

CLIMATE CHANGE ADAPTATION IN AFRICA PROJECT

PROJECT TITLE: TRIGGERING RURAL-URBAN INTERACTIONS TO COPE WITH CLIMATE CHANGE: AN ADAPTATION EXPERIMENT IN ABA AND ITS REGION, SOUTHEASTERN NIGERIA.

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ACRONYMS

BNRCC- Building Nigeria's Response to Climate Change
CDO - Community Development Officer
CCAA - Climate Change Adaptation for Africa
HOD - Head of Department
HOS - Head of Service
LGA - Local Government Area
MOU - Memorandum of Understanding
NEST - Nigerian Environmental Study/Action Team
NPC - National Population Commission
NIMET - Nigerian Meteorological Agency
PAR - Participatory Action Research
PMT - Project Management Team
UNDP - United Nations Development Programme
CC - Climate change

2. SYNTHESIS

In order to reduce the vulnerability of communities in and around Aba city to climate-related hazards, some adaptation actions were implemented to enhance urban and rural interactions.

At inception phase, the project developed structures at both community and municipal levels, to support the implementation process. Familiarization visits were organized which helped to create awareness and sensitize stakeholders. Also, baseline studies were carried out that helped in monitoring and evaluation exercises. Following the inception phase, participatory envisioning and situation analysis were carried out. These activities made the community platforms appreciate the existence of climate change, the extent of their vulnerability, and the impact of climate hazards. They also helped the communities to evaluate the effectiveness of coping measures practiced by community members.

Flooding and erosion were the most rated climate hazards that are threatening livelihoods in communities in Aba city and its surrounding communities. The platform members recognized the impact of climate change and the changes which they needed to make to improve their wellbeing. They also realized the interdependence between rural and urban communities and the boundary partners for the project

The platforms at the community levels reflected on the challenges of climate hazards and focused on realizing the following adaptation project objectives according to local situations:

- Abiriba: controlling the menace of gully erosion;
- Owerinta: – controlling flood to rehabilitate a rural market;
- Umuode: contributing to providing health care services to address frequent sickness;
- Ogbor: controlling erosion;
- Eziukwu: providing access road by controlling flood; and
- Akwete: diversifying income by improving the marketability of Akwete cloth.

The community platforms were enabled to plan for appropriate adaptation measures which have the potentials to boost rural urban interaction. Consultants engaged by the project were involved in the planning by supporting the communities with feasibility services. The platforms articulated activities that will assist them achieve their project objectives and contribute to reduce the vulnerability of rural-urban systems to climate change. Activities carried out by the platforms include consulting and mobilizing the community members and the leadership, sharing responsibilities, engaging with boundary partners, assembling the contributions and testing the adaptation options. The whole process was backed with documentation of activities, roles, decisions and findings. The documentations were reviewed at intervals by the various platforms.

The municipal platform was made up of Community Development Officers (CDOs) and Heads of Departments of Agriculture (HODs) from the six participating LGAs. The municipal platform members also explored to identify opportunities where the Local Government Councils could use cooperation to spur rural-urban interactions and support the communities to reduce their vulnerabilities. They appreciated the ineffectiveness of existing policies and inherent features that contribute to their lack of performance. Among the features are poor consultation, lack of specificity and poor communication. They were enabled to forge better interactions with communities and appreciate the increasing impact of climate hazards, and the uncertainties surrounding them. Among the constraints that the municipal platform members highlighted that affect the

contributions to communities are poor awareness and capacity, funding, and instability in the governance system. Through enlightenment, trainings and on-hand support the members were enabled to improve on their awareness of climate change adaptation, capacity to develop policy frameworks and advocacy. The municipal platform generated policy themes and developed them into actionable briefs based on prevailing climate hazards in their respective local councils as well as the input from their experiences through the community adaptation projects. The policy instruments have been accepted by some LGAs for implementation.

All the communities have also carried out participatory evaluation exercises to determine the extent of achieving these objectives and the performance of the various partners..

In Umuode the center where care is given to sick persons has been completed and made operational. Other patients from surrounding rural communities are taking advantage of the services provided in the Umuode clinic. Community members no longer spend higher costs to access quality health services on account of transportation, and genuine drugs are provided at the center. Some members of the community have taken advantage of the operation of the center to trade on goods and make household income.

Abiriba community members have successfully completed an erosion control project. Now, the road across the project site has become passable and commuters from within and outside the community spend less on transportation. Members of the community have re-planted income-generating trees on their farmlands that exist close to the reclaimed site without fear of having the trees being washed away again. Economic trees used for soil stabilization is considered as source of communal revenue. Flow of remittances from community members living in urban centers have increased as result of the adaptation project.

In Akwete, marketing of Akwete cloth and new products has increased in the community. Household income and wellbeing of weavers in the community have improved. Weaving has become a reliable alternative source of livelihood which is reducing poverty in the community. Governments have accorded greater recognition to the weaving industry and the weavers are participating in local and national exhibitions.

The Eziukwu community members have cleared the wastes in drainage channels and this has made flooding to become significantly reduced. Vehicular movement has increased in the community making transportation of persons and goods easier and cheaper. Some abandoned houses in the community have been re-occupied by tenants. Some residents indicate that they now use insecticide less, on an average of once in 2 weeks, because mosquito infestation has drastically gone down

The Owerrinta market has been resuscitated and goods and services are being exchanged daily. Flooding has been checked in the market vicinity Farmers no longer travel long distances (to Aba city) to sell their farm produce. Perishable items such as vegetables and fruits no longer spoil on transit because of lack of market.. Income of many households in the community, particularly farmers, has increased. The market has provided a central location for merchants and traders from Aba to buy and sell goods. Some youths of Owerrinta community are being engaged in local jobs created by the transactions at the market. The Local government revenue generating department has included the resuscitated market as a revenue generating center.

The lessons from the project and experiences have been documented in different communication tools, such as CDs and leaflets, and posted on the website.

3. RESEARCH PROBLEM AND JUSTIFICATION

The vulnerability of the African continent to climate change is deepening and retarding the continent's progress towards sustainable development. The region is well-known to be the most exposed to the impact of climate change (World Bank, 2009). Food and water security, livelihood, shelter and health are at risk. With the incidence of poverty already very high In Nigeria, climate change is jeopardizing the attainment of development goals of reducing poverty and sustaining growth in the country.. According to UNDP (2007), most Nigerians live below US\$1 a day and over 70% of the population is primarily engaged in subsistence agriculture. Changes in rainfall patterns, associated with the ongoing phenomenon of climate change, are increasing the hardship of the poor in urban as well as rural areas. On one hand, unpredictable and irregular rains are producing agricultural losses. On the other hand, heavier rains are producing floods and erosion which equally affect rural and urban neighborhoods. In addition to causing damages to housing and property, floods encourage the breeding of mosquitoes and other vectors and increase the incidence of disease. It is unarguable that climate change has emerged to become a major developmental challenge in Nigeria.

Community livelihoods depend on the ability to secure regular exchange of goods and services between the urban and rural settlement areas. These exchanges guarantee regular household earnings and sustenance of livelihoods and engender inter-community cohesion. The various types of exchanges between rural and urban inhabitants are crucial to their livelihoods, regardless of climate change. They include exchanges in goods, natural resources, labor and services and also involve large movements in financial resources. Urban-rural interactions are also catalyzed by the services that local and state governments offer to citizens. The central hypothesis of this project is that these interactions also play an extremely important role in helping inhabitants of both types of environment to cope and adapt to climate change.

The interaction between urban and rural communities faces challenges that threaten its capacity to support livelihoods (Okali et al, 2001). These challenges include the political context, governance and finances. In addition to this, the growing impact of climate change in Nigeria is seriously affecting this interaction. All of these factors combined limit the benefits of rural-urban interaction to livelihoods in general and its capacity to contribute to the adaptation of communities. Another hypothesis of this project is therefore that this effect of climate change on rural-urban interaction also contributes to the vulnerability of populations.

Through an adaptation experiment in the city of Aba and its region, in South Eastern Nigeria, researchers of this project are documenting how urban-rural interactions are helping communities to cope or adapt to climate change, or how specific interactions would be needed for that purpose. They are also documenting how the needed interactions are being affected by climate-related hazards.

There have been recent reports of increasing climate hazards in Nigeria. It was observed in the study area that while the total quantity of rain has not changed, the number of rainy days per month within the monsoon season has been reduced and the intensity of rains has increased (Nzegbule et al, 2011). This increase in intensity, combined with other factors, is responsible for the increased flooding and erosion. In an Editorial comment of The Guardian Newspaper of Thursday September 8, 2011 entitled "Protecting citizens against Flood", the paper chronicled growing cases of flooding in the country. It particularly mentioned the floods occurring in Lagos on July 10, 2011 and in Ibadan on September 4, 2011 that caused extensive damage. Over 200 lives were lost and property worth

billions of Naira destroyed. Warnings of more climate-related disasters are being issued by relevant agencies like the Nigerian Meteorological Agency (NIMET). Apart from flooding, increasing menace of soil erosion, drought and heat waves are other climate hazards being experienced in different parts of Nigeria. A climate change scenario developed for Nigeria suggested more days of intensive rainfall, flooding and increase in heat waves in southern Nigeria, with devastating negative impact on agriculture and health sectors (BNRCC 2011). The increasing frequency of climate related disasters and recent predictions of such disasters continuing into the future in Nigeria represent a real threat to the livelihoods of Nigerians, including those in Aba and its region. They are also threatening the interactions between Aba and its surrounding rural communities.

Many rural communities surrounding Aba contribute to the migrant population of the town. The declining agricultural yield, growing unemployment and depletion of natural resources are increasingly forcing rural people to migrate to Aba city. As the climate change impacts intensify, the rate of environmentally-induced migration increases (Tacoli, 2011). Thus rural communities are losing more of the employable men and women who engaged in agriculture and other crafts as a result of climate change. Changing environmental and economic conditions in the rural communities have been noted to influence the decision of dwellers to migrate out in search of other sources of livelihood (CARE, 2007). According to Okali et al. (2001) the migration process dominated by young men and women has negatively affected agricultural production due to the loss of critical farm labor.

This migration also affects urban neighborhoods. The population figures for Aba were 500,183 and 754,927 respectively, according to the 1991 and 2009 census exercises in Nigeria (NPC, 1991; 2009). Inhabitants of some urban communities in Aba reported, in discussions held in the course of this project, that their populations have increased by between 250 and 400 percent since 1980 (NEST, 2011). However in the urban communities, the physical infrastructure is in disrepair and new settlements are unplanned; consequently they are ill-prepared to receive the migrating populations. This elevates the climate-related risks being experienced in Aba city. The growing urban congestion and unplanned human settlements, with significant waste management deficiencies, as in the case of Aba, pose serious emergency management problems when climate change-induced natural disasters, such as flooding, occur. They also increase the likeliness of flooding following intense rain events because they limit infiltration and interfere with drainage.

The impacts of climate change on rural-urban interaction which the project has identified include the destruction of market centers in rural and urban communities which hinder exchange of goods and services as well as damages to roads, rendering them impassable and increasing the cost of transportation (NEST, 2011). In other cases, farmers are compensating declines in agricultural yields by diversifying to occupations that are unfriendly to the environment. In Owerri, for example, many young men are now engaged in sand mining along the roads and in the community river which exposes the soil and river bank to erosion. These impacts may be worsening the imperfections that already exist between rural and urban market operations which hinder commodity exchange to the disadvantage of the rural poor. While climatic hazards such as flooding and erosion may be having significant impact on livelihoods, it has been found that in some cases the improvement of rural-urban activities encourage economic growth and reduction of poverty.

There is a lot of uncertainty regarding the regularity and the extent of the change arising from climate change. Communities need the support of policy frameworks that are responsive to the uncertainty associated with climate change. It is doubtful that Nigeria's policy making process will measure up to the complexity and capacity required.

