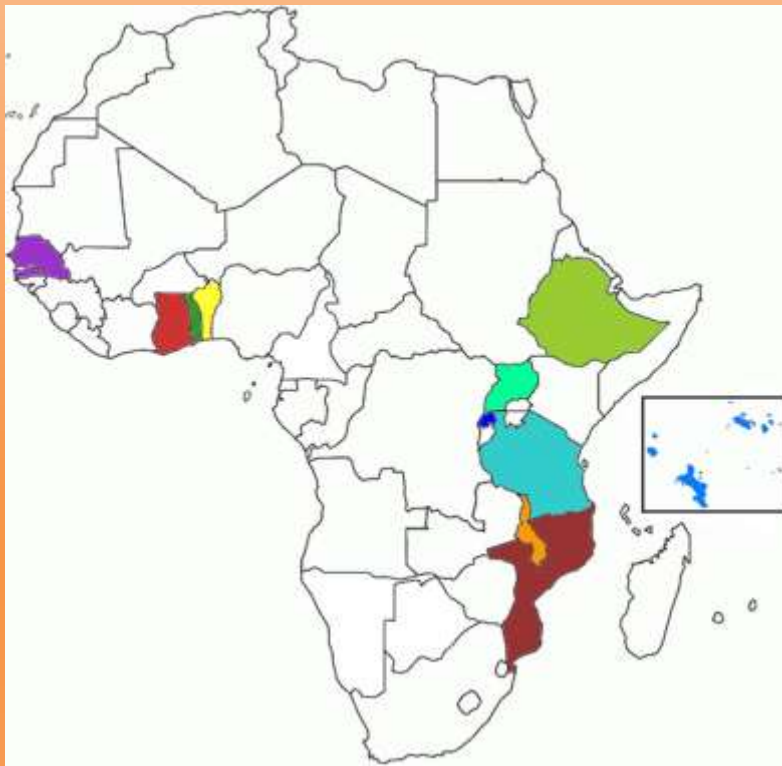


Removing Barriers and Creating Opportunities to Mainstream Climate Change Adaptation in Sub-Saharan Africa



The ‘*Climate Change and Development – Adapting by Reducing Vulnerability*’ (CC DARE) Programme is jointly implemented by UNEP and UNDP under the one *UN Banner*, using funds provided by the Ministry of Foreign Affairs of Denmark. The CC DARE programme provides timely technical and financial support on demand-driven basis to countries in Sub-Saharan Africa and small-island states for **flexible** and **targeted** actions to remove barriers and create opportunities for integrating climate change adaptation into national development planning and decision-making frameworks. The programme is designed to complement and strengthen ongoing and planned climate change adaptation and risk management activities in these countries using quick and tailored support.

The Project was launched in 2008 and is being implemented in the eleven (11) Sub-Saharan African countries of Benin, Ethiopia, Ghana, Malawi, Mozambique, Rwanda, Senegal, Seychelles, Tanzania, Togo and Uganda.

In this MAIDEN VOLUME of the Newsletter, the CC DARE principle of removing barriers and creating opportunities for mainstreaming climate change adaptation into national development frameworks in partner countries is highlighted. The existing barriers are presented by the country and CC DARE partnered with national, regional and international stakeholders to remove the barriers through actions that created awareness, enhanced capacities and influenced policy. Initiatives catalyzed at the national level are presented. Actions taken at the regional level are also discussed.

Country Updates...

Benin

Barriers on mainstreaming adaptation:

In collaborating with the CC DARE Programme, Benin presented as barriers:

1. inadequate knowledge on the climate change risks affecting the country, level of vulnerability of the various categories of the population and the national economy, and adaptation options available to face the challenge in-order to effectively adapt to the consequences of the changing climate; and
2. Inadequate institutional capacity to address the challenges of climate change at the local level.

Actions to remove barriers:

1. **The GARDIEN** (*Groupe d'Action et de Recherche pour le Développement des Initiatives Endogènes et Novatrices*) NGO and the Ministry of Education of Benin collaborated to update the Secondary School Curriculum of Benin by integrating climate change concerns into the Curriculum.



Illustrations in the Pupils' and Teachers Guide Book of the Secondary School Curriculum of Benin

2. The **IDID** (*Initiatives pour un Développement Intégré Durable* (IDID - ONG) NGO of Benin collaborated with Local Governments of Alibori Region to build the capacities of Mayors, elected Councilors, staff of Extension Services, and Community and Opinion Leaders of the Region on addressing climate change issues through on-the-location training and public sensitization through mass media.



Training of Technicians of Climate Change and its integration into Local Government Plans of Alibori Region of Benin

Opportunities Created:

1. Enhanced capacity through training and sensitization workshops for pupils, teachers and other stakeholders in the Education Sector;
2. A strategy for integration of climate change concerns into programs of the secondary school education is developed; School teaching aids on climate change impacts and adaptation strategies are developed, tested and published.
3. One Hundred and thirty-five (135) local government staff, 13 central government extension agents, 11 representatives of Women Groups, 11 representatives of Civil Society Organizations and 7 representatives of the Private Sector in the Alibori Region trained and sensitized on climate change;
4. Constitution of Local Climate Risk and Disaster Management Committees in the Alibori Region of Benin
5. Technical Guidelines on the integration of climate change adaptation options in the Local Government Investment and Development Plans is produced and disseminated.

Ethiopia

Barriers on mainstreaming adaptation:

Barriers that will limit Ethiopia's ability to mainstream climate change adaptation into its national development frameworks include inadequate socio-economic capacities of communities to face the challenges of climate change; inadequate capacities and skills on conservation and sustainable use of risky lands; lack of financing of climate change at the national level; water stress especially in schools; limited knowledge and capacity to assess and determine adaptation measures required to tackle the high vulnerability of the country to climate change impacts; inadequate knowledge and resources on promotion and multiplication of climate-resilient crop varieties and animal breeds; serious challenges arising from secondary impacts of climate change particularly in the health sector; food insecurity, depleted soils and high dependence on climate sensitive productions systems and sectors; and lack of climate change integrated strategies.

Activities to remove the identified barriers:

As Ethiopia is a large country and CC DARE supported is limited most of the activities undertaken to remove the identified barriers were small and of pilot demonstrations in nature. These include:

1. Community Led Buffer Zone Establishment Around Gilgel Gibe I Hydropower Development through the following:
 - a) Creation of livelihood diversification and income generating activities while developing, managing and wisely using the buffer zone around the reservoir area of Gilgel Gibe I hydropower development.
 - b) Establishment of partnerships between the Ethiopian Electric Power Corporation of the Gilgel Gibe I Hydropower Station, Zonal and WOREDA Administration and local communities located in the buffer zone of Chala and Enkori kebeles of Sokoru Wered
 - c) Consecutive stakeholder consultations and site visits around the reservoir and surrounding farming areas to assess the level of environmental and land degradation in the buffer zone and the potential vulnerability of the Hydropower Dam and Reservoir.
 - d) Demarcation and rehabilitation of the buffer zone by the full involvement of 182 community members of which 13 female household are beneficiaries of the project.
 - e) Provision of skills trainings on buffer zone rehabilitation and management including construction of check dams, terraces and soil improvement activities such as compost making around the buffer zone;
 - f) Provision of skills training on income generation activities such as bee keeping, fruit tree production, fish farming and production, and the construction and use of energy saving fuel stoves.



