

BUILDING RESILIENT COMMUNITIES: CASE STUDIES FROM PFR UGANDA



PARTNERS FOR RESILIENCE



WORKING TOWARDS COMMUNITY RESILIENCE

EXPERIENCE FROM PARTNERS FOR RESILIENCE IN KENYA AND UGANDA

\\ REVIEWED BY: SIRAK ABEBE TEMESGEN

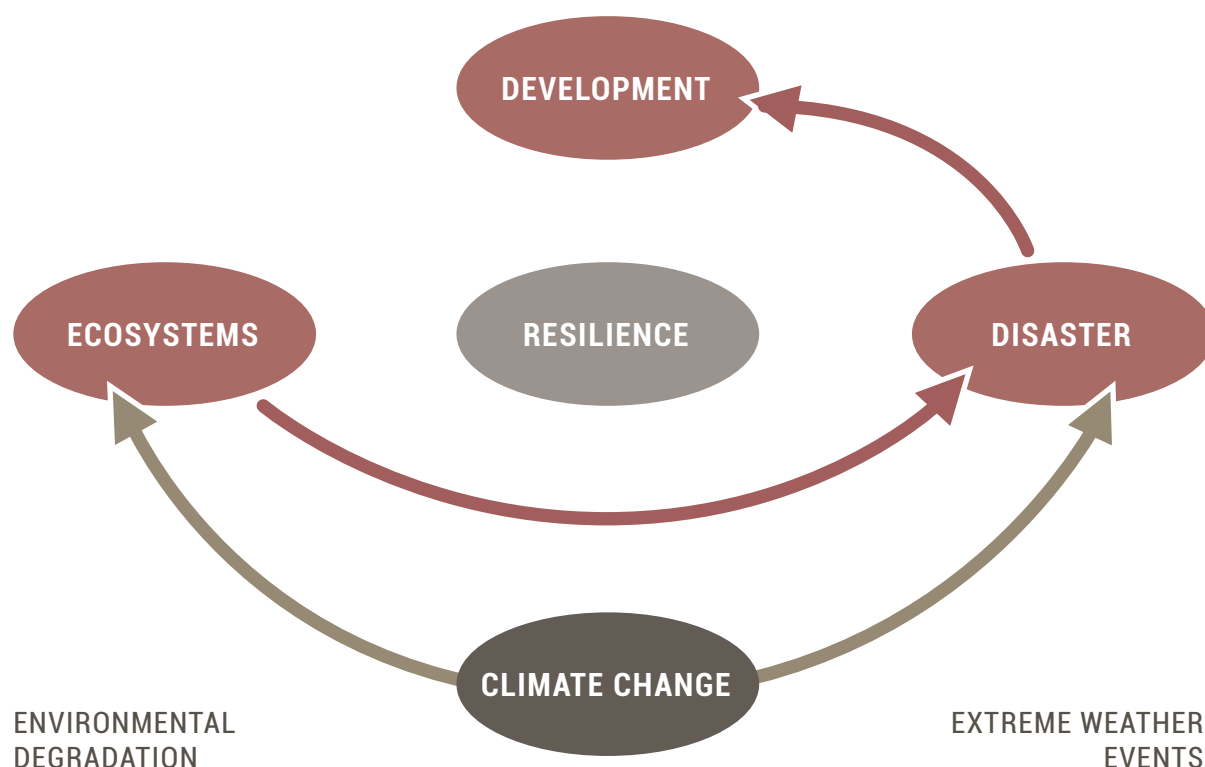
I. INTRODUCTION: A CASE FOR CHANGE

Disaster risk is rapidly increasing. The reasons for this are manifold. Extreme events such as storms, floods and droughts become more extreme and more frequent in some places as a

result of climate change. Rapid environmental degradation is reducing the capacity of nature to regulate these hazards and to provide food, clean water supplies and other products. Communities struggle to find a way to prepare for and respond to

the extremes they face. Meanwhile, the world around them is changing rapidly. This represents a major challenge. At a local level poor communities in both rural and urban areas face setbacks in their livelihoods each time a disaster strikes. As a result they

FOCUS OF THE PARTNERS FOR RESILIENCE



are trapped in a vicious cycle of poverty. At a broader scale governments are confronted with the mounting costs of ill-informed development decisions that render the natural environment and society increasingly vulnerable.

Risk reduction practitioners typically adopt sectoral approaches to resolve these issues. Some experts focus their risk reduction work exclusively on communities. Others focus on water management within river basins or on the management of ecosystems. These fragmented approaches no longer suffice on their own. Instead, efforts to enhance the resilience of the most vulnerable communities should encompass multiple disciplines and span

both temporal and spatial scales. In addition, resilience building requires much more than the sum of isolated and disconnected interventions by different actors. That is exactly the rationale behind the coming together of humanitarian, development, climate and conservation practitioners to form the consortium dubbed "Partners for Resilience" to implement "a climate proof disaster risk reduction" program in nine disaster prone countries in Africa, Asia and Latin America. These organizations are Netherlands Red Cross (NLRC), Cordaid, Wetlands International (WI), Red Cross Red Crescent Climate Centre (RCCC) and CARE Netherlands. The target countries are Kenya, Uganda, Ethiopia, Mali,

Philippines, Indonesia, India, Nicaragua, and Guatemala. The program is funded by the Dutch Ministry of Foreign Affairs and runs from 2011 to 2015.

The overall goal of the program is to reduce the impact of natural hazards on the livelihoods of 750.000 – 1.000.000 members of vulnerable communities.

This goal is pursued through three outcome objectives:

1. To increase the resilience of communities to disasters, climate change and environmental degradation;
2. To increase the capacity of civil society organisations (CSOs) to apply disaster

risk reduction (DRR), climate-change adaptation (CCA) and ecosystem management and restoration (EMR) measures and engage in policy dialogue;

3. To make the institutional environment from international to grass-root level more conducive to integrating disaster risk reduction, climate change adaptation and eco-system-based approaches.

The strategy to realize these outcome objectives and, ultimately, a contribution for the overall goal is guided by the effective integration of disaster risk reduction (DRR), climate change adaptation (CCA) and eco-system management and restoration (EMR) as outlined and specified in the *PfR resilience vision* document, the *Minimum Standards for local climate-smart DRR* and the *Eco-System Criteria*.

This booklet documents the practical experience of Partners for Resilience in Kenya and Uganda in applying the integrated approach and the PfR resilience vision guidance to realize the outcomes sought through the program. It describes the challenges overcome in the course of implementation, and lessons learnt. These insights contribute to existing knowledge in unpacking and applying this lofty concept called *resilience* and will help to improve future program design.

PFR PROGRAM IN KENYA AND UGANDA

PfR Kenya: -The PfR alliance members in Kenya are NLRC, Cor-

daid, WI and RCRCCC which have been engaging with Kenya Red Cross Society (KRCS), Merti Integrated Development Program (MID-P), and IMPACT to implement the program from 2011 to June 2015. The target area for the program is Isiolo and part of Laikipia Counties following the Ewaso Nyiro River Basin benefiting 40,000 vulnerable community members. The area is affected by frequent drought, flood, conflict, eco-system degradation, human and animal diseases.

PfR Uganda: - The PfR alliance members in Uganda are Cordaid, NLRC, CARE, WI and RCCC. The implementing partners are Uganda Red Cross Society (URCS), Soroti Catholic Diocese Integrated Development Organisation (SOCADIDO), Transcultural Psychosocial Development Organisation (TPO), Caritas Uganda, Ecological Christian Organisation, Facilitation for Peace and Development (FAPAD) and Caritas Moroto.

The target districts are: Amuria, Napak, Nakapripri, Apach, Katukiwi and Otuke. The total number of beneficiaries PfR Uganda benefits at the end of year to be 75,000 people across 93 villages.

II. OUR VISION OF RESILIENCE

What do we mean with community resilience? A nearly endless list of descriptions and definitions exist. For practical reasons in this document we follow the UNISDR definition; "Resilience is the ability of a system, community or society exposed to hazards

to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions". We do so without discounting other valid terminology. It is not our intent however to contribute to the academic discussion that has evolved around this topic. Instead, we try to show below how the partners have tried to unpack the concept and aid its translation into practice using identified success stories.

GUIDING APPROACH/ OPERATIONAL PRINCIPLES TO UN-PACKAGE AND PUT RESILIENCE INTO PRACTICE

Asses disaster risk in a holistic manner

Communities, civil society organisations and government entities are aware of the multi-risk environment they face. Risks, vulnerabilities, capacities and root causes to risk are always assessed at both community and landscape level. This results into comprehensive insights into the social, economic and ecological aspects of risk. The way in which people impact and depend on nature and how they evolve along with a changing environment is fully understood. Knowledge about these socio-ecological interrelationships forms the basis of risk reduction planning.

Address the whole range of risk management options

Stakeholders are dedicated to take all measures that are required



to prevent disasters, reduce their impact or prepare to deal with the effects of a disaster. Following the steps defined in the risk reduction cycle they implement conventional humanitarian measures such as contingency planning, emergency stocking and preparedness, first response, forward recovery and rehabilitation. They also address underlying causes of vulnerability and disasters, through a well-integrated set of environmental management and development measures.

Consider environmental, social and economic dimensions of resilience

Both in Kenya and Uganda, all dimensions of resilience are considered. It is understood that

degradation of the natural environment inflicts new hazards, exacerbates vulnerability to existing ones and weaken people's coping and recovering capacities. This increase in disaster risk is a result of the decreased capacity of degraded ecosystems to stabilise hill slopes, regulate water flows and provide food and clean water supplies. With this in mind, the management and restoration of ecosystems, including the resources they provide forms a core part of risk reduction in the target areas. Risk reduction, climate change adaptation and Infrastructure development measures work with and alongside nature, rather than fighting it. These measures are implemented parallel to humanitarian and devel-

opment measures that contribute to enhanced social and economic resilience. In this way, regular risk assessments were done considering existing, changing and emerging risks at the local level.

