand the economic and decision-making implications and to prepare for changing climatic conditions. The most rapid buildup in analytical work, training, and knowledge has been in the area of adaptation, including the establishment of the dedicated GET.
- *Yet grant-based resources to cover the added costs of development in a more hostile climate are woefully insufficient.* This is particularly a problem for IDA countries, which are most in need of major infrastructure investments. Finding a way to provide predictable financial flows to make IDA-supported investments resilient to aggravated climate risks is an urgent priority.
- *Substantial resources coming out of the UNFCCC negotiation process, particularly pledges for fast-track financing made by developed countries in Copenhagen, will be necessary for accelerating future progress.* Growing availability of dedicated climate-related resources for

adaptation and mitigation, while still short of the need, played a significant role in achieving progress to date. The establishment of the CIF and new carbon facilities, which were rolled out alongside the development and implementation of the SFDCC and contributed to its major deliverables, set the stage for scaling up climate resilient and low-carbon investments in the next years.

- *Capacity to use, blend, and package various instruments leveraging significant resources is among key WBG comparative advantages.* The WBG teams, together with partners, worked across the entire menu of instruments helping governments and other clients to access and leverage GEF resources, carbon market, WB-managed carbon funds and new facilities, UNFCCC funds, bilateral financing, and the newly available CIF resources. The WBG was also complementing an expanding use of climate finance with innovative applications and packaging of other relevant instruments such as guarantees, subnational applications, and DPLs.
- *As multiple channels of climate finance will likely continue, this places enormous capacity requirements on both recipients and implementing agencies* to coordinate and optimize various sources. Even with WBG's substantial capacity, more effort is needed to service clients better—both by providing most suitable packages at reduced transaction cost and strengthening their capacity and “readiness” to operate in an increasingly complex international financial landscape.
- *A significant—but selective—experience with technology calls for further clarifying comparative advantages and the role of partnerships.* While the WBG can make a substantive contribution to technology commercialization, its comparative advantage differs across technology stages and the type of technologies. In agriculture, the WBG has been supporting all technology stages, including location-specific research. With respect to much more expensive novel energy technologies with a potential to serve the global market, the WBG advantage remains with scaling up and deployment stages, while CTF and SREP provide new opportunities to move to a larger scale. Opportunities for specific partnerships, such as the GEF/IFC Earth Fund, or for programs ensuring a seamless move from early GEF support to support by CTF and/or other WBG instruments once the technology matures, or with bilateral financing like a new CCS Trust Fund, could be further explored.
- *Investing in knowledge and skills remains a top priority.* Needs in technical assistance and capacity building are enormous in many developing countries and have already emerged as significant barriers to developing action plans and accessing currently available climate finance (such as CDM and adaptation-related funds). With the growing and increasingly complicated agenda, issues, and instruments, the WBG will need to rapidly step up its ability to provide such assistance on a range of issues, as well as respond to requests for “just-in-time” assistance very quickly in a fluid external environment. Two major new programs—the CCDP and SDLP, which were developed and initiated in parallel with the preparation of the SFDCC—increased awareness, skills, and action by many staff and managers, as did WDR 2010 and other analytical work. In the next years, it will be important to use these and other vehicles, such as the Adaptation GET, for reaching out to country-based staff, clients, and a wider range of sectoral experts, as well as increase more specialized training.
- *A large agenda takes time, patience, and institutional resources.* While the WBG's substantial role, knowledge, and expertise is increasingly recognized, realism should be built into future efforts, both in terms of time needed to achieve results that matter for clients and resources to make it happen.

7.2 Moving Forward: Refining Priorities

118. Progress made in the first 12–18 months reinforced the decision taken about the flexible and evolving nature of the SFDCC. The agreed focus on learning, drawing lessons, and adjusting in due course proved necessary, as did the emphasis on guiding, supporting and incentivizing operations rather than imposing fixed “targets.” It should also be noted that progress was not expected to be linear over FY09–11. In many cases, the reported implementation period focused on understanding the issues, building capacity and consensus on addressing them, and thus creating a platform for accelerating action in the next years.

119. Going forward, three processes are key: post-Copenhagen actions and decisions by UNFCCC parties, IDA replenishment, and IBRD capital review. While Copenhagen and subsequent submissions by UNFCCC parties offer important guidance for future climate-related work, much depends on the outcomes of the Cancun COP-16. The establishment of a high-level Advisory Group on Climate Change Financing by the UN Secretary-General is another relevant development. In parallel, the next top priorities are a successful replenishment of IDA-16 and an adequate capital increase for IBRD. These processes are critically important in their own right; furthermore, development finance and climate finance play complementary roles in ensuring sustained progress toward the MDGs, including MDG-7 for environmental sustainability. Both must be adequate, and enhance—not substitute for—each other.

120. While the overall Framework, guiding principles, areas of action, and broad priorities proved robust and suited for continued uncertainty about post-2012 global climate policy and finance, implementation experience and new developments suggest a sharper focus on select activities and outcomes, as well as strengthening some targeted outcomes. These are described below, within the three broad operational priorities agreed to by the SFDCC, and reflecting linkages with the *Post-Crisis Directions* paper and the framework for *Transforming the Bank’s Knowledge Agenda*.

121. Strengthening resilience of communities and economies to climate risks remains the top priority, as it was in the SFDCC. A more concerted and comprehensive effort will be made to increase financial and technical support for climate risk management and adaptation. Building on strong empirical evidence that development is key to improved adaptive capacity while adaptation is essential for sustainable poverty reduction outcomes, the WBG will step up efforts to emphasize the imperative of complementing development assistance for the MDGs, such as IDA, by specialized grant-based resources to address additional climate risks. In parallel to advocating strong replenishment of IDA-16 for core development needs, we will:

- *Step up building capacity—among staff, clients, and partners—to understand and manage adaptation-development linkages in different contexts, by using all tools and instruments at our disposal.*
- *Share more proactively and systematically lessons from pilot projects, programs, and analytical work in the regions, the EACC study, the GFDRR experience, and the Adaptation GET activities, to create a platform for broad-based learning, inside and outside the WBG.*
- *Ensure implementing and learning by doing from the PPCR—the primary objective of which is to make core development planning more climate-resilient at the country level.*
- *Accelerate the work on methodologies for and practical applications of vulnerability assessments at a country/subnational level and climate risk screening for relevant investments, led by agriculture, water, social development, disaster management, and urban practices.*
- *Explore options for substantial and predictable access by IDA-supported programs to complementary adaptation funding, in order to climate-proof development investments in IDA*

countries and build capacity for managing increasing climate risks. Options will be defined in consultations with developing and developed country partners and may include, among others, Memorandum of Understanding arrangements with the Adaptation Fund or other specialized UNFCCC funds, scaling up the PPCR or providing new targeted windows under the SCF. An assessment of options will involve due consideration to the need for reducing proliferation of vertical funds and ensuring synergies—while avoiding duplication—among WBG instruments, the Adaptation Fund, GEF, and other funds supporting adaptation.

122. Another SFDCC priority—to help capture the full range of benefits, local and global, of sustainable development programs—will grow in importance, enhanced by WDR 2010, other studies and experiences, and increasing concerns about energy, water, and food security, as well as the availability of natural resources and quality of local environments to sustain the development path. It is also consistent with the view of developing countries that their contribution to climate action is through sustainable development strategies, and it is the premise of the UNEP-led work on the *Green Economy* report, for which the WBG is a partner. The Mayor’s Task Force on Urban Poverty and Climate Change is another example of an innovative partnership addressing development and climate imperatives in tandem. While the new *Environment Strategy*, under preparation, as well as work in a growing number of sectors, will further seek synergies between local and global co-benefits, the recognized role of sustainable forest management in sequestering GHG emissions, together with growing support for international financing for REDD-Plus, calls for sharing WBG extensive experience in this area on a priority basis. In particular,

- *The process of mutual learning with partners and stakeholders on REDD-Plus through the FCPF has created a platform for further engagement*, including the design of a new financing window or mechanism. The Participants Committee of the FCPF provides one possible model for how to set up the governance body of a future "REDD-Plus window," though the role of the World Bank vis-à-vis other entities would have to be modified.
- *Within the CIF, the FIP provides another learning opportunity on how additional grant support can complement capacity-building grants and performance-based incentives to realize transformational investments* inside and outside of the forest sector, leading to lasting reductions in emissions from REDD or to further efforts to conserve, sustainably manage, or enhance forest carbon stocks while protecting biodiversity and supporting rural livelihoods. The FIP complements and cooperates closely with the FCPF and the UN-REDD Programme. Studying options for enhancing cooperation and seeking coherence between various institutions that support countries in REDD-Plus efforts would be an important next step.
- *Work will continue on exploring agricultural opportunities for reducing emissions while enhancing food production*. Although soil carbon management in agriculture is not included in the scope of REDD-Plus, investments in the agricultural sector—for example, to increase agricultural yields and reduce emissions from deforestation and forest degradation—are eligible as potentially transformational investments under the FIP and as underlying carbon finance transactions under the FCPF’s Carbon Fund.

123. The WBG will continue helping private and public sector clients take advantage of expanding low-carbon growth opportunities while moving to a more strategic engagement, as developing countries prepare and implement their NAMAs within sustainable development strategies. The WBG has built a solid analytical base through supporting some of the first low-carbon growth studies; it provides extensive policy, institutional development, and investment support in relevant sectors; and it holds expertise in a wide range of financial instruments. These pieces can be put together to engage with interested developing countries on the various aspects of operationalizing the NAMA concept, which ensures the priority of economic growth and effective service delivery. While the main interest is coming from middle-income countries, certain elements and approaches are expected to be of

value to low-income countries. Specific areas where the WBG can assist developing countries, in partnership with other MDBs and UN agencies, include:

- *Establish a platform for South-South knowledge exchange through extensive dissemination of the toolkits and knowledge developed under several low-carbon growth studies and other relevant analyses.* The focus will be on bringing together countries at different stages of low-carbon-growth modeling and planning and other development agencies (RDBs, UNDP, bilaterals) supporting such assessments. In coordination with these agencies, support similar long-term strategic exercises in other interested countries as a longer-term framework for preparing medium-term NAMAs. This would be complemented by preparing—jointly with interested developing countries—and disseminating sector-specific (and more detailed) toolkits for NAMAs.
- *Explore and demonstrate more systematically how an arsenal of existing and potential IDA, IBRD, IFC, and MIGA instruments, including the use of guarantees, risk-sharing schemes, subnational applications, and fast-disbursing instruments, can work to support a domestically funded share of NAMAs, complemented with a portfolio of climate finance instruments (for an internationally supported share of the total cost).* This approach can extend to involve including instruments and facilities of other MDBs and IFIs. IFC will build on the dialogue with institutional investors to increase financial mobilization toward climate-friendly investment in emerging markets.
- *Distill and share lessons from implementing new programmatic instruments of climate finance—such as CPF, CTF, and SREP—to make the lessons directly relevant for NAMAs.* Based on these and other operational experiences, build and disseminate knowledge on how to link different elements of NAMAs to the best-suited (in a country-specific context) financing instruments and packages. Using wide-ranging experience with results-based financing (including outside of the climate change area), WBG can help interested countries establish transparent monitoring and reporting procedures for the achieved emission reductions, differentiating between domestically and internationally funded reductions.
- *Explore how energy, transport, and urban sectors, including the IFC, can support low-carbon strategies and NAMAs in the respective sectors through their sectoral programs, including a recent focus on “greening infrastructure.”* The new energy strategy, in a public consultation phase, is expected to articulate how energy sector assistance in a particular country will take into account low-carbon options and opportunities—as they relate to the energy sector—and balance it with other strategic needs.

