ADVANCING CAPACITY FOR CLIMATE CHANGE ADAPTATION - ACCCA

Description of nineteen Pilot Actions In Asia and Africa

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Description of nineteen Pilot Actions in Asia and Africa

ADVANCING CAPACITY FOR CLIMATE CHANGE ADAPTATION (ACCCA)

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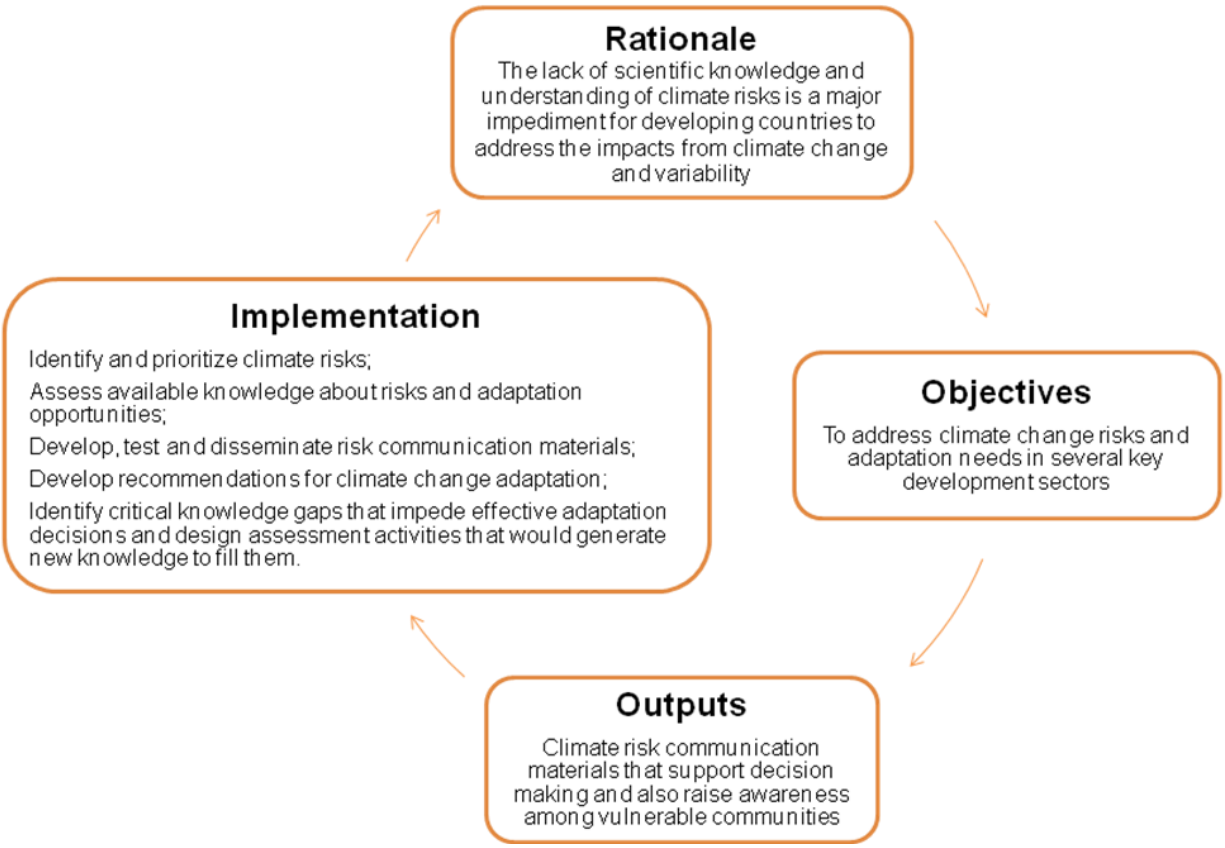
OVERVIEW OF THE ACCCA METHODOLOGY



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1 Community-led Climate Adaptation Programme for Sustainable Livelihoods in Coastal Areas of South Western Nigeria

Region / Country

Low-lying coastal area of Ogun state on Nigeria's coast

Sector

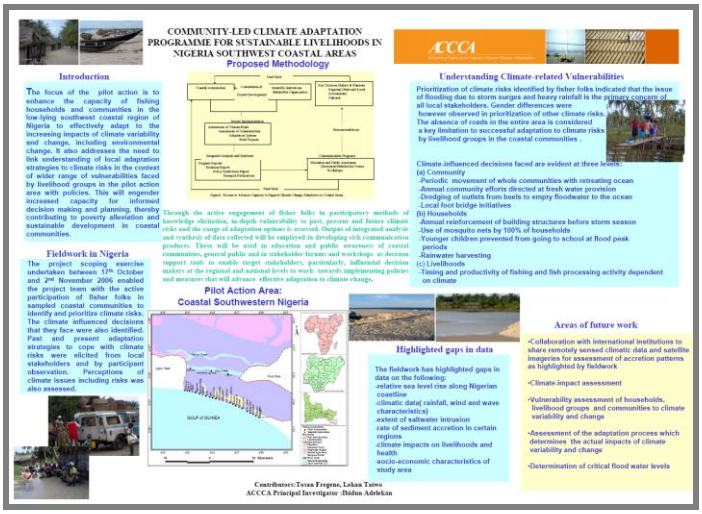
Fisheries and Livelihoods

Target Population

25 fishing communities

Principal Investigator

Dr. Ibidun Onikepo Adelekan
University of Ibadan



Project Focus

Livelihoods are now recognized as a key element in people's adaptive capacity and vulnerability to climate-related stresses. This project used livelihoods as an entry point to enhance the capacity of fishing households and communities in Nigeria's low-lying southwest coastal region to effectively adapt to the increasing impacts of climate change.

Project Rational

The region of southwest Nigeria is subject to coastal flooding, erosion and coastal submergence, which have affected livelihoods and food security. Communities are often submerged with floodwater for a period of 3-4 weeks annually during which socio-economic activities including the movement of people, fishing and marketing activities are suspended, and infrastructure is damaged. Through an examination of fishing households' and communities' vulnerabilities to historical, present and future climate change, this project enabled livelihood groups to share their experiences and concerns. It also allowed them to effectively contribute to decision-making that addresses vulnerability reduction and strengthens adaptive capacities.

Project Outputs

The outputs will include the promotion of self-help livelihood groups to implement indigenous climate change adaptation options and poverty alleviation strategies. Local context-specific needs and adaptation strategies were also communicated to influential decision-makers. By addressing locally relevant climate-related risks, the projects contributed towards regional poverty alleviation and sustainable development by enhancing the adaptive capacity of local people to cope with climate change impacts.