Work across scales

Risk reduction professionals understand that drivers to vulnerability express themselves at multiple spatial and temporal scales: from household or community to landscape level. They understand how the water cycle connects people along the upper reaches of a river with those who live further downstream. They appreciate the temporal dimension of risk: some key drivers to vulnerability and approaches towards increasing resilience take years to emerge.

This is acknowledged in programme design and taken care of during implementation through inclusion of short- and long-term risk reduction measures at local and regional scales.

Ensure adaptive planning and avoid mal-adaptation

Climate change introduces a major factor of uncertainty in risk reduction planning. For many climate-related hazards it remains unknown to what extent their frequency, intensity and predictability will change. Stakeholders adapt their risk reduction plans to this uncertainty. They design measures that accommodate anticipated changes, and that can be flexibly adjusted once change becomes visible. Institutions themselves become adaptive too.

The potential implications of risk reduction measures are always fully assessed. It is understood that short-term responses to current risks may increase vulnerability in the longer term. Likewise risk reduction experts are aware that interests between stakeholders may be conflicting; the construction of water harvesting structures in a highland area for example, may cause water scarcity downstream in the catchment. These trade-offs are well mapped and where possible resolved. Disaster risk reduction programs always include measures to address harmful 'external' developments that take place across sectors, even if they lay outside the direct sphere of influence of the stakeholders involved. These issues are easy said than done. There are many cases in PfR Kenya's experience

whereby risk reduction measures were unintentionally done at the expense of long term benefit. Partners were distributing drought resistant crops and vegetable seeds to later found out they were planted close to the river banks contributing for further degradation of the riverine eco-system. Later this was resolved through community discussion and provision of alternative water sources such as rain water harvesting.

Adopt a partnership approach with a strong civil society capacity building component

There is no organization who is best in everything, and resilience building requires multiple disciplines, including the participation of professionals from a range of sectors such as humanitarian, development, conservation and water resource managers and climate experts. Partnerships typically consist of local communities, government agencies and civil society organisations. This enables implementation of risk reduction measures in both the private (community or household level) and public (the wider landscape) domains. Private actors are fully engaged where relevant. Universities and knowledge institutes provide technical backup during vulnerability assessment and program implementation and contribute to monitoring and evaluation. That is why PfR Partners decided to join hands and pull their human, material, organizational resources and also closely work with local communities, government agencies, civil society organizations, Universities and research centres.

Promoting Community Self-Management

Communities are not just victims of shocks and stresses, they are survivors in otherwise difficult situations. The resilience of a community is to a great extent determined by the degree to which people understand and monitor their risks, have the necessary resources and are capable of organizing themselves and mobilizing appropriate and locally available resources. Community empowerment and creation of local ownership are essential for communities to be in the driving seat of the resilience building processes. They should also be able to establish and facilitate risk assessment, risk reduction plans and turning these plans into actions.

Support the creation of enabling policy and institutional environment

Government agencies are the main actors in deciding development directions for local communities. The decision taken by these agencies significantly determines how easy or difficult resilience building would be. In order for resilience building process to be effective, efficient and sustainable it should be embedded in the policies, strategies and plan of the government at different levels. This will set the institutional arrangement and resources allocation which is a fertile enabling environment for resilience building. Too often, well intended risk reduction measures are compromised by unsustainable development. Risk reduction professionals should engage these groups in their work by establish-

ing extensive dialogues on issues of concern. This also requires touching upon sensitive issues, such as dams (in the case of PfR Kenya), mining, logging and infrastructure development.

Align traditional and science-based knowledge systems

Despite the emerging risks associated with climate change, most communities are not new to the common hazards they are experiencing; they have developed some adaptation capacities on how to reduce its impact and deal with its negative consequences. The traditional knowledge plays an essential role in designing relevant and context-specific interventions to reduce disaster risk. But local knowledge rarely suffices to gain full insight into the local vulnerability context and also the nature and behavior of ever changing and emerging risks which the community have less experience with. Therefore scientific inputs are key to incorporate aspects that are not visible or least understandable locally. In Uganda PfR collaborated with; Kyambogo University, National Agricultural Research Organisation, Uganda National Meteorology Authority, National Semi-Arid Resources Research Institute (NAS-SARI) and Makerere University. Similarly in Kenya, PfR worked with University of Nairobi, Researcher (Groningen University, Kenya Research Institute, Interns from various Universities through RCCC, and national meteorological experts.

Stimulate learning

The partners who formed the

“Partners for Resilience” alliance came together from completely different mandate/competence areas for the first time to work together and dared to test a new chemistry of an integrated approach (DRR, CCA, and EMR) to realize resilience in disaster prone areas. This necessitates developing a culture of openness to one another, compromises on positions, and focus on common interest, supporting each other and learning in the course of implementation. So, efforts were made by the partners to install a strong learning culture. This involves sharing of lessons learned and good practices within and between communities, CSOs, government agencies, knowledge institutes and external actors.

Focus on Livelihoods

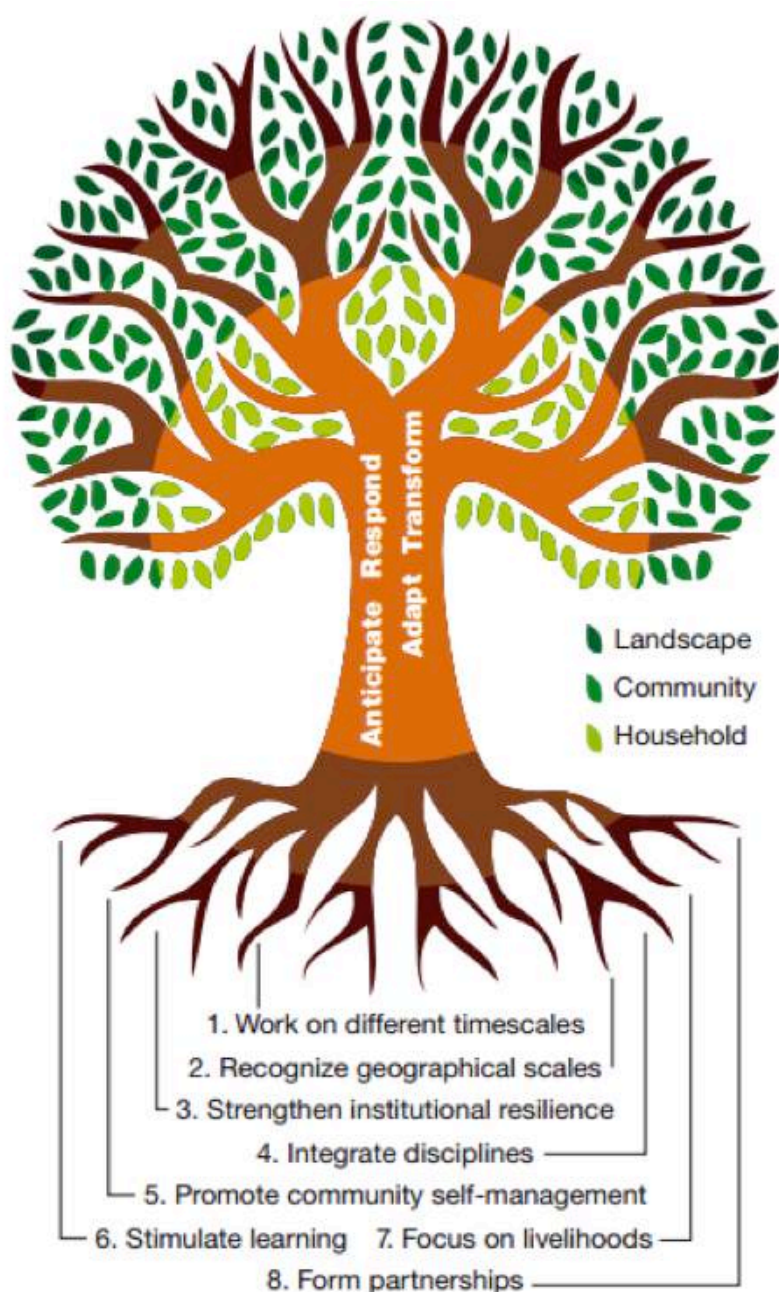
Disasters not only take lives, they also have an impact on livelihoods. And through unsustainable practices that harm the protective capacity of the environment, livelihoods activities themselves may even contribute to slow-onset disasters. Therefore, all dimensions of resilience are considered through links with essential livelihoods capital in its human, social, physical, financial, natural and political dimensions-“the sustainable livelihoods framework”. Diversification can strengthen resilience by enhancing livelihoods capital multiplying options. This promotes human well-being and through sharing of benefits, incorporates equity issues. The natural dimension is one of the key aspects, as environmental degradation reduces basic ecosystem functions and inflicts new

hazards and exacerbates vulnerability to existing ones by weakening people’s ability to cope and recover. It also implies knowledge and capacity for these functions, and investing in community organizations and networks, infrastructures, financial savings and political competence.

III. BUILDING BLOCKS OF COMMUNITY RESILIENCE

So what can be practically done to achieve resilience on the basis of the above guiding approaches and operational principles? How do existing approaches within the humanitarian, development, climate and environment sector come together and complement each other? The Partners for Resilience program undertakes its collaborative programming on the basis of four ‘building blocks’. Three of these, anticipation, adaptation and transformation, are derived from current resilience thinking. Considering the mandate of some of the humanitarian partners and recognising our role in disaster response, we have added a fourth building block, namely response. These building blocks should not be seen as different sequential phases or a cycle. In reality they often take place at the same time.

Individual partners from different sectors may engage in activities under different building blocks. In practice however their strength and traditional mandate are usually confined to a subset of the four components. This underlines



the need for a partnership approach.