124. To support these priority actions and outcomes, the WBG will need to make substantive efforts in the three cross-cutting themes. These themes are built on synergies, lessons, and gaps that have emerged from implementing the six action areas of the SFDCC.

125. Work toward becoming a premier provider of a wide range of financial solutions and expertise to help achieve “climate-smart” development: This is a long-term objective that supports the *Post-Crisis Directions* paper while recognizing the essential role of other MDBs, IFIs, UN agencies, and private sector groups, as well as the need for access to new climate resources. Several steps can—and need to—be taken in the remaining SFDCC period, including:

- *Enhance WBG ability to support climate actions in developing countries and leverage climate finance through strong IDA-16 replenishment.* Without finance for a road, it is impossible to make it “climate-proofed”; without finance for an energy project, it is impossible to make it cleaner. Anticipated growth in climate funding and implementing domestically funded NAMAs by middle-income countries, following the impacts of the financial crisis, also makes having adequate IBRD capital an important issue from both the development and the climate perspective.

- *Concentrate on delivering resources to the recipients for specific projects through the newly established instruments and programs—the FCPF and the CPF under the carbon finance umbrella and the PPCR, CTF, SREP, and FIP under the CIF umbrella—that provide enormous major opportunity to all participants for experimenting and learning by doing. Equally important are effective arrangements for monitoring performance and impact, assessing results, and making lessons and recommendations available to a broader international community. It is also prudent to anticipate and prepare for using some of these instruments as channels of a portion of fast-track financing for adaptation, mitigation, and REDD-Plus announced in Copenhagen, as well as explore how they can be made more responsive to UNFCCC guidance.*
- *Articulate how different climate finance instruments, within and outside the WBG, can complement each other at the program and project levels with an added value (separately for mitigation and adaptation). The work that examined the complementary use of GEF, carbon finance with the focus on CPF, and CTF resources for mitigation actions will be extended to cover other instruments, as well as critically assess the trade-offs between a potential for more fine-tuned financial packages and the capacity needs to make it a reality, reaching the point when the multiplicity of instruments may become counter-productive. This could be supported by consolidating WBG dialogue and advice on climate finance at the country level—moving to a situation when the “climate finance” contact point (or team) is helping government counterparts and private sector clients understand all available instruments and “match” the needs with the available instruments.*
- *Develop guidelines on how new climate resources can and should be used to effectively leverage private sector investment.* Such guidelines would be necessary to provide some measure of certainty and transparency to project developers and to create a strong set of ex ante rules whereby public resources will be made available to incentivize private investment. IFC has begun to explore these issues with the financial sector.
- *Harness expertise to use the entire menu of financial, risk management, and technical assistance products in developing country settings.* Bottom-up initiatives are growing: for example, a new finance and private sector development strategy for Africa is looking at how to facilitate investment in clean and efficient technologies and help Africa “leapfrog” with economic and environmental benefits. The WBG will accelerate efforts to share experiences in financial applications and innovations across traditional sectoral, professional, and institutional boundaries (including those by other institutions). In this respect, most recent initiatives include the launch of the *Climate and Finance Policy Notes Series*, and the establishment of the Climate Finance Ad-Hoc Expert Group of WBG and IMF experts.
- *Help developing countries make informed choices as they increasingly seek direct access to climate funding.* As the concept of direct access has a continuum of applications, a useful contribution would be to assess the comparative advantages of a range of instruments that can quickly and efficiently deliver resources in support of country priorities. The WBG has initiated the work to explore how development policy support instruments, SWAPS, and disbursement mechanisms used in multi-donor trust funds can be developed into tools for providing more direct and efficient access, while still adding value by providing fiduciary services. Experience with performance-based instruments, such as output-based aid, could also complement such an assessment. This could be linked to broader processes looking at simplifying WBG procedures, such as investment lending reform.
- *Continue and expand the work with OECD-DAC and the UNFCCC Secretariat on monitoring and reporting new and additional climate finance flows, building on a review the WB has undertaken on tracking of climate-related financial flows delivered via official development assistance (ODA) channels. Taking account of the recently redefined OECD-DAC Rio Markers for mitigation and adaptation in ODA, we will also accelerate the process of improving the*

tracking and monitoring of WBG's own portfolio of investments with adaptation and mitigation co-benefits.

126. Expand the reach of knowledge through customized services, innovative partnerships, and South-South exchange: The WBG has stepped up research on development and climate linkages, producing major knowledge products and rolling out specialized training. Much remains to be learned, however, including empirical assessments of the efficacy of different approaches to climate-smart development. Increasingly, the WBG will be shifting toward a learning and capacity-building process that is an interactive two-way avenue, where comparative advantages and partnerships are key. In particular,

- *Greater emphasis will be given to developing—jointly with partners—customized knowledge, capacity building, and technical assistance products* that can be quickly translated into climate action and integrated in operations. As an example, WB regions have started work in several countries to help governments estimate the cost and benefits of adaptation measures using the methodologies developed under the EACC study and then reflect them in national adaptation programs.
- *A key role will be given to joint learning and working with developing country institutions.* While making global knowledge and expertise available through the Adaptation GET and other tools and processes, more effort will be required to better serve the client in such a dynamic and constantly evolving field where generating and sharing knowledge is not optional.
- *South-South knowledge exchange is particularly important in the climate change area,* where experience of developed countries is of limited relevance while many innovations are happening in developing countries. More emphasis and instruments will be needed to support this exchange.

127. Strengthen dialogue and outreach: In parallel to scaling up priority services in response to growing demands, there remains a need for continued and enhanced dialogue with clients, partners, and other stakeholders to clarify their expectations from the WBG vis-à-vis its comparative advantage. Specifically, the WBG will:

- Deepen its dialogue with client countries on what their priority needs are, what services and products the WBG can provide, and how we can work and learn together with different stakeholders in these countries to address the new challenges. Leadership by country offices and country teams, with adequate support, would be critical for building stronger and informed partnerships.
- Work to bring together diverse stakeholders at the national level (e.g., ministers of finance and environment through country-level engagements and the Bali Dialogue series) and subnational levels (private sector, city officials, local governments and communities) to facilitate integration of different perspectives.
- Undertake more systematic outreach about WBG experience, using opportunities provided during the country dialogue and at regional and international forums. An emerging consensus on the need for balanced and equitable governance of institutions managing climate funds points, for example, to the importance of more extensively sharing innovative governance arrangements for CIF and FCPF, as well as the ongoing process of WBG governance reform.

128. To conclude, the level of future ambition and achievement continues to depend on a number of external factors, as does the pace of progress. Learning and flexibility to adjust will remain the key features. Yet, the overall Framework appears robust, and the proposed priority actions are driven by already existing or growing demands from clients and partners and rooted in significant experience and consultations. As development-climate linkages are getting stronger and affecting poverty eradication prospects, the World Bank Group has mobilized and will continue harnessing its capabilities in knowledge and innovation, combined with extensive experience in development and finance, to deliver effective support to developing countries.

ANNEX 1. IMPLEMENTATION PROGRESS FOR KEY ACTIONS AND DELIVERABLES

Objective	Action	Products/Processes/Indicators ¹²	Timeline	Progress Reporting / Comments
Action Area 1: Support Climate Actions in Country-led Development Processes	Enhance cooperation with development partners to facilitate global action	<ul style="list-style-type: none"> • Collaboration with the UN and its agencies on a coordinated approach to climate change, particularly financing, capacity building, and monitoring • Joint implementation of CIFs with other MDBs • New partnerships established, particularly to facilitate the work on technology and adaptation 	FY09–11	<p>On track: Coordination started between CCDP and capacity building instruments developed by UN agencies and other MDBs. The Climate Finance Knowledge Platform is being developed jointly by UNDP and WBG under the Acting on Climate Change: The UN System Delivering As One umbrella, in collaboration with other UN agencies and MDBs. WB participates in the UNSG Climate Change team including the UN System-wide event in Copenhagen. Joint conferences with ADB, GTZ, IDB, and UNEP on transport and. Strengthened collaboration through sectoral work on climate change (e.g., transport with UNEP, human rights with UN OHCHR, weather information with WMO) and country programs (joint work implementing GFDDR, GEF, PPCR, etc.)</p> <p>On track: Joint CTF investment plans developed and PPCR program identification missions under way. Collaboration extended to the design of the FIP (\$558 million in pledges) and SREP (\$292 million in pledges), both approved and declared operational in 2009.</p> <p>On track: Several new partnerships emerged, examples follow. Technology: Joint work between ESMAP and InfoDev to explore potential for promoting renewable energy technologies, with bilateral support; a new Trust Fund for CCS pilots. Adaptation: South Asia Water Initiative (SAWI) targeting water and climate change (with DfID and AUSAid); vulnerability assessment for cities with UNEP, UN Habitat and city mayors), MOU with Ramsar on climate modeling. IFC and Treasury engagement with P8 offers an example of innovative financing partnership.</p>
	Support climate actions by operational strategies	<ul style="list-style-type: none"> • Actions to strengthen climate resilience are supported by several CASs, with an estimated demand by at least 10 countries with high vulnerability to climate risks • Support to climate actions included in business strategies for WB regions, MIGA and IFC • Strategy updates for relevant sectors include consideration of climate risks and support to climate actions 	FY09–11	<p>On track, with a higher than planned uptake: Climate resilience in 63% of FY09 CASes, including for Djibouti, Moldova, Indonesia, Guyana, Yemen, and India. Included in business plans for Kenya, Sudan, Senegal, Burkina, Niger, Madagascar, Malawi, Mozambique, Ethiopia, Zambia, and Ghana, 81% of end-FY10Q3 CAS/CPSes including for Belarus, Burkina Faso, Central African Republic, Dominican Republic, Jamaica, Morocco, Nigeria, Romania, Russian Federation, Serbia, Tunisia, Turkey, and Vietnam. An example at the regional level is work with the New Partnership for Africa's Development on land and water management.</p> <p>Completed: IFC has designated climate change as one of its Corporate Strategic Priorities and adopted a new Solar Investment Strategy. A regional strategy for Climate Resilient Growth in Africa completed and a report on climate change in South Asia to guide SAR activities are completed, as are climate change papers and/or business plans in EAP, ECA, LCR, and MNA.</p>
			FY09	
			FY09	

¹² Specific indicators for WBG operations, when provided, are based on existing pipeline and estimated demand.

