



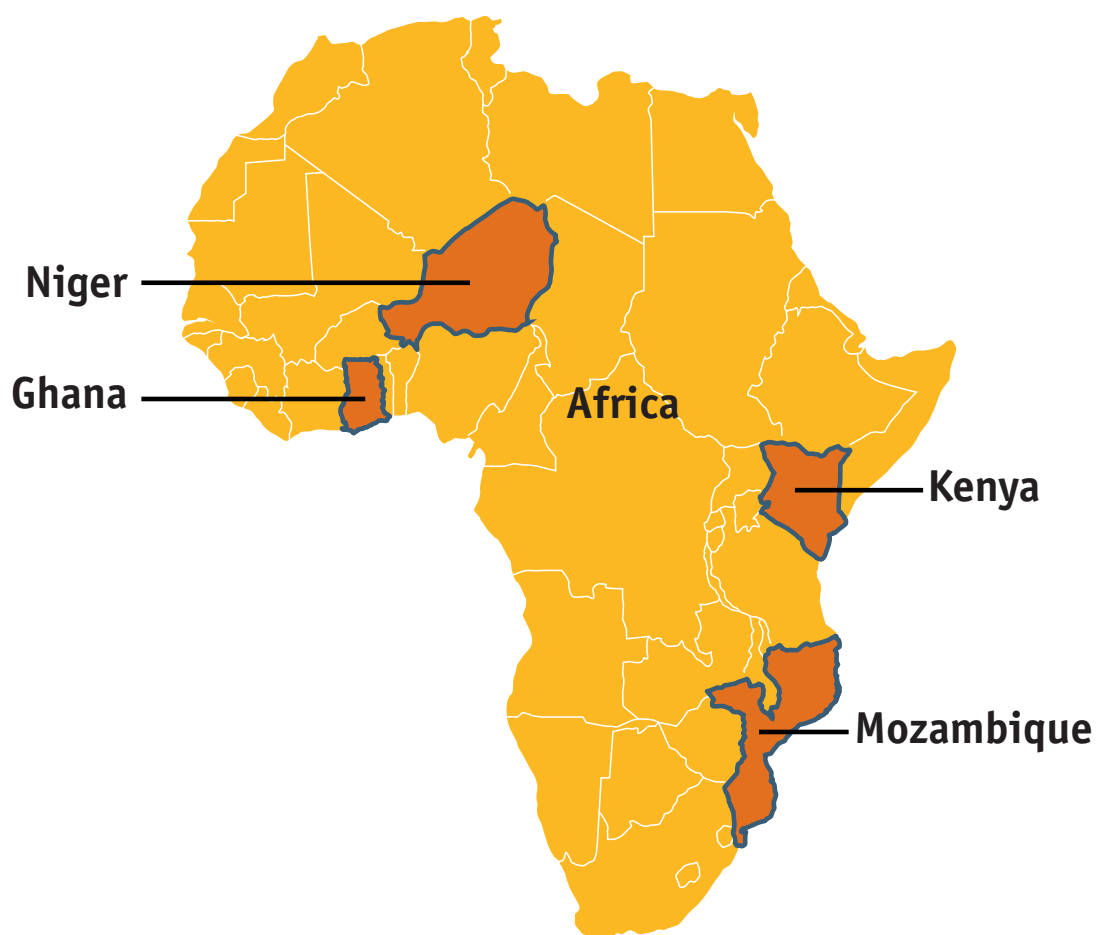
ALP Adaptation Strategies Compendium

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OVERVIEW

Dry season gardening in Tariganga community, northern Ghana. Credit: Nicola Ward/ALP-CARE, 2015.

The Adaptation Learning Programme for Africa (ALP) has sought to increase the capacity of vulnerable households in sub-Saharan Africa to adapt to climate variability and change. The four-country programme reaches vulnerable communities in northern Ghana, southern Niger, eastern Kenya and northern coastal Mozambique by using participatory initiatives aiming to pioneer and deepen practical understanding of Community Based Adaptation (CBA). ALPs approach gives explicit focus on integrating gender equality and diversity into the process. ALP uses a learning-by-doing approach in facilitating CBA in a growing number of vulnerable communities across a range of livelihood groups, agro-ecological zones and climates. The goal is to develop and document effective CBA approaches that result in practical community-generated adaptation decisions that will increase and sustain peoples resilience to climate change. The CBA approaches have the potential to be adopted and integrated into community district and county level development planning cycles and adaptation and related sector programmes. Community plans resulting from participation in CBA approaches relate to livelihood and risk reduction activities, collectively known as ‘adaptation strategies’, which the

communities prioritise as those which will best support their climate resilience in the short and long-term.

This compendium presents the range of different adaptation strategies supported by ALP in communities across the four countries where the programme is working. For each strategy evidence and lessons are provided from successful implementation and impacts in reducing vulnerability and building adaptive capacity in different contexts in Africa. The material is relevant to practitioners, policy makers and local government officers in promoting the future adoption of CBA approaches and adaptation strategies that enable more sustainable adaptation.

CBA in Practice

Good development practice must provide the foundation for community based adaptation to build on. CBA brings in a new structural dimension by helping communities address current and future impacts of climate change. This essential step of assessing climate change challenges brings together vulnerable community groups and their local government representatives, resulting in better-informed decision making at different levels, on

ways to manage the impacts and anticipate and reduce risks. The goal is not just to increase household income or food security, but to protect and improve livelihoods, reduce vulnerability and increase long-term resilience.

The range of CBA approaches promoted by ALP include facilitating vulnerable communities and groups to: raise awareness on climate change trends; analyse their own vulnerabilities and capacities with identification of the changing hazards and risks they face; develop participatory adaptation action plans, access climate information services for different timescales; and establish field schools for on-going learning on adaptation in agriculture and pastoralism. CBA approaches may also target local government and other local level actors, for example supporting integration of adaptation into local government development or Disaster Risk Reduction (DRR) planning and budgeting processes, analysis of sector budgets, and multi-stakeholder participatory scenario planning workshops (PSPs) which produce climate focused livelihoods advisories for dissemination to communities.

The CBA approaches aim to take a gender-responsive approach and strengthen adaptive capacity through improving institutions and linkages, access to knowledge, information and services, forward looking decision making and creating incentives and opportunities for innovation and access to, protection of and accumulation of assets. ALP is in the process of producing a series of practitioner briefs aimed at community development agents that present these approaches clearly and practically. Links are provided in the further reading section, see page 41.

The intention of the CBA approaches is to support communities to make decisions and plans for implementing modified or new livelihood and risk reduction activities on a seasonal to long-term basis. These activities aim to improve their resilience to the impacts of climate change, and are called 'adaptation strategies'. They may be identified at any point in the CBA planning process, and are eventually documented in a Community Adaptation Action Plan (CAAP). This in turn is subject to regular review to allow for modified or new adaptation strategies to be determined. Where literacy is a constraint, groups have devised symbolic or pictorial versions to ensure ownership and internalisation of the plan.

Some adaptation strategies are identified early on as 'quick wins' or 'no regrets' activities that will

generate benefits and resilience under any climatic conditions. They are screened for their climate resilience, affordability, environmental sustainability and economic feasibility. The communities also check their implications on gender in terms of division of workload and of the benefits accruing to both men and women. While they may resemble on-going development and livelihood activities, they differ in that they are deliberately selected by the communities through an informed decision making process, as actions which will help them to adapt to both short and long-term impacts of climate change.

Adaptation strategies go beyond immediate coping after a shock or stress on vulnerable people's livelihoods. Coping strategies help people to bounce back quickly but in doing so often undermine assets and opportunities for future development. In the context of climate change, 'bouncing back' becomes meaningless, as conditions are undergoing unpredictable change, and the concept of normal or business as usual no longer applies. Adaptation strategies are designed to ensure short and long-term benefits, even under difficult conditions, given current knowledge and anticipated futures. Adaptation strategies aim to integrate activities that will generate sustainable and climate resilient development benefits together with an element of risk reduction and management. For example trees can provide productive resources as well as environmental protection, through wind or firebreaks and soil conservation. To be flexible and maintain their effectiveness over time, innovation on the way in which adaptation strategies are applied, technology used and integration of strategies into a holistic livelihood or farming system is important, as is monitoring of the outcomes. Support to improved access, relevance and control over resources, information and services is also needed.

There are no shortcuts to gaining local acceptance and buy-in. The better part of a year is required to work through the various steps in the CBA planning and design process and result in community adaptation action plans with identified adaptation strategies. Adaptive capacity of the more durable kind, is a function of a given household's or community group's ability to plan ahead and access not only resources, but also information and strengthened entitlements in order to formulate and carry out innovative plans which are flexible and forward looking. This in itself is a quantum leap forward for almost every community where ALP is working, and not one achieved in short order.

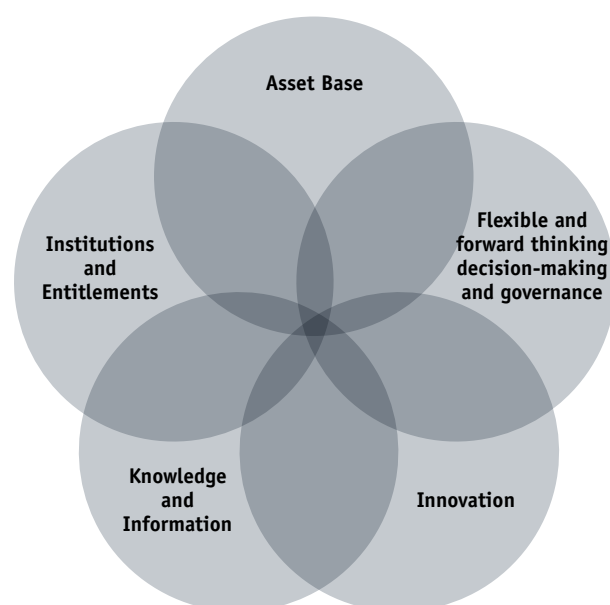
Towards Greater Local Adaptive Capacity

The cornerstone of ALPs work has been taking an integrated, holistic approach to strengthening adaptive capacity at household and community-wide levels. For each of the strategies presented in this compendium – most, if not all, of the elements of the local adaptive capacity framework, developed by the Africa Climate Change Resilience Alliance (**figure 1**) were covered during the initial community discussions, training and motivation stages. It is important to keep in mind how this framework underpins the approach that is described in each of the strategies in this compendium. Strengthening adaptive capacity at all levels ensures that plans and adaptation strategies are managed adaptively to remain relevant as the climate changes.

Selected Strategies

Since 2010 ALP has used the holistic approach to CBA planning described above to support communities across the four countries to build their climate resilience through testing different adaptation strategies appropriate to the different contexts and challenges faced. The strategies presented in this compendium are the ones that have been effective in reducing vulnerability and building adaptive capacity and therefore present the most potential for adoption by communities in other places.

Figure 1. *The Local Adaptive Capacity framework*



Source: Jones, L, Ludi, E and Levine, S (2010)

Table 1. *Adaptation Strategies by country*

Strategy	Ghana 8	Kenya 6	Niger 20	Mozambique 10
Alternate livelihood options/Business skills				
Conservation agriculture				
Village savings and loan associations				
Dry-season farming/gardening				
Warrantage-warehouse receipt/credit system				
Improved seed varieties/ early maturing cassava				
Small ruminant raising/marketing				

[red number = communities using the strategy]



Ghana: Less Hunger, More Cash from Improved Cassava Varieties

Overview

This strategy specifically addresses inadequate and unreliable on-farm harvest and food insecurity faced by most households in northern Ghana. The region increasingly experiences drought, or floods during heavy monsoon rains, which affect agricultural production. The strategy was developed using a participatory Community Based Adaptation (CBA) approach pioneered by CARE, involving community awareness raising, training and decision making, in order to identify appropriate adaptation responses to the challenges faced by the community.

Strategic Aims

The objective of the early bulking cassava strategy is to produce cassava cuttings in large quantities to increase food production and availability in the face of continuous declines in yields of maize and millet, which make up the main diets of the people in northern Ghana.

The main objective is to enable farmers to modify crop production regimes by introducing new, quick maturing cassava with the dual purpose of reducing the 'hungry-season' and providing a source of alternate income among farmers in three pilot communities of East Mamprusi District. In the process, new skills and more diverse crop farming assets are gained, with a long-term goal of increasing livelihood resilience. In East Mamprusi this

strategy is being tested by approximately 646 individuals, 72% of which are women.

Location



East Mamprusi is in the Guinea Savannah Zone, while Garu Tempene District falls within the Sudan Savannah Zone. The Guinea Savannah Zone is the largest ecological zone in the country. In general the area has poor quality soils, but along rivers and in floodplains the soils are more fertile.

The area experiences two major seasons: the rainy season, which starts in April/May and ends in October/November, and the dry season, which runs from November to April. The average yearly rainfall is between 900 and 1100mm. Soils are highly variable but generally low in organic matter and prone to nutrient leaching, which impacts on the potential type and yield of crop.

Background

This strategy was piloted in search of crops that can withstand the increasingly extreme climatic conditions in these ecological zones, including windstorms and heavy rains, which particularly affect millet, and drought conditions. Cassava fits here. It is easy to propagate by both men and women and has multiple uses, for example leaves for soup, tubers for fufu, konkont or gari, it can be roasted or boiled for fast food, processed into dry cassava chips for sale, and also used for brewing local beer.

