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Building Resilience: Bridging Food Security, Climate Change Adaptation and Disaster Risk Reduction

An Overview of Workshop Case Studies

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Foreword to the Workshop 'Building Resilience: Bridging Food Security, Climate Change Adaptation and Disaster Risk Reduction'

The global food system is failing almost 1 billion people. To put it in perspective, this exceeds the combined number of people who live in the European Union, the United States, Japan, Canada, and Australia. Adding to this billion, there are another one billion people who suffer from "hidden hunger" and do not have enough vitamins and minerals in their diets to be assured normal physical and mental growth.

Among poor communities and countries, natural disasters and climate change are a leading cause of hunger and affect all dimensions of food security including economic and physical access to food, availability and stability of supplies, and nutrition. Climate-related disasters are by far the most frequent today: nine out of ten natural disasters are climate-related and every year, they affect more than 200 million people. Trends indicate that less predictable, extreme climate events are becoming the norm. At the global level, climate change will increase the risk of food and nutrition insecurity to unprecedented levels, undermining current efforts to eradicate hunger and undernutrition.

The scale and complexity of some recent disasters such as the Horn of Africa crisis and Pakistan floods, illustrates the type of challenges that local communities, national authorities and global actors will increasingly have to face in the future. This only reinforces the need for a more strategic forward-looking approach to scale up efforts to reduce disaster risk, support climate adaptation and build resilience in food insecure and at-risk communities and countries.

Promising and innovative initiatives that tackle hunger while building long-term resilience and food security are now being developed throughout the world. Food security, climate change and disaster risk reduction research and policy agendas are also increasingly centred on resilience and how to bring together ideas, innovations and lessons from these three fields.

The World Food Programme (WFP) and the Swiss Agency for Development and Cooperation (SDC) recognize the centrality of disaster risk reduction (DRR) and climate change adaptation (CCA) approaches to ensure food security. WFP and SDC have organized this workshop to discuss the interlinked themes of risk management, climate adaptation and food security, all playing a fundamental role in achieving resilience.

The focus of the workshop is to identify good practice, lessons learned, emerging opportunities, critical gaps and challenges at the implementation level, as well as discussing the broader national, regional and global policy implications of building resilience. The basis for the exercise comes from 10 different case studies from Africa, Asia and Latin America, which represents promising and innovative approaches to resilience building. The workshop will also identify follow up steps required to enhance WFP and partners' strategies and approaches in this important area of work.

We are very pleased with the response that this event generated among many partner institutions and we look forward to the contribution that each will provide to shape a more concrete vision of efforts and approaches to resilience building.

Carlo Scaramella
Coordinator of WFP Office for Climate Change and Disaster Risk Reduction

Acknowledgements

This workshop has been the product of numerous consultations, information exchanges and a broad collegial effort by a range of colleagues both within and outside WFP without which, the organization of this event would not have been possible.

In particular the insights regarding the single case studies would not have been possible without the support and collaboration of six WFP country offices, a number of staff from the Swiss Agency for Development and Cooperation (SDC), HELVETAS Swiss Intercooperation and OXFAM America. Their experience, attention and sustained efforts in submitting and reviewing various drafts for the reader as well as preparing the presentations for the workshop has been of critical importance.

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We are also very thankful to the **government counterparts** that will be present at the event and will provide a national outlook to the workshop discussions. These include: Hasan Kabir Khasru (Bangladesh), Djibo Banaou (Niger), Robert Limlim (Uganda), Othman Elshaikh (Egypt) and Betru Nedessa (Ethiopia).

The interest and commitment demonstrated by the eleven WFP staff from the regional bureaus was also greatly appreciated as it facilitated coordination and dialogue with the different country offices.

For what concerns the actual workshop organization in terms administrative and logistical support, a very special thank you to Mark Bennett for leading the Workshop training session and coaching presenters in producing successful presentations and finally to the WFP Office for Climate Change and Disaster Risk Reduction for hosting and coordinating the organization of the entire event.

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About this document

The aim of this document is to provide workshop participants with basic insights into the selected case studies. It has been prepared by the WFP Office for Climate Change and Disaster Risk Reduction with WFP and partner staff in country offices.

Overview of the selected case studies

Ten case studies were identified from various parts of the world representing a selection of examples of activities that have combined climate change adaptation and disaster risk reduction with food security. These case studies and this summary are designed to support the identification of good practice, lessons, gaps, and opportunities in building resilience. The case studies are geographically diverse and cover Latin America, Africa, and Asia. The table and the map below provide an overview.

Each case study provides an overview of the project and rationale, the main features of the project, a set of challenges faced, and the relevance of the project to resilience building.

AN OVERVIEW OF THE SELECTED CASE STUDIES

Project Title	Country	Case Study Lead
1. MERET – Managing Environmental Resources to Enable Transitions to more sustainable livelihoods	Ethiopia	WFP
2. Community-based disaster risk mitigation	Afghanistan	HELVETAS Swiss Intercooperation
3. Resilience building strategies mainstreamed in emergency response	Niger	WFP
4. Food Security in the context of climate change	Peru	SDC / HELVETAS Swiss Intercooperation
5. Enhancing resilience of communities to the adverse effects of climate change on food security	Ecuador	WFP
6. Building resilient food security systems to benefit the Southern Egypt region	Egypt	WFP
7. HARITA – Horn of Africa Risk Transfer for Adaptation	Ethiopia	Oxfam America
8. Agro-climatic risk management	Bolivia	SDC / HELVETAS Swiss Intercooperation
9. Enhancing resilience to disasters and the effects of climate change	Bangladesh	WFP
10. KPAP – Karamoja Productive Assets Programme	Uganda	WFP

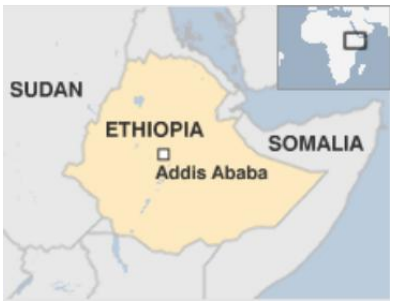
A GEOGRAPHICAL OVERVIEW

1. Ethiopia (MERET)

"Managing Environmental Resources to Enable Transitions to more Sustainable Livelihoods (MERET)"

Project at a glance

No. of Beneficiaries	1.7 million (only for 2007-2011 project)
Project Budget	USD 72,306,786 (total as per 2007-2011 Project)
Areas of intervention	Tigray, Amhara, Oromia, SNNPR, Diredawa and Somali Region
Lead institution	WFP
Partners	Ministry of Agriculture (MoA), Environmental Protection Authority
Activity types	Food For Assets (land and water conservation), community capacity building (training in management and income generating activities)
Project Duration	A new MERET phase is included in the new CP (2012-2015).



Context and Rationale for Intervention

Farming and husbandry represent the mainstay of the Ethiopian economy but food production has failed to keep up to high population growth rates, resulting in high levels of food insecurity. Decreasing farm size, low soil fertility, severe land degradation, fragile ecosystems and recurrent weather-related shocks are the main causes of food production deficits and of high livelihoods vulnerability, especially in the densely populated areas in the north-eastern, south central and south-eastern highlands. Climate change, which is likely to augment the frequency and intensity of extreme weather events and to increase water stress, reinforces the already existing problems and exacerbates vulnerability, reducing agricultural productivity and yields further, and expanding habitats of disease vectors.

Project Overview

The Managing Environmental Resources to Enable Transitions to more Sustainable Livelihoods (MERET) programme builds on a series of projects initiated in the 1980s and targets the root causes of vulnerability by focusing on improving, disseminating and institutionalizing natural resource management practices. The current phase of the project represents a significant improvement and systematization of a very effective approach to increasing communities and households' resilience against shocks, helping them to meet the necessary food needs and to diversify their livelihoods through sustainable land management.

The MERET programme spreads over 72 chronically food-insecure districts in the regions of Tigray, Amhara, Oromia, SNNPR, Dire Dawa and Somali. Targeting of beneficiaries has been conducted in conjunction with the government through vulnerability assessments, farming systems evaluations and evidence from the field. The programme has a two pronged strategy. First, a variety of "food for assets" activities are implemented to increase water and soil retention in the degraded environment to increase soil productivity and water availability. In this context, food assistance is used to effectively compensate

for the reduction of household food production during environmental rehabilitation activities. As a second step, in order to diversify livelihoods and improve household earnings, income generating activities, such as beekeeping, dairy and poultry production, and horticulture are encouraged through training and incentives[1].