2 Food Security and Adaptation to Climate Change in the Afram Plains of Ghana

Region / Country

Savannah Zone, Ghana

Sector

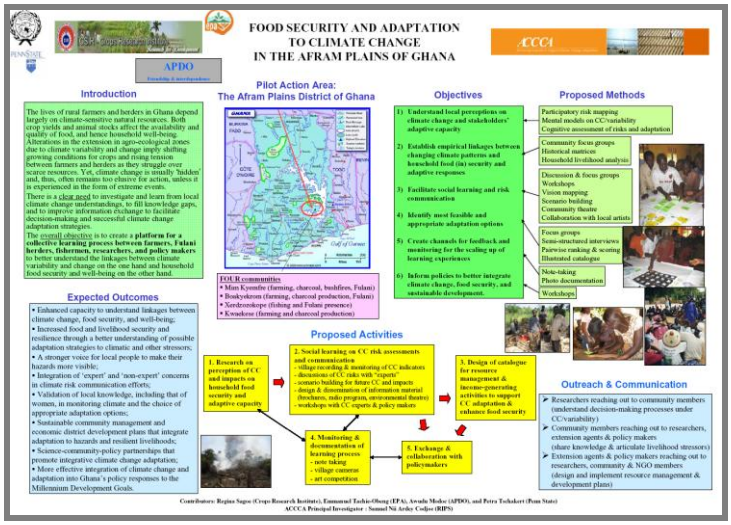
Food Security and Livelihoods

Target Population

Small-scale, poor marginal land users, extension agents, national researchers and policy decision-makers

Principal Investigator

Dr. Samuel Nii Ardey Codjoe, Regional Institute for Population Studies



Project Focus

The broad purpose of this project was to design and implement successful and sustainable climate change adaptation strategies that address food security, livelihood sustainability and poverty reduction in rural areas of Ghana. Its main goals were to understand how people perceive climate change and other livelihood stressors; engage stakeholders at various levels, from local communities to national decision-makers; and develop local stakeholder resource management and livelihood portfolios to enhance food security. Through these areas of focus, the project contributed to a reduction of vulnerabilities to climatic and other locally-relevant stressors, and helped to alleviate poverty.

Project Rationale

Food security is critical for adaptive capacity since poorly nourished actors are usually unable to carry out otherwise effective adaptation strategies. Increased food and livelihood security through resilient resource management and diversification of income-generating activities can, however, enhance adaptive capacity to climate-related stressors.

Project Outputs

Through the use of participatory assessment and planning methods, the project embraced a bottom-up approach that took into account local realities and priorities to better inform national development policies. Gendered needs and vulnerabilities were also taken into consideration. In addition, the focus on social learning will better prepare all stakeholders involved to integrate climate change adaptation initiatives into viable responses to other stresses, such as human health, unemployment and environmental degradation.

3 Collaboration between Communities and Scientific Organizations to Identify and Implement Responsive Water Management Actions in Mali

Region / Country

Republic of Mali

Sector

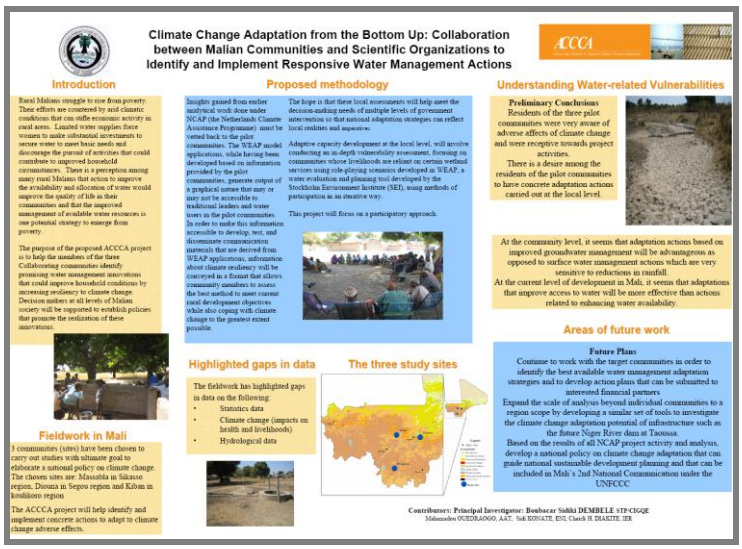
Responsive Water Management

Target Population

Residents of three rural communities that have been pilot sites of adaptation activities for several years

Principal Investigator

Mr. Boubacar Sidiki Dembele, Secrétariat Technique Permanent du Cadre Institutionnel de la Gestion des Questions Environnementales



Project Focus

This project linked partners through the use of innovative risk communication materials for the water sector and provided a unique opportunity to focus on developing specific recommendations for climate change adaptation in the water management sector and to promote their adoption. The Netherlands Climate Assistance Project (NCAP) in Mali had already conducted much of the preparatory data gathering and analysis work needed to generate, communicate and apply information for adaptation decisions. One of the most promising analytical products applied to NCAP is the Water Evaluation and Planning (WEAP) system.

Project Rationale

The next steps included the development, testing and dissemination of risk communication materials derived from the analytical products in order to vet their usefulness at the local level. WEAP scenarios were introduced to three communities as part of an ongoing participatory process of identifying and implementing appropriate climate change adaptation actions related to the management of water resources, so as to allow community members to validate the results of the models developed for their communities.

Project Outputs

Lessons learned from these communities were used to develop broader climate change adaptation strategies for other communities in Mali. Also, the disseminated results of the analysis will inform higher-level policy dialogues about climate change adaptation and provide a useful example for broader sustainable development initiatives.

