

Constraint to irrigation expansion in Ethiopia and alternative strategy from LIDs' experience

**Mekonnen B. Wakeyo<sup>1</sup>, Senayit Shumi<sup>2</sup>, Oka Naoko<sup>3</sup>**

### **1. Introduction**

Ethiopia is a developing country and agriculture contributes 41% to its GDP. Surprisingly, smallholders run 95% of the agriculture to feed 90million from an average of less than 1ha and using backward technologies. Rain-fed agriculture dominates and the share of irrigated land is only 5% though irrigable water is abundant. Because of low irrigation and rainfall shortage output and yield in rain-fed are low. As a result, each year 10% population receives food-aid (Mirzakhail et al. 2012). Thus, the policy document urges irrigation to overcome rainfall shortage. Nevertheless, where irrigation is profitable and improves farmers' life, scheme expansion is lacking. A case is Wonji Kuruftu irrigation Scheme (WK). The head-work of WK on Awash River is finished in 1989 and at 50meter a pump fills a pond linked to canals. About 183 users irrigate 55ha and grow vegetables and cereals. However, non-users earn low income, and applied for expansion of WK as they know that the irrigation is profitable and it changes their life. After repeatedly applying to Water Resource Development Bureau for expansion, the design is completed in 2010. Researchers estimated the expansion cost at 2.5million birr and irrigate 173.6ha, but the expansion is not realized. Many similar schemes lack expansion. Theoretically economic, agronomic, technical, etc. factors (Faurès et al. 2007) impede investment. So, research questions are why expansion is not realized when irrigation is profitable, no shortage of water and land; and whether LID experience helps. Thus, the study investigates how finance limits scheme expansion and seeks alternative.

### **2. Method and Data**

The study uses qualitative analysis of data and information. Researchers visited WK in Ethiopia, discussed with experts and irrigation users and non-users; survey and secondary data are also used.

### **3. Results**

The farmers who applied for the scheme expansion cannot afford to finance even 10%. In Ethiopia, expansions of small-scale communal irrigation are financed by the government. Accordingly, the expansion of WK waits in the list of government projects for long time. Thus,

1. Japan International Research Center for Agricultural Sciences/JIRCAS: [mwakeyo@gmail.com](mailto:mwakeyo@gmail.com)

2. Adama Irrigation Development Bureau, Ethiopia 3. JIRCAS: [okanaoko@affrc.go.jp](mailto:okanaoko@affrc.go.jp)

Keyword: Irrigation-scheme expansion, Finance, LID

financing the expansion projects depends on: 1) the listed government projects, e.g. dams and priority sectors. 2) Government income and foreign-aid. 3) Donors often finance poverty-reduction projects of road, education, health, water & sanitation (which take about 90% of the finance) and agriculture, but agriculture lacks enough share; 4) Federal Government distributes finance among national and regional projects. This means that the project finance that reaches each sub-district and its planned project is low, showing that the probability of financing irrigation in a sub-district (WK) is minuscule. Thus, to secure finance for expansion, WK competes with schemes listed in regions, zones, sub-districts, showing that probability of finance is extremely low.

One may ask why sub-districts or WUAs do not borrow for expansion. In Ethiopia, unless government finances expansion projects such as WK, by law, regions, sub-districts, and WUAs cannot borrow for their projects. Contrarily, the Japanese LIDs have three finance sources: 1) central government; and, 2) prefecture governments and municipalities (Wakeyo et al. 2012); 3) The 1949 Land improvement Act (Article 40 of SHOWA24, No. 195) shows LIDs can borrow and issue bonds for their projects. Moreover, a question could be that rather than waiting for government to finance, what could sub-district Bureau do? The Bureau could look financiers (e.g. Non-government Organizations/NGOs) by justifying the feasibility of WK expansion vis-à-vis the theoretically known constraints. However, sub districts and Bureau did not seek alternatives, and this is institutional weakness.

#### **4. Discussion and conclusion**

Because of low investment in irrigation, the share of irrigated land in Ethiopia is only 5%. Unless alternative financing are required, the low share could continue. This study tried to investigate financial constraints to the expansion of WK scheme and found that though expansion is potentially profitable and cost is recoverable, investments wait for long until government finances. However, the Japanese experience show that LIDs can borrow and this strategy and strengthening sub districts and WUAs in Ethiopia can ease financing irrigation investments.

#### **References**

- Faurès, J.M., Svendsen, M. and Turrall, H. (2007) Reinventing Irrigation, International Water Management Institute/IWMI, Part 4 Ch8-16, Colombo, Sri Lanka
- Mirzakhail, A.K., White, S., Zhu, X. (2012) Irrigation in Ethiopia: World Bank strengths, strategies, and recommendations for effective development, MIIS, California
- Wakeyo, M.B., Koide, J., Fujimoto, N. Naoko, O. (2012) Can Africa learn from the Experience of Japanese LIDs? Experience of three LIDs, JSIDRE, September 18-20 2012, Hokkaido, Japan