



SURVIVING IN THE HARD TIMES OF CLIMATE CHANGE

Acknowledgements

Many thanks to Senga Bay Baptist Mision, Salima ADD and the communities for their cooperation during the case study exercise. Most importantly, Christian Aid should be acknowledged for financial support for both the collection of the case study and its publishing.

Developed and Designed

Dorothy Tembo

Centre for Environmental Policy and Advocacy (CEPA),

P. O. Box 1057

Blantyre

Malawi

Tel: +265 212 700 104

www.cepa.org.mw

A Case study I: Mawale and Mzee Disaster Risk Reduction clubs, Sengabay, Salima



Photovoltaic panel, tank and storage facility for Mzee DRR Club

Climate change, population pressure and natural resources degradation have not spared the lives in Salima just like any other district in Malawi. Reports have indicated that these variables have increased the vulnerability of poor communities to food insecurity and pushing a number of people below the poverty line. Salima district is prone to perennial dry spells and in some years droughts have been experienced resulting in more devastating damage to staple food crop and livestock production. The immediate and long term implications of these dry spells and drought is more pronounced for rural communities whose livelihood is directly linked to agricultural production. With these challenges at hand organizations and communities have resorted to several strategies to cope up with the situation especially with droughts to increase their agricultural production. Small Scale Irrigation Small scale irrigation seems to provide solutions to most families in Senga-bay taking advantage of the water tables in general. Most areas in Senga-bay have attributes of wetlands hence its

potential for irrigation. With financial assistance from Christian Aid in 2006 Baptist Mission mobilized the communities to assess what would be the solution to adapt to climate change effects and this was the birth of the two clubs namely Mzee and Mawale Disaster Risk Reduction clubs (DRR) in T/A Maganga. The clubs have membership of 27 farmers and 20 farmers respectively with 5 men each. The irrigation schemes were designed to use solar driven water pumps.

Using the solar driven pumps each of the two communities are currently able to irrigate 3 hectares of land making a total of about 6 hectares under irrigation. This intervention is a response to the increase in the occurrence of disaster such as drought which are becoming increasingly challenging in the project area. The activity is meant to reduce vulnerability of HIV and Aids affected households and other disadvantaged households to the effects of climate change. Vulnerable households have to improve their crop production in an environmental friendly and climate resilient manner. It is anticipated

that the irrigation system will significantly increase vegetable production like tomatoes, Chinese, mustard and rape in villages thereby improving nutrition and boosting household incomes. In addition the schemes are growing maize which is sold as green maize to individuals, lodges and hotels around the villages. In particular, Mawale DRR club which is located close to Mpatasa Njoka stream practices rice farming using the same irrigation system. All produce have access to markets through linkages which were facilitated by Baptist Mission. Solar panels fitted on top of a tank are visible from a distance. Solar technology — photovoltaic panels — converts the sun's radiation directly into electricity with no pollution or damage to the environment. The panels generate enough power to pump water which is directed into tanks and then farmers open the valves connected to the tanks via drainage canals (feeder canals) to irrigate crops. The communities take responsibility of panel's security.

Amina Asani aged 40 expressed her experiences of how food production trends became lower and lower especially in the 80's. She continued to say that the first time

she was hit with drought was around 2000 and 2001 and this drought completely affected her wellbeing. That season she did not produce any maize not even rice which is well known for Salima. "In 2000/2001 rainy season, I tilled my small land of about 1.8 ha, getting ready for planting, unfortunately, after first rains in October which lasted two days and was on average 6.5 mm (according to the weather personnel), the rains disappeared until December", she said. She continued that she was confused and knew this was the starting of food begging for her household and they resorted to selling of doughnuts and some idle assets from the household. But with these coping strategies *moyo siunali bwino* aunt (life was never the same). We couldn't ask assistance from the neighbors because they were in the same shoes as ours. At this time the dambos were also very dry, *tinalibe kothawira mayi, ng'amba iyi yinali yoopsyia* (we had no alternatives, the droughts were too much). Amina continued to explain that her 3 children had stopped going to schools because of empty stomach and they were encouraged to search for *ganyu* in town and selling of fish, but this did not still improve the situation for her house. Her situation



Healthy maize out of solar irrigation, poor soils supported by irrigation and conservation agriculture



Neighboring field of Mzee DRR club

¹ All photos used in this case studies were taken by CEPA ; All names used in the case study are real names and CEPA is responsible for any claims as regards the names

seemed to improve when she joined the DRR club in 2007, after harvesting the first produce (green maize, tomatoes), the committee agreed to share some produce and use some for income to both the club and also share some income to cope up with the situation. Although I am not completely back to where I was before these climatic changes, I can still see some opportunities for good life. Today my three kids are back in school because from the club we have learnt a lot of strategies which I am practicing at home together with the children. Most importantly is the practicing of conservation farming on my small piece of land, because I can't afford the solar equipment alone.