Planned adaptation that utilizes public policy making and preparation based on an awareness of existing conditions and vulnerabilities is a necessary approach to create a wider and efficient check on the impacts of climate change (Bergkamp et al, 2003). Unfortunately, management of climate change challenge by government institutions has been uncoordinated and non-specific in approach. The existing governance structure and policy environment do not encourage the communities to access the needed resources to overcome their environmental challenges (Heinrich Boll Stiftung 2010). Addressing these vulnerability factors through awareness raising, diversifying livelihood sources, facilitating alternative markets and supporting cooperation between communities and municipal governance structures may reduce the impact of climate change on communities. It is noteworthy that planned adaptation is an unavoidable approach in supporting rural–urban interaction to provide the facilities needed to reduce vulnerabilities of communities (IUCN, 2003). However the capacity (expertise and resources) for policy making and management innovation are weakly developed in the Nigerian context.

Aba is an important regional market, a road and rail hub, and a manufacturing center for cement, textiles, pharmaceuticals, processed palm oil, shoes, plastics, soap, and beer. According to Okali et al. (2001), Aba has extremely intense commercial activity and has the widest migration field of all the cities in the southeastern part of Nigeria. The major ecological problems facing Aba and surrounding regions are gully erosion and flooding that affect livelihood activities. The situation has led to the declaration of the area as a disaster zone by the governor of Abia State. It is therefore an appropriate site to study how rural-urban interactions can help the adaptation process and how they are themselves affected by climate change.

The vulnerability of Nigeria to climate change has captured the attention of Nigerian governments at all levels. Numerous incidents of climate-related disasters across the country recently have increased their awareness and the urgency for action. Towards the end of 2010, the national legislature passed a bill for the establishment of a Climate Change Commission under the Presidency to coordinate national policy in response to the challenge. Similarly a National Adaptation Strategy and Plan of Action has been developed to mainstream climate change adaptation into national development programs. On 12th September, 2012, the Federal Government of Nigeria officially approved a National Climate Change Policy and Response Strategy document. This is significant milestone in the nation’s effort to address a myriad of climate change impacts across the country. It provides a platform for coordinated action and the impetus to mainstream climate change adaptation into government programmes at all levels. Many state governments have also begun actions to control the impact of climate change. It is hoped that lessons from the current study could provide clear trends and help these governments develop tailored strategies for rural and urban interactions to improve adaptive capacity in communities.

The research addressed the following questions:

- Which urban-rural interactions are required to reduce the vulnerability of rural and urban populations to the most critical climate related hazards? How can these be triggered or enhanced?
- How does climate change affect the urban-rural interactions that are most critical to the livelihoods of the poor? How can negative impacts be reduced?

From the project, the major aspects rural-urban interactions which were affected by the climate hazards are

- Transportation of goods and persons within and between communities. This was hindered through floods that covered community roads and erosions that are cutting farm roads. The menace is widespread in all the communities. The constraint posed by these situations has reduced vehicular movement into the communities. The cost of transportation has been increased on account of transportation difficulty.
- Loss of livelihood opportunities: Many households whose livelihoods are related to agriculture , fishing, and transportation were seriously affected by climate hazards. These occupations are climate dependent.. The platform members at Akwete, Abiriba, and Owerrinta reported poor yield, destruction of crops, poor fish catch etc. They no longer produce enough to feed their family not to think of selling the extra quantity of agricultural produce in the market. This has also reduced their household income.
- Destruction of Infrastructure upon which commerce is carried out: Climate change is affecting markets and even the number of days in a year when trade can be carried out in the markets. Local markets at Owerrinta and Eziukwu have been destroyed, forcing people to abandon them because of flooding. The community members at Owerrinta traveled to distant markets at Aba to sell their goods and some perishable items hardly reached these destinations. At Eziukwu the perennial flooding in the rainy season has confined the community members to mostly trade during dry season. The impact on these markets has affected rural urban interaction.
- Limiting opportunities for network: Climate change also inhibited opportunities for community members to interact. The communities remember services which have been obstructed because of climate hazards. At Owerrinta some community members recalled the credit assistance they received from merchants from Aba city, As they collect wares from the merchants on credit and retail at the local markets. They also pass information and food items to their relatives in urban centers through the merchants that come to their markets
- Shortage of farm labour and Increasing cost of production of agricultural produce: The declining number of job opportunities has forced young men and women in the communities to migrate to urban centers. This has caused shortage of farm hands in the communities. The community platform at owerrinta and Abiriba reported that they now resort to engaging men at exorbitant cost from far away communities who migrate to their own community during the rainy season .

As the outcome and findings from this have shown, promoting rural-urban interactions are contributing to reducing the impact of and the vulnerability to climate change in the communities. However no single approach provides all round remedy to the impacts of the hazards but a combination of strategies.

The community adaptation projects have not only reduced the impact of climate change but have also triggered activities that increase rural-urban interdependence. The control of flooding at Owerrinta and Eziukwu community have increased trade in commodities, creating easier and cheaper transportation, provided employment opportunities and reduced poverty among households. Similarly the erosion control project at Abiriba has prevented losses encountered by farmers whose lands are close to the gully, improved transportation and increased inflow of remittances in the community. The activities have also made alternative livelihood activities to become economically lucrative and reviving tourism potential of Akwete community.

Other contributions of the project include increased awareness on climate change among stakeholders, increased adherence to community rules and government policies that support adaptation; and improved mobilization and integration within communities.

In some cases the activities is provided additional sources of revenue for the Local Government authorities. Similarly through the pilot adaptation projects better partnership between the communities and government institutions has been invigorated

3. PROJECT OBJECTIVES

Main Objective:

This project aims to contribute to the reduction of the vulnerability of rural-urban systems to climate change by sharing knowledge generated through a participatory adaptation experiment in and around the city of Aba, Nigeria.

Specific Objectives

1. To assist the Committee¹ of Community Development Officers (CDOs) and Heads of Departments (HODs) of the Municipal Councils of Aba to identify and evaluate cooperation strategies that would reduce rural – urban migration and related environmental degradation that make communities more vulnerable to climate change.
2. To enable existing associations in selected rural and urban communities in and around the city of Aba to explore and evaluate strategies and policies to reduce their vulnerability and increase adaptive capacity to climate change.
3. To encourage sustainability and scaling up of the strategies in Nigeria through wide dissemination of the outcomes and lessons learnt from the action research.

4. PROJECT ACTIVITIES

The two approaches adopted were (i) Participatory Action Research at the municipal and community levels, for the adaptation experiment (ii) Synthesis research to generate knowledge from this experiment and disseminate it to a wider audience. Participatory action research was conducted at the municipal-level with the committee of CDOs and HDOs under specific objective 1. It was simultaneously conducted at the community level in six communities under specific objective 2. Synthesis research and knowledge generation and dissemination activities contributed to achieving specific objective 3.

FORMATION OF PLATFORMS

In all the six communities of the project, platforms were formed from existing associations; each platform was made up of about 30 participants. Groups involved include community development and occupational associations such as farmers' associations. The platforms were enriched further to include more men or women from other associations or villages depending on observed limitations

¹ In the original project document, this objective related to the committee of supervisory councilors. This was modified to ensure that the committee would group the stakeholders that could effectively trigger urban-rural interactions

of the group. These existing associations provided a quicker take-off, stronger opportunity for developing pilot projects and at the same time test new technologies (Roe et al. 2009). The choice of using existing associations is helping to sustain the adaptation projects in the communities..

The community platforms and the respective existing associations from which they were formed are listed below:

- i. OGBOR COMMUNITY (urban) in Aba North LGA
 - Eziukwu, Umuegege, Umuogbueghu, Umugba, Egbelu and Umunwankire
 - Ogbor Hilltop Traders' Association
- ii. OWERRINTA COMMUNITY (rural) in Isiala Ngwa South LGA (located at about 30 km Northwest of Aba)
 - Agricultural Farmers' Association ,Owerrinta Multipurpose Cooperative, Sand Diggers Association ,Fishermen Association ,Piggery Association
 - Owerrinta platform was called Ukwumbutu Farmers Association (Ufa)*
- iii. ABIRIBA COMMUNITY (rural) in Ohafia LGA (located at about 120 km northeast of Aba)
 - Ameke, Amaogudu and Agboji village associations
 - Abiriba Communal Improvement Union (ACIU)
 - Abiriba Women's Cultural Organization (AWCO)
- iv. UMUODE COMMUNITY (urban) in Osisioma Ngwa LGA
 - Odeukwu Multipurpose Cooperation Association
- v. AKWETE COMMUNITY (rural) in Ukwa East LGA (located at about 65 km southeast of Aba)
 - Akwete weaving cooperative society
 - Farmers Multipurpose cooperative
 - Udoala women association
- vi. EZIUKWU COMMUNITY (urban) in Aba South LGA
 - Jiakpo, Okputo,Oleke and Umuobu village associations and
 - Achi-aro market Association.

Below is Figure 1 showing all six communities who participated in the CCAA project

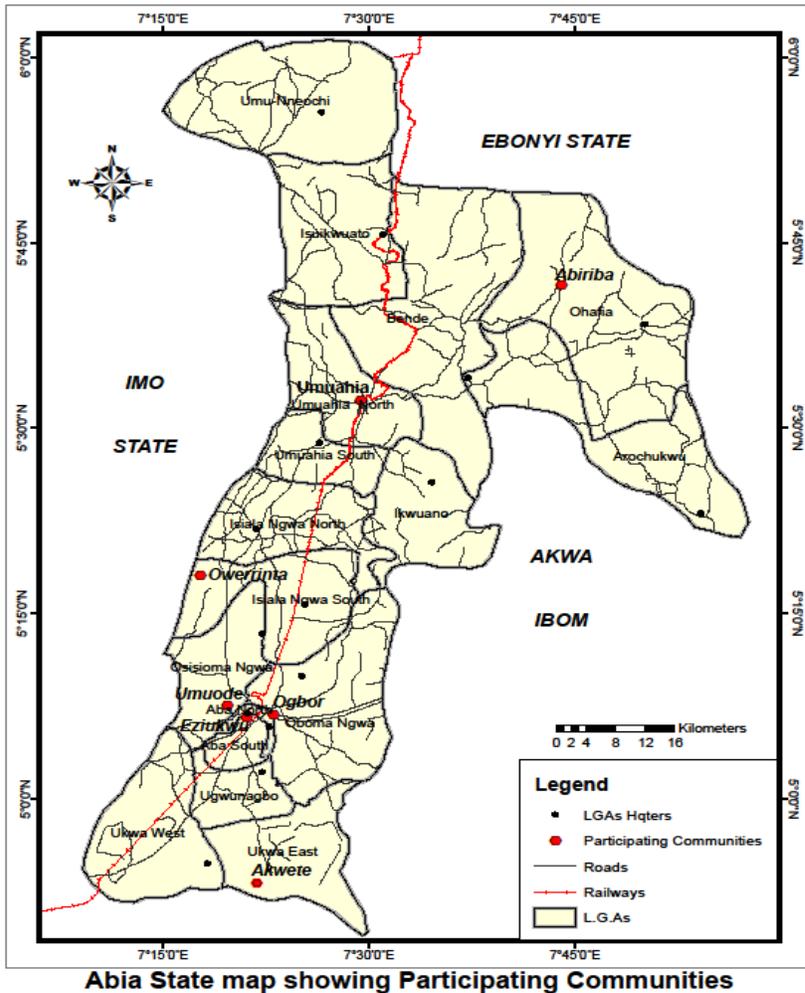


Figure 1: A map of Abia State showing the location of the participating communities

The municipal platform was formed by bringing together key staff of the six Local Government Councils who are exercising administrative control over the three urban and three rural communities. Two categories of staff [Heads of Departments of Agriculture (HODs) and the Community Development Officers (CDOs)] from each of the six Councils constituted the Municipal platform. The choice of these categories of staff was based on their connection with the communities and influence on the Council administration.