4 Analysis of Adaptation Strategies to Climate Variability in the Sahelian Zone

Region / Country

Tunisia and Niger

Sector

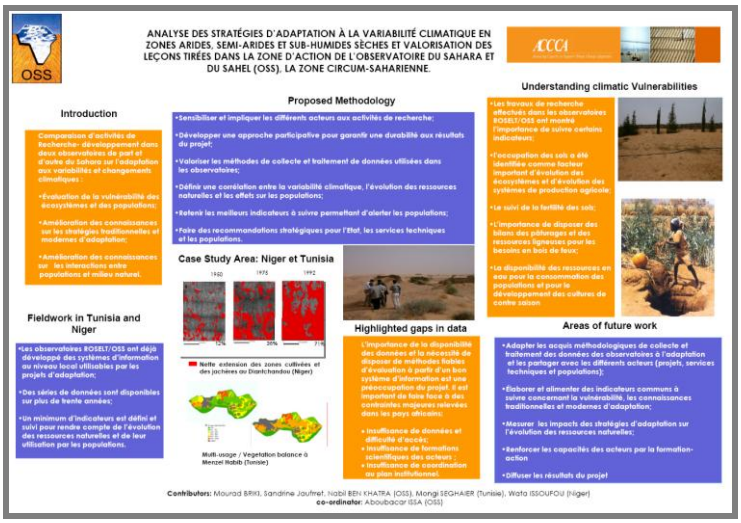
Dryland Agriculture

Target Population

Residents of rural communities

Principal Investigator

Mr. Aboubacar Issa
Sahara and Sahel Observatory



Project Focus

The Sahara and Sahel Observatory (OSS) member states are located within the Sahalian zone in arid, semi-arid and sub-humid dry regions with primarily agrarian economies. Stresses within those regions include high exploitation of natural resources, a fragile natural environment and increasing pressure due to population growth and uncontrolled urbanization. Climatic variability is expected to increase the vulnerability of these populations already living on marginal lands. The aims of this project are to

Project Rationale

Analyze and share successful experiences with regards to climate variability in two arid areas in the north (Tunisia) and south (Niger) of the Sahalian zone, where it is expected that vulnerabilities will be accentuated due to climate change and also to analyze the possibilities to extrapolate the experiences of these locations to other regions with similar agro-climates.

Project Outputs

A study of vulnerability in two OSS observatories in Tunisia and Niger was carried out, as well as an identification of land-use changes in response to climate variations that have occurred during the last thirty years, taking into account changing social and economic conditions. The collection of data and information from the two areas made it possible to carry out a comparative analysis of adaptation strategies, taking into consideration difficulties encountered and to identify best practices in sustainable natural resource management in marginal conditions. The results of this study will also be disseminated to decision-makers of the member states of the Observatories for Long-Term Ecological Surveillance of the OSS for integration into national development planning.

5 Audiovisual Tools for Community-Based Adaptation: bridging the Meteorological Service and the Red Cross's work

Region / Country

Nsanje and Salima districts, rural Malawi

Sector

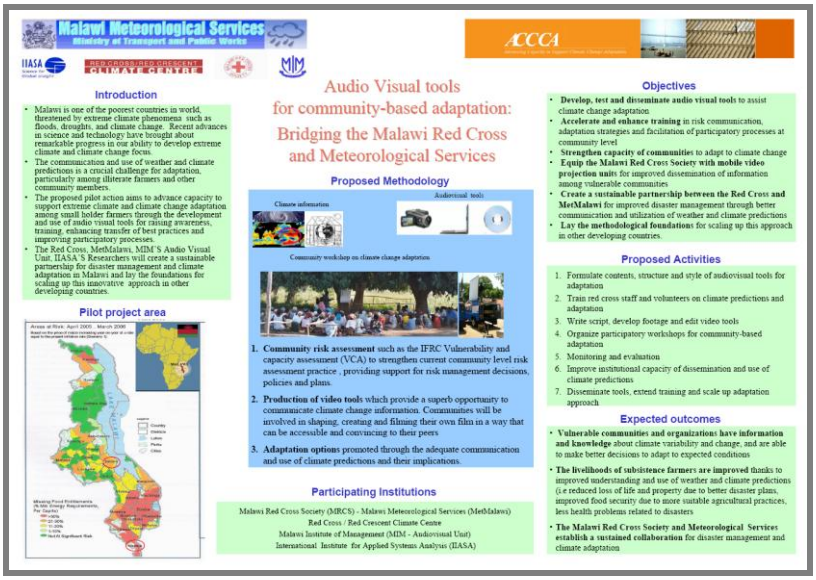
Disaster Management and Health

Target Population

Rural communities vulnerable to droughts and floods, Red Cross staff, Ministry of Agriculture officers and other institutions

Principal Investigator

Ms. Ethel Kaimila
Malawi Red Cross Society



Project Focus

The purpose of this project was to strengthen capacity for climate change adaptation in rural Malawi through the development, testing and dissemination of audiovisual tools to assist in climate change adaptation. The project integrated the knowledge generated by the Malawi Meteorological Service into the extended community-level activities of the Malawi Red Cross Society through its numerous climate-related programs.

Project Rationale

Through the use of innovative approaches based on audiovisual tools, the project will accelerate and enhance the training of Red Cross staff and volunteers in understanding, communicating and utilizing climate predictions, and reduce local communities' vulnerability to climate change. The project will also facilitate the identification of risks and implementation of appropriate response strategies.

Project Outputs

Project outputs included the production of video tools, posters and other materials to support adaptation at the community level though a participatory process. This project helped vulnerable people prepare for anticipated climatic conditions. In addition, it improved institutional cooperation and decision-making processes in order to mainstream the availability of new information about climate risks and adaptation options into existing community programs.

6 Livelihoods Under Climate Variability and Change: an Analysis of the Adaptive Capacity of Rural Poor to Water Scarcity in Kenya's Drylands

Region / Country

Kenya, with wider application to sub-Sahara Africa

Sector

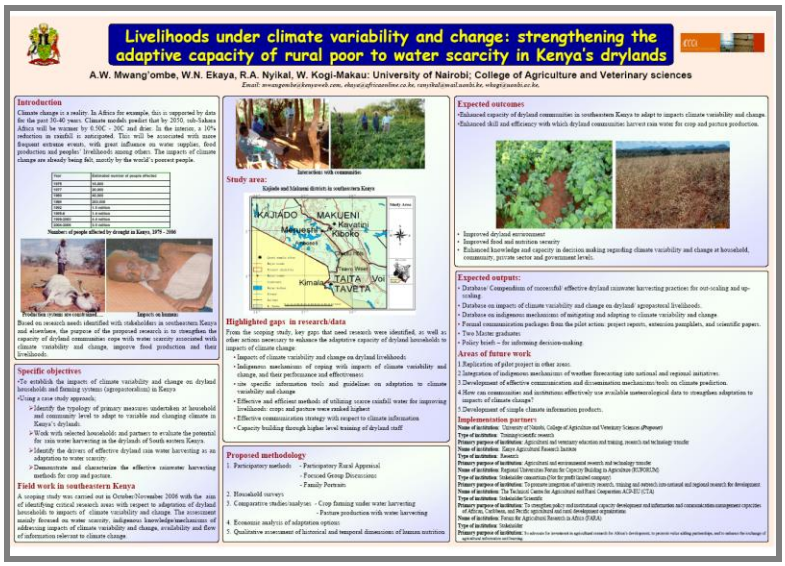
Dryland Agriculture

Target Population

Rural poor in Kenya's arid and semi-arid drylands

Principal Investigator

Dr. Agnes W. Mwang'ombe
University of Nairobi



Project Focus

In dryland communities droughts are a significant cause of decreased crop production and herd size to less than the minimum required for subsistence. Dryland communities, however, have gained experience in trying to adapt to climatic changes. For instance, examples of water harvesting techniques in the drylands of west and east Africa appear to be effective and can potentially serve as lessons for other communities.