Farming is the dominant source of livelihood across the District. The main food crops are maize, millet, guinea corn, groundnuts, cowpeas, soya, and yam. Most farming households also keep some livestock – sheep, goats, pigs, poultry, cattle, donkeys. Many families who have access engage in seasonal harvesting of forest products such as wild fruits, fuel wood. Other important employment options are trading – buying and selling grains, small ruminants, soup ingredients – like bouillon cubes, smoked or dried fish, salt etc. and artisanal work such as masonry, carving, tailoring.

Members of three communities made up of men, women, youth and the physically challenged took part in community-led CBA processes such as participatory community vulnerability and capacity analysis, community visioning and the development of community adaptation action plans, with the aim of identifying appropriate activities to adapt to the changes in the climate, achieve more resilient livelihoods and improve their food security.

Six hundred cassava cuttings were distributed to about 50 farmers in the pilot phase, followed by 3,000 cuttings during the second phase. Farmers planted the cassava and carried out trials to compare cultivation and potential yield under different climate conditions in comparison to staple crops like maize and millet. Community plots were established to grow cuttings that could be distributed to other farmers. Technical and logistical support came from the Ministry of Food and Agriculture (MoFA), District Assembly (DA) and the Savannah Agricultural Research Institute (SARI) – see Table 2.

Creating an Enabling Environment

Adaptive capacity is not achievable in isolation; linkages and changes in social capital are critical, as are communication systems to serve these for example, to communicate of market prices or climate information which can build adaptive capacity by supporting decision making and enabling new activities.

In Ghana, the 2014-2017 District Assembly planning guidelines have been revised to integrate CBA in the planning and budgeting process, in order to make plans climate compliant, and key officials from all District Assemblies were trained on the approach by ALP. In the broader context, government support gives priority to agro-industry promotion, such as through the Rural Enterprise Development Programme, which cassava farmers have the potential to benefit from. Cassava cultivation is being promoted by the East Mamprusi District Assembly through its medium term development plan, leading to continued support for the implementation of this strategy.

Support Required

During the initial community based discussions, ALP linked communities to the Savannah Agricultural Research Institute (SARI) and MoFA by inviting them to present the services they have to offer at community meetings. Such facilitated participation was a regular aspect of the CBA process. During these meetings community members requested SARI to supply them with early bulking cassava varieties, which they had identified as an appropriate adaptation activity, and to assist with their trials.

ALP country staff and community monitors gave additional technical support for monitoring and reporting, working in collaboration with a local partner - Partnership for Rural Empowerment and Development (PARED).

ALP provided the overall financial support to communities for implementation, including funds to purchase the cassava cuttings (first 600 cuttings were free – but insufficient for reaching a large group of farmers).

As for main costs – about 60% of the total expense of US\$13,750 went toward putting chain-link fences around the five trial plots to protect against animals. The 3,000 additional cassava cuttings cost another \$1,000, with the remainder covering land preparation, transport and monitoring costs.

Stakeholder Roles

Table 2. Stakeholder roles in the cassava early bulking strategy

Role / Activity	Stakeholders						
	Farmers	Traditional Leaders*	Community Monitors	CARE-ALP**	NGO Partner (PARED)	Local Government MoFA and District Assembly	Research Institutes SARI
Provide finance/coordination for materials (fencing plots) training, monitoring							
Provide land (*for community plots)							
Supply improved cassava cuttings (6 types), provide technical back-up, monitoring and testing							
Work with farmers to design and implement trial plot layout, provide field extension services							
Monitoring, reporting							
Mobilization of community members for meetings and undertaking some activities.							

** CARE's role in addition to providing finance and doing the monitoring also involves brokering linkages between groups and local authorities such as the DA, MoFA and SARI.

Sustainable Practices

The cassava bulking strategy applied a demand-driven approach: the initial request for support to SARI (a research institution) came from community members. Once a clear plan of action was agreed, there was good collaboration between the key actors such as community monitors, farmers MoFA extension staff, CARE, PARED, and SARI to implement the strategy. Where this collaboration was less successful was in building in sufficient time and funds for training farmers to manage the post-harvest stage for example, the cassava processing and value addition that SARI had intended.

Results and Impact

Because the new cassava varieties tolerate drought, grow well in poor soils and still mature in six months they significantly reduce the hunger gap – to as little as one week. Adding cassava to the crop portfolio, with high potential for marketing either as fresh or dried, increases farmer livelihood options.

Early/1st year results [2012]

- Yields were fairly good despite the late planting.
- Assessing was based on farmer's preference (taste, colour and tuber size, speed of maturation).
- Farmers liked all six varieties, but ranked three as the best: "BB: bia-base", 96/7608, and 96/1613
- SARI monitors noted the issue of late planting and the inability to provide supplemental watering on the on-farm plot as challenges to overcome in the second phase.

Expansion stage [2013]

- ALP procured 3,000 more cuttings of all six varieties for second cycle planting on one additional demonstration farm in Zambulugu (total of two farms), two farms in Jawani and one farm in Dimia. These were established between July/August 2013, including fencing all the farms to protect the cassava from animals.

CASE: Alimatu Wuni – Cassava farmer from Zambulugu

I had never seen these new varieties of cassava until last year when ALP supported us to get six different varieties from SARI in Tamale. From the day we made the first harvest of the cuttings from the multiplication farm, I knew we were in good business. Apart from the many cuttings we got from the six different varieties, the tubers were fantastic. Some of us could not lift one bunch of some of the harvested cassava.

I was lucky to get some of the cuttings which I planted in the farm with the support of my husband and children. This was in May 2014 when the season had just started. To my surprise, the cassava was actually ready for harvesting in just six months, by November the same year (traditional varieties rarely mature in less than a full year). From the harvested cassava, I fed my family of six for close to two weeks. Basically, the harvested cassava was used for slices, “fufu” and the rest of it peeled, dried and processed into flour and used for preparing traditional dishes. I now have over 100 cuttings from my farm in readiness for the next season.



Alimatu Wuni from Zambulugu in northern Ghana holding some of her fast maturing cassava. Credit ALP-CARE Ghana

Enhancing Adaptive Capacity

The Cassava Bulking strategy strengthens farmers adaptive capacity in two key ways:

1. By improving household assets: approximately 650 farmers now grow the improved-strains of cassava mainly for food production. In many cases, sales of surplus cassava raise household incomes.
2. By bringing in new knowledge and information: specifically on the capacity of farmers, who are mostly women, to engage with SARI and MoFA staff during training and extension services. This aspect of building institutional linkages into the strategy ensures sustainability beyond the end of the ALP programme.

Multiplying Impact

The impact of this strategy is multiplied through interacting with other approaches and methods promoted by ALP, such as Participatory Scenario Planning (PSP). Farmers can now obtain timely information on the onset of the rains so they know when to plant cassava, through livelihoods advisories. These advisories are disseminated as a result of the PSP forums involving community representatives and traditional leaders, Ghana Met department, and other District departments.

Income from selling surplus cassava allows Village Savings and Loans Association (VSLA) members to buy more shares after the harvest, because they spend less on purchasing off-farm food items, and thus make bigger contributions to their VSLA accounts. With VSLA funds

(loans and share-outs) more and more households now pursue other income generation activities as part of a larger diversification and risk management strategy (see the related Strategy on VSLAs on page 11).

Lessons for the Future

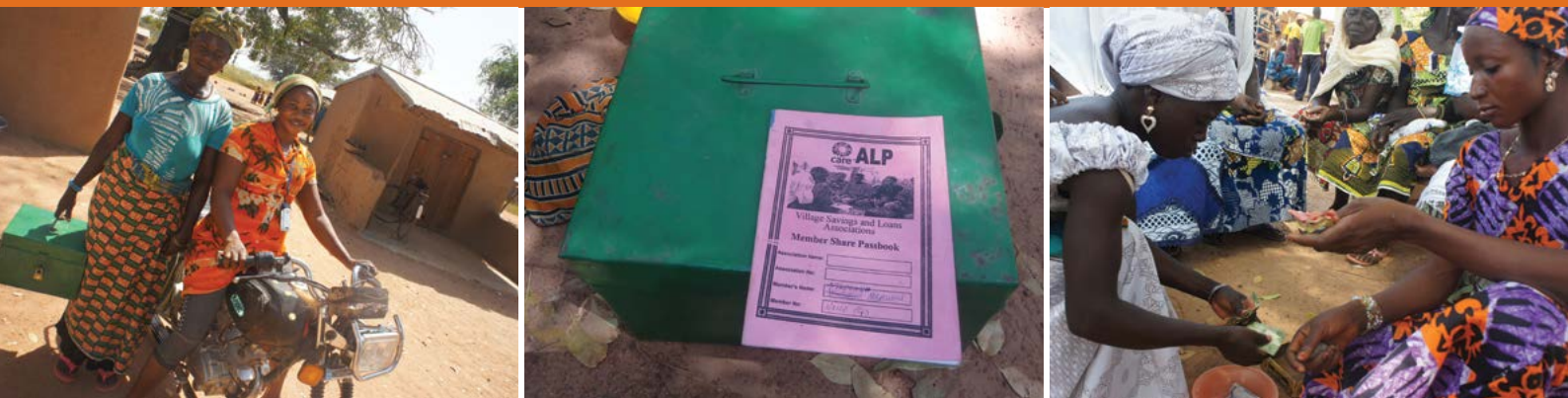
This strategy shows a high possibility of being sustained because it is easy to sprout and produce new cassava cuttings. The method spreads as farmers give plant material to friends, relatives or their counterparts in other project communities in the district and beyond. A major disadvantage is that cassava leaves are sweet and so animals like to feed on them. Plots need to be protected from animals, both small ruminants and cattle and donkeys, adding considerably to the cost of adopting the strategy.

WHAT WORKED WELL

- Good collaboration between, and extensive involvement of major project stakeholders from the start has contributed to greater ownership among farmers groups. Traditional leaders, the District Assembly and district level agencies like MoFA and NADMO are key.
- Community members’ commitment to manage the multiplication plots.

WHAT DIDN'T WORK WELL

- The field was planted late in the first trials, resulting in cuttings withering in one of the plots.
- The farmers did not get the opportunity to complete the entire value chain cycle of cassava within the project period.



Ghana: Village Savings and Loans Associations Boost Resilience

Overview

Village Savings and Loans Associations (VSLAs) are a local, semi-formal community banking technique that offers individuals a way to save money and access small loans at modest interest rates - usually between 5 to 10%. VSLAs allow people to save up the capital to diversify into less 'climate sensitive' livelihoods, in order to spread risk and build resilience. They also allow people access to funds in times of shocks and stress so that they are able to recover quicker. Because of their versatility, VSLAs are one strategy that is being used in all four ALP countries.

In 2011, 55 VSLA's (25 in Garu Tempene and 30 in East Mamprusi) were started in response to extensive community meetings to identify the impacts and appropriate responses to climate change. This has since increased to 127 associations across two Districts in Ghana's northern region (see map). VSLA's provide a secure source of micro-finance, primarily to women - 78% of participants in this case, who would not otherwise be able to take loans.

Strategic Aims

The VSLA model developed by CARE and applied by ALP supports the more vulnerable members of each community to access financial resources as seed capital to diversify livelihood income options. A specific aim is to strengthen resilience against future drought periods or other climate shocks.

Participation in the functions of a VSLA helps members gain self-respect, self-reliance and self-confidence. For many members, such an opportunity and the financial management

skills that come through membership, is a transformative process with substantial positive value to household security and gender equity as well as other key social benefits.

Location



Garu Tempene district is within the Sudan Savannah agro-ecological zone with two main seasons: the rainy season from March/April to October and a long dry season from November to April characterised by 'harmattan' winds, bush fires and severe heat. Vegetation across the District has changed rapidly as a result of bushfires and soil-degradation from inappropriate farming practices. Rainfall patterns have also changed dramatically

seemingly because of the effects of climate change, with far less dependable onset and duration of rains. Soils are sandy-loam mixed with gravels. Vegetative cover has been heavily reduced to widely-spaced scattered trees or shrubs, sparse grasses and herbaceous vegetation.

East Mamprusi District is classified as Guinea Savannah agro-ecological zone. All the communities in East Mamprusi district are within the Guinea Savannah belt with its low grassland, and widely scattered trees. Most common trees species include 'dawadawa' and Shea trees, which play a significant role in the lives of the people. The Shea provides fruits for the people and also provides raw material for the shea butter industry. Trees are also the main source of fuel wood for households. Rainfall patterns have become more erratic in recent decades, bringing greater uncertainty to traditional rain-fed cropping. Average annual rain is approximately 992mm for the more northern regions.

Background

The primary livelihood activities of households in both districts include rain-fed crop production (millet, maize, sorghum, rice, soya, cowpea, onion, pepper) and livestock rearing (cattle, goats, sheep, pigs, guinea fowls, ducks, fowls). Farmers who can access water sources also practice dry season farming of onions, pepper, tomatoes and local leafy vegetables. Non-agricultural livelihood activities include masonry, carpentry, tailoring, hairdressing, weaving, shea butter processing, soap making, petty trading and hunting. Formal sector employment, especially teaching and nursing are other common livelihoods.