COMMUNITY RESILIENCE CAN BE UNDERSTOOD AS THE CAPACITY TO:

1. Anticipate

This is the capacity to foresee the impending hazard and take appropriate and timely action to reduce harm or/and exploit op-

portunities. This capacity has two key aspects: early warning and early action and has four key components: risk knowledge, risk monitoring, risk communication and action. The other aspects of an effective early warning system is to have a clear and practical recommendation on ranges of early actions which the communities or individuals have to take when the early warning signals

reach certain levels. It is important to note that early action is to respond to warnings, not disasters. These early actions have to primarily use local capacities, ensure people are aware, prepared and are ready to act, and that response plans are tested and updated. Contingency plans describe and trigger the early action that the target communities should put in place based on the

past and present experiences of disaster patterns and incorporating future scenarios of climate change that may induce more extreme and unprecedented hazard levels.

2. Response

Response is the provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. This is important because of the fact that a hazard doesn't wait until the root causes of vulnerabilities and lack of capacities are addressed. In that case, a hazard could progress into a disaster. So, as part of risk reduction and climate change adaptation measures, there should always be "Plan B". This is a contingency plan (based

on likely case scenarios, including anticipation of new extreme events) prepared as part of early action planning. When the hazard strikes, a trained community team should take action, and if the disaster exceeds the local response capacity, then a district or national level response team be dispatched to the community to assist in conducting rapid damage and needs assessment and support the community action teams.

3. Adapt to tackle changing and emerging risks

As indicated earlier, adaptation is the adjustment in natural or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits beneficial opportunities. These capacities enable the community/household/ individual to comfortably face the

hazard whenever it occurs with little (in short term) or no effect (in the long term) and also exploit opportunities for people to thrive.

4. Transformation

Transformation refers to address underlying factors and root causes of risk in a sustainable way. Identification of these root factors and potential opportunities to address them is done during the participatory risk assessment. The transformation aspect mainly focuses on unfair policies, unjust power relation to access and control key resources, communities' perception, ideologies, harmful culture etc. Sometimes a disaster gives communities a chance to completely change the way they used to behave and act based on the experience and lessons drawn from it.



COMMUNITIES LOOK BEYOND EFFECTS OF FLOODS AND WATERLOGGING IN UGANDA

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August 2007, marked a flood catastrophe that left a permanent mark in many Ugandan's memories. Located between the hilly landscapes of Karamoja sub-region and Lake Kyoga basin, the flat landscape, which has suffered persistent ecosystem degrading human activities

like wetland encroachment and deforestation, left the Eastern and Northern regions of Uganda with increased levels of vulnerability. Apac, Katakwi and Otuke districts have since suffered perennial flooding and waterlogging.

As a result, Uganda Red Cross Society (URCS), in consultation with the communities, constructed flood resistant huts, as part of its floods emergency recovery programme; since the traditional huts had been collapsing and causing deaths and loss of property. In contrast, the

flood resistant huts were lined with plastic sheeting in the foundation to block off water seepage through the floor. While URCS provided technical, material and financial support, the communities contributed their labor and other locally available materials like bricks, mud and grass.

REACHING FOR CHANGE

After the 2007 success, URCS in 2012 embarked on improving the version of flood resistant huts, to reduce the effects of extreme weather variability causing floods and water logging. URCS partnered with Makerere University, to review and improve the design of the original flood resistant huts. This led to the use of a double lining of plastic sheeting for the hut's floor, instead of a single sheet.

A UNIQUE PARTNERSHIP IS FORMED

The PfR project was thus implemented in Apac (Akokoro Sub-County) and Katakwi (Ongongoja), in partnership with CARE Uganda in Otuke district (Olilim and Ogor sub-counties), and TPO (Transcultural Psychosocial Organizations) in Katakwi (Magoro and Ongongoja sub-counties). Inspired by the

URCS's success; TPO and CARE replicated the technology for the first time in their own project areas, following flash floods in 2013 and 2014, respectively.

To implement the new improved flood resistant huts' design, URCS

mobilized community based volunteers in each community and equipped them with the required skills and knowledge. URCS and CARE trained 140 community members and volunteers as Trainer of Trainers (ToT) for the construction of the huts. In addition



THREE SIMPLE STEPS TO CONSTRUCT AN IMPROVED FLOOD RESISTANT HUT

1. Lay building material, locally know as 'kaveera' or black plastic sheeting, on a 1.5 feet raised foundation floor.
2. Build a special soil brick mound to make a conical wall, plastered with a mixture of dung and mud, for termite control.
3. Roof with grass or iron sheets.



URCS attached ten households to each volunteer to support in the construction of their own huts. To date, URCS, CARE and TPO, have jointly constructed 685 improved flood resistant huts; with another 225 up to wall level in all three locations. Local material was used such as grass, bricks and mud, however this slowed down the construction process.

WATERLOGGING IS CONTROLLED

Concerned by the persistent waterlogging in their gardens, the communities of Omasia parish, in Katakwi district, raised the need to move beyond addressing

effects to tackling the causes of water logging during a meeting held with TPO to review implementation and performance in 2013. Since the channel dug earlier in 2013, from Adurukoi through Oriau B and Kaikamosing villages to the swamp, had not reduced the water logging, the communities proposed digging another one connecting Kaikamosing to Oolir through Kipinyang village, to drain excess water into the nearby wetlands.

With the active participation of 242 community members, a new drainage channel that is eleven kilometers long

was excavated in 2014, with each village digging the section passing through their village up to the point where it drained into the swamp. This effort cost TPO and the community five hundred thousand Uganda shillings per kilometer (166 euros/172 dollars).

COMMUNITY EFFORTS BEAR FRUIT

The new hut design improved the traditional shelter built by the communities using existing knowledge and skills. Mr. Andrew Ogwara from Apac commented...

"After my training in Flood Resistant Huts, I built five huts. I built three at my first wife's homestead and two at the second wife's, in Akokoro. It has taken me two months and one hundred and ten thousand shs (44 USD), to construct the two huts at my second home. I received a four square meter piece of polythene material from URCS, which I used in the floor. Since then, water has never entered my house again. Since my family is expanding, I will build more huts".

The partnership with communities in the construction of improved flood resistant huts promoted

ownership among beneficiaries and secured their household property, food and other valuable items. In Olilim Sub-County, Atoo Celina, 66 years old, was supported by CARE in the construction of a flood resistant hut. In addition, after receiving training from CARE, 3,201 community members raised their verandas to keep water off and planted grass in their compounds to reduce water logging.

As a result of the construction of the water diversion channels in Kipinyang, Kaikamosing and Adurukoi villages in Katakwi district, community benefits such as good harvests, risk reduction, controlled loss and damage of crops, huts, community access roads and other household property, were achieved. From one hectare of ground nuts, households harvested at least ten bags. The rich harvests of November 2014 helped vulnerable households in Omasia parish, Magoro Sub-County, Katakwi district to survive the dry spell from November to early April 2015. As one of the beneficiaries testified;

'I secured a loan from the VSLA group to buy 5 kilograms of groundnut seeds to top up on the 15 kilograms that I had stored and 5 bags of cassava

cuttings which I had planted this year. I was able harvest twelve bags of groundnuts, which were adequate for sale, home consumption and storage for next planting. From this good harvest, I will sell 5 bags of ground nuts from which I expect to get about 500,000 Uganda shillings. The cassava in the garden will fetch me about 3.5 million Uganda shillings from both the cuttings and the tubers when I sell them. I attribute these good harvests to the water diversion channel which was dug in my village and, has greatly reduced waterlogging in the gardens. If it were not for this water channel, I would have lost all the ground nuts and cassava to water logging'.

LESSONS AND CHALLENGES

- Integrating local and modern technologies in the hut's design and partnership in the construction, made community replication and multiplication of the improved huts easy.

- The costs of community based adaptation measures can be more affordable if jointly implemented with the communities and if they take the lead.
- Involving communities in identifying causal factors of hazards affecting them helps them to develop simple and lasting solutions to the hazards.
- Incorporation of affordable, practical, culturally sensitive and friendly technologies facilitates the multiplier effect of initiatives.
- The labor intensive nature of the improved flood resistant huts has placed extremely vulnerable persons, at the mercy of Good Samaritans, to acquire one.
- Seasonal availability of local construction materials has slowed and constrained construction of huts as communities turn priority to agricultural activities during the wet season.

Community benefits from the improved flood resistant huts and water diversion channel have encouraged PfR Uganda to adopt these activities as flood risk reduction strategies that can be scaled up and replicated in flood-prone communities.



INTEGRATED APPROACH OFFERS A NEW LEASE OF LIFE FOR KARAMOJA AND LANGO, UGANDA

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The hilly terrain of Karamoja separated people for years but Lake Kyoga along with its tributaries was a resource that they shared and cherished. Some were known as the people who lived upstream in Napak District and Nakapiripit District

while others were identified as living downstream at Otuke district. For years they enjoyed their life by the water and paid little or no attention to the environmental degradation that was taking place right in front of them.

Extreme and unpredictable weather seasons became disturbingly common such as alternating floods and droughts. This provoked a once peaceful community into resource based conflict fighting for the now scarce resources. The effects of the

drought (often upstream) and the floods (often downstream) also left these communities vulnerable to loss of life and property.

INTEGRATED APPROACH ACTIVITIES BREED RESILIENCE

Partners for Resilience in conjunction with Ecological Christian Organization (ECO), CARE International and Caritas Moroto supported a three-fold community led integrated approach to mitigate the impact of hazards on these communities.

The plan started with training by PfR to community members on participatory disaster risk assessment, and mapping of land cover to identify the services provided by the now degraded ecosystems and the importance the community gave to the services. This analysis led the community to focus on the potential of the degraded land and the need to restore it. After the above exercises, the community identified measures to promote practical DRR, CCA and EMR integrated approaches. Promoting these practical integrated approaches called for collaboration and harmonizing ways of working for the success of the participatory approach. In fact, a Memorandum of Understanding (MOU) was drawn between the community, PfR and the local government. The purpose of the MOU was to clarify: the roles of the stakeholders; the contributions and responsibilities of partners involved; incentives for adherences to short and long term ecosystem activities; agreement on areas demarcated for conservation such as degraded



wetlands; vegetation cover using indigenous species and grass.

