Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Malawi Office: November, 2024

Country Name	**<Phase 1> Project for Development of Medium Scale Irrigation Schemes <Phase 2> Project for Enhancing Capacity for Medium Scale Irrigation Scheme Development, Operation and Maintenance**
Republic of Malawi	

I. Project Outline

Background	In Malawi, agriculture was a key industry where small-scale farmers with a cultivated area of less than 1 ha accounted for most of the farming population. Most of them were engaged in rain-fed agriculture, which posed a challenge to stabilizing and improving agricultural productivity. Under "the Green Belt Initiative" (GBI), an irrigation-based development plan prepared in 2010, the Government of Malawi aimed to promote agricultural productivity improvement and food security by utilizing water resources. However, strengthening the capacity of local and district irrigation engineers/officers and agricultural extension officers in implementing appropriate irrigation schemes was a significant challenge. The Project for Development of Medium Scale Irrigation Schemes (hereafter MIDP or Phase 1) promoted the capacity building of irrigation engineers/officers and extension officers at the field level, from planning and construction management to maintenance management, and the establishment of monitoring and evaluation (M&E) systems in the project areas of the southern region. The Project for Enhancing Capacity for Medium Scale Irrigation Scheme Development, Operation and Maintenance (hereafter MIDP2 or Phase 2) was then implemented to support the government in smoothly implementing the roll-out of the MIDP training approach[1], mainly by the central level of the Department of Irrigation (DoI) at Head Quarters (HQs) and Irrigation Service Divisions (ISDs).
Objectives of the Project	Through (i) capacity development of the DoI in implementing the MIDP training programme[2], (ii) improvement of the practical skills and knowledge of district irrigation officers (IOs) in the model sites through the MIDP training programme, and (iii) establishment of framework for extension services between the DoI and the Department of Agricultural Extension Services (DAES), the project aims at establishing a system for professional development for IOs in medium-scale irrigation scheme development in the DoI in all the 3 regions, thereby contributing to the promotion of medium-scale irrigation scheme[3] development at national level. <Phase 1> 1. Overall Goal: Capabilities of irrigation engineers/officers and extension officers are enhanced in developing/rehabilitating small/medium scale smallholder irrigation schemes and in operating the new DoI's Monitoring & Evaluation (M&E) system of irrigation schemes, through the dissemination of outputs and achievement of MIDP (guidelines, manuals, instructions, etc.). 2. Project Purpose: Capabilities of irrigation engineers/officers, extension officers and farmer groups are enhanced through development/rehabilitation Operation & Maintenance (O&M) and monitoring of target irrigation schemes. <Phase 2> 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.
Activities of the Project	1. Project Site[4]: ＜Phase 1> 11 districts of Blantyre Irrigation Service Division (ISD)/Agriculture Development Division (ADD) and Machinga ISD/ADD in South Region (3 pilot irrigation schemes) ＜Phase 2> Kasungu ISD in Central Region (2 model sites) and Mzuzu ISDs in Northern Region (2 model sites) 2. Main Activities: ＜Phase 1> Enhancement of capabilities of (i) irrigation engineers/officers and extension officers to implement the new DoI's Monitoring & Evaluation (M&E) system of irrigation schemes, (ii) irrigation engineers/officers in survey, planning, Environmental Impact Assessment (EIA), design, construction, and operation and maintenance by farmers groups, (iii) extension officers in mobilizing and training smallholder farmers for the O&M of irrigation facilities and water management, and (iv) disseminating and sharing the project outputs and achievement among the stakeholders. ＜Phase 2> (i) Capacity development of the DoI in implementing the MIDP training programme, (ii) improvement of the practical skills and knowledge of district IOs in the model sites through MIDP training

[1] "MIDP training approach" was defined in the terminal evaluation of Phase 2 as a series of training developed through the MIDP2 with the purpose of building capacities of irrigation engineers/officers, extension officers, and farmers to implement small and medium irrigation development projects based on the "MIDP approach" which was developed during Phase 1 and characterized by its three concepts such as 1) the Government's direct management for plan, design, and construction, 2) Farmer's self-help participation in construction and maintenance, and 3) Collaboration work between irrigation and extension officers. According to DoI, the development of small-scale irrigation schemes is now left in the hands of the district councils as a result of decentralization, and thus, district IOs are in charge of everything from the designs to the actual construction of the canals.