Objective	Action	Products/Processes/Indicators ¹²	Timeline	Progress Reporting / Comments
		<ul style="list-style-type: none"> • Urban • Energy, Social Development • <i>Environment, ICT</i> 	FY10 FY11	<p>Completed: Urban Strategy includes Climate Change and Disaster Management as one of its five business lines.</p> <p>On track, with delivery moved to FY11: The new Energy Sector Strategy and the Social Development Strategy update are in consultation process, both addressing climate changes issues.</p> <p><i>New proposed indicator for FY11, reflecting progress to date and next priorities: the Environment Strategy (in consultation process) is dealing with the broader environmental sustainability while the ICT strategy is outlining opportunities to enhance mitigation and adaptation results.</i></p>
	Support climate actions in lending programs	<ul style="list-style-type: none"> • A plan for strengthening synergies between support to disaster risk management and support to adaptation developed and implementation started • Screening of relevant projects for climate risks <i>and sector-wide vulnerability assessments</i> introduced <ul style="list-style-type: none"> • starting with hydropower projects • extending to other vulnerable sectors within regional context • <i>Methodology for city-wide climate vulnerability assessment developed</i> • Screening for EE opportunities in infrastructure projects introduced <ul style="list-style-type: none"> • starting energy sector projects 	FY09–10 FY09 FY10–11 FY11 FY09	<p>On track: Adaptation is a core pillar of GFDRR business plan. FY09, 12 GFDRR projects of over \$4 million focused on climate change adaptation issues in AFR, EAP, LCR, MNA, SAR and at the global level. An approach paper to strengthening long-term adaptive capacity building through operations focused on immediate disaster response is commissioned. Significant integration is happening at the regional level: for example, a core pillar of Africa climate change strategy is synergy between disaster risk management and adaptation. GFDRR programs addressing this synergy are under way in Madagascar, Mozambique, Namibia, Malawi, Uganda, Ethiopia, CAR, Burkina, Ghana, and Senegal. SAR Regional Disaster Risk Management Strategy, under preparation, also addresses synergies with adaptation, as do several specific activities.</p> <p>The scope of screening indicators is proposed to be re-examined and modified based on analytical and pilot work. Experience points to the usefulness of sector-wide vulnerability assessments completed by project –level screening as/if needed</p> <p>Pilot screening started: Methodologies and tools under development and piloting, with a draft hydropower toolkit delivered. Gaps in global knowledge and analytical uncertainties necessitate additional work to develop operational applications.</p> <p>Pilot work has been extended to the rest of the energy sector as well as to the urban sector. Analytical work is ongoing for the transport sector. IFC pilot program initiated to evaluate methodologies for identifying financial implications of climate risk.</p> <p><i>New proposed indicator for FY11.</i></p> <p>On track (IFC): IFC continues energy sector investment screening and is on track expanding it to other sectors.</p>

Objective	Action	Products/Processes/Indicators ¹²	Timeline	Progress Reporting / Comments
		<ul style="list-style-type: none"> • extending to transport, water, and urban projects • <i>Comprehensive approach to promoting EE in WB operations developed</i> • Increase in WBG financing for new RE and EE by an avg. of 30 percent per annum • WBG low-carbon energy projects share reaches 50 percent • Increased demand for and lending in support of modal shifts in freight and public transport (as compared to FY06–08) • A program to assist with sustainable urban investments is developed and piloted in at least 5 cities 	<p>FY 10–11</p> <p>FY11</p> <p>FY09–11</p> <p>FY11</p> <p>FY11</p> <p>FY11</p>	<p>Progress made (WB): Pilot work screening selected energy projects initiated. Analytical and operational work indicates the need for a sector-wide and policy-focused approach in World Bank operations for scaling EE in energy programs that is closely customized to individual country needs.</p> <p><i>New proposed indicator to better reflect the nature and impact of WB work.</i></p> <p>On track: Continued strong growth, with WBG’s new RE/EE investments increasing 88 percent to \$3128 million in FY09 from \$1665 million in FY08. IFC saw a 53 percent increase to \$901 million in FY09 from \$545 million in FY08. An additional \$100 million of RE was financed through the first CTF project in Turkey.</p> <p>On track: Over 40 percent for FY09.</p> <p>On track: Examples include improving urban transport in Lagos (Nigeria), and Accra (Ghana) by facilitating modal shift. Growing analytical and TA program, as exemplified by the transport section of Brazil climate policy report or a Thailand report on making transport more energy efficient. A flagship report on transport and climate change to be delivered in FY10.</p> <p>On track: Under implementation, with CTF support, in Bangkok, Cairo, and Mexico City. A "rapid diagnostic" program to integrate climate change within a broader city-based assessment has been initiated with pilots identified in Dar el Salaam, India, and Amman.</p>
	<p>Develop an outcome-based results framework</p>	<ul style="list-style-type: none"> • A set of definitions and outcomes developed by the WBG • Improved climate-related portfolio tracking, with the focus on projects addressing climate risks and vulnerability in IDA countries 	<p>FY09</p> <p>FY10</p>	<p>Delivery moved to FY10, to allow for aligning with OECD DAC work on the adaptation Rio Marker. Design approach note prepared. Monitoring definitions for investments with adaptation benefits developed and in process of testing with relevant sectors. Work is ongoing on specific indicators, in coordination with the development of results measurement systems for the CI.</p> <p>On track: IDA15 interim results reporting completed. Pilot program established for developing methods to improve the accuracy of tracking share of climate action in WBG loan portfolio. Methodology developed for monitoring climate-related investment in Bank systems. Monitoring definitions for investments with GHG benefits finalized for ARD, UD; in preparation for Energy and Transport.</p>

Objective	Action	Products/Processes/Indicators ¹²	Timeline	Progress Reporting / Comments
Action Area 2: Mobilize Additional Concessional and Innovative Finance	Increase access to additional finance to cover higher costs and risks	<ul style="list-style-type: none"> Maintained or increased IDA replenishment levels, and improved tracking of ODA to climate-related actions, mitigation, and adaptation (with DAC) 	FY11	<p>IDA-16 replenishment process started aiming at an ambitious replenishment over the IDA-15 level to meet core development needs while exploring options to provide predictable access by IDA-supported programs to adequate complementary adaptation financing.</p> <p>On track (ODA tracking): strengthened collaboration with OECD DAC on monitoring climate finance within ODA through the Rio Markers, including participation in the task force for the development of the Adaptation Marker adopted in 2009. Paper on improving monitoring of climate finance flows prepared, in collaboration with the OECD DAC and UNFCC Secretariat.</p>
		<ul style="list-style-type: none"> Climate Investment Funds operational with a target of \$6 billion 	FY09	<p>Completed: CTF and PPCF became operational in FY09, with pledges of over \$ 6 billion. The FIP and SREP under the SFC became operational in the first half of FY10. \$4.4 billion are committed in CTF investment plans leveraging other resources 1 to 8. Across the CTF and PPCR, activities are on-going in over 20 countries.</p>
		<ul style="list-style-type: none"> <i>Country-level activities start under FIF and SREP; implementation of strategic programs starts under PPCR</i> 	FY11	<p><i>New proposed indicators for FY11.</i></p>
		<ul style="list-style-type: none"> Increased leverage of GEF funds through programmatic approaches 	FY09–11	<p>On track: New GEF programs developed and adopted include (a) Pacific Alliance for Sustainability: Mitigation (\$5m) and Adaptation (\$10m); (b) West Africa Energy Efficiency Program (\$11m); and (c) Technology Transfer Program (\$8m). Transport sector projects approved in FY08/09 achieved leveraging ratio of 1:18.7; projects to be approved in FY10 are expected to achieve GEF leveraging ratio of 1: 24.3.</p>
		<ul style="list-style-type: none"> Guidelines to help access various financing instruments and reduce transaction costs prepared 	FY09	<p>Completed Phase 1: Draft paper comparing use of GEF, CTF, and CF instruments prepared in June 2009. Prototype Climate Finance Knowledge Platform developed.</p>
		<ul style="list-style-type: none"> <i>Guidelines extended to a broader range of instruments</i> 	FY11	<p><i>New proposed indicators for FY11: This proposed indicator reflects the need to add new climate finance instruments, guarantees and packages of development and climate finance, as well as assess experiences with fast-disbursing tools.</i></p>

Objective	Action	Products/Processes/Indicators ¹²	Timeline	Progress Reporting / Comments
Action Area 3: Facilitate the Development of Market-based Financing Mechanisms	Increase access to market products, including for REDD and adaptation	<ul style="list-style-type: none"> • FCPF rolled-out: <ul style="list-style-type: none"> • at least 18 readiness grants provided 	FY09	<p>Progress made on agreed milestones, albeit at a slower pace, as new activities were added and in the face of significant technical and client capacity challenge that require adjustment in indicators going forward.</p> <p>11 readiness grants signed of which 5 are already under disbursement (AFR examples include to Ghana, Liberia, CAR, Gabon, DRC, Uganda, Ethiopia, Kenya, Madagascar, and Cameroon); projected 15 grant agreements signed end FY10; additional financing mobilized from Bank or other donors to complement FCPF funding.</p>
		<ul style="list-style-type: none"> • at least 5 countries have successfully built FCPF capacity 	FY10	<p>Significant additional assistance and capacity-building carried out, establishing the FCPF as a platform for engaging on a range of issues related to the design of the new REDD-Plus mechanism</p>
		<ul style="list-style-type: none"> • <i>Readiness Preparation Proposals assessed, national working groups on REDD-Plus to guide policy dialogue established, and broad-scoped consultations on REDD-Plus strategy initiated, in 15 countries</i> 	FY11	<p><i>New proposed indicators for FY11.</i></p>
		<ul style="list-style-type: none"> • CPF operationalized: <ul style="list-style-type: none"> • initial capitalization of at least €350 million 	FY09	<p>Operationalization planned for FY10</p> <p>Capitalization ongoing, with €100 million in CPF Carbon Fund commitments from Buyer Participants; €9 million in TA resources raised for program and methodology development;</p>
		<ul style="list-style-type: none"> • 12–16 CPF Emission Reduction Programs developed 	FY11	<p>Eight (8) emission reduction programs under development; <i>Target for FY11 is 8-10 programs, reflecting slower capitalization pace and persisting uncertainties with carbon markets</i></p>
		<ul style="list-style-type: none"> • Access to climate risk management products and reinsurance markets increased 	FY10	<p>On track: Broadened coverage and range of catastrophic risk financing and weather insurance products involving 39 examples. New initiatives for crop monitoring and early warning systems under preparation. Innovative work on managing risk in agriculture: Multiple interventions of micro/meso level applications of weather-index insurance linked to WB/IFC/partner programs. Stakeholder training in risk management delivered.</p>

Objective	Action	Products/Processes/Indicators ¹²	Timeline	Progress Reporting / Comments
Action Area 4: Leverage Private Sector Resources	Increase leveraging of private investments	<ul style="list-style-type: none"> MIGA guarantee instruments increasingly used for low-carbon (RE/EE) investments—at least 10 guarantees provided over FY09–11 	FY09–11	<p>On track: In FY09 MIGA-issued guarantees have facilitated investment in water treatment and wastewater management (China), modernization of steel and aluminum production lines, including state of the art technology transfer (Nigeria and Ukraine), or helping alleviate the imbalance of electricity supply and demand caused by the geographic distance and climate difference across regions in Brazil.</p>
		<ul style="list-style-type: none"> Innovative financing packages combining CF, GEF and/or CIF to leverage private investments structured and applied by IFC - at least 10 during FY09–11 	FY09–11	<p>On track: IFC mobilized up to \$15 million from CTF to help support an initial private wind development and supplement regular financing from IFC and IADB; provided Carbon Delivery Guarantee to Himadri Chemicals in India; structured a loan to Estre Ambiental in Brazil; and launched Carbon finance advisory product (first recipient was the Industrial Bank of China).</p>
		<ul style="list-style-type: none"> IFC leverage of low carbon private investment is at least 4 to 1 in dollar values 	FY11	<p>On track: IFC direct investment in FY09 has attracted more than \$5 billion in cofinancing, or a leverage ratio of 5 to 1. An ongoing IFC program to develop sustainable investment ratings and indices aims to make private sector investment more responsive to climate constraints.</p>
		<ul style="list-style-type: none"> Subnational level application of financial tools is tested for projects with climate co-benefits— at least 3 in a pilot phase (further estimates to be provided if/when post-pilot stage approved) 	FY09	<p>Completed: Three subnational operations with climate change co-benefits approved by the Board in FY09 (Turkey, Russia, and Panama).</p> <p><i>Subnational piloting of projects with climate co-benefits continues in FY10, with a target of at least another 3 projects delivered.</i></p>
Action Area 5: Support accelerated development and deployment of new technologies	Develop new partnerships and approaches for technology cooperation	<ul style="list-style-type: none"> Proposals for supporting clean energy technology innovation prepared by IFC and WB 	FY09	<p>Completed: IFC Solar Investment Strategy adopted and a Cleantech Investment Program initiated for early stage cleantech companies in developing countries (FY09). Three technology innovation models (e.g., regional energy innovation centers, technology policy support, and strengthening client's science and technology capacity) developed and presented in a technical briefing to the Board in January 2009.</p>
		<ul style="list-style-type: none"> Program to support technology innovation piloted 	FY10	<p>Progress made: Building on one of the above-mentioned three innovation models on a smaller scale, the Climate Technology Program launched by InfoDev to explore feasibility of Climate Technology Innovation Centers. Pilots launched in India and Kenya, to be followed by Brazil and Vietnam. Technical assistance program for CCS initiated.</p>
		<ul style="list-style-type: none"> Work by CGIAR on climate resilient agriculture technologies scaled up (measured by increase in funding) 	FY09–11	<p>On track: Challenge program on Climate Change and Food Security being finalized, with \$13 million secured in addition to in-kind support from the host organization, the University of Copenhagen.</p>