Within the 36 months of the project’s implementation, the project team has facilitated inception activities, participatory situation analysis, planning, exploring and testing of adaptive options with five community platforms, as well as with the municipal platform. Also it has enabled synthesis of observations and drawing out lessons learned from the project which have been developed into dissemination materials. The dissemination materials have continued to be distributed to reach as

many beneficiaries as possible. From the exercises, evidence of climate change was established in the communities; the platforms have identified factors that contribute to their vulnerability; and implemented specific adaptation activities to reduce the impact of climate hazards. All the communities have carried out participatory evaluation of the performance of the adaptation projects. The municipal platform did an assessment of the potentials and weaknesses of the LGA governance situation and were supported to enhance their capacity to develop policies. The municipal platform members have developed policy briefs that address the major climate hazards affecting the council. These were done to assist LGA institutions to support the communities in reducing their vulnerabilities.

4.1. Activities of the last semester and overall level of achievement

In summary, the following activities were carried out during the last semester:

- Facilitating municipal platform to develop policy briefs;
- Engaging municipal administrations to take up responsibilities that can sustain project objectives; and adopting the policy briefs;
- Enabling the community platforms to carry out participatory evaluation of the adaptation projects;
- Supporting the platforms to lay out plans and activities to sustain the adaptation project;
- Compiling lessons learned from the communities;
- Producing information, education and communication material that contains outcomes and findings from the projects,
- Organizing activities for disseminating and sharing information from the project

Project activities carried out since the inception of the project in 2009 have been subdivided into stages for each of the specific objectives mentioned above. Table 1 presents the stages and the program of activities for the project, indicating the status of each activity. Table 2 in the Appendix is a reporting table including a description of activities conducted and results obtained.

Table 1: Program of Activities for the Project

SO	Stages	Activities	Time Frame	Status
1: PAR at the municipal level with committee of	1.1 Participatory situation analysis of the rural-urban system:	Familiarization with HOS, Community Development Officers and HODs Agriculture in the relevant LGAs;	Oct – Jan, 2010	Done
		Securing a mailing list, convening a meeting of CDOs and HODs,	Feb 2010	Done
		Identifying likely stakeholders to join the Committee, conducting an envisioning meeting	Feb -March 2010	Done
	1.2 Participatory action	Participatory identification of actions to address threats in the communities – is there a new policy or byelaw that can facilitate adaptation in rural-	April, 2010	Done

	planning and exploring of possible collaboration mechanisms:	urban communities and how can the new policy or bye law be put together?		
		Stakeholder analysis: Who can be approached to assist?, Which people are responsible for developing the policies and how can the process be initiated and achieved?; What roles can the CDO, HDO or HOS play In the matter?	May, 2010	Done
		Identify other stakeholders to be mobilized and engaged	June2010	Done
	1.3 Participatory evaluation of collaboration mechanisms:	Engage the relevant stakeholders to promulgate policies and bye laws;	July 2011 – Feb 2012	Done
		Engage the rural and urban communities to utilize the policies to test out options for adaptation	Dec 2010 – May 2011	Done
		Relate with the communities to assess the effectiveness of the policies.	September 2011 – May 2012	Done
2: With the community-level committees	2.1 Inception Stage (Familiarization with communities):	Familiarization Visits – identification with community leaders, major organizations;	Oct 2009- Jan 2010	Done
		Meetings with representative of the communities;	Feb 2010	Done
		Developing TOR for them; engaging consultants to Baseline surveys;	Jan 2010 – March 2010	Done
		Inauguration of the platforms- convening the platform; explaining the process; formation of PMT in all the six communities	April – May 2010	Done
	2.2 Participatory situation analysis stage	Participatory Envisioning; Reflection on what were the hazards responsible for the prevailing Climate change Disasters;	May, 2010 2010	Done
		Situation Analysis- Community mapping, Stakeholder Analysis, Identifying Climate Change threats in the community	July 2010	Done
		Assessment of vulnerability and impact of CC to their wellbeing and interaction with Aba town or rural communities as the case may be;	Sept 2010	Done
		Reflection on the coping measures so far and their effectiveness.	Sept 2010	Done
		Participatory Monitoring and Evaluation training for Platform members and project team	Sept 2010	Done
	2.3 Participatory Planning and exploring of adaptive options stage:	Reflection on options available to overcome CC threats and challenges; Reflection of how to realize the options-material needed,	Feb, 2011	Done
		Are there alternative adaptive options? Reaching consensus on two most pressing and common of all the options;	Feb 2011	Done
		Repeat the process to ensure total acceptance; who should do what, external assistance from	Feb 2011 – March 2011	Done

		LGAs and any other relevant organ;		
		Where and who should be involved if the options would be tested	Nov, 2010	Done
	2.4 Participatory testing of adaptive options:	Reflection on the feasibility of realizing the adaptive options chosen- cost , time frame , personnel etc;	March 2011 – April 2011	Done
		Assembling the requirements for testing the options	Jan 2011	Done
		Assigning responsibilities towards implementing the options – including who keeps record and does the monitoring and evaluation	Jan, 2011	Done
		Operating the options; keeping records of activities and observations	Feb 2011 – May 2012	Done
	3.1 Develop plan for knowledge sharing	Preliminary outreach activities (with media) Identifying and listing stakeholders that could benefit from the experience; engaging in networks.	Oct. 2009, Marc 2010 – Feb 2011	Done
		Identifying and listing stakeholders that could benefit from the experience;	June 2010- March 2011	Done
		Making choice of medium for dissemination to various stakeholders identified	Jan – May, 2011	– Done
		Estimating the quantity or frequency for production	Marc 2011	Done
		Identifying suppliers that will produce the materials; establishing and comparing cost of production, identifying the phases for the produce and use of any of the materials	April – May 2011	Done
		planning of workshops for disseminating information including identifying appropriate audiences;	June 2011	Done
	3.2 Synthesis of observations analyses of action research and lessons learnt:	Assembling the record of activities at all the platforms; compiling lessons learnt- what worked and what did not work;	April 2010 – June 2012	Done
		Analysis of the approach and the results;	Sept 2011 – Mar 2012	Done
		Reflection on the actions and what were responsible for the success or failure and documentation;	Jan 2012 – Mar 2012	Done
		Reviewing and documenting what other approach used to engage the platforms for a re-testing of option	Feb 2012	Done
	3.3 Produce dissemination materials on lessons learnt:	Engaging competent persons to develop materials for dissemination.	Nov 2011	Done
		Developing manuscripts for the material to be produced	Sept. 2011 - Feb 2012	Done
		editing of materials; checking on the content and quality of the produced items	March, 2012	Done

		Producing the materials	Feb April, 2012	Done
3.4	Disseminate materials on lessons learned and evaluate their potential uptake	Distribution of the material to relevant groups and individuals;	March – June 2012	Done
		Engagement with government agencies and media	Sept 2011 – June 2012	Done
		Presentation of radio and TV programmes, mounting workshops with invited stakeholders.	June 2011; Oct 2011 – May, 2012	Done
		Reporting	Final Reporting	Nov, 2011 – June, 2012

Full descriptions of activities carried out from the first to the fifth semesters in the life cycle of the project have been documented in previous Interim Technical Reports as presented in Section 6 of this present Report. The activities conducted during the last semester are detailed below (Section 4.1.1), for each community and the municipal platform. It is to be noted that a summary of key results and lessons learned from these activities are presented in section 5 of the present report. A more detailed description of the activities can be found in the Comprehensive Reports produced through these activities. They are listed in Section 6.6 of this report and have been sent to the IDRC program officer.

4.1.1: Municipal and Community level Activities

4.1.1a: Municipal Activities

The Municipal platform (grouping of Community Development Officers -CDO and Head of Agriculture Department –HOD) had a meeting on the 24th of May,, 2012. Fifteen persons participated in the meeting. The platform members finalized a task which they started in their meeting of 7th February, 2012 - to produce Policy Briefs tailored to support adaptation activities in the communities. During the meeting previous documentations emanating from municipal platform activities were reviewed. Only the teams from 2 LGAs (Ukwa east and Osisioma) developed briefs which they presented at the meeting. A sample Policy Brief which was developed by project office was used to guide the participants. The title was “Enhancing community’s resilience and countering the problem of increasing flooding and water related diseases”. Some platform members chose to take up the policy brief for their LGAs. They were advised on the need to be backed up with strong advocacy. A video record of activities and progress made at the community level was presented to the participants. They appreciated the level of actualization of project objectives at the community level. The participants made suggestions on how the adaptation projects will be sustained and replicated to other communities. Among their suggestions were that the communities need to continue with practices that will not jeopardize the projects; creating more awareness and taking over of the projects by the LGAs. Also the participants discussed the level of achievement of the project objectives and gave their views of what was done well and where the project could have been done differently. They indicated that their awareness of climate change has grown significantly. They have understood their roles and contributions to help communities adaptation

activities. They have been able to develop policy instruments which they will pursue through the local Government Councils.

Other municipal activities performed during the season were meetings with Local Government Authorities to intimate them of progress made on the project, engaging them on the policy briefs and seeking their support to sustain the community projects. The LGAs visited were those of Osioma, Isiala Ngwa and Ukwa East. The Council authorities expressed delight with the completion of the adaptation projects. They all pledged to work towards sustaining the project. The CDO and HOD for each of the LGAs participated in the meetings. The opportunity was used for discussing the policy situation in the LGAs particularly as it relates to support to the communities. A policy brief document on *“Enhancing Community’s Resilience and Countering the Problem of Increasing Flooding and Water Related Diseases”* was discussed during the meeting and handed to the Council authorities.

4.1.1b: Community Activities

Owerrinta Community

The Owerrinta community platform held a meeting on the 25th of May 2012 where 29 members attended. They have completed construction of five open stalls. The platform used the opportunity to evaluate their activities and the level of achievement of project objective. They used charts and posters which were developed from past meetings to review their activities. They recalled the process of forming the platform from existing organizations, the trainings on climate change and adaptation, the mobilization of the community members, clearing the bush and the remains of the old market, sand-filling and construction of the stalls. Participants identified the impact which the resuscitated market is having on them and other community members. Among their observations were that they can easily sell their agricultural produce at the market and flooding is no more a problem during the operation of the market. They were also enabled to identify the challenges which they faced during or after the project. Among the issues raised were the heavy rain and flood that delayed the sand-filling and a community dispute which almost stopped the project. The platform members also discussed the arrangement which they have for sustaining the project. Their comments include constituting a market committee to oversee the maintenance of the market and constructing additional stalls to accommodate people. Already the community have begun building more stalls. The project team seized the opportunity to inform them of a coming closing workshop in the state capital Umuahia.

Umuode Community

The Umuode platform has successfully completed a health center which was an activity they carried out to provide care for sick ones in the community. A platform meeting was held on the 21st of May, 2012 where the participants were facilitated to assess the impact of the adaptation project and identify other follow-up activities. A facilitator displayed all the key charts produced from previous meetings to assist them to review the project activities. The participants listed and described key actions and decisions that they made in the course of the project. Among what they listed were consultations with the whole community that led to the allocation of a plot of land for the health center and feasibility report that they obtained from a consultant on the project. Also they remembered the visits to the Local Government Authorities seeking for partnership. Participants also discussed the contributions which the project has made to their wellbeing. They observed that the Health center has become operational even without its official handover. Among the benefits

they mentioned include that they have easy access to quality health services for sick ones without cost of transportation; they receive both nutritional and environmental education from the health center; and the project has increased their awareness on environmental issues. Participants also discussed the plans they have to sustain the adaptation project. Among their plans is to continue cleaning of surrounding of the building through their community women association and to affiliate the health center with a State University Teach Hospital. They used the session to plan the handing over ceremony for health center building to the Local Government. They were enabled to identify the key success factors that help them in the project and some challenges which they encountered. The Project Coordinator requested them to send three representatives to the closing workshop. Some Local Government Health personnel were simultaneously holding consultations with patients in the center while the platform meeting was going on. At the end of the platform meeting, the project coordinator interviewed the Head of personnel. She identified that the most common health cases they have been encountering were water-related diseases. On the 31st of May 2012 the community organized a ceremony to hand over the Health center to the LGA. The Officials of the LGA came and pledged to post personnel permanently to the center and equip the facility to standard.