Establishing a Disaster Risk Reduction (DRR) and wetland management committee and involvement of local leaders were also critical in achieving a successful collaboration.

Communities in Napak and Nakapiripirit received about 800 fruit trees and over 1,000 wood tree seedlings from the Serere and Nabuin Zonal Agricultural Research and Development Institutes. The institutes offered them expert knowledge on the type of weather, planting season and soil type so that the seedlings would

grow better. The communities in Otuke received seeds and established two fruit and woody tree nursery beds comprising teak, graviella, acacia, muvule, sheanut, avocado, mango, orange, and guava and succeeded in establishing over 6,000 successful trees.

In addition, modern local irrigation interventions were adopted. For instance, affordable drip irrigation by using perforated plastic containers filled with water (by ECO in Nakapiripirit) and harvesting surface water (by CARE in Otuke) were adopted and were critical for watering trees in both Otuke and Nakapiripirit. Furthermore a protected woodlot of



indigenous sheanut trees in three acres of land in Otuke was demarcated in order to preserve the trees. Finally, the communities received incentives in the form of bee hives and goats that kick-started them as they sought alternative sources of livelihood.

INTEGRATED APPROACH GIVES A HEAD START FOR SUSTAINABLE FUTURE

There have been many positive outcomes of these community led processes with PfR support for different stakeholders—such as the local government. Firstly, by-laws were developed and adopted by the communities of

Nabwal and Tepeth parishes in Napak district. Mr. Lokuun Peter, a community member noted,

“Many farmers that were farming along wetlands have now been restricted and the incidences of severe floods have reduced. We also get sufficient clean water for animals and humans”

The knowledge they received from the training on how to sustain the growth of trees meant that existing trees were conserved and more trees planted all of which contributed to reducing risks

through controlled soil erosion as well as restoring the ecosystem.

With availability of water and fruit trees laden with flowers and pollen to attract bees, the community engaged in bee keeping which has become an alternative source of livelihood. Moreover the availability of reliable water points lessened bee's migration hence honey production increased. Otim Peter from Otuke District, another beneficiary remarked...

“The skills we learned have helped me to forge way forward in my future. Last season I sold 12 kg of honey and received 50 dollars income. I will make more bee hives and sell in the market to get money.”

To ensure the sustainability of this success, the community has also been trained on bee keeping for income generation. Mr. Lokol Mariko in Nakapiripirit who attended one of the training sessions added...

“I have learned to appreciate bee keeping. We used to know that bees are untamable insects living in the wilderness. Now we have learnt safe larger scale bee keeping and are doing it as an income generating activity that meets my family's needs.”

"Successful bee keeping has helped these communities to appreciate conservation of water sources and trees. These are at the core of bounty honey harvest"

...said Mr John Nangiro, a community member from Napak District.

He added that,

"The income I generated helped me very much. The harvest of 2013 coincided with the birth of our new baby and we needed funds to clear the hospital bill. With my previous income,

my wife and our new born baby would have been detained at the hospital for failure of clearing the medical bill. The money from the sale of the honey provided a way out for us. I value bee keeping."

"We were blind of the abundant potential of honey production in our land. Now we are able to keep bees, harvest honey, feed our family, even create employment for workers who work in the bee farms,"

...said Omach Celina of Latara village in Otuke

SUSTAINING ENVIRONMENT FOR PROSPERITY AND POSTERITY

The positive impacts of the integrated approach were numerous, among them: nutritional boosts from fruits and honey; the vegetation cover that provided welcome shade for animals and humans; the increased income; the jobs created; and the water supply being assured. Above all, these communities are becoming active agents in ecosystem management and restoration. That is the success of an integrated DRR, CCA and EMR approach!

IN NUMBERS

- Approximately **four years of project implementation**
- Over **500 direct beneficiaries** reached so far
- Over **500 beneficiaries received beehives** after training on bee keeping and management
- **150 farmers** received honey harvesting kits
- About **five honey processing machines** distributed
- **One training per district** conducted on DRR, CCA and EMR



AN INTEGRATED APPROACH CONTRIBUTES TO INFORMED LOCAL ADVOCACY

A CASE OF TESO-KARAMOJA IN UGANDA

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In the good old days, Teso–Karamoja rural areas were characterized by green leafy high and low lands as well as livestock grazing in the serene low lands. The hearty laughter of children playing and their contented parents watching them, paints

the picture of the idyllic past in Northern Eastern Uganda. However, the last decades they have experienced climate variations in the region; deviations that have increased peoples vulnerability because hail storms, floods and prolonged dry spells which

formerly were all unusual have become more prevalent. In fact, food insecurity, loss of lives and loss of property have slowly become common.

It was also notable that little was being done by the local

BOX 1:

THE PROCESS OF BY-LAW FORMULATION
FOR DRR, CCA AND EMR PROJECT IN NAPAK, AMURIA,
KATAKWI AND NAKAPIRIPIT

Problem identification through research ■ Consultative meetings for lobbying and advocacy ■ Drafting of the by-law ■ Presentation of the draft by-law for review by the Local Council III council ■ Endorsement of the by-law ■ Implementation of the by-law



governments of Teso-Karamoja to integrate Disaster Risk Reduction (DRR), Climate Change Adaptation (CCA) and Ecosystem Management Restoration (EMR) into their development plans. In fact there were minimal planned measures for preventing the negative impacts of climate change.

STEPS TAKEN TO SUSTAIN LIVES IN CHANGING TIMES

Fact finding research studies in the Teso-Karamoja were commissioned by the Partners for Resilience (PfR) consortium to find the obstacles and opportunities for implementing DRR, CCA and

EMR at the local level. The findings were:

- Minimal integration of DRR/CCA/EMR in the local government development plans
- Inadequate financial allocation towards DRR/CCA/EMR in local government budget
- Uncoordinated interventions to mitigate climate change at local government level
- Low technical capacities within the local government to implement DRR/CCA/EMR

Equipped with data from these research studies, Cordaid's PfR local partners

engaged local government and national level decision makers to lead initiatives for environmental conservation. A mix of means of engagement namely national and international events, audio and visual evidence, stakeholder analysis, dialogue meetings, policy briefs, mass media and exchange visits, were used to advocate integrating DRR/CCA/EMR in the [District Development Plans](#) and budgets for the Teso-Karamoja region.

In addition, Caritas Uganda conducted various trainings for partners to share knowledge and skills on advocacy and lobbying, budget analysis and expenditure



tracking. The partner organizations then targeted key decision makers at the local government level and challenged them to plan and budget for the DRR, CCA and EMR integrated approach. The main channels and ways of communicating with the decision makers were dialogue meetings to share research findings and community direct feedback in videos, audio and print documentation. This combination enabled effective communication of key advocacy demands and consequently facilitated understanding and promoted change within the local governments.

As a result of these activities, bud-

get allocations for Environment and Natural resources increased from 1.5% in financial year 2013 to 5% in financial year 2014, in each of the four district local governments of Amuria, Katakwi, Napak and Nakapiripirit. These funds facilitated tree planting, environmental awareness outreach and training various stakeholders on DRR.

The most notable success was the enactment of the 2014, *Environmental Protection and Conservation* By-law in Iirir sub-county of Napak District. This by-law helped to regulate indiscriminate cutting of trees such as the "Ecomai" tree for charcoal burning,

a practice which was rampant in Iirir. The "Ecomai" tree, was a cherished tree in this community, provided multiple benefits and served as a major source of livelihood. To name a few of its attributes, its leaves provided food for this community and its wide canopy provided a cool shade for pastoralists and their animals during the hot seasons. Above all, this popular tree was an integral part of the ecosystem of this area. However, the trees were endangered and the benefits this tree provided were diminishing to an alarming extent. (See Box 1 : The process of by-law formulation in Napak, Amuria, Katakwi and Nakapiripirit).

The perspective that the "Ecomai" tree was a money maker changed community attitudes and amazingly the community became eager to preserve these trees.

Additionally, the local government of Amuria joined hands with Caritas Soroti (SOCADIDO)¹ and community members to demarcate the Kiriik wetland in Acowa Sub County that had been degraded by the local communities. The acceptance by decision makers was key to this success.

The degradation of this wetland was worrying. For instance, when floods hit the area in 2007, the damage caused was a wakeup call that this was not business as usual. The community discovered that the destruction of the wetlands had contributed to

¹ Soroti Catholic Diocese Integrated Development Organization.

increasing floods because wetlands acted as water reservoirs and pathways by the rice fields. Fortunately, with the demarcation and protection of the Kiriik Wetland in Acowa Sub County Amero Parish this community was now protected from diverse effects of climate risks such as floods.

They may face new challenges due to years of environmental degradation, but the people of Teso-Karamoja are now more determined to progressively overcome them. So far this process has also led to harmony and unity in the community since the ecosystem is viewed as a means to a com-

mon end and the end is healthy co-existence within the ecosystem. Their environment is greener. A typical case of DRR, CCA and EMR paving the way for a brighter secure future.





COMMUNITIES ROLES IN MAKING BY-LAWS TO MANAGE AND RESTORE THEIR ECOSYSTEM

\\ AUTHORS: IRENE AMURON AND STEPHEN ABILA \\ EDITOR: PATRICK NZIOKA

Uganda Red Cross Society (URCS) and Soroti Catholic Diocese Integrated Development Organization (SOCADIDO) have been working with communities in the Northern, Eastern and North-Eastern parts of Uganda to enable the communities to re-

store the environment, adapt to their ecosystem and ameliorate the negative impacts of climate change.

A common thread in the communities is that their areas are prone to floods, drought, animal and

crop diseases, all of which undermines their development efforts. URCS is working in Akokoro sub-county in Apac district and Ongongoja sub-county in Katakwi district while SOCADIDO is working in Acowa sub-county in Amuria district.

