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Expansion of Community-Based Smallholder Irrigation Development Project
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OJT and Monitoring in New Target Provinces

JICA Expert conducted OJT on the construction of simple weirs and monitoring of simple weir schemes in new target provinces (Copperbelt, North-Western and Central Provinces) in July and August 2019. This article shares the result of those.

1) Copperbelt Province

OJT and monitoring activities were conducted in Luanshya, Chililabombwe, Kalulushi and Mpongwe Districts. The monitoring team composition included 1 Provincial TSB, 3 SAOs, 10 District officers and 12 Camp Extension Officers (CEOs) in total.

The activities started with Luanshya District and the team visited 2 sites and then 1 site was selected as a simple weir site because there is a big water user (Kafue Water and Sewerage Company) downstream on the other sites. Through this, the participants of the team realized the importance of investigating the condition of upstream and downstream water users at candidate site. In the other site, the candidate location of the simple weir was carefully investigated and the centerline of the weir was finally determined.

Following Luanshya, the team visited Chililabombwe District and investigated four candidate sites, and then the location was determined from the point of view of the water flow quantity and elevation between beneficiary area and the weir point. Although the number of beneficial farmers is only four households at the site, the monitoring team decided to develop there because of the potential like much enough area and rich water source for smallholder irrigation. The farmers were advised to increase members of the group.

The team inspected a trigonal type weir in Kalulushi District, which had been constructed under supervision of MoA-TSB officers. Because of terrain, water level should be raised very high, the structure was made very strong. 17 farmers (7 males and 10 females) participated in the construction. The water source is very rich and large area will be irrigated.

While the male farmers fabricate the frame of trigonal weir, female farers prepare sandbags which are put in front of the weir. London Irrigation Scheme in Chilambe Camp, Kalulushi District, Copperbelt

Mpongwe district was also monitored and 2 sites were investigated. Chilimba stream had dried up by June due to less rainfall in the rainy season in this year. Along the Chilimulilo stream, there is a dam and enough water flow was identified at the downstream of the dam. District officers were advised by JICA Expert to look for a beneficial area and good location for a simple weir downstream of the dam.

The monitoring team traveled to Mufulila District finally and inspected two sites. In one site, a constructed weir had a lot of leakages and it seemed that it was difficult to raise up the water level. The farmers were advised to dry up the weir once and then excavate and backfill the leakage point. In the other site, the canal was excavated to higher part of land and it was very deep. The farmers were advised to use line level to determine the alignment of the canal.

The depth of canal which farmers dug so far is very deep because Farmers tend to choose routes of canal that allows irrigation water to reach the beneficiary area from weir point as quickly as possible without considering heavy labor forth required. Mutundu North, Mutundu Camp, Mufulila District, Copperbelt Province

2) Central Province

OJT and monitoring were conducted in Chitambo, Mkushi and Serenje District. Total of 1 provincial TSB, 1 SAO, 8 District officers and 8 Camp Extension Officers participated.

In Chitambo district, an incline type weir was constructed by 25 famers (10 males and 15 females) with technical supervision by government officers. At the root of big tree near the weir, there is a large water leakage and the farmers have struggled to improve that part. The streamflow is excellent and the number of farmers is good enough for group irrigation farming activity. The site is expected to be a permanent weir site in the future if the farmers practice good irrigated agriculture.

A combined type weir of incline and single type was constructed in Mkushi district. 17 farmers (10 males and 7 females) participated in the construction work. When the water level reached to 70 cm higher than that of downstream water level, a lot of water leakage arose at the riverbed. The difference of water level between upstream and downstream is recommended less than 40 cm approximately. The alignment of the canal was realigned. The government officers need more experiences on how the alignment is selected by using the line-level method, since development of simple weir irrigation schemes started just 3 month ago.

In Serenje district, large number of farmers (34 males and 55 females) participated in construction of a trigonal type weir with 15 m width. It took about 4.5 hours. The stream is rich of water. It is expected that many farmers will be benefitted by irrigated agriculture.

Weir construction works were shared. Male farmers fabricated the frame of trigonal weir and female farmers prepared grass and ishinde. Chiefteness Serenje Camp, Serenje District, Central Province

3) North-Western Province

Solwezi, Muwinilunga and Ikelenge districts were targeted for OJT and monitoring as well. The government officers, 2 provincial TSB, 1 SAO, 3 District officers and 6 CEOs participated in the activities.

The activities started in Solwezi district. In Sandagombe camp, 34 m width of incline type weir was constructed in two days by 11 households. The alignment of canal was realigned. One farmer did not allow the canal to pass in her field and the farmers group must discuss with her. Since farmers could face to social challenges on the field, government officers need to sensitize farmers concerned before starting construction of irrigation scheme.

In Chafukuma West camp, the location of proposed simple weir was investigated. The farmers are planning to construct a double line type weir so that it could be used as a bridge crossing the stream.

In Mwinilunga district, investigation of completed single line type weir and construction of simple weir were carried out.

A completed single weir was inspected in Mwinilunga district. The weir had a lot of leakage and the farmers were planning to improve it by changing it to double line type. Alignment of the canal was improper and they were planning to realign it. In Kawiko camp, combined type weir of incline and single line was constructed by 15 farmers (9 males and 6 females). The farmers struggled to complete the construction. It took 4.5 hours to complete because the weir has 20 m width. After construction of the weir, alignment of the canal was determined using line-level method. In order for aligning 200 m, the farmers took only 1 hour since the technique is very easy for them.

Determination of alignment of the canal using line level.
Kawiko Camp, Mwinilunga District, North-Western Province

In Ikelenge district, 3 sites were visited. In Kaswaswa, Muwinyilamba camp, incline type of weir was constructed. The farmers enjoy irrigation farming with 2 limas. They are planning to introduce water from another water source to increase the irrigated area. This is the first year to practice gravity irrigation farming for them but the farmers are actively working on it. They expressed appreciation that the project introduced irrigated agriculture with simple weir. In Kanisamba scheme on Lwakela camp, the farmers constructed two simple weirs because upstream one had less water flow.

In the new target provinces, development of simple weir irrigation schemes started just three month ago. Government officers seem to struggle with selection the location of weir construction and determination of the canal alignment.

More and more simple weirs will be constructed and more and more farmers will be benefitted from irrigated agriculture.