

9. STEPPING UP POLICY RESEARCH, KNOWLEDGE AND CAPACITY BUILDING (ACTION AREA 6)

Enhancing the research program

116. Over the past year, the WBG – including DEC and most WB networks and regions – has significantly stepped-up its research and analytical work on climate change across sectors and issues, and at the local, national, regional and global levels. Table 1, which does not aim to be exhaustive but rather representative of the richness of an on-going analytical effort and the WBG potential to scale up quickly, summarizes some of the major on-going research programs, undertaken in close partnerships with international, regional, and national institutions.

Table 1: Summary of Major Studies

Study / Research Program	Key issues						
	1	2	3	4	5	6	7
WDR 2010: “Climate Change and Development”	X	X	X	X	X	X	X
Global Warming and Developing Countries: an Economy-wide Perspective	X			X		X	
Adaptation in Agriculture						X	
Economics of Adaptation to Climate Change	X					X	
State and Trends of the Carbon Market (annual report)		X		X			
Low carbon growth studies (Brazil, Mexico, China, South Africa, Indonesia, and India)	X	X	X	X	X		
Examples of Regional adaptation studies: <ul style="list-style-type: none"> • Adaptation to Climate Change in Europe and Central Asia • Mitigating and Dealing with Climate Change in Latin America and Caribbean • Climate Change and Africa’s Water: What are the Operational Implications? • Study on Climate Impact and Adaptation in Asian Coastal Cities (with ADB) • Morocco - Adaptation to Climate Change in Agriculture • India - Climate Change Impacts in Drought and Flood Affected Areas 	X	X	X		X	X	X
PREM Policy Notes on Climate Change			X	X		X	
The Role of the Flexible Mechanisms in Reducing GHGs		X		X			
Accelerating Clean Energy Technology D		X					
Water and Adaptation to Climate Change: Implications on Investment and Project Design	X					X	
Research program on Social Impacts of Climate Change						X	

Key to table:

1. Latest scientific evidence on anthropogenic climate change, emission trajectories and the costs of inaction or delay
2. Technology and costs of mitigation
3. Competitiveness and structural changes: threats and opportunities
4. Targets, trading and financial flows
5. Deforestation
6. Adaptation
7. Processes for building a collaborative response

117. The main objectives of scaling up the research program are seen to (i) support WBG client countries in understanding climate change and development linkages with a major focus given to understanding the nature, costs, and social dimensions of adaptation processes and applying this knowledge to the country specific situations, as well as inform WBG dialogue and operations, and (ii) inform the international process of agreeing the future of the climate change regime and the respective policy and financial architecture. Rapidly expanded work by DEC

aims to support operational units in better understanding the linkage between climate change and development.

118. The WBG is preparing a *World Development Report* (WDR) on climate change, to be released in calendar year 2009. Going forward, it will strengthen partnerships with regional and national research communities in developing countries, increase synergies within on-going work, and share and operationalize the key findings.

119. **Among priority areas for research and analytical work**, many of which are already covered by the on-going activities including the WDR, are the following:

- Understanding the nature of the process and the costs of adaptation to climate risks in different country and sectoral contexts, as well as at a global level. Several major studies are on-going at the global, regional and country levels, and expected, collectively, to provide sufficient knowledge for successful operationalization in WBG programs and inform the development of a global financing architecture;
- Understanding the impacts of climate change and climate policies in different countries. Within countries more work is needed to understand the impacts on the poor of different responses to climate change at different levels;
- Assessing low GHG growth trajectories and options across sectors, and their costs and benefits in a specific developing country context. The work has been initiated by the low carbon growth studies that are currently on-going in six countries and providing an important learning platform;
- Understanding and articulating adaptation-mitigation-development synergies and specific institutional measures to take advantage of those;
- Assessing various options for the design of a global policy and financial architecture for talking climate change that is effective, efficient and equitable;
- Understanding the role of technology, the realistic span of new technology uptake at scale, and technology cooperation models;
- Understanding how national policy responses by developing countries to climate change can improve their *development* outcomes; how to make decisions that address trade-offs and manage uncertainties, related to both climate science and economic cost, while dealing with the very long term horizon; and
- Looking to a more distant future, understanding the implications of a carbon-constrained world for development policy analysis, country performance indicators; and project appraisal.