Gullies signifying degradation of zone



Beneficiary Communities undergoing skills training



2. Introduction and promotion of local climate change adaptation measures for the challenge of unemployment and food insecurity through:
 - a) Partnerships are established between stakeholders at regional, district and community levels which include unemployed and landless youth, monasteries and innovator farmers;
 - b) Determination and documentation of baseline knowledge and local climate change adaptation is carried out;
 - c) Training and technical information on conservation and sustainable use of degraded lands and income generation skills on modern bee-keeping and agro-forestry are provided to the partners;
 - d) Provision of bee-keeping facilities and equipments (hives, colonies, management handling equipment and clothing as well as stores and office space) to the trained youth groups;
 - e) Development and dissemination of a beekeeping manual in the *Tigrigna* local language

Ethiopia (continued)



Learning by doing practising bee-keeping as Climate Change adaptation option

3. Field level demonstration of Community Based Adaptation to Climate Change in the North Western Lowlands of Ethiopia involving:
 - a) Extensive consultation with stakeholders, particularly farmer groups and academia at all administrative levels. Consecutive awareness activities are carried out for about 600 target groups.
 - b) Literature review supported by community local knowledge is conducted and documented on vulnerability of the local communities and their environment and local level adaptation options (coping mechanisms).
 - c) Materials are procured and used in field level demonstration of coping mechanisms the success of which has led to scaled up by adjacent farmers.



Climate change coping mechanism in Adarkay District in the North Western Lowlands of Ethiopia

4. Improvement of Water Harvesting Capacity in Schools in Central Rift valley
 - a) Five schools were identified as pilot schools for the demonstration of water harvesting and improvement of the school's landscape;
 - b) Consultative meetings were held and partnerships were established with relevant local government departments, Agriculture, Education and Health;
 - c) Three (3) environmental awareness raising publications on climate change and natural resource conservation relevant to the project area are produced and printed;
 - d) Training workshops on environment and health, natural resources management in dry lands and climate change and rainwater harvesting were conducted to sensitize the schools and the local communities.
 - e) Capacities of the school environment clubs were strengthened;

Ethiopia (continued)

- f) Water tanks with total capacity of 30,000 litres were procured and installed in each of the five project schools;
- g) Materials for conservation activities such as spade, pike axe, watering cans, rakes, etc. purchased and distributed to the five schools
- h) Five (5) tree and horticulture nurseries were established in the five schools;



Installation of Rainwater Harvesting infrastructure in the Schools in the Rift Valley of Ethiopia)

5. Identification of adaptive traits in indigenous cattle adapted to drought prone arid and semi arid areas of Ethiopia through the following.
 - a) Conducted consultations with Zonal and district agricultural offices and local farmers and pastoralists;
 - b) Conducted analysis of morphological and biochemical traits on 40 Irob cattle pertaining to resilience to hardship environment using visual observations of various physical structures, measurements of morphometric characters and taking blood sample for biochemical traits;
 - c) Conducted comparative study and additional sampling from the 40 Afar and highland cattle;
 - d) Conducted joint analysis with School of Veterinary medicine at the Addis Ababa University (AAU);
 - e) Identified and documented adaptive traits that can be used by national and international researchers and geneticists in determining climate change adaptation options, and they can be used in extension, development research, animal breeding, and targeted and strategic crossbreeding with adapted breeds.

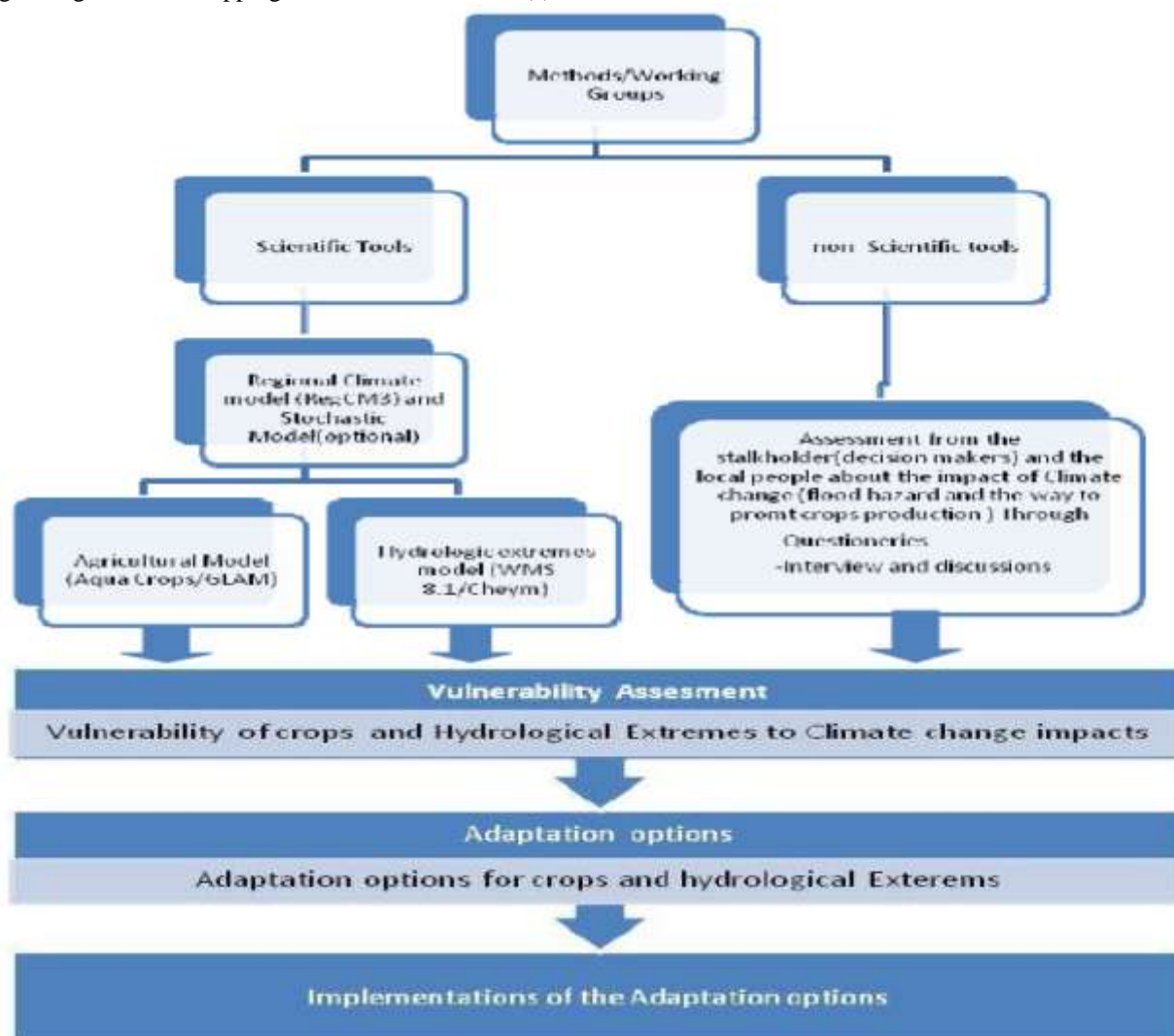


Blood Sampling for identification of adaptive traits (Field Work)

