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Empowering a local community to address climate risks and food insecurity in Lower Nyando, Kenya

In erosion- and drought-prone Nyando, self-help groups affiliated to large umbrella bodies are working with extension agents, researchers and development partners to improve local livestock and diversify crops, to improve soil and water management, and to pool financial and labour resources.

Overview

In the Nyando Basin in western Kenya, climate change and variability are already evident. Droughts, floods and unpredictable rainfall have increased, affecting agriculture and food security. These problems are compounded by high poverty (about half of the population lives below the poverty line) and prevalent HIV (the adult infection rate is around 7.5 per cent)¹ leading to more widow- or orphan-headed households, lost productivity and labour shortages.

Farming is Nyando's primary source of income and food (a mixed crop-livestock system), but Nyando farms are not diverse and show few agricultural innovations.² Lower Nyando also suffers serious land degradation. Soil erosion is rampant in two annual rainy seasons, and run off forms deep gullies that affect about 40 per cent of the landscape.³

Poverty, lost labour and less diversified livelihoods and land degradation all make communities more vulnerable to climate risks, directly reducing household food supply and nutritional status. Up to 17 per cent of households are unable to meet their food needs for 3-4 months in a year.² Malnutrition is estimated to be 45 per cent among under-fives.

To tackle these problems, people in Lower Nyando organised themselves into six self-help groups affiliated to a large 'umbrella' community-based organisation (CBO) called Friends of Katuk Odeyo (FOKO). Households join a group, contributing from

KSh100-200 (equivalent to US\$1.2-2.4) a month.

FOKO now has 20 groups, which comprise 600 households. Of these 20, two are women's groups. In the others, 70 per cent of the active members are women. Two other CBOs have sprung up – Kapsokale and the North East Community Development Programme. Each CBO is a legal entity and has a bank account used by the member groups. Together, they aim to use community empowerment to tackle food insecurity, malnutrition and increasing dependency rates. In the Nyando basin 1,170 households now belong to a self-help group, and 70-85 per cent of the active members are women.

Each self-help group is led by an elected chairperson, secretary and treasurer, and in most cases at least two of these are women. Representation for the groups within each CBO is based on geographical clusters (often villages). The CBOs, which are run by a five-member executive committee, are mainly responsible for linking communities with relevant government ministries, research and development organisations, and for mobilising resources, whereas local groups make decisions on capacity-building needs and activities.

Interventions and impacts

The self-help groups are empowering their communities through collective action. Initially, they simply pooled financial resources into a Rotating Savings and Credit Association (ROSCA) scheme and

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pooled labour (especially for planting and harvesting) based on principles similar to share-cropping. While this particularly helped widow- and orphan-headed households with subsistence food production and supply, many still relied on food aid during droughts. And limited access to improved farm inputs or better agronomic techniques meant food insecurity, malnutrition and land degradation persisted.

Consequently, farmers in Nyando have begun working with research development partners and government extension agents to test a portfolio of promising climate change adaptation, mitigation and risk management interventions. The main partners include the CGIAR Research Programme on Climate Change, Agriculture and Food Security (CCAFS), World Neighbors, the Swedish Cooperative Centre's Vi Agroforestry programme, the Kenya Agricultural Research Institute (KARI) and the Kenya Ministries of Livestock Development and Agriculture. Each contributes their expertise to specific interventions, integrating these within existing community institutions and organisations.

Diversifying livelihoods

Livelihood diversification empowers households, giving them a range of livelihood options to draw on, making them more food and income secure. Interventions in Nyando include beekeeping, improved small livestock production (goats, sheep and poultry) and crop diversification with improved agronomic practices.

Improved beekeeping. A participatory process identified beekeeping as a livelihood diversification option. Traditionally, beekeeping was labour intensive and dangerous, using hollowed out log hives to attract bees. Harvesting excluded women and fostered a fear of handling bees within the community. Average yields were very low, about 5kg of honey per beehive per year compared to a potential yield of 90kg.

