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Climate Change, impacts in Africa: The Role of the African Development Bank

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1. Introduction

Climate Change is emerging as perhaps the most important international development challenge of the 21st century. Climate Change is a major threat to economic growth and development in Africa. The economic and social welfare of our societies and indeed their long term sustainability is increasingly vulnerable to Climate Change risks.

Developing countries – in particular in Africa - are the most vulnerable and bear the highest risks as Climate Change and climate variability critically jeopardize their economic development potential and the achievement of the MDGs. Direct and indirect impacts of Climate Change threaten to reverse decades of development efforts.

It is imperative that the international community take urgent steps to address these risks. Response strategies include actions towards GHG reduction (mitigation) on one side and adaptation to climate change and variability impacts on the other. These actions need to be integrated into the overall development agenda including national economic planning and management.

Climate Change in Africa.

- Climate variability, and the risks it presents, are already affecting development and poverty reduction efforts in Africa.
- First, sea level rise, climate variability and weather extremes such as heat waves, floods and droughts present severe direct threats. Overall economic performance in developing countries is especially affected because of their high dependence on natural resources, notably rain-fed and irrigated agriculture, and their low access to economic and technological resources.
- Second, adverse climatic conditions can cause the under-performance of investments, e.g. new crops or irrigation investments, that are negatively affected if rainfall either increases or decreases significantly.
- Third, the uncertainty and unpredictability of climate can be a powerful barrier to investments and ultimately economic growth, even in years when climate conditions are favorable. The changing climate also complicates the design of infrastructure, and long-term investment planning. Finally, internal and cross-border migration driven by growing pressure on the natural resource base may create tensions among population groups and between countries.

With respect to gender impacts, African women will be most affected as they are the ones who make the bulk of the labor force working in the agriculture and natural resources sectors. Women are also the ones keeping the family together in case of natural disasters and extreme weather events.

2. The Clean Energy investment framework at the Bank

In light of the mounting evidence of the causes and effects of global climate change, the Heads of State and Government of the G8 states, at their Gleneagles Summit in July 2005, called upon the World Bank and other multilateral development banks (MDB's) to prepare specific proposals to address three inter-related challenges: expanding access to reliable energy supplies particularly for the world's poor; promoting investment in clean energy and low-carbon approaches to economic development; and supporting developing countries undertake concrete measures to adapt to climate change and strengthen their capacities to manage the increasing climate variability and extreme weather events. This report presents a comprehensive framework for dealing with these triple challenges in Africa.

2.1 Pillar I: Expanding Energy Access

Africa has considerable energy potential but it consumes the least amount of energy per capita in the world, and is a significant net exporter of energy resources. Endemic low per-capita consumption of energy is both a cause and a consequence of Africa's prolonged poor socio-economic performance since the early 1970s, particularly in oil-importing Sub-Sahara African (SSA) countries. In these countries in general, less than 10% of the rural population has access to modern energy services. An estimated 400,000 deaths, yearly – predominantly women and children – are linked to the use of traditional fuels in poorly-ventilated cooking places. There is a steady deterioration in the quality and reliability of electricity supply, due to chronic under-investment in capacity expansion and operations and maintenance.

Access-for-all to safe, reliable and affordable energy supplies is an imperative, in order to improve the quality of life, strengthen the capacity of African economies to compete more effectively in the global economy, and reduce poverty. However, energy development and access to safe and reliable energy and power supplies for the entire population in Africa, particularly in SSA, are hampered by several major constraints. These include: inadequate attention paid to energy development in national development plans and poverty reduction strategies; lack of energy supplies stockpiling, transportation and distribution infrastructure (including the high capital costs of extending national electric power transmission grids to rural areas and building local distribution networks at the village level); low tax revenues and limited capacity to provide public funding to infrastructure capital investment and consumer subsidies to poor households; limited private domestic savings due to high levels of poverty; tremendous pressures on energy infrastructure due to rapidly rising populations, rural-to-urban migrations and the rising concentration of populations in unplanned peri-urban areas.

