



United Nations Development Programme

COMMUNITY-BASED ADAPTATION TO CLIMATE CHANGE

**A TOOL TO ENHANCE CONSERVATION
TILLAGE PRACTICES IN NAMIBIA**



The Community-Based Adaptation Programme (CBA) is a five-year United Nations Development Programme (UNDP) global initiative funded by the Global Environment Facility (GEF) and delivered through the Small Grants Programme (SGP). The UN Volunteers partners with UNDP and GEF/SGP to enhance community mobilization, recognize volunteer contributions, ensure inclusive participation around the project, and facilitate capacity building of partner NGOs and CBOs. In addition, funding for the Namibian component was also provided by the Government of Japan and from in kind contributions by the Communities. The CBA's programme goal is to strengthen the resiliency of communities to address climate change impacts.



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Acknowledgments

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Acronyms and Abbreviations

CA	Conservation agriculture
CBA	Community-Based Adaptation
CBO	Community-based organization
CES	Creative Entrepreneurs Solutions
CONTILL	Conservation Tillage Project - Namibia
FBO	Faith-based organization
GEF	Global Environment Facility
NGO	Non-governmental organization
OIKE	Omalundu Limuna Kommitiye Elungameno
SGP	Small Grants Programme
SHG	Self-help group
RSA	Republic of South Africa
UNDP	United Nations Development Programme

Project Details

Siya community maize field where CONTILL was applied



Photo: Sion Shifa/UNV

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Project locations for participating CBA communities

Communities: Olukonda, Esheshete, Elondo, Onkani via OIKE and Siya/Kapako communities, 2009/2010. The programme will be expanded to communities in Tsandi, Engela, Ongenga, and Ondangwa in 2010/2011.

Provinces: Oshikoto, Omusati and Kavango regions, 2009. Extended to Oshana and Ohangwena regions in 2010.

Project duration

Project start date: 1 December 2009

Project end date (expected): 1 December 2011

Overview

The UNDP-GEF Community-Based Adaptation (CBA) project in Namibia addresses serious issues brought about by extreme climate events resulting from climate change. The project's both long-term and short-term objectives combine community skills and involvement with innovative agriculture practices; the project aims to increase community participation and awareness and build relevant capacity and skills to manage the uncertainties of climate change. The 12 villages participating in the project are comprised of a diverse audience of community members, including vulnerable children and their communities.¹ The target groups consist of subsistence farmers (most of whom are women and youth) who are most likely to depend on the affected and impacted environments for subsistence and cash incomes.

The project is piloting six coping strategies that have the potential to become longer-term adaptation methods for communities. These coping strategies include (1) ensuring greater water security in the region in the face of increasing climate change pressures, (2) production of vegetables irrigated by flood waters, (3) improvement of dryland crop production, (4) increased use of new and drought-resistant crops, (5) introduction of energy efficient stoves and (6) increased awareness about adaptation and mitigating strategies. At present, the methods are being piloted at different sites. A comparative analysis of the pilots' results will be undertaken to assess the effectiveness and applicability of each strategy (or combination thereof) at different sites and in various countries. This information will help inform community decisions on the selection of coping strategies, including whether more than one strategy can be implemented at a time. Given the complexity of climate change impacts, this multi-strategy risk-transfer approach will be necessary in the future.

The programme employs a holistic approach that addresses climate change adaptation threats and improves community livelihood. In Namibia, conservation agriculture (CA) is being applied at sites in the pilot regions as part of the CBA approach. Benefits of this approach range from social empowerment to increased crop yields. These impacts are real and are having a positive impact on the community-at-large. For example, community members are organizing into self-help groups (SHGs) to share knowledge and build capacity; families with HIV/AIDS are being supported through improved nutritional status as a result of increased food security; farm land quality is improving through composting, biochar, crop rotation and CA; fish and livestock farming are being supported through the provision of ponds and watering pans; and communities are growing other foods, such as rice, fodder and mushrooms.