Objective	Action	Products/Processes/Indicators ¹²	Timeline	Progress Reporting / Comments
Action Area 6: Step up policy research, knowledge, and capacity building	Advance knowledge on climate and development	<ul style="list-style-type: none"> The global economics of adaptation study completed and improved the knowledge of adaptation processes, costs, and benefits Low carbon growth studies provided knowledge of the incremental costs and benefits of development programs with lower GHG emissions—at least 5 studies completed in FY09 WDR2010 on climate change launched and contributed to global knowledge and dialogue Monitoring on global climate action improved, through joint effort with the UN and OECD, and reported in flagship WBG knowledge products (such as WDI). 	<p>FY10</p> <p>FY09</p> <p>FY10</p> <p>FY10</p>	<p>On track: Global report completed and delivered in September 2009. Detailed country case studies to be finalized in the Spring of 2010.</p> <p>On track for delivery in FY10: Brazil, India, and Mexico country studies delivered in FY10 delivery; Poland and South Africa studies also to be finalized in FY10. Work ongoing in Indonesia and new studies are being initiated in response to growing client demand</p> <p>Completed: WDR2010 launched September 2009</p> <p>On track: The WDR, WDI, and the <i>Green Data Book</i> include more climate change-related indicators; The State and Trends of Carbon Markets report has gained increasing recognition and use; the city GHG index (a new initiative with developed and developing country cities) to be launched in FY10. Paper on "Monitoring and reporting on financial flows related to climate change" formulated in consultation with the OECD DAC and UNFCCC Secretariat contributes recommendations for improved monitoring. The Web-based Climate Change Portal and <i>Climate Finance Knowledge Platform</i> are developed to help provide comprehensive information on global action.</p>
	Develop and test new analytical tools	<ul style="list-style-type: none"> Good practice guidelines to help relevant operations account for social and gender dimensions of climate change prepared Toolkits and decision-making guides for adaptation to climate change in agriculture and water sectors developed and applied GHG analysis is developed and applied in IFC real investment portfolio and select WB energy, transport, and forestry sector projects 	<p>FY09</p> <p>FY09–10</p> <p>FY09-11</p>	<p>Progress made: Partially completed in FY09, with work ongoing in FY10, including on gender-responsive monitoring indicators for use under CIFs. Analytical tools for understanding role of local institutions in climate change adaptation developed and tested in 9 countries in AFR, LCR and MNA. Research and review of international law aspects of climate change and human rights.</p> <p>On track: Lessons learned guidebook on watershed management approaches issued. Publication on climate change response strategies for agriculture and a first of a series of policy notes on reduced emissions and enhanced adaptation in agricultural landscapes. LCR piloted good practices on agricultural landscape adaptation. New economic modeling tools under development for assessing aggregate impacts of different energy and climate policies, trade issues in agriculture.</p> <p>On track: IFC applying GHG analysis to all real-sector projects since February 2009. The World Bank is advancing methodology development by supporting sector-specific pilot projects in Energy, Transport and Forestry.</p>

Objective	Action	Products/Processes/Indicators ¹²	Timeline	Progress Reporting / Comments
	Capacity building	<ul style="list-style-type: none"> • Country-level expertise and capacity to manage development-climate linkages and access additional finance strengthened • Potential of existing programs reviewed and enhanced, and a coordinated program with UN agencies developed • Wide coverage of staff and managers by specialized training programs on development and climate change; climate issues included in other training programs, as appropriate • <i>Number of training sessions held in client countries (and staff covered)</i> • Enhanced skill mix to support climate actions 	<p>FY09-11</p> <p>FY09</p> <p>FY09-11</p> <p>FY10</p>	<p>On track: Several new TA programs per client request initiated by the Regions, including for the Africa Union, complemented by analytical work, jointly with country counterparts and local institutions, and TA components in projects. Existing programs continued (CF-Assist, CF training and methodology development) and extended to new countries and sectors. New CF-assist programs in Benin, Burkina Faso, The Gambia, Rwanda, Syria and Yemen, and partnerships at national/regional level in India, Morocco, Philippines, Uzbekistan and West Africa. WBI initiated new programs. FCPF and CPF emerged as new tools for assisting with country readiness.</p> <p>Completed: A new joint program with UNDP to develop a Climate Finance Knowledge Platform established and generated broad support and interest from other development partners.</p> <p>On track: By end FY09, CCDP and SDLP training developed and delivered, with CCDP providing over 4,000 participant-hours to over 850 participants in FY08–10 and SDLP covering over 250 managers, senior staff, and external participants. More than 1,300 participant hours delivered in knowledge-sharing events. Reciprocal Partner Learning Initiative (RPLI) under development. Development of Core Learning Program (CLP), learning programs on low-carbon growth (partnership with ESMAP) and energy efficiency.</p> <p><i>New proposed indicators for FY11: This proposed indicator reflects the need to expand training and knowledge services reach to country staff, in particular.</i></p> <p>On track: Recruitment of several experts and training for WBG staff. Adaptation Global Expert Team established. <i>More staff with climate-development knowledge needed in regions and country offices.</i></p>
	Outreach and communication	<ul style="list-style-type: none"> • Communication and outreach plans for the implementation phase developed and implemented • GHG emissions for all WBG offices enrolled in the carbon-neutral program reduced by 7 percent by 2011 & remaining emissions offset by purchase of carbon credits 	<p>FY09–10</p> <p>FY 11</p>	<p>Progress made: Communications plan developed and a corporate coordination group on climate change-related communications established. New WB and region-specific climate change web sites launched. <i>Moving forward, WBG will step-up communication and outreach efforts at the regional and country levels, as part of client dialogue and partnership program development.</i></p> <p>On track: WB on track to meet its emission reduction pledge of 7 percent between FY2006 and FY2011. New commitment to offset 100 percent HQ and country office emissions.</p>

ANNEX 2. IFC CLIMATE-POSITIVE INVESTMENTS AND INNOVATION

The International Finance Corporation (IFC) has designated climate change as one of its corporate strategic priorities, recognizing the role of the private sector in both financing climate change mitigation and adaptation measures as well as harnessing the major new business opportunities for clean energy and other climate-friendly technologies. Responding to the increasing commercialization of solar technology, IFC has adopted a new Solar Investment Strategy that targets the entire solar value chain, from materials and manufacturing to power generation. While evolving with scientific understanding and political agreements, IFC's strategy is to integrate climate change in all departments and regions, including investment and advisory services, as a model for the larger world of commercial finance in emerging markets.

With this objective in mind, the IFC has established a new *Climate Business Solutions Group* that will support industry groups and regional departments to set—and monitor—ambitious climate goals. It will develop climate-friendly investment strategies by working with the IFC's global industry department. The Group will further ensure better analytical baselines for tracking carbon intensity of the IFC's portfolio, use carbon tools to support clients' efforts to improve their competitiveness, and increase access to carbon markets. The group will expand the IFC's already significant work on building partnerships with funds and institutional investors, venture capital, international finance institutions, and donors to bring innovative climate financing solutions to the markets. The Group will position the IFC as the global leader in knowledge products dealing with effective use of climate finance by the private sector. It will be responsible for developing new financial products while expanding climate investments in developing countries.

Addressing Climate Change in a Diverse Program of Activities

IFC expects to increase its climate-positive investing in all sectors of the economy, as well as to develop new programmatic approaches and financial innovation alone, with others, and with climate finance, to leverage the impact of its own capital and the climate funds pledged by its shareholders. Specifically, *IFC plans to double its climate change-related activities from 10 to 20 percent of IFC's overall activities* in three to four years. To this end, the IFC will build on its rich record in energy efficiency, cleaner production, and renewable energy as well as its leadership in offering measurements and tools that allow investors to build climate risk—and opportunities—into their investment decisions. Current IFC climate activities focus on:

- *Promoting climate-friendly investments using commercial funds*, where the IFC has grown its clean energy investments at an average of 51 percent per fiscal year over the last four years to reach \$1,036 million in FY09. IFC investments in clean energy often opens new markets by introducing first-of-their-kind technologies or financial products.
- *Catalyzing cleaner production* through a combined package of cleaner production audits and financing to improve energy and resource efficiency through low-cost, high-return measures. Programs are under implementation or being developed in Eastern Europe, South Asia, Latin America, and Africa. Following a successful pilot program, a \$125 million facility is now available with a streamlined process for approving related loans.
- *Investing in early-stage clean technology* companies and private equity funds. Examples include a high-efficiency turbine manufacturer in India and a Chinese company with dehumidification technology to improve energy efficiency in blast furnaces.
- *Innovative concessional financing*, blending Global Environment Facility (GEF) and Clean Technology Fund financing to pilot pre-commercial sustainable energy. The GEF supported Earth Fund allows for streamlined approval cycles and the management of such projects on a portfolio

basis. Other projects, such as the Lighting Africa program (www.lightingafrica.org), develop markets for new technologies and help meet the needs of the poor for modern energy services.

Renewable Energy/Energy Efficiency Investments

- IFC is involved in a range of activities, such as:
 - IFC is actively financing all proven renewable energy technologies (hydro, wind, solar, biomass and geothermal) across all regions. Over the years, IFC has financed over 3.4 GW in hydropower and has a strong pipeline of wind projects in Mexico, Romania, China, and elsewhere. In FY10 IFC has financed its first stand-alone biomass project, with a \$6m loan to Auro Mira in India and has invested \$10 m in equity with its first direct investment in a grid-connected solar power projects developer in India.
 - Many of IFC's investments in renewable energy are first of kind projects in their markets, which provide demonstration and catalytic effects to expand the sector. An example of this is the \$30.75 million in debt financing to the first project-financed wind farm in Chile (46 megawatt Totoral Wind Farm), which is experiencing serious power shortages and rising wholesale electricity prices
 - \$24.4 million support of Estre Ambiental to assist with the upgrade of the company's landfill facilities and associated landfill gas collection and combustion systems
 - \$85 million dedicated loan to the MDM Bank, a long-term IFC partner in Russia, to finance the nationwide roll-out of its energy efficiency finance product

Packaging Clean Investment and Advisory Services

- IFC offers existing and new clients a combined package of cleaner production audits and financing to implement recommendations for improving energy and resource efficiency through low-cost, high-return measures (a \$125 million facility).
- Programs are under implementation or being developed in Eastern Europe, South Asia, Latin America, and Africa:
 - A 2009 investment/advisory engagement with Kuibyshev Azot in Russia resulted in a package of five energy efficiency/cleaner production projects worth \$40 million, of which IFC financed \$20 million, leading to a reduction of 115,432 tons of carbon dioxide equivalent (tCO₂e) per year.
 - A \$30 million IFC investment in Assan Aluminum (Turkey) will improve the aluminum producer's overall environmental performance with a 45–70 percent decrease in energy consumption and a 0.50–0.55 tCO₂e per ton of aluminum processed, with a projected capacity of 240,000 tCO₂e annually.