Abiriba Community

Abiriba platform held a final meeting on the 23rd of May, 2012 with thirty two members participating. The members assessed the performance of the different groups during implementation of the gully erosion control project. They reviewed their actions and activities during the two and half years of engagement with the CCAA project. A facilitator displayed the documentations which were produced from previous meetings of the platform. At the meeting the platform members identified the actions which they took that brought about a successful completion of the adaptation project. The members also identified the benefits which the community and others have obtained from the gully erosion control project. Among the contributions from members were that: They are now using the reclaimed gully-affected route; they can now commute at a cheaper cost across the community and farmers have begun growing crops in their farms located around the gully area without fear of being washed away. Participants undertook inspection of the gully erosion project. They observed that the ban placed by the community against dumping wastes on the gully site and bush burning is being complied with. During the tour of the site it was agreed by the platform to extend the concrete drainage work to achieve further reinforcement. T

Akwete Community

Akwete platform implemented adaptation activities to diversify sources of livelihood and reduce poverty in the community. In order to reduce dependence on agriculture and fishing they undertook series of activities to improve marketing of Akwete cloth which has become unprofitable in recent years. On the 16th of December, 2011 an exhibition was held to showcase new products and designs from Akwete cloth at Gado International Hotel Umuahia, the capital of Abia State. The event attracted dignitaries from government, traders' associations civil societies and media received publicity before and after the event. The government representatives were excited with the innovations and they pledged to support the weavers through patronage and by including them as state contingent at national and international fairs. On the 19th of June, 2012, the platform held a meeting to assess the general achievement of the project including the exhibition. Participants did evaluation with the aid of charts and posters which were used in documenting previous activities and decisions of the platform. Some of the highlights of the review were that they have understood a lot about climate change and its relationship with poverty. They have made improvement on

Akwete cloth and produced other accessories from the cloth. Akwete cloth enjoys better publicity and patronage and their household income has grown through the project. The platform members also discussed what they considered helped them achieve the project objectives. Among the issues they consider should have been done otherwise were the level of involvement of their community leaders should have been more and the need to support their cooperative society to make bulk purchases of the thread used in weaving. Participants were also facilitated to discuss measures which they have taken to sustain the gains from the adaptation project.

Eziukwu Community

Eziukwu platform held a participatory evaluation meeting on the 26th of May, 2012 with thirty three members participating. The community platform chose to control flood and to open access roads in the community as their project objective. They were supported through education about climate change, its hazards and the need for adaptation. The whole community was mobilized and they turned out to carry out cleaning up exercise of the drainage channels in the community. During their final meeting the members were assisted to remember these activities through charts and posters emanating from previous activities. The gains arising from the adaptation project which the platform members identified included:- reduced incidence of flooding, improved vehicle movement and reduce cost of transportation; increased business and social activities as well as better cooperation between natives and non-natives. The platform members also identified the factors that made the whole project different and able to succeed. These included the level of mobilization and setting up of a taskforce by the community. Also they mentioned involvement of the traditional community leaders. They also discussed the challenges which they faced during the project and how they clean-up campaign can be sustained. Among the challenges was the dichotomy between natives and migrants in the community; and unfulfilled promises by government from previous interventions. The project coordinator informed them of a coming workshop that will mark the official end of the project.

Ogbor Community

Ogbor community completed situation analysis, envisioning and exploring for possible adaptation actions and planning for adaptation actions. However there arose a misunderstanding between the natives and the migrant population regarding where the project will executed. It was observed that the migrant population dominated a particular settlement area in the community while the indigenes dominated a different area. The area occupied by migrants where lands purchased by them from the indigenes who were the landlords. The problem of erosion and gullies is wide spread and affected the two settlement areas. The project made efforts to resolve the disagreement by scheduling meetings with them separately and jointly but there was no agreement reached. Also the project considered encouraging them to undertake their projects differently but the seems to be mistrust which has strong indications of degenerating. It was on this basis that the project was called off at the stage of testing the adaptation project.

EXIT ACTIVITY - CLOSING WORKSHOP

On the 24th of August, the project organized Closing Workshop as part of its exit strategy. The workshop was used as a platform to disseminate the outcome and lessons learned from the project and to provide platform for further interaction between various boundary partners for the purpose of scaling up the project. It also served as an opportunity to give visibility to the project and voice to

the communities. Over 54 invitees attended the closing workshop including media practitioners, NGOs, Policy makers, academia, rural and urban community members, and community development officer and Extension practitioners. The Commissioner for State Ministry of Environment Chaired the occasion. Some LGA chairmen and representatives were also in attendance. The Project Coordinator made a technical presentation that highlighted the project goal, communities, methodology, outcome and findings, and challenges. The occasion was used to distribute leaflets, CDs and other information materials from the project. The government officials expressed appreciation to CCAA for facilitating the project. They made various pledges to support the sustenance of the project. Policy briefs were also handed over to them.

4.1.2: Synthesis of observations, analysis of action research and lessons learnt

The project team enabled the community platforms to assess the extent to which various stakeholders met their expected contributions towards the completion of the adaptation projects. They also reflected on their actions to understand the key factors that enabled the platforms to achieve project objectives. In Abiriba, all the stakeholders provided their contributions except the LGA. The platform noted that the Age grade group and Traditional Council, through their efforts in mobilization, played key roles in realizing the project objectives. The Abiriba platform evaluated the impact of the completed erosion control project on the wellbeing of community members. They noted that community members and visitors pay less when going in or out of the community. Farmers have also begun replanting economic trees around the reclaimed project site. In Umuode, it was through such reflection exercise that they noted the weakness of the traditional Council in sustaining the mobilization of the community. This is a major reason for the delayed completion of the Community Health Centre project.

The Akwete community held an exhibition to showcase new designs and products developed with Akwete weaved cloth. The occasion was used to hold an interactive session with a cross section of the media. They include 3 television stations, 2 radio stations and 2 printed media outfits. They were informed of the project activities in the six communities in Abia State, the participatory approach, the level of project completion, the outcomes and lessons learned from the exercises. It enabled the participants to ask questions about the significance of adaptation activities, level of community and government participation, the possibility of extending the project to other communities and the role of the media. Over a period of 4 weeks after the exhibition, these media outfits gave prominence to issues of climate change, CCAA project activities in the communities and to the need to have greater government participation.

4.1.3 DISSEMINATION ACTIVITIES

At both municipal and community levels rich documentation was provided for and this enabled the platforms and the project team to determine the outcome of the activities and findings. The two levels of platform participated in ascertaining the level of performance of the projects. The outreach plan that was developed with the support of key stakeholders was applied in the project. Visits, letters, project briefs, publications in newspapers and website, leaflets, CDs and workshops were part of the tools and strategy used in disseminating the project's findings. Visits were made to government officials at Local and state levels, community leaderships and media houses. Also all letters written to partners and beneficiaries contained adequate information about climate change

and the project's performances. Such letters were written to Commissioners, LGA chairmen, NGOs and agencies. Vendors were identified who helped to document community and municipal activities in CDs. The CDs were shared out to stakeholders and invitees during meetings and workshops. Two leaflets were produced during the project which contained information on performance of the project and lessons learned from the exercises. The last leaflet was also used to disseminate the policy brief developed from the project. Also activities and findings of the project were regularly posted on NEST website (www.nestinteractive.org). Visitors to the site are benefiting from the information and they sometimes send in feedbacks for clarifications. There were five major workshops organized by the project. They include: Inception workshop held on 23/24 September, 2009; Participatory monitoring and evaluation workshop held on 7th-8th September, 2010; the Exhibition workshop held on 16th of December 2011 and the Closing workshop held on 24th August, 2012. The invitees to these workshop included persons from the academia, civil societies, media, extensionists and policy makers. They workshop served as good platform for disseminating information from the project using technical presentations, leaflet and CDs which were distributed and press briefings organized. There were newspaper coverage and publications of the project activities and findings. These include the publications in the Nigerian Guardian of Monday, September 17th, 2012,

4.1.4: Lessons learnt from activity implementation

Lessons learnt from the implementation of activities during this semester:

Community organization and Integration

- i. The platform members are drawn from existing associations and this connection formed an effective channel for feedback responses. The improved awareness and capacity impacted on platform members are also influencing discussions and activities of these parent organizations. It is one feature that helped in sustaining the projects
- ii. Akwete cooperative Society is having increasing membership enrolment because of the awareness and improved profitability of the weaving industry. The CCAA project has helped to strengthen the advocacy capacity of the of the women group.
- iii. The nature of community's structure, governance and internal cohesion played a key role in determining the realization of the adaptation project and objectives. In Abiriba for example, the Age Grade institution and the Traditional Ruler helped in the sensitization and mobilization of the community members and resources.
- iv. In Umuode, the platform had a delayed in mobilizing their remaining contributions because of the disagreement that arose on the community leadership. Here, both the migrant and indigenous populations were facilitated cooperate to address communal challenges caused by climate change through proper sensitization and mobilization involving every stakeholder.
- v. In Eziukwu, there was a dichotomy between migrants (whom they nicknamed stranger elements) and the natives at the commencement of the experimentation phase. The involvement of a Town Crier who is a non-indigene and the information that trucks will be hired were key motivations that made migrants and indigenes to jointly participate in the exercise

Triggering Communal Revenue Generation and remittances

- vi. The acceptance of community decisions and opinion encourages platform to consider and bring forward other available options that can be used in achieving the project objectives. In the Abiriba community, the platform decided on the type of plant species to be used to stabilize the gully site and this made them realize that the project could be a source of communal income. Also members of the community who migrated to urban centres were encouraged to send in remittances in appreciation and support of the project.

Creating Unintended Sources of Income

- vii. New thinking and active engagement are able to change the perception of the people and create a value chain that can elicit patronage and job creation in the communities. Some of the products brought for the exhibition by the Akwete platform were not in the original concept of the Consultant. These include earrings and shoes and have created a source of income for people in the community. These products were among those highly sought for by the guests during the exhibition.

Cooperation and Support

- viii. The poor performance and support of Local Government Council to communities is blamed on lack of funds but they do make effort to take advantage of other potentials such as abundance of human resources, indigenous knowledge of the people and their self-help spirit. The Local Government administrations at Isiala Ngwa, Ukwa East and Osisioma LGAs repeated the same excuse but now they appreciate that the community adaptation projects were achieved with small funds used for facilitation and support.
- ix. External contribution towards (community) grassroots empowerment sometimes gives a push to government agencies to respond to adaption needs of the communities. For example the Isiala Ngwa LGA has began developing access routes leading to the reclaimed market. Also at Umuode, the Local Council have began to provide equipment and other facilities at the health center;
- x. Beneficial interventions for communities are suffering delays because of government approach to implementation. At Abiriba, it was believed that the project will be executed through contract with no community contributions. Doubts were cast on the project at Owerrinta and Umuode also which prolonged the inception phase of the project. This attitude was overcome through persistent communication and project leadership approach. There is need for government to keep faith with contractual arrangement with communities with regard to imposition of levies and execution of works
- xi. The willingness of some government institutions to partner with civil societies to actualize project objectives such as the community adaptation projects is predicated on prove of credibility and ability to fund such partnerships with resources.
- xii. The administration at the Local Government Councils is temporary; and this poses a serious challenge in producing legal framework to respond to needs for climate change adaptation in the communities. All the Chairmen and Councilors are appointed, not elected, as transition councils, and are therefore unable to enact bye-laws. The Councils can on only provide policy frameworks which may not have regulatory or enforcement content.

- xiii. The LGAs are able to take steps to increase their level of preparedness to reduce the impact of climate change if they are given the required guidance. In Isiala Ngwa South LGA, they have initiated the process of gathering information on climate hazards affecting their communities. This was as a result of the interaction with CCAA team and explanation on how the communities were chosen.

5: RESEARCH FINDINGS

In the following paragraphs, we present how the various adaptation projects are contributing to reduce the vulnerability of communities to major climate hazards. It also highlighted ways through which rural-urban interactions has been improved to support the resilience of communities. Some of the roles which the project played in supporting the community experimentation were mentioned. This session also presented the expected contribution of some boundary partners such as the local government or the state.. We also discuss how rural-urban interactions that are critical to local livelihoods are affected by climate change and how the negative effects could be reduced.

