



MINISTRY OF WATER AND ENVIRONMENT

FARM INCOME ENHANCEMENT AND FORESTRY CONSERVATION PROGRAMME

Promoting Irrigation for Enhanced Income & Agricultural Productivity

Wadelai irrigation scheme: Improving community livelihoods



An aerial view of Wadelai irrigation scheme ■

FIEFOC-2
FARM INCOME NEWSLETTER

From once underutilized woodland, comprising shrubs and thickets – mainly used for charcoal burning and search for herbs to now a modern gravity-fed irrigation facility – bustling with economic and agricultural activities.

This is the tale of Wadelai irrigation scheme – one of five irrigation schemes that the Ministry of Water and Environment in collaboration with the Ministry of Agriculture, Animal Industry and Fisheries is developing through the Farm Income Enhancement and Forestry Conservation Programme -Project 2 (FIEFOC -2).

Located 46 kilometers north of

Pakwach district headquarters, along Pakwach– Arua road in Wadelai sub-county at Ayabu and Paten communities; the medium size irrigation scheme covers an estimated area of 1,000 hectares.

With an investment worth Sh.55 billion from the African Development Bank, Nordic Development Fund and the Government of Uganda; farmers at Wadelai irrigation scheme are poised to move from one planting season that had hitherto characterized their cropping system for years to two or three seasons, which is likely to improve their livelihoods and benefit over 2000 farmers directly or indirectly.

Some of the visible investments include construction of physical infrastructure such as embankments or water reservoirs; spillways; canals, comprising main, secondary and tertiary canals; road networks; and scheme buildings, including storage facilities, office blocks and residential houses.

According to Eng. Ronald Kasozi, the coordinator for agricultural infrastructure development at FIEFOC-2; the physical progress of the scheme stands at 85.6 percent; and irrigable areas have been cleared and leveled using tractors, subdivided into plots and allocated to potential farmers in

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both Ayabu and Paten communities for increased agricultural production and productivity.

The construction work at Wadelai irrigation scheme started in October 2018 with community mobilization and sensitization, focusing on project development objective and community benefits, as well as signing of consent agreements on land use between the government and the communities.

Available information at the district indicates that a total of 156 community members, including clan leaders consented to the land use agreement; and nine landowners, who were affected by the scheme development in Ayabu village were fully compensated worth shs. 2 billion in the first phase, and 14 others are yet to be compensated during the second phase in both Ayabu and Paten communities.

Unlike Mubuku II and Doho II irrigation schemes, which had the history and knowledge of irrigation management,

"I am today because of this money. It has enabled me to build permanent houses, including residential and commercial houses. I have educated my children up secondary and diploma levels. I have even bought a motorcycle and milling machine, we are okay"

- Mzee Gay Yoba ■



Mzee Gay Yoba (c) and the family pose in front of their newly built house ■

and operations of farmer cooperative societies dating to 1970s; the rest of the schemes have none, including Wadelai irrigation scheme.

To bridge this knowledge gap, 75 farmers, comprising landowners and tenants were selected in 2019 to participate in a three – day exposure visit to Doho II irrigation scheme in Butaleja district, where they learnt how irrigation schemes work.

"When the farmers came back, they were convinced about the importance of an irrigation scheme, and they fully embraced it," Mr. Bayo Lawrence, a resident sociologist, who has been working closely with the communities at Wadelai irrigation scheme said. "They (farmers) are now organized into cooperatives, water user associations and under 20 block leaders, where each block carries 75 members."

He added: "They are even ready to pay an annual fee of shs. 200, 000 for water use, operations and maintenance of the irrigation facilities. A bank account has been opened for that purpose, with some community members as signatories."

Corroborating the resident sociologist; Mr. Muswa Charles, the Deputy Chief Administrative Officer, Pakwach district

said he was happy with the project implementation, adding that at the initial stage of the project, they focused their effort on community mobilization.

"As a result, productivity has increased, road networks in the district and within the scheme have improved. Community expectations were high, but now they own the project because we are in constant touch with them, and the land question is being resolved," Mr. Muswa said.

