

A Preliminary Stocktaking: Organisations and Projects focused on Climate Change Adaptation in Africa



Editors: Musonda Mumba and Brian Harding

Layout: Musonda Mumba

Photo credits: © Musonda Mumba

This is a stocktaking report contributing to the Africa Adaptation Network as an integral part of the Global Adaptation Network facilitated by UNEP.

First published in June 2009 © 2009 United Nations Environment Programme

Report commissioned by:

Climate Change Adaptation Unit,
Division of Environmental Policy Implementation (DEPI),
United Nations Environment Programme
Nairobi, Kenya

Table of Contents

List of acronyms used	4
Introduction	5
Selection Criteria.....	6
Literature Review of climate change adaptation work.....	6
Climate Change Adaptation Internet Platforms	7
Mapping Climate Change Institutions in Africa	8
Media and Climate Change.....	9
Fellowships	10
Training	11
Utilization of the African Diaspora.....	12
Climate Change Adaptation Mainstreaming.....	12
Climate Change and Migration	13
Climate Tools and Africa.....	13
Existing Networks in Africa.....	14
Bibliography	15
Appendix A: List of Organisations working in related fields of climate change adaptation in Africa	16
Appendix B – Existing Networks in Africa related to climate change adaptation.	23
Appendix C: List of Examples of climate change adaptation projects in Africa	27

List of acronyms used

ACMAD: African Centre of Meteorological Application for Development
ACTS: African Centre for Technology Studies
AGRHYMET: Agro-Hydro-Météorologie Agrhyment Regional Centre
AIACC: Assessments of Impacts and Adaptations to Climate Change
ALM: Adaptation Learning Mechanism
CAADP: Comprehensive Africa Agriculture Development Programme
CAN: Climate Action Network International
CC: Climate Change
CCAA: Climate Change Adaptation in Africa
CLACC: Capacity strengthening of the Least Developed Countries for Adaptation to Climate Change
CILSS: Permanent Interstates Committee to control Drought Control in the Sahel
COMESA: Common Market for East and Southern Africa
CRM: Climate Risk Management
DRM: Disaster Risk Management
DFID: Department for International Development, United Kingdom
DMCN: Drought Monitoring Centre
ENDA-TM: Environnement et Développement pour le Tiers Monde
FAO: Food and Agriculture Organization
GEF: Global Environment Facility
ICPAC: IGAD Climate Prediction and Applications Centre
IDRC: International Development Research Centre
IGAD: Intergovernmental Authority on Development in Eastern Africa
IISD: International Institute for Sustainable Development
IREM-LCD: Initiative Régionale Environnement Mondial et Lutte Contre la Désertification en Afrique Sahélienne
IPCC: Intergovernmental Panel on Climate Change
IUCN: World Conservation Union
LDC: Least Developed Countries
LULUCF: Land Use, Land-Use Change and Forestry
NAPA: National Adaptation Programme of Action
NBA: Niger Basin Authority
NEPAD: New Partnership for Africa's Development
OECD: Organization for Economic Cooperation and Development
OMVS: Organization for the Development of the Senegal River Basin
OSS: Observatoire du Sahel et du Sahara / Sahara and Sahel Observatory
PREDAS: Regional Programme to Promote Household and Alternative Energy in the Sahel
PRS: Regional Solar Programme
PRESAO: Prévision Saisonnière en Afrique de l'Ouest / Seasonal Forecast for West Africa
ROSELT: Réseau d'Observatoires de Surveillance Ecologique à Long Terme / Long Term Ecological Monitoring Observatories Network
SADC: Southern Africa Development Cooperation
SWAC: Sahel and West Africa Club
UNDP: United Nations Development Programme
UNEP: United Nations Environment Programme
UNECA: United Nations Economic Commission for Africa
UNFCCC: United Nations Framework Convention on Climate Change
UN/OOSA: UN Office for Outer Space Affairs
WHO: World Health Organization
WMO: World Meteorological Organization

Introduction

A number of recent reports have purported to the fact that there are a very limited number of African regional institutions dealing with climate change (Khennas, 2008, unpublished). However, as we enter a period of intensive work on the negotiation of a post 2012 climate change framework and the upcoming Copenhagen meeting, there is certainly a need to have a clearer view of who is working in the related areas of vulnerability, adaptation and livelihoods, especially in Africa.

This report commissioned by the Climate Change Adaptation Unit within the Division of Environmental Policy Implementation (DEPI) of UNEP is an effort to address the gap that exists. UNEP in partnership with key UN and other international organizations has proposed and is in the process of rolling out a Global Climate Change Adaptation Network and this document will contribute to the solid formation of the African Regional component¹ (UNEP, 2009).

The overall objective of the Network is to help build climate resilience of vulnerable human systems, ecosystems and economies through mobilization of knowledge and technologies to support adaptation policy setting, planning and practices. It is envisaged that the Network will support governments, practitioners and communities with knowledge, technologies, good practice demonstration and capacity building.

It has been rightly noted that it is necessary to distinguish adaptation by who is undertaking it and the interests of the diverse stakeholders involved (Adger *et al.*, 2002). From previous reports, it is clear that gaps exist. Yet it is also clear that many institutions have strong technical capacity and climate change related networks already exist. These need to be assessed for their willingness to be involved in climate change work, and the Global Climate Change Adaptation Network in particular. This report aims to bring as many of their names and strengths into one document for the continent of Africa.

It is hoped that such organizations will be able to screen development policies, projects and programmes with regard to climate change, focusing on scope, results and methods applied. In this vein, many organizations have been left out of this work as they presently do not have an exact focus on climate change adaptation.

A mapping of this type should also be seen as motivation for organizations who feel that they have capacity in this area but who have not been specifically identified, to get involved in the Global Climate Change Adaptation Network by making contact with UNEP. It should also be seen as being an important step toward achieving the goals and aims set out within the guidelines of the Paris Declaration.

How adaptation relates to development varies across circumstances; as such, efforts to draw a fine line between them cannot be universally applicable. Thus defining whether an organization works in the area of adaptation or development in this instance may not be

¹ The Global Climate Change Adaptation Network in Africa, regional consultation meeting was held on 19-20 January 2009, in Nairobi, Kenya.

useful. However, if an organization works in an area of development that will be strongly influenced by climate change, this report has endeavoured to include them here.

Selection Criteria

This mapping of stakeholders involved in the area of climate change covers the whole of Africa.

Each case was examined according to a series of parameters, including

- The status and the location
- The geographical cover and scale
- Scope of the work with a focus on climate change related issues
- The role in the region, strategic emphasis and capability to address climate change related issues
- Funding (where possible)

This review acknowledges the following possible weaknesses:

As the review is based heavily on Internet-based sources, it may lack the presence of agencies that work in this area but do not have a webpage or regular updates on their webpage.

Although this report endeavoured to include as many organizations from Francophone and Lusophone countries as possible, the review contains principally organizations, which publish in English. It is hoped that efforts underway in Francophone and Lusophone Africa, as well as other non-English speaking areas, including those who speak Arabic are not disproportionately underrepresented.

Literature Review of climate change adaptation work

The World Resources Institute's (WRI) *Weathering the Storm* by McGray et al., (2007) identified 135 global climate change adaptation projects using a methodology that included a search through available Internet resources through a desk based study and comprehensive analysis.

It was documented that 44 cases from across Africa were identified. The following countries are listed as having at least one defined climate change adaptation project; Cameroon, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Senegal, South Africa, Tanzania, Gambia, Uganda, and Zimbabwe.

It was found that the majority of cases overall had a rural focus, while adaptation efforts in urban settings appear to be very

limited. In terms of geographic scale, the largest body of cases was found at the community (most often village) level, followed by other sub-national jurisdictions (such as a coastal zone, a water basin, or a district). It was found that few examples aimed to create change at the national level, and even fewer were truly international. The majority of cases globally had an agriculture and disaster risk management emphasis followed by water resource management and coastal resources (McGray et al., 2007).

In Africa it was demonstrated that few projects set out to have a climate change focus from the initiation and planning stages. The majority of cases in Africa were found to be “serendipitous” whereby development objectives had outcomes that incidentally may support adaptation. Some evidence of climate proofing was identified whereby additional activities were added to an ongoing development initiative to ensure its success under a changing climate.

These findings have potential implications for this study. As the majority of the cases were found at the community level in rural locations, it may be assumed that the implementing partners for such work

would be small community based organizations or larger NGO’s partnering with communities to assist in once off type initiatives.

From further analysis of the African components of those identified by the WRI, it is clear that although a number of case studies were found, there does not seem to be a large number of strong national institutions, which have undertaken the actual work. WRI’s work also focuses on the types of distinctions between development and climate change adaptation.

Information regarding climate change adaptation projects can also be found on various Internet platforms.

Climate Change Adaptation Internet Platforms

ALM – Adaptation Learning Mechanism

The Adaptation Learning Mechanism acknowledges that capacity and awareness are often limited, and experiences have yet to be widely shared. The ALM project features tools and practical guidance to meet the needs of developing countries. The ALM is a complement to the wide range of adaptation knowledge networks and initiatives already underway. ALM continues to accept case studies of climate change adaptation work from around the world. This interactive platform aims to be the focal point on the Internet for checking and searching for clearly defined climate change adaptation.

<http://www.adaptationlearning.net/>

WeAdapt

WeAdapt has been an excellent tool for the dissemination of information on climate change adaptation. It is a collaboration between leading organizations on climate adaptation and includes new and innovative tools and methods, datasets, experience and guidance. However, there is a need for certain sections to be increased in depth and strength to benefit the wider climate change community (e.g. ecosystem services and climate change). Particularly, all institutions working in the area of climate change must be encouraged, given incentives or want to place their institution and their work on the website. This could be viewed as a valuable commitment to climate change adaptation - www.weadapt.org

AIACC – Assessments of Impacts and Adaptations to Climate Change

The recently completed AIACC projects brought scientists and experts from all around the world to work together, exchange information and build networks. It has also provided a number of complete climate change adaptation projects for the continent of Africa, which have been included in the database - <http://www.aiaccproject.org/>

Climate Change Adaptation in Africa (CCAA)

CCAA is a programme directed and executed in Africa by Africans covering the entire region (Khennas, 2008, Unpublished). The purpose of the Climate Change Adaptation in Africa (CCAA) research and capacity development programme is to significantly improve the capacity of African countries to adapt to climate change in ways that benefit the most vulnerable. CCAA includes a listing of ongoing projects across the continent of Africa. They have been summarized in the attached database - <http://www.idrc.ca/ccaa/>

Advancing Capacity to Support Climate Change Adaptation (ACCCA)

ACCCA tries to identify climate risks, assess knowledge about adaptation options and develop risk communication materials to aid adaptation decisions - <http://www.acccaproject.org/accca/>

Mapping Climate Change Institutions in Africa

- This mapping of climate change adaptation activities in Africa demonstrates that there are a larger number of existing institutions and organisations involved in working or who have carried out work in the past in the area of climate change.
- There are however gaps that are currently in discussion in the development community, which are not being addressed by any specific organisations (e.g. migration).
- From a review of the databases, it is clear that a number of strong areas come out as playing a significant role in climate change adaptation activities (e.g. training and capacity building).
- Other areas that might be considered to be well represented are agricultural projects. However, it must be noted that many more of these activities could be undertaken.
- There has also been an effort to include as many existing networks as possible. This list is not exhaustive and there are clearly other relevant networks functioning that are not represented here.
- The data collected on ongoing and past climate change adaptation projects in Africa has been greatly aided by the Internet platforms that exist. ALM and WeAdapt are clearly examples of excellent global climate change adaptation initiatives that are housed outside of institutions in Africa, but rely on their contributions in order to build up the region's resources. CCAA is a good example of being a working institution run by Africans in the area of climate change adaptation.