Creating new fields for rice-Mawale DRR club

Mary Ganizani 35, is one of the beneficiaries of the Mawale DRR club in T/A Maganga. Together with her friends, she is involved in solar irrigation which is also assisted by Baptist Mission, but for this club, the main crop grown is rice. Mawale DRR scheme is very close to Mpatsa Njoka stream and the area is very dumpy and has fertile soils, she said. She joined the club in 2007 because of changes she experienced in her well being. The three times meals had disappeared, the income they used to get from their farm land for other luxurious items completely could not be traced.

Life was never the same especially in 2002, she emphasized. When people talked about unpredictable rains, very hot sunshine, outbreaks of diseases etc, I didn't know this was what one can call effects of climate change. She continued to elaborate that there has been strange diseases in the areas in the past years, which even health personnel failed to explain properly what caused them, it's now that I am realizing that, it's all attributed this climate change, she nodded. Today as I stand here, my well being has changed and will continue to change because I have been exposed to a number of people through Baptist Mission.



The Mawale club admiring their own rice; the water passes through small canals to the main field

From a number of forums organized by Baptist Mission I am able to differentiate the differences between coping and adaptation strategies, what causes climate change amongst other. *Ndikuthokozani a babatist (Baptist Mission) mwasintha moyo wanga* (many thanks to Baptist Mission for changing my life). Although I cannot have a solar panel at my homestead, I am able to use other strategies like irrigation through watering cane, *chifukwa njirayi siyitulutsa utsi omwe uli oyipa ku mlengalenga chimodzimodzi ulimi wa mthhilirira pogwiritsa ntchito dzuwa* (clean technology

like solar irrigation), practicing conservation agriculture/farming (Ntaya khasu) which improves soil structure and water retention. On top of Maize, I also grow leguminous crops, like beans and anticipating more bags of produce this year. Last year (2009/10) I got 7 bags on maize and 10 bags of rice. My welfare has really improved, the three meals per day are back but also my family can eat rice at any time because of the scheme. The good thing with the scheme is that each one of us is given a portion to farm on, and the production realized and decision pertaining to the produced is entirely left to the owner of that particular portion. The other members of the club are there to assist each other with advise and sometimes small activities like weeding incase the owner is sick or can't manage to finish the work. Baptist

Mission has always encouraged us to replicate these initiatives in our respective pieces of land at home and they make it a point to visit our respective homes to confirm the replication.

The storage tank for Mawale DRR clubs stores 14000 litres of water which is irrigated on the rice. The rice varieties cultivated by the club include German fire and kilombelo which is supplied by Lifuna research station. Currently, 2.0 hectares is under rice and 1.0 hectares is unused. In good years each portioned plot produces about 9 bags of rice. The major problem we face with irrigation is limited water supply at times and also feeder canals to reach all portions of the field, she concluded.

Case studyII: Mr Sineki Mnani, T/A Maganga, Senga Bay, Salima, Malawi



Mr Mnani's main house

Mr Sineki Mnani lives in Chimbambala Village with his wife, three children and three grandchildren with ages ranging from 5 to 25 years. This head of the household is in his late fifty's and has been living in this village since his birth which was inherited from his great grand parents. This dark colored skin man with height about 1.9 meters did not go a long way with his education including his wife and the children. He went up to standard 6 and knows less of reading and writing including understanding technical terminologies. This family could be looked at as wealthier compared to neighboring households because of the housing structures, land holding size, crops grown and harvests and income generating activities such as marketing of rice after harvest. Mr Mnani elaborated that he lives on farming his 2.0 hectares of land in total although it is fragmented on which he grows rice and maize as major crops. At the time of the interview the other members of the household were at the rice scheme away

from the residential place.

Mr Mnani's family was amongst most of the households in the village experiencing food shortages especially in the lean months and this problem became persistent from the late 1970's to 2009. Mr Mnani only used to harvest 2 bags of maize with the climate



Mr Mnani's health Maize field-Mtaya Nkhasu is the reason behind this big cob



Mr Mnani's neighboring field

challenges. These problems were attributed to several factors including high prices of farming inputs, cultural factors (spirits), his health status, cutting down of trees and many more.

Thanks to coming of Senga Bay Baptist Mission who introduced themselves to him in 2009. This was the time he realized the causes of the food inadequacy. Among other factors, he understands that local effects of climate change are causing these food shortages through unreliable rainfall pattern and extreme high temperatures.