2.2. Pillar II: Clean Energy Development

Expanding energy access is a priority for Africa. However, the right balance must be struck between this goal and following a low-carbon path, limiting GHG emissions per unit of GDP. As one of the regions most vulnerable to global warming, Africa has a vested interest in rendering effective support for global mitigation efforts. As a demonstration of the utmost importance that Africa attaches to preventing excessive global warming, African countries may need to provide contributions of their own (albeit voluntary and non-binding ones) to global emissions reduction. More effective use of flexible mechanisms

under the Kyoto Protocol negotiated under the United Nations Framework Convention on Climate Change (UNFCCC), in particular, the Clean Development Mechanism (CDM), provides a limited but crucial avenue for Africa to mobilize badly needed financing to buy down the initial cost of low-emission energy generating capacity. Africa is endowed with enormous renewable energy potential that remains largely untapped. African economies can progressively switch to cleaner sources of energy and cleaner development practices, if resources are correctly priced taking into account their replacement value and pollution clean-up costs.

African private enterprises, civil society, NGOs, and research institutions also should invest greater effort in understanding the new exigencies, opportunities and challenges of the transition to clean development. Possible innovations include installing and using clean and more efficient stoves; switching to solar power; setting up viable decentralized community-level energy and power utilities to harness local resources such as wind energy, micro and small-scale hydro-power, biogas from communal waste, and sustainable managed community forests; popularizing energy-saving (or passive) housing architecture; licensing energy-efficient appliances; favoring energy-saving bulbs; and undertaking waste recycling. Communities should be provided adequate incentives to preserve local forest and wetland ecosystems, thereby avoiding deforestation and wetland destruction.

2.3 Pillar III: Climate Risk Management and Adaptation to Climate Change

As aforementioned, the consensus among experts is that Africa is one of the most vulnerable continents to climate variability and change because of multiple stresses and low adaptive capacity¹. Countries' situations are exacerbated by anterior development challenges, particularly the high incidence of poverty, poor governance and weak institutions, limited access to capital, infrastructure and technologies, environmental degradation, and complex disasters and conflicts. Most countries are not effectively facing up to current climate variability and extreme weather events, such as floods, cyclones and tornadoes, periodic droughts, and water scarcity, let alone being ready to face up to greater variability due to changing climate in the years ahead.

Thus, the Bank develops on a parallel track the climate risk management and Adaptation strategy. This process will be guided through two main delivery modalities:

- Climate risk management as part of the due diligence in Bank Group projects and country/sector planning

Climate risks directly affect Bank operations. These risks should be addressed in project preparation processes and appraisals similar to other risks: systematic analysis and incorporation into project design and decision-making. Eventually, a large share of the

¹ Particular areas of present and increasing vulnerability are existing infrastructure such as roads, bridges, railways, power supply systems, etc. Furthermore, agriculture, water resources, health, ecosystems and biodiversity including forestry and coastal zones, safety of human settlements, are under threat by increased climate variability.

Bank's operations will include systematic climate risk management, as part of due diligence in country programming and project preparation.

- Support for climate risk management by regional member countries

The main entry point for regional member country support should be the Bank's own country operations. The Bank should identify high-risk investment cases, where external resources can be found for climate risk management add-ons. These cases can be used as a trigger for broader climate risk improvements in regional member countries.

The aim is for climate issues to be integrated into national, sub-national, local and sectoral development planning and decision-making processes. This includes ensuring complementarity with national frameworks such as Poverty Reduction Strategy Papers (PRSPs), sectoral strategies and plans, as well as national and local strategies for sustainable development. Furthermore, a key issue is integration into economic planning and the budgetary process, within and across all sensitive sectors.

“Low hanging fruit”: adaptation by communities

- Climate change can be a trigger for governments, communities, enterprises and individuals to implement climate risk management strategies in the context of their regular activities. African governments have a special role in establishing the policy frameworks to encourage adaptation by individuals, communities and businesses – in particular to tackle the wide range of constraints that limit the current capacity for adaptation by these groups.

New and improved technologies are becoming available to integrate climate risks into agriculture and food security, water resources management, health, and disaster management. Innovations in climate science, such as climate forecasting and satellite-based monitoring, are being used to improve decision-making in these areas.

