



Project Brief Report KAZUNGULA DISTRICT



Project Title: Adaptation to the effects of Climate Variability and Change in Agro-ecological Regions I and II (**Climate Change for Adaptation Project**)

Goal: To improve food security through enhanced adaptive capacity to respond to the risks posed by the effects of climate change (including variability) in AER I and II of Zambia

Objective: To develop adaptive capacity of subsistence farmers and rural communities to withstand climate change in Zambia

Funding: The project is supported by the Least Developed Country Fund (LDCF) of the Global Environment Facility (GEF) through the United Nations Development Program (UNDP) country office.

Implementing Agency: Ministry of Agriculture and Livestock

Project No(s): 00058205/00072197 (ZMB10)

Kasaya Site Catchment Farm Household Numbers: 1,022 (928 males and 294 females)

Outcome 1:

Climate change risks integrated into decision-making processes for agricultural management at the local, sub-national and national levels

Output 1.1: Number of government planners and private sector trained on climate risk management for improved agricultural productivity.

1. One (1) automatic weather station was installed by Zambia Meteorological Department and configured for data collection, analysis and dissemination of early warning system weather information to stakeholders especially among communities of Kasaya site that are usually affected by drought and floods.
2. Two (2) officers oriented on reading and collecting daily averages of air temperature, soil temperature, relative humidity, wind speed, wind direction, rainfall and solar radiation.
3. Ninety (90) farmers (crop diversification group, beekeeping group and goat rearing group – 38 females and 52 males) were trained by the Zambia Meteorological Department on matching weather and climate trends to have good crop harvest, increased livestock production and good honey yield and quality.

Output 1.2: Effective Early warning system developed to enhance preparedness and reduce climate related risks.

1. 90 (38 females and 52 males) small-scale farmers at Kasiya site trained in climate change adaptation techniques with each farmer expected to subsequently adopt at least one technique (technique include use of weather information, soil and water conservation, crop diversification and alternative livelihoods).

Outcome 2:

Agricultural productivity in the pilot sites made resilient to the anticipated impacts of climate change

Output 2.1: Soil and water conservation and soil improvement techniques tested for their ability to improve the productivity of small-scale agriculture.

1. Two (2) field staff (1 male and 1 female) trained on conservation agriculture
2. Thirty (30) farmers (15 males and 15 females) trained in conservation agriculture technology to make them resilient to impacts of climate change. The thirty farmers were supported with conservation agriculture tools and implements – sprayer, ripper and Chaka hoe.
3. Observed higher yields in crops planted under improved soil and water conservation measures than crops planted under conventional farming system. Based on yield assessments done, maize yielded 3ton/ha under conservation agriculture, 1ton/ha under conventional farming system; 1.2ton/ha sorghum under CA, 0.8ton/ha conventional farming system; 0.8ton/ha cowpeas under CA, 0.6ton/ha under conventional farming system; 1.7ton/ha sunflower under CA, 1ton/ha under conventional farming system and 0.9ton/ha rice under conventional farming system.
4. Seventy-six (76) farmers (35 males and 41 females) trained in conservation agriculture technology to make them resilient to impacts of climate change – techniques included use of climatic indicators, indigenous knowledge early warning system (EWS), minimum tillage, crop rotation and crop residue retention.

Output 2.2: Crop diversification practices tested to improve the resilience of farmers to drought

1. Thirty (30) farmers (15 males and 15 females) trained in crop diversification to make them resilient to impacts of climate change. The thirty farmers were supported with crop diversification seeds which are resilient from effects of high temperatures, drought and floods – upland and paddy rice, sorghum, cowpeas and sunflower.

2. Ten (10) farmers (7 females and 3 males) trained in seed multiplication on drought and flood tolerant crop varieties – cowpeas, groundnuts, sorghum, maize and rice – to make them resilient and adapt to effects of climate change.

Output 2.3: Alternative livelihoods tested for their ability to diversify livelihoods away from maize production.

Output 2.3a: Bee keeping and goat rearing tested for their ability to diversify incomes away from maize production.

1. Thirty (30) beneficiaries (9 females and 21 males) were trained in beekeeping production and management by the Department of Forestry. The thirty (30) beekeepers have since been provided with starter beekeeping tools and equipment – five (5) beehives per beekeeper, swarm box, two (2) 20litre buckets, smokers, veil, working-overall and weighing scales. So far there is working progress of 18 beehives already have bees.
2. Three (3) beekeeping farmer group committees were formed to easy sharing of knowledge and skills on production, health, marketing and farmer-to-farmer extension
3. Thirty (30) farmers (14 females and males 16) were trained in goat production and management by the Department of Livestock Production. The thirty (30) farmers were supported with starter pack of two (2) goats, sprayer, acaricide and dewormer. The thirty (30) farmers are expected to pass-on the female offspring to another beneficiary as a sustainability, recovery and expansion intervention. So far there is working progress of 7 kids born.
4. Three (3) goat farmer group committees were formed to easy sharing of knowledge and skills on goat production, health, marketing and farmer-to-farmer extension
5. Both beekeepers (30) and goat farmers (30) were trained on farming as a business to enhance their skills in taking farming as a business and make them resilient to effects of climate change
6. Sensitization, formation, election of executive committees, constitution making, and registration of rice growers and beekeepers' associations. Two (2) associations formed – Sikaunzwe Rice Growers Association and Nakasika Beekeepers Association.
7. 30 beekeepers (9 females and 21 males) trained on honey bee product processing and marketing.
8. Developed a payback (input recovery) and management system for the seed bank, beekeeping, goats and rice farming interventions – the goat recipients pass-on female offspring to an identified beneficiary.