According to Mr. Alfred Okot Okidi, the Permanent Secretary, Ministry of Water and Environment, FIEFOC's "irrigation schemes" are "beacon of rural transformation" that aims at improving "household incomes, food security and climate resilience through sustainable natural resources management and agricultural enterprise development."

"It is envisaged that these efforts will contribute to increasing irrigable land areas from the current 15,000 hectares to 420,000 hectares by 2035," Mr. Okidi said. "This will further contribute towards poverty reduction through enhanced agricultural productivity and commercialization."

Meanwhile, Mr. John Magezi Ndamira, the National Project Coordinator for

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AGRICULTURAL INFRASTRUCTURE DEVELOPMENT

Continued from page 2: Wadelai irrigation scheme

FIEFOC- 2, underscores the importance of Wadelai irrigation scheme, saying that it would provide huge opportunities for farmers, especially the youth and women in terms of employment creation, access to market and credit facilities, as well as promotion of social networking.

Once completed, the irrigation will be used for promotion of high value commodities such as rice, horticulture, aquaculture and apiary, and training of farmers on agronomic practices, soil and water conservation, as well as agroforestry and conservation farming.

Community benefits

According to Ms. Bernadette Awor, the Community Development Officer of Pakwach district, the project is transforming the communities around the scheme, and thus contributing to improved livelihoods.

"FIEFOC's "irrigation schemes" are "beacon of rural transformation" that aims at improving "household incomes, food security and climate resilience through sustainable natural resources management and agricultural enterprise development."

- Mr. Alfred Okidi ■

"The project is employing a number of youth as engineers and workers, while others supply building materials such as bricks, sand and stone aggregates to the scheme," she explained. "With sensitization and training of farmers, they have started growing rice."

She added: "Social amenities such as boreholes are coming up in Ayabu sub - county."

Although the Ayabu and Paten communities are located near River Nile and River Ora, they face huge challenges of water scarcity for both human and animal use. The construction of boreholes at the scheme are, therefore, a big relief and contribution to the communities.

"The project has opened the district and communities around the scheme to the entire country," Awor said. "Before the project, Wadelai used to experience flooding, but with the construction of the reservoirs, the flood is now tamed."

Awor noted that farmers were getting interested in the scheme - as a result, they had already received over 1,000 applications from farmers, who had expressed interests in acquiring plots and cultivate within the scheme.

"Over 200 selected farmers and members of farmer groups, comprising male and female have so far been trained in various aspects of agronomic practices, establishment of farmer field schools or demonstration plots for rice production, horticulture, aquaculture and apiary, as well as provision of technical and financial support to the youth between 18 and 35 years of age under ENABLE Youth program," she explained.

The government through the water ministry has disbursed a total of Ushs 350 million to 18 youth agripreneurs in Pakwach and Nebbi districts, comprising male and female under ENABLE youth program to bolster

their businesses in order to tackle challenges of youth unemployment in the region.

The irrigation scheme is positively impacting communities in ways never seen before. From a serenely woodland, characterized by shrubs and thickets, Ayabu community has now transformed into a bustling trading center with various economic and agricultural activities.

Mzee Yoba

The landowners, who were compensated, used their money for building permanent houses, paying school fees for their children, starting businesses, and boda boda transport services and milling of cassava chips.

Perhaps the tale of Wadelai irrigation scheme is incomplete without the name of Mzee Gay Yoba, 61, who is the homeowner of several grass-thatched and corrugated iron-roofed houses, located on the northern side of Wadelai irrigation construction site.

He is one of nine landowners, who consented to the land use agreement between the government and the communities in Ayabu village. He surrendered eleven acres of his land for establishing a parking yard for the construction site. He was compensated worth Ushs 60 million during the first phase of payout.

When asked about, what he had done with the money, he could not hide his excitement.

He cleared his throat and adjusted his somewhat faded grey jacket over his shoulder, and said: "I am today because of this money. It has enabled me to build permanent houses, including residential and commercial houses. I have educated my children up. Meanwhile, Mr. John Magezi Ndamira, the National Project Coordinator for

FIEFOC -2 gives farmers' new lease of life



Green houses for empowering farmers with skills to increase horticulture production ■

The Chairperson of Shimutu Sub-County in Butaleja District, Mr. Hisama James has hailed the Farm Income Enhancement and Forestry Conservation Programme – Project 2 (FIEFOC -2) for giving them a lease of life.

