



Chief of Wula Ekumpuo with project members

### Impacts/Results

Pilot projects are designed to test adaptation options on a small scale in order to strengthen the resilience of communities to climate change and increase their adaptive capacity. The projects are also meant to provide lessons learned from the field to develop practical approaches to community-based adaptation to climate change which can then be implemented on a larger scale. Lessons learned have also been incorporated in recommendations for federal policy on adaptation to climate change which is currently being developed.

Some of the early impacts of the projects in Wula Ekumpuo and Bebi V include:

- Community interest and awareness in conservation has increased as the project has progressed especially after training on the use of the gari processing machines and the construction of the snail pens. The activities show that the partner, DIN, is committed to assisting the communities which then increases community commitment to the projects.
- Effective community leadership is very important in influencing the way that project interventions are accepted by the communities.
- Cassava can now be processed faster so there is less waste from spoilage and more money from sales.
- The use of the fuel efficient wood stoves means that women spend less money on fuel wood, the food cooks faster, there is less smoke produced and there is less pressure on forest resources. However, in order for new technologies to be accepted, it is important to link the women with the sources of materials so that the stove can be easily replicated. Many women in Bebi IV wanted the improved stove but could not afford the materials so replication was not as widespread as anticipated.
- Chiefs from three neighbouring communities visited Wula Ekumpuo to meet directly with the team from BNRCC, which shows that they are interested in expanding the pilot projects to their communities.
- DIN has raised awareness of conservation in both communities, especially in Wula Ekumpuo, where people have agreed to plant trees to increase shade and to plant useful trees, such as bush mango, close to the community, to reduce pressure on forest resources.

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## Alternative livelihood options to promote community-based adaptation to climate change in Nigeria's rainforest and derived savanna ecozones: Development in Nigeria (DIN)

Since September 2009, the NGO, Development in Nigeria (DIN), has been working with two communities on pilot projects to test community identified adaptation options to climate change impacts. The aims of the projects are to increase awareness of climate change impacts, enhance livelihood options and increase food security, so as to reduce the dependency on and conserve declining local forest resources. This pilot project is a component of the Building Nigeria's Response to Climate Change (BNRCC) project.

### Country context

Nigeria is vulnerable to the impacts of climate change largely because approximately 70% of

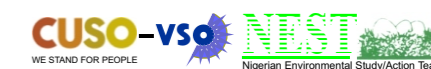
Nigerians are engaged in small holder rain-fed agricultural production, the natural resource base is seriously declining, population growth is very high and infrastructure is being strained beyond its capacity.

### Local context

Cross River State is a biodiversity hotspot and efforts underway to conserve the remaining forests are of global significance. The vast majority of the rainforest and derived savanna communities in Cross River State still rely on local forests for food products and medicine (called Non Timber Forest Products or NTFPs). DIN, among other organizations, works in the area to promote conservation and sustainable use of



Bebi IV Village





*Community meeting in Bebi IV*

these forests. DIN works with the two communities of Wula Ekumpuo, Boki Local Government Area (LGA), speakers of the Ukie language and Bebi IV, in Obanliku LGA, who speak Bebeh. Both communities, with populations of approximately 1600 and 1000 respectively, are made up of mostly small scale subsistence farmers, who clear the local forests for their farms. In addition to agriculture, the collection of NTFPs, hunting and small scale logging are economically important. In these communities, both women and men work on the farm; women specifically plant cassava and to a lesser extent, yams (*Dioscorea* sp) and cocoa yam (*Colocasia* sp). Cropping is more diversified in Bebi IV where beans, groundnut, guinea corn, maize, sweet potato and plantain are widely grown in addition to the main crop, cassava.

### **The Issue**

Rainfall patterns in Cross River State have changed. The rains start later and the season is generally shorter, with periods of more intense rainfall. This results in poor crop yields and changes in the fruiting patterns of the important fruit tree, bush mango. Increased reliance on the forests when crops fail has led to over exploitation, which further contributes to poverty and vulnerability to additional stress, such as those brought about by climate change. People are now faced with dwindling supplies of timber, fuel wood, fresh water, NTFPs and bush meat - the forest is no longer the buffer it once was, providing food and income when crop yield is insufficient. Extraction of forest resources has gone unchecked for many years despite a history of community demands for logging companies to reduce the volume of wood extracted. Local fuel wood extraction also has an impact and women, for example, depend heavily on fuel wood for both commercial and domestic purposes with few alternatives available to them. Continued

deforestation further exposes communities to the destructive effects of severe wind storms, which destroy homes and other buildings.

### **The Project**

Alternative livelihood projects were identified in both communities using a participatory needs assessment process based on a social analysis systems methodology. The projects are designed to reduce people's vulnerability to existing and eventual climate change impacts by enhancing food security by increasing local income and providing alternative food sources to reduce the pressure on the local forests. The project has the potential to expand into neighbouring communities who share common property rights to the local forests. DIN has worked with these and other communities on community land use plans (CLUPs) that help people manage critical, but declining forest resources by allocating some areas as off limits to use and other areas for limited use.

### **Alternative livelihoods**

Alternative livelihood strategies in both communities include cassava (gari) processing and snail farming. The gari processing serves to provide income to both men and women. The snail farming, which is still in its early stages, will serve both as a readily available source of protein to replace bush meat, as well as a source of income. The livelihood projects in both communities are intended to reduce the pressure on local forest resources: income from gari can replace the income that some men make from selling bush meat - a person can make between N10,000 to 12,000 from one night of hunting and N8,000 to 9,000 from one day of processing gari. The meat from snail farming, which is intended to replace the consumption of bush meat, will also act to reduce the number of destructive bush fires set to harvest bush meat.

### **Food security: snail farming**

Crop production is largely dependent on the amount and duration of rainfall. Both communities are reporting shorter rainy seasons in addition to periods of more intense rainfall which leads to flooding. When people sell only NTFPs for income, limited forest resources are further threatened. Many forest animals, such as chimpanzees and gorillas, are now threatened or locally extinct. The snail farming project, which will eventually be reproduced at the household level for sale and consumption, is intended to reduce the pressure on dwindling bush meat resources.



*Structure built by the community to house farmed snails in Bebi IV*

### **Awareness raising**

Posters and stickers with climate change information were produced and distributed to raise awareness of the potential impacts of climate change and to promote ways to reduce vulnerability to those impacts. A Peer Education Manual was also developed to be used by conservation clubs in the two communities, so that peer groups share and disseminate climate change information. A policy brief was written for distribution to local policy makers, to heighten awareness of the climate change impacts within their LGA. Another important aspect of awareness raising is the fire management training that was given to select community members. A common occurrence during the dry season, before planting, is bush burning to prepare the farm. To reduce the incidence of this, people were trained in alternative farm clearing methods and in fire management and prevention.

### **Improved fuel efficient stoves**

To reduce deforestation in Wula Ekumpuo and Bebi IV, 30 women in each community were trained in the use of fuel efficient wood stoves. The

construction of the stoves requires zinc sheeting, a metal bowl and mud blocks. There is some reluctance by the women to adopt the stove on a large scale which may be due to the cost of the materials to construct the stove, a cost that women generally cannot afford or are unwilling to pay. However, it is anticipated that when more people see that the amount of fuel wood used is reduced by almost 50%, there may be more effort to save the money to purchase the materials.



*Fuel efficient wood stove in Wula Ekumpuo*