

20 F – 11 M, 2016  
Nairobi (Kenya),  
Moshi (Tanzania)

# 1st Annual Leadership Course in FBFS and WHR

Report of Group 3: Review adequacy of technical means of  
the spate irrigation . . .



By: ICRAF, METAMETA, and others

# 1<sup>ST</sup> Annual Leadership Course in FBFS and WHR

## I. INTRODUCTION

The leadership course in FBFS and WHR was organized in East Africa. This course served as a platform for exchange of new and innovative ideas, experiences and knowledge among young and mid-career professionals.

Group work was one part of this training course which took place in Moshi, Tanzania on 7 – 9 March 2016.

This report focuses on the work of group 3 comprised of the following members:

Madiha, Yemen  
Min Min Zaw, Myanmar  
Abdul Qayyum Karim, Afghanistan  
Abraha Adugna, Ethiopia  
Ephrem, Ethiopia  
Mourice, Kenya  
Ashfaq, Pakistan  
Omar, Sudan

## II. OBJECTIVE

Objective of the group work was to review adequacy of technical means of the spate irrigation to control, share, distribute and save water while maintaining productivity of technical ways to save and spread water.

The focus of the group work was on the following three areas:

- What more can be agreed to control and share water whilst maintaining productivity?
- Dry Season VS Wet Season
- What bye-Laws and agreements can be made to improve the spreading and control of water?

The team visited the following three areas keeping in mind the above three areas.

## Part I. Visiting Bangalala Village



## Part II. Visiting Microdam Site

### General Remarks:

- Ndiva (6 acr)
- Maintenance (seasonal; volunteer- every Tuesday; and no maintenance for canals from the source to the dam due to the geological formation of the canal 'naturally flowing': only 20% reaches the dam)
- Intake structure for diverting water to the Ndiva from the spring (weir upstream before Ndiva)
- Unlined 4 KM canal from the intake to the Ndiva
- Lined canal around 20M near the canal
- De-silting basin
- Spillway – always open in case of emergency
- Division box outside the Ndiva to divide water into two canals





### Part III. Visiting Makanya Village; Lowland





### **III. DISCUSSION**

#### **A. For Bangalala**

- Significant water loss in unlined canals
- In division boxes the slot gates are not used
- They use stones, mud, grass, etc..
- Canal bed scour on the drops
- Improper location of the de-silting basin

#### **B. For Makanya Catchment Area**

- Canal sedimentation
- Due to the railway bridge, the water directs to the left canal; it is difficult to divert the water to the right command area
- The existing diversion structure aggravates the sedimentation effect

## **IV. RECOMMENDATIONS**

To obtain optimal technical adequacy of the flood structures, the following recommendations and preferred:

### **A. For Bangalala Catchment**

- Line the canal
- Use proper slot gates
- Construct new de-silting basin as a escape canal location
- Frequently clean the de-silting basin
- Maintain the canal scour or place flat stones at the canal drops
- Having road crossing structure
- Collect some money from the farmers for the water they use
- Install a micro hydropower and use it for watermill which can generate substantial money for the canal maintenance
- introduce high value crops

### **B. For Makanya Catchment**

- Try to minimize the coming sediment by doing soil and water conservation activities in the uplands
- Try to make the railway bridge (floor) elevation equal. This may be done by laying riprap stones or boulder; open the bridge spans equally to get uniformly distributed water
- Modify the existing U diversion structure to a triangular structure by using 10M upstream space
- Although the advantages of the sedimentation: increasing the command area and bringing fertile soil; sandy soil will be collected in the area after a while
- Conservation of upper catchment as a strategy to reduce siltation menace
- Get regular meteorological information from nearby station specifically for Makanya sub- catchment- this will help farmers plan better for floods

THE END

**QUESTIONS PLEASE!**