Mr. Hisama noted that people had initially suffered from poverty, but it was not until the government started the implementation of Doho II irrigation scheme that they were given a new lease of life.

"We now harvest rice from season to season," he said. "We only need an excavator to desilt the canals because the backhoe is not long enough to clean the tertiary canals."

Mr. Hisama, however, noted that some sections of the canals were wide and did not have crossing points.

"There is need for building proper crossing points for the farmers in order to reduce time wasting in accessing the farms," he said, adding that

farmers were excited after receiving a backhoe from the Ministry of Water and Environment under FIEFOC-2 project. A backhoe is used for desilting irrigation canals.

Mr. Hisama further revealed that in addition to a backhoe the farmers of

"The project has empowered us to fight poverty by producing throughout the year."

- Mr. Hisama ■

Shimutu parish received more than 300 hand-hoes, pangas and slashers, as well as motorcycles and bicycles to improve security in and around the scheme.

"The project has empowered us to fight poverty by producing throughout the year," he said.

Meanwhile, the Chairperson of Doho II Cooperative Society in Shimutu Sub County... said the farmers' cooperative society was registered in 2020 with the Ministry of Trade and Cooperatives in Kampala with 110 paid –up members.

"We are up and running because we are organized," he said. "More members are joining us since we have been mobilizing them."

He further said that the cooperative society opened up an account in Centenary Bank. According to the modal, the cooperative is scheduled to work with SACCOS. It handles sales and marketing, post-harvest handling, milling and packaging ■

AGRICULTURAL INFRASTRUCTURE DEVELOPMENT

Capacity of Doho II farmers built through training

Ms. Amina Dugu, the Agricultural Production Officer, Butaleja district has revealed that the capacity of farmers at Doho II irrigation scheme have been built through training to boost agricultural production.

According to Ms. Dugu the district has mobilized farmers into farmer field schools and trained them on selection of right seed and varieties, spacing, fertilizer application, weeding, and harvesting, which are important skills for improving the quality of rice and horticulture production.

"In Doho II irrigation scheme, there are 12 farmer field schools, comprising 30 farmers each," said Ms. Dugu during an interview with the documentation team from FIEFOC-2. "The district selects Trainer of Trainers (TOTs), who receive practical training, and thereafter, they assume the role of training other farmers in the best agronomic practices."

Besides rice production training, farmers have been trained on horticulture production, including production of watermelon, onions and cabbages.

"In Doho II irrigation scheme, there are 12 farmer field schools, comprising 30 farmers each,"
- Ms. Dugu ■



Women harvesting rice at Doho II irrigation scheme, Butaleja district ■

"The focus of the training is on choosing the right variety, planting, harvesting, adding value and marketing," Ms. Dugu explained. "The project has also constructed greenhouses at the district premises for the farmers to learn agricultural production."

She added: "One of the green houses is for raising seedlings and the other is for growing cabbages and tomatoes, which have all helped farmers to improve their farming practices."

However, one of the major challenges facing farmers at the scheme is vandalism of irrigation facilities.

"Some people break chains links at the scheme for tethering oxen for ploughing," Mr. Ivan Natwijuka, Doho II irrigation scheme operator (ISO) said. "There is also silting of the canals – because of poor methods of cultivation by some farmers near the river banks, which leads to overflow through the farms."

At the secondary drain two, there is siltation due to access by cattle and the grazing farmers adamantly lead

cows through the irrigation schemes thus leading to destruction of major infrastructure.

At Doholl irrigation scheme, the water flow is still unreliable because farmers do not have a night reservoir to store water to use in dry seasons such as it is in Tochi irrigation scheme in Oyam district, Wadelai irrigation scheme in Pakwach district, and Mubuku II irrigation scheme in Kasese district. The scheme serves 1,117 hectares that need a lot of water yet Manafwa district does not supply adequate water.

Farmers break infrastructure such as canals to put a tertiary canal for easing access of water into their individual farms.