A strategy of the PforR Programme is to build the capacity of communities to participate in the formulation and implementation of by-laws to restore their degrading eco-system.

To ensure full participation, the two organizations supported communities in analyzing their risks and in forming 11 groups at the parish level locally known as DRR committees. In each parish, a committee was formed, comprising between 20-25 members each. These groups were formed to contribute to risks reduction and mitigation of the effects of flooding. These groups act as change agents and as links between the local government, NGOs and the communities. The groups have been registered as Community Based Organizations (CBOs) to enable them to access resources from government and donors once the project ends. The groups are also involved in other development work such as mobilization of communities for government programmes like the youth empowerment and social protection programmes in the same area.

The members were trained in project planning and management, report writing, leadership skills, agro-forestry, construction of energy saving stoves, contingency planning and early warning systems.

Since the group members are not paid, URCS has motivated them by donating bicycles, T-shirts and umbrellas, while SOCADIDO has supported exchange visits. They have also been recognized by the community and local government

for their leadership in the community.

With Support from SOCADIDO, the communities in Amero parish, Acowa sub-county mobilized themselves and came up with by-laws on eco-system management and restoration that were approved by the sub-county Council in 2012. In the same year, URCS facilitated an exchange visit to the Apac district of selected DRR members and local government officials from Katakwi. The team from Katakwi learnt about how their counterparts in Apac were managing environmental issues related to tree cutting by enacting and enforcing by-laws against indiscriminate cutting. These by-laws emphasized preservation of indigenous tree species such as the shea nut butter, mango, and tangerine, the restriction of charcoal burning, and the demarcation of fragile wetlands.

On return from Apac district, the DRR committees and local government officials engaged the community and disseminated lessons learned, which resulted in the development of a by-law, 'Elimination of tree-cutting', which prohibits indiscriminate tree cutting.

In addition, the DRR members organized campaigns against tree cutting using the slogan 'eraiek-itoiopaperikon' (the tree is your friend') to remind communities about the importance of trees. The Ogongoja sub-county, in consultation with the DRR members, developed 'The Wetland Action Plan' after holding a series of consultative meetings with the communities.





Following the enactment of the by-laws on eco-system restoration in Acowa sub-county, the communities demarcated the Kiriik wetland using sisal covering a length of about 50 kilometers.

Currently, most of the farmers that are cultivating around this wetland do not go beyond the demarcated area and the sub county officials together with the DRR committee members have continued to monitor the area that was demarcated.

The degraded eco-system is recovering slowly but surely.

Lessons learnt are that the involvement of communities and council members in the development of by-laws promotes acceptance and implementation.



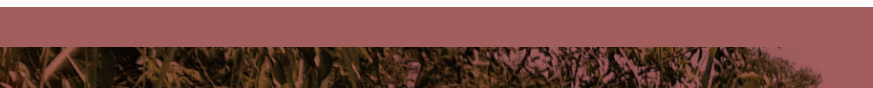
GRASSROOT COMMITTEES FILL POLICY IMPLEMENTATION GAPS A CASE OF OTUKE DISTRICT, UGANDA

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For over 40 years, residents of Ogor and Olilim sub counties in Otuke District, North Eastern Uganda, have suffered periodic ravages of floods, water logging and drought. Over 14,000 residents have been losing crops, livestock and property to raging

waters during the rainy seasons. The situation is worsened by the location of the district— in the low-lying area of Lake Kyoga basin, which acts as a water point for run-off waters from Karamoja highlands. These annual floods and droughts have seriously af-

fected mainly the agro-pastoralist Langi community's efforts to recover from the two-decade civil war that uprooted them from their homeland. Their dream to return to an agro-pastoralist lifestyle has been elusive for about a decade.





While the Government of Uganda formulated policies to alleviate the suffering of communities like Langi, their implementation faced challenges. For instance, the National Wetland Policy (1995), which sought to promote the protection of wetlands, has had limited impact in villages prone to floods, water logging and drought. A similar scenario applied to the National Disaster Preparedness and Management Policy (NDPM 2010), which sought to “reduce Uganda’s vulnerability to disasters”.

To contribute to the goals envisaged in the two policies, in 2011 CARE studied the issues that were limiting their effective implementation in Otuke. Key findings included limited dissemination of the policy, absence of management committees in the villages and language barriers that limited understanding of the policy and made it appear a foreign document for the elite. As such, the community continued degrading wetlands through rice growing, grazing and felling trees for charcoal and wood.

CARE consulted with the Office of the Prime Minister (OPM) that coordinates implementation of the DRR policy with the Ministry of Water and Environment, the Local Government of Otuke and the Langi community, seeking to enable the locals to participate in filling the identified gaps. Training residents on NDPM and Wetland Management policies to build local capacities to lessen effects of hazards, promote sustainable use of wetlands, environmental protection, and promotion of alternative livelihoods were considered viable interventions.

CARE together with OPM and Otuke District Natural Resources and Agriculture Department conducted two separate trainings. First, 90 persons selected by the residents acquired practical skills in disaster risk reduction and management. The second training of 66 community representatives focused on wetland management to promote their sustainable use. The NDPM training ended with the formation of nine-member committees in the 10 parishes of Ogor and Olilim sub counties; the wetland management training, ended with the formation of two, 33-member committees for Agony and Acilayang wetlands.

NDPM committees in parishes later trained locals who formed similar nine-member committees in villages. Together, they planned and mapped hazards in all the 10 parishes, drew hazard and vision maps, and developed and implemented contingency plans. They also documented indigenous weather forecast, which was discussed and shared with government meteorologists for integration into the scientific weather forecast that they disseminate to the community.

The two wetland management committees in 2013 organized meetings with the communities to discuss threats to their environment. They mapped wetlands threatened by degradation due to rice growing, grazing, bush and charcoal burning. The community and the committees agreed to protect Agony and Acilayang wetlands in Ogor Sub County. They held consultative

meetings with all stakeholders of the wetlands such as religious institutions, cultural leaders, women, youth, pot makers, crafts men, schools, fishermen, miners, hunters, sub-county, district NGOs and the Ministry of Water and Environment, to plan the sustainable use of the wetlands.

The wetland management plan included demarcation of the wetlands, digging cattle water points and setting aside grazing areas outside the wetland sources. It also involved controlling fishing and hunting, formulation of by-laws and implementing them. Penalties for breaking the by-laws included cash and livestock fines and arrest and confinement by police.

The locals have owned the risk reduction and wetland management interventions. They follow the by-laws which integrate with the District Natural Resources Ordinance that CARE facilitated in 2013. According to the District Natural Resources Officer of Otuke, cutting of trees for charcoal has been reduced by about 60 percent.

Mr. Angulo Yuventino, a member of Agony Wetland Management Committee in Ogor sub-county remarked:

"I have lived knowing wetlands are our future resources...but people returned from camps to cultivate them. The plan we have developed is good. I am now in the committee and teaching people on traditional values of our wetland resources..."

According to Ms. Akello Betty, a member of Ogor DRR Committee:

"I used to cut trees for charcoal including shea nut and at the same time harvest shea oil for sale. Now I realize the importance of using trees sustainably. I now sell more shea nut oil for income and I have stopped cutting trees. Nature is our wealth, the shea nut trees I harvest were actually harvested by my great grandparents for food, oil and shade. Environment is now my friend".

Communities in Atira, Amunga and Ogwette parishes of Olilim Sub-County have adopted application of traditional risk reduction plans. Families living near flood-

prone areas relocate to stay with relatives in safer areas during the rainy season. Others have constructed raised granaries for food storage, zoned areas for grazing during dry season and built flood-resistant huts.

Over time, the communities have learnt to live with environmental hazards by reducing the risks on their livelihoods, infrastructure and environment. They are implementing the by-laws they formulated because they were consulted and involved. People are taking actions at household levels to safe-guard against hazards. There is also increased communication and coordination with sub-county and district officials.

PfR have learnt that communities have the potential to manage issues that affect them. When organized, they can work collectively with simple laws which feed into government policies. Implementation of this project has helped to understand that local communities are knowledgeable and resourceful. Improving on what they know, possess and believe in, helps enhance their contribution to disaster risk reduction. Even with insufficient financial resources and capacities at government level, communities can go a long way in sustainable use of the environment and reducing the impact of hazards.



INDIGENOUS AND SCIENTIFIC WEATHER FORECASTS WORKING TOGETHER IN UGANDA

\\ AUTHORS: STEPHEN ABILA, IRENE AMURON AND MONICA ANGUPARU \\ EDITOR: SOPHIA IREPU

For ages, communities interacted with their environment and learnt to read its behavior and symbolism and with time, started to associate its unique character with changes in the weather. They learnt to listen, speak and act with their environment, even

when they could not explain why certain things happened the way they did.

Symbols such as the reddening of the moon, absence of stars in the sky, migration of birds in a certain direction, dropping of leaves, ants

lining along a village path, and cooing of the black kiwi bird, were used to tell whether it was going to rain, be dry or extremely windy. The consistency of these signs built community's confidence in the local signs. This made them reluctant and indifferent to sci-

entific weather forecasts given by weather stations. Additionally, weather forecasts were printed in English and broadcast on national television and radio, media which were largely lacking in remote villages. Religious sensitivities also played their part, with some people maintaining that only God can forecast the future. All this affected community's response to and action on the scientific information disseminated.

DISCOVERING THE MISSING LINK

Participation of Partners for Resilience (PfR) collaborators in the monthly National Disaster Risk Reduction platform with the Uganda National Meteorology Authority (UNMA) revealed that communities were ignoring the quarterly forecasts released by UNMA. There was a need to bridge the gap between UNMA and communities in dissemination and use of weather forecasts. This would involve finding new and unique ways of engaging

the communities to proactively receive and use information disseminated by UNMA.