Innovative financial products

- *Carbon finance:* Building on experience investing donor funds for carbon credits, IFC has introduced value-added financial products to help mitigate risks in the carbon market by leveraging its ability to take long-term project and credit risk in emerging markets. IFC, which is AAA-rated, offers a Carbon Delivery Guarantee for credits from projects in developing countries. A Carbon Delivery Guarantee provided to an Indian chemical company helped maximize the value of carbon credits generated from a waste-heat-to-power project. A carbon finance advisory product was also launched to build capacity at local banks and facilitate more investment in smaller emission reducing projects. The first recipient was Industrial Bank China.
- *Clean energy finance:* Building on more than a decade of experience with initial support from donors, IFC has partnered with local financial institutions to support specialized financial products for energy efficiency lending. This product is now operating in Russian, China, the Philippines, and several other countries.

- *Sustainable investing*: IFC is working with public pension funds and other long-term asset holders to promote investment in sustainable businesses in emerging markets. By making a small shift in the trillions of dollars managed by these funds, it may be possible to generate a large source of additional resources for climate-friendly investments. IFC is also working with asset managers to develop methodologies for measuring climate change as an element of business risk.

Outreach and collaboration with other stakeholders

- Through its relationship with the Equator banks and sharing of experience with international business organizations like the World Business Council for Sustainable Development, IFC provides an important link between climate change–related business practices and evolving best practices like carbon disclosure.

ANNEX 3. ADDRESSING CLIMATE CHANGE–RELATED PROGRAMS IN THE WORLD BANK REGIONS

AFR

Making Development Climate-Resilient: Acting Now, Acting Together, Acting Differently

Making Development Climate Resilient: A World Bank Strategy for Sub-Saharan Africa, the Region's Climate Change Strategy, is grounded in four core principles: (1) disaster risk reduction and climate change adaptation form a single integrated agenda; (2) adaptation and risk reduction are fundamentally about sound development; (3) mitigation and adaptation go hand-in-hand, but should not be a constraint to increasing Africa's access to energy and broader growth; and (4) scaled-up finance is necessary to meet Africa's development needs in a climate-constrained environment. The Strategy calls for mainstreaming support for climate action into country and regional programs along four pillars: (1) making adaptation and climate risk management a core developmental component; (2) taking advantage of mitigation opportunities; (3) focusing on knowledge and capacity development; and (4) scaling up financing opportunities. In-depth region-wide analytical work supports the strategy in a number of areas, including work on the economics of adaptation to climate change in Ghana, Ethiopia and Mozambique, the impacts of climate change on transport; land and river basin management, including hydroelectric generating capacity; and identifying deforestation drivers in the Congo Basin.

Adaptation and climate risk management

The Bank is actively engaged in strengthening the climate resilience of sectors particularly vulnerable to drought, floods and other climate hazards, such as agriculture and urban development. For example in drought-prone Ethiopia, the Bank is supporting Government efforts (including through a recently approved Productive Safety Net Program worth \$2.1 billion –of which \$480 million in World Bank financing) to improve the effectiveness of the country's system to assist chronically food insecure rural households; and is working with the government to integrate into the system additional drought risk that climate change might bring about. In Madagascar (a country chronically exposed to cyclones), the Bank has been supporting since 2006 hydro-meteorological risk assessment for agriculture, cyclone impact modeling, updating of infrastructure norms and standards, vulnerability analysis for drought-prone areas, an analysis of historical and projected climate change, and technical assistance and capacity-building for local entities. In Malawi, to complement its assistance to agriculture, irrigation and rural development, the Bank is working with the government to develop innovative climate risk management tools, including weather index –based crop insurance.

Addressing Climate Change into Country and Regional Programs:

Within the regional strategy's four pillars climate is being increasingly mainstreamed into CASs. Kenya, Nigeria, Cameroon and South Africa are recent examples, and climate related work is being undertaken or deepened in Ethiopia, Sudan, Uganda, Madagascar, Namibia, Mozambique, Malawi, DRC, Central African Republic, Rwanda, Niger, Burkina, Ghana, Mali and Senegal. Regional integration is of special importance for Africa, and work on integrating river basin management, regional grids and power development contribute to a more energy efficient and hence lower carbon growth path, while supporting broader sustainable water resource development. Work is on going on the Niger, Senegal, Zambezi and Nile River Basins, as well as on Lake Victoria.

Good examples progress in Integration of Disaster Risk and Adaptation Programs:

- Integrated approach to the work on disaster risk and strategic climate resilience in Mozambique
- Integrating flood and drought management and broader climate and watershed management in Kenya, Malawi (75.5 million)

- The Kenya Adaptation to Climate Change in Arid and Semi-Arid Lands Project (\$5.5 million, GEF) will support community-led efforts to increase climate resilience (plus capacity building efforts at the national and district level)
- Support post-disaster recovery and reconstruction through GFDRR-sponsored assessments in Namibia, Central African Republic, Senegal, and Burkina Faso. Opening the way for more climate resilient reconstruction, a project for urban drainage in CAR is in preparation (\$22.3 million). DRM Country Plans—in initial implementation for Senegal, Mali, Ethiopia, Mozambique; in preparation for Burkina Faso, Togo, Ghana, Malawi, and Madagascar—also identify strategic investment needs for DRM and adaptation to climate-related disasters
- Major focal area for three PPCR countries: Niger, Zambia and Mozambique
- Agricultural, irrigation, and rangeland management operations in Ethiopia, Kenya, Uganda, Burkina, Niger, Madagascar, Mozambique, and Nigeria; under preparation in Ghana, Malawi, Rwanda
 - Increasing productivity and tolerance to climate shocks through sustainable land and rainwater management in Malawi (\$13 million)
 - Enhancing the protection for livelihoods in Ethiopia through drought-risk financing (Second phase of support \$175 million)

Taking advantage of Low-Carbon Opportunities:

The Bank has mobilized, in partnership with the Africa Development Bank, resources to finance a \$2.3 billion Investment Plan in South Africa (including a \$500 million contribution from the Clean Technology Fund). The plan includes support to grid-connected solar thermal power, utility-scale wind power development, solar water heaters, and energy efficiency. In Nigeria, a CTF intervention in the order of \$200 million is being designed, targeting the energy and transport sectors. In Kenya, the Bank is supporting a pilot program –the first of its kind- aimed at supporting the adoption by smallholder farmers of innovative sustainable agricultural land management practices. These practices will, at the same time, raise farms’ productivity, enhance their resilience to climate shock, and enable them to receive payments from the Carbon markets for enhancing the storage of Carbon in agriculture soils. This can pave the way to scaling up the Africa soil carbon market, which according to one estimate, has the potential to mobilize resources of the same order of magnitude of current Overseas Development Assistance (ODA) to the region’s agriculture. Further illustrations of the Bank’s work supporting low-carbon development include:

Energy:

- Improving efficiency of power generation, distribution and use, increasing use of renewable energy (e.g., solar), moving toward more climate-efficient transport and urban development patterns in South Africa
- Improving energy and gas in Nigeria (\$600 million)
- Improving public transport in Lagos, Nigeria (\$150 million).
- Hydropower projects under preparation: Lom Pangar (Cameroon), Rusumo Falls (Rwanda) (\$175 million)

Land management as “double-dividend” in both mitigation and adaptation:

- Liberia, Ghana, Cameroon, Republic of Congo, Central African Republic, DRC, Madagascar, Kenya, Uganda, Tanzania, Mozambique, Gabon, Eq. Guinea and Ethiopia participating in FCPF
- Niger, Mali, Uganda, Kenya, Madagascar, and Ethiopia with reforestation programs supported by the Biocarbon Fund
- Regional approach to REDD under preparation with GEF support in the Congo Basin
- In Kenya, the Biocarbon Fund is supporting development of methodologies to measure carbon sequestration in agricultural landscapes through cultivation of coffee under shade and improved soil moisture conservation in maize production systems

Knowledge and Capacity Development:

- TerrAfrica as knowledge platform on approaches to sustainable land management and adaptation
- Stand-alone analytical products on the economics of adaptation to climate change (Ethiopia, Mozambique, Ghana), on the economic and trade implications of a carbon tax (South Africa), on the drivers of deforestation (the Congo Basin), and on water resources (Zambezi, Uganda, the Nile), as well as on the implications of climate change on fisheries, gender, youth, communities, coastal cities, migration and health (in particular malaria) in selected African countries
- Analytical work on the regional integration implications as related to climate change and water resources, climate change and land management, and climate and transport
- Support for urban land use/drainage/flood risk mapping in Lagos, Cotonou, Luanda, Zambia, and most recently Dakar, Senegal
- GEFRR training and capacity-building activities related to post-disaster recovery and construction in Namibia, Central African Republic, Senegal, Burkina Faso, Togo and Uganda, including a regional study on the impact of the recent flooding in West Africa
- Support for ecosystems mapping in Darfur, Sudan
- Analytical work on improved charcoal management in Tanzania
- Working with key African institutions (e.g., the African Union) on technical issues of interest to Africa in preparation for the Copenhagen negotiations

Partnerships:

- Geothermal Development Facility Project in Rift Valley funded by GEF (\$35.5 million)
- Adaptation to Climate Change in Arid Lands in Kenya, jointly executed with UN Development Programme (\$6.5 million)

EAP

Enhancing Resilience and Reducing Carbon Intensity of Development

The region is highly diverse with regard to countries' climate change exposure and their contribution to GHG emissions. Adaptation takes precedence over mitigation in many countries, particularly in the Pacific Islands, but also in other countries having a large part of their population located in coastal zones (e.g., China, Vietnam). Country focus has been largely on short-term mitigation of natural disasters, which places the integration of disaster risk management and longer term adaptation measures high on the Region's agenda. EAP is also a region with high gross domestic product growth rates, and associated increases in GHG emissions. EAP strategic framework calls for: (a) strengthening analytical and policy support to climate change; (b) scaling up the impact of Bank assistance by taking a programmatic and strategic approach to enhancing resilience and reducing the carbon intensity of development.

Climate Change Portfolio:

- About \$2.1 billion committed in 73 projects (as of March 31, 2010)
- Among 73 projects, 19 are IBRD/IDA, 33 are CF, and 21 are GEF.

A new database to track EAP investments that address climate change is under finalization and should lead to a more comprehensive and accurate reporting soon. Consultations with ENV to improve standardization are on-going.

Development Policy Lending:

- Indonesia Climate Change DPL under preparation (\$300 million)

Supporting Activities Contributing to Adaptation and Reduction of Climate Variability

- Philippines Climate Change Adaptation Project (\$15 million) aims to develop and demonstrate systematic diagnosis of climate-related problems and design of cost-effective adaptation measures, while integrating climate risk awareness and responsiveness into economic and operational planning (Expected Board approval: June 2010)
- Mainstreaming Adaptation in Irrigated Agriculture Project (\$5 million from the GEF Special Climate Change Fund) seeks to integrate the effects of future climate change on the North China Plain (Board approval: August 2008)
- Two new LDCF concepts have been approved for Solomon Islands and for the second phase of the Kiribati Adaptation program

Generating New Knowledge:

- Primer on Climate-Resilient Cities (2008)
 - First implementation in Vietnam, followed by Indonesia and China (FY10)
 - Objectives: (a) to build the capacity of cities in East Asia to be prepared for and to respond to climatic and other natural hazards; (b) to reduce vulnerabilities in order to minimize loss from such events and increase city competitiveness; (c) to mainstream this approach into overall urban management and infrastructure planning; and (d) to back this capacity and "resilience strategies" with concrete local actions and investments on the ground that will form the city's Local Resilience Action Plan
 - "Workbook" developed on methodology and design of templates/spatial mapping guides
- Indonesia Country Environmental Analysis focusing on climate change (November 2009):
 - Analysis prepared using Indonesian expertise in a consultative process and in coordination with the Asian Development Bank

- Study on Climate Change Impacts and Adaptation in the Bangkok area: The Governor of Bangkok recently announced a major plan, "Bangkok-Getting Ahead," which includes flood protection measures, with reference to this World Bank study:
 - Objectives: (a) assess climate change scenarios until 2050 and their social and economic consequences; (b) quantify the likely magnitude of social, environmental, and economic damage; and (c) analyze appropriate interventions.
- EAP Flagship on Energy: *Meeting East Asia's Growing Energy Needs in a Sustainable Manner* has progressed to deliver the following main messages: It is within the reach of the region's governments to maintain economic growth, mitigate climate change, and improve energy security. This requires the governments to take immediate action to transform the energy sector towards much higher energy efficiency and widespread use of low-carbon technologies. This shift to a clean energy revolution requires major domestic policy reforms, and transfer of substantial financing and low-carbon technologies from developed countries.