These diversified activities and actions from the CBA projects have provided an enabling environment for communities to improve their nutrition, gain extra income, and be better prepared for the difficulties associated with the ever-changing climates in their villages. These actions and resultant benefits have increased the resilience of communities as they continuously adapt to impacts of climate change.

¹In addition, Creative Entrepreneurs Solutions is also supporting Omalundu Limuna Kommitiye Elungameno (OIKE) with the implementation of CBA activities.

Community-Based Adaptation in Namibia

Introduction

Local climate change and its variability pose greater risks for vulnerable, poor, and marginalized communities due to the physical impact it makes there. Since 2009, the UNDP-GEF CBA project in Namibia has been working with 12 villages that are facing a number of key problems that stem from extreme local climate events (e.g. pronounced droughts and floods, rising and variable temperatures, increasingly unpredictable rainfall patterns and amounts, severe land degradation leading to loss of productive arable land and range, loss of livestock, as well as high levels of deforestation and over utilization of natural resources).

The agricultural sector in Namibia is particularly affected by climate change. Droughts and erratic rains, interspersed with floods that originate in Angola, plague the northern side of the country and leave brittle, nutrient-poor soil, which renders farm lands unproductive. This negatively affects food, water security and general livelihoods due to failed harvests, and decreases livestock numbers and products. The UNDP-GEF CBA project is working to safeguard livelihoods by encouraging target communities to improve farm gate incomes, diversify the sources of other farm-based incomes, and properly utilize farmlands.

The CBA project is also working with communities to build resilience and adaptive capacity to climate change in agro-pastoral communities and to foster community participation in the identification of climate drivers, risks and adaptive solutions. The target group is comprised of the most vulnerable community members, including women and children, that depend on rain-fed agriculture (e.g. planting pearl millet, maize, sorghum, ground nuts and cowpeas), natural resources (e.g. collecting fruit and oil from the wild), and livestock rearing for both subsistence and cash incomes in the semi-arid areas of northern Namibia.

The first step, and short-term objective of the project, is to enlist community participation in the vulnerability assessment and solutions-generation stage by bringing members together to identify the climate change drivers, risks and adaptive solutions. The project uses a vulnerability reduction assessment method to assist communities, through a participatory process, in determining an appropriate plan of action. This is done through cohesive social groups and trainings before piloting projects.

After the community has a solid understanding of the issues and options, the community can begin to implement effective solutions generated in a participatory way. This is the second step, and long-term objective of the CBA project. During this phase, the project targets the communities' needs to build resilience and adaptive capacities. Communities apply a suite of actions to improve and strengthen their soil management practices, including the application of conservation agriculture in combination with appropriate crop rotation and crop residue retention and incorporation practices that, for example, add coping levels of staple food crops (*Mahangu*)² and legumes (cow peas and ground nuts) when grown together in a single farm.

²Local vernacular for Pearl Millet planted by the local communities in Namibia.

Conservation Tillage as a tool for community-based adaptation

The CBA approach in Namibia is driven by national strategies on adaptation and aims to make a significant impact on community development, reduce poverty, and encourage capacity building to help identify climate change related factors and drivers.

A main focus of the project in Namibia is the promotion and application of conservation agriculture (see Box 1). The applied CA method via the Conservation Tillage Project (CONTILL) is specific to the Namibian agriculture circumstances. CONTILL, developed in 2005 through research and on-farm trials, encourages farmers to produce and apply compost-based fertilizer (manure), to practice minimal soil disturbance using ripping and furrowing, to create in-field water harvesting, and to apply crop rotations, which enable farmers to secure their own food supply and to market surpluses. As a result, farmers are leaving their age-old ineffective practices and quickly adapting to conservation tillage practices. Furthermore, CONTILL allows farmers to diversify production (for instance, of sunflower oil and chicken feed, simultaneously) to boost food security, income and nutrients. CONTILL is helping to reduce the negative effects of floods, drought and irregular rainfall patterns, rising temperatures, and soil degradation. In fact, this process is already showing great results with an increase in agricultural yields of up to 500%.