The following climate change activities are described in more detail below. The descriptions outline identified areas of strengths and weaknesses across the listed institutions working in climate change adaptation in Africa.

- Media and climate change
- Fellowships
- Training
- Utilisation of the African diaspora
- Climate change adaptation mainstreaming
- Climate Change and Migration
- Climate Tools

Media and Climate Change

A number of organizations have been working in the area of communicating climate change information, in collaboration with national institutions in disseminating information using various media. The following examples have been highlighted as standing out during this review:

The Radio and Internet Project (RANET) project provided timely information on climate and other development information for the people in the district. Through established channels of communication, the project then disseminated climate information to local farming communities in a timely manner. Local communities in 17 parishes of the district benefited from this effort. The information enabled the local population, notably farmers to prepare for potential droughts and to take the climate forecast into account when making decisions around Nakasongola, Uganda. This programme saw a demonstrable shift in behaviour when farmers started preparing their land for cropping in advance banking on predictions received through RANET as opposed to the traditional method of awaiting rains before starting land preparation. World Vision were also involved with this project.

(<http://www.acts.or.ke/pubs/monographs/pubs/ecopolicy15.pdf>)

African Radio Drama Association: Climate Change Adaptation in Northern Nigeria

This collaborative project, headed by ARDA, aims to improve the capacity of smallholder farmers in Northern Nigeria to the effects of climate change. With sponsorship from International Development Research Centre (IDRC Canada), and ARDA's joint organization with Farm Radio International (FRI), Women Farmers Action Network (WOFAN), and the University of Guelph, a 26 episode radio drama will air in 5 provinces in Northern Nigeria.

The project which is presently being prepared aims to provide new methods, alternatives, suggestions and options to encourage improved farmer adaptation, both male and female, to the effects of climate change. It also aims to increase the acknowledgment of the important role of women, and encourage youth participation in agriculture.

The idea is novel in the fact that following a 15-minute drama episode, an "expert" (such as a local extension worker) will debrief and provide greater information to the topic of the episode and methods farmers can undertake. The expert corner will be locally specific, given the differing agricultural practices and environments across the four listening states. Listeners will be encouraged to provide feedback via SMS, phone and mail, both individually and through encouraged listener and farmer groups.

http://ardaradio.org/climate_change_project.

Fellowships

Training the future climate change scientists in Africa could be seen as a valid capacity building exercise in the area of climate change adaptation. The African Climate Change Fellowship Program (ACCFP) ran a programme in which African professionals, researchers and graduate students were financed to undertake activities that will enhance their capacities for advancing and applying knowledge for climate change adaptation in Africa. The fellowships were awarded after review by an external, multidisciplinary panel of experts, and by the ACCFP Executive Committee. The program was jointly administered by the global change SysTEM for Analysis, Research and Training (START), the Institute of Resource Assessment (IRA) of the University of Dar es Salaam and the African Academy of Sciences (AAS), with financial support from the International Development Research Centre (IDRC) of Canada and the United Kingdom's Department for International Development (DFID). Further details on the ACCFP may be found at www.accfp.pass-africa.org.

The Capacity Strengthening in the Least Developed Countries (LDC's) for Adaptation to Climate Change (CLACC) fellows continue to be involved with climate change activities in their home countries (CLACC, 2008). Further information can be found on <http://www.clacc.net>

Other fellowships which could be applied for by African students include:

- African Fellows Programme (AFP)
- AGRICULTURE SECTOR PROGRAMME SUPPORT (ASPS), UM
- Alexander von Humboldt Foundation: Humboldt Research Fellowships, DAAD
- ARTS postgraduate study program
- Call for concept notes for the SSA CP CORAF/WECARD region, FARA
- DAAD - Inter-University Partnerships, DAAD
- DATA AGRICULTURAL BANK, MINAGRI
- ENDA fellowship scheme: 'Building Africa's capacity: Understanding vulnerability to climate change and preparing for action' - runs biannually
- Ford Foundation: International Fellowships Program (IFP), Accra, Ghana
- Fritz Thyssen Foundation: Research Fellowships, DAAD
- Georg Forster Research Fellowships
- Helmholtz-DAAD Fellowships, DAAD
- Institutional University Cooperation (IUC) (CIUF-CUD), CIUF
- International Research Centers programme (IOC), DGDC

- Knowledge for Tomorrow - Cooperative Research Projects in Sub-Saharan Africa
- Re-invitation Programme for Former Scholarship Holders, DAAD
- Research Grants for Doctoral Candidates and Young Academics and Scientists, DAAD
- Rothamsted International Fellowship Scheme
- Scholarships for Postgraduate Courses with Special Relevance to Developing Countries, DAAD
- Subject-related Partnerships with Universities in Developing Countries, DAAD
- The Norman E. Borlaug International Agricultural Science and Technology Fellows Program, USDA
- UNFCCC – Fellowship Programme.

(Adapted from CORAF/WECARD - West and Central African council for agricultural research and development
http://coraf.infosysplus.org/db/db_index.php/start/1/door/cats/URL_NAME/coraf)

Training

Institutions and organizations across Africa regularly hold training courses as an accompaniment to capacity building activities. A number of groups have become well known for providing training in the area of climate change. Some of these include:

AGRHYMET: The Agro-Hydro Meteorological Regional Centre is a specialized institution with the mission of promoting information and training about food security, desertification control and the management of natural and water resources.

ACTS: The African Centre for Technology Studies' capacity building activities include training in the areas of biodiversity and environmental governance; energy and water security; agriculture and food security etc.

AIACC: Assessments of Impacts and Adaptations to Climate Change (AIACC) group aims to advance scientific understanding of climate change vulnerabilities and adaptation options in developing countries and has been active in capacity building and training the past. They have offered funding, training, and mentoring to developing country scientists to undertake multi-sector, multi-country research of priority to developing countries.

CCAA: Climate Change Adaptation in Africa's programme aims to strengthen the capacity of African scientists, organizations, policymakers and others to contribute to adaptation to climate change.

CSAG: University of Cape Town - climate research - trains aspiring climatologists from around Africa

ENDA: Specialising in capacity building in all aspects of climate and development - training for practitioners, policy and decision makers, researchers both from within Africa and those

from outside wishing to understand more about Africa (including internships) are part of our staple fare.

Gobabeb Institute, Namibia: training and research in desertification and arid area climatology.

University of Dar es Salaam: a core partner of START for training in climate change adaptation and offers a variety of specialist training courses in related fields.

Utilization of the African Diaspora

The African Diaspora has an important role to play in climate change science. It is extremely difficult to estimate the amount of African people who live outside the continent and who work in international organizations in the area of climate change adaptation. There must also be a large community of African students in universities and academic institutions, in Masters and PhD programmes focusing on the same area.

In June/July 2009, UNESCO and the African Scientific Community will host a conference entitled “*The African Diaspora Scientific Community Mobilization for Africa*” (Adiascom Africa Initiative). Although the conference does not deal specifically with climate change, it will be an example of the African diaspora coming together to speak about what contributions they can make to assisting in developing infrastructures in Africa. Many of the themes will overlap significantly with climate change, including those working in the area of water, natural resource management and environmental impacts.

Climate Change Adaptation Mainstreaming

The need to mainstream adaptation to climate change into development planning and ongoing sectoral decision-making is increasingly recognized (Klein et al., 2007).

There seems to be a lack of information about whether ongoing development projects are being climate proofed or reviewed for incorporating climate change concerns into ongoing or future projects within African organizations working in climate change related areas.

In January 2009, the full roll out phase of CC-DARE began with 16 countries in sub-Saharan Africa being targeted (UNEP, 2009). Climate Change and Development – Adapting by Reducing Vulnerability (CC-DARE) is a joint

UNDP and UNEP initiative, with generous funding from the Government of Denmark which aims to give pragmatic advice on mainstreaming climate change into development decisions.

CC-DARE attempts to tackle the challenge for adaptation in building the technical, analytical, and institutional capacity needed for integrating climate change risks and opportunities into national development planning and decision-making.

CC-DARE provides demand-driven technical and financial support to sub-Saharan African countries that is targeted, flexible and rapid. The support is made available to improve the ability of sub-Saharan African countries to remove

barriers and create opportunities for integrating climate change adaptation into national development planning and decision-making frameworks. More information at www.ccdare.org.

Climate Change and Migration

The thematic area of climate change and migration is understudied on the continent of Africa. The discussions on this topic are being addressed in an upcoming conference in climate change, adaptation and migration at the University of Sussex and past conferences held by the Danish Institute for International Studies (DIIS). Further information is on <http://www.diis.dk/sw69178.asp>.

In a recent meeting on migration and African development, climate change came out as a serious concern by participants. Organizations such as IOM and OSS acknowledged that climate change could continue to exacerbate existing migrations from rural to urban

areas and continuous movement away from drought areas (VOA, 2008).

The debates about whether population movement due to climate change will need to be addressed in Africa are without doubt. But the right to migration, particularly international migration at a time when there are increasing inequities is likely to be increasingly contested (O'Neill et al., 2001).

It is clear from reviewing the database that this topic is not being addressed by the institutions that are listed. This could be considered to be a niche or gap that organizations could undertake work in.

Climate Tools and Africa

Although have been many calls for improved tools for climate change data analysis to provide information that is credible and for integrating adaptation into decision making.

New methods and tools are constantly being developed and the application of those that are already in use is steadily being refined. The UNFCCC Compendium on methods and tools to evaluate impacts of, and vulnerability and adaptation to, climate change is a web-based resource that provides key information on available frameworks, methods and tools, and their special features.

It is notable that many of the approaches mentioned in the UNFCCC Compendium document are not being used employed by development and climate change actors in Africa. Network members must be encouraged to use appropriate locally adapted tools as much as possible.