Carbon Finance:

- Thailand: TSM Bio Energy Wastewater Management and Methane Capturing for Electricity Project (Spanish Carbon Fund) Expected total emission reductions: 150,000 tCO₂e per year
- China: Facilitating Reforestation for Guangxi Watershed Management in Pearl River Basin (BioCarbon Fund) Expected to sequester 0.34 Mt CO₂e by 2012 and around 0.46 Mt CO₂e by 2017
- China Hubei Provincial Biogas Program developed in coordination with IBRD China Eco-farming Project (Board approval: December 2008, for \$120 million), for CPF
- One additional CPF program under development in China, and one each in Indonesia and Vietnam
- Indonesia working with the FCPF and UN-REDD to support readiness and prepare for possible future payments through REDD
- Thailand has signed a participation agreement with FCPF.

Climate Investment Funds:

- Working with IFC and ADB on large-scale CTF-based programs, with the Philippines, Thailand, and Vietnam CTF investment plans already approved by the TF Committee and the Indonesia CTF plan was approved in March 2010. Identification mission for the operations under the Thailand CTF was conducted in March 2010.
- PPCR: update: (a) Cambodia: joint donor mission October 2009, implementation of policy framework addressing CC expected from June 2010. Identification of investments to follow, and (b) Samoa: scoping mission in December 2009 and formal joint donor mission in April 2010.

Other Innovative Financing:

- Philippines Chiller Energy Efficiency Project: Designed on the financial partnership that includes three international financial instruments (GEF, MLF and CDM), with the Bank as an implementing agency of the GEF and MLF and KfW as the Carbon Fund buyer (Total financing: \$53.89 million).

Knowledge Management and Capacity-Building Activities:

- PoA Training Workshop in Bangkok (September 2009).
 - In partnership with WBI Carbon Finance Assist Program, Carbon Finance Unit, and Thailand Greenhouse Gas Management Organization
 - 198 CDM experts from 25 developing countries as well as EAP/SAR staff attended
 - CIF partnerships meeting in Manila with strong EAP representation
- Indonesia: Inputs to national low-carbon growth study

ECA

Increasing Resilience to Climate Change and Reaping Mitigation Co-benefits

The ECA region is actively supporting client countries on addressing climate change opportunities and risks. From a business perspective, the region focuses on building strong partnerships with the European Union, as well as multilateral, regional, and national institutions, and emphasizes leveraging of carbon finance and new Climate Investment Fund resources, while scaling up renewable energy and energy efficiency investments. Working with partner countries, the region is mainstreaming climate-resilience improvements in an increasing number of sector investment and policy loans. Examples include leveraging CTF resources in Turkey, Ukraine, and Kazakhstan; promoting CF in the Czech Republic, Latvia, Russia, Ukraine, and Uzbekistan; and scaling up RE and EE in Armenia, Bulgaria, Croatia, Macedonia, Poland, and Turkey. In the area of adaptation, ECA follows a three-tiered approach that builds on the Region's adaptation flagship report and a series of analytical products that help clients understand the range and likelihood of climate impacts and incorporate them in client and WBG investment portfolios and country partnership and assistance strategies. An updated comprehensive Climate Change Business Plan for the Region will be prepared in FY10–11.

ECA's portfolio in FY09 and the first three quarters of FY10 includes 38 climate change investment and advisory activities on adaptation and mitigation, with financing from IBRD/IDA, GEF, and Carbon Finance totaling \$873.6 million.

Supporting Low Carbon Growth

Investments with Mitigation co-benefits:

- *Development Policy Lending*: The proposed Turkey Environment Sustainability and Energy Sector DPL (\$800 million)—the second project in a programmatic series that started with 2009 Programmatic Electricity DPL (PEDPL1) operation
- Energy Efficiency Montenegro (\$15.7 million)
- Energy Efficiency Belarus (\$125 million)
- Private Sector Renewable Energy and Energy Turkey (\$500 million)
- Montenegro Institutional Development and Agriculture Strengthening (MIDAS) (\$15.7 million)
- Water Supply and Sanitation Project Belarus (\$60 million)

Climate Investment Funds:

- CTF resources in Turkey to leverage public and private investment to improve energy efficiency as well as overall generation capacity “cleanly” with a focus on environmental sustainability by reducing GHG emissions (\$100 million)
- CTF investment plans were endorsed for Ukraine (US\$ 350 million) and in March 2010.

Carbon Finance:

- Rosneft Gas Flaring Reduction Project Russia (\$150 million), Moldova Community Forestry Project (\$13.6 million)
- Carbon finance programs in Uzbekistan (\$2 million)

GEF: Programs with climate elements in Croatia, Poland, Bulgaria, Macedonia, Armenia totaling \$173 million

Analytical and Advisory Work:

- TA to financing wholesale emission reduction projects through sale of Assigned Amount Units in Ukraine, Czech Republic, and Latvia
- TA on Southeastern Europe Regional Energy Efficiency and Renewable study, which will formulate an EE intervention strategy for the Western Balkans with country-specific sections for Albania, Bosnia-Herzegovina, Kosovo, Macedonia, Montenegro, and Serbia

Knowledge Sharing and Capacity Building:

- CF Assist National Training Workshop on Joint Implementation/GIS in Serbia
- Assist Outreach Workshop in Turkey

Supporting Climate Resilient Development

Investments directly contributing to climate change adaptation *reaching approximately \$175.5 million:*

- HydroMet strengthening in Russia (\$80 million)
- Armenia Irrigation Rehabilitation (\$30 million); Uzbekistan Ferghana Valley Water Resources Management (\$65.5 million)
- A regional hydro meteorological project for Central Asia planned for end FY2011, which will finance management systems, data gathering, equipment, etc.

Investments directly contributing to DRM/reduction of current climate variability:

- Croatia and Moldova Disaster Risk/Adaptation (\$36.3 million and \$10 million respectively)

Analytical and Advisory Work:

- The regional energy flagship “Lights Out? The Outlook for Energy in Eastern Europe and Central Asia” (launched in March 2010) outlines significant needs in building energy security while exploring policies and instruments to also take advantage of enhancing energy efficiencies, reducing GHG emissions, and furthering global efforts to address climate change
- The regional flagship report “Adapting to Climate Change in Europe and Central Asia” launched at Bonn climate discussions in June 2009, with rollout in ECA beginning in November 2009 alongside the WDR
- Analytical work to assist client countries understand range and likely impacts from climate variability and change on vulnerable subsectors in sensitive subregions, and to develop candidate adaptation approaches to mitigate impacts in a cost-effective manner. This includes AAA efforts to improve the resilience of the energy sector in Albania and Uzbekistan; ensuring climate resilient agriculture in Albania, Moldova, Macedonia and Uzbekistan; developing a water sector adaptation plan for the Sava River Basin in SE Europe, and assessing livelihood and income impacts in Tajikistan.

Climate Investment Funds:

- The Pilot Program for Climate Resilience (PPCR) for Tajikistan—Phase I started with a Joint Mission held October 12-22, 2009 and will include analytical work and investments to integrate climate resilience in sector and cross-sector programs.

Other Innovative Financing:

The Southeastern Europe and Caucasus Climate Change and Catastrophe Risk Insurance Facility, also under preparation, will create a specialized regional reinsurer to enable a rapid expansion of climate change and catastrophe insurance penetration among homeowners and small and medium enterprises in participating countries.

LCR

Supporting New Development Challenges through Partnerships, Knowledge, and Finance

LCR countries were among the first to partner with the WBG in addressing climate change. Starting with analytical work to better understand the physical nature of the impacts, assistance has grown to a strategic compact that aims to use the full suite of WBG products, instruments, capabilities, and experiences to help with a new and complex development challenge. The LCR portfolio includes 183 climate change activities in adaptation and mitigation totaling \$7.3 billion and encompasses regional studies, country assessments, IBRD investment, and development policy lending. Other products include innovative catastrophic insurance schemes; GEF grants and carbon finance; and TA and new concessional finance, such as CTF.

Building Knowledge at the Country and Regional Levels: LCR's analytical and advisory assistance program (\$5 million) consists of analytical work, development of models and toolkits, capacity building, and high-level policy seminars.

- Regional flagship study on climate change, *Low Carbon, High Growth: Latin American Responses to Climate Change, an Overview*, published in 2008 and launched simultaneously at the Poznan COP, in Washington, DC, and in Bolivia. A second technical volume, *Low Carbon Development*, released at Annual Meetings in Istanbul
- Low-carbon growth studies for Brazil and Mexico
- Program of analytical work on clean energy and climate change
- Regional study on social impacts of climate change
- Country/sector studies on climate change impacts on fisheries, agriculture, tourism, and hydropower
- Amazon Dieback study with technical collaboration of the University of Exeter, the Remote Sensing Technology of Japan (RESTEC), and the Potsdam Institute for Climate Impact Research. identified and evaluated the long-term options that would be required to maintain the integrity of the Amazon Basin, and locally delay the impacts of Amazon forest mortality

Supporting Policy Development:

- Mexico Climate Change DPL (\$500 million) is supporting the government's commitments under the UNFCCC outlined in their 3rd National Communication, and the Special Climate Change Program. Assistance to Argentina to formulate its Third National Communication to the UNFCCC
- Green infrastructure DPL--Mexico (\$1.5 billion). The Framework for Green Growth DPL provided a framework, via the country's Special Climate Change Program (PECC), for emission reduction by way of a trisection of: Renewable Energy policies/law/funds, Energy Efficiency policies/law/funds and Mass Transit/Urban Transport regulations/institutions/funds

Investments Directly Contributing to Climate Change Adaptation:

- **Nicaragua National Seed System Strengthening** helps to sustainably increase agricultural production in the medium term. Operation strengthens seed producer organizations, provides TA, develops seed storage capacity, improves seed certification, develops a revolving fund to finance seed production, strengthens production of basic seed, and enhances seed testing facilities
- **Natural Disaster Mitigation in Honduras** identifies and takes measures to replace lost incomes from climate change impacts and to reduce risks of flooding and droughts

Investments Directly Contributing to DRM/Reduction of Current Climate Variability:

- **OECS Disaster Vulnerability Reduction Project** finances disaster vulnerability reduction investments for selected public infrastructure. The project will seek to climate-proof public infrastructure in selected priority sectors: water, housing, health, and education
- **Colombia Rio Bogota Environment Infrastructure Project** includes a large flood control component that will raise flood standards from a 25-year return period to 100-year return period.

