



Climate resilient sustainable agriculture for adaptation to climate change in The Gambia

Introduction

Smallholder farmers in Gambia are increasingly facing climate related induced disasters and vulnerabilities affecting their lives and livelihoods. During 2010-2012, farmers faced flash floods, periods of drought, disease infestation, saline intrusion, deforestation and massive erosion of their farmlands resulting in crop failure and reduced food security. ActionAid has introduced agroecological approaches including disaster risk reduction (DRR) and climate resilient sustainable agriculture (CRSA) to support smallholder farmers adapt to these shocks and to reduce vulnerabilities.

1267 smallholder farmers from 18 villages have been supported to become increasingly resilient for sustainable food security. There has been a tremendous increase on the number of smallholder farmers who are now practicing CRSA on their own. Many are actively sharing the knowledge and skills with other smallholder farmers far beyond the initial project intervention areas.



Figure 1. A woman tends her organic garden by the River Gambia

Through a partnership and collaboration with the Ministry of Agriculture, ActionAid trained 11 Multi-Disciplinary Facilitation Teams

(MDFTs) – government extension workers in the field - on CRSA practices to provide extension service support to farmers. Among the common CRSA practices and applications are intercropping, mixed cropping, use and application of composting, introduction of open pollinated, traditional, early maturing seed varieties, mulching, use of botanical pesticides, provision of environmentally friendly farm implements and draught animals. The MDFTs also work with smallholder farmers, especially women, to identify their own vulnerabilities through participatory vulnerability analysis which help the communities to develop action plans to mitigate the identified vulnerabilities.

Description of the Agroecology system

A wide range of Interventions have been devised across the entire food production cycle to improve communities' resilience in a holistic manner. Starting with seeds: open pollinated, traditional, early maturing seed varieties reduce dependence on commercial inputs and encourage crop diversification. Seeds are treated with botanical pesticides prepared from locally available resources which are used as part of an integrated pest management approach. Practices such as intercropping, mixed cropping and cover crops alongside soil fertility enhancement using animal manure, locally made compost and



mulching also help to build resilience and reduce costs. Measures to control flooding and soil erosion include contour bunds and, when resources allow, the desalinization and restoration of wetlands through dyke construction. Post-harvest handling and management is critical to enhancing food security and the seed and cereal banks are an essential part of this.

The training, support and encouragement to adopt and extend these practices are provided by: ¹

- the farmer extension service support, mainly facilitated by Multi-Disciplinary Facilitation Teams (MDFTs) and
- Peer to peer learning among farmers practicing Climate Resilient Sustainable Agriculture

With the collaboration of eleven extension workers of the Multi-Disciplinary Facilitation Teams, the project provided extension services/support to smallholder farmers on various CRSA application and practices. Most common adopted practices were intercropping, mixed farming, application of organic manure, composting and adoption of non-farm burning.

In the 2015 and 2016 cropping seasons, 1267 smallholder farmers had applied one or more forms of CRSA practice. The CRSA application and practices have contributed to the increased productivity experienced within the 18 intervention communities. The MDFTs also provided quarterly monitoring and supervisory visits to those who were indirectly reached and are engaged in the peer to peer learning programme.

Neneh Camara, is a farmer in Touba Kolong, The Gambia and participates in the project. She stated: *“This year we were taught not to use chemical fertiliser on our garden. We use animal dung from donkeys, cows, chickens – we gather everything and use it on our garden. We made that compost ourselves.*

“I have never experienced anything like that since I was born. This year we used it on our garden. I was so happy. I put it on my onions and they were very good.

“Now my onions are quite different from before. The onions with compost are bigger than with chemical fertiliser. Sometimes if I used too much chemical fertiliser it damaged the vegetables. In one part of the garden I put chemical fertiliser three times and it dried out. I watered it over and over but still it was no good.



Figure 2. Neneh Camara with organic onions

“I can show you my onions are very big. Since we lifted them they last well, they’re still sound. That’s why the compost is good. Since we collaborated with ActionAid on this project we’ve seen a lot of benefits. We are very happy because it has improved our garden activities.”

Despite the impressive positive impact of the extension support by MDFTs, limited capacity to reach out to many farmers still remains a challenge. This was the reason for the adoption of peer to peer learning which embeds sustainable systems of sharing and learning within communities. A total of 2231 smallholder farmers were covered in peer to peer learning. Each trained smallholder farmer was

¹ Now I can feed my family – video featuring testimony from Gawlo Sabally: <https://youtu.be/eGvTdRFQVPI>



tasked to train and give support to between seven and ten other farmers on CRSA practices in their respective villages.

Beyond these CRSA practices other adaptation measures to support and strengthen alternative livelihood activities such as bee keeping, small ruminant rearing, tie & dye and batiks, soap making, petty trading, fishing equipment for fisher folk have helped to improve resilience to climate impacts. The approach also includes strengthening capabilities through capacity building on value chains and access to market.

Political space

Government departments are aware of the severe climate impacts on smallholder farmers but have limited resources to respond. Collaborations with non-governmental organizations are welcomed as a way of expanding capacity and impact.

Alpha Jallow, a Gambian UNFCC Focal Point said: *“If there is more finance we will go beyond the current level we are, because otherwise annually we can do only few trainings and sensitisations for farmers and extension workers... I was invited by ActionAid to have a sensitisation and training with farmers. This included ActionAid, its partners and the government and was a good initiative. So if you have partners who are not the central government but work in collaboration with central government for better coordination and knowing that these resources that are coming into it, it is good.”*

Outcomes of the practices

The CRSA farmer extension support has created enhanced awareness among smallholder farmers about climate change and its impact on lives and livelihood sources. Project participants have reported an increase in food security and effective adaptation to climate change. CRSA practice further ensures smallholder farmers, especially women, have healthy soils that retain moisture and help compensate for erratic rainfall and unseasonal high temperatures.

The seed and cereal banks are a great contribution to resilience building. The physical structures provide safe storage facilities for farmers to keep their seeds and cereal away from animals, pest infestation and/or fire hazards. The availability of open pollinated, traditional, early maturing seed varieties enables farmers to have access to seeds at the crucial moment when the rains start. Combined with reliable weather information this also provides resilience when the onset of rains is less reliable. The banked cereal also enables access to cereal especially during lean period.



Figure 3. Organic vegetables grown with compost



Reports from the communities indicate a huge expansion on the use and application of botanical pesticides as smallholder farmers have recorded positive adoption of this CRSA practice. It is easy to convince farmers and to adopt because it is inexpensive and is preventative, as opposed to chemical pesticides which are expensive and hazardous to the environment and people. Smallholder farmers do still use chemical fertilizers but many farmers within the project areas are now increasingly apply compost despite the challenges of providing sufficient materials to cover an entire farm at one go. In the long run, there is a trend towards elimination of chemical fertilizers as farm areas treated with compost or manure do not need to be fertilized every year.

Message from farmer to farmers

“My food would only last six months but since I’ve used compost my food lasts all year. Unlike before, I’m no longer going to people begging for handouts of rice, handouts to feed my family. I thank God I no longer have to do that now I can feed my family.”

— Message from Gawlo Sabally, farmer, Ngawarr village



Figure 4. Gawlo Sabally, farmer Ngawarr village