Further information on climate change: http://unfccc.int/adaptation/nairobi_workprogramme/compendium_on_methods_tools/it-ems/2674.php.

Existing Networks in Africa

It is clear from Appendix B that a number of networks already exist in Africa which could be important partners in this regional part of the Global Climate Change Adaptation Network. A few of these existing networks are listed here as examples of what benefit they might bring to a larger African network.

FEWSNET supports national forecasting to coordinate water and climate information to forecast flooding risk across the continent of Africa. They are an example of a network with a consistent supply of excellent, well analysed and presented data.

The Green Actors of West Africa (GAWA) network is a group of environmental organisations across the region with a goal to develop ways of enhancing cooperation and coordination between and among the various donors and environmental (nature conservation) actors in the sub-region.

GAWA is an example of a network that has an impressive geographical coverage of including: Ghana, Guinea, Nigeria, Togo, Benin, Ivory Coast, Senegal, Mali, Burkina Faso, Sierra Leone, The Gambia and Liberia. They are also trying to expand into Niger, Guinea Bissau, and Cape Verde. (Adapted from: http://www.gawa.nu/gawadb_frame.htm)

RAPAC: A network of organizations working in the conservation of protected areas in French speaking Africa. <http://www.rapac.org/>.

ODINAFRICA: An example of a functioning African network which could benefit climate change adaptation efforts.

The Ocean Data and Information Network for Africa (ODINAFRICA) brings together marine institutions from twenty-five Member States of the Intergovernmental Oceanographic Commission of UNESCO from Africa (Algeria, Angola, Benin, Cameroon, Comoros, Congo, Cote d'Ivoire, Egypt, Gabon, Ghana, Guinea, Kenya, Madagascar, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Senegal, Seychelles, South Africa, United Republic of Tanzania, Togo, and Tunisia).

The earlier phases of ODINAFRICA enabled the participating member states to get access to data available in other data centers worldwide, develop skills for manipulation of data and preparation of data and information products, and develop infrastructure for archival, analysis and dissemination of the data and information products.

The goal of the current phase of ODINAFRICA will be to improve the management of coastal and marine resources and the environment in participating countries by: enhancing data flows into the national oceanographic data and information centers in the participating countries, strengthening the capacity of these centers to analyse and interpret the data so as to develop products required for integrated management of the coastal areas of Africa, and increase the delivery of services to end users.

Adapted from: <http://www.odinafrica.org/>

Adger W. N., Brown K, Conway D, Huq S, Hulme M, (2002) Adaptation to climate change: Setting the Agenda for Development Policy and Research: Tyndall Working Paper 16.

Kirsten H.; Priyadarshi, S. 2008 Sustainable development as a framework for developing country participation in international climate change policies *Mitig Adapt Strat Glob Change* 13:105–130.

Kelly, P.M. and W.N. Adger, 2000: Theory and practice in assessing vulnerability to climate change and facilitating adaptation. *Climatic Change*, 47(4), 325–352.

Khennas, S., 2008 (Unpublished) *Mapping of regional centres working with climate change in Africa*.

Klein, R.J.T., Eriksen, S.E.H., L.O. Næss, A. Hammill, T.M. Tanner, C. Robledo and K. O'Brien (2007), "Portfolio screening to support the mainstreaming of adaptation to climate change into development assistance", Tyndall Centre for Climate Change Research, Working Paper 102, Stockholm. Available from:
http://www.tyndall.ac.uk/publications/working_papers/twp102.pdf/.

McGray, H., Bradley, R., Hammill, A. with Schipper, L. and Parry, J., 2007: *Weathering the Storm: Options for Framing Adaptation and Development*. World Resources Institute Report.

Mitchell, T. & Tanner, T., 2007 Embedding Climate Change Adaptation in Development Processes. Institute of Development Studies, Issue 2.

O'Neill, B. C., MacKellar, F. L. and Lutz, W. 2001: *Population and Climate Change*. Cambridge: Cambridge University Press.

Osborne, H., 2007. Building resilience: Adaptation mechanisms and mainstreaming for the poor. Human Development Report.

Schipper, L. 2007. Climate Change Adaptation and Development: Exploring the Linkages. Tyndall Working Paper No. 107. Norwich, UK: Tyndall Centre for Climate Change Research. http://www.tyndall.ac.uk/publications/working_papers/twp107.pdf.

UNEP, 2009. UNEP 2008: Annual Report.
www.unep.org/PDF/AnnualReport/2008/AnnualReport2008_en_web.pdf.

Appendix A: List of Organisations working in related fields of climate change adaptation in Africa

Organisation	Website	Scale in Africa	Relevant focus, e.g. Crop development, Water management, CC impacts, Seasonal forecasting	Climate Change Adaptation Strategies
AATF	http://www.aatf-africa.org	Sub-Saharan Africa	Crop development; Technology transfer for African farming systems.	Crop breeding
Action Aid International	www.actionaid.org	Kenya, Malawi, Ghana	Poverty Reduction	Integration of disaster risk reduction into schools.
ACMAD	http://www.acmad.ne/en/homepage.htm	Africa (all)	National regional and continental meteorological information	
ACTS	http://www.acts.or.ke/	Eastern and Southern Africa	Food Security, involved in biotech	Working through networks. Integrating Vulnerability and Adaptation to Climate Change into Sustainable Development Policy Planning and Implementation in Eastern and Southern Africa (2006-2009); - Community based adaptation to Climate Change (2008-2011). Work on seed fairs as a response to drought in Kenya
ATPS	http://www.atpsnet.org	Africa (23 Countries)	African Technology Policy Studies Network.	Mainstreaming climate change in integrated water resources management, S,T,I for climate change adaptation, innovation systems for climate change adaptation in agriculture. Training programs on climate change adoption for policymakers, researchers and the private sector.
ATPS	http://www.africare.org/	Kenya	African Technology Policy Studies Network:	Not specifically.

AFRICARE	http://www.africare.org/	Africa (36 countries)	Food security, water management, micro-enterprises and natural resource management	Not specifically.
AGRHYMET	http://www.agrhymet.ne/	Africa (all)	Disseminating agro-meteorological information to reduce vulnerability to current climate variability	Provide seasonal forecasts and information on current climate variability to farmers.
AIACC	http://www.aiaccproject.org/	Africa (all)	Enhance LDC capacity to assess vulnerability and adaptation to CC	Improved seasonal forecasting, enhancing adaptive capacity by making climate data more accessible to agriculture.
ASARECA	http://www.asareca.org/	Africa (10 countries)	Agricultural research for Food Security. Focus is on new crop varieties	Crop breeding to produce crops resilient to current variability. Moving into climate change adaptation work
BFAP	http://www.bfap.co.za/	South Africa	Bureau for Food and Agricultural Policy has carried out economic modelling of climate change effects on South African crops (including maize)	No, impacts only
CARE International	www.careinternational.org or www.careclimatechange.org	Africa (all)	Humanitarian organisation	
CCCMA	http://www.cccma.bc.ec.gc.ca/	Global	Producing GCMs	No
CCFD	http://www.ccfid.asso.fr/	?	Conflict prevention and resolution, Food security, International migrations	Setting up seed banks in Ethiopia (http://www.ccfid.asso.fr/ewb_pages/p/partenaire_789.php).
CEDARE	http://www.cedare.int	Africa (North)	Centre for Environment and Development in the Arab Region and Europe	Not specifically
CEEPA	http://www.ceepa.co.za/	Regional	Economic impact of CC on agriculture, and analysis of economics of adaptation activities	Carry out World Bank studies into climate change.
CGIAR	http://www.cgiar.org/	Africa (all)	Crop research, but also work on vulnerability and adaptation to CC	Climate resilient crops, improved cropping techniques enhancing productivity of water, natural resources management. Each of the CGIAR organisations work in areas very much related to climate change adaptation.

CIESIN	http://www.ciesin.columbia.edu/	Global	Data provision, for example CC impacts in agriculture, mapping vulnerability to CC	No specific climate change adaptation programmes
CILSS	http://www.cilss.bf/	Regional	Food security in the Sahel and impacts of CC	Improved use of water; solar powered pumping of groundwater, small-scale irrigation. Natural resources management
CIRAD	http://www.cirad.fr/fr/index.php	Global	Combine biophysical with economic models to look at CC impacts	Not sure, difficult to find relevant information
COMIFAC	http://www.biodiv.be/comifac2	Africa (mostly Central and West Africa)	Forest conservation	REDD
EARRNET	http://www.asareca.org/earrnet/about_us.htm	Regional	Breeding more resilient crops (with a focus on Cassava), and improving farming techniques and natural resources management, for example integrated pest control, models to develop nutrient management strategies,	Breeding more climate resilient Cassava, and NR management
Earthwatch Institute Kenya	http://earthwatch.org	Kenya	Environmental projects, volunteerism	Climate change resilience in Samburu, Kenya.
ECABREN	http://www.ecabren.org	Regional	Improved bean varieties. Demand driven bean technologies and systems	Improved bean varieties. Soil management techniques (not clear what these are)
ECOWAS	http://www.ecowas.net		Economic Community Of West African States (ECOWAS) is a regional group of sixteen countries	Coordination of regional climate change activities.
ENDA	http://enda.sn	Mostly Africa	Lobbying and policy dialogue and multilateral agreements on climate change:	Community level climate change adaptation programmes. Multiscalar activities.
FAN		Regional	Forest Action Network – Forestry and Livelihoods.	Enhancing the capacity of journalists to understand climate change
FANRPAN	http://www.fanrpan.org/	Regional	Food security and the impacts of CC. Also some work on vulnerability	Research into adaptation strategies, and building research capacity

FAO	http://www.fao.org/	Global	Food Security	Currently developing an Adaptation Strategy. Relevant activities include conservation agriculture, provision of agro-ecological data, mid-term forecasting and improved water efficiency amongst others
FARA	http://www.fara-africa.org/	Regional	Improving food security by raising productivity, with an emphasis on better access to new technology	Umbrella organisation: members work on adaptation. Part of LCA
GCOS	http://www.wmo.ch/pages/prog/gcos/index.php	Global	Climate for Development programme; strengthening climate observations, and integrating them into development activities.	Providing climate information for development; historical data harvesting
GECAFS	http://www.gecafs.org/	Global	Global environmental change and food security. Assessing vulnerability and adaptation options	Research into adaptation options to improve food security. Don't know if they are implementing any adaptation strategies
GLOWA	http://www.glowa.org/	Global	Developing decision support tool to evaluate impacts of climatic and land use trends	Improving water management in Volta basin through research and modelling of land-use, socio-economic variables and atmosphere. One sub-project trying to produce accurate predictions of the onset of the rainy season
Hadley Centre	http://www.metoffice.gov.uk/research/hadleycentre/	Global	Modelling	No
ICCMG	http://www.ipsl.jussieu.fr/	Global	Modelling	No
ICRAF	http://www.worldagroforestry.org	Sub-Saharan Africa	Crop development, water management, land-use system design	Building resilience into agricultural systems, rainwater harvesting techniques
ICPAC	http://www.icpac.net/	Regional	Dissemination of meteorological data such as seasonal forecasts, and assess vulnerability to current climate variability	Climate data helps adaptation to current variability
ICTP (PWC section)	http://www.ictp.trieste.it	Global	Climate models, RCM focus. Building LDC modelling capacity	No