5.1 Municipal Level

The Community Development Officers and the Heads of Department for Agriculture are civil servants who interface between the communities and the Local Government Councils. In this project, they constitute a municipal platform that explored for cooperation opportunities that would reduce rural – urban migration and related environmental degradation that make communities more vulnerable to climate change. The project helped to build the capacity of the CDOs/HODs through enlightenment about climate change hazards and adaptation processes. The municipal platform members had a stereotyped engagement with the communities in the past which does not have the effectiveness and flexibility to support climate change adaptation activities at the community level. Through the project they have developed a better orientation and focus which has made them appreciate the reality of climate-related hazards, limitation of the communities to address the hazards, and needed support from the municipal authorities. The municipal platform members have done a mapping of policy and cooperation situations in the communities and through that they identified that there are no specific policies and bye laws existing that can assist communities to adapt to climate change impact. Some of the existing policies and bye laws are non-specific, poorly crafted and difficult to implement. Also the pattern of engagement with the communities, most times, excludes the communities who are the end-users of the project or policies; and this makes the programs unsustainable. The communities view the policies as unfriendly and geared towards further exploitation.

The platform members were facilitated to appreciate the contributions or roles which they should be play in order to support the communities to adapt. The municipal platform members identified their own limited capacity to make contributions on account of poor skills to develop policy instrument, engage in advocacy and skills to push for attitudinal change. The CDOs/HODs capacity were enhanced in these regards. They have developed actionable policy briefs directly targeting climate hazards in the communities which have been adopted by some of the Local Government Council. Also they were supported to identify other surrounding challenges. There is lack of capacity among elected Council officials and poor infrastructure to develop policy instruments at the Local Government Council level. Another core challenge, is that leadership positions are unelected and are frequently changed at the Local Government Council. As a result, the Councils lack statutory capacity and adequate timeframe to provide the needed policy and cooperation to reduce vulnerability of both rural and urban communities to climate change. Also confusion created by the

constant change in governance has enabled the state level authorities to usurp some responsibilities which the Local Government Councils have had towards communities. This situation results in communities developing distrust because they are unable to access the needed support from government institutions.

In conclusion, the activities at the municipal platform are helpful to rural-urban exchanges because policy and governance institutions are important frameworks that influence the outcome of adaptation or development activities. Having created significant frame of awareness and capacity for cooperation among the municipal officials they have already began supporting adaptation activities in communities.

There is a poorly developed institutional structure at the municipal level in Abia state. Otherwise, this would have supported the rural and urban communities to adapt to climate change using the interdependence of both community systems to an advantage.

5.2 Community Level

Abiriba

The community platform in Abiriba explored the possibility of reducing the community's vulnerability to the menace of erosion caused by heavier rainfall of recent years. Some houses, roads, market and schools in the community have either been abandoned or under serious threat of being eroded. Farmers paid higher fares to convey their products because vehicles were using alternative and longer routes to avoid the gullies. Some households lost income-generating fruit trees and crops to erosion and landslides. Factors that contribute to the vulnerability of the community to erosion include the sloping landscape, lack of good drainages, indiscriminate cutting of trees and sand mining. The Abiriba community platform agreed to control erosion as their project objective by constructing drainages and stabilizing the fragile soils with bamboo plants and Neem trees. The project hired consultants who helped the platform members obtain information regarding the resources and cost required for implementing their adaptation activities. While women in the community gathered stones and provided water, men provided sand and labor, youth planted the tree seedlings. The project provided the engineer that designed the drainages, a carpenter and bags of cement. The plant seedlings were raised in a nursery by the project.

Today, the road across the project site has become passable and commuters from within and outside the community spend less on transportation. Members of the community are re-planting income-generating trees on their farmland without fear that they will be washed away again. The community leaders are seeing the bamboo planted on the erosion site as a source of communal revenue as it will be selectively harvested, when matured, and sold by authorized persons. Returning members of Abiriba who temporarily migrated to urban centers are remitting monies to the community in support of the project. Sustaining the adaptation project and replicating it in other areas affected by gullies is the focus of the community. They are considering using money realized from the harvested bamboo and the remittances to continue the work on the project. They are sensitizing members of the community to avoid dumping wastes on gully sites and avoid setting the vegetation on fire. The Local Government Administration did not support the project as the platform members had anticipated and they attributed situation to poor representation and changes in the leadership of the Council.

Reducing agricultural losses and existence of transport route are very significant to the livelihoods of farmers. They were hindered by a climate-related hazard, erosion, which results from heavy rains. Access roads are necessary for the transportation of the produce. The negative impacts of climate change on these exchanges and on the livelihoods of farmers can be reduced by a proper maintenance and protection of the roads (responsibility of the State), construction of drainage and infiltration infrastructures (responsibility of the local government area), planting trees as well as judiciously planning the exploitation of trees and sand (responsibility of the community). The community can also reinforced the soils within existing gullies with stone walls and practicing agroforestry to help retain sediments and progressively fill them up. Complying with existing and upcoming policies that relate to natural resource conservation, waste disposal and fire prevention are essential to increase their resilience.

Umuode

The Umuode community platform identified flooding as the major climate hazard in their community. It has brought about an increase in prevalence of diseases and frequent ill health, particularly on children and women. Women lose working hours and their children are frequently absent from schools because of ill health. The platform members also reported that incidences of child and maternal mortality are rising in the community. Flooding is caused by increased intensity of rainfall experienced in recent years in Umuode community. The community platform chose to develop a Primary Health Center to provide care for those affected by ill health. The State Government had rehabilitated a major road which improved access to the community. The contributing factors to the increasing risk of flooding in the community are higher intensity of rainfall and absence of drainages. It is hoped that the drainages constructed along with the rehabilitated roads will reduce flooding. The platform identified that the frequency of ill health in the community is worsened by the absence of health care facilities, poor nutrition and increasing migrant population in the community. In planning to provide a health care centre, the community designated a plot of land where the facility is located. A building consultant was contracted by the project to guide the community platform in the construction. The Osisioma Ngwa Local Government Council was approached by both the project team and member of the platform to seek its support. Various stakeholders pledged to provide different materials for the construction. At the on-set, the platform mobilized the community to secure these materials needed to commence the project. The community's traditional council provided truckloads of sand and stone for the project. The women provided water for the construction while their youth supplied labor.

The community's project objective has been actualized now that the health center has been built and become operational. Government health personnel have began delivering health care services to sick persons in the community. The project has contributed to reduce the vulnerability of the people in the community because according to the community members: the health center is accessible and households in the community are saving transport cost which would have been spent traveling to other far away health centers; community members are benefitting from improved health and nutrition education given to mothers and other patients who come for treatment; non-indigenes in Umuode community are bringing their visiting relatives from rural communities to the Center for treatment; some members of the community have began a make-shift market for children's wears and other household materials at the center which is providing source of livelihood and increased household income for their people; the health center is giving community members assurance of government presence and they are benefitting from some free medical services; the community members are purchasing genuine drugs being sold at reduced prices from the Center.

The community members have also laid out arrangements to sustain the adaptation project through :- provision of security; carrying out monthly weeding and clean up around the health center building; making necessary consultation to transform the center to become an outpost for State University Teaching Hospital; officially handing over the Health Center to the Local Government Authority (LGA) at Osisioma Ngwa and by retaining the project management committee (PMC) to continue monitoring the functioning of the Health center.

Akwete

Agriculture, a major occupation of Akwete people, is increasingly becoming unprofitable because of declining soil productivity. The Akwete platform agreed to diversify to other sources of livelihood, thereby reducing their poverty level and vulnerability. A locally weaved cloth was considered a veritable product whose marketing could be promoted to reduce poverty in the community. However, the production and marketing of Akwete cloth have declined as a result poor patronage and lack of product variety. The low profitability of Akwete weaving has waned the interest of young ones and the craft is now dominated by aged women in the community. Youth in community are increasingly forced to migrate to urban centers, such as Aba, to search for sources of livelihood. Akwete platform members reported that their children were dropping out of schools and that social vices rose in the community. The factors that contribute to the increased level of poverty are: declining soil fertility, government policies not supporting their major sources of livelihood; the low profitability of weaved cloth; dwindling interest of younger peoples in their local weaving craft; absence of market for their weaved cloth and the loss of patronage of tourists. The community platform identified and implemented activities that will promote the marketing of their locally weaved cloth. They were enabled to produce new designs and products of the Akwete material. A consultant was engaged to train the local weavers on the improved techniques which they experimented on and produced new designs and products. A small capacity rolling machine was developed and introduced to the weavers which in general terms reduced the weaving time. Through these measures the platform was able to produce new Akwete cloth with less weight and other products such as traveling bags, shoes, ear rings head gear and muffler. The Project team partnered with the State Ministry of Commerce and Industry and the Local Government Council to organize an exhibition to showcase the new products from Akwete weavers. The Exhibition was held on the 16th of December, 2011, at the state capital, with many invitees attending from the state and local governments, the media, academia and market traders' associations. All the CCAA project activities and the Exhibition were extensively publicized in both print and electronic media. The new products were highly patronized during the exhibition. The platform used their initiative to produce ear rings and the shoes. The project was a catalyst to these additional achievements. The State Ministry of Commerce and Industry was elated with the innovations and pledged to promote the Akwete cloth and involve the weavers in all Trade Fairs which the State will be participating. Community platform members have presented indications that the community's project objective has been realized. Also an independent evaluation has reinforced the opinion from the platform. The adaptation project has contributed to increase the resilience of community members. Some indications of this include: that the Akwete cloth has become re-packaged by being lighter and new products have been made out of it. The changes have brought more

patronage and sales to the weaving households; the increased sales has provided better income to most households and has improved their standard of living; the Akwete cloth enjoys greater publicity and the weavers are receiving orders from institutions and individuals for materials; the cooperative society is cooperating with government institution and policy makers; the younger ones in the community are picking interest in the trade of weaving. Another general impact of the project is the improved awareness of climate change and need for adaptation action in the community. The conclusion of the community was possible because of participatory process; tangible project and appreciable progress were visible;

Eziukwu

For over fourteen years the drainage channels in Eziukwu community had not been cleared. The increasing intensity of rainfall in recent times occasioned by climate change has made flooding a perennial problem during the wet season. Roads are rendered impassable and many houses are abandoned in the community particularly during the monsoon season. Market and other businesses become closed during the rainy season. Commuting in and out of the community is a serious challenge. Transporters avoid plying the community's roads and the few that risk the hazards charge five times the usual fare from the boundary junction to the centre of the community. Residents adopt diverse coping measures such as carrying their office clothes and shoes inside bags and dressing up after trekking across the flooded area. Others use heaps of sand bags to hold off the flood from their premises. Bringing in goods from rural areas is difficult and those brought in cannot be sold in any central place because their community market has become non-functional. Blockage of existing drainages with wastes; non-adherence to town planning rules and building of houses indiscriminately; population increase in the community; inadequate infrastructure and neglect by government were the features recognized by the platform members to have made the community vulnerable to flooding. The platform planned a clean-up exercise and organized community enlightenment as the adaptation activities which were implemented to achieve their project objective. Using effective mobilization and imposing movement restriction, the community members tramped out and conducted a clean-up of the drainages on the 28th of January, 2012. Key factors that helped the clean-up campaign to succeed were the availability of trucks to evacuate the wastes scooped out from the drainages and the involvement of the traditional ruling council in the mobilization of residents. The attitude of different government contractors who collect levies from residents for the purpose of clearing the gutters without fulfilling the work. This has made the residents to feel defrauded and created distrust against the government. The unfulfilled roles and the levies imposed by the government left the community in perpetual wait and unable to plan for themselves. The increasing diversity of population with more and more migrants contributes to the challenge particularly for mobilization. The wastes which were scooped from the drainages during clean-up exercises are supposed to be evacuated by relevant authorities, namely the Local government agency and ASEPA; but they are not. The trucks used for evacuating the waste during the exercise of the 28th of January were hired by the project. The drainages have been cleared of the blockages after clean up. Another clean up exercise was carried out in the community on 31st of March, 2012. The project has succeeded in completing its set adaptation activities. A two-prong approach evaluation method was adopted to assess the level of achieving project objectives- using community participation and an independent evaluation.