Box 1: Conservation agriculture

Conservation agriculture aims to achieve sustainable, profitable agriculture and improve the livelihoods of farmers by combining profitable agricultural production with environmental concerns and sustainability. It has been proven to work in a variety of agro-ecological zones and farming systems. Practitioners perceive CA as a valid tool for Sustainable Land Management.

In Namibia, the CONTILL conservation agriculture method is achieved through the application of the following strategies:

- **Minimal soil disturbance through ripping and furrowing soils**
- **Crop residue retention and incorporation**
- **Crop rotations**

Organizing community-based adaptation in Namibia

The project is bringing together community members to create a participatory process to engage stakeholders and build awareness and skills. This process brings together groups to discuss and develop adaptation strategies and carry out related exercises, such as vulnerability reduction assessments. Although participation in these groups is voluntary, every effort is made to balance community representation. Support for local groups, and in some cases, the formation of the local groups, is being guided by the local non-governmental organization (NGO) Creative Entrepreneurs Solutions (CES).

Creative Entrepreneurs Solutions

Creative Entrepreneurs Solutions is a local NGO that is working with communities to support the implementation of adaptation activities to optimize sustainable impact and empowerment of the target communities. CES applies a holistic and practical bottom-up implementation approach. It creates an enabling environment by collaborating with strategic partners and stakeholders (e.g. line ministries, local authorities, national and international institutions of higher learning, traditional authorities, farmer's organizations, vocational training centers, NGOs, and community-based organizations [CBOs]) to form task teams to support communities.

Support systems

Creative Entrepreneurs Solutions and its partners are establishing support systems for communities that are in dire need of assistance to cope with and adapt to changes in the local climate. Support systems provide assistance that ranges from advisory functions, informational provisioning, procurement of necessary tools, implements, and relevant seeds, production of compost fertilizers and services, to the fabrication and introduction of renewable energy technologies. This support system ensures a very high level of community participation and motivation. The support system, created and currently managed by CES, provides an enabling environment for targeted, sustained community development. It promotes sustainable livelihoods as a means to adapt to climate change. It emphasizes sustainable development founded on social mobilization and empowerment at group and/or community levels. It also encourages the formation of self-help groups (SHGs), and the utilization of the advantages of their cohesiveness, skills training, mentorship, and on site farmer-to-farmer learning through on-farm demonstrations. The support system is well organized and provides a mechanism in which other partners can channel support to communities for various developmental activities.

Self-help groups

Self-help groups help to implement CBA strategies identified by community members and are buttressed by support systems, which help and cushion vulnerable communities to cope with and adapt to changes in the local climate. Community members are encouraged to form SHGs where one member of each community functions as that community's coordinator, and is appropriately trained for this responsibility by CES' partner organisation, Hand-in-Hand, Republic of South Africa (RSA). The SHGs are a platform for knowledge sharing, duplication of successful CBA strategies, savings and enterprise creation. The formation of SHG's in Namibia is based on existing models in Africa and Asia that are founded on education, socialization and empowerment. These provide the necessary prerequisite to keep communities together and to pursue issues of common concerns, such as being involved in community-based adaptation initiative in their localities.

Project results

The UNDP-GEF CBA Programme in Namibia comprises a cluster of 6 projects and became operational in December 2009. Since its inception, the programme has experienced robust levels of participation. Currently, there are 40 community members practicing the CONTILL CA method on their smallholding farms, and approximately 73 community members practicing and test-validating the practices on community-owned plots. A group of women, along with a few male partners from Onakapya, Ongungulume, Onkani, Onkaankaa and surrounding villages, formed OIKE, a women-led CBO that is testing CONTILL on several plots within their region in northern Namibia. The participating communities faced problems with flooding and or drought on their individual or community farms prior to working with UNDP. These issues led to crop failures and increased food insecurity. Through the application of CONTILL³ as a result of the UNDP GEF CBA project, these problems were successfully mitigated in late 2009.