Project Rationale

Further research into the relationships between water harvesting, vulnerability reduction, adaptive capacity, poverty reduction and possibilities for the duplication of these initiatives needed to be undertaken.

Project Outputs

This project has contributed to strengthening the capacities of dryland communities in Kenya to cope with climate variability, improve food production and sustain people's livelihoods. Using a case study approach, the project provided an overview of the typology of adaptation measures that have been undertaken, examined their implications on livelihoods, identified the drivers of effective rain water harvesting as an adaptation strategy to frequent droughts, and built capacity for climate vulnerability assessments and decision-making at various stakeholder levels (household, community, private sector and government).

7 Strengthening Community-Based Adaptation to Climate-Sensitive Malaria in Kakamega or Kericho District, Western Kenyan Highlands

Region / Country

Kakamega or Kericho, Western Highlands, Kenya

Sector

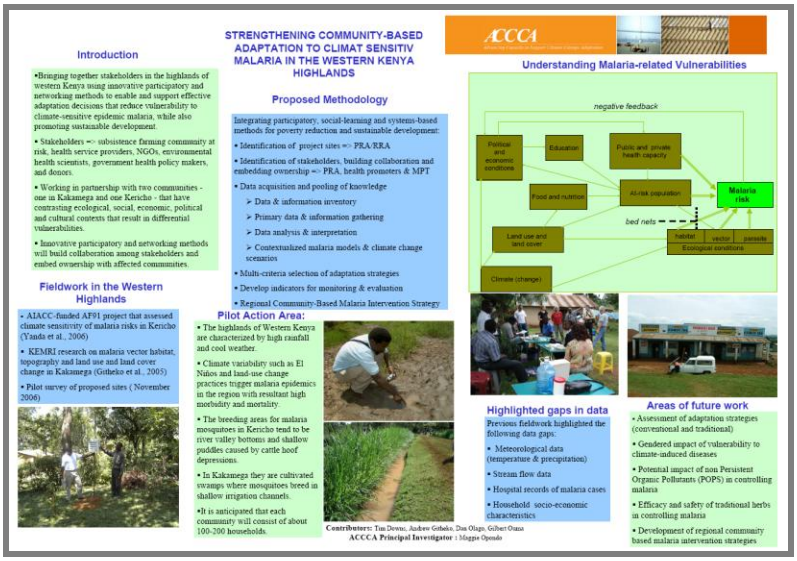
Human Health and Disaster Management

Target Population

Rural poor, subsistence farmers

Principal Investigator

Dr. Maggie Opondo
University of Nairobi



Project Focus

In Kenya, malaria continues to kill more people than any other communicable disease. Increased malaria transmission due to drug resistance, land-use change and climate variability disrupts people's lives and contributes to reduced productivity and increased poverty. On a pilot scale, this project sought to strengthen the capacity of stakeholder groups to work more closely together to better assess climate-sensitive malaria risks and existing adaptations, plan interventions, implement them and monitor performance.

Project Rationale

The project builds active collaboration among six key stakeholder groups: the subsistence farming community at risk, health service providers, NGOs, environmental health scientists, government health policy makers and donors. Stakeholders were able to discuss existing perceptions of malaria risk, and local people will be able to share their views on malaria risk and whether or not outside knowledge adequately considers its relationship to poverty and land-use.

Project Outputs

Strategies based on integrated vector management (IVM) principles and lessons learned from other countries were explored. The preferred malaria intervention strategy chosen by communities at risk, lessons learned, and supporting capacity building elements will become the basis of a strategic plan for sustainable malaria adaptation.

8 Adaptation Strategies and Challenges Associated with Climate and Ecological Changes to the Lake Victoria Community

Region / Country

Lake Victoria region, Tanzania

Sector

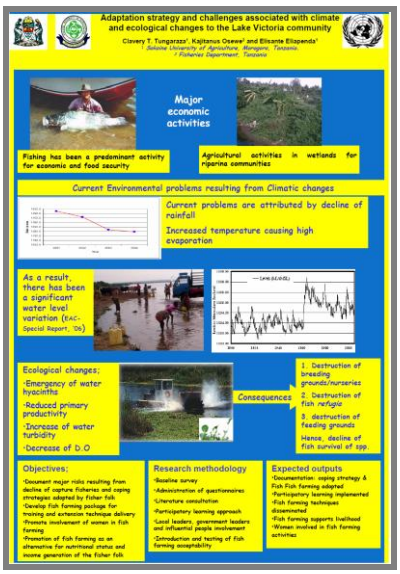
Fisheries and Livelihoods

Target Population

Fishing communities

Principal Investigator

Clavery T. Tungaraza
Sokoine University of Agriculture



Project Focus

This project aimed to implement sustainable adaptation alternatives in the fishing communities of the Lake Victoria region in order to restore food and income generation supporting activities. Through a participatory process with fisher folk and government representatives by:

- Highlighting sustainability and environmental problems associated with current fishing strategies;
- Providing communities with comprehensive and sustainable methodologies for coping with fish shortages and changes in water level and quality; and
- Introducing fish farming techniques and new groundwater sources through pilot projects as a way of reducing vulnerability to climate and ecological changes.

Project Rationale

During the 1980s and 1990s, the Lake Victoria region experienced considerable changes in the ecology of its lake and fish populations, an increase of its industrial fishing sector, and more recently a drop in its water levels leading to shortages of clean, potable water. This project sought to document historical and current adaptation strategies to these stresses.

Project Outputs

The findings from this research focused on the identifying environmental friendly alternatives relating to the fishing industry and potable water access that can be easily adopted by the communities. The project also explored the introduction of fish farming strategies in order to reduce the dependence of the community on directly harvesting the fish from Lake Victoria, and as a way of reducing vulnerability to climate and ecological changes.