TACKLING THE PROBLEM

PfR partners worked with the communities in Amuria, Apac and Otuke to conduct a rapid assessment in determining practical means of increasing coverage and use of UNMA weather forecasts by subsistence farmers, agro pastoralists and pastoralists for effective planning and implementation of farm activities, and for monitoring and giving feedback to UNMA. The assessment revealed the communities strong attachment to indigenous signs and symbols for reading weather as an opportunity to bridge the gap.

With this information, PfR Uganda, worked with the same communities to identify and record known indigenous signs and symbols used for weather forecasts. The communities collectively identified movement of the

wind, whistling of kiwi birds locally known as *Esuksukin* Amuria, Katakwi, Napak, Nakapiripirit and *Awila* bird in Otuke, patterns of stars and moon, croaking of frogs, as signals commonly used to tell whether there would be rain or drought and its magnitude, with minimal variations from one community to another.

Soroti Catholic Diocese Integrated Development Organization (SOCADIDO) working in Acowa Sub-County, Amuria District, and CARE Uganda working in Ogor and Olilim sub-counties in Otuke districts then supported the communities in formerly documenting and developing these into Early Warning Early Action (EWEA) posters and matrices for easy dissemination and access. The matrices are used to integrate indigenous and scientific weather forecasts and draw actions on a quarterly basis, for dissemination by the Disaster Risk Reduction (DRR) committees in market places, churches, mosques, traditional events, schools, communi-

INDIGENOUS SIGNS USED BY THE COMMUNITIES TO PREDICT WEATHER	
SIGN/SYMBOL	SIGNAL/MEANING
Whistling of Esuksuk or Awila bird (kiwi bird)	Onset of rain
Croaking of frogs	Onset of heavy rain
Movement of stars from East to West direction	Rain is about to come
Movement of very strong dry wind from north to south	Onset of dry season
Silence of Esusuk and Awilabird	Onset of dry season
Heavy flowering of Luchoro tree	Onset of very heavy rains and hence floods
Delayed and poor flowering of Luchoro tree	Delayed and short rains affecting crop yields



ty information centers and other public notice boards.

BUILDING BRIDGES

SOCADIDO has since partnered with the meteorology office in Soroti district to validate the community's local weather forecasts and disseminate quarterly scientific weather forecasts to the communities through meetings. During one of these meetings, the meteorology officer reviewed the indigenous signs and symbols documented by the community for that quarter, along with the early actions agreed upon by the community to assess the level of accuracy in comparison to the scientific weather forecast and recommended actions for that quarter. After more than two com-

parisons, he agreed that the two were in agreement and could be disseminated to the communities as an integrated weather forecast to cover both indigenous and scientific interests. Since then, the community members have continued to disseminate their weather forecasts as integrated, covering both indigenous and scientific predictions.

COMMUNITY RADIO EXTENDS REACH

In Apac and Katakwi districts, Uganda Red Cross Society (URCS) supported the communities in setting up community radios for easy dissemination of weather forecasts. Attached to a long pole on the roof of a hut, the community radio consists of two

loud speakers tied together, with a microphone, and a solar panel and its accessories for power. The community members selected one household to host the radio equipment that covers a radius of two and a half kilometers. This household is responsible for the overall management and security of the equipment, supported by a committee set up by the community. The management charges a fee of Uganda shillings 500 to 1000, which is less than a dollar for private radio announcements to support maintenance of the radio. Dissemination of the information on this radio is done by six trained Community Based Disaster Risk Reduction (CB-DRR) members. Francis Amode, Omunyuk Parish Development Chairperson, testifies:

"The community radio has eased communication in the villages of Omunyuk, Anyangabela, Obarute, Obulengorok and Amuruto. We now get timely information on the state of roads, water, climate and even education and make informed choices..."

After the installation of the Apac weather station in June 2014, URCS partnered with Apac District Local Government to share and disseminate district specific weather forecast information, through the community radio. Jasper Otimoi; District Environment Officer and Weather Forecast focal person, Apac district, shares his experience:

"Before the weather station was opened in June 2014, we relied entirely on information from the Meteorology Department in Entebbe. This was troublesome and unreliable, as it was not area specific. This made communities consider the information as inaccurate."

CASTING A WIDE NET

CARE partnered with meteorologists from Ngeta Zonal Agriculture and Research Development Institute to disseminate weather forecasts in Otuke district and train district sector heads in weather forecast dissemination. Private media houses were used to disseminate weather forecasts through radio talk shows to increase access and coverage. Speakers on these talk shows included a meteorologist and district officials. Feedback sessions with radio listeners were arranged to monitor coverage and general feedback from the community to UNMA.

CARE partnered with the Africa Climate Change Resilience Alliance, supported the translation and dissemination of forecast highlights in 8 local languages, including those spoken in PfR project sites. Community volunteers were trained to use a simple monitoring and evaluation tools to obtain feedback on weather forecast dissemination and use. The feedback is used by UNMA to inform decision making.

ACHIEVEMENTS

- Communities now use the integrated scientific and indigenous weather forecasts

to undertake early actions like opening channels and planting fast maturing and drought tolerant crops.

- UNMA has used the experience with the PfR project on integrating indigenous and scientific knowledge to inform the development of national indicators for climate change.

LESSONS LEARNT

- Partnering with other stakeholders helps to bridge gaps in weather forecast dissemination and build in sustainability.
- Beneficiary involvement in information collection for weather forecasts helps to dispel skepticism, distrust and build confidence, commitment, ownership and demand from the target beneficiaries.



COMMUNITY BASED KNOWLEDGE CENTRES BOOST COMMUNITIES' SKILLS IN UGANDA

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The saying “knowledge is wealth” held true for the communities of Napak and Otuke districts in Karamoja and Lango sub-regions of Uganda when Partners for Resilience (PfR) collaborators worked with them to conduct community

risk assessments. The risk assessments were conducted in 2011 with the communities by Caritas Moroto in the parishes of Nabwal and Tepeth in Iriir Sub-county, in Napak district and by CARE International Uganda, in Oluro, Anyalima,

Atangwatta, Omwonylee, parishes in Ogor Sub-County and Ogwette, Gotojwang, Anepkide, Angetta, Amunga and Atira parishes in Olilim Sub-County Otuke district.

The common hazards identified by the communities included pro-

longed dry spell¹, droughts², flash floods, and hailstorms. The impacts ranged from, crop damage to reduced yields, food insecurity and hunger, loss of lives, poor animal health, destruction of infrastructure and people's properties. The communities identified limited DRR/CCA/EMR knowledge, skills and exposure, as factors limiting their capacity to mitigate and adapt to extreme conditions of weather variability.

COMMUNITIES JOIN HANDS TO SOLVE THE PROBLEM

During further consultations with the communities and other stakeholders in Napak district, communities identified the establishment of community based structures as one of the ways to address the capacity gaps identified and to enhance communities' capacity to cope with hazards. Following this recommendation, Caritas Moroto, supported the communities in Napak district to construct six learning centers in the villages of: Naloret; Lojom; Naturumrum; Apenanyia; and Loskait, in Iriir Sub County.

For their part, the communities contributed labour, local materials, and land for both the Centre building as well as demonstration gardens. Caritas provided



the finances, technical experts and other construction materials like cement and iron sheets to help complete construction of the learning Centre building. Once built they equipped the learning Centre with books, flip charts, training boards and Early Warning and Early Action posters which had been developed previously with the communities. Farm inputs such as hoes and spades were also given for use in the demonstrations gardens.

To keep the Learning Centres functional, Caritas Moroto facilitated the community in identifying 20 community members to serve as DRR committees. These

were composed of local leaders, women and men, with the main responsibility of overseeing and managing the community learning centers. Upon their selection, the DRR committee members were thus trained in leadership, Centre management and group dynamics skills, to help in their management of the community Centres.

In order to address the technical skill gaps earlier identified by the communities in the consultation meetings, basic livelihoods skills trainings on soil and water conservation measures like establishment of drainage channels, use of small scale irrigation schemes and

1 **Dry spell** is a prolonged dry season with minimal impact and potential to progress into a drought. In Uganda, dry spells are experienced more commonly in the flat lands of Teso and Lango sub regions.

2 **Drought** is the failure of two or more consequential rainfall seasons resulting in the drying of pastures and water points, with dire consequences on people's lives and livelihoods. A drought can last for months or years, or may be declared after as few as 15 days. Drought is more common in Karamoja than any other region in the country, given the semi-arid nature of its terrain.



modern agronomical practices such as agroforestry, apiary management and construction were conducted. Additional training in sustainable use of energy efficient stoves, DRR/CCA/EMR basic components, livestock treatment and integration of the traditional and scientific weather forecasts for early warning and early action, were also given for the committees to pass on to the communities on a regular and sustainable basis.

The DRR committees are now running the centres and work with the communities on a monthly basis, to develop monthly action plans to roll out the theoretical and practi-

cal knowledge attained from the center to both direct and indirect beneficiaries who visit the community center. Occasionally the committees also carry out community sensitization activities to share DRR/CCA/EMR principles.

MODEL FARMERS SCALE UP KNOWLEDGE AND SKILLS TRANSFER INITIATIVES

In Otuke District, CARE, in 2012, in consultation with the community, parish and sub disaster management committees identified 30 model farmers from ten target parishes, using the criteria of good behavior, activeness, receptiveness to new knowledge,

skills and practices and ability to pass it on to the community. After their selection, CARE provided training on improved agricultural technologies such as apiary, soil and water conservation practices like mulching and post-harvest handling, conducted by Ngetta Agricultural research institute in Lira District.

In addition, CARE attached five vulnerable households to each of the 30 model farmers to pass on their knowledge, skills and practices. For incentive, five model farmers were provided with a technician to guide in constructing rainwater harvest pits on a cost sharing basis. Ten model farmers received drought tolerant seeds like cassava and peas for multiplication and five received eggplant and onion bulbs to establish kitchen gardens, as learning farms for other community members. Five cassava multiplication fields have since been established in Angetta, Atira, Anepkide parishes in Olilim Sub-County and Omwonylee, Oluroparishes, Ogor sub-counties.