³ The Conservation Tillage Project (CONTILL) has been piloting and researching CA in Namibia since 2005. This work is ongoing and provides useful feedback that CONTILL uses to update and improve application of CA.

Box 2: Namibian community participation in conservation tillage

Conservation Tillage on Smallholding CBA Participating Farms

40 community members practicing CONTILL on smallholding farms

Conservation Tillage on CBA Participating Community-Owned Plots

73 community members practicing and test-validating CONTILL on community-owned plots

CBA Participating Women-Led Conservation Tillage

OIKE and Siya/Kapako, local CBOs testing several plots in northern Namibia

The project has seen positive results to date due to three main factors: (1) use of effective equipment; (2) use of crop rotation and (3) use of an integrated approach.

Use of effective equipment

The use of effective equipment has been critical to the success of CONTILL in Namibia. A tractor-mounted ripper-furrower equipped with wings is being used to break up the soil; it breaks up the hard pan underneath the light-sandy topsoil at a depth of 30 cm, which allows for water retention and deep root penetration below the hard alkaline (salty) layer. This allows the feeder roots to reach the nutrients located below the 30 cm depth in the soil. At the same time, the wings make a furrow that collects rainwater and channels it to the base of the furrow and into the ripped area where the plants will grow. Research and on-farm trials show that this method is solving problems associated with limited moisture in the soil (i.e. drought), as well as flooding (by allowing and increasing infiltration). The in-field water harvesting channels rainwater to the plants basal area. During flooding, the abundant, excess water finds its way through the ripped compaction layer, infiltrating deep into the soil and preventing water logging. Ripping and furrowing can be adapted to traditional cultivation methods and can still be cost effective. The technology can accommodate pulling by both oxen and tractors with similar increases in harvest yields.

The farmland that was ripped and furrowed in January/February 2010, following CONTILL best practices, has done exceptionally well (see Photo 2). Although all of the project participants faced drought or flooding, their crops (pearl millet, beans, sorghum and maize) grew to maturity with higher yields than expected in fields that were conventionally farmed and only used traditional methods⁴. The project farmers received a bumper harvest from their CONTILL farmlands, particularly from pearl millet (*Mahangu*) – the national staple food crop in the region (see Photo 2).

Use of crop rotation

Mirroring the adaptable community-based cultivation methods in the expansive Namibian semi-arid lands, crop rotation of legumes with pearl millet, maize sorghum, coupled with composting of plant residues, is a no-cost fertilization method that has worked well in combination with ripping and furrowing. Similarly, the introduction of improved but locally tested wild seeds is another important adaptation factor under trial in Namibia. This approach takes advantage of and utilizes existing indigenous knowledge to adapt to climate change.

⁴By mid March 2010, growth in one of the farms within the OIKE community fields, far west of the region which did not receive any rainfall at all after planting, was experiencing slow growth.

Photo 1: Sunflower for cooking oil & chicken feed



Photo: Andreas Tweendeni/CES

Use of an integrated approach

Creative Entrepreneurs Solutions, OIKE, local CBA project implementing partners, and community members are aiming to not only pilot the climate change adaptive characteristics of CONTILL as a technique, but also to undertake applied research and document the drivers of adaptation. This approach should provide real-time, on-farm instructional information, which can be used by other farmers to learn about how to apply new dry-land farming technologies while maintaining the use of traditional fertilizer application practices (e.g. using plant residues, manure and crop rotation) and rain-fed crops within a changing planting patterns.

Summary of key areas of success

The UNDP-GEF CBA programme in Namibia is successful on many levels. It is raising awareness and bringing communities together to participate in the development and implementation of adaptation strategies. The main adaptation tool being utilized in Namibia within the CBA project is the CONTILL, Namibia-specific CA method. This method of farming is well suited to the conditions in Namibia and, as shown through this report, is yielding excellent results. It is also gaining wider acceptability regionally and nationally. The following summarizes how the project has been successful.