Beginning in 2010, ALP carried out participatory Climate Vulnerability and Capacity Assessments (CVCA) with each community as the initial input into the Community Based Adaptation planning process. This helped raise awareness and generate new thinking among community members on how they might address climate change related challenges in a more unified and pro-active way. An essential part of this work involved community members in preparing a Community Adaptation Action Plan (CAAP) – a plan that includes specific new, or improved activities to build household and community resilience. Although the process is slow and time intensive, it generates a deeper understanding and commitment to the activities that follow. The VSLA concept was put forward by people during this planning process, as an innovative financial credit system which could help them to overcome some of the challenges they were facing in having limited capital funds to invest in livelihoods activities.

Creating an Enabling Environment

VSLA groups in both districts have come together to form District-level 'Apex Bodies' of VSLA leaders. This is an innovative strategy of using the VSLA model as a social advocacy tool to galvanise support and mobilise resources for CBA advocacy. Weekly VSLA group meetings provide a platform for raising issues that affect community members, especially women, and for sharing solutions. VSLA group meetings are also used as forums to share seasonal climate forecasts and to meet with local government representatives such as the Assembly persons and staff of implementing partners.

Four phases to establish a VSLA:

All VSLA groups receive training and supervision for about 9 months before the groups can operate independently and sustainably. VSLA Facilitators visit the groups regularly to offer guidance. This requires a minimum of 15 visits during that period: starting out with frequent visits that are steadily reduced over the entire cycle. ALP covered the cost of these initial training visits.

- 1. Preparatory phase** provides general information to local leaders and prospective VSLA members. They will decide if they want to be trained.
- 2. Intensive phase** entails 10 training meetings over 15 weeks. During the training the Association elects a management committee/leaders, establishes its constitution and sets out the rules and procedures that govern financial activities. The groups are trained in simple saving, book-keeping, holding elections, officers roles, developing a constitution with rules and agreements. The typical fees paid for training are between 5 and 15 Ghc a month (\$1.25-3.75), per group.
- 3. Development phase** takes 12 weeks with three visits during monthly loan meetings only. During this phase VSLA Facilitators visit less frequently and are less active in Association meetings.
- 4. Maturity phase** involves three visits: two supervision visits, to check that Associations are running without any outside help and one to help each VSLA prepare for share out and graduation. If the Association needs additional training or supervision, the cycle can be extended. The groups are linked to a national financial institution (e.g. BESSFA Rural bank in Garu Tempane) by opening active accounts where the groups also save on periodic basis.

Stakeholder Roles

Table 3. Stakeholder roles in the VSLA strategy

Role / Activity	Stakeholders					
	Farmers' groups CBOs	Community VSLA facilitators (Monitors)	NGO partners (PARED, PAS-G)	CARE-ALP Technical Team	CARE Banking on Change (BOC)	Banks/ Private Sector
Mobilise and train new VSLA groups; ensure that participants become active savers and borrowers						
Schedule and make sure members attend meetings and all regular affairs of managing the VSLA						
Facilitate nomination and election of VSLA officers						
Provide financial and technical support to newly-formed VSLAs						
Build capacity of community based VSLA Facilitators and VSLA groups						
Document programme results, methodologies and tools. Management Info. Systems (MIS)						
Promote links to relevant service providers (credit unions, and financial institutions)						
Lead training workshops for the community based VSLA Facilitators						

CASE: Adamy Abarike's story

In the past three years things have changed because we now have new ways of doing things. I now plant new crop varieties that produce better yields especially in times of drought. My yield has increased by 50 per cent since I started following the advice given by the ALP programme. We now have money to save each week, both myself and my wives are members of Village Savings and Loans Associations. One wife uses credit to finance her business at the market. Our kids now all go to school and everyone in my household has health insurance.



Adamy Abarike, VSLA member from xxx with his wives. Credit: Adrian Fenton 2013

I took part in the community adaptation action plan. I shared the importance of planting trees and the need to educate ourselves and our children. We decided that our community needed a dam for dry season farming and we made a plan so that we could get one.

I have also planted trees to serve as protection against storms and created gutters around my house to allow easy passage of water. When my building was damaged by a storm I knew that I could ask NADMO* for support through my Assembly Man. Before the ALP programme we did not know what services we were entitled to and who provided them. We now receive seasonal forecasts by the radio, the Community Monitors and via VSLA meetings so that we know what to expect in the coming season. I also store improved seed so that I can use it during the next season.

Before the start of the ALP programme I considered myself a poor man. Now my wealth has increased, I have many fowls and animals. Instead of only one, I now have six zinc roofs. The changes I have experienced came from implementing the new knowledge I have been given.

*NADMO is the National Disaster Management Organisation

Support Required

The total cost for the mobilisation and training of 55 VSLAs in the two districts was approximately Ghc 450,000 [US \$143,000] or Ghc 8,180 / US\$2,600 per VSLA group.

An important aspect of the success of the VSLA model is the technical support provided by CARE's Banking on Change (BOC) project team who has tremendous expertise in micro finance.

Use of available internal expertise and building synergies across projects and organisations is a key lesson learnt for enhancing adaptation management skills.

Sustainable Practices

- All VSLAs use a management information system (MIS) to effectively track their activities. The MIS provides updated results on the financial performance to help management to make informed decisions.
- VSLAs are member-managed. Each VSLA has a five-person Management Committee elected for one cycle.
- Inviting neighbouring communities, for example women from Zambulugu with VSLA experience to educate and inspire other groups convinced more people of the feasibility and benefits of the concept.
- Localised training: VSLA groups are trained by local Community Monitors who receive modest fees from the VSLAs for the training provided.
- Each Association develops a written constitution that is signed by every member.
- All members of the Association save through share-purchase. Regular saving is the key to mutual confidence and success. One to five shares can be purchased at each meeting.
- All members have the right to borrow up to a maximum of three times the value of their accumulated shares.

Results and Impact

In 2014, four more non-ALP communities joined the VSLA programme, creating more than 70 new VSLA's and giving a significant sign that the strategy can spread without major external support. Although it is not a given that all of these VSLA groups will also apply climate information or CBA principles in their activities, since they did not go through the same lengthy planning phase as the initial 55 groups, they will derive similar

benefits in terms of household financial security – and the resilience this brings to shocks of any sort.

ALP links mature VSLA groups to other institutions like cooperatives, or rural banks where they are accessing loans. The East Mamprusi Community Bank Manager, explained that VSLAs have been important conduits for their 'Credit with Education Programme'.

Lessons for the Future

- VSLA is one of the most easily replicable CBA models for adaptation, judging from its spread into other communities where ALP is not operating;
- VSLA groups make financial services easier and accessible;
- The VSLA experience shows that community members can mobilize financial capital, albeit small amounts, to invest in small-scale livelihood activities;
- VSLA impacts on social unity and solidarity are as beneficial as its economic benefits in the view of group members, women in particular.
- The number of VSLA Facilitators should be increased to meet the increasing number of VSLA groups;
- Timing/scheduling of community training must follow on closely after the Training of Trainers (ToT) of Community Facilitators – to ensure people put into practice the principals and information they have just learned.



Community Monitor Eli Atis from Tariganga Community, Ghana. Credit: Agnes Otzelberger/ALP-CARE, 2013.

Cover images: Joseph Ndiritu/ALP-CARE, 2013.



Mozambique: Conservation Agriculture – Building Resilience by Farming with Nature

Overview

Agriculture in the coastal region of the northern province of Nampula where ALP is working is among the least productive in the world. Farmers must contend with poor, mostly sandy, acidic and increasingly depleted soils, much-shortened fallow periods (of typically only one year), and little prospect for using costly chemical fertilizer. Even without the threat of a changing climate many farming households are chronically food insecure. Conservation agriculture is a vital element of a necessary ‘sea-change’ in conventional plough and plant farming practices that are failing to feed a growing population.

ALP has used the powerful farmer-led extension method of Farmer Field Schools (FFS), as a learning platform to promote low-cost and easily replicable conservation agriculture practices to help farmers, especially women, to significantly raise their yields of staple crops. The FFS approach promotes innovation in farming practices as farmers test and select new methods and crop varieties that are most appropriate for their own situation. It is also a space for learning and sharing information, both scientific and indigenous knowledge of farming techniques that reduce the impacts of climate change. Conservation Agriculture has proven potential to raise the yields of staple crops such as maize and cassava by an average of 50%, while improving the long-term environmental sustainability and financial viability of farming in Angoche District.

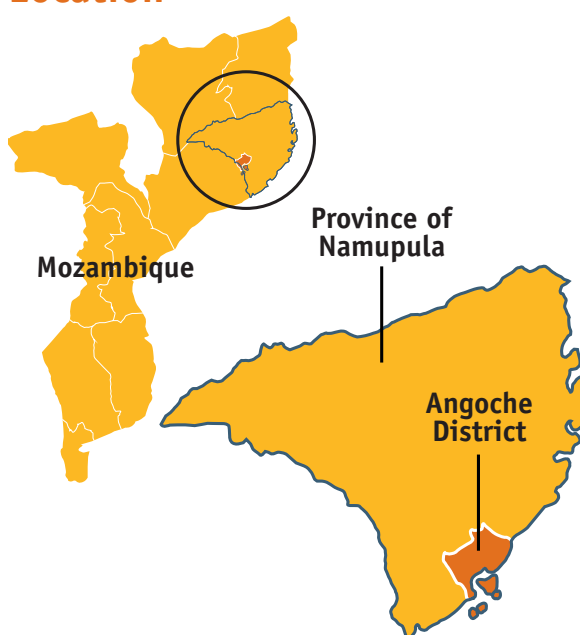
Strategic Aims

Conservation agriculture reduces the impacts of droughts and floods at the same time as building up soil fertility and therefore increasing production and productivity.

ALP has introduced a greater diversity of crops that produce better yields over a long period, with the aim of reducing the number of months without on-farm production. The overall objective is to build a mixed intercropping system with more disease and drought resistant crops that can improve soil health, are edible and will produce when the main crop - for example maize or cassava, is not producing.

Greater resilience of productive assets like soil and cropping systems – when achieved by growing numbers of farmers working together in organised groups, will translate into greater household and community-level resilience, opening doors for other livelihood choices as seasonal food insecurity becomes less of a constraint.

Location



ALP started working with nine communities, in Angoche District, Nampula Province in 2011, building on the many years of experience CARE already had working in the region. Angoche is a lowland coastal district in the northern region of Mozambique, which is vulnerable to typhoons from the southern Indian Ocean. The rainy season extends from late December to the end of March, with an extended dry period in between. In better years, the region receives from 800 to 1000mm of rain. This often comes in very heavy monsoon-type events that can cause waterlogging and soil erosion contributing to crop loss. Erratic rainfall and high runoff rates associated with the high temperatures, results in a deficit of available soil humidity.

Background

In Angoche, rain-fed agriculture is the primary livelihood and source of food, but crop yields are declining as the sandy soils become depleted of organic matter and essential nutrients. Fishing has been an important livelihood source that buffered poor farm productivity and maintained nutrition, but fish stocks are now also in decline. Erratic rainfall has also changed water access so that in the dry season fresh water may be as far as eight kilometers away.

The intense heat during the dry season across these lowland areas is equally inhospitable to crop production and farm work. Cassava is well adapted, however coastal Nampula is affected by Cassava Brown Streak Virus, a disease which causes necrosis of the tubers and can cause total loss of production and diets based on cassava alone cause malnutrition. Increasing numbers of youth and men in the area migrate to the cities seeking employment, or to the mines of the neighbouring province of Cabo Delgado on a seasonal cycle, to earn their living off-farm.

Creating an Enabling Environment

Farming is the main livelihood, involving almost all the households in Angoche, therefore agriculture requires special attention in local planning processes. Developing the District means making agriculture more productive by improving soil fertility and minimizing the impacts of climate change - prerequisites to improve yields.

Conservation agriculture has been specifically integrated into Angoche District's 2015 socio-economic plan and budget, meaning that under the agricultural sector the government will continue promoting this strategy, with a modest budget allocated for this purpose. The Local Adaptation Plans (LAPs) developed for Angoche also prioritized this strategy as a route towards increasing productivity and climate resilience.

The LAPs form part of the main five-year district development plan [2015-2019]. Communities have also prioritized Conservation Agriculture in their Community Adaptation Action Plans (CAAPs) that have been developed with the support of ALP. The CAAPs will be used to advocate for support from the district in implementing relevant activities. At national level, the Strategic Plan for Development of the Agricultural Sector promotes Conservation Agriculture as an approach to overcome the shortage of labour in agriculture, restore degraded soils, manage soil moisture and improve productivity.

Support Required

ALP provided initial funding for conducting a Climate Vulnerability and Capacity Analysis (CVCA) in Angoche. This was followed by a series of community dialogue sessions to prepare local Climate Adaptation Action Plans (CAAPs). These action plans included several 'quick-win' options such as distribution of improved cowpea varieties (short maturing and high yielding); disease resistant (brown-streak, cassava mosaic virus) and high yielding cassava varieties. Building on this work, ALP has placed emphasis on facilitating access to seasonal forecasts, on the use and interpretation of climate information; and on training FFS groups on the various aspects of climate change such as the causes, impacts and adaptation actions.

Sustainable Practices

FFS is a particularly important platform for communities to build trust and cooperative linkages among community members. A large network of individuals such as community leaders, trained NGO staff and extension workers, are involved in promoting the practice of FFS with knowledge about conservation agriculture practices as well as traditional climate knowledge.