Output 2.3c: Rice farming tested for its ability to diversify incomes away from maize production.

1. Ten (10) farmers were trained in rice production and management. The ten (10) farmers were supported with upland rice (NERICA 4 variety – New Rice for Africa) and paddy rice (Supa variety) to make them resilient to flood and drought effects.
2. The upland and paddy rice growers have formed the Sikaunzwe Rice Growers Association and an interim committee (6 males and 4 females) to oversee the operations of the rice mill was elected. The association will include rice growers within and outside project area for sustainability.
3. One (1) rice mill acquired for rice farmers in Kasaya.
4. Held one (1) field day on rice farming and 92 farmers (28 females and 64 males) attended rice farming field day.
5. 26 farmers (14 females and 12 males) trained in rice production, harvesting, processing and marketing.

Output 2.4: Community-based water storage and irrigation systems improved or developed to test their ability to raise agricultural productivity.

1. Two (2) storm water dams were constructed (using government contribution) in 2010 in Zambwe village covering more than 40 farm households.

Outcome 4: Lessons-learned and knowledge management component established

4.1 Knowledge and lessons learned to support implementation of adaptation measures compiled and disseminated

1. One (1) newspaper article publication (in The Post Newspaper of Wednesday, 3rd July 2013) and one (1) documentary recording done by the National Agricultural Information service in order to disseminate project specific information.

Outcome 5: Project Management and Coordination

5.2 Backstopping, supervision and training and monitoring of projects activities

1. Ten (10) monitoring and backstopping visits conducted by the Provincial Project Members to Kasaya pilot site – Agriculture, Forestry and Meteorology.
2. Thirty-six (36) monitoring and backstopping visits conducted by District Project members to Kasaya pilot site - Agriculture, Forestry and Meteorology.

Stakeholder involvement

1. The implementing agency (Ministry of Agriculture and Livestock) is working with Department of Forestry on aspects of alternative livelihoods, Zambia Meteorological Department, Zambia National Farmers' Union on aspects of agricultural input supply and collaborated with a UN Volunteer based at the Provincial Agricultural Coordinator's Office on rice production, harvesting and processing.
2. Climate change project activities are reported to the Kazungula District Development Coordinating Committee through the Agriculture and Natural Resources Sub-committee on a quarterly basis.

Lessons Learnt

1. Soil and water conservation and soil improvement techniques provide good agricultural practices (GAPs) for farmers in the project and surrounding areas. The practices provide adaptation measures for farmers' resilience to effects drought and flood.
2. Crop diversification with inclusion of rice and sorghum provide GAPs that are adapted to effects of drought and flood experienced in the project site and results can be replicated to similar environments.
3. Seed multiplication intervention ensures sustainability of project interventions after project completion through multiplication of drought and flood tolerant crop varieties.
4. Alternative livelihoods – beekeeping and goat rearing – provide GAPs that are adapted to effects of climate change and variability.
5. The goat pass-on-the gift concept is a good agricultural practice that will ensure project sustainability and exit strategy. This will increase goat numbers in the Kasaya Catchment area.
6. The involvement of Department of Meteorology and Department of Forestry in project implementation has provided farmers with appropriate weather information and beekeeping practices as a team, which provides an opportunity for communities to have a complete climate change adaptation technique package.
7. Early Warning Systems (EWS) are important tools for any interventions that beneficiaries wish to undertake at Kasaya Site because it affects their ability to become resilient to effects of climate change and variability.

Gender Participation

Out of the total number of 142 farm households supported by the project, 71 females (50%) and 71 males (50%) with more than 30% women participation, access to inputs, access to extension services, farmer groups and involvement in decision making other than being the main source of farm labour at community level.

Challenges and action taken

- Lack of improved and certified red sorghum crop varieties among seed companies will be addressed by the identified ten (10) seed growers who shall multiply red sorghum. The district team will work in collaboration with Zambia Agriculture Research Institute (source of red sorghum foundation seed) and the Seed Control and Certification Institute (training, inspection, seed testing and certification).
- Replication of interventions at institutional level requires policy commitment to national level to sustain activities and achievements. There is need for budgetary support to climate change adaptation measures among all partner institutions through their respective Ministries or organisation.