REPORT OF RESEARCH SITE VISITS AND OUTSCALING OF VIA PROJECT IN TANZANIA

MAY/JUNE 2018

PART 1.0 INTRODUCTION

Tanzania VIA research team had a two weeks trip in three different regions (Dodoma, Iringa and Morogoro) which are having irrigation schemes participating in the research activities.

The main objectives of this visit was: to introduce the project to newly selected irrigation schemes, follow up of research progress of existing schemes and doing Sense maker trials to capture social learning of farmers

Five new irrigation schemes were engaged to the project, while one old scheme (Kiwere in Iringa) was handed over to a sister -project (TISA). Currently, there is a total of Nine (9) schemes under VIA in Tanzania. In all these new schemes (Table 1) we are selected 20 farmers who will be using soil and water monitoring tools (chameleon, wetting front detectors).

Table 1: List of new irrigation schemes, which are engaged to VIA Project in June 2018

S/N	Name of a Irrigation Scheme (crops)	Location of the scheme District, Region
1	Fufu (vegetables)	Chamwino,Dodoma
2	Luganga (vegetables)	Iringa Rural, Iringa
3	Mangalali (vegetables)	Iringa Rural, Iringa
4	Mkula (Rice)	Kilombero, Morogoro
5	Njage (Rice)	Kilombero,Morogoro

The visit also focused on conducting sense.maker trials by using an ipad whereby 35 farmers' stories were collected for analysis. The stories will be used to quantify qualitative data by analysis of the triads.

Photo 1.1: Sense.maker trials in Chinangali

PART 2: BACKGROUND INFORMATION OF NEW SCHEMES

2.1 FUFU IRRIGATION SCHEME IN DODOMA

2.1.1 Geographical Location

The scheme is found in Fufu village, Chamwino District in Dodoma Region. It is located 72 km from Dodoma municipality along Dodoma- Iringa highway road and lies between (S $06^{0}43.484^{1}$, E $035^{0}58.416^{1}$).

2.1.2 Cultivation and Market

It is a new scheme, whereby a surveyed area of 40 hectare is potential for irrigation. Crops to be grown in the scheme are vegetables such as watermelon, onions, tomatoes, Chinese cabbage, spinach etc. One Hundred farmers who owned plots before irrigation scheme are given plots in the scheme.

The expected market for the harvested crops will be local, Dodoma and outside of Dodoma markets.

2.1.3 Project Beneficiaries and State of Scheme

The construction cost of this scheme is about four hundred seventy seven millions Tanzanian shilling, financed by the Korean people under an NGO's known as Good Neighbours Tanzania. The construction was supervised by Tanzania National irrigation commission (NiRC) Central zonal office in collaboration with Chamwino District Council office.

The scheme construction is 98% completed, farmers will start to grow crops in July/August 2018.some farmers have started land preparation for the next season

2.1.4 Method of Irrigation Systems

The method of irrigation is furrow irrigation system. The water source- two solar power operated bore holes of a total discharge of 20,000 litres per hour fills a reservoir of 800,000 litres. It takes 4 sunny days to fill the tank. Water is then released from the tank to the main canal, secondary, tertiary canals and then to the farms.

	
Photo2.1: Fufu irrigation scheme Tank	Photo2.2: Fufu water sources - Borehole

	
Photo 2.3: Fufu farmers training session	Photo 2.4: Farmers Meeting at Fufu

2.2: LUGANGA IRRIGATION SCHEME IN IRINGA

2.2.1 Geographical Location

Luganga irrigation scheme is found in Luganga village, Ilolo Mpya ward, Iringa District. The scheme is located about 54km North West of Iringa town and is accessible throughout the year, through the Iringa- Pawaga Road. Geographically, Luganga irrigation scheme lies at Latitude $07^0$68'S and Longitude $35^0$58'E

2.2.2 Cultivation and Market

The scheme has the potential area of 1000 hectors of which 400 hectors are under irrigation. Crops grown in the scheme are different crops: like Paddy, maize, watermelon, onions, tomatoes, beans and cassava.

The market location for the harvested crops is Iringa town and outside of Iringa markets.

2.2.3 Project Beneficiaries and state of scheme

The scheme construction is 50% completed and has a total number of 380 farmers of which 248 are male and 132 female. Currently, the farmers are at land preparation stage and a few of them have planted crops during this dry season.