120. Going forward, the WBG will make an effort to keep abreast of outside research, ensure effective partnerships with global and national research communities, maximize synergies within the on-going work by the WBG itself, promptly operationalize the main findings, and become a recognized knowledge leader on the development policies and practical solutions in the context of climate change. Given that the challenge is global and its scientific understanding is based on a suite of global models, there is a strong justification for better coordinating the work by the

WBG operational units that utilizes global models and projections and outside technical capacity (such as that provided by WMO to several studies). It is also important to minimize duplication through fostering real-time knowledge sharing about the work within and outside the WBG.

121. Enhancing the coherence, focus, and quality of a growing program of analytical work across various operational units of the WBG will be one of the key responsibilities of Senior Climate Change Advisor to the Sustainable Development Network Vice Presidency (SDNVP). The Advisor will collaborate with DEC and other technical experts within the WBG, including IFC, and external experts as necessary.

Working with partners to monitor global progress

122. The WBG will extend its knowledge sharing and dialogue to the global level. It has engaged and will work with other development partners, such as the UN Statistical Division and UNFCCC Secretariat, to improve knowledge and facilitate systematic, consistent and comprehensive monitoring and reporting on progress with global climate action, including progress towards meeting international climate agreements and financial flows to developing countries in support of their mitigation and adaptation-related actions. This work will build on its flagship global knowledge products with broad outreach, such as the *World Development Indicators* and an annual review of the *State of the Carbon Market* that reports on carbon revenue flows. As part of another global initiative, the WBG will include GHG-related indicators for urban areas in the Global City Indicator Program that it has already initiated (see Box 25).

Box 25: Global City Indicators Facility

While indicators to measure city performance are commonly used by many levels of government, academia and international agencies, they are not yet standardized, consistent, or comparable across time or across cities. There is an urgent need for a single, standard, comprehensive system for measuring and monitoring city performance and quality of life.

Recognizing the need for a comprehensive system to collect and monitor city indicators, the World Bank worked with key stakeholders to establish the Global City Indicators Facility (www.cityindicators.org) now housed at the University of Toronto. The Facility will initially monitor twenty-seven ‘core’ indicators and twenty-six ‘supporting’ indicators as collected by participating cities. The indicators also provide a framework for additional ‘indices’ of more complex city characteristics such as total greenhouse gas emissions, competitiveness, subjective well-being, and so on. The indicators and indices are being designed in a manner to facilitate third party verification. This will help to provide a sufficiently robust structure to enable cities to publicly meet local service and contribute to global action.

Source: www.cityindicators.org

123. The WBG will also work with the OECD DAC on improving tracking and reporting of the provision of new and additional finance to meet the incremental costs of climate actions as part of the ODA flows. Given that following a pilot three-year program, the DAC recently included markers for mitigation-related funding in its reporting of bilateral aid, the focus will be on adaptation. The World Development Report 2010 and an on-going study on the economics of adaptation, undertaken in several developing countries in collaboration with local institutions, will provide important technical knowledge to support this process.

Building expertise on development - climate linkages in a developing country context

124. **Economic dimensions.** In addition to continuing policy dialogue in its traditional areas where climate implications reinforce the importance of good economic policies, such as energy and water pricing, the WBG will strengthen its policy and technical expertise to provide advice and help in the areas of emerging interest from clients. There is a growing interest from finance ministries in climate financing instruments. Even with the availability of new and additional financing, there will be a need to make decisions about cost-effective resource allocation that are vastly complicated by the very long-term and uncertain nature of costs and risks. Technical assistance with improving investment climate for private sector investment in renewable energy, energy efficiency, and climate risk resilient projects is another area of growing demand, where WB, IFC and MIGA can join forces.

125. Other areas, where advice is being sought, include fiscal and expenditure policies, trade, competitiveness, social safety nets, governance, and decentralized decision making. Among the main recent studies addressing development-climate linkages are a new “climate change” series of policy notes by PREM (2008), the IMF report on fiscal implications of climate change (2008), and the Growth Report (2008) by the Growth and Development Commission that reiterated the priority of rapid growth in developing countries in the face of climate change.