9 Capacity Development and Adaptation to Climate Change on Human Health Vulnerability in Ghana

Region / Country

Ghana, West Africa

Sector

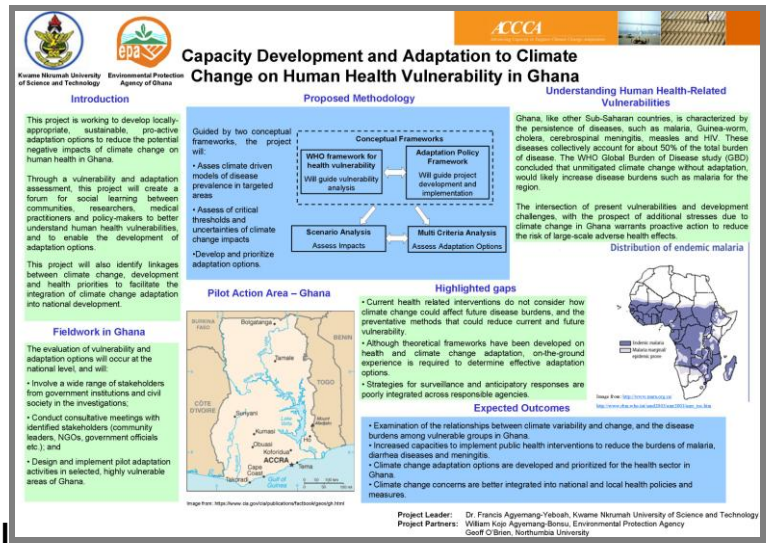
Human Health and Disaster Management

Target Population

Rural, peri-urban and urban populations (approximately 10,000,000 people)

Principal Investigator

Dr. Francis Agyemang-Yeboah
Kwame Nkrumah University of Sciences and Technology



Project Focus

The global environmental challenges related to climate change, including combating climate-sensitive diseases, are closely interlinked through complex socio-economic livelihood processes. Ghana's principal development challenge of accelerating economic growth to alleviate poverty necessitates a healthy working population. With this goal in mind, this project sought to develop capacity to implement pre-disaster prevention and adaptation options in order to reduce the potential adverse effects of climate change on human health in Ghana.

Project Rationale

To formulate, develop and implement sustainable systems that would reduce the burden of climate-related diseases, promote community capacity development, educate the community on preventative measures, and build the capacity of health practitioners in early detection and treatments. Through this research the project identified current stresses and risks, as well as elucidated the future impacts on the most vulnerable populations, particularly women and children. Adaptation policies and measures to reduce disease burden, including procedures for capacity building and implementation, were identified. These included the promotion of pre-disaster planning as a basic component of adaptation to cope with, and respond to, climate change and variability in relation to human health.

Project Outputs

Through this project pragmatic adaptation strategies for human health vulnerabilities not only achieved synergies and coordination within the public health sector, but also established synergies amongst other government policies and facilitated the mainstreaming of environmental management into sustainable development.

10 Application of Community Based Adaptation Measures to Weather Related Disasters (WRDs): Preparation for the Potential Climate Change Signal

Region / Country

Western Nepal

Sector

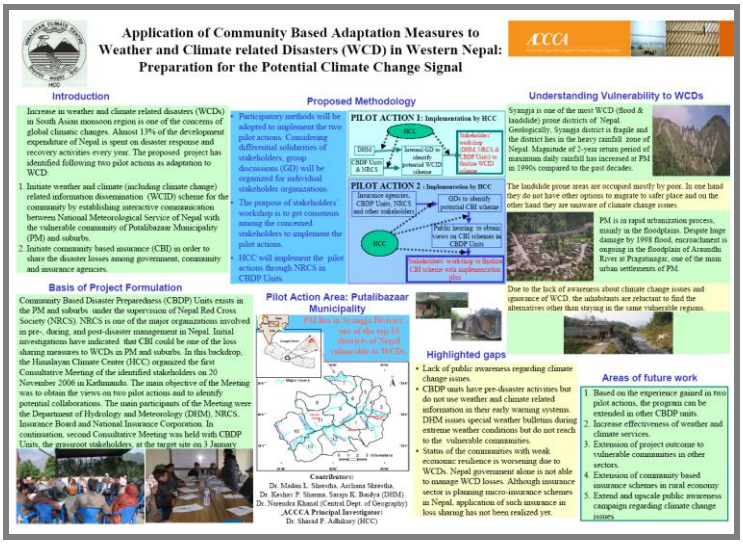
Human Health and Disaster Management

Target Population

Urban and rural populations

Principal Investigator

Dr. Sharad Adhikary
Himalayan Climate Centre



Project Focus

The recovery from weather-related disasters has been a great challenge for the Nepalese Government. Any future increase in these disasters associated with climate variability and change will certainly add to this challenge. In most developing countries, including Nepal, disaster insurance has not been applied as an adaptation scheme to reduce vulnerability to disasters. As a result, its effectiveness has not yet been assessed.

Project Rationale

In light of these issues, this project aimed to implement the concept of collective disaster insurance as a loss sharing measure for adaptation and to establish communication about weather forecasts to minimize loss through Community Based Disaster Preparedness (CBDP) Units.

Project Outputs

The project examined historical climate data, local perceptions of climate-related disasters, and future climate scenarios in order to conduct a detailed analysis of extreme weather in Nepal. Communication was established and strengthened between national weather forecast systems and local communities of the CBDP units. Implementing a community disaster scheme was an important measure to reduce disaster impacts by increasing the economic resilience of the community. The collective disaster insurance of a community is expected to act as a loss sharing mechanism for both the government and the local people, contributing to poverty alleviation by distributing the impacts of disasters more equitably.

11 Policy Framework for Adaptation Strategies for the Mongolian Rangelands to Climate Change at Multiple Scales

Region / Country

Dry areas of Mongolia

Sector

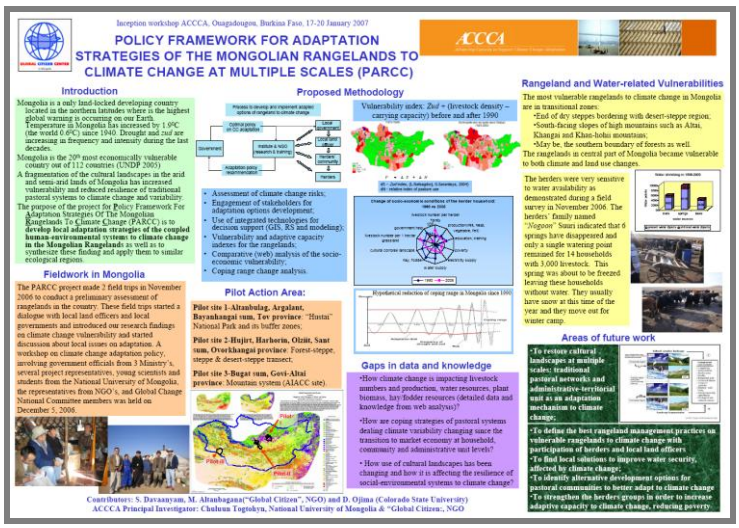
Pastoralism

Target Population

Herders and traditional pastoral communities

Principal Investigator

Dr. Togtohyn Chuluun
National University of Mongolia



Project Focus

A fragmentation of the cultural landscapes in the arid lands of Mongolia has increased vulnerability and reduced adaptive capacities to climate variability of traditional pastoral systems that have evolved over thousands of years. This project's purpose was to develop local adaptation strategies of the coupled human-environmental systems to climate change in the Mongolian Rangelands, as well as to synthesize these findings and apply them to similar ecological regions.