2.2.4 Method of Irrigation Systems

The method of irrigation is furrows irrigation system. Water source is Ruaha River, there is an intake weir which discharges 1200 liters/second. water is conveyed into main canal and distributed into secondary canals through water distribution structures by using canals- the main, secondary, tertiary canals and then to the farms.

Photo2.5: luganga Community leader

Photo2.6: Meeting session in Luganga

Photo2.7: Training session in Luganga

Photo2.8: Training on Installation of tools in Luganga

2.3.0: MANGALALI IRRIGATION SCHEME IN IRINGA

2.3.1 Location and Geography

The scheme is present in Mangalali village, Iringa District council District in Iringa Region. It is located 25 km from Iringa Town along Ruaha National Park road and lies between (S $7^0$45'8" E $35^0$35'')

3.2 Cultivation and Market

The scheme has the potential area of 150 hectors of which 107 hectors are under irrigation. Crops which grown in the scheme are different horticultural crops like maize, watermelon, onions, tomatoes, Chinese cabbage and spinach

The market location for the harvested crops is Iringa town and outside of Iringa markets.

2.3.3 Project Beneficiaries and state of scheme

The scheme construction is 40% completed and has a total number of 340 farmers of which 180 are male and 160 female. Currently, the farmers are at preparation stage and a few of them have planted crops.

2.3.4 Method of Irrigation Systems

The method of irrigation is furrow and basin irrigation system whereby water is conveyed from the river by constructed intake weir which discharges 600 litres/second. there is a main canal distributed into secondary canals through well constructed water distribution structures by traditional structures the main canal, secondary, tertiary canals and then to the farms.

	
Photo2.9: Mangalali village office	Photo210: Meeting session in Mangalali

2.4.: MKULA IRRIGATION SCHEME IN MOROGORO

2.4.1 Location and Geography

Mkula irrigation scheme is found in Mkula ward, Mang'ula division in Kilombero district. It's located along the Ifakara – Mikumi road about 55km from Ifakara town. Its altitude recorded at 308 Meters above sea level. The scheme lies between N 9140000 and N 9138000 and E 268000 and E 270000.

2.4.2 Cultivation and Market

The scheme has a potential area of 254.3hectares. Out of these 175hectares are under paddy irrigation. The remained area is being used under sugar cane plantation, maize and vegetables. Trading of all food crops including rice is done through the private marketing system dominated by a large number of small traders and middlemen. Typical market price for rice is in a range of Tshs. 1000 – 1500 per kg; the scheme has a milling machine and a Warehouse facility. The market access is easily by a road to Mikumi, Morogoro and Dar es Salaam. Also there is a nearest railway station at Mang'ula to Dar es Salaam.

2.4.3 Project Beneficiaries and State of Scheme

Construction of Mkula irrigation scheme started in 1978 after securing funds from the central government for the construction of an intake weir and main canal 700m. In 2005 the scheme received funds from Food Aid Counterpart Fund amounting Tsh. 102,096,000 aiming at rehabilitating the intake, main canal, construction of secondary canal and its structures, secondary drain and demarcation of farm service road. The rehabilitation and construction work was accomplished in October 2007.In 2007/08 scheme received funds from NIDF which was for construction of Secondary 1 and Secondary 2 about 1427 meter long. In 2008/09 it received 32,526,893 from DADPs and it was used for plastering of 1427m secondary canal and construction of New secondary canal about 900meters long, In 2009/10 the scheme received 31,905,000.00 from DADPs which was used for rehabilitation of intake weir. In 2011/12 the scheme received Tshs 240,000,000/= from CARITAS-Australia through Ifakara Roman Catholic Church where by 2200metres of secondary canals were constructed with canal associated structures. While Kilombero district council contributed in cash by paying per diem, fuel and in kind contribution by allowing its tipper trucks to be used in construction work. Also Mkula farmers (beneficiaries) have contributed towards scheme development by supplying sand, gravel and stones for construction work and digging the canals. The scheme is not fully improved as there are still areas with unlined canal.

Mkula scheme has 254.3 hectares potential for irrigation out of this 175 hectares are under paddy irrigation. The scheme receives water for irrigation from Mkula River which originates from Udizungwa Mountains National Park. The scheme has 320 farmers (215 male and105 female) beneficiaries.