MAIDEN VOLUME – JANUARY 2011

Ethiopia (continued)

6. Assessment of vulnerability and development of mechanisms to adapt climate change impacts from hydrological extremes through:
 - a) Collections of climate data from metrological stations;
 - b) Identification and selection of appropriate Digital Elevation Model (DEM);
 - c) Conduct statistical downscaling for two hydrometeorological stations within the watershed using collected climate data, to compare the Regional Climate Model (RCM) output with the Down Scaling Model (DSM) output and also to check the model realities on hydrological extremes;
 - d) Setup the hydrological model (RCM, RegCM4) based on the downscaled outputs, and conduct simulation runs using historical data for the base period;
 - e) Conduct flood mapping for the Baso River using the output of the simulation conducted under (d) and baseline and climate change scenarios;
 - f) Conduct assessment of the vulnerability of the communities living within the watershed to hydrological extremes under climate change using the flood mapping results obtained under (e) above.



Flow Chart of the Methodology used to run the Project

Ethiopia (continued)

7. Development of National Acute Watery Diarrhoea Prevention and Control (NAWDPC) Strategy through the following:
- Prepared and endorsed the Terms of Reference (TOR) and recruited Consultants for the development of the NAWDPC Strategy;
 - Production of the Template of the Strategy by stakeholders and agreement on the Work Plan to be used by the team of consultants assigned to prepare the NAWDPC Strategy;
 - Conducted sectoral and cross-sectoral scoping meetings to identify gaps in the preparation of NAWDPC.
 - The consultants collated and reviewed available information on AWD reduction in the country.
 - Prepared and circulated the Draft NAWDPC Strategy document for potential reviewers.
 - Conducted validation workshop and endorsement of the NAWDPC Strategy.



Team of Consultants during a Working Session to draft the National Acute Watery Diarrhoea Prevention and Control (NAWDPC) Strategy

8. Identification, documentation and dissemination of control and management of rangeland invading alien plant species for enhancing the communities' resilience to climate change adaptation in Jijiga Zone of Somali Region, Eastern Ethiopia.
- Conducted a reconnaissance survey in three (3) WORDAS (districts) of Jijiga Zone;
 - Conducted an inventory of IPS through field work;
 - Conducted eight (8) communities and experts focused group discussions and the necessary data collected.
 - Identified nine (9) major IPSs as per FAO's classification;
 - Documented local management and control options;
 - Conducted three (3) training workshops for local pastoralists and DAs on the management and control of IPSs in each of the WOREDAS based on findings of local and scientific knowledge reviewed from literatures.
 - Prepared toolkits on IPSs in Jijiga Zone;
 - Designed adaptation strategies concerning reclaiming invasive weed and bush encroachment for Jijiga and other climate change hotspots areas in the country.

Ethiopia (continued)



Popularization workshop on IPS at Project sites and Field Level Identification of IPS

9. Participatory Promotion and Demonstration of Conservation Agriculture (CA) as climate change adaptation option in East Gojam Zone, Amhara Regional state
 - a) Conducted National Workshop on Conservation Agriculture in collaboration with COMESA on which NGOs, high level decision makers, agricultural research institutes participated.
 - b) Conducted sensitization workshop on project site for 44 participants drawn from zonal, district offices and research institutes. Jab planter (improved technology appropriate for CA) imported in 2010 by FAO was displayed at the workshop.
 - c) Conducted field visits to Dejen and Awebel Districts for Conservation Agriculture development partners.
 - d) Conducted a five-day training workshop at Regional level for 37 Zonal, District and Woreda level experts;
 - e) Prepared and distributed a technical manual on conservation agriculture to participants of the training workshops and other stakeholders.
 - f) Development and distribution of Bulletin and brochures;
 - g) Provided a 4 days training workshop on conservation agriculture to 38 development agents and farmers on the project site;
 - h) Established and trained 14 Groups of 25 farmers per Group;
 - i) Procured agricultural inputs that include seed, fertilizer, herbicides and farm tools (hoe, machete, meter, sprayer, etc.);
 - j) Conducted pilot demonstrations of Conservation Agriculture in 7 districts and 14 Kebeles, using 7 FTC and 7 farmer plots with an area of 1/2 ha each, involving 350 farmers.



Jab planter introduced to trainees (FAO)



Field demonstration activity on Conservation Agriculture

Ethiopia (continued)

Opportunities created:

1. Partnership between the communities living in the margins of the Buffer Zone, serving as a divide between the settlements and the Gilgel Gibe I Hydropower Facility, and Management of the Hydropower Development Project under the Ministry of Mines and Energy, provided a solution of long standing conflict on the effective conservation of the Buffer Zone and the natural resources therein. Communities have access to alternative livelihoods, potentials to increase agricultural production and minimized expansion to virgin lands, and are now ready to conserve the Buffer Zone. The outcomes of the proposed project will be replicated in other hydropower development project areas such as Koka, Tis Abay I, Awash II, Awash III, Finch, Melka Wakena, Tis Abay II, Tekeze and ongoing and abandoned mine development sites.
2. The capacity of the local Farmers' Training Centers (FTCs) to provide services to their farmers in Tigray has been enhanced. Bee-keeping and agroforestry, using multipurpose trees and shrubs for the conservation and sustainable use of rehabilitated hills sides is promoted as a basket of climate change adaptation options and adopted by farmers and landless unemployed youth of the Tahtai Maichew District in Tigray. The farmers and youths have formed cooperatives and developed value-added market chain for their honey and bees wax. A manual on bee-keeping in the *Tigrigna* local language has been prepared and will be disseminated to enable replication to other areas of the country with similar.
3. Communities in North Western Lowlands of Ethiopia have adopted Community Based Adaptation (CBA) that generates adaptive strategies through participatory processes, building on existing cultural norms, and also addressing local development issues that make will enhance the resilience of people vulnerable to the impacts of climate change.
4. Partnerships have been established with relevant Local Government, Agriculture, Education and Health departments in the Central Rift Valley of Ethiopia. Rainwater harvesting as an adaptation option under climate change induced water stress has been piloted and adopted in schools.
5. Cost effective adaptation options and implementation strategies for most vulnerable areas in the Southern Ethiopia due to the threat of extreme hydrological events (e.g., floods and droughts) under climate change in Southern Ethiopia have been determined and integrated into the Regional Governmental development plan and decision making framework.
6. Adaptive traits in Afar and Irob cattle breeds, that have made them successfully cope with current stressful environments such as aridity, high temperatures and rugged terrain in the North Eastern part of Ethiopia have been identified and documented. The identified adaptive traits are to be utilized for conservation and within breed genetic improvement under projected climate change.
7. A climate Change integrated National Acute Watery Diarrhoea Prevention and Control Strategy is available as a guiding strategy for national development sectors as the main resource in building capacities and for the achievement of the health-related MDGs and for health equity under a changing climate. Policy level partnership and an Inter-ministerial Forum from health, water, education, environment, investment, agriculture and rural development and government communication affairs has been established and chaired by Federal Ministry of Health.
8. Nine (9) major rangelands invasive plant species (IPS) are identified as per FOA's classification; toolkits on awareness and management options on these species in the Jijiga Zone are developed and available; adaptation strategies concerning reclamation of the IPS invaded pastoral lands for Jijiga and other climate change hotspots areas in the country are designed and available; and when implemented these adaptation options will improve livestock productivity and survival, particularly in the Kebribeyah, Fafan and Lefey-Issa weredas of Jijiga Zone.
9. A technical manual, bulletin and brochures on conservation agriculture are prepared and disseminated to trainers and trainees during various training sessions and other stakeholder consultations. Awareness of policy makers, extension agents and local communities in East Gojjam on conservation agriculture, particularly under climate change, is enhanced through demonstration activities, experience sharing and exchange visits and networking suppliers and user farmers. The capacity of Extension Agents and Farmers has been enhanced on ways to build and accumulate organic matter content of soils by maintaining crop residues on the soil surface, conservation of soils through avoidance or limiting ploughing. In the longer-term, the low-yielding subsistence agricultural system in which soil nutrient levels critically limit food and agricultural productivity will be turned around to boost food security of the region.