WFP and a range of partners have supported the Ethiopian government in developing MERET. The project's activities are in line with national development priorities which emphasize the need to address and reverse the land degradation problem and adapt to climate change while providing beneficiary-ownership. As for implementation modalities, the Ministry of Agriculture and Rural Development has been the major implementer at federal, regional and district levels and MERET's activities are have become complementary to the National Productive Safety Net Programme (PSNP). Partnerships with FAO, UNDP and the World Bank have also been created to mobilize complementary non-food resources and technical capacities.

In the past 5 years alone, MERET has reached 1.7 million beneficiaries in over 500 communities. According to a mid-term evaluation conducted in 2009, MERET has contributed to the rehabilitation of over 400,000 hectares of degraded lands. A cost-benefit analysis made in 2005 showed that economic and financial rates of return exceeded 12% from the assets created and soil fertility restored, with evident impacts in food production, rural income generation and livelihoods. Food security in the targeted areas was reduced by 40%, while 80% of interviewees reported being better able to cope with shocks and stress. Increased resilience will gradually allow communities to phase out from food assistance.

KEY FEATURES

- ✓ **Community empowerment**. Community participation and ownership have been ensured through capacity building activities in all phases of the development interventions, from problem identification and planning to implementation and evaluation. Communities effectively work and manage the interventions[2].
- ✓ **National ownership.** MERET is a national government programme, supported by WFP and other partners. The ownership of the government of the programme has given MERET sustainability and continuity, allowing it to evolve into the effective programme it is today
- ✓ **Community-based watershed approach**. Natural resources comprising the watershed system have multiple, conflicting uses, so any given management approach will spread benefits and costs unevenly among users. By working with all the communities in a watershed and taking into account social, economic and environmental needs of the systems, the programme achieves a better allocation of resources and more lasting solutions.
- ✓ **Technology and technical standards**. Low-cost but innovative technologies, easily adaptable to local needs were introduced and combined with high technical standards and careful monitoring.

[1] *Physical and biological measures* include: soil and water conservation in farmlands, reforestation, gully reclamation, drainage structures, sediment capture structures, water harvesting. *Livelihoods activities* include: Vegetable and fruit planting, bee-keeping, fodder/forage development, revolving loans for income generating activities, nursery support, and village access road rehabilitation.

[2] *Capacity Development* involves: community management support, technical training for natural resource experts, demonstration sites and study visits, incentives for innovation and technology development, business training for community groups, training on results-based management.

- ✓ **"Food for Conservation"**. Food assistance was provided not only to build/rehabilitate structures, but also to compensate for lost food production from degraded lands rehabilitated for conservation purposes.
- ✓ **"Quick wins" approach**. Communities' were able to immediately see the benefits of the programme and commit to its longer term components through "quick win" watershed livelihood improvements packages, such as intensive water harvesting, which achieved immediate results.
- ✓ **"Centre of Excellence"**. MERET has become a laboratory of successful interventions which are picked and implemented in other government projects. Most significantly, MERET provided a model and many lessons for other government-led food security initiatives.
- ✓ **Gender inclusiveness**. Erosion of traditional divisions of labour and gender-based discriminations has been promoted by giving equal involvement of women in the decision-making processes and entitlement to equal wages or incentives.

CHALLENGES

Irregular funding for MERET has meant that WFP support to the project has been inconsistent, and this has an overall impact on the achievement of Government's efforts and on upscaling of the project. In particular, there has been a mismatch between a limited amount of financial contributions and food aid. Such an issue has constrained WFP's ability in providing technical assistance, implementing hand-over trainings for government counterparts and to purchase agricultural equipment and non-food items for project activities. Finally, additional funding could further improve monitoring and evaluating the impacts that MERET interventions have on communities' livelihoods.

RELEVANCE FOR RESILIENCE BUILDING

The MERET project has delivered results, improving communities' livelihoods and resilience to current weather related shocks and better equipping them to face climate change induced challenges through improved natural resource management practices. A combination of the above illustrated factors has ensured the ownership and sustainability of the project, which has nine-year history of implementation. MERET is also an example of successful transitional investments that combine the provision of food transfers needed to offset a seasonal need with enabling development interventions, characterized by high technical standards.

NOTES

2. Afghanistan

"COMMUNITY-BASED DISASTER RISK MITIGATION"

PROJECT AT A GLANCE

No. of Beneficiaries	35,500
Project Budget	USD 4 million
Areas of intervention	Bamyan, Samangan and Baghlan provinces
Lead institution	HELVETAS Swiss Intercooperation
Partners	Community Development councils (CDC), District Development Assembly (DDA), District and Province Authorities, DRR Consortium of NGOs, Afghanistan National Disaster Management Authority (ANDMA), SDC, Lichtensteinischer Entwicklungsdienst (LED), EC, Swiss Re
Activity types	Cash for work, conservation measures, capacity building
Project Duration	2008-2012

CONTEXT AND RATIONALE FOR INTERVENTION

After 30 years of war, food shortages and poor living conditions, especially in rural areas where 80 percent of the Afghan population live, there remain major threats to the country's long-term stability and economic recovery. In recent years, the situation has further deteriorated due to harsh weather conditions such as persistent droughts, flash floods, growing insecurity and poor infrastructure. Most of the watersheds in Afghanistan are highly degraded due to inappropriate practices (overgrazing, shrub uprooting, dry land farming) and institutional failures (lack of regulations, weak institutions). The uncontrolled use of natural resources in these watersheds is leading to increasing flooding in the valleys, decreasing soil fertility, and reducing income for farmers.

PROJECT OVERVIEW

In line with the priorities of the Afghan Government, and in collaboration with local authorities and communities, HELVETAS Swiss Intercooperation is implementing the "Disaster Risk Mitigation" programme whose goal is to contribute to improved livelihoods of the poor rural population in Bamyan, Samangan and Baghlan provinces by reducing flood risk and increasing long-term land productivity. This is done through a holistic watershed management approach which introduces a mix of short and long-term solutions.

The programme has three main components: (i) disaster preparedness and response, (ii) sustainable land management (SLM), and (iii) protective infrastructure. While the first component focuses on building the capacity of civil society and government authorities in assessing and mitigating disaster risks, the latter strengthens local Disaster Risk Management Committees in planning, construction and maintenance of protective infrastructure.

The SLM component of the programme focuses on watersheds and aims to tackle the root cause of the problem. Only through improved management of the areas where runoff and erosion originate can the risk of floods be mitigated over the long term. Furthermore, by restoring degraded land and preserving natural assets, the project contributes to food security and resilience building of the targeted communities.

The SLM component includes a combination of structural, vegetative, and management measures aimed at reducing flood risks and improving fodder, fuel wood, and cash crop production. The major emphasis of this component is on capacity building of Community Development Councils[3] to manage the watersheds in a sustainable way through people's participation[4] and collaboration among different institutional and social actors.

One of the main achievements of the programme so far is that the population has become increasingly aware that flash floods can only be mitigated by improved management of watershed areas. Other positive changes include the observed reduction of flash floods in two out or three watersheds where the programme is implemented and the extra income received by families for their participation in cash for work activities. Over all, in 17 established watersheds more than 3,000 families have benefited from cash for work schemes. Because of the introduction of alternative energy options such as community bakeries there has also been a significant reduction in shrub collection from the watershed areas.

KEY FEATURES

- ✓ **Integrated holistic approach** to flash flood and drought management which conserves the natural resource base and simultaneously builds protective infrastructure and builds the capacity of authorities and communities to prepare for disasters. This results in improved livelihoods and food security of the local communities.
- ✓ **Partnerships with existing structures**. The programme builds on existing functional organizational structures: Community Development Councils, District Development Assemblies and district government authorities. Watershed Management Committees are created and nominated by the Community Development Councils (CDCs). The Watershed Management Committees are responsible for the planning and implementation of watershed management projects and execute on behalf of the CDCs. District Development Assemblies participate in project identification, design and monitoring and also actively contribute to conflict resolution.
- ✓ **Participatory and gender sensitive approach**. Programme planning, implementation and monitoring is undertaken with all stakeholders involved and with the communities, women and men separately, in ways that are culturally appropriate.
- ✓ **Alternative energy options**. One of the causes of watershed degradation is the continuous and unplanned shrub cutting by the local population as shrubs are used for fuel at household level, mainly to bake bread. However, the prohibition of shrub-cutting without the provision of alternative solutions is not possible. An effective and successful solution has been the creation of energy efficient community bakeries, baking dough received from customers. Since the establishment of community bakeries, shrub cutting has significantly declined in the villages as all families take their dough to the bakery. This has had a positive ecological impact on the watersheds and a positive economic impact on the families.[5]

[3] Community Development Council (CDC) is a group of community members elected by the community to serve as its decision-making body. The CDC is responsible for implementing and supervising development projects and acting as a liaison between the communities and government and non-governmental organizations.