Project Rationale

This project builds on a previous climate change vulnerability project in which remote sensing data was collected, and an ecosystem modeling analysis and ground survey were conducted through the former Assessment of Impacts and Adaptation to Climate Change (AIACC) project. Further work was to use higher resolution remote sensing data, as well as social surveys with local populations in order to develop adaptation strategies to climate change in the most vulnerable zones. This was conducted with the participation of scientists, herders and local land officers.

Project Outputs

A restoration of pastoral networks at multiple scales will serve as a safety mechanism against extreme events, to reduce poverty and support sustainable development. The project defined best land management practices on fragile rangeland and pastoral systems restoring cultural landscapes at multiple scales, and finally found alternative options for pastoral communities to adapt to climate change.

12 Promoting Integration of Adaptation Strategies into Developmental Policies by effectively Communicating Climate Risks and Adaptation Measures

Region / Country

Bundelkhand region, India

Sector

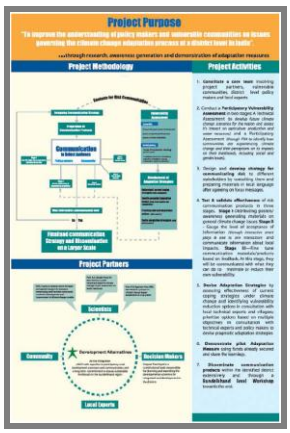
Responsive Water Management

Target Population

District level decision-makers, rural communities

Principal Investigator

Mrs. Indira Mansingh
Society for Development Alternatives



Project Focus

Agriculture is the main source of livelihoods for rural communities in the Bundelkhand region of India. The region however faces a number of natural constraints such as erratic rainfall, low soil fertility, soil erosion, limited irrigation facilities and degraded forests. These constraints adversely affect the agricultural production and livelihoods in the region.

Project Rationale

In addition, projected water stresses due to climate change are likely to further worsen the situation. In light of these circumstances, this project aimed to develop and validate risk communication products to improve the understanding of all concerned stakeholders on scientific, social and policy issues governing the climate change adaptation process at a district level in India.

Project Outputs

This project assessed the vulnerability of the agricultural and water sectors to current and potential climate change, and tested and validated risk communication materials through a multidisciplinary stakeholder engagement process. Once the target audiences are made aware of the climate risks to agriculture and water sectors, consultative methods were used to identify, prioritize and implement pragmatic adaptation strategies. A pilot adaptation project in one district, an extensive media campaign, policy recommendations and regional workshops were used for communicating risks and potential adaptation strategies to stakeholders in order to demonstrate the need to integrate adaptation processes into policies and programs at the state level.

13 Mainstreaming Climate Change Adaptation in Watershed Management and Upland Farming in the Philippines

Region / Country

Philippines

Sector

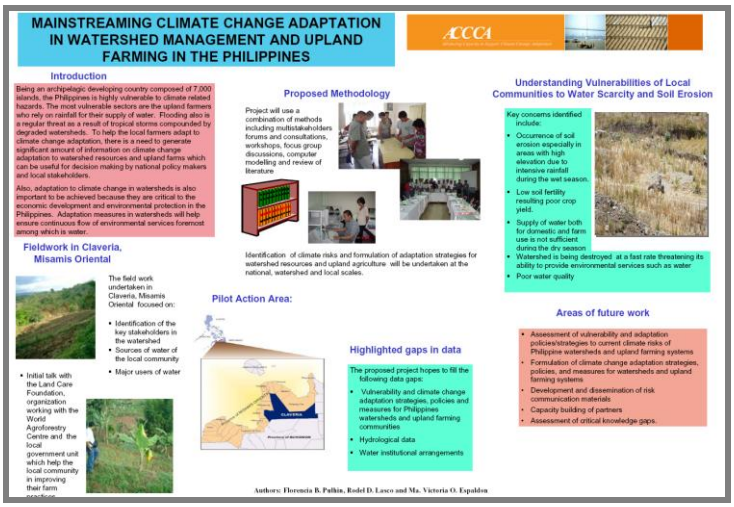
Responsive Water Management

Target Population

Rural, upland poor

Principal Investigator

Dr. Florencia B. Pulhin
University of the Philippines Los Banos



Project Focus

Upland farmers and their families, who number about 20 million, comprise the poorest of the poor in the Philippines. Their livelihoods depend on cultivating marginal hilly land areas which are very vulnerable to climate related risks. This project's overall goal was to promote climate change adaptation by upland farmers in watersheds at the national level in the Philippines. The project generated a significant amount of information on climate change adaptation for watershed resources and upland farms that will be useful for decision-making by national policy-makers and local stakeholders.

Project Rationale

Previous studies from the Assessment of Impacts and Adaptation to Climate Change (AIACC) programme showed that upland farmers have developed various adaptation strategies to cope with the impacts of climate variability. These adaptation strategies could form a strong foundation for exploring viable options for adaptation to climate change. The project utilized a variety of methods to ensure the delivery of outputs including multi-stakeholder forums and consultations, workshops, focus group discussions, computer modeling and a review of relevant literature.

Project Outputs

Based on the assessment of vulnerability and adaptation policies/strategies, climate risks adaptation communication materials were developed for policy makers, local farmers and other local stakeholders. The project also contributed to the preparation of the Philippines' Second National Communication to the UNFCCC.