2.4.4 Method of Irrigation Systems

Water supply in the scheme is done by Gravity, from the Intake Weir to the canals. The main canal discharge is 0.34m^3/s. The construction and lining of two secondary canals enable easily water supply followed by the tertiary canals where water enters the plots by furrows. Finally the provision of drainage systems have ensured discharged of water. Two cropping seasons has ensured and increased crop yield per unit area been done, the productivity has increased from 2.4 tones /hectare to 5.5tones per hectare of paddy.

Photo2.13: Mkula scheme rice packaging machine

Photo2.14: Meeting session in Mkula

Photo2.15: Training session in Mkula

Photo2.16: Data collectors Training

2.5.: NJAGE IRRIGATION SCHEME IN MOROGORO

2. 5.1 Location and Geography

Njage irrigation scheme is found in Mchombe ward, Mngeta division in Kilombero district. It is located along the Ifakara – Mlimba road about 67km from Ifakara town. Its altitude was recorded at 298 meters above sea level. The scheme lies in N 188873 and E 9088702 points.

2.5.2 Cultivation and Market

Trading of all food crops including rice is done through the private marketing system dominated by a large number of small traders and middlemen. Typical market price for rice is in a range of Tshs. 1000.00 – 1,500.00 per kg. The market can be easily accessed by road from Ifakara to Mikumi, Morogoro and Dar es Salaam. Also there is a nearest railway station at Mngeta to Dar es Salaam.

2.5.3 Project Beneficiaries and State of Scheme

The construction of Njage irrigation scheme started in 2003/04 after securing funds from the Central Government through DADP for the construction of an intake weir and main canal 700m. The DADP fund were released in 3 phases thus phase 1, in 2003/04 – Tshs 40,400,000.00, phase 2, in 2004/05 – Tshs 42,440,286.00 and phase 3 in 2005/2006Tshs 21,223,324.00 making a total of 104,063,610.00 Tshs.

Construction of Njage irrigation scheme has involved several development partners such as Central Government who contributed in cash, while Kilombero district council contributed in cash by paying per diem, fuel and in kind contribution by allowing its tipper trucks to be used for construction works. Also Njage farmers (beneficiaries) have contributed towards scheme development by supplying sand, gravel and stones for construction work and digging the canals.

In year 2008 to 2012 the scheme received funds a total amount of TSh. 848,485,000 from the District Irrigation Development Fund (DIDF) from the Central Government for the construction of second intake weir, secondary canals 2,290m, farm service road 1,880m,collector drains 1,575m,secondary drains 823m,river training 525m and 19turnouts. The scheme construction is not fully completed. This year 2018/19 the Central Government will release some funds for the

Rehabilitation and construction of the scheme. Njage scheme has 325 hectares potential for irrigation out of this 175 hectares are under paddy irrigation. The scheme receives water for irrigation from Njage River which originates from Udzungwa Mounts National Park. The scheme receives water for irrigation from Njage River which originates from Udzungwa Mounts National Park. The scheme has 360 (254 male and106 female) beneficiaries.

2.5.4 Method of Irrigation Systems

Water supply in the scheme is done by Gravity through Njage River, from the Intake Weir to the canals. The main canal discharge is 0.29m³/s. The construction and lining of one secondary canal enables easily water supply followed by the tertiary canals where water enters the plots by furrows system. Finally the provision of drainage systems have ensured discharged of water. Two cropping seasons has ensured and increased crop yield per unit area been done, the productivity has increased from 2.2 tones /hectare to 6.0 tonnes per hectare of paddy.