- For example, SwissRe, one of the world's leading re-insurers, and the International Research Institute for Climate and Society (IRI) are together developing an innovative index insurance system with the objective of protecting farmers in Kenya from climate risks.

Climate variability has been largely considered as not amenable to intervention. However, advances in climate science, and increases in the capacity of meteorological services and users of climate information, are slowly changing this perception in Africa.

Seasonal forecasting provides great opportunities to manage climate impacts one season ahead, and it could be applied much more effectively by better tailoring it to communities

Climate change can act as a catalyst to enhance partnerships between government departments, the private sector, non-governmental organizations, and national and international providers of scientific information, in order to share and jointly develop tailored climate information, and implement climate risk management interventions.

Innovative private sector instruments, management practices and business approaches are being developed that can help to cope with climate risks. Financial services can facilitate risk sharing through insurance. This helps absorb some of the impacts of climate variability and extreme events, and provides strong signals on the scale of risk exposure and the market valuation of expected losses. Weather insurance schemes to reduce farmers' vulnerabilities to climate shocks are already being piloted in Malawi, Kenya and Tanzania. Similar services should be facilitated and expanded for businesses, communities, households and farmers in the developing world, especially through low cost micro-insurance schemes for low income groups.

The following are some priority areas where the Bank may offer support.

- Human resources development and training, institutional capacity building and management change, and public finance improvement.
- Advisory services on climate risk management.
- Developing appropriate climate risk management methods and tools.
- Generation and sharing of high quality climate and adaptation information, especially on best adaptation practices and lessons learnt and transfer of appropriate technologies.
- Facilitating information flow, and communications.
- Help with resource mobilization for effective climate risk management in national planning and sectoral strategies for climate-sensitive sectors.
- Support by ADB will be particularly useful where climate risk management requires transboundary cooperation.
- Leveraging partnerships for effective climate risk management.

2.3.1 Climate risk management

Many of the most effective measures to adapt to future climate change coincide with those that can reduce vulnerability to current climate risks. This principle lies behind climate risk management, which integrates management of current climate variability and extremes with adaptation to climate change. Climate risk management offers immediate benefits to economic development in Africa, as well as longer term security in the face of a changing climate.

The systematic integration of climate risk management in development operations is receiving increasing attention in various development agencies and development banks. Examples of the methods and tools that are being developed for this purpose include the World Bank's Climate Risk Screening Tool; methods from the Asian Development Bank's CLIMAP program; and risk screening tools developed by the UK's Department for International Development (DFID). Besides the development of these tools, there is further, a growing body of projects implemented by development banks that explicitly include climate risk management. The private sector, in particular insurance and re-insurance companies, are also beginning to take the lead in integrating climate risks into their insurance products.

The African Development Bank is planning to integrate climate risk management into its regular operations, and to support enhanced climate risk management by regional member countries. Thus, the institution is currently developing a climate risk management strategy to guide its efforts as well as preparing a number of project interventions including the CARLA project on climate adaptation for the food security and agriculture sector in Malawi. The strategy will address two key gaps in current Bank work. First, it will help Bank operations integrate the notion that the future climate will be different from the past, which changes investment opportunities and risks. Second, it will address the underinvestment in climate adaptation and in climate risk management, even in light of current climate variability and extremes.

In addition, the AfDB is working with key partners, namely the African Union and the United Nations Economic Commission for Africa on implementing a UK DfID-sponsored program 'Climate Information for Development Needs' (ClimDev). The goal of ClimDev is

to improve the availability and use of climate information and services in support of sustainable development and achievement of the MDGs. ClimDev should result in better food security, improved protection from malaria and other climate-sensitive diseases, enhanced management of water resources, better disaster risk management, more judicious use of energy resources and improved environmental sustainability.

2.3.2 Africa's special climatic situation

Africa faces a number of special challenges that makes the continent more vulnerable to climate change than other parts of the world.

