

**BUILDING COMMUNITY RESILIENCE THROUGH SPATE IRRIGATION  
ACTIVITIES OF CATHOLIC RELIEF SERVICES AND TECHNOSERVE IN  
DEDZA DISTRICT**



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## **1.0 Introduction**

Technoserve believes that by building climate resilience via cost effective natural resource management technologies, Malawi can stabilize its food security over time. In 2014, TECHNOSERVE embarked on a unique and conceptually innovative donor support program to combat three of the main drivers of food insecurity: Droughts and Dry Spells, Inadequate Irrigation and Decreasing Yield due to Soil Erosion. This was an initiative under the USAID Feed the Future Program, spearheaded by Technoserve, in consortium with a Knowledge Partner from India and an Innovation Adopter from Africa. The designated Indian Knowledge Partner is GRAVIS. The designated Africa Innovation Adopter is Catholic Relief Services.

A field Appraisal visit to appreciate the activities by Techno serve was conducted on 13<sup>th</sup> October 2016. The team comprising a representative of Irrigation Department and Land resources Conservation Department joined staff from Techno serve and Catholic Relief Society (CRS) for the trip in Dedza District.

## **2.0 Background**

The team was briefed that the activities being implemented as part of a project supported by the USAID entitled “Feed the Future India – Africa Agriculture and NRM Innovation learning Platform. Interventions being showcased have been successfully implemented in India. Looking at similarities in context between the two countries, a project to test their adaptability to African countries was conceived and Malawi is one of the countries in the project

## **3.0 Technologies**

### **3.1 Site 1**



**Site 1**

**Mkwaira Village - Chinsakhwa Irrigation Scheme**

According to the information obtained from Technoserve, in July 2015 the consortium of Technoserve, GRAVIS and CRS constructed 8 seepage wells out of the targetted 10 at Chisankhwa Irrigation Site in Mkwaira village and it is anticipated that the number of well to be constructed ultimately will be 13 because currently 5 more are under construction.

Comprises of 200members (120 women). It has a total land area of 5Ha and the Maize crops being are maize, beans and vegetables. Irrigation technology being consist of Shallow wells dug with technical guidance of Techno Serve. Farmers draw water from the shallow wells using Treadle Pumps. Shallow wells are 4metres deep and supported on the sides by a brick wall. Shallow wells draw their water from ground water sources. Communities contribute labour and local materials for the construction of the shallow wells



Seepage Well/ Shallow well



*Inside the shallow well*



*Good crop stand*

### **3.2 Positives noted at the scheme**

- Improved boreholes suck for supplemental irrigation
- Communities well charged and enthusiastic
- Good crop stand noted on the fields
- Water lifting devices provided to farmers are making positive contribution

### **3.3 Issues that need improvement**

- Farmers noted and admitted that they don't work with any government staff e.g. AEDO

- Lack of and weak local capacity in group dynamics
- Lack of integration with other Land Resources interventions e.g. Manure making and application, CA probably due to the disconnect above.
- Lack of strategies for ground water recharge since the boreholes they have sunk are mainly relying on ground water recharge
- Lack of Environmental and Social Management Plan
- Poor crop husbandry practices observed e.g. planting pits too close and not well spaced.
- Large area planted to maize than what they water available can adequately irrigate.
- Lack of strategies on catchment management i.e. linkage between upstream and downstream farmers

## Site 2 – Kapesi Village



***Signpost for visibility***

Technology showcased - Demonstration of Gully Reclamation using Gabions, loose check dams and vegetative plants

The village comprises of 1200 Households. Major challenge noted by farmers was loss of soil due to big gullies in the village (160 Gullies identified). This led to siltation of local stream and the loss of cropping land.

Activities done so far include the following;

- Installation of Gabion basket check dams since last year.
- Planting of Bamboo and other plants to heal the gully.
- Excavation of infiltration pits or Run off detention ditches.
- Establishment of Agro forestry nurseries.



***Gully Reclamation***

### **3.4 Positives at site 2**

- Serious gully being reclaimed.
- Community participation is good.
- Good visibility of project activities.

### **3.5 Things to be improved**

- Despite impressive infiltration pits, the fields in between were not aligned and seemed to be lying idle.
- Few technologies being promoted.
- Lack of Environmental and Social management Plan.

#### **4.0 Way forward**

1. For both sites, it was noted that government staff should be brought on board through Golomoti EPA and Dedza DADO. This should include all technical departments including crops department, livestock, irrigation and Land resources
2. There is need to bring complementary practices i.e. Manure making, agro forestry and Conservation agriculture
3. Issues of catchment conservation need to be included. It appears the project targeted downstream farmers only but them up stream farmers should be also be targeted on catchment management.
4. There is need to bring strategies for groundwater recharge to replenish the Shallow wells.
5. There is need to come up with Environmental and social management plans. For example communities indicated that they use water from the shallow wells for drinking as well. This might raise some health concerns. It was also noted that there were no toilets in the irrigation scheme.
6. It was recommended that the group need to be registered into a Water Users association for the sake of sustainability.
7. It was noted that there in “no magic bullet” in land resources management as such for positive results, there is need for farmers to implement a package of practices in combination e.g. manure application, CA, agroforestry rainwater harvesting e.t.c..
8. Documentation and knowledge management has to be improved for both sites so as to provide evidence base for success
9. It was agreed that there should be capacity building of the farmers in the following areas;
  - Group dynamics
  - Irrigation water management
  - Manure making and Conservation agriculture and other land resources practices

## **5.0 Conclusion**

The technologies being piloted above were observed to be very relevant in solving the problems (food insecurity and soil erosion) the communities in the two villages of Mkwaira and Kapesi are currently facing. It is pleasing to note that besides solving the problems, the interventions are in line with the National Irrigation Policy Development Strategies (NIPDS) and National Land Resources Policy in the sense that, firstly, they fit into a strategy of sustainable and environmentally appropriate natural resources development and management.

The initiatives promulgated by Techno serve are complementing the efforts of the Land resources Conservation Department. There needs to be pragmatic collaboration with government extension system so that these can be up scaled to other areas.