Creation of awareness and strategic mobilization in communities

Community members have witnessed the process and success of CONTILL through their involvement in all of its steps. This began with community mobilization and land preparations and has continued through the germination of crops, the growing period, and into the harvest period that resulted in a

bumper harvest. These communities have benefited from NGOs, farmers' associations, Agriculture Extension Officers, and volunteers who have worked with farmers, on local and remote levels, and have accompanied them during the process.

Application of appropriate technological support

The in-field water harvesting resulting from ripping and furrowing practices has contributed to continuous growth even with inadequate rains during the farming season. Moreover, in torrential downpours (resulting from variable rainfall attributed to regional climate change), the fields where CONTILL was applied have not been waterlogged, have been less alkaline and have retained less moisture for a longer period of time. This result can be attributed to the effectiveness of the CONTILL approach, which increases the amount of water captured from rainfall per square meter of row spacing from 300 mm to 520 mm.⁵ This methodology and associated technology has also ensured that plants are stronger and provide a higher pearl millet yield. Supporting this result, past regional scientific trials have shown an average yield of 209 kg/ha from conventionally ploughed fields (see Photo 4 & Photo 5), compared to a realizable 1,176 kg/ha from CONTILL fields. This significant increase in yield will contribute to food security in the area (see Photo 6).

Use of knowns (seeds source) and unknowns (new technologies)

Part of the success of CONTILL CA in Namibia has been the combined approach to implementation. CONTILL represents a new and improved farming system within the communities, but integrates the new approach with the use of traditional crops (although some seed varieties went through an improvement

Photo 2: CONTILL pearl millet field



Photo: Andreas Tweendeni/CES

Note: Within three months of planting, the CONTILL CA pearl millet field was showing positive results.

⁵ Marsdar, 1993. *Conservation Agriculture in Namibia: An Introductory Guide*, p. 37. Unpublished report by the NRC.

Photo 3: Drought resistant maize at Onyaananya



Photo: Tuhafeni Nghilunanye/CES

During 2010, the participating communities tested drought-resistant white maize varieties. These showed good plant development and high yields during the May/ June harvesting season.

programme locally). The CA technique and improved traditional seeds are the vehicles through which adaptation strategies are being realized. These strategies have allowed the farmers to carry on with their preferred method of traditional rain-fed crops with a better farming system. This seems to be a major factor contributing to the success of CONTILL as an adaptation strategy at the pilot sites. The project is showing that mixing unknowns with knowns can reduce cultural shock and risks associated with adoption of a new technique, such as CONTILL in this case, while enhancing acceptability and the adaptability of the farmers involved.

Experimentation with new crops and technology and diversification of risks of failure

The CONTILL projects allowed farmers to experiment with new crops and technology. This year, project farmers introduced yet another crop, the sunflower, used to produce cooking oil and chicken feed, to diversify incomes (see Photo 1). Results showed that the plants were strong, benefited from the in-field water harvesting in the CONTILL furrows, and required less attention. This gave farmers more time to focus on their primary crops. For example, one of the groups was able to start their white maize harvest early from their CONTILL community plot and had impressive yields of two to three cobs per plant. This surplus enabled the community to market green maize daily at open-air markets (see Photo 7) during the harvesting season.

Identification of the need for continuous community-based support systems

A vital factor in successfully adapting to climate change is a reliable support system. The support system must be community-based and fully present in the target community; preferably it should offer the needed services and goods. In this case of CONTILL in Namibia, the following deliverables have been part of the assembly of goods and services provided to the communities: service provision (ripping and furrowing), subsidised fertilizer, technology inputs and advisory services. The support systems have been sourced from NGOs, CBOs, faith-based organizations (FBOs), civil society, and government extension services. These groups have helped to facilitate tailor-made, continual community-based research on relevant best practices, lessons, improvement of inputs (e.g. seeds), and infrastructure (private sector based support is the best way to guarantee continual supply). The support system has also helped to ensure adaptability and provision of the reliable support required for successful implementation of adaptation measures.

