

Terminal Evaluation Summary

1. Outline of the Project	
Country: Republic of Malawi	Project Title: Project for Enhancing Capacity for Medium Scale Irrigation Scheme Development, Operation and Maintenance (MIDP2)
Thematic Area: Agriculture/Forestry/Fisheries - Agriculture - Agricultural Engineering	Cooperation Scheme: Technical Cooperation
Division in Charge: Rural Development Department	Total Cost: 344 million yen
Project Period (R/D): 26th March, 2015 to 25th March, 2020 (5 years)	Counterpart Agencies: Department of Irrigation (DoI), Ministry of Agriculture, Irrigation and Water Development (MoAIWD), Kasungu Irrigation Service Division (ISD), Mzuzu ISD, Dowa District Irrigation Office (DIO), South Mzimba DIO, Department of Agricultural Extension Services (DAES), Kasungu Agriculture Development Division (ADD), Msusu ADD, Dowa District Agriculture Development Office (DADO), South Mzimba DADO, Nachisaka Extension Planning Area (EPA), etc.
	Supporting Organizations in Japan: Ministry of Agriculture, Forestry and Fisheries
	Other Related Cooperation:
1-1. Background of the Project	
<p>According to the third Malawi Growth and Development Strategy 2017-2022 (MGDS III, 2018), agriculture is one of the key industries in Malawi, which accounts for 28 percent of the country's GDP and contributes over 80 percent of the country's national export earnings. Furthermore, agriculture sector employs 64.1 percent of the country's workforce, comprising mostly the subsistence smallholders. The sector is also the main contributor to the national and household food security and nutrition. However, the sector is facing a number of challenges such as climate change impacts and risks. Other challenges include low use of meteorological information, post-harvest losses, lack of agriculture diversification, low irrigation development, small landholding sizes, land degradation and underdeveloped market systems among others.</p> <p>Considering the above situation and based on the request by the Government of Malawi, the "Project for Development of Medium Scale Irrigation Schemes (hereinafter referred as 'MIDP1')" implemented from June 2011 to May 2014. The project aimed at the capacity building of irrigation engineers/officers and extension officers in the 11 districts of Machinga and Blantyre ISDs/ADDs. In addition, the "Project for Enhancing Capacity for Medium Scale Irrigation Scheme Development, Operation and Maintenance (MIDP2)" has been commenced based on MIDP approach focusing on capacity development and human resource management in DoI and DAES with 5 years project period from March 2015.</p> <p>Approaching to the completion of the Project in March 2020, JICA decided to conduct a terminal evaluation mission from 25 November 2019 with the objectives of verifying and analysing the</p>	

achievement of project purpose and outputs, the implementation process, evaluating the Project in terms of five evaluation criteria and compiling a joint evaluation report based on the survey results.

1-2. Project Overview

(1) Overall Goal

Medium-scale irrigation scheme development is promoted at national level.

(2) Project Purpose

A system for professional development for irrigation officer in Medium-scale irrigation scheme development is established in the DoI.

(3) Outputs

- 1) The capacity of DoI (HQs and ISD) in implementing the MIDP training approach is developed.
- 2) The practical skills and knowledge of district irrigation officers in the model sites are improved through MIDP training approach.
- 3) The cooperative framework for extension services between DoI and DAES is established.

(4) Inputs

1) Japanese side

Long-term Experts: 3

Short-term Experts: 4

Counterpart Training: 3 C/P in total

Provision of Equipment: Approx. 20 million JPY

Local Cost: 44.8 million JPY

2) Malawian side

Counterpart Personnel: 51 staff in total

Local Cost: Approx. 3.59 million JPY

Land and facilities: Office space for experts in

Kasungu ADD, and DoI

2. Evaluation Team

Members	Role	Name	Affiliation
	Leader	NOGUCHI Shinichi	Director, Team5, Agriculture and Rural Development Group2, Rural Development Department, JICA
	Irrigation	NAGAYO Narihide	Senior Advisor, Rural Development Department, JICA
	Cooperation Planning	KAKINUMA Shota	Associate Expert, Team 5, Agriculture and Rural Development Group2, Rural Development Department, JICA
	Evaluation Analysis	OHASHI Yuki	Consultant, Tekizaitekisho LLC

Evaluation Period:

25 November to 13 December, 2019

Type of Evaluation:

Terminal Evaluation

3. Results of Evaluation

3-1. Project Performance

- (1) Output 1: The capacity of DoI (HQs and ISD) in implementing the MIDP training approach is developed.