Capacity building has enabled farmers to continue refining the techniques, and also promote conservation agriculture among other farmers. Government and CSO extension workers have also been trained to replicate and promote the strategy and provide technical support to farmers. The FFS curriculum has been re-designed each year based on lessons learnt in the previous agricultural season to ensure that stakeholders from the government, civil society organizations, farmers and others who promote or are involved in farming activities have the latest guidelines. FFS groups have also been formally registered as farmers associations, meaning that farmers will continue working together and supporting each other into the future. The benefits of being a registered

Stakeholder Roles

Table 4. Stakeholder roles in promoting Conservation Agriculture

Role / Activity	Stakeholders					
	Farmers' groups CBOs	Local leaders	NGO partners (AENA)	CARE-ALP Technical Team	Government agricultural extension service*	Local service providers/ National Met. services
Sensitisation of the farmers						
Forming FFS/CA groups						
Re-designing the FFS curriculum				+consultant		
Provide technical training and advice on various topics (e.g. seasonal forecasts)						
Input supply (e.g. improved seeds and varieties)						Seed companies (Oruvera);
Information provision						
Adoption of CA methods						
Gathering evidence of impacts, documentation and Monitoring and Evaluation						
Dissemination of CA technology						

*National Research Institute – improved seed supplier

association include access to government funds, ability to open a bank account, representation in decision making forums, and better prices when selling their products.

Results and Impact

The improving yields of many food crops is captured in the case study of Johari on the next page, which points out how farmers are improving their lives through practicing conservation agriculture. The Farmer Field Schools enable farmers to learn to carry out experiments and to select the best techniques that are most appropriate for their own situations. This gives them more control in a difficult and changing situation.

One of the more impressive results of promoting FFS work in Angoche has been to raise the self-confidence and leadership capacity of women farmers. In ALP communities, women are gaining confidence through their membership in FFS, and are playing stronger roles in other community activities.

The FFS approach contributes to improving gender relations and to promote women's empowerment, which is evident from the fact that men and women are currently working together and make joint decisions even at the household level.

As a result of training, farmers have also abandoned some unsustainable farming practices such as slash and burn to prepare the land. This has minimized the negative impacts

such as lost assets and deforestation caused by uncontrolled fires. Soil health has improved; water infiltration and retention increases crop resilience, better fertility has raised productivity; disease tolerant cassava enables households to overcome the Cassava Brown Streak Disease problem and improved varieties of cowpeas that produce within 60 days have increased adaptation to climate change as the rainy season shortens.

Lessons for the Future

- Access to information and extension services are crucial for effective adaptation.
- Improved varieties of seeds and planting materials contributed to increase of adoption of conservation agriculture technology. More investment is needed in agricultural research so that more disease and drought resistant crops can be created. Farmers can play a key role in testing new varieties and give feedback to researchers, as experienced in ALP.
- Access to climate information allows farmers to make informed decisions, such as planting date, crop choice (short or long cycle) thus reducing the risk of crop failure.
- In order to adopt a new technology such as using green manures or cover crops for example lablab, mucuna, canavalia and others, farmers need to be convinced of the benefits, that is better yields and less time weeding. On-going training and demonstration of the

technology is imperative. Covering the soil using green manure/cover crops was found to be more appropriate in Mozambique, both in Angoche and Inhambane, than using mulch (dead grass) which is increasingly difficult to find. Green manure or cover-crops are more effective in supplying nitrogen to the plant roots and carrying grass is laborious.

- Involve influential local leaders in the learning process, for example through field days. This increases the adoption rate of new technologies by farmers because local leaders will help disseminate the messages to community members through different community forums.
- To ensure sustainability of the activities, district government representatives particularly public extension workers and the staff involved in planning activities should be included in all the phases of the programme and the appropriate technical staff trained in order to continue supporting farmers when the programme ends.
- Conservation agriculture is often promoted as a way of mitigating the impacts of drought, however the results of three years of implementing this technology show

that it can also minimise the impacts of floods. Farmers have observed that crops on plots using conservation agriculture were not destroyed after flooding, while crops where the conservation agriculture was not practiced were lost.

- Women do the bulk of farm work in Angoche, therefore scaling up adoption of women-friendly agriculture practices, such as labour saving practices must be prioritised. For instance, green manure or cover-crops can reduce the need for weeding to one or two times a season. There is also no need to carry mulch to cover the soil. The labour reducing aspect of conservation agriculture is one of its strongest attractions.
- Improved crop varieties that are higher yielding, nutritious, with good flavour such as dolichos lablab, and which are disease and drought tolerant should also be integrated in the system to foster adoption and spread of the technology, as well as providing food fresh from the field earlier and later in the season than at the moment. “Shoulder harvesting” of nutritious beans and dark green leaves, rich in protein and beta carotene reduces the length and severity of the hungry season at both ends.

CASE: Johari's Story

Nowadays the rains no longer start at the expected time, as before, and therefore it makes our planning very difficult. Pests and crop diseases such as cassava brown streak, also reduce the amount of food we produce. These things are difficult to cope with, but following the CVCA exercise in 2011, I decided to join the Adaptation Learning Programme Farmer Field School (FFS). I started to learn new production techniques and about soil fertility and water management, to improve production and reduce food insecurity in our household despite climate change.



Johari selling her cakes and biscuits at the Gebe market. Credit: Dércio Dauto/ALP-CARE Mozambique, 2014

I have been a member of the farmer field school since 2012. At first it was not easy for my husband to allow me to join the group, which involved both men and women. In our culture, men are not expected to work together with women, unless they are members of the same family. However, by seeing the benefits gained by other FFS participants which included learning about new farming practices like conservation agriculture, he changed his mind and supported my decision to be a member of the FFS. Through the adoption of conservation agriculture techniques I learned in the FFS, our production has increased and I have surplus to sell and support my husband with household needs, like buying stationery and school uniforms for our children.

In the 2013/2014 farming season we produced 900kg of cassava, 400kg of peanuts and 550kg of pigeon peas, compared to the previous three year average of 500kg of cassava, 220kg of peanut and 290kg of pigeon peas so we almost doubled our production.



Ghana: Dry Season Farming – what a difference moving water (with pumps) makes

Overview

This strategy is about supporting farmers with water pumps to improve and expand dry season farming activities as an input to replace the manual method of irrigating crops during the dry season. Dry season farming refers to irrigated crop production using local water points, usually small dams, where no rainfall is expected. Many farmers in northern Ghana engage in dry season farming by fetching water manually to irrigate their crops or vegetables along river banks, ponds and streams which is physically exhausting and time consuming.

Water pumps are used to draw water from water sources or bodies to irrigate vegetables crops such as onions, tomatoes and pepper during dry seasons. The strategy was initiated in four communities in Ghana's North Eastern Region following a Climate Vulnerability Capacity Assessment (CVCA) which was conducted in the eight Adaptation Learning Programme (ALP) pilot communities. The communities documented their hazards and coping strategies and identified potential adaptation strategies which were validated by local farmers in a community-wide meeting. The identified strategies were subjected to expert scrutiny for their feasibility in terms technical, financial, environmental as well as gender impacts resulting in concrete adaptation strategies for implementation. Irrigated dry season farming was selected as an adaptation strategy with high potential for success, and farmers requested support to acquire water pumping

machines. ALP procured 12 pilot water pump machines via the Ministry of Food and Agriculture (MoFA) in 2012.

Strategic Aims

The strategy seeks to improve household food security and income. The pumps allow larger numbers of farmers to irrigate expanded areas, and provide off-season employment and wage-labour where previously such earnings were insignificant. Farmers get dependable yields with greater crop diversity thus increasing household resilience and adaptive capacity. The strategy addresses several prioritized community objectives:

- Increase unit area per farmer of cultivation, crop production and food crop diversity;
- Eliminate the strenuous work-load associated with manual irrigation;
- Improve household incomes for farmers;
- Improve skills in efficient water management.

Location

The Dry Season Farming strategy has been implemented in Tariganga, Akara, Kugri, and Farfar communities in Garu Tempane District of Ghana's North Eastern Region. Situated in the Sudan Savannah agro-ecological zone, the region is characterised by dispersed deciduous trees and grasses. There are two main seasons: a long dry



period (October to April) and the rainy season (May to September). Rainfall patterns are increasingly erratic causing poor and declining agricultural productivity. Drought and floods are the major climate hazards experienced in the region. Other natural hazards include pests, especially locusts, and disease outbreaks.

Background

The primary livelihood activities include rain-fed crop production (millet, maize, sorghum, rice, soya, cowpea, onion, pepper) and livestock rearing (cattle, goats, sheep, pigs, guinea fowls, ducks, fowls). Dry season farming of onions, pepper, tomatoes and local leafy vegetables is practiced by farmers who can access water sources. Non-agricultural livelihood activities include masonry, carpentry, tailoring, hair dressing, weaving, shea-butter processing, soap making, petty trading and hunting. Formal sector employment, especially teaching and nursing are other common livelihoods.

Strategy Description

STRATEGY SELECTION

The water pump irrigated dry season farming strategy was selected by local community representatives (men, women and youth) as the most viable option for improving household food security and income as well as providing off-season employment in a changing climate. This strategy was prioritised during the initial Climate Vulnerability and Adaptive Capacity Analysis (CVCA) that documented the local hazards and the coping strategies and identified potential adaptation options. The potential strategies were subjected to a feasibility analysis (technical, financial,

environmental) by experts as well as gender analysis and the strategies which were found to be appropriate formed the basis of the Community Adaptation Action Plans (CAAPs).

GROUP SELECTION

Trained community monitors managed the selection process. Criteria for selecting the beneficiary groups included their viability and activeness, gender composition and proximity to reliable water source. The selection criteria helped to limit the number of community groups selected to under two dozen.

The selected groups were issued with water pumps in a formal presentation at a community 'durbar' (traditional gathering). Community Monitors, chiefs, elders, and representatives from community groups, District Assembly, Agriculture Department (MoFA), CARE local partner PAS-G, and CARE staff were all present in the formal presentation of the water pumps as ALP's contribution to the beneficiary groups for the implementation of their Community Adaptation Action Plans.

COMMUNITY TRAINING

Following issuance of the water pump machines, ALP in collaboration with the Regional MoFA department in Bolgatanga organised training and installation of the water pumps at the community level. Supervision and monitoring of the activities was conducted jointly by PAS-G and Department of Agriculture in Garu.

STRATEGY ADOPTION

As of November 2014, about 272 individual farmers (69 men and 203 women) were using the water pump irrigated dry season farming strategy. Most of those adopting the strategy are among the most vulnerable groups in the community including people with disabilities. Overall, the strategy improves household food security and income as well as providing off-season employment, a factor that keeps more family members closer to home.

Support Required

An essential aspect of the sustainability of this strategy, is training group members to maintain the pumps properly – since they are the single most expensive component (costing 14,400 Ghc, or US\$4,800). This training was provided by MoFA for a cost of Ghc 2000/\$500. Other key inputs requiring outside finance were initial sensitisation meetings (Ghc 3,500/\$885), and transporting the pumps and accessories (Ghc 2,000/\$500) to the field locations.

Stakeholders Roles

Table 5. Stakeholder roles in the Dry Season Farming Strategy

Role / Activity	Stakeholders			
	Farmers CSOs	NGO Partner (PAS-G)	CARE-ALP	Ministry of Food & Agric.
Acquire and issue water pump machines to farmer groups				
Provide land, mobilize community, and attend meetings				
Monitor & evaluate, coordinate, and supervise				
Facilitate links between farmers groups and service providers (BESSFA, NRGP and SADA)*				
Community and group mobilization				
Provide technical and professional support to farmers (best agronomic practices, research, provision of seeds & other logistics) policy				
Install and give training to manage water pump machines (maintenance, proper/safe operation of the pumps				

*These include Bawku East Small-Scale Farmers Association (BESSFA), Northern Rural Growth Programme (NRGP) and Savannah Accelerated Development Authority (SADA).

Sustainable Practices

- The groups are selected using participatory criteria such as their viability and activeness, gender composition and close proximity to a water source (small dam or natural pond).
- A formal presentation of the water pump machines is made to the beneficiary groups in a community durbar to foster greater ownership and ensure awareness among all parties.
- Collaborative effort among the various actors builds sustainability of the strategy, Community monitors, chiefs and elders, community groups, Margazia¹, Assembly persons and staff of MoFA, PAS-G and CARE were all present in the formal delivery of the pumps.

- Linkages for dry season farmers with relevant service providers like the rural banks, and Rural Enterprise Programme to add value to their produce through agro-processing.
- The involvement of all the actors in implementing the strategy promotes cross-learning.

Results and Impact

Dry season farming strengthens the families' food security and livelihood resilience against climate variability. Community members are now using the water pumps to irrigate larger areas, and no longer hauling water manually which is exhausting and time consuming.

CASE: Anisum's Story

Anisum Akparibil from Akara tells how she used to cultivate half an acre of land and produced 6-7 bags of pepper and 15 bags of onion during the dry season with some help from family and friends. But by using the water pump she is now able to cultivate one acre of land and produce 15 bags of peppers and 20 bags of onions without any need for additional hired labour. Since the price of a bag of onions in these parts of Ghana is between 60-100 GHS / US\$ 22-36 this represents a significant increase in revenue for the small-scale farmers.