The chairperson Water user committee Doholl, Hapule Fred, said management has not yet installed a rice milling machine to ease farmers' harvest so that they have their rice milled at the yard after drying. Farmers require a modern milling machine.

Farmers have farm roads which are

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AGRIBUSINESS DEVELOPMENT

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marked but not in use due to lack of cheap transport means and they request for a truck to deliver their rice to the store for drying and market availability.

"It is hard to carry sacks of rice on our heads to the drying yard/store and that is why we request for a truck to ease our transportation of rice," Hapule said, adding that in order to maintain the truck, farmers can be asked to contribute an affordable fee so that they can afford fuel and other costs.

Farmers also break cross regulators and chains and padlocks. These acts of vandalism spoil parts of infrastructure in the scheme.

Regarding operation and maintenance of small-scale irrigation schemes, technical teams assist the farmer during the two years of scheme running after which they expect the farmer to have gained technical skills and knowledge of operating and maintaining the scheme. Incidentally, farmers expect to receive technical support forever. To solve this problem, the ministry introduced farmer loans to enable farmers to support themselves with the revolving funds.

There is flooding of Doholl irrigation scheme during heavy rainy seasons which affects farming efforts as farms flood thus destroying crops.

"The focus of the training is on choosing the right variety, planting, harvesting, adding value and marketing"
- Ms. Dugu ■

The irrigation scheme operator, Ivan Natwijuka, said that his role is to maintain off farm facilities such as secondary canals, secondary drains and cross regulators.

Some of the infrastructure include latrines for farmers and water

Farmers in Doholl irrigation scheme do not have fuel to run the machinery/backhoe. "We do not yet have capacity as an association to fully run and maintain the backhoe.

LC3 Shimutu sub-county, Hisama James, said that his people request for an excavator since the backhoe is not long enough to clean tertiary canals. The canal from the river is too long yet silt is way too much.

Some areas do not have crossings yet there are big channels. People need crossings because they take long distances rotating from one are to another.

The chairperson Doholl cooperative society requested for a milling machine to improve market for their rice. There is also need for some equipment such as tractors to help in opening up gardens to support productivity in the farms.

During a focus group discussion with farmers, Sabula Robert, a trainer of rice growers highlighted the problem of raised topography in the scheme that impedes some farmers from receiving water in their canals. He advocates for Doho3 so that such a challenge could be addressed

Recommendations

Farmers in Doholl recommended that the ministry in partnership with stakeholders complete the marked farm roads to enable easy transportation of rice from the farm to the main road so that it becomes easier for them to transport rice to the milling machine.

There is need for follow up on the combined harvesters AfDB had promised to give farmers in Doho II irrigation scheme.

There is also need for input and fertilizers to improve productivity because farmers complained of loss of fertility.

Farmers requested for facilities such as lorries and trucks to assist in transportation of rice to other areas to increase market for rice.

Cherop Leonard recommended that there is need for mindset change right from the onset of any project so that communities are sensitized on the importance of the project.

To solve the problem of flooding in Doho II irrigation scheme, it is proposed that the ministry of water and environment in partnership with stakeholders implements a huge water project in Manafwa district to hold water and mitigate floods in Butaleja district.

It was further proposed that a dam is constructed in Manafwa district to contain water from the upstream and also secure a machine such as a backhoe to desilt river Manafwa and the entire irrigation infrastructure.

During one of the focus group discussions with farmers of Doholl irrigation scheme, they requested for improved mechanization such as a combined harvester since hand hoe does not do all the required work. since kg8 and k85 are considered low yield varieties.

Due to ever increasing population in the eastern region, technical people requested for more resources for water infrastructure investments to address the overwhelming demand for water for production facilities ■

AGRIBUSINESS DEVELOPMENT

Farmer cooperatives and water user associations taking root at irrigation schemes

The design of Farm Income Enhancement and Forest Conservation Programme – Project 2 (FIEFOC -2) envisaged establishment of farmer cooperatives and water user associations at each irrigation scheme to ensure ownership and sustainability of the schemes, improve market access through bulk production, and ensure easy access to agricultural financing through group formations.