From the evaluations it was indicated that flooding has become tremendously reduced in the community; roads have become passable and movement of persons in and out of the community is easier; vehicular movement into the community has increased making transportation of persons and goods easier and cheaper; cleanliness of their surrounding has greatly improved and former breeding grounds for mosquitoes have been removed; incidence of water-related diseases in most households, particularly malaria, has been reduced; some abandoned houses in the community have been re-occupied by tenants; there is also increased business and social activities in their community; there is greater cooperation between the migrants and indigenes of the community through the project. The independent assessment also found out that community members wholly comply with rules made by their own community traditional leadership than that made by the government. Some of the factors that helped the community to complete the project were that: they were the decision-makers in the project. It enabled them to focus on the felt-need of the community; the formation of a taskforce which included both indigenes and migrants made all sections of the community to have a sense of belonging; there were trucks available to evacuate waste collected from the drainage channels which gave the community confidence and boosted their enthusiasm in the clean-up exercises; the project brought exposure and there was involvement of men and women without discrimination. Among the challenges that were ascertained through the evaluation were: the rivalry that existed between the indigenes and non-natives in the community which delayed the participation of non-natives in the platform; the community members assumed that the CCAA project was one of those programmes which the government used to defraud them. Sanitation levies are collected from them annually by the government yet there is no positive impact on the cleanliness of their environment; the rains have become very intense these days and it does not take long before the drainage channels become filled up again.

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Owerrinta

Owerrinta is a rural community existing on a plain. The occupation of the people is mainly farming because their land is very fertile. There was a local market in the community where the people sold the products to merchants from Aba and, on the other hand, bought manufactured goods from the merchants. The community's market was destroyed and abandoned because of floods. Farmers in the community traveled long distances to Aba to sell their products at unfavorable prices fixed by urban market associations. Some income-earning activities associated with the market, which had occupied their young ones no longer exist. Apart from the flatness of the terrain other identified factors that contribute to the flooding are lack of government's attention to their problems and lack of drainage along the expressway and other roads. The community platform members concertedly identified and implemented some adaptation activities to reclaim the flooded market. With the guidance of technical experts provided by the project, the community sand-filled the area with over 150 trucks of red earth soil and erected some stalls on an elevated market platform. The interest of the community members to operate the market has been re-awakened with the re-erection of stalls. A disagreement among the families in community over the pattern of allocation of the stalls was settled by the project and the traditional ruling council. Five stalls have now been constructed on the site and it has been commissioned by the Local Government Authorities.

Final activities carried in Owerrinta community were to evaluate the performance of the project compared to the initial objective. The contributions of the adaptation project included that:

- flooding in the market has been checked and the market has been re-started;

the market is encouraging farming activities in the community as they are easily selling their agricultural products without most of them perishing on storage or transport;

- The re-opened market has enabled them to save money and time which would have been spent on transportation of the goods. In the past they traveled up to a distance of 30km on bicycles and lorries to Aba to sell their products;
- People from neighbouring communities and Aba are coming to the market to buy and sale their goods at the market. Before now, the absence of central market made the merchants to move from one farmer's sales outlet to another to buy the agricultural produce. The situation and poor communication among the farmers gave advantage to the merchants to buy their goods at exploitatively cheap prices.
- Flooding at the market have been checked and community members no longer have the fear of endangering their lives while transacting business in the market;
- Many households in the community are having increased income because of the re-opened market.
- Community members are now buying household wares and other processed materials (eg packaged food items) from traders who come from Aba town to sell goods at their local market. . The opportunity has enabled them to interact more with traders from Aba town and through them they sometimes deliver messages to their own relatives who had migrated to the city.
- The re-opened market has also brought back sundry jobs such as "Cart pushers" and "loaders" which have occupied some of their youths in the community. They were before jobless and some were engaged in sand-mining, an activity that was exposing the community to erosion menace. Now that such jobs have been created it will hopefully reduce the tendency of migrating to urban centers;;
- Conflict in the community is reduced because majority of the local population are meaningfully engaged in one livelihood activities or the other and family conflict has reduced as well;

The arrangements which the platform have in order to sustain the market include: strengthening the embankments which were constructed around the markets periodically; handing over of the market to the Local Government Council at Isiala Ngwa South which has been done; building more stalls to ensure that every member of the community is accommodated and can benefit from the re-opened market; constituting a market management committee made up with women and men who are overseeing the functioning and maintenance of the market; reviving some of their traditional norms and ceremonies that fostered the growth and cleanliness of the market in the past before it was destroyed.

Conclusions drawn across the sites

From the observations made through the activities in the different sites, we draw the following conclusions about how urban-rural interactions affect the adaptive capacity of communities and how these interactions are in turn affected by climate change.

Trade appears to be the most important source of income of populations in both rural and urban areas. Rural communities depend on trade with the cities to sell their agricultural products, crafts,

natural resources. In turn, many players in urban areas commercialize products from the rural areas. Rural consumers are also important to the urban trade. The income from this trade contributes to households' capacity to cope with climate related hardships.

However, this trade is seriously being compromised by the effects of climate change. Increased rains result in increased floods and erosion. The damages caused to roads increase the cost of transportation of goods and reduces the income from trade. Damages to markets in rural areas force farmers to sell in the city and to be submitted to conditions fixed by urban market associations. Increased sickness due to increased temperatures and standing water affect the overall well-being of households but also affect trade through diminished work force. Irregular rainfall reduces agricultural yields and compromises the profitability of agriculture. Important rural-urban migrations, which are exacerbated by these factors, bring added pressures to urban areas. Unplanned settlements increase the risks of floods and of spreading of waterborne diseases. Increased construction in urban areas increases the needs for sand and wood exploited in rural areas. Their exploitation further increases the vulnerability of these areas to erosion.

Community authorities, local and state governments have the responsibility of providing services that are important to development in general and crucial to adaptation. Failing to play these roles can significantly hinder the capacity of both rural and urban communities to adapt to climate change. These roles include the coordination of the actions of different players, adequate planning of settlements, waste removal, the construction of drainages, road maintenance and the provision of health services. They also have an important role to play in the regulation of the extraction of natural resources such as sand and wood in rural areas. It is observed that the Local Government administrations lack the technical capacity to develop policy instruments that are crafted to enable them meet these responsibilities at community level. This represent serious handicap at governance level and worsens the helplessness and vulnerability of the communities if not addressed. The situation is partly accounting for the indifference of the local government institution regarding the impact of climate change in the communities.

A number of international mechanisms have been put in place to provide funding for adaptation to climate change. This funding could be used to cover some of the additional burden created and it should therefore be channeled to local and state governments through the national agencies that have access to it.

6 OUTPUTS BY SEMESTERS

The outputs from various activities performed between September 2009 and August 2012 have been submitted to the Program officer, along with their respective Interim Technical Reports. They include six Interim Technical Reports as listed below. The submitted activity outputs are as follows:

6.1 NEST (2010) Inception Report

- NEST (2010) Report On Nigerian Environmental Study/Action Team (NEST) Inception Workshop of a CCAA- Funded Project-Inciting Rural-Urban Interactions to Cope with Climate Change at Binez Hotel, Aba, Abia State from 23rd And 24th September, 2009. 4 p.

- NEST (2010) Project Orientation /Inception Workshop for Communities Representatives and Local Government CDOs and HODs of Agricultural Department, 4th February, 2010. Workshop Report, NEST, 13 p.
- NEST (2010). Report of the Facilitation Training Workshop, 11-12 February 2010. Workshop report, NEST, 17 p.
- Onyebinama, U.A.U. (2010). Baseline Survey in Owerrinta (Isiala Ngwa South Lga) and Abiriba (Ohafia Lga) Abia State. Consultancy Report, 5th April, Ibadan, Nigeria, 16 p.
- Umoh, G., (2010). Baseline Survey of Eziukwu and Umuode Communities in Abia State, Nigeria. Consultancy Report, 2nd April, University of Uyo, Uyo, Nigeria. 20 p.
- Asawalam D. (2010). Baseline Survey of Akwete and Ogor Communities in Abia State, Nigeria. Consultancy Report 4th April, Michael Okpara University of Agriculture Umudike Nigeria. 28 p.

6.2 NEST (2010) Interim Report N 2

- NEST (2010) Comprehensive Report of Situation Analyses conducted in seven Platforms Comprising of three Rural Communities, three Urban Communities and the Local Government CDO/HOD 28th May – 20th July 2010. 91p
- NEST (2010) Comprehensive Report of Stakeholders' Analysis and Envisioning Exercises Conducted in Three Rural and Two Urban Communities 24th – 31st July, 2010. 29p
- NEST (2010) Report of the Proceedings of the Project Management Committee meeting of Aba Climate change Adaptation project, 6th of September, 2010 Mirage hotel calabar. 5p
- NEST (2010). Report of the Participatory Monitoring & Evaluation Workshop September 7-8, 2010 Mirage Hotel, Calabar, Cross River State, Nigeria Workshop Report 26p

6.3 NEST (2011) Interim Report N3

- NEST (2011) Comprehensive report of the first project pre-experimentation meeting on adaptation option in the six communities 21st January – 17th Feb 2011 pp 40
- NEST (2011) Report of a CDO/HOD platform project pre - experimentation meeting for testing adaptation policy actions held in Umuahia on 23rd February, 2011. pp13
- NEST (2011) Climate Change Adaptation for Africa: Triggering rural-urban interactions to cope with climate change: an adaptation experiment in Aba and its region, southeastern Nigeria. Project Information LEAFLET No 1
- NEST (2011) Report of a courtesy visit to the Honourable Commissioner of the State Ministry of Rural Development, Cooperative and Poverty Reduction , Abia state on the 8th March, 2011 pp3
- NEST (2011) Planning outline for a consultative forum on CCAA-NEST Aba project for knowledge sharing with stakeholders and expected beneficiaries in April 2011 pp 3

6.4 NEST (2011 Interim Report N4

- NEST (2011) Report of the platform meeting held on 16th march, 2011 and a pre-experimentation meeting held on 31st may at Eziukwu community pp13.
- NEST (2011) Workshop report of a stakeholders' consultative forum on knowledge sharing to expected beneficiaries on 18th May, 2011 at Umuahia pp14.
- NEST (2011) Comprehensive report of final pre-experimentation exercises and commencement of some experimentation activities in the communities between March and June 2011 pp32
- NEST (2011) Workshop report of a stakeholders' consultative forum on knowledge sharing to expected beneficiaries on 18th may 2011
- NEST (2011) Comprehensive report of the first testing platform meetings in the six communities May – July 2011 pp 40
- NEST (2011) Report of specific baseline study on planned adaptation experiments to reduce the vulnerability of rural urban-interaction: A case of Aba and its region south eastern Nigeria 25th August 2011 pp 32
- NEST (2011) Participatory planning and implementation of community adaptation response to climate change impact on rural-urban interdependence: An experiment with Aba and its environs" (*About to be published*)

6.5 NEST (2012) Interim report N5

- NEST (2012) Comprehensive report of Community platform activities in the communities between November 2011 and February, 2012 pp45
- NEST (2012) Comprehensive report of municipal level activities between September, 2011 and February, 2012 pp 21
- NEST (2012) NEST, others urge support for Abia sustainable livelihood scheme, The Environment, The Guardian Newspaper, Vol 29, No 12079, page 38, Monday January 23, 2012
- NEST (2011) Participatory planning and implementation of community adaptation response to climate change impact on rural-urban interdependence: An experiment with Aba and its environs" (*About to be published*)

6.6 NEST (2012) Final Technical Report

- NEST (2012) Report of CCAA project closing workshop held at Gado Hotels and Garden, Umuahia, Abia State, Nigeria on 24th August, 2012
- NEST (2012) Comprehensive report of final platform meetings at the municipal and
- community levels held between May and July, 2012
- NEST (2012) LEAFLET No. 2 Triggering rural-urban interactions to cope with climate change: an adaptation experiment in Aba and its region, Southeastern Nigeria. July, 2012
- NEST (2012) End-of-Project Evaluation Report: Triggering rural-urban interactions to cope with climate change: an adaptation experiment in Aba and its region, Southeastern Nigeria. July, 2012
- NEST (2012) Compilation of newspaper articles published on activities of the project

7. OUTCOMES

Below are observed outcomes for the main boundary partners who are involved at the municipal and community levels of project activities. Project outcomes for each activity can be found in the reporting table, Table 2 in the Appendix.