Anisum Akparibil from Akara who is involved in dry season farming. Credit: Nikolaj Moller/CARE, 2014.

¹ Mangazia are recognized women leaders in each village

Multiplying Impact

The dry season farming strategy interacts directly with two other strategies - Village Savings and Loans Associations (several of the pumps were provided to existing VSLA groups), and Conservation Agriculture - more commonly known as 'block farming' in Ghana, to multiply the impact achieved.

For example, money not spent at the market through access to dry season garden produce means more to set aside at weekly VSLA meetings. Share-outs or loans from VSLA's get re-invested in farm inputs (seed, tools, processing/value addition etc) and other small businesses related to farming. Conservation Agriculture principles can also apply to irrigated farming: till soil as little as possible, cover the soil, intercrop with nitrogen-fixing beans, cowpeas or green grams. This results in households having more fresh food during the hungry period ahead of the rainy season, more cash from selling the surplus produce and less vulnerability generally. In addition, irrigated plots offer potential for off-season work and income, which means that young men stay around and don't migrate to the big cities to find work, improving social cohesion.

Lessons for the Future

- The capacity building provided to the groups enabled them to operate the water pump machines with minimal problems contributing to the sustainability of the approach.
- Participatory planning, implementation and monitoring enhanced the process and sustainability, increasing ownership and impact of the approach.
- The implementation of the strategy did not include basic farm inputs such as fertilizer, improved seeds and implements with which productivity gains could have been even higher.
- Farmers were linked to other actors such as BESSFA, NRGP and MoFA enabling them to access on-going support and resources for sustaining the strategy.
- Commitment and positive attitude among community members and leaders was a direct result of the slow, but motivating participatory CBA process which resulted in the production of Community Adaptation Action Plans (CAAPs) where strategies like dry season farming were identified as appropriate responses to the challenges faced by the community.

Community Monitors in Ghana

Community monitors have proven successful agents of change in Northern Ghana where they provide a range of services including community-based extension and community mobilisation. Monitors, also called facilitators, animators or motivators, are trusted individuals who gain and share new skills to motivate community action and represent the community in development related forums.

Monitors are often passionate about issues affecting the welfare of their constituents and work in a voluntary capacity, supported by their community. They are selected by community members through a transparent and participatory process. Through ALP Ghana, eight communities selected a total of 24 men and 24 women monitors.

Key roles of monitors

- Facilitate CBA planning - community mobilisation and organisation and contact with key informants to verify information given during CVCAs.
- Record rainfall data using community rain gauges relaying this to the meteorological services department
- Implement Community Adaptation Action Plans, for example facilitate and support development of VSLAs.
- Additionally they host community demonstration farms as key students of Farmer Fields Schools (FFS) and help in disseminating new agronomic practices learnt there.

Monitors listen to community views about development issues and explain new ideas and project activities. They facilitate community reflection meetings; convey community views and experiences to project teams and other key stakeholders and relay feedback to their community. Monitors organise citizen and government meetings that provide platforms for community members to demand service and information. These include access to timely weather or early warning information for agricultural planning, or access to improved seed at affordable prices.

Male monitors in particular are now gender champions in their communities and ensure that the differing needs and views of women are reflected in plans and requests to local government departments and service providers. They maintain written records but also find ways to work with the knowledge, skills and challenges faced by non-literate community members. Monitors are motivated from exposure and learning outside their communities.

As a body of local expertise embedded within the community, which strengthens their links to local government, projects and external services and information, Community Monitors show potential as a sustainable approach to building long term community adaptive capacity to realize resilient livelihoods in the face of an uncertain and changing climate.



Niger: Warrantage: Debt relief, food security, financial empowerment – rolled into one

Overview

At a time when large numbers of farmers are facing low agricultural production due to recurrent drought and land degradation, the warrantage system is proving to be an effective approach for increasing the resilience of vulnerable farming households. Warrantage allows producer groups to put part of their harvest in store in return for a loan which is paid back after the grain is sold when the prices are higher. This allows beneficiaries to carry out additional income generating activities with the funds, enabling them to repay part or all of the loan and remove their stock. They are then free to sell or keep the returned stock for household use such as seeds for replanting or consumption during the lean period. In addition to the essential household needs, it allows them to escape the cycle of debt and continuous repayment of high-interest loans from informal moneylenders.

Definition: Warrantage is a rural credit system that guarantees loans to producers’ organisations or their members, by setting aside non-perishable agricultural produce such as millet, sorghum, rice, maize, sesame or peanuts, which may increase in value.

Source : FAO, Fiche de Bonne Pratique, 2012

Strategic Aims

Warrantage is an adaptation strategy adopted by both male and female farmers and agro-pastoralists, to enable households to secure their surplus agricultural produce against market price fluctuations.

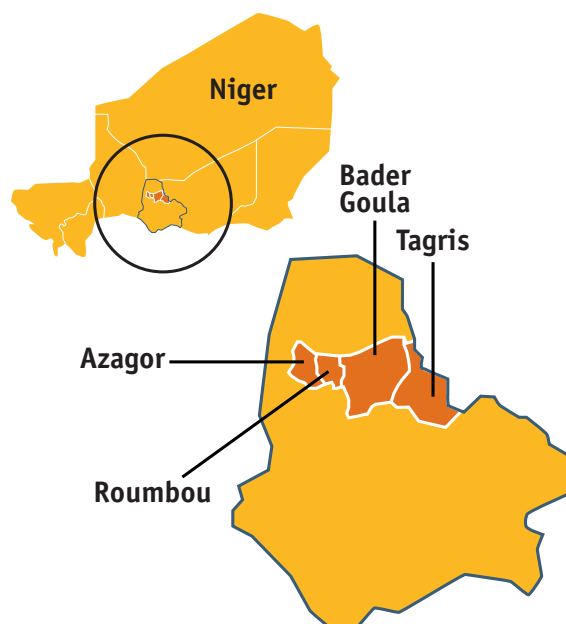
It enables vulnerable people to:

- Have more money to meet their household needs, particularly when they need it most.

- Have access to grain or seeds during periods of shortage or the planting season.
- Ensure greater self-reliance and economic and social development.

Location

ALP is working in 20 communities in four communes – Azagor, Bader Goula, Roumbou and Soly Tagriss in the department of Dakoro in Niger. The area and the population living there are particularly affected by the impacts of climate change. From the 1980’s to the present, the agro-pastoralist population have been experiencing the impacts of recurrent droughts caused by the shortening of the rainy season (2-3 months of precipitation) and irregular rainfall. Annual rainfall ranges from just 200 to 300 mm on average.



In addition, traditional agricultural practices, namely the use of local varieties of crops that are slow to mature (120 days), are not adapted or well suited to reduced rainfall. The population is experiencing difficulties related to not only food security but also access to financial services, which limits their opportunities to meet the urgent financial needs of their households, let alone make long term livelihoods investments. At harvest, they were previously forced to sell their agricultural produce at low or reduced prices to cover their needs.

It was in this context that warrantage was identified during the Community Adaptation Action Planning process as a suitable strategy to enable communities to overcome the challenges posed by climate change.

Beneficiaries are farmers and agro-pastoralists that meet the following criteria:

- Willingness to be part of and adhere to the principles of a warrantage group.
- Have sufficient agricultural production of good quality cereal crops that allows each grower to store a portion of their surplus.
- Apply for loans to develop income-generating activities such as animal rearing and small businesses, or to finance agricultural or household needs, whilst still repaying their loan in a timely way.

Creating an Enabling Environment

The warrantage strategy is in line with the national poverty reduction strategy and in particular the actions included in I3N (Initiative 3 N- Nigeriens Nourish Nigeriens), which has the aim “to cover the food needs of vulnerable households.”

Eventually, it is hoped that as warrantage becomes more popular and shows real potential for increasing community adaptation and resilience to climate shocks, the Niger government will take steps to provide institutional support for implementing the strategy. There is increasing demand from communities beyond the ALP-supported areas for using the warrantage system, some of which are setting up systems independently with credit provided by the local bank in Dakoro.

Support Required

Implementation of warrantage strategy costs about \$2,000 for each beneficiary community. ALP made a total expenditure of \$34,000 for the 17 warrantage groups of the

strategy. Given an average groups size of 22 growers (mainly women), this reaches a minimum of 375 households.

Strategy Description

Implementation involves the following steps:

Step 1. Build awareness of the beneficiary community on the principles of warrantage.

Step 2. Elect the Management Committee among beneficiaries during a general meeting of all members.

Step 3. Prepare legal documents (by-laws, internal regulations, accreditation) specific to the warrantage group.

Step 4. Discuss and agree on the prices of produce included in the warrantage system in a community assembly, normally setting it a bit lower the market price, the handover period is normally around 3 to 6 months.

Step 5. Identify producers, register members of the warrantage group and record the quantities of produce they want to pledge for the warrantage scheme. The amounts can be from as little as 5kg to 50kg or as much as 800kg – depending on each household and the harvest.

Step 6. Identify or construct a suitable grain storage facility within the community, built with local materials and labour - usually clay bricks.

Step 7. Quality check of produce (non-perishable products) and their storage in the warrantage store, with indications of the names of beneficiaries and the quantities of each bag.

Step 8. Co-management of the inventory using ‘double locks’, the first key being held by the micro-finance institution and the second by the management committee Treasurer or Chairlady.

Step 9. Signing of the warrantage agreement and payment to the group Treasurer who then distributes the loan funds to the members based on the quantities of stock stored by each member.

Step 10. Repayment of loans by the members, or sale of stored produce during the lean season when prices are high, to recover and reimburse the loan.

Sustainable Practices

A strong Management Committee: When setting up the management committee of the warrantage, members of the Management Committee are always elected from among the beneficiaries in a general assembly of all group members. They are selected based on several capabilities:

Stakeholder Roles

Table 6. Stakeholder roles in the Warrantage strategy

Role / Activity	Stakeholders				
	Producer groups/ Farmers	Village Head	CARE-ALP	Local authorities/ Government services	Private sector [MFIs]*
Identify the beneficiaries (ensure the appropriate storage facility, inventory management, credit payment, after restitution of the inventory to beneficiaries).					
Awareness building for communities. Establish and train management committees of warrantage groups					
Provide training and support: legal papers, identification cards / registration of beneficiaries, advocacy with microfinance institutions.					
Approval of legal documents for warrantage groups					
Procurement of financial services; secure funds through accounts and grant warrantage loans					
Supervise distribution of funds and/or recovery					

*Micro-finance institutions

- Their availability throughout the period of the warrantage loan to serve the group;
- They must have the ability to ensure quality control of the stock (i.e. reject all poor-quality grain);
- An ability to supervise the loan repayment process;
- They must ensure delivery of the inventory to their owners, and of course, the proper management of funds.

Secure facilities for crop storage: After harvest, once the audit of the stock is conducted and the allocation of the loans to beneficiaries agreed, the grain store is secured with two locks. One key is held by the Management Committee Chair Person of the warrantage group, the other by the donor of the funds.

Fair loan distribution to beneficiaries: With a maximum amount of credit available (\$2000 in ALP's case) loans should be administered fairly and agreed in advance by community members so that it is not possible for wealthy households to monopolize the system.

Securing the warrantage funds that are paid back by loan recipients in banking institutions.

Regular monitoring meetings between committee members and community input in the construction of storage facility, demonstrates the members' commitment to the activity.

Results and Impact

Beneficiary households can use these surplus stocks stored through the warrantage system as seeds for planting their fields the following season as well as food for household members during part of the growing season. This kind of situation is very common especially in households that use the warrantage loan to finance micro-enterprises. The income from their small business helps them repay the loan before the due date. In these cases, the beneficiaries are not required to sell their stocks to repay a loan, but they have the option to use it for agricultural purposes.

For example, the warrantage group from Dan Maza Idi, which benefited from the first ALP warrantage loan in 2012, generated (after repayment of loans by beneficiaries) about 80,000 Fcfa (\$200) that year. This amount comes from the contributions of the beneficiary households. This contribution varies from 25 to 50 Fcfa made on each unit (1'tia' = 2.5 kg) of grain put in the warrantage storage facility. The number of beneficiaries increased from 48 to 54 at harvest time in 2013. This contribution allows the farmer's group to cover its operating costs (packaging, store maintenance, cost related to opening saving accounts with a micro-finance institution, and transportation of group representatives during deposits and withdrawals of funds) without compromising the capital of the warrantage provided by the project.

EMERGENCE OF WOMEN LEADERS

Women's involvement in management committees significantly contributed to increasing the impact of this strategy. In fact, an evaluation of the warrantage system highlighted several achievements by groups managed by women, in particular: the proper use of loans, their own initiatives to fund the construction of the storage facility and inter-community exchange visits for sharing of experiences.

Lessons for the Future

1. The users of the warrantage strategy now have stocks of food that last up to just before the onset of the rainy season. This improves the field preparation for the growing season, by reducing both hunger and the expense of daily meal preparation and increases household resilience.
2. Low or non-literacy of communities requires ongoing support to management committees, in particular during the allocation and repayment of warrantage loans.
3. Linking up warrantage groups with local micro-finance providers secures their loans and increases their ability to access other funds.
4. Strengthening committees' capacity for better management of funds ensures good governance within warrantage groups and ultimately the sustainability of this strategy.
5. The strategy is easily appropriated by the beneficiaries and creates the conditions for sustainable use of the resource base by community producers.
6. A bad agricultural production year due to drought or locust attack for example, can reduce the capacity or

the number of producers contributing to the stock for warrantage; hence the importance of combining warrantage with promotion of drought-tolerant crop varieties and pest management practices.