- **Argentina Province Infrastructure Sustainable Investment** includes a large-scale flood prevention project in the province of Buenos Aires
- **Agriculture Insurance for Vulnerability Reduction and Climate Change Adaptation.** The objective is to reduce vulnerability of small and medium agricultural producers in LCR to adverse systemic weather events. The project supports the transfer of capacity on financial agriculture risk management, policy dialogue, and the dissemination of knowledge and skills on design and implementation of index-based risk management tools for low-income agriculture producers

Climate Investment Funds--PPCR:

- Bolivia has presented its initial draft for Phase I activities to the Pilot Program for Climate Resilience Trust Fund in an informal session in Manila.
- The Regional Program for the Caribbean is also moving ahead, with scoping missions for all of the four OECS countries completed, the Haiti program proposal well integrated in its earthquake recovery plan. For those countries where IDB has the lead (Jamaica and the Regional component), World Bank staff have participated in their scoping missions.

Climate Investment Funds—Clean Technology Fund

- One of the first investment plans endorsed in January 2009 was for Mexico. At \$500 million, it focuses on renewable energy and urban transport. In May 2008, Mexico became the first country with a private sector (wind farm) project prepared by IFC for CTF financing of \$15 million.
- The first investment operation to be financed under the CTF in LAC was approved by the Board in March, 2010. The \$150m Multi Stakeholder Partnership for the Urban Transport Transformation Project (UTTP) seeks to transform urban transport in Mexican cities into a lower-carbon one.
- The Colombia Investment Plan was approved by the CTF Trust Fund Committee in Manila. The \$150m plan (of which \$40m will be linked to World Bank operations) focuses on urban transport and energy efficiency.
- The first missions to Chile to help prepare the CTF Investment Plan were held in November, 2009. The list of priorities determined by the Government at that time is being re-evaluated in light of the recent earthquakes and will be included in the “building better” program.

Financing with Mitigation Co-benefits amounts to over \$6.2 billion and includes:

- Regional Air Quality and Sustainable Transport (Mexico, Brazil, Argentina and a regional project)
- Supporting introduction of compact fluorescent lighting, appliances, air-conditioning, new building codes (Argentina, Mexico, Brazil)
- Reducing losses in transmission (Honduras, Uruguay)
- Technical Assistance to reform policy and regulatory framework to encourage energy efficiency (Nicaragua, Honduras, Dominican Republic, Ecuador, Uruguay, Argentina, Guatemala)
- Mini-hydro power plants, off-grid rural electrification in Central America, Peru; wind in Colombia

Leveraging Private Sector Investments in RE/EE: In FY05-09, IFC net investments (including large hydropower) reached over \$641 million. More than 25 percent of these commitments (around \$179 million) were provided in FY09, marking a clear increase in IFC’s engagement over the last five years. Investments include 8 renewable-energy projects in Argentina, Chile, Colombia, Brazil, Honduras, Guatemala and Nicaragua, and 5 energy-efficiency projects in Paraguay, Colombia, Brazil, and Mexico. A carbon mitigation project was also approved for Nicaragua

Carbon Finance: The region is also benefiting from opportunities for emission reductions and has 36 agreements signed to a value of \$126.3 million, for a total reduction of 20.3 million tCO₂

Forest Carbon Partnership Facility: Out of 37 participating countries, 15 are from LCR. In addition, Peru has been selected as one of the six pilot countries for the Forest Investment Program under the CIFs.

MNA

Integrating Climate Change in Bank Business and Scaling Up Climate-Related Activities

MNA's Climate Change Strategy was one of the first to be developed in the Bank, preceding the SFDCC. Work is under way to update the regional strategy in line with the SFDCC and to reflect recent country dialogue. MNA seeks to fully integrate the objectives of reducing climate vulnerability and GHG emissions into the Bank's development assistance to the region. The business plan of lending activities is organized around two dimensions: (1) IBRD and IDA projects that will serve as a "vehicle" to deliver the mitigation or adaptation assistance; and (2) additional activities that would help MNA countries reduce GHG emissions or enhance their resilience to climate.

- Yemen: CAS includes addressing climate change as one of its main objectives;
- Morocco and Tunisia: CPSs focus on enhancing climate change resilience and promoting low-carbon growth.
- Over 40 percent of projects in FY09 and pipeline contain one or more climate actions:

Investments Directly Contributing to Adaptation:

- Yemen: Agrobiodiversity and Adaptation (\$4 million);
- Morocco: Support Plan Maroc Vert (\$100 million); Climate Adaptation in Agriculture and Water (\$5 million);
- Regional Coordination on Improved Water Resources Management and Capacity Building in Cooperation with NASA (\$5.64 million).

Contribution to Reduction of Current Climate Variability:

- Tunisia: Water Sector Investment (FY09) in the amount of \$30.6 million;
- Yemen: Water Sector Support (FY09) in the amount of \$90 million;
- Yemen: Groundwater and Soil Conservation Add; financing (FY09) in the amount of \$15 million;
- Lebanon: Greater Beirut Water Supply (pipeline) in the amount of \$100 million;
- Egypt: On-Farm Irrigation (pipeline) in the amount of \$100 million;
- Syria: Coastal Rivers & Orontes River Basins (pipeline) in the amount of \$3.4 million;
- Regional: Strategic Action Plan for Red Sea and Gulf of Aden II (pipeline) in the amount of \$3 million

Knowledge Products:

- GFDRR (\$1.1 million) contributes to the creation of a DRM center of excellence, enhancing regional risk assessment, and supporting the development of national- and city-level CCA and DRR policy frameworks in priority sectors (2009–10):
- MENA Regional flagship report on Climate Change in MENA (2010 – 2012).
- MDTF for Addressing Climate Change in MENA (\$5 million). The five current ongoing studies are:
 - Regional: TA in Support of Downscaling CC with Some Application of Case Study;
 - Regional: Improving Food Import Supply Chains in Arab Countries
 - Sub-regional (Jordan, Lebanon, and Syria): Vulnerability to CC in Agricultural Systems Sub-regional (Morocco, Algeria, Tunisia, Egypt, Jordan, Syria, West Bank/Gaza): Economic Analysis to Assess the Potential for CSP in MENA & Evaluate the Derived Benefits of Large Scale Renewable Development;
 - Egypt: Cairo Congestion Study
 - Syria rural strategy in a changing climate (2009-2012).

Carbon Finance:

- Five municipal solid waste (MSW) projects (2 stand-alone CF projects in Egypt; 2 lending projects blended with CF in Tunisia, and 1 blended project in Jordan); 1 national MSW program (Morocco DPL) under preparation for the CPF (post-2012 program);
- Energy sector: 1 energy efficiency program in Yemen, 2 renewable energy projects in Yemen (first of its kind in Yemen, 60 megawatt wind farm) and Tunisia (34 megawatt wind farm), energy efficiency national program in Egypt (household level), energy efficiency of pumping systems for irrigation and drainage in Egypt;
- Citywide CF program to address all GHG sectors (i.e., energy efficiency, renewable energy, transport and sanitation) for Amman, Jordan for the CPF;
- Livestock and poultry manure biogas program in Yemen;
- Transport program (vehicles scrapping, bus rapid transit) in Cairo, Egypt;
- Egypt, Morocco, and Tunisia among the earliest launched programs under Carbon Finance Assist, completed in 2009. Focused capacity building programs were completed in Syria and Yemen during 2007-08, in Jordan and Lebanon during 2009. Capacity building activities to scaling up of carbon finance activities (i) through programmatic approach and (ii) in urban areas are underway.

Climate Investment Funds:

- MNA Regional CTF Investment Plan for Concentrated Solar Power (\$750 million), Morocco CTF Investment Plan (\$150 million) and Egypt CTF Investment (\$300 million);
- Yemen as one of the pilot countries selected for PPCR; Proposal for Phase I to be submitted to CIF April 2010(\$30 -60 million)
- Morocco has expressed interest in being considered for funding under the FIP.

Integrated Financing Packages:

- Morocco Solid Waste Sector DPL: Programmatic series of two DPLs designed to provide budget support and sustain implementation of reform program of solid waste sector. DPL promotes (through programmatic use of carbon finance) reduction of methane emissions as part of the broader support to sector reform. Morocco MSW Carbon Finance Program amounts to €100 million (FY09);
- Yemen: Conservation and Utilization of Agro-biodiversity for Adaptation to Climate Change in the Rainfed Highlands. Used a pilot window in the GEF under Strategic Priority of Adaptation (FY10);
- Morocco: Integrating Climate Change in Development Planning and Disaster Prevention to Increase Resilience of Agricultural and Water Sectors. Approved under the SCCF (pipeline);
- Yemen: Climate Resilient Integrated Coastal Zone Management. Approved under the Least Developed Countries Fund (pipeline);
- Tunisia: EE and Cogeneration Investment Scale-Up and Biomass Pilot-Project (pipeline).

Knowledge Sharing and Client Capacity Building:

- MENA, in partnership with AFR, developing Africa climate scenario portal to help decision makers internalize the evolution of climate in investment design and other development choices;
- Regional forum on agriculture, climate change, and food security designed in partnership with the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development, and the World Food Programme, assisting ministers of agriculture with challenges of climate variability and change, food security, and rural poverty alleviation. Launch planned for the FAO annual conference in November 2009;
- Sub regional study of implications of climate change in water and agriculture sectors in Yemen and Djibouti, including downscaling of climate models;
- Conference on economic implications of climate change was held in Morocco in February 2009. The meeting resulted in a request by the government to assist in the development of an integrated Climate Change Strategy.

SAR

Enhancing Climate Resilience and Reducing Carbon Emission

A high population density, combined with a large concentration of poverty, a degraded resource base, and a variable climate all combine to make South Asia especially vulnerable to the consequences of climate change. SAR emissions have risen faster than any other region except the Middle East. India has emerged as the sixth largest emitter of GHGs, although per capita emissions in the region are among the lowest in the world. The climate-smart development approach in the region affirms the overall objective of assisting client countries in building climate resilience while promoting more sustainable growth. Activities are guided by five key pillars: (1) promoting “no-regrets” approaches, given the uncertainty of impacts; (2) focus on building resilience of the climate-vulnerable poor; (3) investment in knowledge to address critical information gaps; (4) regional cooperation to deal with cross-border climate related challenges; and (5) maintaining the integrity of environmental services to ensure that development is rendered more resilient. Similarly, in the first instance low-carbon development and growth are guided by three key pillars: (1) harnessing the low-hanging fruits of win-win policies and investments, (2) enabling access to greater finance for clean development strategies, and (3) assisting with clean technology transfer.

Strengthening the Knowledge Base and Contributing to the Development of Regional Programs:

Ongoing activities include:

- From Kathmandu to Copenhagen, a high-profile conference that focused on the risks of climate change in the Himalayas and the gains and opportunities from regional cooperation. This was the first time participating SAR countries agreed to a joint conference statement
- Pioneering analytical work on trade and climate change that would develop a global index on the climate sensitivity of trade beginning with SAR countries as a pilot
- South Asia Water Initiative (SAWI) regional water program focusing on climate change concerns
- Numerous studies that identify future climate threats and possible adaptive responses in India and Bangladesh, with ongoing work for several other countries.

Supporting Policy Development:

- Technical assistance to Pakistan on developing a strategy on national environment policy that is climate resilient through an ongoing non-lending TA program and preparation of a TA project
- Ministry of Finance TA on Climate Change Issues in India that has provided policy and strategic support on climate change
- Analytical work on the effects of climate change on water resources in Nepal and the Ganges Basin helping affected countries formulate response strategies
- An international conference on Bangladesh’s climate strategy and action plan in September 2008 that led to a multi-donor trust fund for Bangladesh, the first of its kind in the world, with the Bank as trustee.