1-1. More than 20 irrigation officers of DoI (Group 1&2 members) are registered as Professional Irrigation Engineer. [Partly achieved]

9 irrigation officers have been accredited as Professional Inigation Engineer (PIE) so far. Other 4 to 5 officers can be accredited by the end of the project period, according to the DoI.

1-2. The number of preparatory studies for F/S conducted by DoI exceeds ten (10). [Achieved]

16 preparatory studies for F/S (including 2 F/S) were conducted by G1 and G2 members.

1-3. Annual monitoring report in the target districts by M&E system is prepared by DoI. [Partly achieved]

DoI prepares the annual report which contains the information of all district nationwide gathered through the M&E system. Although the required data and information are sent by the target districts without delay, the data reliability needs to be improved.

1-4. The satisfaction rating of DIO exceeds 75% with reference to the capacity of DoI (HQs and ISDs) irrigation officers in implementing the MIDP training approach. [Achieved]

100% of DIO officers (20 IEs and AIEs) who received the IOs training in 2018 and 2019 lectured by G2 members (GEs of ISDs and DIOs) rated the training as “Useful”.

1-5. The participants who attended ToT convey their knowledge obtained through the training to other irrigation officers. [Achieved]

The questionnaire survey to the participants of 4th ToT training revealed that 96% of them (23 persons out of 24) have conveyed their knowledge obtained through the training to other irrigation officers.

(2) Output 2: The practical skills and knowledge of district irrigation officers in the model sites are improved through MIDP training approach.

2-1. The self-rating of district irrigation officers on their practical skills and knowledge of the medium-scale irrigation scheme development exceeds 75% on average in the model sites. [Achieved]

According to the results of self-rating test by DIOs participated in the 1st to 4th IO’s trainings, average percentage of understanding of each topic was 80%.

2-2. The satisfaction ratings of the community people in the model sites exceed 75% on average with reference to the competency of district irrigation officers. [Achieved]

A questionnaire survey to the farmers of 3 model sites conducted in September 2019 revealed that 92.1% of them were satisfied with the competency of district irrigation officers.

(3) Output 3: The cooperative framework for extension services between DoI and DAES is established.

3-1. The self-rating of extension officers in the model sites (district, EPA, and section level) on O&M and water management of irrigation schemes exceeds 75% on average. [Achieved]

The results of self-rating test conducted with EOs participated in the 1st to 5th EO’s training showed the average percentage of understanding of each topic was 76.6%.

3-2. The satisfaction rating of officers of DoI, DAES, ISD, ADD, DIO, and DADO exceeds 75% on average with reference to the collaboration in MIDP training approach. [Partly achieved]

The questionnaire survey to identify the level of satisfaction about the collaboration was conducted to only DIO and EPA. The result showed the average 89% of DIOs and 87% of EOs (7 out of 8) answered they were satisfied. The Project will not conduct the satisfaction survey for the officers of DoI, DAES and ADD as well as DADO, because they have not been directly involved in the collaboration activities at model sites.

3-3. The community people in the model sites implement O&M of irrigation facilities supported by EPA/DADO and DIO. [Party achieved]

The O&M training for farmers of the 1st to 3rd model sites was conducted, and the farmers started their

activities accordingly. The progress of their O&M activities differs among the sites. Regarding the 4th model site, the O&M training will be conducted by the end of January 2020.

(4) Project Purpose

1. MoAIWD officially adopts MIDP training approach as an official process of human resource development for irrigation officers. [Partly achieved]

Although all types of training developed by MIDP2 are considered as official training to be adopted nationwide, according to DoI, a plan and strategy to replicate the program after the Project have not been determined yet. Some contents of the MIDP training have already been utilized to conduct training in other donors' programmes. GEs who were trained through MIDP2 play a role of trainers in such trainings.