126. **Social and Human Development Dimensions.** An important area of the WBG work will be to advance the understanding of the impacts of climate change and mitigation actions on different social groups to inform relevant operations. Building on activities initiated in FY08, the WBG will work, through the development of social analysis tools, good practice guidelines, and capacity building, towards:

- *Ensuring that the poorest, least resilient social groups who are most vulnerable to climate change impacts, are supported in developing adaptation strategies, so as short-term well-being and long-term livelihoods of these vulnerable groups are not unduly compromised.* This will include understanding and supporting social safety nets, providing social investment funds to rebuild communities in the advent of natural disasters, and developing weather-linked agriculture insurance schemes customized to reach the poor.
- *Taking into account that impacts are often differentiated by gender.* The prevailing lack of equal rights of women to land, irrigation water, and access to education renders them especially vulnerable in a future with anticipated increases in pressure on these resources. Women, therefore, may often have a lower adaptive capacity arising from prevailing social inequalities and are ascribed social and economic roles that lead to increased hardship (e.g., through reduced food security or shortage of water resources).
- *Understanding the impacts of mitigation actions on poor people’s livelihoods, through applying social analysis to the design of (a) policies (e.g., changes in price regimes to promote low-carbon growth globally and nationally), (b) investment projects (e.g., large use of hydropower) to ensure that poor people benefit from the project, and (c) new forms of climate action and finance so that poor people’s assets are protected and they are included in benefit streams created by these new opportunities.*
- *Supporting local institutions in helping facilitate adaptation, economic diversification and growth strategies that maintain or increase social resilience and cohesion.* The specter of increasing rural-urban migration and urban slums population increase, social unrest,

growing unemployment, and sense of exclusion and the increased conflict can already be witnessed in a number of countries, particularly in the MENA region where fewer job opportunities in agriculture push people to move. While difficult to attribute to human-induced climate change, such examples highlight the possible scale of future issues.

- *Understanding the scope of health impacts caused by climate change and addressing these*, including increased incidence of communicable diseases, malnutrition, food-borne illness, heat or cold related exposure, migration-related negative health effects, mental health, drowning, and other impacts on vulnerable groups differentiated by age and gender.

Developing a suite of tools to support policy dialogue and operations

127. The WBG uses a wide range of analytical approaches and instruments to inform its policy dialogue and lending at the project, sector and country level. In addition to this, the Bank works closely with client countries to inform and support national, sectoral, and local development policy and planning, while the IFC similarly supports its private sector clients. To support its clients with climate aspects in their projects and programs, the WBG will take the following steps:

- Make relevant use of analytic instruments and information generated outside the WBG;
- Update guidance for existing tools and instruments to take account of climate considerations when necessary; and
- Develop, test and refine new instruments as needed.

128. Outside the WBG, several initiatives are underway to create and organize databases and decision-aiding tools in order to provide a wide variety of audiences with climate and vulnerability related information. Most of the tools are still limited in one way or another (e.g., in terms of sectors, ability to respond to user needs; reliability of climate information provided at a relevant scale, etc.); yet, a range of these tools applied within their useful range can inform the design of adaptation components within a particular initiative (e.g., using community-based assessments; economical analysis of adaptation options, etc.). The WBG will continue to inform and share experience with other players to develop a suite of tools needed to support actions at a sectoral and country level.

129. A range of existing tools and instruments used within the WBG are well suited to include relevant climate issues at the country, sector and project level. The core instruments for applying environmental, economic and social analysis to development policy dialogue and the design of operations will therefore be important channels for the WBG's evolving work on climate change (see Annex 6).

130. In FY09–10, the WBG will review and update guidance notes for existing analytical instruments to aid operational staff with taking account of climate change dimensions when appropriate. For example, the Bank has worked with OECD on guidelines for integrating climate change in SEAs, and will pilot this approach on a demand basis, during FY09-11. A DPL toolkit on climate change is being prepared and will be available in FY09.

131. **New Instruments.** The development of new and/or wider application of emerging instruments and approaches will be required in two specific areas. The *first* one relates to taking

better account of climate risk and vulnerabilities. The *second* area is linked to the need to better understand the impacts of the WBG's activities on GHG emissions.