My village used to receive rains in good time starting from late October to at least March but these days we don't know as to when these rains will commence and stop. These type of patterns have affected my family a lot because we now don't have the proper time we can say we start our farming activities, Mr Mnani complained. *Taganizani mayi mvula yikumayamba kumapeto kwa November dzaka zina, komanso mvula yake yosakwana* (just think of it, sometimes the rains start as late as November and it's still not enough). With Baptist's assistance through awareness and sensitization meetings, he understands that climate change is a resultant effect from corrosion of the

ozone layer which covers the earth from inhabitable climate like high temperatures. Mr. Mnani now knows that climate change is a long term phenomenon which has been induced by the rich countries with their gas emissions from industries and that most African countries, including Malawi are just suffering from the effects. The coming of Baptist Mission was aimed at equipping the local communities with skills to adapt to effects of climate change like unreliable rainfall which is making water very scarce for crops and high temperatures which scorches their crops, Mr Mnani explained. He also explained that, for countries such as Malawi, there is very little they can do in terms of mitigation but rather adaptation to ensure resumption of food flows.

'Before Baptist Mission introduced the adaptation strategies to our family in 2009, life was miserable, we did not know what the day will bring, we survived on one meal a day which was not even enough for us all. We took part in sacrificial ceremonies to bring back the rains but to no avail' it was difficult. For the first time during the 2009/2010 farming season, I managed to harvest about seven bags of maize after consuming a lot of green maize and 8 bags of rice, many thanks to Baptist Mission. This maize lasted my household 9 months which was a miracle. In this 2010/2011 season I am expecting to produce more than the previous year. Baptist Mission trained me and my family on cheap *Mtaya khasu* technology. This merely involves laying dead grass or maize stalks on the ground to suppress the weeds and conserve moisture considering scarce water. *Mtaya khasu* is also known as *Mtaya makasu* or *Mlera nthaka* (conservation agriculture). Baptist Mission is also providing start-up herbicides. The herbicides are sprayed on top of the grass to kill any weeds growing. The seeds are planted following the *sasakawa* technology on a flat field. Apart from maize



(Mr Lawrence Chafuwa-Baptist Mission technical expert on Conservation farming)

and rice, I also grow ground nuts, soybeans, pumpkins and cucumber. I am now a happy family man because I can now take care of my dwindling health and my family, we sold two bags of maize and six bags of rice and used the money to buy clothes, cooking oil, meat, paid school fees and used some for visiting relatives. The only problem I face with this type of farming is the competition for maize stalks, livestock needs them for

feed and we want them for maximum soil cover. Just the same, if I am to use dead grass, the competition is also there because other households including myself need it re-thatching of the house. On top of mulching, purchasing fertilizer is also a challenge since I don't have a stable source of income, my land is also small, Mr Mnani concluded.

² Flat field, since 2009, Mr Sineki has not ridged his field, as such the existing ridges in the field are little by little disappearing. His photo is showing some grass laid on the ground

Case studyIII: Mr Evason Sokasoka, GVH Mikute 1, T/A Maganga, Senga Bay, Salima, Malawi



Mr Evason in his garden, proud of three cobs per stalk

Mr Evason Sokasoka aged 54 is a retired soldier from Malawi defense force and is based in Mikute 1 village since his retirement. The retired soldier became a serious farmer about six years ago since the coming of Mr Sokasoka in the village neighboring households, farmers and other villages have looked at him as their model because of his modern housing structure, fleet of houses, big chunk of land, different types and breeds of livestock, two dishes (dstv and free to air), fleet of vehicles and oxcart and his lifestyle from 2005 the retired soldier's home was full of different types of produce, including maize. The household was always full of temporary laborers who came to assist the man with work as Ganyu, you could not make a mistake identifying his household from other neighboring households because of his wealth. Mr Sokasoka did not find problems feeding his big family size of 7 people, he also could afford the bags of purchasing fertilizer for the crops. Until 2009, when his crops were

affected, that is when he felt the pinch, he was forced to change his life style including failure to purchase fertilizer. Things were not the same with him. All this was attributed to the delayed rains in 2007 which affected his crops which he depended on entirely after his retirement. This was the time he realized



Mr Evason's neighboring plot with healthy maize – Ntaya khasu is the answer

the talked about climate change has not spared him at all. For the first time, he visited Baptist Mission after hearing about their initiatives on conservation agriculture, the institution did not hesitate but to assist this willing farmer and knew that they would not find challenges with him because he is a learned farmer, this was the coming back to wealth of the retired soldier. In 2008, he managed to produce maize for the family for the whole year and also sold the surplus, Ntaya khasu was the solution. For 2010/2011 he is anticipating more produce

since he has used Ntaya khasu to almost all his land (1.5 hectares) which survived four weeks dry spell because of mulching, almost all the whole field has 3 cobs per stalk. He will continue to practice this type of farming and plans to buy maize stalks from other farmers to use for his field for maximum soil cover which is one of the principles of conservation agriculture. Him being a model seems to bounce back and he is proud to be a model to others. To show that he is a model, all his neighboring fields are also under conservation agriculture.