2. Responsible Irrigation officer is nominated in DoI (both HQs and each ISDs) for replication of the MIDP training approach. [Partly achieved]

4 responsible irrigation officers have been nominated, 2 in Central Region, 1 in Southern Region and 1 in Northern Region. However, their functions so far do not correspond to the replication of MIDP training.

3-2. Analysis based on the 5 Evaluation Criteria

(1) Relevance

Relevance of the Project is assessed as "high".

- The Project is relevant to the policies of Malawian Government, such as Malawi Growth and Development Strategy III (MGDS III) (2017-2022), the National Agriculture Policy (NAP) (2016-2021), the National Irrigation Policy (NIP) (2016-2022), and the National Irrigation Master Plan and Investment Framework (2015-2035), in terms of the priority of irrigation development to enhance agricultural productivity and strategies against the challenges in the irrigation development.
- The Project is relevant to the needs of Malawi society, in terms of the necessity in increasing agricultural productivity, the importance in the irrigation development, the insufficient irrigation development, the challenges in the irrigation development, especially in the capacity development of actors and stakeholders.
- In the current Japan's ODA policy for the Republic of Malawi, "Promoting diversified and market oriented agriculture", the irrigation development has been a subject of its assistance.
- The MIDP approach is considered as the basic approach of the government for small and medium irrigation projects, considering the efficiency and sustainability.
- The Project developed a series of training to build capacities of those who are the main actors in small and medium irrigation scheme development, realizing their OJT and applying what they learnt in the training sessions in the 4 model sites. Most of them are satisfied or very satisfied with each type of training, and they use what they learnt from the training in their daily works.
- The selection of project site and trainees is considered appropriate, in order to extend the achievement nationwide in the future.

(2) Effectiveness

Effectiveness of the Project is assessed as "relatively high".

- All types of training developed by MIDP2 are considered as official training to be adopted

nationwide, according to DoI. A human resource development strategy to replicate the MIDP training programme has been drafted, but need to be improved and approved by the MoAIWD.

- Some contents of the MIDP training, which correspond to the capacity gap identified in other donors' programmes, have already been utilized to conduct training in respective donors' programs. GEs who were trained through MIDP2 play a role of trainers in such trainings.
- Responsible IOs have been nominated, however, their functions so far do not correspond to the replication of established training.
- By achieving the 3 Outputs, the MIDP training program was established. Regarding establishment of the system for professional development for irrigation officer, the achievement of 3 outputs significantly contributes to the project purpose. Yet, the further effort to institutionalise the system is required.

(3) Efficiency

Efficiency of the Project is assessed as “medium”

- Regarding the Output 1, the process of PIE accreditation was slower than expected, mainly due to the limitation of budget from Malawian side. It is expected to reach to 13-14 accredited PIEs by the end of the project period (65-70% of the target figure). The capacity development of DoI (HQs and ISDs) as trainer was progressed, considering the achievement of related indicators. However, their experiences as trainer are still limited to certain components of training depending on the individual trainers. As to the M&E, although the data collection system has been functioning through the M&E system, the quality of data is still a subject to be improved.
- As to the Output 2, both 2 indicators to measure the improvement of practical skills and knowledge of district irrigation officers in Dowa and Mzimba South DIOs were achieved. They also considered that they have sufficient knowledge to implement similar irrigation projects and to provide adequate follow-up to the model site farmers collaborating with EOs.
- While the knowledge of EOs on O&M and water management of irrigation schemes was enhanced, the Output 3 is considered still in the process of achieving the other 2 indicators. The collaborative framework will be established by getting an approval by both DoI and DAES about the contents of guideline of the framework, which is still under the process of brushing up. Although the collaboration of IOs and EOs based on the MIDP approach was established at local level, the necessary coordination at district, division, and central levels has not been discussed sufficiently. In addition, the progress of O&M in the model sites differs in each site, and a continuous effort to follow-up the communities is required.
- The construction of irrigation facilities at model sites was implemented efficiently in terms of construction cost, based on the concept of MIDP approach.
- Regarding the input from Japanese side, the allocation of Japanese experts was less than the initial plan from the midterm, as long-term experts were reduced from 3 to 2. The equipment provided was properly utilized and maintained.
- As to the input from Malawian side, C/P personnel was allocated adequately, in terms of the number and institutions, although some of the C/P personnel moved to other places by periodical transfer. The insufficiency of the budget, in the remuneration fee for SREs and fuel cost and allowance necessary for project activities, caused a certain delay in the progress of the project activities.
- Electricity and water supply was suspended frequently at the project office in Kasungu, which affected the implementation of project activities.