MAIDEN VOLUME – JANUARY 2011

Ghana

Barriers on mainstreaming climate change adaptation in Ghana:

Lack of a proactive, targeted and cost effective strategy that increases the long-term resilience of the population and economy of the country under the changing climate is a serious barrier in Ghana.

Actions taken to remove barriers

1. Ghana and international partners agreed to update an existing National Climate Change Adaptation Strategy (NCCAS) that was initially drafted but found to be incomplete;
2. Conducted national level, sector-specific and cross-sectoral scoping meetings to identify gaps in the draft NCCAS, develop strategies to address these gaps and to develop sector-specific and cross-sectoral work plans for the updating of the sectoral and cross-sectoral parts of the NCCAS. Twenty (20) representatives of Community Based Organizations, Civil Society Organizations (CSOs), local and international NGOs and private sector entities and 30 Senior Government and Academia representatives participated in the identification and updating of gaps as well as cross-sectoral issues in the draft NCCAS related to the specific sector



Floods



Droughts



Crop failures



Displaced communities

Major Impacts of Climate Change in Ghana

3. Collated and review available information from studies on Climate change risks reduction.
4. Organized workshops for Parliamentarians, Chief Directors, Heads of relevant agencies, Community Based Organizations (CBOs), Civil Society Organizations (CSOs), local and international NGOs and private sector organizations
5. Updated the draft NCCAS document
6. The Updated Draft National Climate Change Adaptation Strategy (NCCAS) will now go through validation, endorsement and launching processes involving stakeholders from Central and Local Governments, Private Sector, CBO/CSO/NGO communities, Development Partners and On-going and Potential Climate Change Adaptation Initiatives in Ghana.

Opportunities created

1. Partnerships have been built to take climate change implementation forward
2. Ghana has a solid Draft National Climate Change Adaptation Strategy that (a) ensures a consistent, comprehensive and a targeted approach to increasing climate resilience and decrease vulnerability of the populace; (b) deepens awareness and sensitisation for the general populace particularly policy makers about the critical role of adaptation in national development efforts; (c) positions Ghana to draw funding for meeting her national adaptation needs; (d) strengthens international recognition to facilitate action; and (e) facilitates the mainstreaming of climate change and disaster risk reduction into national development.

MAIDEN VOLUME – JANUARY 2011

Malawi

Barriers on mainstreaming adaptation:

In partnering with the CC DARE Programme to mainstream climate change adaptation into her national development programmes, Malawi presented the lack of climate change integrated (1) curriculum, (2) local government plans and in (3) sectoral policies.

Actions to remove barriers:

1. The Departments of Agriculture and Natural Resources Management of the Bunda College at the University of Malawi Project worked together and developed four climate change modules in both English and Chichewa and a climate change integrated curriculum at the Master of Science degree (MSc.). Students, Teaching staff and communities were fully involved and capacitated.



The Bunda College Agriculture and Natural Resources Curriculum involved school children, technicians and local communities

2. The Forestry Research Institute of Malawi (FRIM) developed information package on the needs of the communities of the impoverished Blantyre North Area to strengthen the management of the regions natural resources and enhance their resilience under a changing climate.
3. The Coordination Union for the Rehabilitation of the Environment (CURE) NGO worked with Village and Area Development Committees, and the Karonga District Assembly to develop the climate change integrated Contingency Plan of the Kagonga District. The capacity of 150 representatives from the Area Civil Protection Committee (ACPC) and 142 representatives of Village Civil Protection Committee (VCPC) were built through training on climate change and its integration into Local, District and National Plans



4. The National Commission for Science and Technology (NCST) revised its Policy by integrating climate change concerns and also proposes to review and revise the NCTS Act as soon as the NCST Policy is operationalized.

The actions can be replicated and up-scaled in other institutions of learning and national sectors necessary for national development under a changing climate.

Opportunities Created include:

1. A climate change integrated curriculum for the Master of Science degree (MSc.) programme and four climate change modules in both English and Chichewa are available at the Bunda College of the University of Malawi Project and guarantee continues and sustainable development of a critical mass of trained technicians and local communities;
2. The climate change information package developed and available at FRIM provides the needs of the communities of Blantyre North Area with a tool to strengthen the management of the regions natural resources and enhance the resilience of the communities to a changing climate.
3. The development and availability of the climate change integrated Contingency Plan of the Kagonga District provides the District Assembly and the communities with a tool to address risks and adaptation to the adverse effects of climate change.
4. With the climate change integrated Policy, the National Commission for Science and Technology (NCST) of Malawi has set the pace in the country for other sectors to emulate for holistic national development under a changing climate.

Mozambique

Barriers on mainstreaming adaptation:

Mozambique put forward (a) the unavailability of long-term climate data in the most appropriate and easily usable format, (b) the inadequate capacity and tools to address the serious loss of soil and property in coastal cities such as Xai Xai, (c) the lack of community based coastal zone management plan, and (e) the lack of climate change integrated curriculum especially at the University level as barriers to mainstreaming climate change adaptation into development frameworks.

Actions to remove barriers:

1. The National Meteorological Services (INAM) in collaboration with 114 representatives of relevant partners, inventorized, digitized, processed and achieved the available climate data of Mozambique for the period 1909 to date.;



Inventorization, Digitization, Processing and Quality Control were tedious but rewarding to INAM and Mozambique

2. The Centre for Sustainable Development of the Ministry of Environment produced an Ecological Zoning Map and Management Plan to be used for the management of the coastal zone of Guvuro;
3. The Municipal Council of Xai Xai led the citizens of the city to construct and maintain soil erosion and sand stabilization walls landscaped with vetiver grass and shrubs in the city to serve as adaptation measures to climate change and sea level rise induced erosion and destruction of properties;



4. The Physics Department of the University of Eduardo Mondlane (UEM) of Mozambique collaborated with other national, regional and international educational institutions and used extensive consultation and capacity building efforts to develop a Curriculum for a Masters Degree on Disaster Risk Management and Adaptation to Climate Change (MDRMACC).