Photo 4: Conventionally ploughed field with water logging



Photo: Courtesy of CONTILL/NRC

Photo 5: Poor plant development in conventionally ploughed field (using disc-harrow)



Photo: Tuhafeni Nghilunanye/CES

Photo 6: Example of ripped and furrowed community field



Photo: Tuhafeni Nghilunanye/CES

Photo 7: Community members marketing surplus produce



Photo: Tuhafeni Nghilunanye/CES

Box 3: Examples of conservation tillage in Namibia

Example 1: An animal-drawn ripper- furrower, developed by a local agriculture based implementation firm, allows owners to become CONTILL service providers and communities to increase household income. If this income is invested back in to the farmers who own animal-drawn ripper-furrowers, it will likely ensure that ripping and furrowing⁶ required for CONTILL in the area will be available for needy farmers. Application of CONTILL has to be done in a systematic way and does require some upfront investment that is associated with acquiring the equipment. Thus, it remains expensive for all farmers to own the necessary implements. Service provision by private individuals is, therefore, necessary within the communities or local towns to provide the services at a fee.

Example 2: Plans are underway to assist communities with the procurement of animal-drawn ripper-furrowers. As part of the programme, farmers and communities are encouraged to help pilot new projects to test the adoptability and adaptability of practices within other communities located in similar climatic areas. These will be the project pilot sites in the coming rainy seasons of 2010/2011 during the project life-time.

⁶ In the first year, farmers apply ripping/furrowing, which must be carried out with a tractor-mounted implement, as the hard crest under the topsoil is too tough to break with an animal drawn implement. However, from the second up to the fourth year, an animal drawn implement can be used. Then again, a tractor mounted ripper furrower is used in the fifth year and so forth in rotation for good results.

The Future of Conservation Tillage

A model for community-based adaptation

The possibility of transferring and duplicating CONTILL CA in and outside of Namibia has great potential. As an adaptation measure, CA is ideal for countries that experience unpredictable rainfall events and patterns, as well as arid areas with light, alkaline soils such as those of northern Namibia. The CONTILL process outlined in this report, and the associated technology described, may also work well in similar areas such as those of Kwa Zulu Natal province of South Africa, most parts of Australia, Ethiopia and Zambia.

By applying CONTILL, soil quality is improved, which leads to greater crop yield for small farms at the household level. CONTILL contributes to community food security and adaptability to climate change events, both of which are exacerbated by drought and flooding in Namibia.

Next steps: The implementation of a new conservation agriculture model

The next step for UNDP-GEF CBA CONTILL projects is to implement what is arguably the best model for CA in Namibia. This model will be applied at the community level, starting with 30 CONTILL CA method test strips on a small-holder farming level. Neighbours will be invited to a CONTILL demonstration ("farmer's day," which is similar and modelled after "a farmer's field schools approach") where they will see, hear, and learn from farmers with experience in conservation tillage. As part of this model, local ploughing service providers will be encouraged to purchase CONTILL implements at the "Farmer's Day" and to offer ripping and furrowing services to local farmers at affordable rates. This action will bring on board micro-finance institutions, run by CONTILL farmers, that would subsidize farmer's fees as well as offer trainings, advisory and marketing support systems.

The Namibian case is currently at this stage of development. Communities' adoption of CONTILL CA technology (use of ripping and furrowing) in Namibia has been successful; the next step will be to sustain and put in place self-regulating mechanisms to ensure its effective repetition nationally.

Annex

Photos from the field

The photograph below depicts the condition of the soil in participating communities before the application of CONTILL CA. The remainder of the photographs included in this Annex illustrate the success of CONTILL CA in Namibia through UNDP's GEF-CBA Programme.