[4] Structural and vegetative conservation measures are implemented through a "cash for work" approach with 20% community contribution.

[5] Cash savings vary between 2000 to 4000 Afghani (about US$40 to US$80) a month per household. In fact, one load of shrub lasts 2-3 days and costs an average of 250 Afghani (about US$5), whereas each family pays from 220 to 350 Afghani monthly to the baker. As a result, for the cost of one load of shrub, a family gets its bread baked for the entire month. The cash saving and additional income from productive activities carried out during the time freed from gathering shrub enable people to buy food and non-food items and medicine.

- ✓ **Good governance principles**. A "Code of Conduct" based on principles of good governance is shared with and used by implementing partners. The Code tackles issues like transparency, consensus, equity and inclusiveness, accountability, effectiveness, and efficiency.

CHALLENGES

The main challenges faced by the project are corruption, which also directly affects the sustainability of the programme, and the complexity of implementing a project in an environment of conflict. The watershed management projects implemented as part of the programme had to address complex land rights-based conflicts. Finally, the watershed management project and its successful reduction of shrub cutting did not prevent the 2010 floods. Watershed management requires a holistic approach and needs to be undertaken over a long-term.

RELEVANCE FOR RESILIENCE BUILDING

The "Disaster Risk Mitigation" programme with its three components and its focus on watershed management introduces a comprehensive approach addressing risk management and tackling – indirectly – food security. The approach largely contributes to resilience building as it creates a safety net and buffer against immediate shocks (through the protective infrastructure) but also tackles the more "structural" causes of food insecurity (through sustainable land management and the capacity building in disaster risk management).

NOTES

3. Niger

"RESILIENCE BUILDING STRATEGIES MAINSTREAMED IN EMERGENCY RESPONSE"

PROJECT AT A GLANCE

No. of Beneficiaries	743,300
Project Budget	USD 30,108,196
Areas of intervention	All regions
Lead institution	WFP
Partners	Ministry of Agriculture and Livestock, Ministry of Environment, Food Crisis Cell in Prime Minister Cabinet and NGOs
Activity types	Cash for Assets and Food for Assets
Project Duration	July 2010- June 2011

PROJECT CONTEXT AND RATIONALE FOR INTERVENTION

Niger is one of the poorest countries in the world with 65.9 percent of the population living on less than $1 a day. With a very high population growth rate, Niger's food needs double every 20 years. Niger's largely agrarian and subsistence-based economy is disrupted by a range of cyclical shocks and hazards (mainly drought) which increase the vulnerability of the rural population. Food insecurity in Niger is structural and driven by desertification, cyclic droughts, crop infestation and floods. In addition, Niger faces a deteriorating security situation.

In 2010 Niger experienced a food and nutrition crisis which affected nearly half of the population (7.1 million people) from May to September. The crisis translated into early migrations, school withdrawals, massive indebtedness, and deterioration of already weak coping strategies. In response to the crisis WFP shifted from a protracted relief and recovery operation (PRRO) to an emergency operation (EMOP) to meet the immediate food and nutrition needs of the population.

PROJECT OVERVIEW

The 2010 EMOP had the duel objective of: a) meeting the immediate food and nutritional needs of the affected population; and b) building resilience to climate shocks through disaster risk reduction activities aiming at improving the natural resource base of rural communities in pastoral, agro pastoral and agricultural areas.

The EMOP targeted 164 vulnerable areas covering the 8 regions. Activities aimed to rehabilitate degraded lands through interventions such as the construction of firebreaks to preserve valuable fodder, sand dune fixation, improved water harvesting, and the improvement and rehabilitation of pastures. The project consists of cash for assets and unconditional cash transfers. During the project, food for assets activities resumed following an agreement with the government.

KEY FEATURES

- ✓ **Government participation and support**: The government of Niger has adopted an increasingly proactive stance with respect to the food insecurity situation in the country. The new government is now seeking to mobilize all available means in order to avoid future large scale famines**.**
- ✓ **Pre-existing development approaches and interventions:** The EMOP built its disaster risk reduction activities on pre- existing community initiatives and development projects which had been developed and implemented by the government, development, and humanitarian partners in the country. This is considered a key success factor as it allowed such activities to be rapidly resumed immediately after the crisis and scaled up allowing for a rapid transition from relief to post crisis early recovery and livelihood rehabilitation and ensuring a smooth exit from the emergency.
- ✓ **Tripartite agreement:** Tripartite partnership agreement between WFP, the government and NGOs effectively facilitated coordination and ensured participation of all key stakeholders. Within this arrangement, WFP played a crucial 'linking' and 'mediation' role between the interests of the government and those of the communities (as voiced by the NGOs). This helped to avoid the problem of the 'broken feedback loop[6]' and information asymmetry that often affects the various levels of implementation within an operation undermining its efficiency.
- ✓ **Development of strong strategic partnerships to manage food crises:** Through the National Food Crisis Prevention and Mitigation Mechanism (DNPGCA), the government of Niger, United Nations and other agencies are collaborating to develop integrated national plans aiming at having an enduring impact on the environment and mitigating the risk of future hazards.
- ✓ **Funding:** The project benefited from substantial funds and therefore did not have to deal with issues related to resource constraints. In this way, the project focused was able to focus on quality and delivering robust and sustainable results.

CHALLENGES

A number of challenges were faced in the project. More flexible funding was needed in order to allow operations to adjust more rapidly to contingencies. The short duration of the intervention (3-4 months) put some pressure on the implementation process and the uncertainty of future funding for DRR related activities made it difficult to ensure continuity.

Another set of challenges relates to the difficulty of achieving objectives which have different 'gestation' periods. For example, rehabilitating degraded lands is a medium to long term process. In the meantime, immediate food needs must be met.

Increasing drought frequency in Niger risks undermining the rehabilitation process of the natural resource base pointing to the need to diversify livelihoods.

The security situation has also caused limitations of access for WFP staff.

[6] Bertin Martens.2005. *Why do aid agencies exist?* Development Policy Review

RELEVANCE FOR RESILIENCE BUILDING

The key characteristic of the Niger project is that disaster risk reduction was mainstreamed within an emergency operation. Traditionally, programmatic action has been tied to a linear sequencing of activities in which the 'relief' phase had to be completed before interventions could start addressing 'development issues[7]'. What the Niger case shows is that disaster risk reduction activities which address the medium and *long term* structural causes of vulnerability and meet *short ter*m relief needs can and should complement each other to ensure a smooth and rapid transition out of a crisis and towards more resilient livelihoods.

NOTES

[7] Maxwell et al. 2008. *Rethinking Food Security in Humanitarian Response*. Food Policy and Applied Nutrition Program Discussion Paper No. 41

4. Peru

"Food Security in the Context of Climate Change in the District of Kunturkanki"

Project at a Glance

No. of Beneficiaries	309 families
Project Budget	USD 255,000
Areas of intervention	Kunturkanki district (Cusco region)
Lead institution	SDC / HELVETAS Swiss Intercooperation
Partners	Authorities of Kunturkanki, Kunturkanki Health Centre, Climate Change Adaptation Programme (PACC Perú)
Activity types	Adaptation measures, capacity building
Project Duration	2010-2012

Context and Rationale for Intervention

Peru is highly vulnerable to climate change, due to structural poverty and inequality, as well as the expected impacts of climate change on globally important ecosystems, such as glaciers. In this context, the Swiss Agency for Development and Cooperation (SDC) and the Ministry of Environment of Peru are collaborating on a bilateral initiative "Climate Change Adaptation Programme (*Programa de Adaptación al Cambio Climático, PACC Perú*)" in Apurimac and Cusco regions. The programme's purpose is to strengthen the capacity of regional and local stakeholders to address the impacts of climate change.

Kunturkanki, a district in Cusco Region, is amongst the poorest districts in Peru. Approximately 80 percent of the 5,500 people who live in Kunturkanki live in rural areas where the main income generating activities are agriculture and livestock breeding, both of which are dependent on water resources. Malnutrition and anaemia are high, especially among children[8].

A recent study[9] observed that precipitation is decreasing sharply in the region, showing consistency with projections of possible climate change impacts. Combined with the degradation of vegetation cover due to poor management of natural pasture and overgrazing, the decline in rainfall reduces water infiltration and groundwater recharge, thereby decreasing water availability.

Project Overview

The project "Food Security in the Context of Climate Change" aims at reducing the vulnerability of Kunturkanki's population to the effects of climate change on food security. The project aims to reduce by 5 percent food insecure and malnourished children in Kunturkanki by the end of 2012.