With the completion of irrigation schemes, five farmer cooperative societies and five irrigation water user associations have been formed at each irrigation scheme, namely: Ngenge (Kween district), Doho II (Butaleja district), Mubuku II (Kasese district), Tochi (Oyam district), and Wadelai (Pakwach district).

Over 6,000 registered farmers are now part of the cooperative societies and water user associations in the five irrigation schemes. These include Ngenge (1052), Doho II (2074), Mubuku II (1036), Tochi (1141) and Wadelai (1303).

To further support farmers in irrigated agronomy, a total of 208 farmer field schools (FFS) have been established, including 47 in Ngenge irrigation scheme, 64 in Doho II irrigation scheme, 24 in Mubuku II irrigation scheme, 36 in Tochi irrigation scheme and 37 in Wadelai irrigation scheme.

A total of 116 irrigation water user association members have been formed, including 43 members in Ngenge, 24 in Doho II, 20 in Mubuku II, 15 in Tochi and 14 in Wadelai.

Farmer cooperative societies guide farmers on scheme management, the best agronomic practices, crop



MAAIF team, Kween district officials on a joint supervision of the work done by the Consultant at Ngenge

production and productivity, farm inputs (fertilizers, seeds and equipment) and market access, as well as marketing, post-harvest handling, milling and packaging. The model also works through SACCOs, which works closely with commercial banks.

Water user association

According to the Chairperson, Doho II Irrigation Water User Association (IWUA), Mr. Hapule Fred, the ministry of water and environment through FIEFOC-2 has helped them (farmers) to get sustainable water for crop production.

"The ministry has trained farmers," he said. "Through facilitators, it has conducted election of farmer leaders and formed farmer field schools."

Mr. Hapule noted that farmers used to produce for consumption but with availability of irrigation water, they now produce for markets.

Irrigation water users' association ensures that water flows to all farmers' plots and regulates water flow through the farm-gates. It also trains farmers to cultivate the farms in a standard way and follow a calendar season. It further ensures that all farmers get water in a

dry season.

The formation of water user association was based on the realization that without stewardship, farmers would fight for water use.

Mr. Hapule explains that farmers are not supposed to open canals but wait for water in the tertiary canals.

"All water users are members and have to approach the IWUA when they need assistance," he explains. "IWUA solves small issues and only goes to higher authority if the issues are way beyond them."

According to Mr. Hapule, members of IWUA also voluntarily pay water user fees, which are discussed and agreed to pay to maintain tertiary canals, drainage systems, main canals and secondary canals. The fees also help the association to pay for security and other manageable technical work.

Mr. Hapule reveals that prior to the intervention of FIEFOC-2, farmers used to produce 100kg of rice per season but now they harvest 1000kg per season.

"Every time farmers want water it is available and whenever it is not needed it is reduced," Mr. Hapule said.

MWE-FIEFOC PICTORIAL



Soils at Ngenge five hours after watering ■



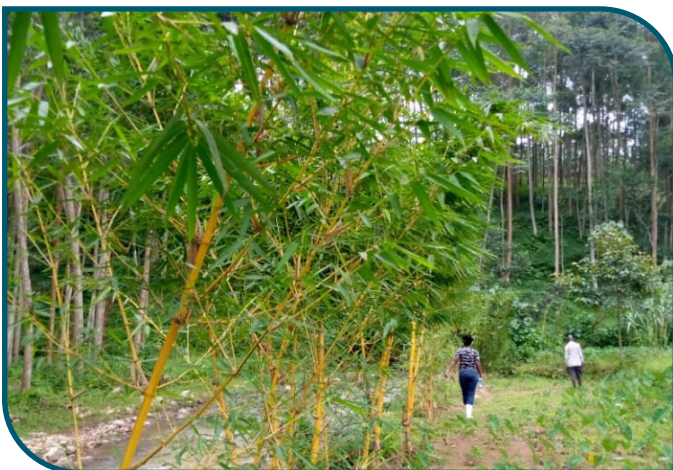
MAAIF and Kasese district staff supervising the fish ponds for the youth at Mabuku II ■