14 Participatory Climate Risk Assessment and Development of Local Adaptation Action Plans in Bangladesh

Region / Country

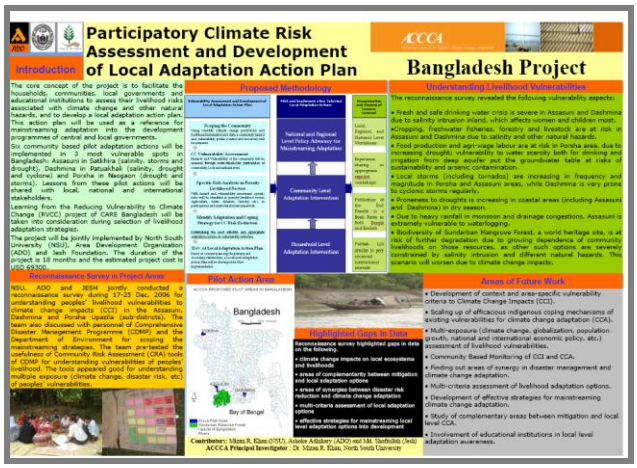
Rural areas of Bangladesh

Sector

Mainstreaming Climate Change into Sustainable Development

Target Population

Marginalized rural communities, and local and national governments



Project Focus

This project aimed to develop a community-driven adaptation plan of action, as well as to facilitate the mainstreaming of climate change adaptation into the sustainable development planning process. Primary beneficiaries included poor and marginalized farmers, agricultural laborers, landless women, indigenous people, small traders and students.

Project Rationale

Through the identification of livelihood vulnerabilities to climate change, climate variability and other natural hazards, this project developed strategies to reduce such vulnerabilities identified in the risk assessment process. The project adhered to the standard community risk assessment procedures of the Ministry of Food and Disaster Management of Bangladesh and its ongoing Comprehensive Disaster Management Programme.

Project Outputs

Risk communication strategies, materials and means were developed to facilitate government and development agencies involvement and the mainstreaming of climate change adaptation into development planning. A selection of potential adaptation options was tested at the local level and lessons learned were shared with local, national and international stakeholders. As the project aimed at implementing the activities with the active participation and ownership of the local governments (Union parishad), the process contributed to the overall development plan of these governments, which, in turn, contributed to the sustainable development process within those communities.

15 Supporting adaptive capacity to extreme climate events and climate change in the context of urban and peri-urban Ougadougou

Region/Country

Urban Center and Peri-urban center, Ouagadougou

Sector

Raising awareness, Responsive Water Management

Target population

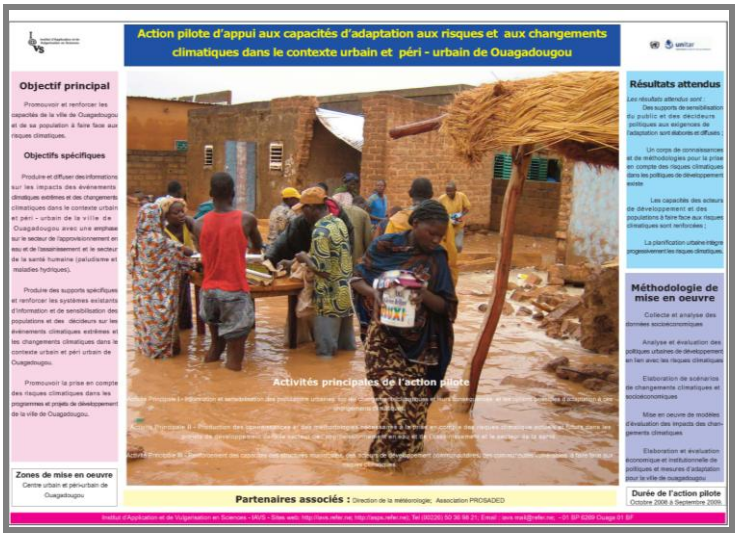
Ouagadougou urban communities

Principal investigator

Mathieu Badolo

Duration

October 2008 – September 2009



Project Focus

This pilot action sought to enhance the awareness of the decision makers and the inhabitants of Ouagadougou about climate change risks and the impact on the development of the town, in order to reduce vulnerability in the urban and peri-urban context of Ouagadougou, as well as of the development projects of the area.

Project Rationale

Since the droughts of 1973, Western Africa has increased its trend of intensive urbanization. More and more people live in cities that keep growing every day. This growth increases the vulnerability of the urban areas to climate change. The negative impacts of the flooding of 2009 in the biggest cities of Western Africa are still very current and as a result of climate change the frequency and the intensity of extreme hydrological and meteorological events is expected to increase, becoming a threat to the economic and social development of these agglomerations. In this context, it is necessary to adjust the development strategy of the cities by taking into account the changing climate.

Project Outputs

Many activities have been implemented by the "Institut d'Application et de Vulgarisation en Sciences" (IAVS), among which include a survey done in the district of Baskuy to identify climate change impacts and perception, a training workshop for the executive staff of the Town Hall of Ouagadougou, on how to integrate risk in urban planning, a capacity building workshop on climate change risks for Burkinabe journalists, a research seminar for the elaboration of a legal framework for the implementation of a micro-insurance taking care of climate change risks in Ouagadougou, and an elaboration of a local action plan for risk reduction related to climate change in the area of Ouagadougou.

16 Climate variability and Climate Change in Northern Cameroon: Social economic and adaptive strategies

Region/Country

Sudan-Sahel region of Northern Cameroon

Sector

Dryland Agriculture, Livelihoods

Target population

Agrarian households communities of Ngaoundere

Principal investigator

Ernest Molua

Duration

September 2008 - August 2009

Project Focus

The pilot project targeted farming groups in the Sahelian Northern region of Cameroon (shaded area on the map). A third of the households in Cameroon are thought to live below the poverty line with the majority of them relying on agriculture for subsistence. Maintaining adequate production levels and safeguarding food self-sufficiency pose a challenge to farmers. The pilot action sought to study the empirical relationship between agriculture and farming decisions towards climate variability by identifying, evaluating and popularizing existing adaptation methods.

Project Rationale

Climate variation is significantly influencing livelihoods in Northern Cameroon, a region characterized by an average precipitation of 100 mm during the peak dry-periods of the year and 1200 mm of rainfall during the peak wet-periods. Episodic hydrologic drought and vagaries of the Lake Chad are testament to the environmental and climate challenges in the region. Further perturbations in the climate system will likely lead to increased loss of livelihoods, particularly as it affects outputs and incomes from the agricultural sector. Because agricultural production remains the main source of income for most rural communities in the region, adaptation of the sector is imperative to protect the livelihoods of the poor and to ensure food security.

Project Outputs

The Pilot Action team engaged in collecting primary and secondary data in more than 40 villages and interviewed around 700 farming households about their social and economic activities (e.g. farming systems and production techniques, farm yield, farm productivity, farm adaptation i.e. adoption of climate protective measures, farm cost, prices and subsidies, farm sizes, farm income, farm management techniques and climate information for region), Secondary information was obtained from government offices (Ministries of Agriculture, Livestock and the Environment) on farm and environmental policies, as well as weather stations.