[8] Nearly 40% of children under 5 are chronically malnourished while another 40% are at nutritional risk, i.e. at the boundary of chronic malnutrition. Moreover, all children under 5 in the district suffer from anaemia; half of them at a severe level. (Baseline study, 2011)

[9] Precipitation in the watershed Huacrahuacho (where most of Kunturkanki communities are located) has decreased at a rate of -12 mm/year over the period 1994-2008. (Research study SENAMHI-PACC, 2010)

A wide variety of activities addressing food security and integrating climate change adaptation and disaster risk reduction approaches are being implemented. These range from adaptation and natural resources management measures to capacity building, and awareness raising. A strong emphasis is given to nutrition while target beneficiaries are young children and pregnant women.

As an integral component of the PACC initiative, this project is implemented by local authorities over three years (2010-2012) and involves local public and private stakeholders.

Signs of improved resilience have already been observed. For example, vegetables as well as frost resistant and low water demanding varieties of crops are now cultivated and introduced in family diets; water harvesting and natural pasture management measures are implemented at community level; dairy products and meat (guinea pigs) are now included in family diets and also serve as income generating activities; 13 newly created "early childhood development centres" have been established; targeted families have been trained on nutrition and diet, breastfeeding, appropriate complementary feeding, safe water, hygiene, and early child stimulation.

KEY FEATURES

- ✓ **Linking food security, climate change adaptation and nutrition**. By focusing on nutrition as a key element of food security, the approach addresses the linkages between food security, climate change adaptation and nutrition. It assumes that a well-nourished child (both in quantity and quality) will be less vulnerable and more resilient to future shocks, including those induced by climate change. Thus, nutrition aspects are integrated in activities covering the different dimensions of food security, for instance: reintroduction and promotion of nutritious Andean crop varieties (availability), capacity building for dairy products processing and integration of these products in the family diet (access), trainings on nutrition and health (utilization).
- ✓ **Community involvement in targeting and monitoring**. The communities of Kunturkanki are involved in all phases of the project, from design to implementation and monitoring. The targeting of beneficiaries - families with children younger than 5 years old and families with pregnant women - was undertaken through participatory community mapping. In addition, teams of 12 members including locally-elected and government officials, NGO representatives, and prominent local people were established in each community. These groups undertook a review, mapped out and prioritized the needs in their communities focusing on disaster risk reduction and climate adaptation infrastructure. Finally, the communities assume responsibility for the monitoring and surveillance of the children's' growth and development. Hence, nutrition and early development is not only the responsibility of the family but of the community at large. Such involvement of the community has direct positive effects on the endorsement and sustainability of the project.
- ✓ **Coordination among stakeholders**. A key factor for the success of the project is effective coordination between stakeholders. Local authorities of Kunturkanki co-finance and lead the project. More specifically, the Department of Economic Development and Environment is responsible for the implementation of activities and the coordination with other public and private institutions and with the communities. The Health Centre of Kunturkanki plays an important leading and advising role for the early childhood development component. The PACC acts as coordination, advising and monitoring body.

CHALLENGES

Awareness and knowledge on the effects of malnutrition is still limited among authorities and the population at large. Therefore the project has a strong capacity and awareness building component, both for beneficiaries and for implementing partners. Besides, the participation of men (fathers) in early childhood development activities is quite low. The project is thus gradually promoting male participation and encouraging active participation of parents in early childhood development. The articulation of adaptation actions with all food security components is essential as support for reducing structural vulnerability and vulnerability associated with climate change.

RELEVANCE FOR RESILIENCE BUILDING

The “Food Security in the Context of Climate Change” project aims at building resilience by addressing the four dimensions of food security – availability, access, usability, and stability – and by reducing the vulnerability of the beneficiaries to the impacts of climate change. The approach places food security at the centre of resilience and integrates, through specific activities, other key aspects such as climate change adaptation, disaster risk reduction, nutrition, development. The activities range from adaptive agricultural practices, to early childhood development, diversification of livelihoods and risk management capacity building. The comprehensiveness and diversity of the activities implemented allow addressing resilience and ensure the sustainability of the achieved results.

NOTES

5. Ecuador

"Enhancing Resilience of Communities to the Adverse Effects of Climate Change on Food Security in Pichincha Province and the Jubones River Basin"

Project at a glance

No. of Beneficiaries	15,000 households
Project Budget	USD 7,449,468
Areas of intervention	Pichincha, Loja, Cuenca, El Oro
Lead institution	WFP
Partners	Ministry of Environment, Ministry of Agriculture, Livestock, Aquaculture and Fisheries, Pichincha Provincial Government, Commonwealth of the River Jubones, Adaptation Fund.
Activity types	Capacity building for adaptation, climate monitoring, early warning, physical structure construction/rehabilitation, agroforestry, PES.
Project Duration	Signing of Project Agreements October 2011 Start of implementation: November 2011

Context and Rationale for Intervention

Ecuador is highly exposed to natural disasters, such as droughts, floods, and frosts. The country has incurred losses of more than US$4 billion in the last decade due to droughts alone. Key sectors, such as agriculture, fisheries and water resources are highly vulnerable to disasters, whose frequency and intensity is expected to rise as a consequence of climate change.

The target areas for this project covers two watersheds and is characterised by land and ecosystem degradation, experience high to very high levels of food insecurity and are affected by climate threats. The major contributing factors to community vulnerability to such threats are the lack of awareness and lack of effective risk reducing measures.

In the central zone of the Jubones Basin there are extended periods of dryness and drought, while in higher elevations there has been an increase in heavy flooding. In Pichincha droughts and glacial retreat are the main climatic problems, affecting water supply for agriculture. Such phenomena impact food production and consumption: in the Jubones river basin and Pichincha province, at least 40% and 20% of the communities respectively are affected by malnutrition caused by poor food habits and dietary practices. To make matters worse, climate models show that precipitation in the targeted provinces is likely to decrease while temperatures are set to rise, affecting food security further.

Project Overview

The project goal is to reduce the vulnerability of the communities and of the ecosystems in the target areas to the adverse effects of climate change by incorporating a food security lens in two project components at the community level. In order for communities to be able to increase their awareness of climate change risks, prioritise and manage adaptation measures, and ensure ownership, the activities

of the first component are all related to capacity building and knowledge management. Climate monitoring and early warning systems will also be implemented.

The second component will focus on the construction or rehabilitation of physical assets to increase the adaptive capacity and resilience of both communities and ecosystems against climate change events. Examples of physical assets include water harvesting and storage measures, irrigation and drainage systems, and flood defences. A range of landscape-based activities to restore the ecosystems will be implemented as well, such as reforestation, along with the identification of strategies to implement Payment for Ecosystem Services (PES).

The project addresses the priorities that the national and provincial governments of Ecuador have identified. Besides the need for increased awareness and availability of climate information, Ecuadorean authorities stress the need to identify the communities' priorities in the adaptation to climate change, and the relevance of ensuring environmental sustainability. To address these conditions, the project will adopt a two pronged strategy, combining both a Community Based Approach (CbA) and Ecosystem Based Adaptation (EbA); involving all relevant stakeholders: national authorities, local governments, communities and NGOs.

KEY FEATURES

- ✓ **Institutional coordination at policy and implementation level**. As far as policy-level coordination, the project links together the government's food security and adaptation priorities, features a strong alignment with national and local level priorities in climate, development and the environment, and is in line with the Government's decentralization policy. Both national and local authorities will be involved in the implementation phase. In order to achieve such level of alignment and coordination, an extensive process of consultation through meetings and joint workshops was put in place, starting from the project design and community targeting phase. This process was instrumental in defining and addressing the adaptation needs in Ecuador, deciding the role of each institution, adopting a community based approach and identifying jointly the provinces and cantons, based on WFP's vulnerability assessments and local climate threats. Finally, the project will also represent a testing ground for the government to use this type of approach in its programmes in the future.
- ✓ **Environment and community integration.** The project acknowledges the importance of addressing both community needs and environmental requirements to achieve adaptation goals through the integration of CbA and EbA approaches. Other features of such integration are represented by the identification of PES schemes and by institutional arrangements that allow for the targeting and implementation of activities at the watershed and micro watershed level, overcoming provincial and cantonal institutional borders.
- ✓ **Community Participation.** In order to achieve ownership and sustainability of the activities implemented, strong investments are planned in capacity building of the communities. Communities were also invited to participate in workshops and activities from the design phase of the project, while their ability to implement and manage adaptation plans will be strengthened as the project unfolds. The project has a strong focus on women and assuring their participation in planning and priority setting stage.
- ✓ **Climate risk analysis.** The design stage of the project included a detailed analysis of the current climate vulnerabilities and future climate risks. This will minimise the risks of maladaptation of the activities implemented and improve the identification process of the most vulnerable communities. In addition,

detailed climate risk analysis has been one of the fundamental features for gaining access to financing from the Adaptation Fund.