(4) Impact

Impact of the Project is assessed as “relatively high”.

- As to the prospects of achieving the Overall Goal, the target ISDs/DIOs have already developed various irrigation projects with farmers' contribution in labour and locally available materials, as well as donors support in construction materials, and providing technical support such as survey, design, and supervision of construction, collaborating with EOs in respective EPAs. In such similar projects, although the farmers gain capacities to maintain their facilities, the capacity development of EOs as well as farmers in O&M, including the collection and management of membership fee and knowledge to improve their marketing etc. is a challenge to enhance sustainability.
- Mini and small scale irrigation schemes development in the country has been implemented constantly. By extending the training developed through the Project, the application of MIDP approach nationwide can be expected.
- In the 3 model sites of the Project, household income was increased 73-175% comparing before and after the intervention. Positive changes in farming and livelihood have been also reported. In addition, in Zombe, the farmers group is organized well and has been realizing group activities including cooperative marketing and purchase, village bank, organizing committees, such as marketing and maintenance committees. The Project in Zombe became a good practice for surrounding villages so the farmers in Zombe were requested to give technical advice on canal construction to the farmers in neighboring village.
- The establishment of the accreditation of PIE can contribute to the development of irrigation engineering in Malawi.
- DoI conducted various F/S for other donors' projects/programmes by the GEs trained by the Project, including 15 new small-scale solar schemes under implementation through the Malawi Drought Recovery and Resilience Project (MDRRP) by World Bank, and a number of district funded projects including large scale F/S for Linga and Dwambazi under the African Development Bank (AfDB).
- Students of LUANAR in total 26 who were assigned to DIO under internship program participated in the different types of training of the Project, including the OJT, supervision of rehabilitation work in model sites, and other project activities. It contributed the capacity development of young human resources.
- All 13 G2 members who belong to non-target ISDs/DIOs answered in the questionnaire done by the Team that they have applied their knowledge acquired in MIDP2 trainings in their irrigation projects in respective divisions/districts. Also, some of them have applied MIDP approach to carry out their projects.

(5) Sustainability

Sustainability is assessed as “relatively high”.

- As to the policy and institutional aspects, the related national policies will be valid for several years, and the importance of irrigation development and related capacity development will continue. Although the request of DoI for donors has been shifting to the development of large irrigation schemes, the importance of small and medium scale irrigation development still remains. DIOs continue to be responsible for small and medium irrigation development and will require capacity development.
- Regarding the organizational and financial aspects, the number of technical officers of C/P

institutions has been limited and remained same for past 6 years. However, the number of overall staff under DoI have increased for recent years. In terms of budget, DoI has an increased amount of Other Recurrent Transaction (ORT) and Development Budget 1 (donors' funds). As to the DIO, their budget is also quite limited, and the insufficiency of operation budget for local level officers such as DIOs and AEDOs is main challenge for them to attend communities during and after the irrigation development project. Currently, most irrigation projects are implemented by donors' funds such as World Bank and various NGOs.

- For donor projects, there are components of farmer and/or staff trainings. The part of the MIDP training components has been utilized to these donor projects.
- The collaboration between IOs and EOs has worked at all levels, but the framework has not been finalised at higher level yet.
- Regarding the technical aspects, training and mentoring, 4 PIEs of DoI have been approved as SREs by Board of Engineer (BoE), which is expected to facilitate the training and mentoring process from now on. The capacity of trainers for IOs training and OJT were strengthened through the Project. However, each trainer needs more practical experiences.
- There are 3 manuals and 40 training materials developed by the Japanese Experts. It is required for each trainer to arrange the materials corresponding to the topic of training to teach IOs and also EOs. Japanese Experts have been preparing additional training materials for EOs to train farmers in O&M, including the market survey and planning, in order to facilitate their training.
- In terms of the gender aspect, women have equal opportunities as men in the model sites of the Project, as it was facilitated by the Project.
- Social conflict in the community can impede the progress of farmers' organization and participation.
- There was no major environmental challenge identified in the model sites, as the target irrigation facilities involved rehabilitation of existed canals.