132. The WBG's move towards greater application of risk screening tools to climate-sensitive projects implemented by IBRD/IDA, particularly to costly long-term infrastructure investments, will require further work to develop, apply and test robust tools. Several screening tools for natural risks and hazards, such as MiRisk, Hazuz-MH, as well as the ADAPT tool developed within the Bank, are commonly available, but so far limited to a few sectors; and the choice of risk screening tools and approaches to use will depend on the context. The WBG will also work with interested client countries to develop and pilot methodologies for rapid climate risk and vulnerability assessments at a country level.

133. The private sector initiatives, led by IFC and MIGA, will continue to pilot approaches for risk assessments relevant to their private sector clients. IFC initiated in 2007 the first series of assessments of the risks posed by climate change to private sector investments. As part of environmental due diligence, MIGA is also assessing the climate-related risks of prospective projects, such as those involving water resources management, mining, and hydropower, and, in particular, how the design of these investments would be sufficiently robust with respect to changes in local hydrology that are projected by climate models. As part of its larger Adaptation Program, the IFC will use a set of initial case studies to help produce an understanding of the risks to the private sector and the relationship to financial performance. The program will also address the larger role of private sector adaptation opportunities and its relation to public sector initiatives.

134. **Methods for GHG Analysis.** As part of strengthening the knowledge base and capacity, the WBG is developing and piloting methods to analyze GHG emissions. The focus is on facilitating access to and effectively using additional climate finance. Some applications of these tools, including accounting for and valuing GHG emissions, are already used in GEF and carbon finance projects. They will extend, for learning and information purposes, to a larger pool of projects.

135. The Bank will select pilot projects in energy, transport, and forestry on a demand basis, and will work in close cooperation with clients and local institutions. An emerging approach in all three sectors is to undertake GHG assessment as part of a broader analysis of *all* project benefits and external costs, including a range of externalities (e.g., urban air pollution and congestion for transport; ecosystem benefits for forests). This would allow analysts to place the GHG analysis of a project in the context of its development impact and assess the trade-offs where applicable. The IFC will apply these tools to its real sector portfolio, to inform its dialogue with its private sector clients on climate-related business opportunities and risks. The methodologies will be coordinated with other MDBs, IFIs, and other stakeholders, which are developing similar tools and methods, with a view to greater harmonization in approaches.

136. These initiatives are intended to:

- Build staff and client capacity for carbon analysis to prepare for a carbon constrained future;
- Gather information to better understand the implications of possible new approaches;
- Identify low cost mitigation opportunities across operations, especially in sectors which may be currently overlooked (i.e., beyond energy and transport);

- Facilitate an analysis of alternatives; and
- Help promote the efficient use of emerging climate funds (including the CTF).

137. This is an analytical and learning exercise, not a business requirement, and it will not be used for decision making about projects using traditional WBG financing instruments. By the end of the piloting period, a proposal will be prepared for Board consideration on the future applications of tools appropriate for Bank and IFC business models, client needs, and available climate financing instruments, taking into account the outcomes of the UNFCCC deliberations.

Scaling-up Capacity Building

138. Enhancing skills and capacity to apply new and existing knowledge inside the WBG and in client countries has been identified as a high priority by both external stakeholders and WBG staff. This set of activities will be implemented in cooperation with other development partners with a mandate for capacity development such as UNDP. The WBG will seek to collaborate with key regional, international and national partners to support the capacity of developing countries to apply relevant knowledge for both mitigation and adaptation.

139. The main objective of capacity development is to strengthen the capacity of client countries and WBG staff to respond effectively to the development challenges and opportunities posed by climate variability, climate change and climate financing. Consultations revealed demand for capacity development in five areas:

- Awareness of climate change impacts: understanding how climate change affects development;
- Knowledge sharing on policies, good practices, and cost effective mitigation and adaptation strategies;
- Knowledge of various financing sources (loans and grants across development institutions, and market mechanisms) and capacity to avail them in a cost-effective manner;
- Skills to integrate climate change considerations into policy analysis, sectoral strategies and development programs at the sub-national and local level; and
- Leadership development and support to outside networks.