17 Improving the decision-making capacity of small holder farmers in responding to climate risk adaptation in three drought prone districts of Tigray, Northern Ethiopia

Region / Country

Eastern and Southern Tigray, Ethiopia

Sector

Dryland agriculture, Food security

Target Population

Wukro, Endeta and Hintal Wejerat Woredas communities

Principal Investigator

Gebreyohannes Girmay

Duration

August 2008 - Mai 2010

Project Focus

The project brought together communities in the drought-hit regions of northern Ethiopia, plus technical and scientific communities in the spheres of land management, agricultural research, agronomy and climatology to assess climate change vulnerability in the region and propose strategies that enable effective adaptation decisions and reduce vulnerability. This pilot action addressed climate change, local agriculture, food security, and community resilience in the region of Eastern and Southern Tigray, Ethiopia.

Project Rationale

Ethiopia is one of the poorest and least developed countries in the world, ranking 169 of 175 countries, according to the Human Development Index (HDI). The province of Tigray is characterized by some of the highest poverty levels in Ethiopia, resulting in low life expectancy and high malnutrition rates. In addition, 83% of the population depends on subsistence agriculture for their livelihood. Increasingly the province of Tigray is experiencing extreme climate events which are impacting on the access to food processing/storage and marketing opportunities and reducing the overall production, hence affecting household income.

Project Outputs

An analysis was done of the land use, land cover and the inter-annual climate variability in relation to vegetation cover and its impacts on crop water requirement and yield. Climate adaptation strategies were then developed together with subsistence farmers to mitigate current and future impacts of climate change, in particular, drought (famine and loss of livelihoods and degradation of natural resources). Surveys were conducted to understand local perceptions especially amongst the farmers about climate change, and also to document existing coping strategies. The results of the survey indicate that whereas many do not understand the phenomenon, many of the local farmers attribute the variation in rainfall to rampant forest degradation and deforestation.

18 Improving the decision-making process through climate change scenario generation in the Bunyala flood plains of Western Kenya

Region / Country

Bunyala flood Plains, Western Kenya

Sector

Dryland Agriculture, Responsive Water Management

Target Population

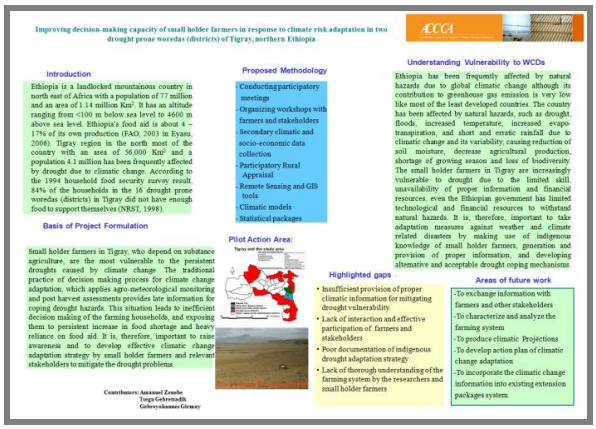
Bunyala communities

Principal Investigator

Parminder Singh Sahota

Duration

August 2008 - April 2010



Project Focus

The project sought to increase the rice farmer's adaptive capacity to climate change by assessing local knowledge and skills, and strengthening farmer's organizations through training and involvement of the farmers into examining solutions to the future challenges resulting from climate change.

Project Rationale

The Bunyala plains are located along the shores of Lake Victoria, in one of the most densely populated regions in Western Kenya and East Africa. The region is a rice growing area and contains a rice irrigation scheme. In the past 40 years, the area has experienced 13 counts of significant flooding followed by periods of drought. These threats are bound to re-occur and thereby disrupt livelihoods if no sustained actions are undertaken.

Project Outputs

Baseline studies were undertaken to collect data about the area and the future climate trends. Furthermore, the impacts on the water balance of the Nzoia river catchment were evaluated and a flood analysis performed for the Bunyala plains. These analyses provided data for an assessment of the climate change impacts and risks, allowing the consideration of suitable adaptation options for agriculture. A number of important conclusions can be drawn based on these analyses, for technical support in the maintenance and the implementation of the planning tools and also for the facilitation of stakeholder workshops. A baseline study was conducted by FutureWater entitled – "Impacts of Global Climate Change on the water resources of the Bunyala Plains"- to assess the future changes in water resources of the Nzoia river catchment in general and the Bunyala floodplains. The study revealed that the Bunyala irrigation scheme is a favorable place to invest in agricultural production, because water is abundantly available and also because the farmer's interest and expertise is high. Furthermore in a questionnaire distributed to rice farmers present at a workshop, organized to gauge the level of understanding about climate change and its impacts, the responses showed that many of the farmers had some knowledge about climate change and its predicted impacts, with some farmers even managing to capture some of the opportunities resulting from floods like increased fish catchment.

19 Climate change Adaptation options in informal communities in Durban, South Africa

Region / Country

Durban, South Africa

Sector

Human Health and Disaster Management

Target Population

Amoati Township

Principal Investigator

Debra Roberts

Duration

August 2008-April 2010

Project Focus

The eTheckwini Municipality commissioned Golder Associates Africa (GAA) to undertake a climate change social vulnerability assessment of the Amaoti community and based on this assessment, to recommend appropriate adaptation strategies aimed at reducing the Amaoti community's vulnerability to climate change.

Project Rationale

Durban, located on the south east coast of Africa, is the second most populous city in South Africa. It is a fast-growing city with a population currently in excess of 3 million inhabitants, ranging across multiple social and economic strata. There are several informal settlements scattered across the urban zone, comprising of poor communities sheltered in low levels of infrastructure with no access to services, often occupying land unfit for permanent habitation. Amoati municipality, located within the eTheckwini municipality, was selected as the study area because it is recognized as the largest informal settlement in Durban. Possible impacts as a result of climate change on the Municipality may include: increased spread of vector borne diseases such as malaria, bilharzia and cholera.

Project Outputs

A risk and vulnerability mapping of the informal settlements located within the eTheckwini Municipality was conducted with the aim of identifying those communities that are most at risk. The report "Risk and vulnerability mapping: Identification of indices of vulnerability" undertaken by Golder Associates and submitted to the etheckwini Municipality, presents a detailed vulnerability analysis of the Amoati municipality. The report findings concluded that the greatest vulnerability in the area is flooding which causes poor water access and sanitation, deduced from the fact that 89% of the respondents indicated that they did not have running water.

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