Typical degraded land area in northern region of Namibia before application of CONTILL



Photo: Tuhafeni Nghilunanye/CES

How to do a social mapping of a village



Photo: Marie Johansson/CES

Practical SHG session on how to cooperate



Photo: Marie Johansson/CES

VRA meeting in Olukonda



Photo: Tuhafeni Nghilunanye/CES

Siya group members with threshed mahangu



Photo: Marie Johansson/CES

Tractor mounted ripper and furrower land preparation



Photo: Courtesy of CONTILL/NRC

Drought resistant maize and other seeds



Photo: Marie Johansson/CES

Glossary of Terms

CONTILL⁷: A method of conservation agriculture (CA) that was applied by the UNDP-GEF Community-Based Adaptation programme participants in the northern regions of Namibia: CONTILL applies ripping and furrowing of the soil, crop residue retention and incorporation, and crop rotations. The Namibian Conservation Tillage Project and the Ministry of Agriculture and Forestry jointly pioneered the method.

Conservation agriculture (CA): A farming method that aims to achieve sustainable, profitable agriculture and improve the livelihoods of farmers: CA is a way to combine profitable agricultural production with environmental concerns and sustainability. It has been proven to work in a variety of agro-ecological zones and farming systems. Practitioners perceive CA as a valid tool for Sustainable Land Management. CA is achieved through the application of minimal soil disturbance, permanent soil cover and crop rotations.

Community-based adaptation (CBA): A tool or strategy implemented by local actors to enhance the resilience and adaptive capacity of communities and ecosystems to the projected effects of climate change: This process takes a proactive, anticipatory and participatory approach to adaptation that considers local conditions, practices and indigenous groups. CBA draws on local knowledge and fosters community-driven innovation, which is shared and supplemented to inform best practices and improve local adaptive capacity.

Community-based organisations (CBO): A non-profit, civil-society organization driven and operated by community residents in all aspects of its existence: A CBO typically operates within a locality or a single low-income, indigenous community. Priority issue areas addressed by CBOs are identified and defined by residents through participatory and open forums, as well as surveys; solutions and priorities are locally generated. CBOs are self-funded and run by local residents on a voluntary basis. Some are formally incorporated, with a written constitution and a board of directors (also known as a committee), while others are much smaller and more informal.

Creative Entrepreneurs Solution (CES): A small local non-governmental organization (NGO) registered in Namibia that is undertaking activities in the northern Kavango, Ohangwena, Oshana, Oshikoto and Omusati regions: It cooperates with the Namibia Conservation Tillage Project and the Ministry of Agriculture, Water and Forestry to pioneer CONTILL at CBA project sites.

Self-help groups (SHGs): A village-based community group that tends to meet regularly to provide support and share information among its members for mutual problem solving regarding savings, lending and enterprise creation: These groups are usually composed of 10-15 local people, the majority of whom are women.

Support systems: A local assembly of resource institutions, activities or services that aim to help farmers or community members in need. In the case of CA, support systems may help with manual work (e.g. ripping fields), education on farming practices (e.g. contouring fields, applying fertilizer, weeding and crop rotation), or provision of new products for planting (e.g. improved seeds and subsidized fertilizer). This assistance improves the livelihood of community members by ameliorating farming conditions and increasing financial wellbeing. Together, these boost the recipient's cropping strategies and hopefully lead to long-term resilience and adaptation to climate change.

Task teams: A group formed by local and national stakeholders to assist with the implementation of CBA activities. CES coordinates and gives direction to these teams, whose responsibilities range from mobilizing communities to creating an enabling environment, allocating communal land or contouring farmland.

⁷Implementation of the CONTILL in Namibia has been ongoing since 2005 by the Golden Valley Agriculture Research Trust, the Namibia Agronomic Board, the Namibia National Farmers Union, and the Namibia Resource Consultants. The Swedish International Development Cooperation Agency (SIDA) provides funding for this project. Farmers engaged in the participatory on-farm trials refer to CONTILL CA method as 'Lima Nawa.'



Photo: Tuhafeni Nghilunanye/CES

Note: Monica Nepembe, CBA farmer, and Agronomist Patricia Sheehama, Extension Officer of the Namibian Government

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