7. The introduction of subsidized grain by the government (10,000 Fcfa per 100kg bag) in local markets during times of food insecurity drives down prices of commodities. This is bad news for warrantage groups wishing to sell their products after delivery of the inventory and what would have normally doubled or tripled in price ends up being worth a lot less.
8. Group dynamics are important, groups with women as President or Treasurer better manage the collection and repayment of funds than groups with traditional leaders.



A typical warrantage storage facility built by women in Dan Maza Idi community credit: Agnes Otzelberger/ALP-CARE, 2015.

CASE: Rakia's Story

In 2012 I placed a millet stock worth 20,000Fcfa (US \$60) in warrantage. I used the money to buy a donkey that allowed me to reduce the hard work of fetching water for domestic use, despite the depth of the well that goes as deep as 60 meters. After the harvest of 2013, I repeated the procedure to buy a second donkey. This allowed me to make a profit through transporting goods to the local Goula markets, Makérawa Lasseïni and Gomozo. This opportunity was my entry point to begin a small enterprise selling items such as sugar, salt and chocolate. The profits allow me to repay the warrantage loan and also increase my contributions to the VSLA fund of our women's group.



Rakia Abdou - warrantage loan Beneficiary from Dan Maza Idi community Credit: Harouna Hama/ALP-CARE Niger

I have been dreaming of this for over ten years, but now it's come true. If one of the donkeys is ill or is being used to carry water or for transportation, I have a second one to transport the goods to markets. In the future, as they give birth and multiply over time, I would become a rich wife and the members of my household and children will be more fulfilled.



Kenya: Small Business Skills yield Climate Change Resilience in Garissa

Overview

Small-scale business is being practiced as an alternative livelihood strategy by eight groups in Garissa County in order to adapt to the impacts of climate change on traditional pastoral livelihoods. The strategy was selected through a participatory process involving extensive discussions between communities, ALP and other relevant stakeholders in government and CSOs, where the impacts of climate change and appropriate responses were identified.

Weak business development skills and limited capacity to generate income from less climate sensitive livelihoods were a major capacity gap identified by the communities during these discussions. ALP adopted the Business Skills Development (BDS) approach from CARE's other livelihood programmes and developed it into an adaptation strategy through integrating the use of climate information in decision making.

The new enterprises created allow groups to spread financial risks and increase their assets through group savings. With increased income, and new knowledge and equipment such as refrigerators, communities are able to increase the value addition of products like perishable fruits and fresh milk, generating a greater income when sold. The decision on what to invest in is informed by climate and other information, to enable the groups to better manage uncertainty and risk. Having more income also means having the resources to better prepare for seasons, for example investing in water supply for crops and animals, reinforcing homes with better building materials and buying medicine and vaccinations for anticipated seasonal illnesses.

Strategic Aims

Climate change is impacting on pastoralism, which is the dominant livelihood of communities in the arid and semi arid areas of northern Kenya. In response, many households are transitioning into an agro-pastoral way of life, combining traditional livestock rearing with crop production and other economic activities. This strategy aims to increase the capacity of vulnerable households to respond to climate change through diversification of livelihood strategies and spreading of risks.

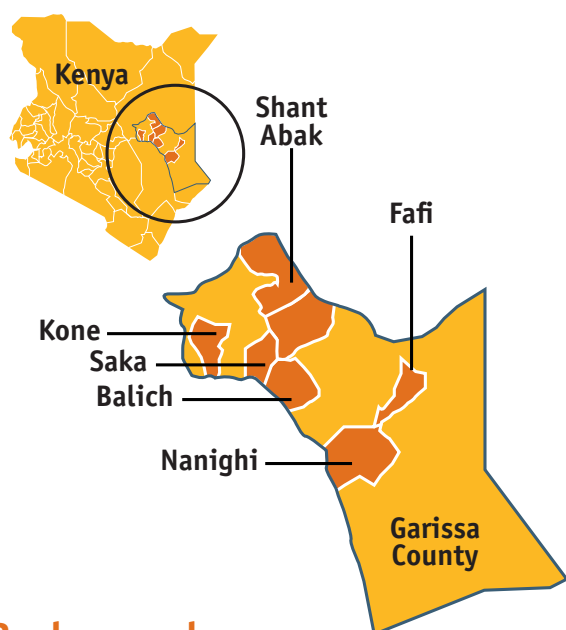
- Training in BDS helps communities to increase their asset base so that they are able to take more risks, given that they have more security through increased income.
- It also enables communities to better prepare for seasons, given the increased incomes and be more flexible in their decision making about what economic activities to invest in using climate forecasts and other information.

Location

In Kenya, ALP is working in six communities in Garissa County, in the arid and semi arid drylands of the north-eastern part of the country. Saka, Balich, Kone and Nanighi are located along the Tana River and are characterized as agro-pastoral communities, while Shant'abaq, and Fafi Plains are pastoral communities located further from the river.

More than 70% of the total annual rainfall occurs during the long rains in March to May, with another 20% falling in the short rains in October to December. Records show that moderate droughts have typically occurred every three to four years, with a major drought occurring every ten years on average. Since 2000, prolonged periods of

drought have become more common. Given the existing climate variability across Kenya and the localized nature of rainfall patterns in particular, predicting how national-level projections will manifest in different parts of the country is critical for decision-making, yet quite difficult to achieve.



Background

The participating communities in Garissa pursue pastoral and agro-pastoral living. Their dominant livelihood strategies are livestock rearing and crop production, which are prone to climate change related shocks – in particular flooding along the Tana River basin (Kenya’s largest river) and drought that causes loss of crops and livestock.

Other sources of income include unskilled labour, trade and commerce, salaried jobs, remittances and charcoal production. Communities rely on communally owned land for livestock grazing, farming and other livelihood resources including firewood, non-timber forest products, charcoal, honey and medicinal products.

Since ALP began working in Kenya, 147 men and 122 women have been trained in business development skills in eight groups in Garissa: three in Nanighi, two in Balich and three in Kone. The communities receive training on business development skills to enhance their capacity to manage their enterprises and increase their revenue. Groups trade in perishable and non-perishable goods ranging from livestock and livestock products, crop produce, crafts, clothes and other household items. The training also helps improve the communities’ understanding of and access to markets. The training is not held in isolation, but includes other complementary sessions including topics like group leadership and dynamics, value chains, and financial management.

Creating an Enabling Environment

One objective of group training is to raise the capacity of the group members to better advocate for their needs and basic services. Resulting interaction with the county assembly-level policymakers has made them more accessible; ‘we know who they are, and which services they should be providing’ (women’s group member). Training has increased women’s confidence because they can now articulate issues and relate these to county government plans. In the past, they had little or no information of this, as many of them are illiterate, and they also had minimal interaction with government partners.

The government has also worked with the women to build their confidence in engaging directly with markets, so that they avoid middlemen and thus make more profit. With joint marketing, the women are able to access larger markets and negotiate better prices for their animals.

BDS groups have been connected to sources of government funding and supported to submit proposals, for example Abaqdera group submitted a proposal to the Women’s Enterprise Fund in the Department of Social Services for a loan to expand their milk selling business and Balich group was supported to develop a proposal for a Njaamarufuku grant from the Ministry of Agriculture to trade in goats and charcoal. BDS groups have also been linked to two national banks - Equity Bank, and Kenya Commercial Bank where they open and operate accounts to save their money, giving them more security and access to bigger loans.

There have also been ongoing discussions with potential support institutions, such as the Kenya Co-operative Bank on developing a special loan facility for pastoralist Somali women who are members of Garissa Savings and Loan groups, which complies with Sharia law that prohibits access to interest.

Multiplying Impact

BDS is directly linked to the Group Savings and Loans (GS and L) strategy, also known as VSLA in other CARE programmes (see VSLA strategy from Ghana on page 11). Most of the BDS groups practice GS and L, which serves as a platform for mobilising resources and circulate or loan funds to group members as a source of business start-up capital. The proceeds from the successful businesses also build the groups’ savings fund from which new loans can be taken.

Stakeholder Roles

Table 7. Stakeholder Roles in Business Skills Development strategy

Role / Activity	Stakeholders			
	Farmers' groups	CARE-ALP	Government Ministry of Agriculture	Banks
Share local experiences and knowledge				
Mobilise community groups and do training				
Provide information on climate, markets, government funding opportunities, as well as skills training on proposal development.				
Facilitate stakeholder linkages and collaboration				
Provide financial and technical support				
Operate and manage businesses				
Monitor and report on progress				
Provide more accessible banking facilities				

Support Required

The strategy is relatively inexpensive; the only direct cost is community training and monitoring. The business development training package is designed to take three days per group followed by monitoring activities and follow up training where necessary. The cost for training one group runs to approximately US\$2000 (lunches, accommodation, transport) and can be reduced particularly when local partners have experience in facilitating community training.

After the 3-day training, ALP maintains regular contact with the group to facilitate linkages with other service providers as well as capacity building of the group in other areas, such as additional complimentary training on group leadership and dynamics, and value chains.

Sustainable Practices

- Use participatory and inclusive processes in the development, planning and implementation of the strategy.
- Include climate forecast information (in this case from Kenya Meteorological Services) – in seasonal planning and decision making to enable communities to be more flexible and forward thinking in their businesses.
- Do not reinvent the wheel – use and build on existing resources (e.g. training manuals) and processes.
- Include other forms of training, such as group leadership and dynamics; support for this can be either directly from project implementer, or indirectly from government and other projects that have the expertise to ensure cohesion, a more holistic approach and sustainability.

- Keep group size manageable – about 20-30 people per group, to ensure that the group is big enough to create useful pool of capital yet small enough to keep meetings and other group activities relatively focused.

Results and Impact

The community group as an institution provides for equitable access and entitlement to key resources amongst the members, particularly financial resources to facilitate adaptation to climate change. Training on group dynamics ensures group cohesion and equality amongst all group members. Women groups form the majority of the BDS groups in Garissa. This greatly empowers women to have access and control over resources for adaptation. The increased interaction and linkages created with various institutions also mean increased access to services and resources available in the institutions.

Lessons for the Future

- It is relatively cheap to implement compared to other strategies such as irrigation, the only expenditure involved is on community training and creating linkages.
- Business skills are essential in all livelihood strategies be it agricultural or non-agricultural. Therefore it is a strategy that can be used to support and compliment other pastoral and agro-pastoral livelihood strategies such as for example fodder production for livestock.
- It is necessary to have a pool of trained local people on BDS such as Community Monitors, to effectively and sustainably implement the strategy.



Balich women's group being trained in group savings and loans (GL&S), credit: Stanley Mutuma/ALP-CARE, 2014.

CASE: NINIGHI HIDDIG AND BALICH WOMEN'S GROUP STORY

Ninighi Hiddig women's group were supported by UNDP with a solar powered fridge (costing 124,000 Ksh / US\$1,265), after ALP trained them on BDS which included a package on basic skills on proposal writing which they put into use to write their successful proposal to UNDP. The group has established small enterprises selling fresh fruits, juices and milk. They use the fridge to preserve fresh juice and milk and store it for longer to expand the number of customers they are able to sell to.

'We started as a merry go round [revolving small loan system] women's group but after the trainings on BDS and GS and L, we started small-scale businesses managed by the group. From our fruits juice and milk business we are now making a profit of up to 25,000 Ksh per month (US \$255), which we share amongst ourselves to educate and feed our children. We no longer rely on our husbands to provide for the family single handedly' (Amina Mohamed, Ninighi Hiddig women's group).

The Balich women's group has increased their savings from 9,000 to 37,000 Kshs (US \$92 - \$377) within a period of 3 months, through establishing goat fattening business after the training. Using seasonal climate advisories they bought goats when prices were low (during dry season when pasture is depleted) and sold them later when prices were good after feeding them with crop residues.

The BDS training has also promoted an enhanced level of innovation as communities diversify to other livelihood strategies, thinking of new and appropriate ways utilise their increased earnings. Balich women's group are making additional income through mat making and other handicrafts, which are less sensitive to climate change and Gargar women's group in Nanighi have ventured into fruit juice processing for local sale, an innovative way of providing a market to about a dozen fruit farmers in Nanighi.



Balich women's group with their handicrafts, which they have received training on how to market through the Business Development Skills (BDS) course, credit: Stanley Mutuma/ALP-CARE, 2014.



Niger: Restocking: A new start for pastoralist women

Overview

The strategy of small livestock rearing or ‘Habbanayé’ as it is known in Niger consists in identifying the most vulnerable women in each community, and dividing them into two groups and providing them with small ruminants. The small ruminants can be goats, sheep or cattle, according to the beneficiary’s preference, and would also be a species most adapted to the context of the area. ALP has been promoting this strategy to increase the resilience of 42 women’s groups living in the dry and vulnerable area of Dakoro in southern central Niger.

Strategic Aims

The objective of this strategy is to respond to the vulnerability of women to the impacts of climate change by dealing with the recurring problem of loss of livestock related to the lack of rainfall due to climate variability and change experienced in this part of Niger. Lack of rainfall and prolonged periods of drought cause the scarcity of pastures and increases in diseases, which can lead to the loss of the herd.