In 2009, the Ministry of Livestock Development and World Neighbors started working with five of FOKO's self-help groups. The partnership introduced improved beehives, and trained farmers to be more productive beekeepers. Now, 15 beekeeping groups have spread across seven villages affiliated to the three CBOs, with 175 beehives between them. Three of the 15 are women's groups, while the other 12 have 70 per cent active women members. Eight artisans are now trained and equipped to build affordable theft-resistant hives, and shared learning is empowering farmers to exchange knowledge within and across self-help groups. Average honey yield now ranges from 10kg per beehive per harvest. Harvesting is three times a year, with potential for

up to six harvests a year.

Improved livestock. From late 2011, CCAFS has been collaborating with World Neighbors, Vi Agroforestry and Kenya's Ministry of Livestock Development to work with farmers to improve productivity of small livestock. Small livestock (sheep, goats and poultry) is less labour intensive than cattle and gives women more control over livestock management and income.

The Ministry's extension services help farmers improve management practices including animal healthcare. Through the partnership, 16 community-based animal health workers, or 'para-vets', have been trained across the three CBOs. World Neighbors is identifying and sourcing improved breeds. Sixty faster maturing Gala goats and 10 Dorper sheep are being cross-bred with indigenous breeds.

Poultry improvement focuses on early maturing and disease-resistant indigenous chicken. About 400 improved local chickens were sourced from a government programme and distributed to 100 farmers. The total population of these chickens is now probably over 3,000. With improved housing practices, they mature two months earlier than conventional free-range chicken.

Overall, about 120 households in Nyando are now benefiting from interventions on small livestock. Of these households, 70 per cent are headed by women.

Crop diversification. CCAFS, KARI and the Ministry of Agriculture are working to empower farmers to manage climate risk through a combination of crop diversification and improved practices. They are introducing sorghum, pigeon peas, cowpeas, green grams and sweet potatoes to supplement the traditional maize, cassava and bean staples.

More than 250 households are using improved agronomic practices and KARI has started on-farm multiplication of an improved cassava variety (MH95/0183) that resists mosaic virus.

Youth are particularly involved in horticulture. About nine youth groups (not affiliated to the three CBOs) and 20 individual farmers are intensively growing onions, tomatoes, butternuts and watermelons. Average yields per acre range from 500kg for onions to eight tonnes for watermelon.

Mitigation interventions

Agro-forestry, land and water management are among the mitigation interventions employed to reduce greenhouse gas emissions in Nyando basin. The partnership has supported 22 tree nurseries, some owned by the self-help groups (more than half of all

Crop diversification can help manage climate risk



Kelvin Trautman (CCAFS)

the nurseries are female-owned). More than 50,000 high-quality tree seedlings have been produced, each worth KSh10-20. About 23,500 multipurpose trees have been planted in homesteads with a 75 per cent survival rate and the local community is establishing a two acre demonstration woodlot.

To improve soil moisture retention and reduce erosion, the Ministry of Agriculture is working with farmers to promote contour farming and terracing, composting and conservation agriculture. Collectively, community members have also financed and built 40 new water storage 'pans' and rehabilitated 12 others.

Box I. John Obuom is one of 35 'champion farmers' within the Nyando Basin and a member of the Kowalla self-help group. Champion farmers practice sustainable intensification and proactively try new technologies. John's three acre farm has three water pans and a woodlot. He owns a manual pump and pipes for irrigation, and receives advice and support from extension agents for improved agronomic practices. In the short rainy season he grows maize, green grams, kales, tomatoes, butternuts and indigenous vegetables. He also grows perennial crops such as cassava, sweet potatoes, bananas and pawpaws. His livestock include improved dairy and beef goats, poultry and beekeeping. In future, he plans to reinvest in a dairy cow.

Building resilience

Through group savings and support from development organisations, the self-help groups affiliated to FOKO and NECODEP CBOs have established an agricultural supply shop at FOKO's resource centre along the Kisumu-Kisii highway. It offers farmers high quality inputs, affordable prices, advice and information and credit (for members of the CBOs). The shop seeks to make about 5 per cent profit and gets advice on the types and quality of the inputs to be stocked for every season from the Ministries of Agriculture and Livestock.