THE BENEFITS

More than 300 people in Napak were trained by the DRR committees in energy efficient stove construction, small scale irrigation, apiary management, agronomy, water and soil conservation practices, and local water harvesting technologies. Out of around

270 beneficiaries evaluated in 2014: 70 are practicing local water harvesting on their farms and homesteads; 190 adopted home vegetable gardens; 240 are able to diagnose, treat and vaccinate livestock by themselves; and 156 are maintaining protective trees in and around their gardens as a local flood response measure. Mr. Mutia Joseph a DRR committee member from in Nabwal parish testifies;

Caritas-Moroto trained us on horticulture in the DRR center and gave us vegetable seeds to plant in and around our home. We are now able to practice most of these activities without much external support.

In Otuke District, five model farmers have scaled up their production levels from one acre to four acres. This has diversified their sources

of income and improved their resilience to hazards. Ten communities have now constructed small water points for harvesting water for their animals. Mr. Acuma Tom, a model farmer from Got Ojwang parish, Olilim, proudly notes;

My home is now a demonstration site. I receive community members, District stakeholders and other civil society representatives, who come to learn from me and also give me necessary support. The chief administrative officer said my home will become a central learning point for visitors.

CHALLENGES

- High cost of inputs that farmers cannot easily afford, which discourages adoption
- Slow government interest to support community initiatives

- Climate variability limiting production and harvests

LESSONS LEARNED

- Presence of community learning centres and reference points in the communities help to facilitate easy transfer of knowledge and skills among community members.
- Use of participatory approaches helps to put solutions in the communities' hands and promotes their ownership and the sustainability of initiatives.
- Understanding communities' local capacities, skills, knowledge, perceptions and natural resources helps to design more acceptable and resilient interventions at the community level.



USING IMPROVED SEED VARIETIES TO ADAPT TO CLIMATE CHANGE

\\ AUTHORS: DEBORAH ATEBO AND STEPHEN ABILA \\ EDITOR: JAYNE ROSE GACHERI

For Charles Okullu and Vincent Okello, both from Katakwi and Amuria Districts of North Eastern Uganda, respectively, the last 10 years have been stressful. They had to live from hand to mouth striving to provide for their families. Many times their families had

to go without a day's meal. This is because their fortunes in farming were uncertain and often difficult due to unpredictable weather.

"Sometimes we would plant expecting a bumper harvest

only for the rains to fail and reduce the harvest to nothing," said Okello.

Conversely when the rains came flooding their crops were swept away. Living in the drought strick-

en regions, there were hardly any alternative sources of economic activity when farming failed. The two Districts have two planting seasons; a wet season from March to October, and a dry season from November to February. However, Cordaid Uganda, an organization which supports farmers, noted that these seasons were increasingly becoming unreliable and unpredictable. This was attributed to changing weather patterns that have resulted in periodic prolonged dry spells as well as intermittent flooding.

This phenomenon greatly affected the economy of the two districts because more than 90% of the population rely on subsistence agriculture and animal husbandry. Some of the major crops grown included cassava, sweet potatoes, ground nuts, sorghum millet, peas and maize.

According to a Uganda food security brief of November 2010, Katakwi and Amuria were among the District in Teso region that were bordering on food insecurity or were moderately food insecure. This implied that appropriate responses and strategies were necessary to improve the livelihoods and to reduce the risk of hazards.

The two Cordaid Uganda partners: Transcultural Psychosocial Organization (TPO Uganda) and Soroti Catholic Dioceses Integrated Development Organization (SOCADIDO) worked with the Communities of Amero in Acowa Sub-County and Omasia in Magoro Sub-County to identify alternative adaptation measures to prolonged dry spells. The two communities prioritized adoption

of improved crop varieties of cassava, sorghum, green grams, simsim and peas.

In order to access the improved seed varieties, TPO Uganda and SOCADIDO contacted the National Semi Arid Research Resources Institute (NaSARRI). NaSARRI is a government-led research institute that develops improved varieties of local crops that can better endure climate variability. NaSARRI's researchers were also interested in establishing a demonstration site where they could demonstrate their work and encourage local adoption of these new seed varieties. The two organizations signed a memorandum of understanding to provide improved seed varieties and to establish demonstration sites for learning purposes in the two communities.

PRACTICAL LESSONS THROUGH DEMONSTRATION SITES

In 2012, seven demonstration sites were established in Omasia Parish and eight in Amero Parish. Planted in the demo farms were several varieties of sorghum (seso 1-3), peas (secow 1-3), cassava (NASE 14) and simsim (sesame 3). NaSARRI trained 120 local residents (60 in Amero and 60 in Omasia) to run the demonstration farms. They were trained on how to handle and cultivate the new varieties. They were only authorized to purchase improved seeds from the research station that were evaluated by the communities according to their yields, maturity period and resistance to pests and diseases. The evaluation was done to help the communities in identifying the

varieties that performed well for adoption and multiplication. Most of the seed varieties performed better than the traditionally used seeds, with the exception of seso 3 that withered even under normal rain conditions. NaSARRI and the community used this feedback to determine which strains were worth adopting in the two communities.

After establishing the suitability of the tested seed varieties and their compatibility with the soils and climatic conditions of the two sub-counties, TPO Uganda and SOCADIDO procured seeds from NaSARRI and distributed them to 825 households in Amero Parish and 1,216 households in Omasia Parish. The seeds distributed included sorghum, pea, soya beans, cassava stems and sesame. The total of the seeds distribution is indicated in the table below:

After planting the improved seed varieties, Okullo who hails from Amero Parish was quite impressed by what he harvested in less than a year.

"The improved cassava variety took less than a year to mature as opposed to the traditional variety which took five years to mature,"

said a jubilant Okullo.

He explained that with the traditional variety he had to go through stressful periods where he had difficulty feeding his family while he waited for the harvest. Now, he says, he can spend this valuable time doing other things that

TABLE 1.

IMPROVED SEEDS DISTRIBUTED (2012)	
20,410	Kilograms of sorghum (seso 2)
1,127	Kilograms of pea seeds
280	Kilograms of soya beans
1,080	Bags of cassava stems
416	Kilograms of sesame

have economical gains.

"I am extremely impressed with this type of cassava variety (NASE 14) which has taken 8-12 month to mature. This has helped me to recover from the problem of food shortage that had affected my household. I can now have more than two meals a day

with my family which was not the case before",

explained Okullo.

From the inputs distributed (Table 1 above), the outcome was encouraging as seen from table 2 below.

CHANGING FAMILY FORTUNES

At the beginning of the project in 2012, a total of 904 households from Katakwi and Amura districts

received the improved cassava varieties for multiplication. Farmers in Amero and Omasia parishes have already distributed 412 bags of cassava stems to 212 households for planting within their parishes. *"This means that the projects is going to touch many lives in the next three years,"* Okullu noted.

"The improved varieties (sorghum, green grams, peas, and cassava cuttings/stems)

TABLE 2.

SEED TYPE	NUMBER OF HOUSEHOLDS SUPPORTED	OUTPUTS (IN TONNS)
Sorghum	2041	3,673.8
Peas	1,127	90.16
Soya beans	56	22.4
Sesame (3)	416	22.88
Cassava cuttings	904	2,712

that were distributed to the households have changed household food security status. Families in these regions are now able to have two meals a day," said Vincent Okello, a farmer from Omasia Parish, adding that before the introduction of the improved variety seedlings, most families could hardly afford more than a meal a day.

Before trying the improved varieties Vincent Okello used to harvest less than 50 kilograms of green grams and peas from his ½ acre parcel of land. Now, he said the yields have improved and he harvested more than 100 kilograms of green grams and 80 kilograms of peas in the same

parcel of land. Now Okello had more than one acre of land under cultivation and he was looking forward for better yields to enable him to become a commercial farmer. *"I am happy with the yields from these improved new seeds and I am looking forward for a better harvest which I can sell,"* he said. The excited farmer said he was planning to save enough to venture into dairy farming.

From the sale of the peas, sesame and soya beans harvested in 2013, a total of 13 households in Omasia Parish purchased 62 goats while those in Amero Parish purchased 71 goats. After breeding the animals to maturity, they sold them off and shared the proceeds with group members. Part of the money was used to buy more goats.

"This way we hope to save enough to invest into large scale farming and who knows, maybe one day we shall save enough to grow the group to a cooperative saving scheme where members can borrow and repay with interest,"

said Okello.

From the gains made in the improved seed venture, households were not only able to feed their families but could pay their bills such as school fees, hospital bills, and hire additional labor for ploughing, planting, and harvesting. The sky is the limit for the farmers of Katakwi and Amuria districts.



VILLAGE LOAN ASSOCIATIONS IMPROVE LIVES IN UGANDA

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They are kilometres apart. Their populations are different. But Otuke, Napak and Nakapiripir districts in Uganda have one thing in common: Crippling abject poverty caused by flash floods, erratic rainfall and prolonged dry spells. The ravages of weather

have been causing crop failure, mainly maize, sesame (sim sim) and sorghum every year—exposing a combined agro-pastoralist population of over 120,000 to hunger.

In 2011 and 2012, Partners for

Resilience (PfR), Facilitation for Peace and Development (FAPAD), Ecological Christian Organisation (ECO) and CARITAS Moroto, facilitated a participatory assessment of this problem. The assessment was done in Olilim and Ogor sub-counties of Otuke

District; Nabilatuk and Lolachat sub-counties of Nakapiripirit District and IriirSub-County in Napak District. They established that while the mainly agro-pastoralist Karimojong and Langi communities have been seeking to alleviate poverty and hunger through diversification of income sources, lack of capital has stood in their way. The two communities were actually worsening the climate change problem by clearing forests and burning charcoal to make ends meet.