7.1. Platform and Community Levels

Reduced Impact of climate change in communities

- i. The community projects have reduced the incidence of flooding and erosion in the communities where projects were implemented. At Abiriba the completion of drainage channels has checked the threat of gully erosion in Amamba village. At Eziukwu, the cleaning up of the drainages has channeled the run-off and reduce flooding in the community. At Owerrinta community, flooding has been checked in their local market.
- ii. The resilience of community members at Umuode and Akwete has been enhanced through the adaptation projects which they implemented. The health care services which are obtained at Umuode community has eliminated the seeming hopeless situation and avoidable expenses the incur in the community. Akwete community have a reliable alternative source of livelihood and has reduced poverty among weaving households in the community. Also the

Increased Empowerment and Developmental capacity

1. The platform members have built their capacity to execute developmental projects on their own. They were able to determine what has influenced the success of the community adaptation projects and the challenges which were encountered. The pilot projects were effective demonstration for the platform members;
2. The community members have also understood the importance of adequate mobilization and governance structure in project management. The platform members at Umuode, Abiriba and Owerrinta recognized these as facts during evaluation exercises
3. The platform members and the communities have marked out activities that will enable them to sustain the adaptation projects. The communities have already implemented some of the activities such as organizing opening ceremonies where the Local Council authorities took over the projects at Umuode and Owerrinta; and the continued existence of the Project Management Committees. At Abiriba the rules placed against dumping of waste in the gullies and bush burning are still in effect.
4. Many community members are becoming engaged in occupational opportunities created through the adaptation project. At Owerrinta, loaders and cart pushers are benefiting from the operations in the market. At Umuode, some mobile traders are selling children's wears and other household items to persons coming to be attended to at the health center. Akwete weavers are having increasing order for Akwete cloths and their income has tripled as a result of the project intervention;
5. Farmers and various households have regained confidence to re-plant economic trees and crops around the erosion affected areas. This was made possible at Abiriba through the completion of the adaptation project in the community.
6. Communities have opened opportunities for more market for their products and more jobs through the adaptation projects. In Akwete community, the exhibition of new products and

designs has created more demand for additional products and consequently more job opportunities for the weavers in the community.

Improvement in rural urban interaction

- i. Community members are witness improvement in the level of engagement between urban and rural dwellers as a result of the project. At Owerrinta the opening of the market has enabled people from other communities and Aba city to come buy and sell goods.
- ii. The community adaptation projects are encouraging migration in some communities. In Umuode, some migrants bring their relatives in rural communities to benefit from free health services provided at the health center. Also in Eziukwu, some abandoned houses are being re-occupied now that flooding has reduced in the community.

Improvement in Gender inclusiveness

- i. Women fully participated in decision-making and providing contributions in all the communities where adaptation projects were implemented. This enabled them to have a sense of ownership in the project. In the past communities women were hardly consulted before decisions are taken in these communities. The involvement of women made it possible for them to take part in the allocation of stalls on their own at Owerrinta.
- ii. It has increased the advocacy capacity of the disadvantaged groups in the communities particularly women. The project at Akwete enabled the Women weaving Coperative Society to attract more membership monthly. The increase in membership has given them strength to seek for assistance from the Local Government Council.
- iii. The project has also generated better gender involvement in community activities. At Eziukwu, clean up campaign was reserved for men mostly. The imposition of community sanctions has encouraged women and men to participate equally in the exercise;
- iv. Opportunities have been created for community men to participate in cultural activities which were before reserved for women. In Akwete, the men are participating in down-stream activities associated with cloth weaving which were generated through the project. The men are now involved in sowing Akwete bags and shoes.

Improved Awareness, Communication and Advocacy-

1. Community and platform members have gained greater enlightenment on climate change and environmental issues. This is evident from the confidence with which the discussed the topics and reviewed the activities which were carried out over the life cycle of the project in the communities. Also at Umuode, the Health center is serving as a point where community members (indigenes and non-indigenes) receive education on good environmental and nutritional habits;
2. Most boundary partners have benefitted from the experiences from the community adaptation projects and the lessons learnt in the process. They have received tools such as leaflets and CDs developed from the project which has strengthened their capacity to implement their own related interventions and programmes;
3. The Municipal platform members have the knowledge of how to develop and process policy documents that can be used as instruments to check the impact of climate hazards in the communities. The CDOs and HODs have been able to develop Policy

briefs on their own because of the capacity building exercises which they participated in through the project. This enhanced capacity will be useful to the CDOs and HODs because they have realized the importance of policies and the interventions which they can initiate to bring about changes in the LGAs. They know the handicap that exists at the LGAs in terms of the inadequate capacity of the Councilors and the implications of having temporary leadership structure at the LGA.

4. The LGA administrations are aware of that the projects at the community level have been completed. They participated in the closing workshop and the municipal platform members reviewed video recording of all the project. The experiences and lessons which they gathered will support them in replicating similar adaptation project in other communities.
5. The media personnel have knowledge of the outcomes and findings of the community adaptation projects. They participated in the Closing Workshop and followed the presentations that included a press briefing. Also leaflets and CDs containing project experiences and key finding were distributed to them. Already activities and findings from the project are being reported in two electronic and 3 print media. The project has continuously engaged the media and received coverage since inception. A network of media activists was facilitated through the project during a Consultative Forum of Media Practitioners. Interested public are benefitting from the presentations and publications made through the electronic and print media outfits.

Increased Cooperation and Mobilization

1. The Local Government Councils have received policy briefs that relates directly to climate related hazards affecting communities in their domain. With the assistance of the Community Development Officers and Heads of Department (Agriculture) the implementation of the recommended policies will support further adaptation activities in the communities.
2. The CDO/HODs have produced policy instruments which are being pursued further in the LGAs to address climatic hazards in the communities. HOD and CDO for each LGA reflected the peculiarities of their LGAs in the Policy Brief which were developed..
3. An LGA administration was triggered to undertake a mapping of climate hazards affecting its community as part of it preparedness. The LGA administration at Isiala Ngwa South, have initiated plans to survey and identify various communities and the climate change problems they are experiencing. The information gathered from the process will be of assistance to the Council in articulating appropriate response to the challenges.
4. The LGAs have given commitment to partner with the communities to sustain the gains from their projects and increase resilience of the community

Improved Integration in the Communities

- i. The completed projects have enabled communities to have improved integration among their members. The re-opened market at Owerrinta has made local traders to sometime take goods on credit from urban traders for retail in their market. Also households are

able to pass information and goods to their relatives residing at Aba city through the urban traders without traveling themselves.

- ii. Communities have reduced friction and conflicts through the project. At Eziukwu both indigenes and non-indigenes were able to work together to carry out clean up exercises in their community after years of unsuccessful attempts. At Umuode the health center is being used by both indigenes and non-natives which has promoted integration in the community.

7.2. Improved Monitoring And Evaluation Capacity

1. The community platforms participated in the monitoring and evaluation of the adaptation projects.. They have also noted the extent to which stakeholders met their expected contributions and played their roles in the implementation of the project. The platforms at Abiriba and Umuode reviewed what happened during the experimentation stages and noted those who contributed to the adaptation projects. They noted that the Local Government Councils have not given any support to the project. This has improved their capacity to evaluate activities.
2. The platforms appreciated the inherent good attributes of having community members participate in project development. The platforms at Abiriba and Eziukwu compared the level of involvement of the communities (including men and women) in decision making in the case of CCAA project with those of done by the government in the past and considered the approach of CCAA as very inclusive and sustainable.
3. The communities have experimented and are encouraged with effectiveness of the adaptation projects in checking various hazards which they had faced. The clean-up campaign conducted in Eziukwu made them to consider hiring the trucks on their own without relying on the government. At Abiriba, the platform appreciated the significant contribution made towards the completion of the project by the Age Grade group and have solicited for their involvement in sustaining the project

7.3. Sustenance And Economic Growth

1. The Local Government administrations are working to sustain the community adaptation projects. At Umuode the Council commissioned the Health center project and have posted health personnel permanently to the Center. At Akwete the State Ministry of Commerce and Industry is now involving the Akwete Weavers in Exhibitions organized by the government which is giving them visibility and increased demand for their products.
2. Farmers in some of the communities are having better access to farming inputs as a result of the adaptation projects. In Owerrinta, merchants are bringing and selling fertilizers and improved planting materials to the market. The Akwete platform reported that they use some income which they receive from weaving for purchasing farming materials also.
3. Migrants have become encouraged to send in remittances on account of adaptation project which is being carried out in their native community. In Abiriba community, some returning

members of the community who came back during the Christmas holiday provided monies to the Community Ruling Council to support of the adaptation project.

4. The community platforms have recognized one of the adaptation measures as a means of raising communal revenue. At Abiriba, the platform plan to sale and raise revenue through selective harvesting of the bamboo. The bamboo stems are in strong demand by builders and merchants from the urban centers.
5. Community members have outlined activities which are being adopted to sustain adaptation projects. In Eziukwu community, the Traditional Ruling Council and a vanguard group are mobilizing the community and continued enforce clean –up programme in the community. At Abiriba, they are sensitizing and stopping people from burning the vegetation and dumping waste in the rehabilitated site.
6. The state ministries and the LGA are according recognition and supporting activities that improve community livelihood and reduce poverty. The state ministry of commerce and Industry has recognized the Akwete weavers and including them among their contingents for national and regional trade fairs.

7.4. Project Management

1. NEST has obtained additional information of things to adopt in order to promote sustenance of the projects. The CDO/HOD platform identified other issues during their last meeting
2. NEST has executed exit activities in the communities and has capped its work enabling the implementing agency to consolidate on its project delivery capacity
3. The project team has assurance of the partnership of policy makers in the achievement of the project objectives in the communities. The administrators of Isiala Ngwa South and Osisioma LGAs gave their commitment to contribute to the adaptation projects and to take them over on completion during meetings with the project team. Also the Ministry of Commerce and Industry in Abia state has assured that they will involve the weavers in all national and international trade fairs.

8. IMPLEMENTATION STATUS ON MONITORING AND EVALUATION PLAN AND ACTIVITIES PLANNED IN THE NEXT SEMESTER

The project has been completed.. Five Interim Technical Reports had been submitted covering periods of the 6 months after inception; 12 months, 18 months, 24 months and 30 months after commencement. This is the Final Report which contains summary of experimentation activities and impact at both municipal and community platforms. The outputs being forwarded is the concluding outstanding events for both Milestone3 and 4. Presented below are milestones and an indication of the level of achievement/work.