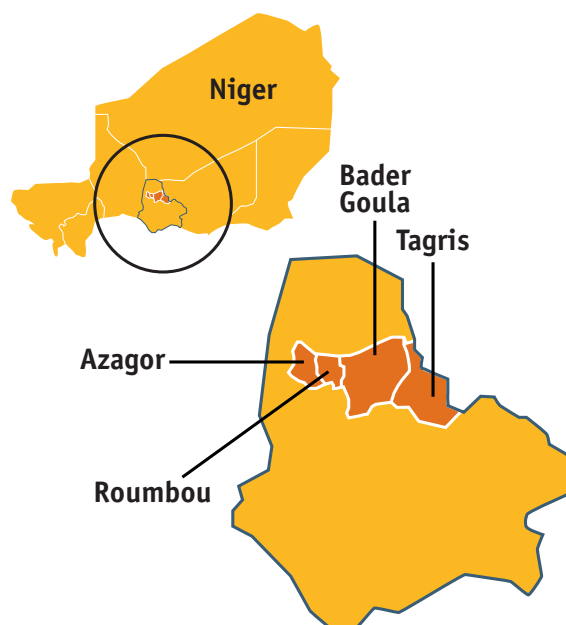
The strategy not only helps provide an additional food source to families, but also provides additional income for the beneficiary women through the sale of animals and milk, as well as by-products like yogurt, butter and cheese.

Location

ALP is working in 20 communities in four communes – Azagor, Bader Goula, Roumbou and Soly Tagriss in the department of Dakoro in Niger. The area and the population living there are particularly affected by

the impacts of climate change. From the 1980’s to the present, the agro-pastoralist population have been experiencing the impacts of recurrent droughts caused by the shortening of the rainy season (2-3 months of precipitation) and irregular rainfall. Annual rainfall ranges from just 200 to 300 mm on average.

In addition, traditional agricultural practices, namely the use of local varieties of crops that are slow to mature (120 days), are not adapted or well suited to reduced rainfall. The population is experiencing difficulties related to not only food security but also access to financial services, which limits their opportunities to meet the urgent financial needs of their households, let alone make long term livelihoods investments. At harvest, they were previously forced to sell their agricultural produce at low or reduced prices to cover their needs.



Background

The huge loss of livestock experienced in agro-pastoral areas in Niger due to the impacts of climate variability and change has left people completely destitute. Small livestock rearing is a feasible livelihood strategy in these areas because of the drought tolerance of certain breeds and the potential for income diversification. The strategy aims to increase the potential livelihood productivity of women, by providing them with animals for breeding, resulting in an average of eight animals per person. Therefore it is promoted by ALP as part of a community based adaptation approach aimed at increasing the resilience of vulnerable households.

The strategy was selected through a participatory process involving extensive discussions between communities (especially women), ALP and other relevant stakeholders in government and CSO's on the impacts of climate change and appropriate responses, which were developed into a Community Adaptation Action Plan (CAAP). Women are the primary beneficiaries of this strategy, since the aim is to particularly reduce their vulnerability as they contribute the most to the development of small scale farming within the household.

The strategy is sustainable because it allows female beneficiaries to establish a herd from the starting capital of just two animals. One woman receives two goats and once they have given birth she passes on the adult females to the next woman and so on, so that the strategy becomes self-sustaining. It also strengthens the capacities of beneficiary groups to make decisions through regular meetings focusing on the management of the initiative. Every woman who receives animals gives 1000 or 2000 FCFA to a special community fund dedicated to the management of the small ruminants initiative. If 20 women participate paying 2000 each, the fund has 40000 FCFA. When an animal dies or disappears, the fund is used to replace the animals. The women keep contributing 40 or 50 FCFA per month to keep the fund going.

Creating an Enabling Environment

This strategy is consistent with the national poverty reduction strategy and in particular the I3N strategy (Initiative 3 N – Nigerians Nourish Nigerians) of the Government of Niger, which has the aim “to cover the food needs of vulnerable households” and is well established by municipalities at the local level with communities.

CASE: MARIAM CHAIBOU'S STORIES

Mariam Chaibou of Maigochi received two goats through the small ruminants initiative, she now owns four. As part of the initiative she has also been trained as a paravet. She is in charge of a kit of medical supplies for the goats and sheep in her village which is an important task considering the livelihoods of Maigochi's population depend in large parts on their livestock.



Mariam Chaibou of Maigochi village in Niger with two of the four goats she received through ALP's restocking scheme. Credit: Agnes Otzelberger/ALP-CARE, 2015.

Stakeholder Roles

Table 8. Stakeholder Roles in Restocking strategy

Role / Activity	Stakeholders			
	Female Beneficiaries	CARE-ALP	NGO Partner (AREN)	Local Service Providers (e.g. Veterinary services)
Responsible for the care, breeding and rotation of livestock				
Oversee delivery of activities as well as monitoring, evaluation and sustainability				
Provide expertise guidance on the delivery of the activity and the methodology of the monitoring and evaluation				
Monitor the health of the livestock and provide vaccines and medication				

Multiplying Impact

The small livestock strategy complements the Village Savings and Loans Association (VSLA) strategy (see page 11) that consists of saving groups that facilitate access to small loans. The VSLA system originated from the MMD system 'Mata Masu Dubara', meaning "ingenious women" that was initiated and supported by CARE Niger since the 1990s. Together these two strategies contribute to the economic empowerment of women involved in the project but they also have a ripple effect that goes beyond the implementation communities involved.

In addition this strategy supports the warrantage strategy (see page 23) by providing an extra source of income that allows women to obtain seeds - mostly cow pea and millet, and put a portion of their harvest in storage in return for a loan which is paid back after the grain is sold when prices are higher.

Support Required

The implementation of this strategy costs around \$1700 per community which includes the cost of the livestock and paravet training and equipment. ALP spent a total of US\$34,000 on carrying out this activity in 20 beneficiary communities between 2010 and 2014.

Sustainable Practices

The most vulnerable women are the first to benefit from the scheme and receive animals that they raise until they gave birth. Six months after the birth once the young are weaned, they pass on the adult animals to the next most vulnerable group of women who are waiting their turn to be involved in breeding.

This strategy is innovative because it has introduced a system of animal rotation between female beneficiaries which doesn't exist in the traditional livestock breeding system (habbanayé) and the fact that the rotation is limited between two very vulnerable women who are identified by the women themselves.

ALP provided additional support for the effective implementation of this strategy by strengthening the capacity of female beneficiaries for supplementary feeding of animals through the production of salt licks that provide nutritional support. In addition, the project has supported paravet training and equipment to ensure the health of livestock, neither of these things existed before ALP initiated this strategy in the communities.

Results and Impact

One of the important outcomes of this strategy is the constant availability of milk, which is a highly valued complimentary food by all communities, improving the nutritional status of people's diets.

This has created a market for milk, with daily demand at household level which the women respond to. Funds from the sale of milk in most cases are used by women for making weekly payments to the VSLA groups which further enhances their resilience by enabling them to save funds to invest in other income generating activities or to cover household needs.

The other significant impact is the positive change in social position of the female beneficiaries within the community, through involvement in decision making and above all recognition of their contribution to the income and resilience of the household.

Lessons for the Future

- Illiteracy in women has reduced the success of managing the project due to a lack of capacity in accounting and book keeping, which is needed for both the guarantee fund for replacing dead, lost or stolen animals, and the money generated from the sale of veterinary products which is used to replenish the stock of products.
- The restricted mobility of women reduces their success in expanding the benefits of this strategy, for example their ability to travel to sell livestock related products in the market. This is why it is particularly important that veterinary services are available within the community where the women live so they don't have to travel far to get them.
- The involvement of beneficiaries in the choice of animals at the time of purchasing allows them to quality assure the animals they receive and leads to greater sense of ownership.
- The rotation of animals between beneficiaries encourages good behavior of the beneficiaries involved in the scheme, at the same time as promoting the sustainability of the activity. It also stimulates a sense of competition, or emulation amongst the beneficiary women about the care of the animals when they are assigned to each woman in turn.
- The replacement of a dead or stolen animals through the creation of a fund which the women pay into helps the initiative to be sustainable, even when the original animals no longer exist.

CASE: SAOUDE IDI'S STORIES

Saoude Idi originally received two lambs through the small ruminants strategy that soon gave birth enabling her to sell three goats in order to buy a pregnant cow. This cow has now given birth to a calf, enabling her to restock her herd of animals which she lost due to a previous drought. Saoude Idi was extremely vulnerable before she received the lambs, but now she has her cows, and sheep, and sells milk – providing her with an income and meaning that she is no longer extremely vulnerable.



Saoude Idi and her husband with her cows that she received through ALP's restocking scheme. Credit: Sanoussi Ababele/ALP-CARE Niger, 2015.



Dela Jari - Community Early Warning Volunteer reading the rain gauge in Aman Bader village, Niger. Credit: Agnes Otzelberger, 2015.

The Learning Continues

Compiling ALPs Adaptation Strategies in this coherent compendium has the added benefit of offering some broader insights and common lessons about the opportunities and challenges of achieving resilience to climate change, and of the contribution of adaptation strategies determined through implementing CBA. This closing section reviews these in concise form to help readers with ambitious intentions to better understand the relationship between adaptation strategies and adaptive capacity, using the Local Adaptive Capacity (LAC) framework. This framework, as you will recall, was described in detail in the Compendium Overview on page six.

Link between adaptation strategies and Local Adaptive Capacity framework

APPLY NEW KNOWLEDGE AND INFORMATION

In today's 'information society' the element of bringing in new information – or capturing local knowledge (in various formats) is perhaps one of the most 'enabling' from the perspective of isolated, or marginalised rural communities. However in many contexts illiteracy is a key barrier to adaptive capacity. Community Monitors, who serve as conduits for information to the community (see page 22), are mostly literate and can support dissemination of information to non-literate people in the community. Radio and mobile phones also play an important role in sharing information with the

most vulnerable. ALP staff in many ways also serve as 'information brokers' – especially on the rapidly evolving scene of climate information and knowledge. They facilitate links to new, or underused government services e.g. the Rural Enterprise Project in Ghana, that offers training and capacity building and provides access to credit. By brokering such links, ALP aims to ensure mainstream systems and services are strengthened and responsive to community needs. This in turn can enable CBA to result in sustainability in both adaptive capacity and livelihood resilience.

Example: Community Rain Gauges

ALP supplied rain gauges to communities (20 in the case of Niger – Dakoro district) to allow them to collect their own accurate rainfall data. This information is passed on to the national Meteorological department – and even broadcast over local community radio stations. Now farmers refer to the rainfall data for deciding when to plant their fields. They are less likely, as before, to waste seed (by sowing too early or late), and thus are more likely to get a better harvest.

ALPs work with more than 40 communities demonstrates how access to and use of weather and climate forecasts, combined with traditional or local climate knowledge, can be transformed into valuable planning information.

Example: Community-based Monitors

Communities working with ALP in Ghana selected 48 individuals to be trained as community-based monitors. Although they play many roles – their main role is to disseminate the information and knowledge they gain, often via training, to the community. The Monitors listen to their communities' views about development issues and explain new ideas and project activities. They facilitate community reflection meetings; convey community views in local government forums and to project-partner teams, and relay feedback to their community.

Low Literacy Constraints

Very low-income households tend to be the least literate and have the least education. This is particularly so for the women. It puts them at a disadvantage for attending meetings and in using any form of written project material, such as the PSP advisories.

Low literacy rates among VSLA members in Ghana were a problem, until the introduction of using numbers in the account record books rather than names for members. Numbers – aside from being gender neutral, are easier for illiterate people to recall compared to names.

In Niger, during the community adaptation action planning stage, different symbols were drawn by participants to represent each activity. ALP is using other novel approaches like mobile phones for sharing and receiving climate information, community radio and more traditional audio-visual communication methods as well.

Example: Seeds as credit

Women groups in Dakoro Niger now store their surplus cowpea harvest from an improved variety that ALP requested and the Ministry of Agriculture provided, in purpose-built group-owned granaries. This more secure grain storage coupled with the popular warrantage credit system, allows group members to receive credit for meeting household expenses whilst waiting to sell their crops at a higher price thus avoiding the low prices at harvest time. This initiative was part of a Community Adaptation Action Plan they developed themselves with ALP assistance.

BUILD (OR RE-BUILD) ASSETS

Resilient households, and by extension the larger community, can draw on assets such as natural resources, savings, livestock, remittances, in times of drought or other climate shocks. But extended droughts, such as the devastating ones in mid 1980s and the more recent events in 2005 and 2010-11 in the Sahel and Horn of Africa, exhaust or do permanent damage to such assets. Strategies that consciously build the assets of households and create opportunities to engage in new livelihood options are also more likely to endure beyond project-life, and ultimately spread to other communities.

Adaptation requires more than new knowledge and locally elaborated plans. It is about building the physical infrastructure, such as grain stores, weighing and seed handling equipment, and transport, combined with the skills of managing each season's harvests better than before. It entails 'capitalising' on future market value rather than selling the surplus cheap when the prices are low – and balancing the food (what's for dinner?) versus finance (pay school fees?) trade off to optimise these 'liquid' assets. There is nothing simple here, yet dozens of communities and thousands of households are getting better at such asset management.