140. Specific actions will include the following:

- *Capacity Development through WBG Operations.* As climate change considerations are being integrated into regional, country and sectoral programs, support to task teams will be given to ensure that relevant operations will include a component or integrated action for building analytical and technical skills and strengthening organizational capabilities in a country to respond to climate challenges. In addition, stand-alone technical assistance, Institutional Development Fund, and other institutional development operations could be implemented based on country and regional demand.
- *Supporting Global and Regional Leadership Networks* aimed at creating communities for leaders and practitioners in the area of climate change in developing countries, in a conjoint effort to strengthen existing regional institutions and professional networks. An example of

an existing program via which this could be done is the World Bank Institute's Leadership Development Program.

- *Ensuring shared learning from CIF through Partnership Forum.* To achieve the learning and knowledge sharing goal of the CIFs, a "learning-and-sharing" program would be initiated in conjunction with the Forum, starting from the very early design stage. This program would put in place a *well-structured shared learning event* which would be convened by the World Bank in collaboration with other partner organizations (including think tanks and developing countries research organizations).
- *Working with other development partners to scale-up a multi-agency coordinated effort to support capacity building.* This will support a move towards programmatic CDM approaches, access financial support to mitigation options that are outside CDM – but can be supported by GEF, FCPF or CTF – and address the adaptation needs (e.g., drawing on the Adaptation Fund, PPCR and new insurance products for adaptation). Thematic areas will cover adaptation, related disaster management activities and mitigation opportunities. The WBG will take lessons from and explore synergies with *the Carbon Finance Assist*, which has carried out capacity building activities in about 50 countries and has helped to initiate CDM projects;
- *Developing cost-effective delivery mechanisms.* Most capacity development programs have used a face-to-face delivery approach, severely limiting reach and coverage. In the face of rapidly increasing needs, the WBG expands the range of delivery mechanisms to sustain a significant scaling up, while allowing focus on the different components of capacity development (awareness, understanding, practical action and leadership). This will include e-learning, web-based learning and other distance and multi-media approaches.

Box 26: Carbon Finance Assist (CF-Assist) – a Multi-donor Capacity Development Fund

CF-Assist's work program includes three main components: capacity building at the national and/or regional levels; facilitating carbon market development through global and regional events; and market assessment and outreach through sectoral studies, learning guidebooks, market trends reports (www.cfassist.org). Country level activities are implemented through the Regions, and the large annual Global "Carbon Expo" jointly with Carbon Finance Unit. Approximately 10,000 people have participated in CF-Assist activities, which include:

- Capacity development and knowledge management activities in over 50 countries;
- Assistance in developing approximately 200 CDM projects;
- Support of several regional forums;
- Creation of new institutions and/or provision of technical assistance (TA) for institutional strengthening in over 20 countries;
- Partner in creation of innovative instruments (e.g., Argentina and Mexico Carbon Funds);
- development of new project methodologies in transportation, biomass energy, Integrated Gasification Combined Cycle (IGCC) in the power sector, and in forestry as new "project types" have been included in CDM;
- Co-organization of the successful annual Global Carbon Expo (which has been attracting an increasing number of participants) and facilitation of host country participation, which are the hosts of current CDM projects;
- Playing an active role in the Nairobi Framework through partnerships with UNDP and UNEP in Sub-Saharan Africa

Source: World Bank Institute

Capacity and Skills of World Bank Staff

141. A comprehensive, programmatic and multi-mode *Climate Change for Development Professionals (CCDP) Learning Initiative* has been developed and is being rolled out to World Bank staff. Launched at the Sustainable Development Forum in February 2008, it is expected to cover 8,000 staff over FY09-11 (FY09-1,500; FY10- 2,500; and FY11- 4,000). In collaboration with WBI, the CCDP will be extended to development practitioners in client countries.

142. Other activities to enhance staff knowledge, skills and capacity include: (i) the roll-out of the Sustainable Development Leadership Program (SDLP) for senior staff and managers (launched in Cambridge in June 2008); (ii) an inclusion of climate change modules in regular mass training programs (such as introduction to Bank operations, economic analysis of projects, etc.); and (iii) improving the staff skills mix through strategic hiring. In addition, the WBG will explore options (assessing GWMATE, ASTAE and other models) and establish facilities to provide just in-time, on-demand operational expertise to support climate actions, using high quality outside know-how.