Milestone One (6 months)

- Modules for training in facilitation and participatory monitoring and evaluation produced **(completed within the report of the PM&E workshop)**
- Output 1.1: Report of the situation analysis conducted with the municipal-level multi-stakeholder reflection group convened by the Committee of Supervisory Councilors

(including visioning, analysis of vulnerability and coping capacity, institutional analysis)
(completed)

- Output 2.1: Compiled report on visits in the six communities and on the composition of the community-level multi-stakeholder reflection groups **(completed)**
- Submission of Interim Technical Report to CCAA/IDRC **(completed)**

Milestone Two (12months)

- Output 1.2: Report of the participatory action planning and on the analysis of the different mechanisms considered **(completed, report of a CDO/HOD platform project pre - experimentation meeting for testing adaptation policy actions held in Umuahia on 23rd February)**
- Output 2.2: Compiled report on participatory situation analysis in the six communities **(completed)**
- Output 2.3: Compiled report on planning meetings in the six communities **(completed a report of pre-experimentation)**

Submission of Progress Report to CCAA/IDRC **(completed)**

Milestone Three (24 months)

- Output 1.3 : Report on the results of the experimentation process **(On-going; Second Report submitted titled: Comprehensive Report of Community Level Activities and the Comprehensive Report of Municipal level Activities)**
- Output 2.4: Report on the process and results of the experimentation - Pending
- Output 3.1: A detailed knowledge sharing plan (Completed, Workshop report of a stakeholders' consultative forum on knowledge sharing to expected beneficiaries on 18th May, 2011)

Milestone Four (36 months)

- Output 3.2. Detailed report on synthesis of observations and lessons learned (Completed)
- Output 3.3: Dissemination materials (training modules, video documentary, radio scripts, scientific publications) produced (Produced and disseminated – CDs produced, Leaflet No 2 produced and circulated)
- Output 3.4: Report of the survey of persons who have received dissemination materials ()
- Submission of final Report to CCAA/IDRC (Completed)

CONCLUSION

The project has used various participatory approaches in its bid to realize the project's overall goal of contributing to the reduction of the vulnerability of rural-urban systems to climate change by sharing knowledge generated through a participatory adaptation experiment in and around the city of Aba. Over a period of 36 months the participating communities and the municipal councils have

had improved awareness of climate change and impacts as well as an enhanced strategic connection of the governance institutions for reducing the vulnerability of communities.

The platforms analyzed the policy and community situations. Among the recognized key constraints in forging meaningful cooperation to reduce vulnerability at community level were: weak and non-specific policy environment, lack of community participation, lack of enforcement capacity and lack of technical capacity to develop appropriate policies. For the urban and rural communities, key vulnerability factors are poor awareness, poverty, changing pattern of rainfall, increasing population, inadequate infrastructure (e.g. drainage on roads and health and sanitation facilities) and disconnect from the municipal institution. The community platforms identified flooding and erosion as the major climate hazards affecting their livelihood and the impact of these challenges are reinforced by increasing population, particularly in the urban communities.

The project addressed the constraints and vulnerability factors through different adaptation measures agreed upon by the various platforms. At the municipal level, the platform was exposed to the various climate-related challenges being experienced in the communities. The capacity of Community Development Officers and Heads of Agricultural Department to develop policy instruments was enhanced through training. Also the various LGA administrations were made to appreciate and partner with the communities in completing various adaptation activities which were targeted to address key climate hazards. The municipal platforms have now developed specific policy briefs which are to address climate related hazards in the communities.

At the community level, the platforms agreed on realizing various adaptation project objectives. The objectives included reconstructing a market abandoned because of flood menace by raising its floor height; constructing drainage channels and planting economic trees on a gully erosion site in a community to reclaim a road; building a primary health facility to care for women and children frequently affected by ill health in a community affected by flood; and promoting alternative livelihood in another community experiencing loss of soil productivity. The communities were enabled to establish links with their respective Local Government Councils as a means of securing expected contributions and cooperation. The expectations from the LGAs were not secured due to instability in the leadership and confusion created by overlapping roles of State and Local Government institutions.

The different adaptation project activities have begun to trigger rural-urban interactions in diverse ways such as boosting trade in commodities, creating easier and cheaper transportation, increasing remittances, providing employment opportunities, promoting alternative sources of livelihood and reducing poverty among dwellers in the various communities. Also it has provided additional sources of revenue for the Local Government authorities. The project is also fostering cooperation between indigenes and migrants residing in the communities. Members of the various participating communities have built capacities to address similar climate-related hazards through experiences from the pilot adaptation projects and established network/partnership with government institutions. The effect of these is contributing to reduce vulnerability of the communities to climate change.

The project has documented activities including lessons learned at the various platform levels. These findings are being shared to identified beneficiaries including Local and state administrative institutions, media, community leaders, academia and civil society organizations. Some Local administrations have begun to introduce measures to support their level of preparedness.

Dissemination of information is being effected through the electronic and print media in order to reach wider audience.

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13. APPENDIX

Table 2: Reporting Table

Specific objectives	Activity	What happened? (what, who, how, why, how many people involved)	Date	Outcomes and lessons learned	Output
1. <i>To assist the Committee of Community Development Officers and Heads of Department of the Municipal councils of Aba to identify and evaluate cooperation strategies that would reduce rural – urban</i>	1.3 Participatory evaluation of collaboration mechanisms	The CDOs/HODs platform held an evaluation and final meeting where they reviewed their own activities and that of community activities. They produced and shared Policy briefs arising from the adaptation project. The members assessed the expectations and achievement from the project. They also suggested things to do to sustain community projects and carry out closing workshop ii. The project team and community representatives visited the municipal authorities to engage them, sharing with them the findings of the CCAA project, present them with the Policy briefs	May 24th 2012	<ul style="list-style-type: none"> i. The CDOs/HODs produced policy briefs tailored to curb the impact of climate change in the communities and have tendered them to LGA administrations ii. The CDO/HODs benefited from sharing of lessons learnt from the project which were presented during their meeting.. iii. The CDO/HODs appreciated the vigorous documentation process of the project and it has sharpened their evaluation capacity iv. The CDO/HODs appreciated the shortcomings of the LGAs in terms of responding to expected statutory responsibilities to the communities v. The CDOs/HODs have improved their advocacy skills with their involvement in the engagements with high level policy makers and the communities; vi. The CDOs/HODs now enjoy better understanding and cooperation with 	Comprehensive report of final platform meetings at community and municipal levels held between May and August 2012

<p><i>migration and related environmental degradation that make communities more vulnerable to climate change.</i></p>		<p>and invite them to the closing workshop ceremony The Chairmen, Heads of service and other principal officers were present.</p>		<p>communities vii. The Government Authorities are receptive to external views and support particularly those addressing community needs</p>	
<p><i>2. To enable existing associations in selected rural and urban communities in and around the city of Aba to explore and evaluate strategies and policies to reduce their vulnerability</i></p>	<p>2.4 Participatory testing of adaptive options</p>	<p>Opening and Commissioning ceremonies were organized for Umuode, Abiriba and Owerrinta adaptation projects. The LGA authorities, community leaders and CCAA project team participated in the events.</p>	<p>May 31st 2012</p>	<p>i. The communities had opportunity to express their feelings relating to climate hazards directly to government administrators ii. Government officials explained to the communities the reasons why they were unable to meet up their expectations and it forged a mutual understanding and trust between the communities and the government iii. The municipal authorities used the ceremonies to extend immediate moral and financial support to the communities that have capacity to sustain the adaptation projects; iv. The Health personnel posted to the Health center at Umuode received official support to assist them in their functions.</p>	<p>Comprehensive report of final platform meetings at community and municipal levels held between May and August 2012</p>

<i>y and increase adaptive capacity to climate change.</i>					
3. <i>Encourage sustainability and scaling up of the strategies in Nigeria through a wide dissemination of the outcomes and lessons learnt from action research.</i>	3.2 Synthesis of observations and analyses of research and lessons Analysis of the approach and the results	i. Final platform meetings in 5 communities to were organized to evaluate the projects and to assess the methods used ii. Engaged a consultant to carry out end-of-project evaluation using 5 defined Terms of Reference to independently ascertain changes in social and cultural settings and vulnerability levels of in the communities after the completion of the adaptation projects. The consultant used Focus Group Discussion, indepth interviews of community members and visits to carry out his work. He assessed the communities' overall rating of the project's approach and performance. A report was presented to NEST after a 6 weeks period of the task.	May 21 - June 19, 2012	<ul style="list-style-type: none"> i. The community platform members were able to improve their evaluation skills through the exercises. ii. The communities have appreciated the extent of achievement of project objectives and its contribution to reduce climate change impact; iii. Community platform members appreciated the necessity for adequate documentation of activities which were helpful in evaluation. iv. The community platforms were able to identify key challenges encountered in the process of project implementation and provide sustainability v. 	Comprehensive report of final platform meetings at community and municipal levels held between May and August 2012

				<p>ii. NEST was able to have an independent rating of the performance of the project at the communities. The communities had a platform to discuss and present their opinion of the project implementation method and provide a feedback regarding the success of the project. NEST was able to identify some other findings which were not obtained when the community platforms did participatory evaluation exercises. Some non-natives are bringing their relatives from rural communities to benefit from the health center. There are helpful government policies which the communities are aware of but rather will prefer to adhere to those rules made from their community traditional institutions. Also there are other avenues created by the communities to maintain the adaptation projects through better integration with existing associations</p>	
	3.3 Produce dissemination materials on lessons learnt	<p>i. Produced 2000 copies Leaflet No2 which contains adaptation activities in the five communities, the outcome, the challenges, sustainability plan and lesson learnt.</p> <p>ii. A vendor was engaged who produced 200 CDs which contains records participatory adaptation activities0/, testimonials from community</p>	<p>30th July, 2012</p> <p>26th July 2012</p>	<p>i. NEST has acquired useful communication materials and tools from their experience on climate change adaptation to share with other stakeholders;</p> <p>ii. Documentations of findings on climate change adaptation are available to NEST to produce further reference materials such as books</p>	<p>Leaflet No2: Triggering rural-urban interactions to cope with climate change: an adaptation experiment in Aba and its region, southeastern Nigeria</p>

		<p>members about impact of the adaptation projects</p> <p>iii. Organized a press briefing after Project Closing Workshop. Over 54 invitees attended including media practitioners, NGOs, Policy makers, academia, rural and urban community members, and community development officer and Extension practitioners.</p> <p>iv. Two policy Brief documents were developed that contain specific frameworks to reduce the impact of climate change</p>			<p>200 copies of CDs on Aba Climate Change Adaptation Project</p>
	<p>3.4 Disseminate materials on lessons learned and evaluate their potential uptake</p>	<p>i. Organized Project Closing Workshop during which the Project Coordinator made a technical presentation that explained the background, approach, the outcome and lessons from the project. Over 54 invitees attended including media practitioners, NGOs, Policy makers, academia, rural and urban community members, and community development officer and Extension practitioners.</p>	<p>24th Aug ust, 201 2</p> <p>24th Aug</p>	<p>i. NEST effectively disseminated the project's outcome and findings;</p> <p>ii. Policy Brief was handed to decision makers in government</p> <p>iii. Government and communities were incited to replicate the adaptation actions having built their capacity</p> <p>iv. Agents of Government became informed of cooperation opportunities and policy gaps to be addressed to support adaptation in communities</p> <p>v. Communities expressed improved adaptive capacity through the testimonials</p> <p>vi. NGOs and academia practitioners who participated in the workshop have</p>	<p>Report of CCAA project closing workshop held at Gado hotels and Garden, Umuahia, Abia state, Nigeria on 24th August, 2012</p>

		<p>j. Distributed the leaflets and CDs that contain activities and lessons learnt from the project to media practitioners, NGOs, Policy makers, academia, rural and urban community members, and community development officer and Extension practitioners who attended the Closing Workshop.</p> <p>ii. The website of NEST (www.nestinteractive.org) contains an electronic copy of the Leaflet No 2. Visitors to the website are having access to the CCAA project findings.</p> <p>iii. Sign posts and wall plaque were permanently fixed on three project sites at Umuode, Abiriba and Owerrinta community. Also Project 2 banners were produced which are displayed at all workshop stands where NEST is participating</p>	<p>ust, 2012</p> <p>30th Aug, 2012</p>	<p>improved capacities to implement adaptation actions through case studies which were explained to them.</p> <p>vii. Media and NGOs have obtained tools that will support their advocacy and dissemination of adaptation potentials</p> <p>viii. The awareness of the government on climate change adaptation issues has improved because they are able to state the gains which communities can make from it however they lack the desired will and tact;</p> <p>ix. The government are desirous of civil society partnership but are unclear of the engagement process ;</p> <p>x. Regular visitors to NEST website are benefiting from the outcome and lessons learnt from the project. Some of them make calls asking for more information.</p> <p>xi. The sign posts, wall plaque and banners are continuing to give visibility to the CCAA project .</p>	<p>www.nigeriaclimatechange.org/doc/CCAA_Leaflet.pdf</p>
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