IDRC	http://www.idrc.ca	Global	Run Climate Change Adaptation in Africa (CCAA) with DFID, focusing on reducing agricultural vulnerability to present and future climate	Varied, for example: integrating data from CC scenarios into water planning, running a radio play about adaptation
IDS	http://www.ids.ac.uk/	Global	Capacity building, food security, adaptation	Co-coordinate LCA with IIED. Varied according to project but research based.
IFAD	http://www.ifad.org/	Global	Food security	Integrating adaptation into their loan portfolio
IIASA	http://www.iiasa.ac.at/Research/LUC/index.html?sb=1	Global	World Food System Analysis: Modelling changes in agricultural systems under different social and ecological scenarios. Provides a tool for evaluating adaptation options	Use WFS analysis to evaluate adaptation policies. Wide range of data sets and tools to distribute information on climate and agricultural parameters such as soil
IIED	http://www.iied.org/	Global	Adaptation and Capacity building, Food security	Capacity building, co-ordinate LCA and CLACC
IISD	http://www.iisd.org/climate/	Global	Adaptation and vulnerability, some work on adaptation in agriculture (e.g. Kenya project)	Livelihoods-based approach and CRiSTAL tool for screening adaptation projects. Various projects under Adaptation to Climate Change in E + S. Africa, e.g. Increasing resilience to drought in Kenya (drip irrigation, diversifying crops and livelihoods),
INERA	http://www.pg.science.ru.nl/en/burkina_inera.html	National	Crop genetics	Crop breeding
IRI	http://portal.iri.columbia.edu/portal/server.pt	Global	Integrating data on current variability into agricultural planning. Climate risk management	Using climate data to improve agricultural productivity and reduce vulnerability to climate hazards
IUCN	http://www.iucn.org	Africa (all)	Biodiversity, Protected Areas, Natural Resource Management, People and Livelihoods	Protected areas in Africa. Have used CRISTAL for some projects

NIRADO	http://www.nirado.org	National	Improving agricultural productivity through new methods and technologies, and improved institutional practices	Improving agricultural productivity; soil management, access to technologies, disseminating agricultural information
OHVN	http://www.maliagriculture.org/services_tech/OHVN/index.html	Mali	Food security, natural resource management	Diversification of crops grown.
OSS	http://www.oss-online.org/	Africa	Early warning and monitoring systems for agriculture, food security and drought in Africa.	“Climate change, drought and desertification” that will act on two levels: assessing ecosystem vulnerability to the impacts of climate change, and adaptation to climate change.
Oxfam	http://oxfam.org	Africa (Kenya)	Livelihoods.	Oxfam Kenya working in Northern Kenya with pastoralist communities.
RANET	http://www.ranetproject.net/	Global	Communicating information on current variability for climate risk management	Seasonal forecasts and current meteorological information helps adaptation to current variability
Red Cross	http://www.redcross.org	Malawi, Kenya	Disaster Relief	Disaster Risk Reduction and climate change adaptation.
SAA	http://www.saa-tokyo.org/english/country/	Regional (All Africa)	Food security through improvements in crops and farming methods. Focus on technology transfer.	Crop breeding and transfer of agricultural technology and techniques, e.g. conservation tillage
SARRNET	http://www.iita.org/sarrnet/index.htm	Regional	New crop varieties, emphasis on cassava and sweet potato	Crop breeding, for example more drought tolerant varieties
Science and Technology Policy Research Institute		Ghana	Biotechnology	Climate change adaptation and biotechnology.
SSN - South South North	http://www.southsouthnorth.org/	Southern Africa	Community based adaptation and mitigation projects. Not just agriculture	Community based, capacity building. Various projects, e.g. solar powered water pumps (Moz.), more drought resistant Rooibos tea varieties (S. Africa)
Tyndall Centre	http://www.tyndall.ac.uk/	Africa	Modelling, Adaptation, Institutional barriers	Research into institutional barriers and opportunities for adaptation, for example in the case of trans-boundary watershed management of the Nile and Limpopo rivers.

VARTROP	http://www.geoconnexion.com/uploads/westafrica_intv5i6.pdf	West and Sub-Saharan Africa	Effects of current variability on food production in W.Africa and Sahel	No, although mapping the effects of current variability on food production in the Sahel is valuable for understanding what adaptation would be needed
WAMIS	http://www.wamis.org/		Provide data on current variability, and agrometeorological tools, to farmers and decision makers	Provides data and tools to help farmers manage current climate variability, e.g regular agro-meteorological bulletins
WCRP	http://www.wmo.ch/pages/prog/wcrp/	Global	Modelling, improving RCMs and making them relevant to different sectors, such as agriculture	No
World Vision	http://www.worldvision.org	Africa (all)	Poverty Reduction, agriculture	Radio programme produced in Uganda on climate change adaptation
WWF	http://www.worldwildlife.org	Africa (all)	Nature conservation, natural resource management.	Protected Area Management
ZERO	www.zeroregional.com	Regional, but mostly National/local in Zimbabwe	Agricultural Productivity, Rural Energy generation	Working as part of LCA and CLACC on capacity building. Looking at how to scale up local adaptation needs to national and international policy

Appendix B – Existing Networks in Africa related to climate change adaptation.

Networks	Website	Scale	Focus	Adaptation Strategies
ACCCA	http://www.acccaproject.org	Regional	Identify climate risks, assess knowledge about adaptation options and develop risk communication materials to aid adaptation decisions	Vary, but a focus on community led adaptation and indigenous adaptation responses. Strengthening local capacity through participatory assessment and planning exercises.
AIACC	http://www.aiaccproject.org/	Global	Assessing vulnerability and adaptation options	Projects vary; Assessing how extended climate forecasts could be used as adaptation in W. Africa, Adaptation to climate change induced vulnerability to Malaria in L. Victoria region etc. SEE APPENDIX C
ACSAD	http://www.acsad.org/	Arab states in Africa	Arab Center for the Studies of Arid Zones and Dry Lands: Arab organization working within the framework of the League of Arab States with the objective of unifying the Arab efforts which aim to develop the scientific agricultural research in the arid and semi-arid areas, help in the exchange of information and experiences and make use of the scientific progress and the modern agricultural techniques in order to increase the agricultural production.	No specific programmes in climate change adaptation.
AMMA	http://amma.mediasfrance.org/	West Africa	African Monsoon Multidisciplinary Analyses: improve our knowledge and understanding of the West African monsoon (WAM) and its variability with an emphasis on daily-to-interannual timescales.	Associated with CLIVAR and other climate related activities in Africa.

AOCRS	http://www.oact.dz/oact/	Africa (all)	African Organization of Cartography and Remote Sensing promote the development of cartographical, and remote sensing activities in Africa. They encourage the setting up of services for cartographical production and processing, remote sensing in order to assist economic, planning and improve the development of natural resources, desertification and disaster management.	Cartography, Natural Resource Mapping, Remote Sensing and Space Sciences, Geographical Information System, Early warning, Training
APINA	www.sei.se/rapid/apina.htm	Africa (all)	Air Pollution Information Network for Africa; APINA is a network of scientists, policy makers and private sector and non-governmental organisations from Africa. APINA's aim is to transfer relevant air pollution information to policy makers for informed decision making.	Collection of climate related data in Africa.
CCAA	http://www.idrc.ca/ccaa/	Regional	Capacity strengthening for adaptation; projects all run by Africans, in Africa	Projects vary but include developing tools for relaying meteorological information (Benin), communicating adaptation via plays (Nigeria), developing methods for increased smallholder production (Zambia and Zimbabwe). Scope is increasing in areas of climate change adaptation in Africa.
CLACC	http://www.clacc.net/	Global (LDCs)	Capacity building of LDCs for adaptation and sustainable development	Capacity building through information sharing. Involved with the NAPA process
CORN	http://www.zeroregional.com/corn/corn_index.htm	Regional	More traditional development network of CBOs. Focus on rural communities and information exchange between CBOs	More traditional development, with a focus on land, cross-border trade and capacity building in communities
FEWNET	http://www.fewnet.org	Global	The Famine Early Warning Systems Network (FEWS NET) provides early warning and vulnerability information on emerging and evolving food security issues. They monitor and analyze relevant data and information in terms of its impacts on livelihoods and markets to identify potential threats to food	Building capacity for national weather forecasting

			security in Africa and worldwide.	
GAWA	http://www.gawa.nu/gawadb_frame.htm	West Africa	The Green Actors of West Africa (GAWA) units the environmental movement across the region. Ghana, Guinea, Nigeria, Togo, Benin, Ivory Coast, Senegal, Mali, Burkina Faso, Sierra Leone, The Gambia and Liberia.	Biodiversity, forest restoration, conservation.
GEF-NGO Network,	http://www.gefngo.org/	Africa (all)	The Global Environment Facility NGO Network comprises GEF-accredited organizations whose work in environment and sustainable development is aligned with the GEF mandate. This website lists 289 NGO's for Africa which outline some form of work in climate change.	
IPACC			IPACC - Indigenous Peoples of Africa Coordinating Committee - carries out much training and awareness raising in CCA	
LCA	http://www.linkingclimateadaptation.org/	Africa (all)	Sharing information and experience among adaptation practitioners and policy-makers. Themes are CBA, Costs and Benefits, Disaster risk reduction, Governance and Policy, Key sectors, Methods and tools, and science and technology	Sharing information and experiences to improve adaptation practice. Specific projects vary depending on the organisation undertaking them.
NGO Climate & Development Network	http://climatdeveloppement.wordpress.com/	Africa	Launched by ENDA. The network is currently composed of more than 25 NGOs and networks of NGOs from 16 countries worldwide including Mali, Nigeria, Ghana, Senegal, Benin, Cameroon, DRC, France, USA, Niger, Burkina Faso, Suisse, Togo, Canada, Guinea Bissau, Guinea Conakry.	Advocacy, awareness, capacity building for NGOs from South and North on issues related to the main building blocks of negotiations within UNFCCC.
ODINAFRICA	http://www.odinafrica.net	Africa	Network of Marine institutions in Africa	Collection and dissemination of sea level data
PIREM	http://www.agrhymet.ne/PIREM/index.html	Africa (all)	Platform of Regional Institutions for the Environment and Meteorology	

REPAO	http://www.endadiapol.org	West Africa	Network on Fishery Policies in West Africa: works in bringing together organisations working to achieve the sustainable management of fisheries.	None specifically.
RING	http://www.ring-alliance.org	Global	Network of Policy Organisations working together on Climate Change, Trade and Sustainable Development	Focussing on the policy dimensions of how to build adaptive capacity in local communities
RIPIECSA	http://www.aird.fr/ripiecsa/projets_cibles.htm	West Africa	Interdisciplinary and Participatory Research on Interactions between the West African Ecosystems, Climate and Societies	Various climate change related activities in West Africa.
SAFNet	http://afis.meraka.org.za/safnet/	Southern Africa	Southern African Fire Network: a regional network that fosters collaborative efforts in fire monitoring and management in southern Africa.	Generation of data for fire management in southern Africa and estimation of greenhouse gas emissions from fires.