3-3. Factors that have promoted the achievement of the project

(1) In relation to the plan

There was no factor identified in relation to the plan.

(2) In relation to the implementation process

- Although the construction of a part of model sites, such as Champhole and Chamkhwere, took longer than expected due to the unorganized farmers' group and insufficient participation of farmers, the field tours to a successful site were effective to motivate the farmers to improve their participation.

3-4. Factors that have hindered the achievement of the project

(1) In relation to the plan

There was no factor identified in relation to the plan.

(2) In relation to the implementation process

- The EOs normally provide training/workshop to farmers such as leadership, conflict management, and group dynamics, before and during the construction process. While on the 1st to 3rd sites, they implemented these trainings/workshops, the Project could not spare enough time to do such activities in the 4th site Chamkhwere due to the unexpected site change. It did not allow the Project as well as farmers to be prepared sufficiently in terms of farmer's organisation and motivation. Eventually, it caused the delay of the canal construction.

3-5. Conclusion

It was confirmed that the Project was highly relevant and the MIDP2 training program is mostly developed, and participating IOs, EOs, and farmers strengthened their capacities in the development of small and medium irrigation facilities based on the MIDP approach. It requires further efforts in terms of the establishment of a system for professional development for irrigation officers in Medium-scale irrigation scheme development, by adopting MIDP training program as an official process of human resource development, however, it is expected to achieve it by the end of project period. Regarding the unachieved indicators of Outputs, the Project will be able to enhance the level of achievement by carrying out remaining activities. Therefore, it is considered adequate to terminate the Project within the planned period. On the other hand, in order to secure the utilization of the established training programme to achieve the Overall Goal and the sustainability of the Project, there are some challenges to cope with.

3-6. Recommendations

[Recommendations in the remaining project period]

I. Recommendations to the Project

1) Completion of remaining tasks

In the rest period of the Project, the Project team is expected to complete the remaining activities, such as Activity 1-1, 3-1 and 3-5. Moreover, regarding the indicator 1-1 and 1-3 of the Output 1, 3-2 and 3-3 of the Output 3, it is expected to maximize the achievement. In regarding the pilot project site 4, Chamkhwere, the Evaluation Team recommends that related stakeholders make best efforts to formulate the plan for the completion of the canal rehabilitation even after the termination of the Project.

2) Finalisation of the human resource development strategy and elaboration of plan for training programme based on the strategy

As mentioned in 4.2., the draft of the human resource development strategy has already been prepared, but need to be improved and approved by MoAIWD before the end of the Project. It is recommended that the strategy includes a medium-term plan for all types of training such as SRE, ToT, IOs, and OJT trainings based on the MIDP training programme.

3) Re-organising training materials according to the irrigation development cycle

Forty training materials were prepared by the Project, which are applicable for small and medium scale irrigation development. However, these materials are not systematically organised. For easier understanding for all users and more effective application to local sites, it is recommended to re-organised the training materials according to the irrigation development cycle. In addition, the training materials should be printed and bound to distribute both hard and soft copies to all stakeholders such as DoI, DAES, ISD, DIO, EPA, and main donors by which these people can easily access the materials when needed.

4) Elaboration of the Manual on canal rehabilitation works by MIDP approach

The Project has implemented the canal rehabilitation works at 4 model sites by the MIDP approach application, and has made great impacts on not only the increase agricultural production and farmers' incomes but also fostering farmers' awareness of responsibility on the O&M towards the sustainability. In order to disseminate the MIDP approach, it is recommended to elaborate the Manual on canal rehabilitation works by clarifying each step and the contents of the works.

5) Holding a workshop to present the results of Project inviting stakeholders concerned

In order to disseminate outcomes of the Project, it is recommended to hold a workshop inviting related

Governmental organizations, Donors, NGO, Universities and others. In the workshop, positive and negative practices should be presented and shared by not only the Project team, but also EOs and farmers.

6) Revision of PDM

The Terminal Evaluation Team propose the revision of PDM. Main revised points are 1) clarification of term “MIDP training approach”, 2) addition and modification of indicators in Overall Goal, Project Purpose and Output 3, and others are minor changes.