Opportunities Created include:

1. Availability of digitized and processed climate data for the period 1909 to date at (INAM) will increase the Agencies performance in meetings its mandate at the national, regional and global levels;
2. Availability of Ecological Zoning Map and Management Plan at Guvuro has enhanced the capacity of the Municipal Council and the community to adopt and use the tool for community-based coastal zone management as climate change adaptation measure;
3. The Municipal Council and citizenry of Xai Xai have the tool and capacity to address soil erosion and its consequential damage to infrastructure and personal property as a climate change adaptation measure;and
4. The University of Eduardo Mondlane (UEM) of Mozambique has a Curriculum for a Masters Degree Programme on Disaster Risk Management and Adaptation to Climate Change (MDRMACC) for the continuous development and production of the required critical mass on disaster risk reduction and climate change adaptation.

MAIDEN VOLUME – JANUARY 2011

Rwanda

Barriers on mainstreaming adaptation:

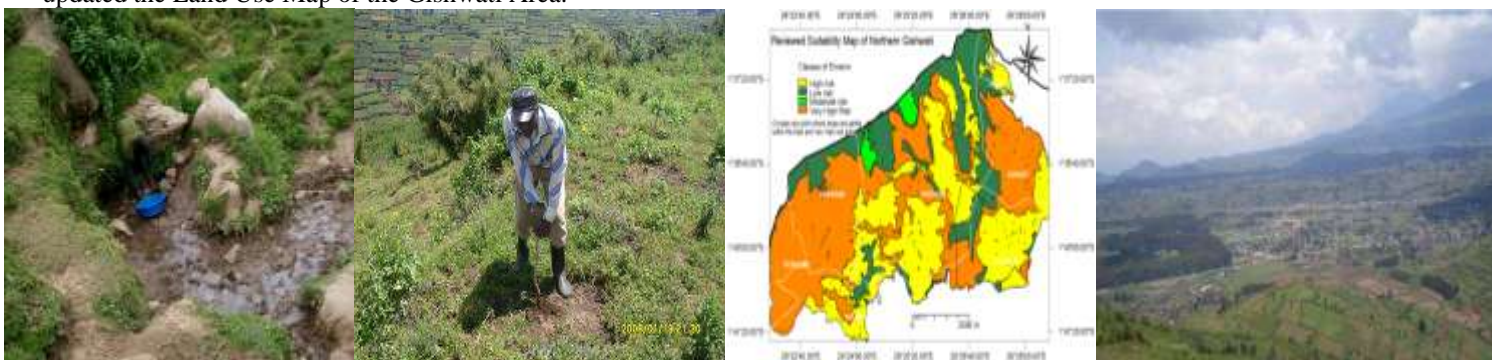
Barriers to integrating climate change adaptation into the national development frameworks of Rwanda include (a) low awareness and lack of media materials and guidelines on developing and reporting climate change information, and (b) old and obsolete Area and District level Land Suitability Maps and Plans, especially for the Gishwati Area of the Nyabihu District.

Actions to remove barriers:

1. The Nile Basin Discourse Forum (NBDF), partner NGOs and Media Houses of Rwanda collaborated to produce various media materials on climate change, trained 45 representatives of Civil Society Organizations and 36 journalists from various media houses, and used these trained median agents to sensitized over 200 local government and community representations in the 5 Provinces of Rwanda;



2. The Rwanda Environment NGO Forum (RENGOF), partnered with Nyabihu District Municipality and the Local communities of the Gishwati Area to determine appropriate climate change adaptation strategies of the area, demonstrated some of these strategies and updated the Land Use Map of the Gishwati Area.



Water Shortage

Demonstration of Landscaping, of risky slopes

Land Suitability Map

Relocated Communities

Opportunities Created

These barriers have been replaced by the following opportunities.

1. A critical mass of trained Civil Society Organizations and Journalists on climate change risks and adaptation, methods of developing and reporting climate change stories, and various media materials such as posters, pamphlets, etc. are available for dissemination and broadcasting of climate change issue on the media and for the sensitization of the general public;
2. A updated Land Use and Land Suitability Map and Plan of the Gishwati Area is available to guide the implementation of climate change adaptation at the District level and also serve as input to bigger climate adaptation initiatives in Rwanda.

MAIDEN VOLUME – JANUARY 2011

Senegal

Barriers on mainstreaming adaptation:

Senegal's identified barriers to mainstreaming climate change adaptation into her national development frameworks included (a) inadequate knowledge and capacities on agricultural practices that serve as adaptation measures to the changing climate at the local level, (b) the lack of effective tools to inform the Local Governments and communities of coastal cities such as Rufisque and Bargny on climate change induced sea level rise and erosion, and (c) the non-consideration of climate change risks into the planning and budgeting systems at the central government, local government and community levels.

Actions to remove barriers:

The Senegal/CCDARE partnership adopted the following actions to remove these barriers.

1. Through a consultative process involving major stakeholders in the Senegal River Delta area, five appropriate and priority climate change adaptation technologies that can be applied in the agricultural sector of the Senegal River Delta were identified. A training Guide (4 modules), plan and a strategy for the spin-off technologies were developed and tools to support technologies and strategies for adapting to climate change were designed. Twenty-two (22) trainers, 15 agricultural and natural resources producers, 3 Sector Heads, and 4 Agricultural Extension advisers in the Senegal River Delta were trained.



Training of Technicians from various Sectors in the Senegal River Delta on climate change adaptation measures and technologies

2. The Department of Territorial Management (DAT) of Senegal partnered with Local Governments and communities of the coastal cities of Bargny and Rufisque to study and evaluate the climate change risks facing the communities. The UNEP DHI Centre and the HID/TROPIS in Denmark developed a Simulation Tool that provided historic, current and future behaviour of the coastal zone of the two cities, the impacts on the settlements and their citizens and recommended adaptation actions to be undertaken by the Local Governments and the communities of the coastal settlements. The Urban Plans of the two cities were updated by the integration of climate change considerations based on the findings of the study. The whole process was consultative, participatory and included awareness raising and capacity enhancement of stakeholders.



Sensitization of stakeholders and Focus Group discussions

Shoreline Erosion

Simulated Shoreline movement

Senegal (continued)

Actions to remove barriers (continued):

3. The Ministry of Finance and Planning of Senegal

- Conducted a study and inventoried the planning structures in Senegal that can eventually have climate change risks integrated in their policies.
- Identified those flexible, preventive and anticipatory approaches required in the integration of climate change, and thus also of the legal, institutional and political changes that may be required for a successful and efficient process;
- Developed scientific and technical leaflets on best practices for consideration of climate change risks in socio-economic development policies and strategies, particularly the VISION 2025 of Senegal.
- Developed a draft methodological guideline for the integration of climate risks in finance and planning strategies and policy documents which is to be validated and disseminated;
- Trained representatives of the Ministry of Finance and Economic Planning and the Planning and Monitoring Units responsible for sectoral budgeting on the role of planning, the methodologies for taking climate risk in the formulation of development projects and programmes, the assessment and impacts of climate change, adaptation and tools for the evaluation adaptation investments.

Opportunities Created

The Senegal/CCDARE partnership replaced the identified barriers with the following opportunities.