CHALLENGES

The implementation of the project will begin in November 2011, thus no concrete actions have been enacted to date; however, some of the lessons learned arising from the challenges at the design stage, which began in October 2010, can be identified already. These include the importance of strong coordination and communication among and within institutions. A strong monitoring and evaluation system is essential to ensure the measurement of results, document the achievement of objectives and lessons learned. In line with results documentation, a challenge will be to show an impact from adaptation to climate change risks and not just development results. Applying Global Climate Change Models to the local context remains problematic and requires local studies and assessments to correctly understand local threats. A final challenge is ensuring adaptation benefits for the most vulnerable.

RELEVANCE FOR RESILIENCE BUILDING

The importance of this project in building resilience lies, at the design stage, in its integrated approach. It represents one of WFP's best examples in integrating food security and adaptation strategies, which are reflected in an improved targeting of communities and a careful selection of activities responding to both challenges. This was made possible by an in-depth analysis of climate change vulnerability and its interactions with the food security analysis. Another type of integration considers the needs of the communities and those of the environment, which should be achieved by applying CbA and EbA simultaneously. In line with the Adaptation Fund's goals, concrete actions and local ownership are key to building resilience.

NOTES

6. Egypt

"Building Resilient Food Security Systems to Benefit the Southern Egypt Region"

Project at a Glance

No. of Beneficiaries	Currently 5,000, potentially 115,000 direct beneficiaries
Project Budget	USD 9,803,116 (over 5 years)
Areas of intervention	Southern Egypt
Lead institution	WFP
Partners	Ministry of Agriculture, Local government, local organisations, Spanish Government, Swiss Fund, International Development Research Centre (IDRC).
Activity types	Food for assets for village upgrade including climate friendly houses, efficient irrigation; livestock assets; financial assets (microfinance); and institutional strengthening.
Project Duration	Pilot Project (2005-2010)

Context and Rationale for Intervention

Despite being classified a low middle-income country, Egypt faces food security and malnutrition challenges. Egypt is a net food importer and highly susceptible to food price changes. Malnutrition has risen from 23% to 29% between 2005 and 2009 among children under five, while anaemia has increased from 25% to 45% between 2000 and 2005. The global food price rise of 2011 was compounded by the January uprising, which caused economic growth rates to fall from over 7 percent to 1.9 percent, exacerbating an already serious food security situation.

Climate change poses additional challenges to Egypt's food security. Temperature rise affects crop and livestock productivity by facilitating the spread of pests and diseases, decreasing crop-water use efficiency, and reducing nutrient content in crops, in turn affecting household income and food security. Food production is also affected by the threats climate change poses to the water flow in the Nile, and increased evaporation and evapotranspiration rates.

According to climate change projections, climate change will impact Southern Egypt more strongly than other regions. Projections indicate that by 2040 temperatures could rise up to 2°C with an associated increase of about 4 percent in areas with already very high evapotranspiration rates. Southern Egypt is home to 30 percent of Egypt's rural population, 45.8% of households there live under the national poverty line (more than twice the rate elsewhere), and 15.6% of its population is characterised by extreme poverty. Southern Egypt also includes most of the severely food deficit governorates in the country[10].

At the same time, climate-induced sea level rise will cause direct inundation of land, salinisation, and groundwater salinity in the Nile Delta, threatening up to three fifths of the country's food production. Some estimates predict that six million Delta inhabitants may migrate due to inundation and loss of soil productivity[11].

[10] Egypt Human Development Report (2010). Ministry of Planning and UNDP.
[11] The Egypt 2nd National Communication to the Climate Change Convention

PROJECT OVERVIEW

WFP provided support to the Egyptian government on adapting food security to climate change threats in a "climate smart" way, both at field and policy levels. In a joint effort with the Ministry of Agriculture, local government, Spain, the Swiss Fund, and the Canadian International Development Research Centre, WFP has piloted interventions (2005 to 2010) to improve the environmental sustainability of communities around Lake Nasser (Aswan Governorate). The project has improved agricultural production, through innovative food-for-assets interventions which support better timing of cropping seasons, efficient water practices, and expansion of agricultural plots. In addition, unsustainable agricultural practices on the shores of Lake Nasser, characterised by high fertilizer and pesticide use, have decreased by 75%, as they have been replaced with organic farming.

On the policy side, WFP supported the Government to assess the country's combined vulnerability to food security and climate change and inform its adaptation strategy through the creation of a Climate and Food Security Atlas. This Atlas will also be used by both the national and local governments to understand the risks to food security posed by climate change and inform planning.

KEY FEATURES

- ✓ **Government ownership**. The Ministry of Agriculture has been the main owner and leader in this pilot, providing funding for all non-food interventions and matching each unit of WFP's investment with a contribution that is at least five times bigger. The Government has requested assistance from WFP to expand the pilot, taking into account several new climate adaptation measures, such as the introduction of agroforestry and other techniques to manage temperature, innovative irrigation methods to remedy some of the side effects (such as salinity) observed with earlier methods, introduction of heat and drought tolerant crops and livestock breeds, early warning systems for immediate farmer use, and climate insurance.
- ✓ **Innovative activities**. WFP provided food and technical assistance for building innovative assets such as eco-houses suitable for high temperatures, renewable energy, water saving irrigation schemes, and sustainable organic agriculture practices. In addition, communities benefited from microfinance initiatives and strengthened linkages to markets, while local level institutions were reinforced through capacity building.
- ✓ **Value chain links**. The project has established value chain links between farmers and food processors. Communities are now suppliers of tomatoes to Heinz and sesame to an Egyptian factory on a forward contracting basis. This was enabled by field cooperation between WFP and a USAID project aimed at linking farmers to markets through technical assistance.
- ✓ **Scalability**. Given Upper Egypt's similar topographic and climate characteristics to Lake Nasser, the pilot could help in scaling up climate adaptation practices in agriculture benefiting a wider segment of the population in this region. As adaptation techniques are widely practiced, they become less costly over time.
- ✓ **Climate analysis and policy support**: WFP worked with the Government to analyze climate change risks to community livelihoods and food security. The resulting index of food security and climate change vulnerability will support government allocation decisions to "at-risk" communities through access to productive land and assets for those whose lands have become unproductive due to climate change, direct transfers, food subsidies, and other forms of support. WFP advocacy efforts under the next WFP Country Programme will enable the Government to allocate its resources where they are most effective.

CHALLENGES

In terms of project design, improved analysis of the challenges posed to crops and animals by climate change needs to be integrated into the planning process, especially given the uncertainty around these projections. As the project goes to scale, this analysis will be better incorporated into the implementation and planning process.

RELEVANCE FOR RESILIENCE BUILDING

The pilot provides a climate smart way for increasing agricultural productivity while taking into account climate change threats. It also works with communities to increase their awareness and ability to manage climatic shocks to their rural livelihoods. Finally, it develops - in a climate friendly way - new areas around Lake Nasser that can serve as a model in the future as voluntary migrants from the Delta and desert communities threatened by climate change seek new opportunities and livelihoods.

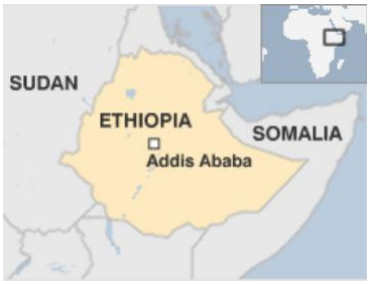
NOTES

7. Ethiopia (HARITA)

"Horn of Africa Risk Transfer for Adaptation (HARITA)"

Project at a Glance

No. of Beneficiaries	13,000 households from 43 villages
Project Budget	USD 500,000 per year
Areas of intervention	Tigray region
Lead institution	Oxfam America
Partners	Ethiopian farmers, the Relief Society of Tigray (REST), Nyala Insurance share company, Dedebit Credit and Savings Institution(DECSI), Mekelle University, International Research Institute for Climate and Society (IRI), Swiss Re, Rockefeller foundation, local government agencies.
Activity types	DRR Activities, Insurance for work
Project Duration	2009 - 2016



Project Context and Rationale for Intervention

In Ethiopia's crop-dependent northern highlands, including the Tigray region, a significant proportion of the population is chronically food insecure. Farmers are heavily reliant on seasonal rains for agriculture, their main source of income and food. Increased rainfall variability due to changing climate patterns is exacerbating food insecurity in the region exposing communities to increased risk of drought. Traditionally, farmers' primary risk management strategy has been to invest any extra income in livestock. However, when rains fail for a prolonged period of time and all other coping strategies fail, farmers are forced to sell livestock. Although selling livestock ensures immediate survival, the loss of savings and productive assets undermines farmers' future ability to build sustainable livelihoods.