Appendix C: List of Examples of climate change adaptation projects in Africa

Country	Project Title	Focus Area of Project	Adaptation Strategies Employed	Sector Affected	Impacts	Geographic Scale	Rural or Urban setting	Case Description and Web-Link
Benin	Strengthening the Capacity to Adapt to Climate Change in Rural Bénin	Climate Risk Management	Agriculture; Resources; Planning; Empowerment;	Agriculture	Increase planning ability	National	Rural	The project will act at three levels in the decision-making hierarchy by facilitating coordination frameworks in six departments, supporting surveillance committees in 35 communes and fostering farmer experimentation in two field-schools in each commune. The main border partners will be farmers and elected officials. The overall aim is to reduce food insecurity and rural poverty in Bénin. www.idrc.org/ccaa
Botswana	Impacts of Climate Change, Vulnerability and Adaptation Capacity in the Limpopo Basin of Semi-Arid Land Southern Africa: The Case of Eastern Botswana	Addressing Vulnerability	Vulnerability Assessment	Agriculture	Impacts of climate change on water and food resources	National	Rural	The study will ascertain the degree of vulnerability and capacity to adapt to climate change and identify strategies to enhance locally based adaptation options www.aiaccproject.org
Burkina Faso	Rural Urban Cooperation on Water Management in the Context of Climate Change in Burkina Faso	Building Response Capacity; Climate Risk Management	Vulnerability Assessment	Disaster-risk management	Water resource management; conflict	National	Both Urban and Rural	Taking the hypothesis that climate adaptation in the city depends to a great extent on climate adaptation in the country, this project aims to reinforce cooperation between cities and rural areas in order to better cope with climate change and variability. www.idrc.org/ccaa

Egypt	Adaptation to the Impacts of Sea Level Rise in the Nile Delta Coastal Zone (Egypt)	Addressing Vulnerability	Vulnerability Assessment	Disaster-risk management	Sea Level Rise	National	Both Urban and Rural	<p>This project aims to demonstrate the value of stakeholder participation in evaluating the trade-offs between adaptation options in the stretch between Ras El Bar and Gamasa on the northern coast of Egypt. Researchers will carry out environmental assessments, investigate the socioeconomic and institutional aspects of vulnerability, deliberate with stakeholders on adaptation strategies, and build capacity through technology transfer, awareness raising, workshops, training exercises and institution strengthening</p> <p>www.idrc.org/ccaa</p>
Ethiopia	Coping with Drought and Climate Change	Building Response Capacity; Climate Risk Management	Agriculture; Resources; Planning; Empowerment; MEWS	Agriculture	Drought and Aridity; Decrease of Crop Yields	National	Rural	<p>Ethiopia is testing a range of adaptation measures, including agricultural practices to cope with drought and use of early warning systems for agriculture.</p> <p>(http://www.gefweb.org/Documents/Medium-Sized_Project_Proposals/MSP_Proposals/documents/Ethiopia-CopingwithDrought-CC.pdf)</p>
Ethiopia	Monitoring Drought and Food Security	Building Response Capacity; Climate Risk Management	MEWS	Disaster-risk management	Decrease of Crop Yields; Water Shortages; Drought and Aridity	National	Both Urban and Rural	<p>Ethiopia uses an early warning system to assess and communicate danger of food shortages.</p> <p>(http://iriportal.ldeo.columbia.edu/portal/server.pt/gateway/PTARGS_0_2_1171_0_0_18/Climate%20and%20Society%20No1_en.pdf)</p>
Ghana	Capacity Development and Adaptation to Climate Change on Human Health Vulnerability	Building Response Capacity; Climate Risk Management	Institutions; Planning; Policy	Human health	Spread of Vector-Borne Diseases	National	Both Urban and Rural	<p>Several organizations are collaborating to devise adaptation options in response to climate-related diseases, and to integrate adaptation into national and local health policy.</p> <p>(http://www.acccaproject.org/evolution/modules/knowledgebox/external2/view.php?id=298&kbid=5)</p>
Kenya	Low-Cost Locally-Made Sprinklers	Building Response Capacity	Technology	Agriculture	Decrease of Crop Yields; Water Shortages; Drought and Aridity	Community	Rural	<p>Small-scale farmers in Kenya have developed a way to make low-cost sprinklers out of recycled materials, helping farmers protect their crops from drought.</p> <p>(http://maindb.unfccc.int/public/adaptation/adaptation_case_study.pl?id_project=130)</p>

Kenya	Drought Cycle Management	Building Response Capacity; Climate Risk Management	Institutions; Infrastructure; Empowerment	Agriculture	Decrease of Crop Yields; Water Shortages; Drought and Aridity	Community	Rural	The Ilkerin Loita Integral Development Programme helps Loita Maasai pastoralists prepare for droughts by growing grain and accessing credit. (http://maindb.unfccc.int/public/adaptation/adaptation_case_study.pl?id_project=114)
Kenya	Integrating Climate Change Adaptation into Planning	Addressing Vulnerability Drivers; Building Response Capacity	Institutions; Empowerment; Planning	Disaster-risk management	Flooding; Drought and Aridity; Water Shortages	National	Rural	Kenya is integrating a climate-risk perspective into national and local policy-making and developing programs to enhance adaptive capacity in communities. (http://www.gefonline.org/ProjectDocs/ClimateChange/Kenya-AdaptationtoCCinAridLands(KACCAL)/ProjectDocumentFinal11-10-06.doc)
Kenya	Capacity Building to Evaluate and Adapt to Climate Change-Induced Vulnerability to Malaria and Cholera in the Lake Victoria Region	Building Response Capacity	Institutions; Empowerment; Planning	Human health	Spread of Vector-Borne Diseases	Community	Rural	The focus of this study is to improve the understanding of the relationship between climate change parameters (precipitation and temperature) and the incidences of malaria and cholera in the Lake Victoria region (Kenya, Uganda and Tanzania). www.aiaccproject.org
Kenya	Strengthening Community-Based Adaptation to Climate-Sensitive Malaria in the Western Highlands	Climate Risk Management	Awareness	Human health	Spread of Vector-Borne Diseases	Community	Rural	Several organizations are collaborating to develop a model of climate-sensitive malaria and appropriate risk communication strategies. (http://www.acccproject.org/evolution/modules/knowledgebox/external2/view.php?id=284&kbid=5)
Kenya	Capturing Seasonal Water in Sand Dams in Kitui	Addressing Vulnerability Drivers; Building Response Capacity	Technology; Resources	Water resources	Water Shortages; Drought and Aridity	Community	Rural	The SASOL Foundation helps communities build forested sand dams to provide a source of water during droughts. (http://maindb.unfccc.int/public/adaptation/adaptation_case_study.pl?id_project=170)

Kenya	Integrating Indigenous Knowledge in Climate Risk Management in support of Community Based Adaptation	Climate Risk Management	Empowerment	Agriculture	Indigenous Knowledge	Community	Rural	<p>Researchers will endeavor to integrate indigenous knowledge into scientific climate forecasts at the local level, where it can be used to enhance the resilience of communities vulnerable to climate change.</p> <p>www.idrc.org/ccaa</p>
Kenya	Enhancing Adaptation to Climate Change among Pastoralists in Northern Kenya	Addressing Vulnerability	Coping Strategies	Pastoralism	Drought and Aridity	Sub national	Rural	<p>This project seeks to shed light on pastoralists' vulnerability and coping strategies with respect to climate change in Turkana and Mandera districts, Northern Kenya. Researchers will examine indigenous technologies, best practices and existing institutional arrangements for adapting to climate change.</p> <p>www.idrc.org/ccaa</p>
Kenya	Flood Mitigation Structures in Nyanza	Climate Risk Management	Resources	Water resources	Damage to Human Settlements; Flooding	Sub national	N/A	<p>The Kenyan Red Cross trains communities in flood prevention and protection, including changes they can make to waterways to better control flooding.</p> <p>(http://maindb.unfccc.int/public/adaptation/adaptation_case_study.pl?id_project=109)</p>
Lesotho	Impacts And Adaptation to Climate Change for Subsistence Farming Communities: Lessons from Lesotho.	Addressing Vulnerability; Climate Risk Management.	Formulation of community based adaptation network and multi level policy dialogues.	Agriculture	Increased coping mechanisms for climate change adaptation.	National: Three Ecological Zones in Lesotho (Senqu valley, Foothills, Highlands)	Rural	<p>The Study will look at impacts of climate change on livelihoods of subsistence farming communities in Lesotho and current coping strategies and mechanisms that communities employ to adapt to climate change. Capacity building to make communities less vulnerable is also part of the project.</p> <p>Funding for this project is provided by START through a grant from the US National Science Foundation (GEO-0627839 "Capacity Building for Global Change"),</p>
Madagascar	Helping Ecosystems Adapt to Climate Change	Climate Risk Management	MEWS; Awareness; Resources	Coastal resources	Drought and Aridity; Flooding	National	Rural	<p>WWF and Conservation International are analyzing and raising awareness about the vulnerability of marine and terrestrial environments to climate change.</p> <p>(http://www.worldwildlife.org/climate/adaptation.cfm)</p>