1. In the Senegal River Delta:

- A percentage of the population and actors critical to improvement of agricultural productivity in the River Senegal Delta are informed, sensitized and have their knowledge base and capacities enhanced in relation to the consideration of climate change adaptation in their agricultural activities in the Delta;
- Existing and new adaptation technologies being applied in the Senegal River Delta or elsewhere in Senegal have been identified and document. Five of these have been identified and prioritized as applicable in the Senegal River Delta;
- Training Modules on the five (5) identified and prioritized adaptation technologies have been developed
- A critical mass of 44 trained technicians on these models is now available in the Senegal River Delta...

2. In the coastal settlements of Bargny and Rufisque of Senegal:

- At least 585 people have been sensitized on the risks presented by climate change induced sea level rise to the settlements;
- A video on the impacts of coastal erosion in Rufisque and Bargny has been produced to enable continuous sensitization of the population beyond Bargny and Rufisque
- A Shoreline Movement Simulation Tool is available to the Ministry of Environment and the Local Governments of the two settlements with appropriate enhancement of the technical capacity of the national project team in Senegal in the analysis of the effects of sea level rise and coastal erosion on the two coastal settlements;
- Maps on Historical and Future effects of sea level rise on the settlements have been produced and the documents contain recommended actions for acceptance and implementation by the Local Government Authorities;

3. The Ministry of Finance and Planning of Senegal has

- A critical mass of trained representatives of the Ministry of Finance and Economic Planning and the Planning and Monitoring Units responsible for sectoral budgeting on the role of planning, the methodologies for taking climate risk in the formulation of development projects and programmes, the assessment and impacts of climate change, adaptation and tools for the evaluation adaptation investments.
- Scientific and technical leaflets on best practices for consideration of climate change risks in socio-economic development policies and strategies, particularly the VISION 2025 of Senegal are available; and
- A methodological guideline for the integration of climate risks in finance and planning strategies and policy documents has been developed, validated and disseminated.

MAIDEN VOLUME – JANUARY 2011

Seychelles

Barriers on mainstreaming adaptation:

In her consideration of the mainstreaming of climate change adaptation into national development frameworks, Seychelles is faced with the barriers of the unavailability of representative climate data due to large distances between meteorological stations on the islands, inadequate knowledge, awareness and capacity on the adoption of rainwater harvesting as an adaptation measure to climate change induced water stress, and inadequate knowledge and capacity of the institutions and individuals responsible for management of coastal zone in Seychelles.

Actions to remove barriers:

Through effective partnership with CC DARE Programme, these barriers were lifted and replaced with the following opportunities.

1. The Seychelles National Meteorological Services, the Seychelles Island Foundation and the CC DARE partnered to procure and installed three (3) Automatic Weather Stations (AWS) on the inner islands of Mahe, Aldabra and Praslin and trained technicians on the management of the systems;
2. The Ministry of Education procured and installed rainwater harvesting equipment and infrastructure at eight (8) schools, conducted rainwater harvesting in schools to meet their needs and to reduce the cost of their water bills, educated the school children on the impact of climate change on water sources and the use of rainwater harvesting as climate change adaptation measure, and continue to share the schools' experience on water harvesting with other organisations;



Training of Teachers



Installed Rainwater Tank



School Children with Model



Rainwater Harvesting saves money

3. CC DARE engaged the expertise of the UNEP-DHI (Danish Hydraulic Institute) Collaborating Centre (UDC) to enhance the capacity of stakeholders in Seychelles through training on Integrated Management (ICZM, IWRM, and ICARM) concepts; shoreline management; coastal processes and classification; climate change impacts in the coastal zone; causes of, vulnerability and risk classification of coastal erosion and flooding; shore and coast protection measures; the Shoreline Impact Assessment and Mitigation (SIA) tool; the Water Resources Impact Assessment Matrix (WRIAM); the Integrated Spatial Planning tool; the four basic tools of (a) data collection, (b) field investigation and surveys, (c) numerical modeling and (d) physical modeling used in shoreline management; and concepts of artificial beaches and lagoons that are designed to be stable and provide attractive and safe environment based on the hydraulic design guidelines;

Opportunities Created

Through effective partnership with CC DARE Programme, the identified barriers were lifted and replaced with the following opportunities.

1. The Systematic Weather Observation Network of Seychelles National Meteorological Services has expanded with the installation of Automatic Weather Stations to collect more data and on a timely basis. The capacity of technicians on the management of the systems has been developed.
2. Rainwater Harvesting from roofs as climate change adaptation technology is now entrenched in the Secondary School Curriculum of the Ministry of Education of Seychelles. The success of the project has inspired a consideration of the institutionalization of rainwater harvesting in government institutions and communities.
3. A critical mass of trained technicians has been created on Integrated Management (ICZM, IWRM, and ICARM) concepts; shoreline management; coastal processes and classification; climate change impacts in the coastal zone; causes of, vulnerability and risk classification of coastal erosion and flooding; and shore and coast protection measures. The Technicians have been trained on and provided with the Shoreline Impact Assessment and Mitigation (SIA) tool, the Water Resources Impact Assessment Matrix (WRIAM) and the Integrated Spatial Planning tool.

MAIDEN VOLUME – JANUARY 2011

Tanzania

Barriers on mainstreaming adaptation:

Potential loss of indigenous knowledge weather forecasting indicators and skills in the future was indicated as a barrier in Tanzania. Another barrier identified in Tanzania was the lack of knowledge and awareness of the potentials in using woodlot management as climate change adaptation measure.

Actions to remove barriers:

These barriers were removed through the following actions.

1. The Environment Management and Protection Services (EPMS) NGO (a) partnered with Local Government Authorities of Arusha, Tabora, Mwanza and Dodoma Regions of Tanzania, (b) identified experts in indigenous weather forecasting knowledge, (c) trained 27 technicians on the forecasting indicators and tools (d) consulted with and gathered relevant data and information from selected elderly people that possess indigenous weather forecasting knowledge, (e) processed collected data and information, (f) documented findings and prepared technical and non-technical reports in English and Swahili, (g) developed a Policy Paper on how to mainstream indigenous weather forecasting knowledge and techniques in planning processes for consideration by the relevant authorities, and (h) proposed efforts to integrate conventional and indigenous weather forecasting systems.



2. The Department of Forest Mensuration and Management of the Sokoine University of Agriculture partnered with relevant stakeholders and (a) assessed silvicultural management practices and growing stocks in woodlots, (b) used the results of the assessments and identified alternative adaptation strategies to climate variability and change and (c) developed guidelines in English and Swahili containing best practices on woodlot management and marketing to enhance the resilience of the communities to the adverse effects of climate change.

Opportunities Created

The identified barriers were removed and replaced with the following opportunities that will eventually led to the initiation of the mainstreaming of climate change adaptation in national development frameworks.

1. Technical and non-technical reports in English and Swahili and a Policy Paper on how to mainstream indigenous weather forecasting knowledge and techniques in planning processes for consideration by the relevant authorities have been developed and disseminated.
2. Guidelines in English and Swahili containing best practices on woodlot management and marketing to enhance the resilience of the communities to the adverse effects of climate change has been developed and disseminated.

MAIDEN VOLUME – JANUARY 2011

Togo

Barriers on mainstreaming adaptation:

The Republic of Togo identified (a) inadequate knowledge and awareness of the general public on climate change, weak partnership between Central Government, Local Government, Private Sector, Civil Society Organizations and Local Communities and (b) acute water stress especially in the northern districts of the country as barriers to mainstreaming climate change into national development frameworks.