Project Overview

The Horn of Africa Risk Transfer Adaptation project (HARITA) is a holistic risk management approach consisting of three main components:

- ***Risk Reduction*** – such as soil improvement, water harvesting and composting
- ***Risk Transfer*** – weather index insurance to cover for catastrophic losses
- ***Prudent risk-taking*** –Through microfinance institutions farmers have the possibility to bundle insurance with credit and savings.

HARITA builds on the Productive Safety Net Program (PSNP) of the Ethiopian government which allows chronically food insecure rural households to work for food and cash while developing productive assets through activities such as soil and water conservation. HARITA allows communities and households served by the PSNP to identify additional critically needed risk reduction activities such as small scale irrigation and water harvesting, soil improvement and composting and work extra days on these activities in exchange for insurance through an Insurance for Work mechanism. The risk reduction measures are critical for reducing exposure to small scale shocks, building more resilient land and boosting income over time.

At the same time, these activities do not provide complete protection against catastrophic risks such as large scale drought. HARITA complements these risk reduction activities with weather index insurance. In the event of a drought, insurance payouts are triggered automatically by low rainfall and enable farmers to cover their losses, offsetting any negative coping strategy that might otherwise ensue.

The innovation presented by HARITA is that farmers are able to pay for the insurance premiums through their labour, which is the surest asset they have. The prudent risk taking component on the other hand, allows farmers to access credit through microfinance institutions. Vulnerability to shocks makes farmers risk averse and makes them less likely to invest in new technologies or improved agricultural practices which are more profitable in the long run but might imply a higher level of initial risk. HARITA helps farmers to build savings and credit reserves that they can invest in livelihood diversification, new technology adoption, and entrance into more profitable activities, with the added protection of insurance.

KEY FEATURES

- ✓ **"Farmer- centric" approach**. Farmers played a central role in the design of the rainfall index insurance package. The community helped in the identification of farmers' vulnerabilities to specific hazards and their capacity to adapt, was involved in collecting weather data, and was key for identifying farmers' preferences for key parts of the insurance contract. This resulted in an attractive insurance package tailored to the specific needs of the farmers and substantially increased product take-up and coverage.
- ✓ **Insurance for Work**. The key innovation of the HARITA model is that it allows cash-poor farmers to work for their insurance premiums by engaging in community identified disaster risk reduction products such as improved irrigation and soil management. This innovation was suggested by the farmers themselves and it makes insurance affordable even to the most marginalized and resource poor sectors of society. This model also increases the effective use of government and donor resources to generate risk reduction returns as well as insuring beneficiaries against loss.
- ✓ **Alternative delivery channels**. Distribution of insurance in rural markets with low population density and few insurers has always been a challenge. Because insurance almost inevitably necessitates consumer education and behavioural change, the choice of the delivery channel is of particular concern. Many bottom of the pyramid initiatives have adopted a shared distribution channel strategy of 'piggybacking' on pre-existing delivery networks set up for different purposes (such as micro-credit). HARITA employs a non-traditional shared channel, namely Ethiopia's Productive Safety Net Program (PSNP). This is a well established federal social protection program serving eight million chronically food insecure. HARITA uses PSNP to identify the vulnerable households so as to streamline administration costs and strengthen collaboration with the government.

CHALLENGES

Challenges refer to: the difficulty of coordinating between a broad range of partners, adequately quantifying the cost and monetization of labour and securing government interest. Currently, a number of government officials have supported HARITA and have been critical interlocutors for project implementation however a broader and more widespread interest is still lacking and this reflects particularly in the absence of a proper regulatory environment and national policies for index insurance.

Maintaining credibility of the weather index insurance product has also been challenging. The characteristic of index insurance is that payouts are triggered by a physical or objective value, in the case of HARITA, precipitation patterns. Indemnities are paid when rainfall levels fall below a certain threshold. As a result, there is the possibility that the insurer could suffer a loss and not receive enough indemnities or that an

insured that has not suffered a loss receive an indemnity. If such a situation occurs the credibility for the product could be undermined. A last challenge is the difficulty of objectively measuring impacts in terms of the difficulty of demonstrating profits and the impact of risk reduction activities. Thanks to insurance and savings farmers take more risks and invest in more profitable activities and while there is empirical evidence for this, it is difficult to quantify these results objectively. Similarly, the second element refers to the need of producing a baseline study which is cost effective but at the same time provides accurate and reliable measurements.

RELEVANCE FOR RESILIENCE BUILDING

Uncertainty and risk, particularly related to climate change, are major drivers of vulnerability. The inability of farmers to plan for the future and manage adverse events increases their exposure to shocks as it prevents poor households from investing in more profitable activities and on a more sustainable future.

HARITA has successfully managed to reduce farmers' exposure to uncertainty through the development of a holistic risk management model that **mainstreams disaster risk reduction with insurance. This model builds resilience in two fundamental ways**: it allows farmers to **manage** risks as well as **adapt** to change. HARITA beneficiaries in fact, **manage** small scale shocks through disaster risk reduction activities and with their work pay for insurance against catastrophic events. As a result, the *residual risks* that disaster risk reduction activities cannot protect against are effectively transferred to the market. This whole mechanism is then complemented by microfinance institutions which allow farmers to access credit, take up more risks, invest in innovation and therefore **adapt** proactively to change.

NOTES

8. Bolivia

"AGRO-CLIMATIC RISK MANAGEMENT"

PROJECT AT A GLANCE

No. of Beneficiaries	600 farmer families
Project Budget	USD 180,000
Lead institution	SDC / HELVETAS Swiss Intercooperation
Areas of intervention	Municipalities of Tiwanaku, Jesús de Machaca and Tapacarí (Departments La Paz and Cochabamba)
Partners	Union of Productive Associations of the Altiplano (UNAPA), Foundations AGRECOL and PROFIN, NGO PROSUCO, SDC
Activity types	Risk transfer, adaptive agricultural measures
Project Duration	2007-2009

CONTEXT AND RATIONALE FOR INTERVENTION

Bolivia is characterized by diverse ecological and climatic zones, ranging from the highlands to the tropics. Agricultural activity takes place between 4,000 and 4000 meters above sea level and includes subsistence family farming making use of local inputs and applying conservation practices, and industrial mechanized farming. Smallholder agriculture is most vulnerable to external shocks such as natural hazards, harsh weather conditions, or crop diseases. Moreover, the vulnerability of small farmers is accentuated by a lack of education and technical skills, limited access to financial and non-financial services, and the weakness of institutions and policies to address the impacts of extreme climatic events which cause agricultural losses and jeopardize food security.

PROJECT OVERVIEW

The Agro-Climatic Risk Management Project, implemented as pilot in three Municipalities of La Paz and Cochabamba Departments, seeks to make smallholders resilient against the risk of hydro-meteorological disasters, which are increasing due to climate change. To address this challenge, the project focuses on four main areas: i) strengthening farmers' capacities to generate research, apply innovative agricultural techniques, and share good practices within the community; ii) validating and systematizing local knowledge to use bio-indicators as means to forecast weather and climate conditions; iii) applying feasible and effective agro-ecological practices[12]; and iv) transferring risk through an agricultural insurance system.

In each community, "leader farmers" are identified[13]. They are responsible, in the frame of the project, for testing and validating adaptive agricultural practices, for sharing results within their community and with others, and for providing technical support to the farmers of their community. Leader farmers are also responsible for monitoring the weather conditions, comparing them to the observed bio-indicators and use

[12] These measures include soil and nutrient management through bio fertilizers, mulch, plague and disease control, biodiversity and production optimization techniques.

[13] Leader farmers – called *Yapuchiris* in Bolivia - are productive, entrepreneurs, and dedicated to the community. They are designated by the community as "example" farmers and respected as such.

these to forecast weather and build climate risk scenarios. They then adapt their agricultural practices to these scenarios and advise the community.

Using an area-yield approach, leader farmer's plots serve as "control plots" and are representative of a homogenous productive area. Compensation is paid to insured farmers only if the yield of the "control plots" is below a specific threshold and only if they have applied the adaptive measures recommended by the leader farmer. This provides a more cost effective insurance mechanism than individual loss assessment for all insured farmers, and reduces the moral hazard associated with farmers not applying good farming practices in the hope of receiving an insurance pay-out.

The project is implemented by the Bolivian NGO PROSUCO (Promoción de la Sustentabilidad y Conocimientos Compartidos) and funded by the Swiss Agency for Development and Cooperation (SDC). The main partner is the Union of Productive Associations of the Altiplano (UNAPA) which is already present in the targeted communities and facilitates implementation. Other important partners include PROFIN Foundation, which has developed the insurance model and manages the insurance fund, and the AGRECOL Foundation which is involved in documentation and awareness building.