And Nyando farmers have built on earlier community saving and credit schemes, in partnership with Vi Agroforestry and World Neighbors. The three CBOs – FOKO, NECODEP and Kapsokale – each has capital of at least KSh250,000 (US\$3,000) that provides loans for self-help group members to invest in farming and other income generating activities. The scheme has made loans totalling KSh1,250,000 (US\$15,000) to Nyando households in the past 12 months.

Main achievements and challenges

Nyando's multi-stakeholder approach shows how research, development partners, extension agents and communities can work together towards a common outcome.

Community groups working with World Neighbors and the Ministries of Agriculture and Livestock

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Development have gained capacity in improved agronomic practices, beekeeping and livestock management, and this has often particularly helped women, who are well represented in community groups (7 of the 16 community-based animal health workers that have been trained are women). Some of the groups are already looking further afield. For example, some of the beekeeping groups have joined other organisations outside their CBO to improve market access and increase their bargaining power.

Households have gained better incomes, better nutrition and more control over their own food security. Crop productivity has increased while income from selling crops, honey, eggs, chicken and tree seedlings is providing extra income to meet other household needs.

Other advantages of the group approach include sharing income or products equally among members or reinvesting in other income-generating activities. Groups either share income or products equally among members, or re-invest in other income-generating activities. Horticultural groups, for example, invest some of their proceeds in other high-value traditional vegetables. Within livestock enterprises, the principle of 'passing on the gift' enables other community members to acquire the improved breeds.

Integrating livelihood diversification with mitigation interventions, for example by improving land management through agro-forestry, is another key achievement.

Interactions within and across groups and CBOs has driven knowledge-sharing and learning. Through the partnership, Vi Agroforestry, World Neighbors, Ministries of Agriculture and Livestock Development and KARI have expanded their extension programmes to meet increased demand.

Yet despite the achievements, challenges remain. Scaling out of the interventions and active participation

for group members still need to be strengthened. Adding value post-harvest is another challenge. Cereal crops need drying and storage facilities, horticultural products need cooling facilities, and beekeepers need equipment for processing and packaging honey. Collectively owned tree nurseries, horticultural enterprises and beekeeping all face challenges with basic record keeping for monitoring productivity as well as profitability. Pests remain a further challenge, especially for crops. Lastly, fodder and forage for livestock and beekeeping has been slow to establish.

Lessons

Farmers, researchers, development partners and extension agents all benefit from uniting around common interests. Participatory processes that involved all stakeholders in identifying and prioritising interventions have empowered community members to directly request and access information and services.

By forming umbrella organisations, self-help groups gain bargaining power and financial resources. The umbrella CBOs have been key to empowering individual groups. As such groups grow, they will become better able to access credit from formal financial institutions such as banks and micro-finance institutions.

By taking a 'gendered approach', community development efforts can contribute to women's empowerment. Diversification into beekeeping and poultry has particularly helped women, as such enterprises need little land (women face tenure problems in conservative societies like Nyando) and are not labour intensive. Ensuring that leadership roles in self-help groups are open to women is a further path to women's empowerment.

Overall, linking climate risk management, mitigation and adaptation interventions through a broad partnership has diversified enterprises, empowering farmers to become more resilient.

Notes

■ ¹ NACC and NASCOP. 2007. *National HIV prevalence in Kenya*. Government of Kenya, Nairobi. Also see Kenya National Bureau of Statistics (KNBS). 2007. *Basic Report on Well-Being in Kenya*. Based on the Kenya Integrated Household Budget Survey 2005/2006. Ministry of Planning and National Development, Nairobi. ■ ² Mango, J., Mideva, A., Osanya W., Odhiambo, A. 2011. *Summary of Baseline Household Survey Results: Lower Nyando, Kenya*. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. Available online at: www.ccafs.cgiar.org; CCAFS. 2011. *Global Summary of Baseline Household Survey* ■ ³ ICRAF. 2008. *Baseline Report Nyando River Basin*. Western Kenya Integrated Ecosystem Management Project. ■ ⁴ World Neighbors. 2006. *From hunger to hope: Friends of Katuk Odeyo Community Development Program (FOCODEP)*, Baseline Survey Report.



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