Actions to remove barriers:

Actions taken under the partnership between CC DARE and Togo to remove these barriers include:

1. The NGO - Friends of the Earth – Togo; (a) developed training modules, (b) trained civil society organizations and journalists on climate change risks and adaptation, (c) developed media materials, and (d) partnered with the trained CSOs and Journalists to sensitize other stakeholders and the general public in the 5 Districts of Togo using the media materials that have been developed. Seventeen (17) stakeholders participated in the Project Inception, fifty (50) stakeholders participated in the forum to start the district level sensitization and public awareness campaign and 35, 28, 44, 30, and 42 stakeholders participated in the district level sensitization in the five districts of Maritime, Plateaux, Central, Kara and Savannes, respectively.



Maritime District Plateaux District Central District Kara District Savannes District

District Level Public Awareness and Sensitization Campaigns by “Friend of the Earth – TOGO” NGO

2. The Department of Village Water Supply of Togo (a) enhanced the knowledge and capacities of the staff of the Department and communities of the District of Savanes in Northern Togo on climate change risks and measures to adapt to the risks, (b) forged partnership between the Department of Water Resources, Private Construction Company and the Local Government and Communities of Savannes District and (c) rehabilitated two Water Reservoirs in the Savannes District producing an increase in the capacity of the storage from 9,000 to 24,000 cubic meters of water at Damone Reservoir and from 50,000 to 70,000 cubic meters of water at Timbou Reservoir.



Degraded Reservoir Rehabilitation works Rehabilitated Reservoir Healthy Watershed Happy Community

Water is Life

Opportunities Created

The barriers in Togo have been transformed into the following opportunities to mainstream climate change adaptation into Togo’s development framework

1. A critical mass of trained CSOs and Journalists is available
2. Media materials for use in the continuous sensitization of the public are available;
3. Water is available to the communities of Damone and Timbou all year round reducing migration of the communities and livestock in search of water during the dry season and the consequential conflicts

MAIDEN VOLUME – JANUARY 2011

Uganda

Barriers on mainstreaming adaptation identified in Uganda include:

(a) inadequate awareness at all levels of the Ugandan population but particularly at the grassroots level; (b) inadequate partnership with and networking amongst stakeholders that matter in the climate change arena; (c) vague and non-conclusive studies on the impacts of climate change and variability with respect to agriculture practices, including indigenous coping practices by farmers; and (d) national and sectoral policies, plans and strategies do not fully take climate change into consideration

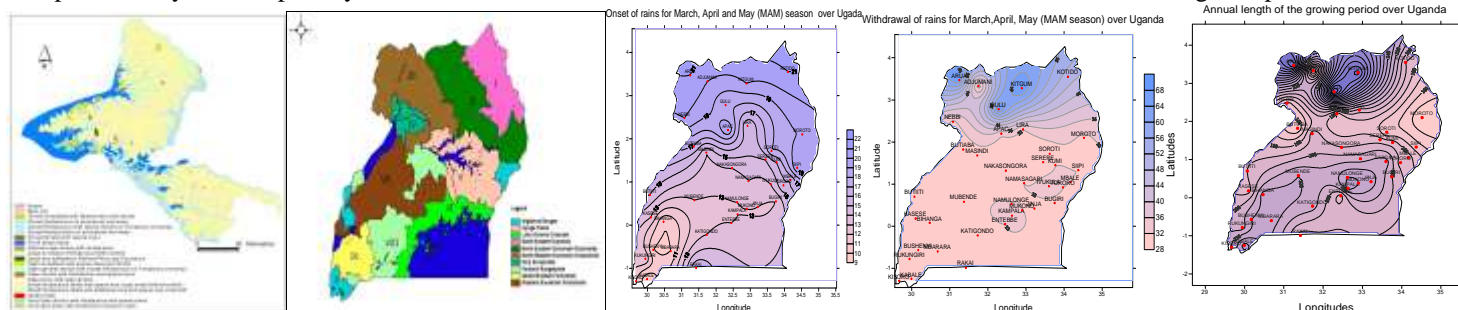
Actions take to remove these barriers include:

1. For the implementation of the CC DARE Programme in Uganda, partnerships were forged between PEM Consult A/S (Denmark), the IGAD Climate Prediction and Application Centre (ICPAC, Kenya), the Great Lakes Film Company (Uganda), the Farmers Media Link Centre (Uganda), The National Agricultural Research Laboratories (NARL) of the National Agricultural Research Organization (NARO), the Department of Meteorology, the Agriculture Planning Department (APD), the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), and the Ministry of Water.
2. The Department of Meteorology (DoM) under the Ministry of Water contracted the Great Lakes Film Production Company to produce a Film Documentary on climate change as it relates to freshwater, diseases, reduced resources and insecurity, and gender. The DoM also contracted the Farmers Media Link Centre to produce Media Materials (Audio and Print) that are crispy, easy to understand and targeted. The DoM then took the Film Documentary and Media materials to conduct public awareness and sensitization campaigns in Central, Eastern, Northern and Western Regions of Uganda, targeting communities, civil society organizations, local government authorities, education and training institutions, and policy- and decision-makers;



Bududa landslides and droughts are eye-openers to climate change: Training, sensitization and awareness are prerequisite

3. The National Agricultural Research Laboratories (NARL) of the National Agricultural Research Organization (NARO) produced erudite scientific knowledge and information characterizing agro-meteorological climate risks and uncertainties regarding crop production in the country. Through partnerships, data and information on current socio-economic factors, constraints and opportunities for promoting adapted land use and management technologies in tandem with traditional knowledge and practices for agricultural drought mitigation in the southern and eastern Lake Kyoga agro-ecological zone (AEZ) identified. Pilot demonstration activities were conducted on farmers' plots of land to demonstrate farmer managed implementation of adapted technologies [integrated nutrient management (INM), conservation agriculture (CA), contour bunds, etc.] and best practices and integration of traditional knowledge for mitigating agricultural drought in the selected AEZ and the water and nutrient efficient adaptation strategies for increased agricultural productivity are accepted by extension services and communities at the district level as viable climate change adaptation measures.



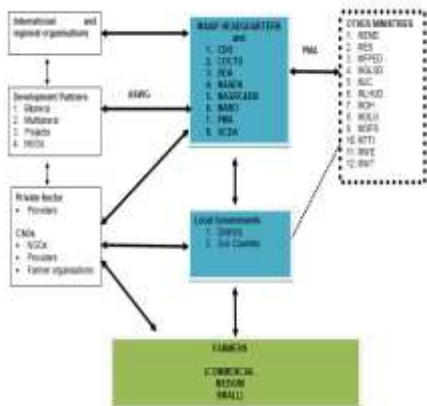
Maps of Uganda showing Land Use, Ecological Zones, Onset of Rainy Season, End of Rainy Season and Annual Length of Growing Season in Uganda

MAIDEN VOLUME – JANUARY 2011

Uganda (continued)

Actions take to remove these barriers in Uganda (continued):

- Thematic Working Groups were setup and tasked to review, revise and write the Agriculture Chapter of the Development Strategy and Investment Plan (DSIP) taking into consideration climate change issues. Guidelines on mainstreaming climate change concerns into development frameworks were developed by ICPAC. Forty (4) staff of the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), eighty (80) members of the Thematic Working Group and 90 Local Government Officials that are responsible for planning and implementation of agricultural activities at the local level were trained. The Agriculture Development Strategy and Investment Plan (DSIP) were revised with climate change integrated in it as part of an updated National Development Plan (NDP).