- Key economic sectors – specifically agriculture, and other natural resource-based sectors – are highly sensitive to climate variability and change.
- Many systems are already close to their tolerance limit for temperature rise or changes in rainfall.
- Multiple stresses – including endemic poverty, complex governance and institutional dimensions, limited access to capital, ecosystem degradation, disasters and conflicts – combine to exacerbate Africa's vulnerability to climate variability and change.
- Availability of climate information is limited in most African countries, and the quality is usually poor.
- Competing priorities, and short- to medium-term decision-making horizons, often result in lack of attention by politicians and other decision makers to the need for adaptation to climate change. Low priority of adaptation is given due to the fact that it does not have a clear immediate economic output of its own. Hence, it is often considered less important than other development objectives.
- Currently available funding for climate change adaptation in Africa does not come even close to the amount needed.
- The infrastructure to cope with grave disturbances and catastrophic events is weak/underdeveloped.

Climate change does however bring some opportunities for Africa.

- Attention paid to climate risks in the face of climate change can help to reduce the impacts of climate variability and extremes that Africa is already facing today.
- New and improved technologies, and innovations in climate science, are becoming available that could help Africa adapt to climate change.
- Innovative private sector instruments, management practices and business approaches are being developed that can help to cope with climate risks.
- Climate change can act as a catalyst to enhance partnerships between government departments, the private sector, non-governmental organizations, and national as well as international providers of scientific information.
- New adaptation funding provides resources for enhancing the effectiveness of current investments, or developing and implementing innovative practices.

- Incorporating climate risk management into projects results in a re-orientation of project planning and development, and better operation and maintenance, with both immediate and long-term benefits.

3. The Banks implementation instruments

To implement both the Clean Energy Investment Framework and the Climate Risk management strategies, the Bank will utilize its regular resources of both concessional and non concessional lending. Further resources are available through the African Development Fund ADF which was replenished in December 2008 for the three years cycle till 2012.

Finally, the Bank is currently planning to establish a climate targeted facility at the Bank that covers both the mitigation support and the adaptation aspect. This facility will be called the Clean Energy and Climate Adaptation Facility for Africa (CECAFA).

3.1. The new Clean Energy and Climate Adaptation Facility for Africa

The objectives of the new facility are in short the following:

- Reduce poverty and promote development by expanding Africa's access to, low-carbon, clean and sustainable forms of modern energy such as renewable energy, energy efficiency and cleaner fossil fuel technologies;

Development of partnerships for increased access by RMCs to the Clean Development Mechanism and other carbon financing opportunities for clean energy, reduced emissions from deforestation and other low carbon investments;

Assist RMCs in adapting to climate change and better managing climate risks; including contributions to partnerships with regional and global partners.

3.2 Rationale for CECAFA development

The aforementioned CEIF and CRMA, as well as the World Bank recent studies indicate that the resource requirements for Africa's energy access and climate adaptation exceed the available funds by a great extent. It is well recognized that the prevailing financing gap will seriously hamper the efforts by various parties to respond to the current urgent requirements. To address this gap, CEIF proposed the establishment of a multi-donor trust fund – Clean Energy and Climate Adaptation Facility for Africa (CECAFA). The same proposal has been reinforced by the CRMA strategy paper. Accordingly, preparation of an operational strategy and 3-year work program are under way. The operational strategy, which is scheduled for presentation to the Board of Directors in the first quarter 2009, describes the scope, operational priorities, the 3-year work program, and the implementation arrangements of CECAFA based on the guiding principles of the Bank Group Strategic Orientation, and the CEIF and the CRMA Strategy papers.

3.3. Scope of CECAFA

CECAFA will complement and strengthen the Bank support to RMCs on clean energy and climate adaptation, including provision of pre-investment and investment support at the national and sub-regional level. CECAFA will operate through two distinct entities: Clean Energy window; and the Climate Adaptation window.

The first window will provide to African countries and regional energy development organizations support in the form of technical assistance, advisory services, capacity building, project identification and preparation, as well as, financing of relevant projects/project components. It will also support capacity strengthening of project developers in RMCs (including local communities) to formulate CDM-eligible projects, to market their projects on international carbon credit trade exchanges, and to negotiate the terms-of-sale. The facility will continue and expand on the mandate of the FINESSE program which has provided support for mainstreaming renewable energy and energy efficiency in the Banks project operations.