Madagascar	Vulnerability and Adaptation to Climate Change : Agricultural Systems in Madagascar	Climate Risk management	Planning	Disaster-risk management	Multiple	National	Both Urban and Rural	This project will allow the University of Antananarivo to facilitate a dialogue between decision-makers and researchers at the national, regional and local level; to produce spatial information on the factors affecting vulnerability to climate change on the whole island of Madagascar; to better understand existing and possible adaptation strategies; to explore various intervention strategies under different scenarios; and to reinforce national capacity in analysis of climate change vulnerability and adaptation. www.idrc.org/ccaa
Malawi	Drought Insurance	Addressing Vulnerability Drivers; Climate Risk Management	Insurance; Technology	Agriculture	Decrease of Crop Yields; Drought and Aridity	Community	Rural	A joint private-sector project helps farmers cope with uncertainty through an insurance program for droughts and loans for seed purchase. (http://iriportal.ldeo.columbia.edu/portal/server.pt/gateway/PTARGS_0_2_1171_0_0_18/Climate%20and%20Society%20No1_en.pdf)
Malawi	Raising Preparedness for Climate Change	Climate Risk Management	Awareness	Disaster-risk management	Decrease of Crop Yields; Drought and Aridity	Community	Rural	The Red Cross is raising awareness of food security and disaster risks related to climate change. (http://www.climatecentre.org/downloads/File/preparing%20malawis%20preparing%20for%20climate%20change%20program%20july%202006.pdf)
Malawi	Audiovisual Tools for Community-Based Adaptation: Bridging the Meteorological Service and the Red Cross' Work	Climate Risk Management	Awareness	Disaster-risk management	Drought and Aridity; Flooding	Community	Rural	The Red Cross and partner organizations are finding creative ways to communicate climate predictions to subsistence farmers. (http://www.acccaproject.org/evolution/modules/knowledgebox/external2/view.php?id=294&kbid=5)
Mali	Agrometeorology Project	Climate Risk Management	MEWS; Awareness; Technology	Agriculture	Decrease of Crop Yields	National	Rural	The government of Mali and the Swiss Agency for Development and Cooperation use data collected by farmers to help farmers make planting decisions. (http://iriportal.ldeo.columbia.edu/portal/server.pt/gateway/PTARGS_0_2_1171_0_0_18/Climate%20and%20Society%20No1_en.pdf)

Mali	Climate Adaptation from the Bottom-up: Collaboration between Malian Communities and Scientific Organizations to Identify and Implement Responsive Water Management Actions	Building Response Capacity; Climate Risk Management	Awareness; Planning	Water resources	Water Shortages; Drought and Aridity	Community	Rural	Several organizations are collaborating to raise awareness and plan for the future regarding water resources and climate change. (http://www.acccaproject.org/evolution/modules/knowledgebox/external2/view.php?id=290&kbid=5)
Mauritius	Sensitisation on Environment Protection with Emphasis on Climate Change	Building Response Capacity; Climate Risk Management	Awareness; Technology	Coastal resources	N/A	National	Both Urban and Rural	Environment Care Association is spreading awareness of climate change through talks and booklet distribution to schools, women's groups, and youth organizations. (http://sgp.undp.org/web/projects/11569/sensitisation_on_environment_protection_with_emphasis_on_climate_change.html)
Morocco	Using Demand Side Management to Adapt to Water Scarcity and Climate Change in the Saiss Basin	Building Response Capacity	Awareness; Planning	Agriculture	Water Resources Policy	National	Rural	This project will examine whether demand-side management (DSM) can provide a solid basis for water management and strengthen the capacity for adapting to climate change in the Saiss basin. www.idrc.org/ccaa
Morocco	Moroccan Coastal Management : Building Capacity to Adapt to Climate Change through Sustainable Policies and Planning	Building Response Capacity	Awareness; Planning	Coastal resources	Coastal Inundation or Erosion; Vulnerability	National	Both Urban and Rural	This project will support capacity building and the development of tools and methods to underpin preparation for and responses to climate-related events in coastal zones. Researchers will identify population vulnerability; develop adaptation strategies and land use guidelines while optimizing the tradeoffs between different stakeholders; and enhance local capacity for participatory planning. www.idrc.org/ccaa

Morocco	Adaptation to Climate Change in two Rural Communities on the Plains and in the Mountains of Morocco	Building Response Capacity	Awareness; Planning	Agriculture	Plains and mountain areas	Subnational	Rural	This project aims to build the adaptive capacity of two poor rural communities vulnerable to the effects of climate change. Building on assessments of past and projected climate change impacts on natural resources, agricultural systems and local residents, the research team will analyze risk behaviour under different climatic scenarios and strengthen local capacity to identify and formulate appropriate technical, institutional and policy options. The research will also support the development of community-based action plans. www.idrc.org/ccaa
Morocco	Engaging Action Research in Adaptation to Climate Change at the Community Level in Morocco	Building Response Capacity	Planning	Agriculture	Water Resources Policy	National	Rural	This grant will support a series of project planning workshops for community-based partners to develop a proposal on community adaptation to climate change with respect to desertification and reduction of water resources. www.idrc.org/ccaa
Mozambique	Coping with Drought and Climate Change	Building Response Capacity; Climate Risk Management	Infrastructure; Resources; Agriculture; Institutions; MEWS	Agriculture	Drought and Aridity	Community	Rural	Mozambique is testing a range of drought adaptation measures, such as diversifying livestock and crops, assuring access to water and land, and developing an early warning system. (http://www.gefweb.org/Documents/Medium-Sized_Project_Proposals/MSP_Proposals/documents/Mozambique-CopingwdDrought-CC.pdf)
Mozambique	Zambezi Valley Market-Led Smallholder Development	Addressing Vulnerability Drivers	Institutions; Empowerment; Agriculture	Agriculture	Land Degradation/Soil Erosion; Decrease of Crop Yields; Damage to Human Settlements	Subnational	Rural	A market-oriented smallholder development project aims to accelerate agricultural growth and reduce poverty in the face of drought and land degradation. (http://www.gefonline.org/projectDetails.cfm?projID=2889)
Mozambique	Disaster Preparedness for Climate Change	Climate Risk Management	Awareness; Institutions	Disaster-risk management	Landslides; Spread of Vector-Borne Diseases; Flooding	Subnational	N/A	The Red Cross is strengthening its disaster preparedness capacity and promoting awareness of climate change impacts. (http://www.climatecentre.org/downloads/File/dealing%20with%20climate%20change%20in%20mozambique%20july%202006.pdf)

Mozambique	Integrating Adaptation to Climate Change within Disaster Risk Management Systems in the Búzi River Catchment Area	Building Response Capacity; Climate Risk Management	Policy; Planning	Disaster-risk management	Flooding	Subnational	Rural	The Programme for Rural Development is preparing the Buzi district for storms and floods by establishing preparedness committees and early warning systems and promoting risk reduction policy. (http://www.gtz.de/en/themen/umwelt-infrastruktur/umweltpolitik/16057.htm)
Mozambique	Clean Water and Energy Project	Building Response Capacity; Climate Risk Management	Technology; Resources	Water resources	Water Shortages; Drought and Aridity	Community	Rural	SouthSouth North and local partners are supplying farmers with renewable energy to combat water shortage. (http://www.southsouthnorth.org/country_home.asp?country_id=11#165)
Mozambique	ADAPTIVE	Local responses to climate variability	Institutions, Awareness,	Disaster-risk management	Drought, Aridity, climate variability	Community	Rural	The ADAPTIVE Project worked with the National Institute for Disaster Management (INGC), Department of Agriculture, University Eduardo Mondlane and Save the Children US in southern Mozambique to assess the characteristics of local responses used to cope with livelihood disturbance, particularly to climate variability and extremes in Nwadjahane village. www.idrc.org/ccaa
Multinational (Fiji, Cameroon, Tanzania)	Mangroves and Coral Reef Conservation	Climate Risk Management	Resources; Planning; Technology; Institutions	Coastal resources		Multinational	Rural	WWF is testing methods to restore degraded mangrove forests to make them resilient to climate change. (http://www.panda.org/about_wwf/what_we_do/climate_change/problems/global_warming/scientific_proof/ipcc_report/cameroon.cfm)
Multinational (East Africa)	Linking African Researchers with Adaptation Policy Spaces	Building Capacity Response		Multiple	Multiple	Multinational	Both Urban and Rural	Researchers will investigate the complexity of adaptation policy processes in different countries and identify policy spaces; use this knowledge to build policy engagement tools and strategy; develop an analytical framework for investigating climate change adaptation policy processes in Africa. www.idrc.org/ccaa

Multinational (East Africa)	Transferring the Malaria Epidemic Prediction Model to Users in East Africa	Addressing Vulnerability,	Planning	Human health	Malaria	Multinational	Both Urban and Rural	About 80% of statistical variation in malaria incidence can be explained by rainfall and temperature. Current methods of detection do not provide sufficient lead-time to introduce effective intervention. In 2001, however, a malaria epidemic prediction model was developed by the Kenya Medical Research Institute that uses climatic factors to detect an epidemic 2-4 months before its occurrence, allowing sufficient time for intervention. This project will fine-tune the model, incorporate site-specific factors and transfer it to end users in Kenya, Tanzania and Uganda. www.idrc.org/ccaa
Multinational (North and East Africa)	Managing Risk, Reducing Vulnerability and Enhancing Productivity under a Changing Climate	Climate Risk Management	Vulnerability Assessment, Planning	Disaster-risk management	Drought	Multinational	Rural	This action-research project seeks to contribute to the development of adaptive strategies by gathering knowledge on vulnerability to drought within different social, political and economic contexts, and designing decision-making tools to reduce vulnerability. www.idrc.org/ccaa
Multinational (North Africa)	Adapting to Water Scarcity and Climate Change in North Africa : Exploring the potential for Demand Side Management	Addressing Vulnerability,	Vulnerability Assessment	Disaster-risk management	Water Resources	National	Urban	Support two project development meeting 1. Looking at demand-side management in North Africa and identify points of entry for management options at policy level. 2. A technical meeting where participants will outline in detail the technical issues that need to be addressed in order to use demand-side modeling techniques to define water management scenarios relevant to regional conditions. www.idrc.org/ccaa
Multinational (North Africa)	Assessment of Impacts, Adaptation, and Vulnerability to Climate Change in North Africa: Food Production and Water Resources.	Addressing Vulnerability Drivers	Vulnerability Assessment	Agriculture	Food Security and water resources	Multinational	Both Urban and Rural	This study will enhance scientific and technical capacity in countries in North Africa for: (1) assessing current and future adaptive capacity and vulnerability of food production and water resources; (2) enhancing adaptive capacity in current and future conditions; and (3) synthesizing lessons learned in the region. The project will compare the results of three case studies representing a range of climate and agricultural systems (Nile Delta (Egypt), Settat Province (Morocco), Center Region (Tunisia)) and integrate the results in a North Africa wide context. www.aiaccproject.org