Opportunities created include

- Conclusive studies on the impacts of climate change and variability with respect to agriculture practices, including indigenous coping practices by farmers, and analyses of the available climate data showing the changes in the rainfall and temperature regimes over the past 50 years in Uganda are now available;
- Farm level water and nutrient efficient adaptation strategies for increased agricultural productivity tested, demonstrated and accepted by extension services and communities at the district level;
- The Ministry of Agriculture, now has a Development Strategy and Investment Plan (DSIP) with climate change integrated in it and contributed to the updating of the National Development Plan (NDP) which will go to Cabinet for adoption after all other sectoral chapters are submitted;

Regional level training and capacity building

Regional Level Barriers in mainstreaming climate change include:

Inadequate knowledge and awareness on climate change science and mitigation, vulnerability (impacts and adaptation) and mainstreaming climate change, particularly adaption into development frameworks;

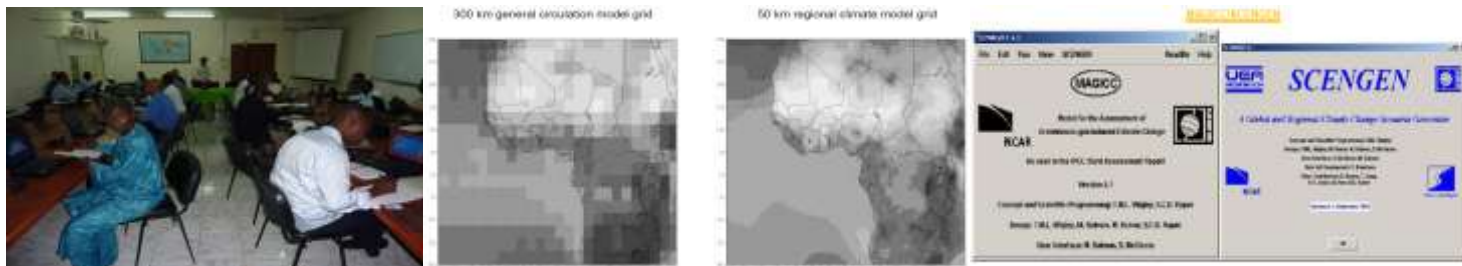
Actions taken to remove barriers

1. In May 2009, the UNEP DHI Centre (UDC) in Denmark, CapNet Nile IWRM Net and the Ministry of Water and Environment in Uganda collaborated in the training of Water Resources Technicians and Managers from East Africa on climate change and water resources management.



Workshop style and Industrial Site Visit Type Training of East African Water Resources Managers and Technicians in Uganda in 2009

2. In May 2010, the UNEP Risoe Centre (URC), the Danish Meteorological Institute (DMI), ICPAC and ACMAD collaborated in the training of researchers and decision makers on Climate models, projections and uncertainties in Sub-Saharan Africa.



3. In May/June 2010, CC DARE supported the Network of Climate Journalists in the Greater Horn of Africa (NECJOGHA) in the conduct of the First Africa Climate Change Communication Conference in Kampala, Uganda. Participants came from African countries including Tanzania, Kenya, Rwanda, Burundi, Sudan, Zambia and Uganda.



Opportunities created

1. Forty (40) trained Water Resources Technicians and Managers on climate change and water resources management exist in East Africa;
2. A Tool Kit on Global Water Partnership (GWP) is provided to all 40 participants.
3. Twenty (25) trained researchers and decision makers on Climate models, projections and uncertainties exist in West Africa.
4. A learning and experience sharing platform for 85 scientists, senior reporters, senior editors, science communicators and CSOs on enhancing communication for adaption and mitigation to climate change has been enhanced.

Catalytic Nature of the CC DARE Programme

Principal challenges in integrating climate change adaptation into sectoral and development policies include:

- Poor communication between the development and climate change communities
- Inadequate understanding of policy constraints
- Lack of understanding by many policymakers of how climate variability and change might impact achievement of the Millennium Development Goals
- Lack of appreciation by policymakers of the value of climate information in reducing the negative impacts of climate variability and climate change;
- Problems in engaging decision makers from line ministries and securing institutional coordination.

Prerequisites of mainstreaming of adaptation into development activities require catalytic activities, including:

- Expanding analytical work as a basis for action at the national and local levels
- Enhancing scientific understanding and use of tools to assess the nature of climate risks to development projects (for example, use of Climate Screening Tools)
- Building capacity of institutions and communities at risk so that they can better cope or adapt to climate variability, and
- Supporting innovations, including investments and piloting of risk management tools, for example provision of weather insurance for farmers;
- Sustainability of the activities that are used to initiate the process of mainstreaming climate change adaptation into development frameworks

The CC DARE Programme faced the challenges posed by the climate change integration process, provided the prerequisites of mainstreaming of adaptation into development activities and, throughout the implementation of the programme, sustainability of the activities undertaken are assured. The following are some examples of catalytic impacts of the CC DARE Programme. These impacts serve as assurance of sustainability of the activities.

In **Rwanda** the revised Land Use and Land Suitability Map and Plan developed for the Gishwati Area of Rwanda with CC DARE support is being used to guide the determination and implementation of national climate change projects supported by GEF and UNDP/Japan Africa Adaptation Programme (AAP). The Government of Rwanda has allocated **25 million USD** to implement the relocation plan of people in high risk zones, using the revised map.

In **Uganda** the National Agricultural Research Organization (NARO) has accessed **\$481,000** from the Rock Fellow Foundation for capacity building on climate change adaptation

In **Mozambique** the climate data and trend analysis produced by the Data Recovery project in Mozambique is being used by other institutions for modeling and design of CCA programmes and projects. The Data Recovery project has been sucked up by UNDP AAP with **117,000 USD** funding to replicate and up scale the activity across other regions in the country. Completion of CCDARE projects has helped to secure **USD 13.3M** from the GEF Least Developed Country Fund (LDCF).

In **Senegal**, the Centre Suivre d'Ecologie (CSE) built on CC DARE activities in their proposal to *secured USD 8.6M* from the Adaptation Fund Board

In **Benin** the successful implementation of the CC DARE projects has been used to secure **USD 11.3 M** from the UNFCCC Least Developed Countries Fund (LDCF).



Funds for the implementation of CCDARE Programme were provided by the Ministry of Foreign Affairs of Denmark. The Programme is hosted by UNEP Regional Office for Africa

Contact Us

'Climate Change and Development – Adapting by Reducing Vulnerability' (CC DARE)

Mr. Richard Munang, UNEP Policy Advisor (Richard.Munang@unep.org)

Mr. Johnson Nkem UNDP Policy Advisor (Johnson.Nkem@undp.org)

Mr. Bubu Pateh Jallow, Project Manager, (bubu.jallow@unep.org)