Climate change impacts on public and personal assets but communities with already diminished natural



Caption: A woman from Dan Maza Idi community standing in her cow pea harvest grown from seeds distributed by ALP that mature in 45 days. Credit: ALP/CARE Niger 2010.

resources, and heavy dependence on them, are especially vulnerable. So when agricultural assets, such as fast-maturing cassava or cowpeas, and livestock assets are generated or restored relatively quickly, and secured through grain stores and warrantage systems for example, the household heads that receive the benefits will keep putting effort into such a strategy that ‘worked’ – especially one they chose and helped to design.

Assets in the wider context also include community institutions that enable procurement and better, more equitable management of productive assets such as water pumps, grain storage or seed banks (as in warrantage), and community seed-multiplication plots.

LINK WITH INSTITUTIONS AND ENTITLEMENTS

Institution strengthening is a strategic aspect of creating long-term adaptive capacity. All new VSLAs and their apex bodies are in effect new community institutions, with a constitution signed by each member, a formal system for self-governance, and increasingly with bank accounts. Registered Farmer Field Schools are new institutions that build farmers confidence, especially women’s. They encourage experimentation and innovation in a supportive way – and quicken the spread of new, drought and disease resilient crop varieties, as well as having other well-documented benefits.

Well-governed, democratically managed institutions that are able to advocate for and exercise their members’ rights and entitlements are ultimately the most valuable assets a community can own.

In many countries, in particular Ghana and Kenya, a renewed focus on local (County or District) devolution of government services has shifted the opportunity for accessing government services closer to those who need them most. However, marginalised communities may not yet realize or be aware that such services are available – or will be soon. ALP has worked hard over the last four years to bring service providers from various levels into more direct contact with community groups, which are usually organised or formally registered, as part of the CBA planning process. ALP recognizes that CBA planning must function at all levels to ensure plans are well integrated and yield multiple benefits. In the process, groups establish on-going relations with, and a proactive approach to requesting services or inputs, from the officers working within Agriculture, Livestock, Forestry, Land, Water, Meteorological and other government departments.

“Before the ALP programme we did not know what services we were entitled to and who provided the service. We now receive seasonal forecasts by the radio, the Community Monitors and via VSLA meetings so that we know what to expect in the coming season.”

Adamy Abarike – VSLA member, Ghana

Example: Accessing irrigation training

Studies conducted by ALP show that communities not only know who their local government representatives are – they now know what services, such as training, micro-finance, water-development, and animal health, to expect from them and are in a better and more informed position to ask for assistance when needed. In Ghana, the communities of Jawani and Zambulugu received training from the Ministry of Agriculture on managing water pumps, which were purchased with ALP funds and are now successfully making requests to their local government for enlarged or new water ponds or small dams that will not dry up during the long rain-less period from November to March/April.

INNOVATE TO ADAPT

Faced with changing weather patterns, such as shorter rainy seasons with heavier, more intense and thus destructive storms, following the old approaches has been a recipe for failure. This failure often results in hunger and food insecurity, a cycle of seasonal indebtedness, or diminished household assets. The only way out is through innovation: discovering new ways to sustain – or increase productivity that are both affordable and low-risk. Yet the risk of trying, for example investing scarce cash in something unproven is usually too high for individuals to attempt – putting a break on innovative initiative. What is needed is a more secure environment and community level learning systems in which to apply innovations and share results with those who are more risk averse.

Example: Conservation Agriculture and Farmer Field Schools (FFS)

In Mozambique, ALP has promoted conservation agriculture as an adaptation strategy through use of Farmer Field Schools, working with ten communities in the coastal and inland areas of Angoche district. Women and men farmers learn the basics of conservation agriculture techniques: to manage cover crops, interplant with improved cassava varieties as a quick win, eliminate soil-degrading ploughing, and improve soil fertility with nitrogen-fixing legumes. Learning in a structured and supportive FFS atmosphere via on-farm field trials, that they have had a role in designing, is a major step forward in helping farmers gain confidence in trying new techniques with little risk of incurring losses.

ANTICIPATORY AND FLEXIBLE DECISIONS

The real value of the adaptation strategies is realised when they are implemented as a direct result of a conscious decision making process where relevant information and knowledge is accessed and used to weigh up and select a range of options for a particular season or livelihood purpose. Given the highly localised and uncertain impacts of climate change, adaptation plans and strategies need to be reviewed on a regular basis and be flexible to respond to changing circumstances. With adaptive capacity, this can extend to anticipating possible seasonal and longer term futures and planning accordingly.

For example, a diverse farming system with a mix of crops, livestock and trees, and a range of crop varieties allows for flexible decisions on how much of each variety to plant and when to plant on a seasonal basis. When a forecast is for a normal to below normal rainy season, indigenous varieties planted early will take advantage of possible normal rains but in case of failure will not incur major financial loss, while early maturing varieties planted when the rains are sufficient will help to ensure a harvest. Seeds for the latter usually need to be purchased so farmers need to be strategic in their use. Flexible shifts between crops and livestock among agro-pastoralists and planting fodder in below normal seasons to ensure at least livestock do not suffer are other examples of anticipatory decision making. When choosing tree species to plant for fire and wind breaks, farmers can look for information on their heat and

drought tolerance, in anticipation of future conditions in the expected lifespan of the trees. Climate information and regular planning and reviews are critical inputs to enabling flexible and forward looking decisions on adaptation strategies and combinations of strategies.

Gender Responsive Adaptation Strategies

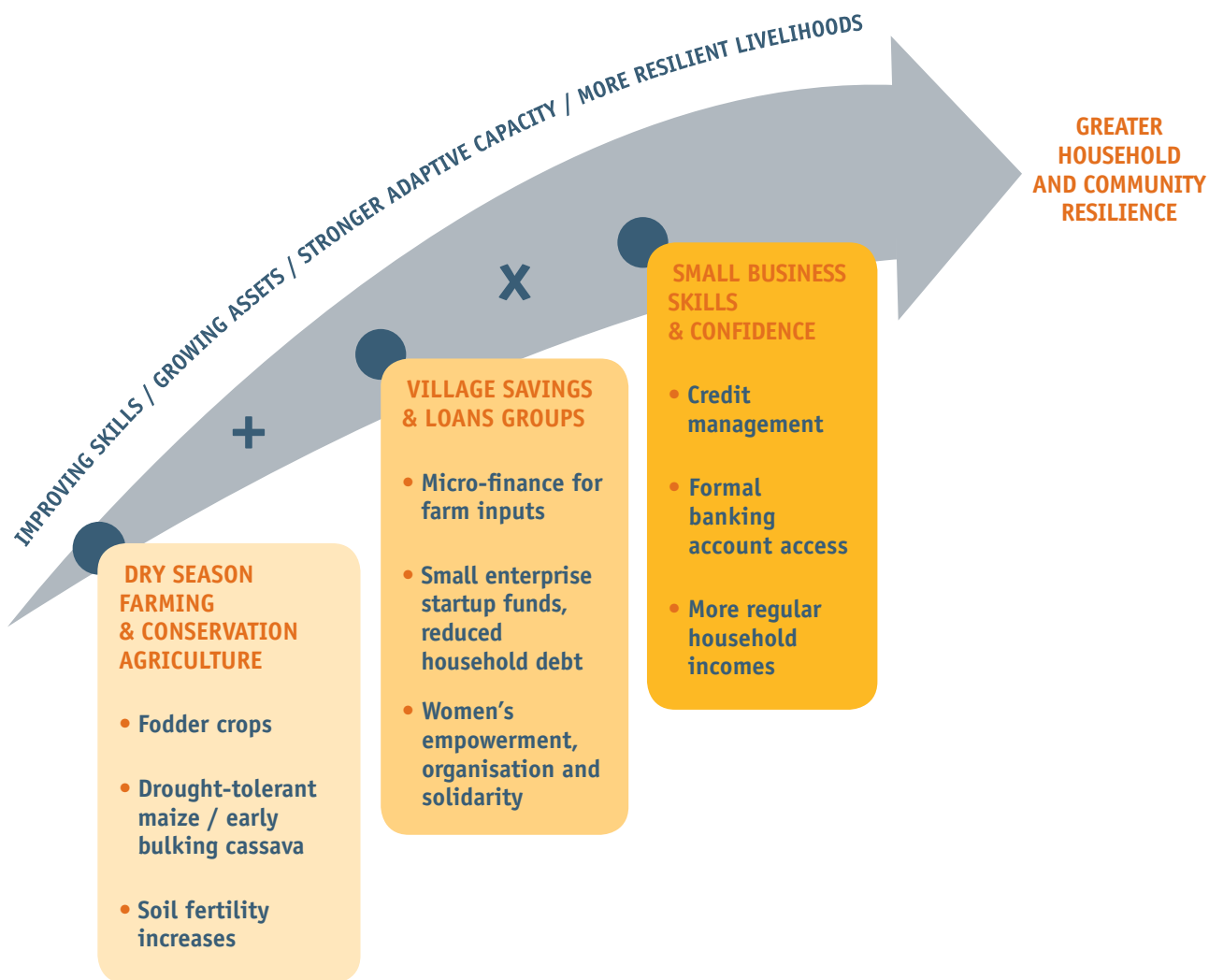
Women's participation in adaptation strategies facilitated by ALP contributes to their empowerment as they earn their own income and are seen by their husbands to be contributing to household expenses. Testimonies from men and women point to increased openness on the part of men to women's involvement in household and community decision-making.

Enabling semi or non-literate women to play an active role in the planning process, and giving them decision-making powers, is not as simple as inviting them to the meetings. ALP overcame many obstacles through fostering a more equitable, women-supportive climate within all ALP initiatives. It is central to CARE's core vision to do so, but it is not a given that traditional patriarchal African cultures will take it to heart when continuing with their own initiatives into the future.

Impact studies and numerous beneficiary testimonies express a positive achievement from ALP gender activities, resulting in greater involvement in community processes by women and improved gender relations in general. One gender study in Niger captured changes in men's attitude towards supporting women's participation in household and community decision making. ALP staff in Mozambique also report women learning side by side with men in Farmer Field Schools, playing a more active decision making part, and taking on group leadership roles. A study commissioned by ALP Ghana highlights how women have been the ones to lead non-agricultural, more climate-resilient activities in three communities facilitated by membership in VSLA groups because the majority of VSLA members are women.

ALP has seen that these adaptation strategies – designed and implemented by the communities - deliver benefits to all community groups, allowing for different priorities between men and women by drawing on complementarities and seeking better ways of working together.

Figure 2. Multiplying effect with two or more strategies operating together



The Multiplier Effect

A crucial insight coming from recent reports and impact assessments - is that community groups that have been pursuing more than one strategy in parallel over two to three years, gain greater benefits as a 'multiplying effect' kicks in. This is illustrated in **Figure 2**.

Such a spontaneous dynamic raises interesting questions. Is there a relationship between the Community Adaptation Action Plan (CAAP) process, or more broadly the foundation work of strengthening adaptive capacity, and realising these multiplying impacts? Did developing a holistic plan enable the

Example: Dry season farming

In Ghana, better productivity from dry season farming on pump irrigated farm plots, on which many farmers also practice new conservation agriculture techniques, provides additional income. This in turn, lowers household expenses on off-farm food supplies, which enables people to make higher weekly savings in VSLAs, resulting in a larger share-out per member at the end of the cycle. Evidence shows close to 20% of VSLA members use their share-outs (dividends) for farming inputs.

communities to see the connections, or their value, or help them to be more forward looking? And a bigger question - given that farmers have always had a diverse set of activities that they juggle, how exactly has CBA and adaptive capacity influenced a change in the choices and combinations they are making now? These are not questions that can be answered easily and which need to continue to be explored with the communities ALP works with.

Example: Community Radio in Niger

Community radio along with mobile telephones is used to broadcast locally-generated rainfall data and early warning information quickly to farmers and pastoralist herders. The rapid access to climate information means decisions on when, what and where to plant are not the guesswork and possible waste of valuable seed that they were before. Many growers are still in learning mode on optimum timing of sowing new and improved crops – mainly early maturing cowpea and millet. Higher yields in general boost morale and confidence and mean larger quantities are stored in the new warrantage schemes. Women now avoid selling their crop at depressed prices at harvest time - something they never did before, and have extra cash to save in their new VSLA accounts, or use for household needs. It is easy to see how these strategies – if implemented in isolation, or without the added element of timely climate information, would be less robust and more likely to fail under harsh rural conditions.

Concluding Remarks

These are only some of the emerging lessons as the body of knowledge grows with experience in implementing CBA. ALP faces the challenge of translating the experiences gained into practical knowledge products for future users – within the growing number of adaptation programmes in Africa, and beyond. The experiences documented here represent the beginning of an ongoing learning process by all actors concerned with adaptation to climate change.

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The Adaptation Learning Program (ALP) for Africa aims to increase the capacity of vulnerable households in sub-Saharan Africa to adapt to climate change and climate variability. Since 2010, ALP has been working with communities, government institutions and civil society organisations in Ghana, Kenya, Mozambique and Niger to ensure that community-based adaptation approaches and actions are integrated in development policies and programmes. This is achieved through the demonstration and dissemination of innovative approaches for CBA, supported by practical tools, methodologies and evidence of impact. ALP is also working to create an enabling environment for CBA by working directly with local and national governments and with civil society to influence national and international policy frameworks and financing mechanisms for adaptation.

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