Photo2.17: Njage village office

Photo2.18: Meeting session in Njage

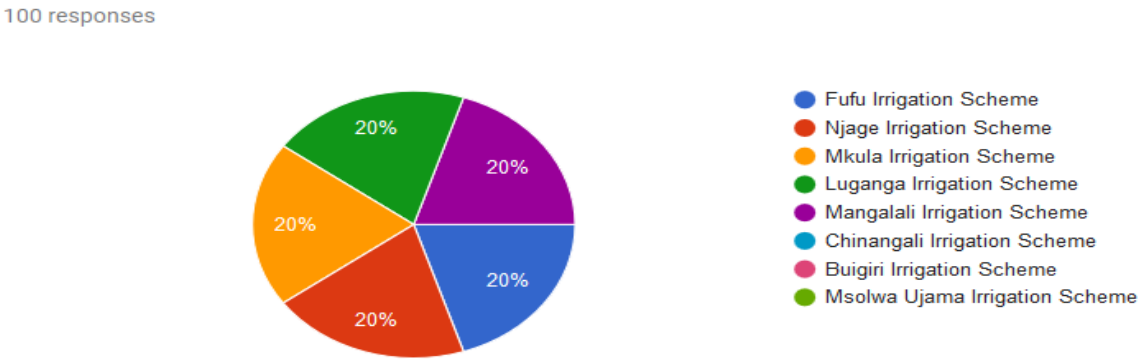
Photo2.15: Training session in Njage

Photo2.16: Training on Installation of tools in Njage

PART 3: CHARACTERISTICS OF FARMERS SELECTED FOR VIA PROJECT

A total of 100 farmers where selected, 20 farmers from each scheme based on pre- set conditions which include but not limited to Gender, Age, Plot location on the scheme , This was done to ensure that the selected farmers do come from a same family or location and ensure that we enable to capture data from different categories.

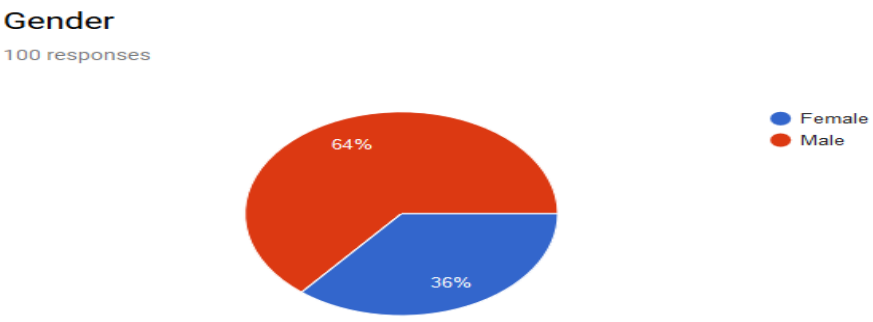
3.1 **Number of farmers**- The number of selected from each scheme was the same – 20 as shown in the Pie chart 3.1 below.



Pie chart 3.1: Number of Farmers Selected from schemes

3.2 **Gender of farmers**

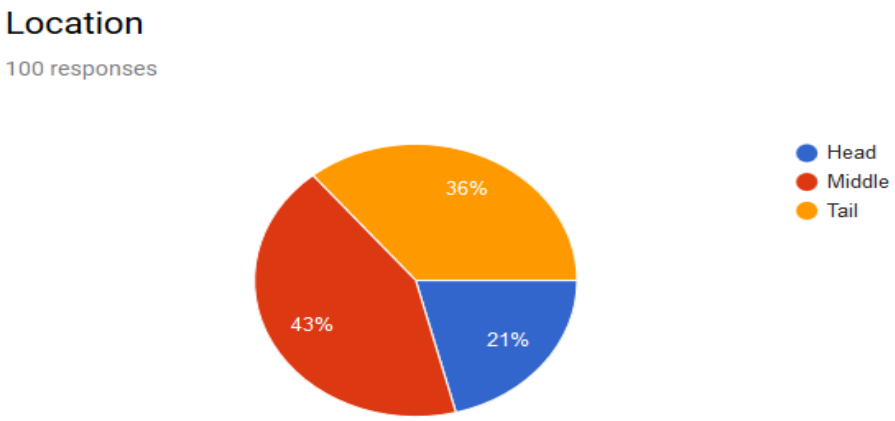
As for the case of gender our Main target was 50%/ for Male and 50% for Female but unfortunately after selection of Farmers from all scheme the result was 64% For Male and the 36% Female.



Pie Chart 3.2: Gender Dominance on Selected farmers

Another factor taken into consideration during Selection of Farmers is the Location of farmer Plot in the scheme. The taken was 33.3% For Head, 33.3% For Middle and 33.3% for Tail but after Selection following was result 21% For Head, 43 % For Middle and 36 % for Tail

3.3 Location of farm



Pie Chart3.3: Farmers plots location on the Scheme