CECAFA's second window will provide support for mainstreaming climate change adaptation and climate risk management into development planning, poverty reduction strategies, and relevant programs and projects. It will support climate adaptation integration into national environmental strategies and build key institutions for climate adaptation. It will also support the implementation of ClimDev Africa activities to assist RMCs to build climate resilient societies.

3.4. Complementarities with AFDB and Climate Investment Funds

CECAFA will complement AFDB's operations in two respects. First, CECAFA will serve as an instrument to bring to the forefront the issues of energy access, clean energy, and climate change adaptation by supporting AFDB's internal capacity development and by funding relevant components in Bank operations. Second, the pipeline of CECAFA activities will be built to a large extent by proposals emanating from various Bank operations while task teams are encouraged to pay special attention to clean energy and climate change adaptation activities. AFDB will also provide administrative support, fiduciary controls, logistics, office space and facilities, and other in kind contributions.

CECAFA will complement Climate Investment Funds (CIF). The largest of these funds, i.e., the Clean Technology Fund (CTF) has received more than \$6 billion in donors' pledges. It will provide large-scale financial support to projects with significant emission reduction potentials. Such projects are likely to be initiated only in a few African countries. CECAFA complements CTF in terms of providing funds to smaller scale projects that CTF is not likely to cover. Indeed the majority of energy access and clean energy projects in SSA would not be suitable for CTF but suitable for CECAFA. Furthermore, CECAFA will complement CTF by identifying projects which could be suitable for CTF. Finally, a second group of CIF funds, referred as Strategic Climate Fund (SCF), are emerging which are intended to be broader and more flexible than CTF, and are aimed at testing innovative approaches to mitigation and adaptation. These funds are envisaged to be of much smaller size than CTF but still cover all developing countries. CECAFA will complement these funds through its focus on Africa, and identifying candidate projects that can be financed (or co financed) by SCFs.

3.5. Experiences, Challenges and the Way Forward:

The valuable lessons learned from the FINESSE program in awareness rising, capacity building and pilot projects have resulted in the proposed design of the facility. The evaluation of the program in August 2007 has provided a number of important insights in assuring a successful implementation of the CECAFA:

- The assessment noted that high level engagement of (senior) management is very important for visibility and penetration of the project;
- Parallel tracks should be developed for Technical Assistance and project support, including tight inter-linkages between them;
- In order to ensure proper implementation of the project, adequately staffing levels directly from the inception is required;

- The planning of the program should be very clear and strict, with procedures built in for regular check and balances whether the implementation plan is
- Still relevant and should allow for adjustments to changing needs and priorities of the Bank and RMCs should the need arise;
- Regular steering committee meeting between the Bank and the donor's is essential to keep donors engaged and to mobilize replenishments;
- The program needs to be closely linked to the operational complexes and the departments, which will be the main users of the facility;
- A database / roster / pool of specialized consultants that could assist in project implementation should be developed, in order to be relied on with simplified procurement
- Procedures. Thus, allowing flexible use of the consultants' expertise and availability;
- Special attention should be given to communicate the existence of the program in general and to the type of support that has been given in the past through
- Regular newsletters, staff seminars and other outreach activities, both internally and external. Furthermore, it should publish case studies of successful projects and best practice.

Thus, with the aforementioned experiences, FINESSE has laid the thrust within the Bank and at RMC level, to engage in substantial projects- and components in Renewable Energy and Energy Efficiency. Furthermore, FINESSE has established strong linkages with other development partners.

The way forward is fourfold: firstly, to detail the structure and the implementation arrangements of the budget of the facility. Secondly, to link up with external partners such as the World Bank administered Climate Investment Facility and the Africa Energy Access Program for collaboration and funding. Thirdly, further mainstreaming of clean energy and climate adaptation into banks operations. Finally, formulation of pilot studies, projects and initiatives with up scaling potential that the facility will finance as a catalytic function to stimulate energy markets or climate adaptation activities in RMCs.