Majority of the locals involved in the community assessment made it clear that their main problem was access to capital to diversify their income sources. They wanted to save the money they had to get start-up capital from shared pools.

PfR mobilized and facilitated the residents informing and registering Village Savings and Loan Associations (VSLAs). The choice of VSLAs was informed by the successes that CARE International recorded with that resource mobilisation method in Karamoja region in 2006, as well as in other areas of Uganda. PfR took the following steps:

- 400 community leaders were trained on record-keeping, group dynamics, financial management, and leadership skills. The leaders then returned to their respective communities and trained other persons on leadership skills. They also supported the groups to formulate and implement by-laws.
- They facilitated group visits and exchange programmes



among VSLAs to help them learn from one another. Various members of VSLAs in Otuke District, for instance, paid a visit to Apetosican and Eswamata Ajautu VSLAs in Olwa Parish, Amuria District, in November 2014. Here, they learned added value and marketing.

- They provided saving kits to the groups to keep their money safely in their homes. The kits included cash boxes, counter-books for keeping records, rubberstamps, ink pads, and pens.
- In some cases, PfR provided start-up capital to VSLAs. For instance, in 2012, CARITAS

Moroto extended a Uganda Shillings 700,000 loan to its 12 VSLAs in Napak District to help them give adequate loans to their members.

- Since some VSLA members were investing their loans in crop production, FAPAD helped 30 successful farmers in villages establish model farms in Ogor and Olili sub-counties from which VSLA members could learn best farming practices.
- FAPAD, ECO and CARITAS Moroto later facilitated supervision and sensitisation of the associations in financial management to help them remain stable.



These interventions have led to resilience of the targeted population to floods, long dry spells and erratic rainfall, all problems which are worsening daily. The details of the success are as follows.

RESOURCE MOBILISATION

The targeted residents of Otuke, Napak and Nakapiripirit districts are now pooling their money and pulling together quite literally. Over 200 VSLAs with over 8,000 members have been formed in the three targeted districts— 186 associations in Otuke, 30 in Nakapiripirit and 12 in Napak. Annually, the VSLAs can save up to Uganda Shillings 164 million. Mr

Lokitare John Bosco, the group secretary Lojom VSLA in Napak District, commented:

"Currently, the total savings of the group stand at Ug Sh 1,200,000 and the welfare fund is 350,000."

This money is usually available for members to borrow and venture into diversified crop cultivation, business and other IGAs. In 2012, for example, George Odongo and his wife Josephine Akello joined CARE VSLA called Par pi Anyim in Bar Keo Village in Otuke District

and borrowed Uganda Shillings 2 million to diversify his businesses. He invested the loan in a shop, a restaurant and rice farming.

"In 2014, we used the loan to construct a permanent house that cost Uganda Shillings 15 million. We have rented out part of the building and the other part is a hotel,"

Mr Odongo shared.

BUSINESS BOOM

Most businesses started by VSLA members are doing well. Some VSLA members have opened shops and restaurants while others buy and sell livestock, fish and cereals. Some have repaid their loans and are sustaining their business with the profits they have made over the years.

Mr Ngiro Charles of Namid-Kao Village, for instance, took a loan of Uganda Shillings 300,000 from Lokwakwa VSLA and invested it in an animal drugs business. He had this to share:

"In two months I had made a Uganda Shillings 250,000 profit. This is the money I'm using to run my business. Besides, I grow and sell vegetables throughout the year. I save the proceeds every week."

BETTER LIFE

Some residents have used VSLA loans to improve the quality of their lives. They have built better houses and acquired assets. Mr. Lotee Mariko and his wife Lucy from Natapararengan Village, for example, have realized their dream of living in an iron-sheet-roof building. The two members of Ariamriam VSLA have set up a six-room house.

"I have also been able to acquire a number of chickens and three goats using profits from the loans I took at the VSLA,"

says Mrs Lotee.

EDUCATION

Some residents of the three districts are using loans from their VSLAs to fight illiteracy. In Ogor Sub County, for instance, Otim Peter from Amyelo Village, a member of Note EnTeko VSLA, has set up a nursery school that now has 35 children. Besides helping boost education levels in the area, Mr Otim has created jobs for five community members who teach and cook for the children.

MORE CROPS BETTER YIELDS

Members of VSLAs who have invested their loans in crop culti-

vation say they are getting better harvests after diversifying their crops, and learning new methods of farming at village model farms. Additionally, most of them are now able to buy better and drought-tolerant seeds. They have used VSLA loans to put more land under cultivation, with some farming parcels as large as two hectares. This has boosted food production and food security for the targeted population.

CEREAL BANKING

Some VSLA members have ventured into cereal banking where they keep their money. Besides keeping their loans safely, they make profit by selling the grains at competitive prices. This has boosted family incomes and provided an alternative banking system in remote villages where commercial banks are not available. Lokitare John Bosco, the group secretary Lojom VSLA in Napak District, noted that the group has opened a cereal bank worth Ug Shillings 1,800,000.

SOCIAL SECURITY AND COHESION

VSLAs have improved the social security of residents of Otuke, Napak and Nakapiripirit districts. Members of over 200 associations now get emergency and

welfare loans.

LESSONS LEARNED

- VSLAs can serve both literate people and those without formal education. This is because record keeping— one of the main headaches for illiterate people— is simplified by representing a share value with symbols that are transferred to record books with inked stamps. This helps all members to keep track, audit or verify information regarding their savings.
- VSLAs are very flexible, able to respond well to varied conditions and needs, and can operate in any environment.
- VSLAs cultivate financial management culture among the participants. Members of VSLAs in the three districts are now better planners and financial managers.
- VSLAs are good platforms for integrating marginalised groups like women in leadership and politics. They are also good tools for social mobilisation and integration of many people into community programmes.



INCENTIVES FOR ECOSYSTEM BASED ADAPTATION IN PASTORAL COMMUNITIES: THE CASE OF NAKAPIRIPIRIT IN UGANDA

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Livelihoods in agro-pastoralist areas such as the Karamoja sub-region in Uganda are deeply dependent on nature. Environmental degradation and climate variability - that result in periodic floods and drought - worsen the communities' vulnerabilities,

while at the same time, limiting livelihood options.

Such communities are usually food insecure, do not have enough pastures for their animals and have little or no water. Sustainability of the ecosystem is

therefore crucial to their survival. Initiatives to reverse these trends should aim to build community resilience to climate change. PfR, through Wetlands International, proposed implementing an ecosystem based adaptation approach (EbA).

It is important to note that projects aimed at long term benefits, as is the case with EbA, may not at the outset be attractive to the communities. It is with this in mind that Wetlands International, working with Partners for Resilience, proposed the bio-right approach to motivate communities through incentives for wider adoption of ecosystem based adaptation measures.

WHAT IS THE BIO-RIGHT APPROACH?

This approach is essentially a micro-credit finance mechanism that combines poverty reduction measures with environmental restoration and conservation, by releasing funds to enable communities to develop resilience and mitigate the negative impacts of climate change.

The bio-rights approach was applied in 2014 in the Nakapiripirit project in the Karamoja sub-region of Uganda. In this sub-region, communities depend on nature for their livelihoods; such as requiring rain to sustain their pastures. More than 200 vulnerable people from five villages – Namidkao, Lokitela, Losimit, Domoye and Naponga South – are participating:

Their communities receive money as credit to develop sustainable income generating activities. They repay the principal of the loan while the interest is paid in the form of conservation activities such as reforestation, habitat protection and refraining from unsustainable land use practices.

Once the conservation measures prove successful and sustainable, the repayments are ultimately converted into a community-based revolving fund for further resilient development.

THE PROCESS

The first step in the implementation process included an assessment called “rapid ecosystem profiling” aimed at identifying habitat types, services and goods the communities get from the environment they live in, as well as environmental status and threats. This was followed by sensitization through meetings to seek the community’s support and to also identify the project sites.

Five grazing reserves, totaling 30 acres, were selected for conservation in the five villages. The grazing areas were zoned. Rules for their use were enforced and promotion of natural regeneration and planting of woody tree species was promoted. Penalties were also levied to those who did not adhere to the rules.

An immediate benefit was that the zoned grazing areas provided fodder to feed more animals than before. They were also used as a water reservoir during prolonged dry seasons.

The zoning additionally resulted in the rejuvenation of natural trees whose roots and leaves are used for medicinal treatments. Acacia and Neem trees were targeted because they are drought resistant. As an incentive, the communities were given 200 beehives and 90 goats. In 2014, 75 kg. of honey, with a value of 720,000 Uganda Shillings, was

harvested and sold to Beehouse Limited and other individuals.

A beneficiary from Losimit village, Adiaka Max Kale said:

“We have been cutting and burning our trees not knowing that we were losing other livelihood resources. Our grasslands are providing pastures to our animals. I get income from honey that has helped me buy food for my family. We need to protect our ecosystem to live”.

As a result of implementing the project, we learned that continuous funding for incentives for livelihoods is crucial for maintaining participant’s commitment to EbA activities.

GOING FORWARD

We also learned that it is important to work out strategies to deal with complexities resulting from cultural and religious beliefs. For example, payment of interest or *riba*, on micro-credits is considered *haram* and is forbidden in Muslim communities. We adopted revolving fund that is very similar to Zakat, to make it acceptable amongst Muslim communities.

Sensitization is key to ensure that as many people as possible voluntarily participate in the scheme.

Projects that involve revolving community assets such as small ruminants or refunds of micro-credit in kind, were found



to be acceptable to the people, however, the risk rests with the organization providing the loan.

Working with groups as opposed to individuals was found to be the best way to mitigate against defaults. In situations where

contracts have to be signed, it is important to involve respected organizations like religious institutions or the local government.

Where land is communally owned, it is important to come up with by-laws and recognition of both

formal and customary laws on land ownership.

The bio-rights approach presents a viable alternative to promote ecosystems-based approaches through microcredit.



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