Multinational (Burkina Faso, Cameroon, Ethiopia, Kenya,South Africa)	Advancing Capacity to Support Climate Change Adaptation : Five Pilot Projects	Addressing Vulnerability Drivers	Institutions; Awareness; Policy; Infrastructure	Disaster-risk management	Food Security and water resources	Multinational	Both Urban and Rural	This project seeks to reduce the vulnerability of poor populations in sub-Saharan Africa to climate change by mobilizing scientists and all the other actors concerned to inform political decision-making. It will do so by means of five pilot projects in rural and urban populations. The project will emphasize the generation, organization and communication of information on the risks resulting from climate change, climate variability and extreme climatic events, as well as preparation for their effects on food security (Cameroon, Ethiopia, Kenya) and water supply (South Africa, Burkina Faso). www.idrc.org/ccaa
Multinational (Nepal, Malawi, Haiti, Kenya, Ghana, Bangladesh, India)	Disaster Risk Reduction through Schools	Building Response Capacity; Climate Risk Management	Institutions; Awareness; Policy; Infrastructure	Disaster-risk management		Community	N/A	Action Aid is making schools in high-risk disaster areas safer, enabling them to act as a locus for disaster risk reduction. (http://www.actionaid.org/main.aspx?PageID=212)
Multinational (All Africa)	Capacity Building in Analytical Tools for Estimating and Comparing Costs and Benefits of Adaptation Projects in Africa	Building Response Capacity	GCM Scenario Building	Agriculture	Cost Analysis	Multinational	Both Urban and Rural	The key objective of this project is to help build and strengthen the institutional capacity within Africa to develop and implement analytical tools for estimating and comparing the costs and benefits of adaptation projects in key economic sectors. www.aiaccproject.org
Multinational (Southern African countries)	New Seed Initiative for Maize	Addressing Vulnerability Drivers	Technology; Empowerment	Agriculture	Drought and Aridity; Land Degradation/So il Erosion	Multinational	Rural	The New Seed Initiative for Maize in Southern Africa provides poor farmers with drought-resistant seed. (http://www.sdc.admin.ch/en/Home/Projects/Maize_initiative)
Multinational (Southern African countries)	Resilience and the African Smallholder : Enhancing the Capacity of Communities to Adapt to Climate Change	Addressing Vulnerability	Vulnerability Assessment	Agriculture	Food Security	National	Rural	This project aims to enhance the ability of households, communities and relevant institutions to respond to changing circumstances with a view to reducing future threats to food security and environmental integrity. It will do so by working with farmers to identify improved farming technologies, and translating the results into action plans at the appropriate institutional level whether local or national. www.idrc.org/ccaa

Multinational (Southern African countries)	Malaria Early Warning and Respose	Climate Risk Management	MEWS	Human health	Spread of Vector-Borne Diseases	Multinational	N/A	The Roll Back Malaria Initiative developed a monitoring and early warning system that uses climatic data to predict malaria outbreaks. (http://iriportal.ldeo.columbia.edu/portal/server.pt/gateway/PTARGS_0_2_1171_0_0_18/Climate%20and%20Society%20No1_en.pdf)
Multinational (West African countries)	West Africa Agricultural Productivity Program	Building Response Capacity	Technology; Institutions	Agriculture	N/A	Multinational	Rural	The West Africa Agricultural Productivity Program Support Project generates and disseminates agricultural technologies and information. (http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P094084)
Multinational (West African countries)	Rural Households and Drought in the Sahel Region of West Africa: Vulnerability and Effective Mitigation Measures	Addressing Vulnerability,	Vulnerability Assessment	Agriculture	Drought	Multinational	Rural	The objective of this study is to identify the groups most vulnerable to climate variability and change, and understand the nature of this vulnerability in relation to adaptive capacity. A number of villages and communities in Nigeria and Mali will be selected for inclusion in the project and will be stratified into levels of drought severity based on existing indices and stakeholder consultation. Combining climate data from historical and baseline records, and non-climate data that will be obtained through stakeholder consultations using ethnographic and participatory research, the study will build an impact model for the study region. A guided sensitivity analysis will be carried out on the impact model by applying incremental scenarios based on changes to the key climatic variables as produced by GCMs, which contribute to the impact model. www.idrc.org/ccaa
Multinational (West African countries)	Food Security and Climate Change in Sub-Saharan West Africa	Addressing Vulnerability	GCM Scenario Building	Agriculture	Food Security	Multinational	Both Urban and Rural	The primary objective of the project is to undertake a study of the vulnerability of food crop production to inter-annual climate variability and extreme weather events in West Africa and to assess how extended weather and climate forecasts could be employed as a basic adaptation strategy to ameliorate the impacts. www.aiaccproject.org

Multinational (West African countries)	Adapting Fishing Policy to Climate Change with the Aid of Scientific and Endogenous Knowledge	Climate Risk Management	Planning	Coastal resources	Decline In Productivity of Fisheries	Multinational	Both Urban and Rural	<p>This project aims to improve fishing practices and policies in the face of climate change in six countries - Cap Vert, Gambia, Guinée, Guinea Bissau, Mauritanie and Sénégal. It will do so by facilitating twice-yearly meetings at three levels (sub-regional, national and local), bringing together political decision-makers, researchers, representatives of fisher associations and managers of projects and programs.</p> <p>www.idrc.org/ccaa</p>
Multinational (West African countries)	Real Life Stories of Communities Adapting to Environmental Change : the Human Dimension of Climate Change Adaptation	Climate Risk Management; Building Response Capacity	Vulnerability Assessment	Agriculture	Indigenous Knowledge and Drought	Sub national	Rural	<p>Under the knowledge component, researchers will endeavor to understand community perception of adaptation practices and coping strategies; craft strategies to help IDRC partners engage with communities; and identify knowledge gaps where research-generated solutions could complement existing approaches to adaptation. The capacity building component will provide communities with the opportunity to formulate their needs and demands with respect to adaptation.</p> <p>www.idrc.org/ccaa</p>
Multinational (West African countries)	Responding to Shoreline Change and its Human Dimensions through Integrated Coastal Area Management	Building Response Capacity; Climate Risk Management	Planning	Coastal resources	Coastal Inundation or Erosion; Decline in Productivity of Fisheries; Biodiversity Loss	Community	N/A	<p>The UNDP is incorporating climate change concerns, such as coastal erosion and declining fish stocks, into integrated coastal management.</p> <p>(http://www.undp.org/gef/adaptation/projects/06c.htm)</p>
Multinational (Southern African countries)	Strengthening Local Agricultural Innovation Systems in Less Favorable and High-Potential Areas of Tanzania and Malawi	Building Response Capacity	Planning	Agriculture	Agricultural innovation systems	Community	Rural	<p>This action-research project aims to bring together institutions and individuals from the research, policymaking and farming communities to develop agricultural innovation systems that are better able to adapt to climate change and variability.</p> <p>www.idrc.org/ccaa</p>
Multinational (Southern African countries)	Integrated Assessment of Miombo Region: Exploration of Impacts and Adaptation Options in Relation to Climate Change and Extremes	Addressing Vulnerability	Vulnerability Assessment	Agriculture	land use and its impacts on food production systems and food security	Community	Rural	<p>The goal of this project is to assess vulnerability and explore adaptation options to climate variability and extreme events in the Miombo region, including areas of Malawi, Zambia, Zimbabwe, and Mozambique that lie within the drainage basin of the Zambezi River.</p> <p>www.idrc.org/ccaa</p>

Multinational (Sub-Saharan Africa)	Altering the Climate of Poverty under Climate Change : the Forests of Congo Basin	Ecosystem Management and Climate Change	Resources; Planning	Forestry	Sustainable use of forest resources	Multinational	Rural	<p>This project aims to underscore the importance of the Congo basin forests in climate change adaptation efforts in Cameroon, Central African Republic and the Democratic Republic of Congo. Researchers will map adaptation priorities and policies in the countries under study. They will engage with stakeholders to ensure that local perspectives are brought to bear on forest management strategies</p> <p>www.idrc.org/ccaa</p>
Niger	Niger Basin Water Resources Development and Sustainable Ecosystems Management Project	Building Response Capacity	Institutions; Resources; Infrastructure	Water resources	N/A	Subnational	Both Urban and Rural	<p>The Niger Basin Authority is working to improve watershed management, irrigation, hydroelectric power, and institutional coordination on water resources.</p> <p>(http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P093806)</p>
Nigeria	Strengthening the Capacity of Smallholder Farmers to Adapt to Climate Change through Radio Drama (Nigeria)	Building Response Capacity	Awareness	Agriculture	Communicating Adaptation Strategies to the Public	Nationally	Both Urban and Rural	<p>This project will support the production and test of a 26-episode radio drama featuring climate adaptation content. The episodes will be produced locally in two local languages and broadcast weekly by five radio stations over a period of six months.</p> <p>www.idrc.org/ccaa</p>
Nigeria	Second National Fadama Development Project	Addressing Vulnerability Drivers; Building Response Capacity	Technology; Infrastructure	Agriculture	Decrease of Crop Yields; Water Shortages; Drought and Aridity	Subnational	Rural	<p>The World Bank's <i>fadama</i> irrigation project helps ensure water availability during times of drought.</p> <p>(http://maindb.unfccc.int/public/adaptation/adaptation_case_study.pl?id_project=152)</p>
Senegal	ENDA-SYSPRO Sustainable Agro-Forestry Practice	Addressing Vulnerability Drivers; Building Response Capacity	Institutions; Resources	Agriculture	Water Shortages; Drought and Aridity; Decrease of Crop Yields; Land Degradation/ Soil Erosion	Community	Rural	<p>Environnement et developpement du tiers monde helps farmers set up agroforestry up co-ops, reducing erosion and improving food security in the face of droughts.</p> <p>(http://www.cckn.net/pdf/seeing_the_light_dre.pdf)</p>

Senegal	Partnership for adapting Vulnerable Populations to Soil Salinization resulting from Climate Change in Sénégal	Building Response Capacity	Awareness	Agriculture; Water Resources	Salinization and acidification of land	National	Both Urban and Rural	This project aims to increase the capacity of rural communities, community-based organizations, and local and national decision-makers to deal with soil salinization www.idrc.org/ccaa
Senegal	InfoClim : Platform for Helping Vulnerable Communities Adapt to Climate Change	Building Response Capacity	Vulnerability Assessment	Multisectoral	Livelihoods	Subnational	Rural	Project InfoClim will establish a platform to facilitate the integration of scientific information, local adaptation strategies and policies for reducing vulnerability in Sénégal. Working in several villages belonging to four communities in the region of Thiès, the project will put in place an observatory of climate change, sensitize local actors, and identify and implement adaptation strategies to improve the living conditions of vulnerable populations www.idrc.org/ccaa
Senegal	Assessing Global And Regional Climate Change Scenarios for West Africa	Addressing Vulnerability	Vulnerability Assessment	GCM Scenario Building		Regional	Both Urban and Rural	This project seeks to build capacity for assessing climate change scenarios from global and regional climate model simulations for use in impact studies in West Africa. The project will address the need to (a) Assess global circulation model (GCM) and regional climate model simulations for present and future climate states in order to examine the processes that bring about new climate states; (b) Determine whether these changes are realistic given the current understanding of the West African Climate system; and (c) Provide model output to other disciplines to examine how potential changes in climate might affect key sectors on national and regional scales in West Africa. An important component of this proposal is capacity building of West Africa institutions www.aiaccproject.org
Senegal	The German/Senegalese Photovoltaic Solar Energy Project, at Diaoulé and Ndiébel.	Addressing Vulnerability Drivers; Building Response Capacity	Empowerment; Infrastructure	Energy, Agriculture	Water Shortages; Drought and Aridity; Decrease of Crop Yields; Land Degradation/Soil Erosion	Community	Rural	The German/ Senegalese Photovoltaic Solar Energy Project installs solar energy in remote villages for use in homes and farming operations, helping residents cope with water shortage. (http://www.cckn.net/pdf/seeing_the_light_dre.pdf)