Since the beginning of the project in 2007, a 45 percent decrease of the negative impact of frost and hail on crops has been observed, while an increase of yields of up to 250 percent has been measured on some plots. A total of 220 farmer families have purchased insurance, with compensation reaching Bs 25'000 (approx. 3'500 US$) during the 2008-2009 season. Furthermore, a network of local weather observers was created, and local knowledge was validated. Farmers were empowered and several leader farmers managed to provide their services to other municipalities and institutions, thus reaching a greater number of families. Adaptation measures are now known and used in the targeted municipalities. The results of this project contributed to the national dialogue about an insurance scheme at national level. Finally, the Bolivian Government launched an agricultural insurance scheme in June 2011.

KEY FEATURES

- ✓ **"Leader farmer" model**. The "leader farmers" model is central to the approach used in this project. The communities' sense of responsibility and ownership towards the project was enhanced by the fact that these focal persons are members of the community, make use of ancestral knowledge, and are responsible to support local farmers in enhancing their resilience.
- ✓ **Insurance scheme**. In order to minimize administrative and operation costs, and because of the lack of historical and accurate weather data that could be used to calculate risks, compensations and premiums, a new insurance scheme was designed. Farmers in the community identified in a participative way the items to be insured, the most relevant climate risks, the costs of production, homogeneous productive areas and average yield indexes. The monitoring of the yield is then done on the control plots only and assumed to be equivalent in the same productive area, if the farmers apply the same agricultural techniques as the leader farmer.
- ✓ **Risk Mitigation Agricultural Fund**. The insurance mechanism is financed through a "Risk Mitigation Agricultural Fund" valued at US$ 62,000 provided by SDC (80%) and UNAPA (20%). The interest is used for compensation, while premiums cover the services of the leader farmers.
- ✓ **Knowledge sharing among communities**. Leader farmers not only share lessons and expertise within their own community but also with other community leader farmers. This transfer of good practices from farmer to farmer is now a local empowerment strategy.

- ✓ **Local knowledge validated**. The use of local knowledge and ancestral practices to observe nature and predict weather conditions substitutes missing weather stations and is an easy and affordable way for small farmers to build risk scenarios and take preparedness measures.
- ✓ **Agro-ecological practices**. The pragmatic application of accessible agro-ecological practices aimed at increasing resilience and productivity of agricultural production systems.

CHALLENGES

The recovery of local knowledge met some reluctance at the beginning as it was considered by some stakeholders as out-dated, not modern and unscientific. It was also difficult to train farmers to relate their observations with scientific weather information.

In its next phase (2010-2014), the project is scaling up from 3 to 22 municipalities. The challenge is to apply the insurance scheme – which was designed for the local level – to an increasing number of beneficiaries, and making it economically viable.

RELEVANCE FOR RESILIENCE BUILDING

The "Agro-Climatic Risk Management" project is innovative in terms of the development of a creative insurance scheme and community participation through the "leader farmer" model. By using local knowledge, the project has been able to overcome some of the problems associated with the implementation of insurance schemes where weather data is insufficient. Furthermore, by adding to the risk transfer a wide capacity building component including risk assessment (weather forecast by the observation of bio-indicators), risk mitigation (specific agricultural techniques), and knowledge management, it addresses resilience from different angles. Approaches of disaster risk reduction, climate change adaptation and food security are combined to achieve the project's goal, which is to make smallholders resilient.

NOTES

9. Bangladesh

"ENHANCING RESILIENCE TO DISASTERS AND THE EFFECTS OF CLIMATE CHANGE"

PROJECT AT A GLANCE

No. of Beneficiaries	420,000 people
Project Budget	USD 25 million per year (USD 14 million covered by WFP and USD 11 million covered by Government)
Lead institution	WFP
Areas of intervention	Disaster prone regions along flood plains in the north-west (along the major Brahmaputra and Jamuna River system) and the southern coastal belt
Partners	Local Government Engineering Department, local NGOs
Activity types	Food and cash for work and for training
Project Duration	2008-2011 (2 year cycles)

CONTEXT AND RATIONALE FOR INTERVENTION

Bangladesh faces very high risks from cyclones, flooding, salt water intrusion and river erosion, which are expected to increase in severity over the coming decades as a result of climate change. The southern coastal belt and north-west flooding zones of Bangladesh are particularly vulnerable due to high poverty rates and frequent natural disasters. These areas suffered extensive damage following Cyclone Sidr in 2007, Cyclone Aila in 2009, and the floods of 2004 and 2007 which caused billions of dollars in damage, displaced millions and created long-term food insecurity due to the loss of assets and breached embankments. Severe shocks like floods and cyclones affect 30 to 50 percent of the country annually and offset gains in poverty reduction and agricultural production. Climate change affects everyone, but is expected to affect the poor disproportionately as these people are already the hardest hit by floods and crop failures.

PROJECT OVERVIEW

The Enhancing Resilience (ER) programme aims at strengthening the resilience of communities and households vulnerable to natural disasters and to the effects of climate change on food security and nutrition. It engages and involves communities and individuals in the planning and building of community assets and provides training in disaster risk reduction and climate change adaptation. A combined food and cash for asset and training approach is used in which WFP provides food and the Government provides an equivalent amount in cash. The goal is to strengthen the economic resources of beneficiaries while also building community-based assets to protect development gains from future disasters and the negative effects of climate change.

Community assets are built during the dry season (January-June) and training is provided during the rest of the year over a two-year period. Projects develop or rehabilitate embankments, roads, drainage and irrigation canals, and other relevant assets. Training is provided to develop disaster preparedness, response, recovery and longer-term adaptation skills as well as awareness of climate change. Nutrition and life skills training are also provided to improve feeding and hygiene practices.

WFP also works closely with local stakeholders – particularly local government agencies, community-based and non-government organisations, and Union and Upazila Disaster Management Committees – to develop their disaster preparedness and response capabilities through workshops, close consultation and regular feedback.

The ER programme complements the Government's Climate Change Strategy and Action Plan[14] and targets the regions prioritised by the Government of Bangladesh and through the United Nations Development Assistance Framework (UNDAF).

From 2008 to 2011, the ER programme provided assistance to 637,500 ultra poor beneficiaries in disaster prone areas and improved infrastructure such as roads, embankments, canals and homestead raisings in order to mitigate the impact of disasters and climate change in 209 communities. This resulted in an increase from 20 to 81 percent of households with adequate food consumption[15] in the targeted regions.

KEY FEATURES

- ✓ **Local level planning (LLP)**.Teams of 12 members that included locally-elected and government officials, NGO representatives, and prominent local people were set up in each community to develop local level plans. These groups undertook a review, conducted focus group discussions with the community, identified relevant activities of other actors, mapped out and prioritized the needs in their communities focusing on disaster risk reduction and climate adaptation infrastructure. This process resulted in less top down influence and greater community ownership and appropriateness of interventions. The food and cash for work interventions are based on the LLP and the LLP report is used by other actors as a planning tool.
- ✓ **Partnerships**. There is a strong collaboration and commitment from the Government (mainly the Local Government Engineering Department) providing technical expertise and all cash wages to the programme. The Government was involved in the planning, implementation and monitoring of the programme. This is complemented with local NGO partners who mobilize communities, select ultra-poor participants, manage implementation, distribute food and cash wages, and deliver trainings to the participants, communities and local institutions. WFP also serves as a link to strengthen Government partnerships with NGOs, government other ministries, departments and civil society organizations to secure effective planning and to avoid duplication of resources.
- ✓ **Combination of food and cash for asset creation and for training**. Food and cash wages contribute to immediate and longer-term food security and reduce undernutrition levels during lean season while community assets focus on protection from disasters as well as rehabilitation of agricultural land to strengthen food production. At the household level, the training provides the foundation to improve nutrition knowledge and practices, disaster preparedness and climate change adaptation knowledge. In addition, during the high food price crisis, WFP distributed cash grants with income generating activity training. This delivered strong results by providing very poor women with the resource, skill set and support to develop a sustainable income. The training is also offered to the community and local institutions to enhance their capacity on disaster risk reduction and climate change adaptation.
- ✓ **Women's empowerment**. Users Committees were set up to facilitate the process of food and cash distribution and oversight. These were usually led by a female participant. In total, 70 percent of project participants were women.

[14] The Government's Climate Change Strategy and Action Plan identifies "Food Security, Social Protection and Health", "Infrastructure" , "disaster preparedness" and "Capacity Building and Institutional Strengthening" as key pillars.
[15] The adequacy of food consumption is measured by dietary intake and diversity.