Supporting adaptation-related activities:

- Nepal and Bangladesh have been nominated for the PPCR
- Extending analytical services to assist clients to better evaluate the magnitude and distribution of climate change impacts in a number of sectors
- Three major reports on the impact of climate change on agricultural performance in Bangladesh, India, and Pakistan supporting these countries in developing adaptation strategies for agriculture
- Two analytical reports on understanding and addressing the risks of India’s large coastal cities, vulnerability reduction, and adaptation to climate variability. A major study on the environmental challenges of rapid growth under preparation

- TA to India on economic development and adaptation of the Sunderbans, and to Andhra Pradesh to pilot interventions for enhancing drought adaptation capacity of affected communities and reducing their vulnerability to drought in the long term
- TA on damage needs assessment, disaster management, and adaptation for cyclone recovery in Bangladesh
- Non-lending TA for Pakistan with support on adaptation programs
- Report for Nepal on the Ganges strategic water assessment
- FY09 and FY10 Q1&2: Investments directly contributing to climate change adaptation
 - Pakistan Water Sector Capacity Building (FY08), recognizing major climate change impacts on water resource management
 - High-impact investment for the Maldives through an IDA-financed Environmental Management Project and assistance to the government in establishing a climate change trust fund
 - Hydrology Project Phase II (India)
 - A coastal adaptation project in Bangladesh under preparation

Financing with Mitigation Co-benefits focuses on reducing the carbon intensity of the region's growth, and promoting the transition to low-carbon development. A majority of the activities focus on energy efficiency, reduction in energy intensity, and renewable energy:

- Major investments are under way for the energy sector, including:
 - India Punjab High Voltage Distribution System (pipeline)
 - Pakistan Community-Based Renewable Energy Development in Northern Areas and Chitral (ongoing)
 - Bangladesh Brick Kiln Efficiency Project (pipeline)
- Future focus on developing programmatic approaches and leveraging resources through CIFs
- India Low Carbon Growth study identifies some of mitigation wins-wins for development

Carbon Finance: Many of the investment activities involve carbon finance. The proposed and ongoing investments cover the major polluting sectors industry, urban, and transport and are projected to lead to a total reduction of 14.7 Mtons CO₂.

- CF funding along with a GEF grant and the Montreal Protocol mechanism support the India Chiller Efficiency project, improving energy efficiency, lower GHG emissions in the chiller industry and reduce ozone-depleting substances
- Lahore Composting Project in Pakistan promises to be a model for the substantial reduction of landfill waste, environmental and health hazards and GHG emissions by applying composting technology and recycling
- Three CF investments in the pipeline: Himachal Pradesh watershed management, bio-carbon livelihoods in India, and a bio-carbon forestry project in Nepal
- India Rampur Hydropower Project—Carbon Finance (pipeline)

Knowledge Management and Capacity-Building Activities aimed at building partnerships and deepening knowledge among countries in the region:

- SAR Climate Change website as key to knowledge management and partnership development, with new postings released during and ahead of important global events
- A training program for Bank staff under development with CCDP
- SAR-wide or global workshops sponsored by GDLN in cooperation with Asia Learning
- Collaboration with WBI to deliver climate change training programs to countries in SAR and EAP
- Regional CCDP Training Workshop on The Economics of Climate Change and Development (May 12-13, 2009), with more than 40 participants attending, including Bank staff from Pakistan, Afghanistan, Sri Lanka, Bangladesh, and Nepal

ANNEX 4. CLIMATE INVESTMENT FUNDS

The Climate Investment Funds, including the Clean Technology Fund and the Strategic Climate Fund, were approved on July 1, 2008, and represent a balanced partnership of contributor and recipient countries implementing innovative climate financing through the MDBs to bridge the financing and learning gap between now and a post-2012 global climate change agreement. A sunset clause enables their closure once a new financial architecture has become effective under the UNFCCC regime. To date over \$6.3 billion has been pledged.

	Clean Technology Fund (~\$4.4 billion)¹³	Strategic Climate Fund (~\$1.9 billion)		
P R O G R A M M I N G	<i>Finance scaled-up demonstration, deployment and transfer of low-carbon technologies</i>	<i>Targeted programs with dedicated funding to pilot new approaches with potential for scaling up</i>		
	Country Investment Plans	Pilot Program for Climate Resilience (\$967 million)	Forest Investment Program (\$558million)	Program for Scaling Up Renewable Energy in Low-Income Countries (\$292 million)
	Egypt, Mexico, Morocco, MNA Regional Concentrated Solar Power, Philippines, South Africa, Thailand, Turkey, Vietnam, Colombia, Indonesia, Kazakhstan, Ukraine endorsed <i>Under preparation: Chile and Nigeria</i>	Help build climate resilience into core development planning (operational)	Reduce emissions from deforestation and forest degradation (REDD) (operational)	Support transformational change in using renewable energy (operational)
G O V E R N A N C E	CTF Trust Fund Committee	SCF Trust Fund Committee		
	Australia, Brazil, China, Egypt, France, Germany, India, Japan, Morocco, Nigeria, South Africa, Spain, Sweden, Turkey, UK, US	Bolivia, Guyana, Indonesia, Kyrgyz Republic, Maldives, Senegal, Tunisia, Yemen, Australia-UK, Canada, Denmark-Switzerland**, Germany, Japan, Netherlands, Norway, USA (Program Sub-Committees with different composition)		
	CTF TFC Active Observers	SCF TFC Active Observers		
	UNDP, GEF, UNEP, UNFCCC 4 civil society, 2 private sector	UNDP, GEF, UNEP, UNFCCC 4 civil society, 2 Indigenous Peoples, 2 private sector		
	*Committee members and observers for civil society, IPs and private sector “self-select.” ** Within the contributor country group, it was agreed that countries may partner in a “twinning” arrangement to share one seat. The two partnering countries will agree how to rotate representatives as Member for the seat.			

Thirteen investment plans have been endorsed for CTF cofinancing as shown below:

- Egypt wind power, urban transport: CTF \$300 million
- Mexico energy efficiency, urban transport, wind power: CTF \$500 million
- Morocco electricity generation, energy conservation, urban transport: CTF \$150 million

¹³ As of September 15, 2009

- MNA Concentrated Solar Power (CSP) expansion programs: CTF \$750 million
- Philippines energy efficiency, renewable energy, solar and urban transport: CTF \$250 million
- South Africa solar power (CSP), wind energy, solar water heaters, energy efficiency: CTF \$500 million
- Thailand energy efficiency, renewable energy, and urban transformation: CTF \$300 million
- Turkey renewable energy, energy efficiency: CTF \$250 million
- Vietnam energy efficiency, transmission and distribution, renewable energy, and urban transport: CTF \$250 million
- Colombia sustainable transport systems and energy efficiency: US\$ 150 million
- Indonesia geothermal power, energy efficiency and renewable energy: US\$ 400 million
- Kazakhstan renewable energy development, associated gas flaring reduction and fuel switching to gas, district heating system modernization, demand side management and end-user efficiency in SME: US\$ 200 million
- Ukraine energy efficiency and renewable energy, smart grids and zero emissions power from gas network: US\$ 350 million

The first CTF-co-financed IBRD project—Turkey: Private Sector Renewable Energy and Energy Efficiency Project—was approved by the Board in May 2009 and the loans have recently been declared effective. The objective of the IBRD (\$500 million) and CTF (\$100 million) loans is to provide lines of credit through two local development banks for increased lending for wind, solar, small hydro, biomass, and geothermal projects, as well as industrial energy efficiency. There are two other projects approved: the Mexico Urban Transport Transformation Project (\$200 million CTF concessional loan co-financed by a \$150 million IBRD loan) and the Mexico Private Sector Wind Development Project (IADB/IFC). CTF-co-financed IBRD operations are under preparation for South Africa and Egypt for submission to the Board in FY10, while other MDBs are also developing projects.

Investment plans endorsed by March 2010: Colombia, Indonesia, Kazakhstan, and the Ukraine, under preparation are the CTF plans for Chile and Nigeria.

Work is under way in the Pilot Program for Climate Resilience (PPCR) to identify and start activities in Bangladesh, Bolivia, Cambodia, Mozambique, Nepal, Niger, Tajikistan, Yemen, and Zambia, and in two regional programs for the Caribbean and the Pacific. Countries of special focus in the two regional programs: in the Caribbean Region Haiti, Jamaica, Dominica, St. Lucia, St. Vincent and the Grenadines, and Grenada (OECS); and, in the Pacific Region Papua New Guinea, Samoa, and Tonga.

Country-based actions under the Forest Investment Program (FIP) and Scaling-Up Renewable Energy Program (SREP) are expected to begin in calendar year 2010. The FIP Sub-Committee had its first meeting on October 29, 2009, and has approved a work program to make the FIP fully operational. The Scaling Up Renewable Energy Program in Low Income Countries (SREP), with now \$292 million in pledges, was declared operational at COP-15.

ANNEX 5. MAIN CLIMATE FINANCE INSTRUMENTS USED BY THE WBG

Global Environment Facility (GEF) US\$1 billion over 2007-2010 for climate change	M	Finances mitigation activities, mainly capacity building, technical assistance for barrier removal and piloting
	A	Supports pilot and demonstration projects that address local adaptation needs and generate global environmental benefits in all GEF focal areas
Least Developed Countries Fund US\$ 547 million	A	Helps in the preparation and financing of implementation of National Adaptation Plans of Action to address the most urgent adaptation needs
Special Climate Change Fund (SCCF) US\$ 685 million	A	Supports adaptation and mitigation related projects in all developing countries, with emphasis on adaptation
The Adaptation Fund US\$ 53.09 million, expected to grow to US\$254-443 million by 2012 from CER monetization plus possible contributions	A	Provides grant-financed adaptation resources through national and multilateral implementing agencies; IBRD is accredited as a Multilateral Implementing Entity
Carbon Funds managed by WB US\$ 2.5 billion from which US\$215 million remain available.	M	10 funds: Prototype Carbon Fund, Bio Carbon Fund, Community Development Carbon Fund, Spanish Carbon Fund, Italian Carbon Fund, Carbon Fund for Europe, Danish Carbon Fund, Umbrella Carbon Fund, The Netherlands CDM Facility, The Netherlands European Carbon Facility
Forest Carbon Partnership Facility (FCPF) Readiness Fund - US\$110 million Carbon Fund - US\$50 million	M	Supports country readiness by piloting mechanisms that provide incentives for reducing emissions from deforestation, forest degradation and improved forest management (REDD-Plus)
Carbon Partnership Facility (CPF) Carbon Asset Development Fund - €7 million Carbon Fund-€100 million	M	Supports programmatic and sector-wide interventions; new methodologies, and advanced technologies
Climate Investment Funds US\$6.3 billion comprising The Clean Technology Fund US\$4.4 billion Strategic Climate Fund US\$1.9 billion comprising: <i>Pilot Program for Climate Resilience (PPCR)</i> - US\$967million <i>Forest Investment Program (FIP)</i> - US\$558 million <i>Scaling Up Renewable Energy in Low-Income Countries (SREP)</i> US\$292 million	M	Finances demonstration, deployment, and transfer of low-carbon technologies at a transformative scale
	A	Helps build climate resilience in core development plans
	M	Finances enabling investments for reducing emissions from deforestation, forest degradation, and improved forest management (REDD-Plus)
	M	Supports transformational change in using renewable energy for development
Global Facility for Disaster Reduction and Recovery (GFDRR) US\$27 million provided for adaptation-related activities	A	Builds adaptive capacity for climate risk management and resilience to climate-related natural disaster.
Various Trust Funds and Partnerships (e.g. ESMAP, bi-lateral initiatives)	A M	Finances knowledge products, capacity building, upstream analytical work and project pilots

Note: A=Adaptation; M=Mitigation