II. Recommendations to Malawian Side

1) Nomination of Technical responsible irrigation officers in DoI (both HQs and each region) for replication of the MIDP training program.

Technical responsible irrigation officers are master trainers who conduct ToT trainings and support IO and OJT trainings. In order to ensure the effective replication of MIDP training programme, it is strongly recommended that DoI assigns technical responsible irrigation officer in both HQs (1) and each region (3).

[Recommendations after the Project]

1) Continuous dissemination of MIDP approach

The evaluation team recognize that MIDP approach is applicable and effective for farmers and community who wish to improve their irrigation facilities in order to enhance their livelihood. The idea of MIDP approach would be adapted to a series of irrigation developments in local community level in Malawi. It is recommended that DoI will have more strong leadership to organize medium and small scale irrigation development plan in Malawi with DAES, and facilitate local governments/offices to utilize these knowledge and skills which JICA projects have been providing, even under decentralization.

2) Continuous implementation of MIDP training program for the capacity development of DoI officers

The Project has been implemented mainly to build the capacities of irrigation officers and extension officers by providing MIDP training programme. During the Project period, those officers have been gradually trained and its number is increased, but in order to achieve the overall goal of the Project “Medium-scale irrigation scheme development is promoted at national level”, more officers in the nationwide are to be trained. So it is recommended for MoAIWD to systematize training programme as ordinary duty of the Ministry in order to allocate the trained officers to the whole country.

3) Efforts to secure necessary budget for implementation of irrigation projects

Insufficient budget has been one of the key challenges on implementing any projects in Malawi. Even in these circumstances, it is highly recommended for DIOs with support of MoAIWD to make efforts for taking necessary steps and procedures on right time every fiscal year to secure necessary budget for local irrigation projects.

4) Enhancement of collaborative works between DoI and DAES

In order to produce more effects on irrigation development, it is recommended to enhance the collaborative works between DoI and DAES at central and local levels, clarifying the each role and responsibility in the development to make sure that trainings for EOs and farmers will be conducted.

5) Utilization of good practices

Through the Project, there are good practices seen in pilot projects site. For example, Zombe model site,

leadership of village headman and the farmers' president were observed, which surely contribute improvement of the agricultural productivity and farmers' income generations. They looked well-organized, adopted irrigation skills, and disseminated their experiences to surrounding communities that wish to improve the irrigation farming. By accumulating such positive experiences and disseminating good practises to others, community-levelled irrigation development will be expected to nationwide.

6) Collaboration with MA-SHEP

Based on the interviews of counterpart personnel and targeted farmers groups, close relationship with SHEP, which introduces market-oriented approach for smallholders, were observed. By introducing SHEP idea to farmers in Malawi, they would be motivated to improve their farming style and then understand an importance of irrigation facility for improving produces' quality and quantity. So it is recommendable for MoAIWD and JICA to utilize MIDP approach and MIDP training programme to communities where SHEP programme is introduced.

3-7. Lessons Learned

1) Effectiveness of farmer-driven facility construction in the enhancement of awareness for ownership towards the sustainable irrigation scheme management

The canal constructions at model sites were carried out by farmer-driven, in which they prepared construction materials and worked for the construction. It is observed at Zombe model site that this methodology is very valid to develop the awareness for ownership towards the sustainable irrigation scheme management.

2) Synergy effect of the collaboration between SHEP approach and the irrigation canal rehabilitation to increase farmers' income

At Zombe model site, it was observed that the farmers' incomes on farming have been increased by the synergy effect between irrigation canal rehabilitation and the SHEP approach.

3) Effectiveness of On the Job Training (OJT) to strengthen the applicable skills and techniques on the ground

The Project has carried out OJTs on the canal rehabilitation at model sites. The participants of OJT have acquired practical knowledge and techniques on survey, planning & design, construction and O&M of canal through theses OJT. Moreover, some irrigation engineers, who participated in the OJT, have applied already the acquired skill and techniques to implement irrigation canal rehabilitation works at other schemes. In these facts, it is considered that the OJT is appropriate way to acquire the applicable skills and techniques on the ground.