CHALLENGES

On the technical side, a challenge that emerged was the poor maintenance of some schemes where there was not much community ownership. WFP worked closely with local government officials to ensure that adequate resources were allocated to maintenance. Also, current wages were found to be low during some periods, particularly the harvest time. Finally, gender assessments recommended setting up gender-sensitive provisions on project sites (including sanitation, drinking water and a private space for breastfeeding) to facilitate women's participation in the construction activities. Facilities are now in place in the majority of schemes, and plans are underway to cover remaining sites. Males are also being included in construction activities to foster greater gender balance and ownership of projects.

RELEVANCE FOR RESILIENCE BUILDING

The ER programme is WFP's largest resilience building programme. The combined food and cash approach proved to be pertinent and was favoured by the beneficiaries. Through the food and cash for work activities, the immediate food security could be addressed while the assets created contribute to longer term food security, adaptation to climate change and prevention of disasters. Finally, the building of capacities through trainings contributes to the sustainability of the programme by providing beneficiaries with the skills to reduce their vulnerability and enhance their resilience to shocks.

NOTES

10. Uganda

"KARAMOJA PRODUCTIVE ASSETS PROGRAMME (KPAP)"

PROJECT AT A GLANCE

No. of Beneficiaries	456,000 beneficiaries (76,000 households)
Project Budget (USD)	USD 23 million per annum
Areas of intervention	Karamoja sub region
Lead institution	WFP
Partners	Office of the Prime Minister of Uganda; District local governments; 9 Implementing partners
Activity types	Food/cash-for-work Asset creation
Project Duration	2010-2013

PROJECT CONTEXT AND RATIONALE FOR INTERVENTION

Karamoja is part of the semi-arid, pastoralist belt of the Horn of Africa. It is the poorest and most marginalized region in Uganda, with over 80 percent of its people living below the poverty line. Due to its geographical location, Karamoja is prone to natural disasters - particularly droughts - which are becoming more frequent and severe as a result of climate change. At the same time, the sub-region is also affected by chronic insecurity, due to inter-ethnic tensions and cattle raiding. Over time, the combination of frequent natural disasters, ongoing violence, severe environmental degradation and high poverty rates has not only eroded people's capacity to cope but left them heavily dependent on food aid, which was the principal assistance modality of WFP's programmes in the region until 2010.

PROJECT OVERVIEW

The Karamoja Productive Assets Programme (KPAP) is a large-scale food and cash for work and asset creation programme that marks a shift to support government efforts to promote recovery and longer-term development in the region[16].

Launched in 2010, KPAP has been supporting 76,000 chronically food insecure households with labour capacity (roughly 38 percent of the population) to transition from dependence on food aid towards self-reliance. The objectives of the programme are twofold: (i) prevent the spread of negative coping strategies during the traditional hunger season and (ii) stimulate recovery.

In line with the Governmental strategy for Karamoja, the KPAP is a three-tiered programme consisting of:

[1] Public works: beneficiaries qualify for conditional food or cash transfers in exchange for their participation in public works activities. The types of activity supported include: livestock watering points; land/soil conservation measures; reforestation and; road rehabilitation.

[16] Since 2011, the KPAP has been an implementing arm of a broader framework/programme of the Government of Uganda known as the Second Northern Uganda Social Action Fund (or "NUSAF2"). Governmental ownership – both at national and district level – is an extremely important aspect of the programme.

[2] Household income support: beneficiaries receive both 'soft' and 'hard' inputs aimed at strengthening and diversifying their livelihoods systems. The types of activity supported include: drought-resistant staple crops (e.g. cassava, millet); vegetable gardens; fruit orchards; gum Arabic; dairy production and; energy-saving stoves.

[3] Capacity development: WFP and implementing partners systematically engage with communities and district local governments at clearly defined points in the annual programme cycle.

KEY FEATURES

- ✓ **Kicking-off with a sensitization campaign**: Given the context of food aid dependency community acceptance of the programme is essential. To this effect, standardized core messages have been imparted to communities about the roles and responsibilities of stakeholders in the project, beneficiary entitlements and obligations and the importance of self-reliance and building resilience.
- ✓ **Selecting from the 'menu'**: Karamoja consists of three different ecological zones, which has inevitably influenced livelihood patterns along divergent lines[17]. Recognizing the intrinsic differences between each livelihood zone is different, households are offered different 'menu' of public works/ household income activities in each zone. Activities supported under the programme must always be appropriate for the livelihoods zone, as well as technically suitable for low-skilled manual labour.
- ✓ **Phasing-in cash transfers**[18]: Around 10 percent of households (who live in and around the seven major trading centres of Karamoja) have been switched from food to cash transfers, in order to foster market development which has been constrained by the low purchasing power within households.
- ✓ **Working with Government**: District local governments play a formal, active and clearly-specified role in terms of approving activities carried out under the programme, and monitoring and evaluating the performance of sub-projects against their stated objectives. The programme also focuses on building government capacity to improve sustainability;
- ✓ **Strong partnership focus**: KPAP relies on strong technical and operational partnerships. FAO played a key role in developing the investment menu for KPAP and is advising district local governments, WFP, and other implementing partners on a range of technical issues on the programme pertaining to livelihoods promotion and environmental management. This is essential for quality assurance on sub-projects, as well as harmonization with the work FAO itself is supporting through Agro-Pastoralist Field Schools (APFS). Nine NGO partners also worked closely with WFP to adjust geographical coverage and ensure adequate implementation capacity across the region, allowing a rational large scale effort to be mounted.

CHALLENGES

Making the transfers more predictable and reliable. In the context of KPAP, reliability and predictability of the transfers is essential to ensure the recovery and resilience building of vulnerable households. However, food transfers have often been affected by pipeline breaks (owing to shortages of grain at the national level for local purchase), while the capacity of the cash transfers service provider has been over-stretched. These challenges will be addressed in 2012 through: (1) Advance purchasing/pre-positioning of food and; (2) Redeployment of the cash transfers service provider to a more concentrated geographical area

[17] Karamoja has three livelihood zones: (1) Agricultural; (2) Agro-pastoral and; (3) Pastoral. In recognition of this, the KPAP 'menu' is tailored to each of the livelihood zones. The 'menu' has been discussed at length with the Government of Uganda and FAO, with modifications having been made along the way.

[18] The delivery mechanism for cash transfers is "e-money" (i.e. MTN *Mobile Money*).

Quality assurance on livelihoods activities. Ensuring the quality and durability of assets in a context where environmental conditions and community dynamics are highly variable and 9 different implementing partners are working to deliver the programme at the community level is difficult. The quality of the infrastructure and livelihoods activities is essential to the sustainable transition of households off food aid. These challenges will be addressed in 2012 primarily through: (1) A more intensive technical orientation of implementing partners prior to the launch of the 2012 programme cycle; (2) Closer and more formal collaboration with FAO.

RELEVANCE FOR RESILIENCE BUILDING

KPAP strengthens households' resilience to shocks and adverse events by building sustainable livelihoods. A livelihood is sustainable when it can cope with and recover from shocks, and when it can maintain or enhance its capabilities and assets while not undermining the natural resource base[19]. In particular, KPAP builds resilience in three main ways:

[1] Preserving and building-up the asset base of households – Under the public works component of the programme, WFP is providing households with access to food/cash transfers during the traditional 'lean' season when the sale of assets (most often livestock) is a common negative coping strategy. Productive assets are therefore preserved allowing households to better absorb and manage 'stress' during unexpected shocks;

[2] Strengthening and diversifying livelihood systems – Under the household income support component of the programme, WFP is providing households with the means both to 'climate-proof' their existing livelihood practices (e.g.by improving the access of livestock to water sources), and to diversify into new livelihood activities (e.g. by supplementing cattle-rearing with basic agriculture). In this way allowing beneficiaries to better adapt to changing climate patterns by helping them mitigate risk and avoid the spread of risk across multiple livelihoods.

[3] Ensuring the continuity and sustainability of the programme. Emergency response can be expensive and can be unpredictable as flows of relief aid are often insufficient. However, ensuring the continuity and sustainability of programmes is necessary to securing results in terms of building more resilient livelihoods. The cost effectiveness of KPAP accounts for the sustainability and high coverage of the programme. While the 2009 food aid operation (covering the same target group as the KPAP) cost approximately USD $120 per beneficiary per annum, the KPAP costs approximately USD $50 per beneficiary per annum. KPAP therefore advances the agenda for prevention over response.

NOTES

[19] Lindsey Jones, Susanne Jaspars, Sara Pavanello, Eva Ludi, Rachel Slater, Alex Arnall Natasha Grist,Sobona Mtisi. 2010. *Responding to a changing climate: Exploring how disaster risk reduction, social protection, and livelihoods approaches promote features of adaptive capacity*. Overseas Development Institute: working paper 391.