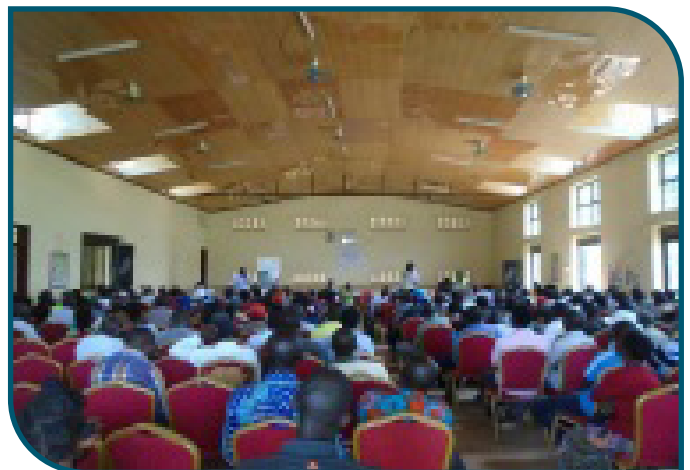
Talapia fish sampled from the demo pond at Tochi ■



Water conservation tools distributed to farmers undertaking agro-forestry conservation ■



Restoration efforts along river Manafwa in Easter Uganda ■



Capacity building ■

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- Ministry of Water and Environment.
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- 40 District Local Governments that manage integrated natural resources in catchment areas of five irrigation schemes.
- 5 District Local Governments that implement irrigation schemes

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ABOUT FIEFOC 2

Farm Income Enhancement and Forestry Conservation Programme–Project 2 (FIEFOC 2) is a five year project (2016-2021), designed within the context of the Government of Uganda's National Development Plan (NDP) and the long term development strategy, the Vision 2040 both of which promote agricultural infrastructure and income enhancement. The project is further designed to assist the Government increase land area under irrigated agriculture from the current 14,418 hectares to about 420,000 hectares by 2035. And it further seeks to consolidate and expand notable achievements registered under FIEFOC 1, which ended in December 2012.

The overall objective of the project is to contribute to poverty reduction and economic growth in Uganda through enhanced productivity and commercialization of agriculture. Specifically, the project aims at improving household incomes, food security and climate resilience through sustainable natural resources management and agricultural enterprise development.

The project has four components, including Agricultural Infrastructure Development, Agribusiness Development, Integrated Natural Resources Management and Project Coordination. The primary project beneficiaries, estimated at 1,816,756 are found in the districts of Pakwach, Oyam, Butaleja, Kween, and Kasese, where five irrigation schemes are being constructed. These include Mubuku II irrigation scheme in Kasese district, Doho II irrigation scheme in Butaleja district, Tochi irrigation scheme in Oyam district, Ngenge irrigation scheme in Kween district and Wadelai irrigation scheme in Pakwach district.

The Ministry of Water and Environment and the Ministry of Agriculture, Animal Industry and Fisheries jointly implement the project. Water ministry is the executing agency, responsible for implementation of irrigation infrastructure and related activities under project component one and the natural resources management activities under component three. While the agriculture ministry is a key implementing partner, responsible for implementation of agronomy and extension related activities and the agri-business development.

FACTS & FIGURES

Project Objective: To improve household incomes, rural livelihoods, food security and climate resilience through sustainable natural resources management and agricultural enterprise development.

91.43

Total project cost in millions of dollars. (UgX 327.6 billion)

40

Number of project Locations in districts.

5

Number of catchments.
Number of irrigation schemes.
Number of districts implementing irrigation schemes.

56

Kilometers of scheme roads constructed

1,816,756

Total population of districts implementing schemes.

175

Number of Youths so far trained under ENABLE Youth Program.

103

Number of agripreneurs approved for funding.

15,000

Number of farmers targeted for capacity building under Climate Smart Agriculture.

4,300,000

Number of assorted tree seedlings distributed to farmers.

324

Length of river banks restored in kilometers.

4,293

Acreage of forest cover restored in hectares.

8,575

Number of farmers trained in post harvest handling.

3,267

Number of farmers trained in apiculture

2,862

Number of farmers trained in financial accessibility

125

Number of trainer of trainers trained in handling different horticultural groups ■