South Africa	Adaptation by Small Scale Rooibos Tea Farmers in Wypperthal and Suid Bokkeveld areas of Western and Northern Cape	Addressing Vulnerability Drivers; Climate Risk Management	Agriculture; Empowerment; Awareness	Agriculture	Decrease of Crop Yields; Water Shortages	Community	Rural	<p>SouthSouthNorth and Indigo Development and Change are helping farmers adapt their practices to anticipated climate change</p> <p>(http://www.southsouthnorth.org/country_home.asp?country_id=11#159)</p>
South Africa	Climate for Water (C4W)	Building Response Capacity; Climate Risk Management	Awareness; Resources	Water resources	Water Shortages	National	N/A	<p>The Climate for Water project aims to improve climate prediction tools from a water resources perspective.</p> <p>(http://www.c4w.org.za/c4w/custom/com/c4w/home/index.jsp)</p>
South Africa	Impacts and Adaptations to Climate Change by the Biodiversity Sector in Southern Africa	Ecosystem Management and Climate Change	Development of Tools	Ecosystems	Biodiversity	National	Rural	<p>The project aims to develop, test and promote tools for planned adaptation in the biodiversity conservation sector. Training and awareness-raising, particularly among professional biodiversity managers and policy-makers within the South African Development Community. This project has Robert Scholes, CSIR Division of Water, Environment and Forest Technology, South Africa as implementers.</p> <p>www.aiaccproject.org</p>
South Africa	Managing Climate Risk to Agriculture and Water Resources in South Africa	Building Response Capacity	Planning	Water resources	Water shorages	Subnational	Both Urban and Rural	<p>The project will feature a previously tested model, extensive stakeholder engagement and capacity-building for local scientists. The idea is to enable private and public institutions in the Western Cape and the country to better integrate information on climate change and climate variability into water resources policy, planning and management.</p> <p>www.idrc.org/ccaa</p>
South Africa	Development of Regional Climate Change Scenarios for Sub-Saharan Africa	Assessing Vulnerability	GCM Scenario Building		Multiple	National	Rural/Urban	<p>The primary component of this work will be to extend existing capacity among African scientists in issues of method and implementation for regional scenario construction. The work is undertaken by the Climate System Analysis Group, University of Cape Town, South Africa</p> <p>www.aiaccproject.org</p>

Sudan	Community-Based Rangeland Rehabilitation for Carbon Sequestration, Bara Province	Building Response Capacity	Resources; Agriculture; Empowerment; Institutions	Agriculture	Drought and Aridity	Community	Rural	The Community-Based Rangeland Rehabilitation (CBRR) for Carbon Sequestration project helps communities in Bara province manage farms and forests and prepare for drought. (http://www.aiaccproject.org/working_papers/Working%20Papers/AIACC_WP42_Osman.pdf)
Sudan	Khor Arba'at Rehabilitation Project	Addressing Vulnerability Drivers; Building Response Capacity	Resources; Agriculture	Agriculture	Drought and Aridity	Community	Rural	In the name of food security and enhanced livelihoods, SOS Sahel is improving water management, agricultural practices for farming in arid areas, credit, and literacy. (http://www.aiaccproject.org/working_papers/Working%20Papers/AIACC_WP42_Osman.pdf)
Sudan	Increasing Human Resilience to Climate Variability and Change in the Agricultural Sector in El Fashir, North Darfur	Addressing Vulnerability Drivers; Building Response Capacity	Resources; Agriculture	Water resources	Drought and Aridity	Community	Rural	Intermediate Technology Development Group supports community-developed water conservation and agricultural practices that help cope with drought and warming. (http://www.aiaccproject.org/working_papers/Working%20Papers/AIACC_WP42_Osman.pdf)
Sudan	Environmental Strategies for Increasing Human Resilience in Sudan: Lessons for Climate Change Adaptation in North and East Africa	Addressing vulnerability	Resources; Agriculture	Agriculture	Drought and Aridity	Subnational	Rural	This project aims to identify cost-effective environmental management measures that can contribute most to the resilience and adaptive capacity of vulnerable communities and agricultural systems in Sudan and other drought-prone countries, specifically in the areas of agriculture, including food crop production, silviculture and animal husbandry to climate-related disasters and long-term climate change www.aiaccproject.org
Tanzania	Hifadhi Ardhi Shinyanga (HASHI) Project	Addressing Vulnerability Drivers; Building Response Capacity	Resources	Agriculture	Land Degradation/Soil Erosion; Drought and Aridity	Subnational	Rural	The Ministry of Natural Resources and Tourism is reviving a traditional soil conservation practice known as <i>nigtili</i> to cope with droughts. (http://maindb.unfccc.int/public/adaptation/adaptation_case_study.pl?id_project=117)

Tanzania	Shifting of Shallow Water Wells Affected by Inundation in Coastal Regions	Addressing Vulnerability Drivers; Climate Risk Management	Infrastructure; Resources; Empowerment	Water resources	Water Shortages; Spread of Vector-Borne Diseases	Community	Rural	<p>SouthSouthNorth and local partners are addressing groundwater salinization by testing well-water and drilling new wells in agricultural areas.</p> <p>(http://www.southsouthnorth.org/country_home.asp?country_id=11#146)</p>
Tanzania	Adaptation Strategies and Challenges Associated with Climate and Ecological Changes to the Lake Victoria Community	Building Response Capacity	Agriculture; Resources	Water resources	Drought and Aridity; Decline in Productivity of Fisheries	Community	Rural	<p>Several organizations are collaborating to solve problems of overfishing and potable water shortages in Lake Victoria and will explore aquaculture as a reduction in vulnerability to climate change.</p> <p>(http://www.acccaproject.org/evolution/modules/knowledge_box/external2/view.php?id=297&kbid=5)</p>
Tanzania	Formation of Water User Associations and River Namwi Catchments for Sustainable Irrigation	Building Response Capacity	Resources; Awareness; Institutions	Water resources	N/A	Community	Rural	<p>The Mwashu Water User Group is training communities in water management and irrigation to combat water shortages.</p> <p>(http://sgp.undp.org/web/projects/11331/formation_of_water_user_association_and_river_namwi_catchments_for_sustainable_irrigation_at_mwashu.html)</p>
Tanzania	Mainstreaming Climate Change in Integrated Water Resources Management in the Pangani River Basin	Climate Risk Management	Technology; Planning	Water resources	Decrease of Crop Yields	Subnational	N/A	<p>Tanzania is preparing for climate change impacts on the Pangani River by improving technical knowledge and watershed management.</p> <p>(http://www.gefweb.org/Documents/Medium-Sized_Project_Proposals/MSP_Proposals/documents/Tanzania-PanganiMainstreaming.pdf)</p>
Tanzania	Water Sector Support Project	Building Response Capacity	Institutions; Resources; Policy	Water resources	N/A	National	Both Urban and Rural	<p>The Water Sector Support Project is strengthening institutions for integrated water resources management and broadening access to water supply and sanitation.</p> <p>(http://web.worldbank.org/external/projects/main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P087154)</p>

Tunisia	Adapting to Climate Change in the Agricultural Sector	Building Response Capacity	Policy; Awareness	Water resources	Drought and Aridity; Decrease of Crop Yields	National	Rural	GTZ helped Tunisia develop a National Adaptation Strategy. (http://www.gtz.de/de/dokumente/en-climate-results-maghreb.pdf)
Uganda	Goat Breeding in Moroto and Nakapiripirit	Addressing Vulnerability Drivers	Agriculture	Agriculture	Decline in Productivity of Livestock and/or Poultry; Drought and Aridity	Subnational	Rural	The Karamoja Agro-pastoral Development Programme provides women with crossbred goats and instruction in graze-free feeding to improve goat survival during droughts. (http://maindb.unfccc.int/public/adaptation/adaptation_case_study.pl?id_project=35)
Uganda	Mainstreaming Adaptation to Climate Change in the Development Process	Building Response Capacity; Climate Risk Management	Technology; Awareness; Agriculture	Agriculture	Water Shortages; Decrease of Crop Yields; Drought and Aridity	Subnational	Rural	The Radio and Internet Project enhances collection and dissemination of early warning and climate information at the local level through radio and internet. (http://www.acts.or.ke/pubs/monographs/pubs/ecopolicy15.pdf)
Zimbabwe	Improving Water Efficiency in Mudzi and Gwanda	Climate Risk Management	Agriculture; Resources	Agriculture	Water Shortages; Land Degradation/Soil Erosion; Drought and Aridity	Community	Rural	The ISSD and Zimbabwe ENDA Community Drought Mitigation project helps farmers improve water-use efficiency and decrease runoff as a way of coping with droughts. (http://maindb.unfccc.int/public/adaptation/adaptation_case_study.pl?id_project=120)
Zimbabwe	Coping with Drought and Climate Change	Addressing Vulnerability Drivers; Climate Risk Management	Planning; Agriculture; MEWS; Resources	Agriculture	Drought and Aridity; Decrease of Crop Yields	Subnational	Rural	Zimbabwe is promoting sustainable livelihoods in the face of drought, enhancing use of early warning systems, and developing community drought preparedness plans. (http://www.undp.org/gef/adaptation/docs/CwD2/CwD_MSP_Zim_PAC2.ppt)

Zimbabwe	Wind Power Development in Tamaruru and Dumbamwe	Addressing Vulnerability Drivers	Technology	Energy; Water resources	Water Shortages; Decrease of Crop Yields; Spread of Vector-Borne Diseases; Biodiversity Loss; Drought and Aridity	Community	Rural	ZERO installed wind power for home use and irrigation pumps, helping rural villages cope with water shortage. (http://www.cckn.net/pdf/seeing_the_light_dre.pdf)
----------	---	----------------------------------	------------	-------------------------	---	-----------	-------	--



Climate Change Adaptation Unit (CCAU)
Division of Environmental Policy Implementation (DEPI)
United Nations Environment Programme (UNEP)
P.O. Box 30552 Nairobi, 00100
Kenya

Tel: (+254) 20 762 3508
Fax: (+254) 20 762 3917

Email: Musonda.Mumba@unep.org
www.unep.org/depi/