[2] "MIDP training programme" consists of 5 different types of training and creates a cycle.

[3] The government definition of size categories differs depending on the time of Phase 1, Phase 2, and ex-post evaluation. However, it is mentioned in the Final Report (MIDP2) that "medium and small-scale irrigation schemes, 10 to 100 ha irrigation area, shall be developed with MIDP approach", which is the same definition as in Phase 1. When mentioning "medium scale irrigation facilities", it is therefore understood that the above definition applies.

[4] Malawi is divided into 3 regions (North, Central and South). There are 8 ISDs and 28 District Irrigation Offices (DIOs) in the country.

	programme, and (iii) establishment of framework for extension services between the DoI and the DAES. 3. Inputs (to carry out above activities) Japanese Side <Phase 1> 1) Experts: 8 persons 2) Trainees Received: 14 persons 3) Equipment: vehicles, surveying instruments, computers, printers, digital cameras, video cameras, etc. 4) Operation cost <Phase 2> 1) Experts: 7 persons 2) Trainees Received: 19 persons 3) Equipment: Laptop PC, vehicles, global positioning system (GPS), alidade set, digital camera, printer, etc. 4) Operation cost		Malawian Side <Phase 1> 1) Staff Allocated: 41 persons 2) Land and facilities: Office spaces, conference and workshop facilities, a drawing office room and a conference room, vehicles 3) Operation cost <Phase 2> 1) Staff Allocated: 78 persons 2) Land and facilities: project office, electricity, tap water, etc. 3) Operation cost
Project Period	<Phase 1> (ex-ante) May 2011 – April 2014 (36 months) (actual) June 2011 – May 2014 (36 months) <Phase 2> (ex-ante) March 2015 – March 2020 (60 months)[5] (actual) 26 March 2015 – 25 March 2020 (60 months)[6]	Project Cost (Japanese side only)	<Phase 1> (ex-ante) 353million yen (actual) 274 million yen <Phase 2> (ex-ante) 553 million yen (actual) 344 million yen
Implementing Agency	<Phase 1> <Phase 2> Department of Irrigation (DoI) of Ministry of Water Development and Irrigation (MoIWD) in Phase 1 / DoI of Ministry of Agriculture, Irrigation and Water Development (MoAIWD)[7] in Phase 2 <Phase 1> Department of Agricultural Extension Services (DAES)[8] of Ministry of Agriculture and Food Security (MoAFS)		
Cooperation Agency in Japan	Ministry of Agriculture, Forestry and Fisheries		

II. Result of the Evaluation

<Constraints on Evaluation>

- To capture the data/information related to the continuation status of the local level MIDP training programme and the achievement of Overall Goal Indicator 1, there was a need for further inquiry directly from DIOs because the irrigation database at HQs does not specify the approach that was used in constructing, maintaining, and rehabilitating the schemes. However, due to limited resources, it was not possible to cover all the 28 DIOs throughout the country. The JICA Office conducted a field survey visiting the 4 target ISDs (Machinga, Blantyre, Kasungu and Mzuzu) and their 4 DIOs (Mzimba, Dowa, Mulanje and Machinga) covering the 3 regions, including 6 pilot/model[9] schemes and 4 non-pilot/model schemes constructed during the project periods. Non-target ISDs/DIOs and irrigation schemes adopting MIDP approach constructed after the project completion were not visited. Information about Lilongwe DIO (non-target) were obtained from the Principal IO for Lilongwe ISD based at HQs.

<Special Perspectives Considered in the Ex-Post Evaluation>

- In the ex-post evaluation, Phase 1 and Phase 2 are evaluated as a single project. Both phases demonstrate continuity in the project timeline (Phase 2 commencing 10 months after the completion of Phase 1) and continuity in the logic models (The Overall Goal of Phase 2 is contiguous with the Project Purpose and Overall Goal of Phase 1, and it is at a higher level). Therefore, in evaluating the degree of achievement of effectiveness and impact, the indicators of the Project Purpose and Overall Goal of Phase 2 shall be applied and verified.

1 Relevance/Coherence

[Relevance]

<Consistency with the Development Policy of Malawi at the Time of Ex-Ante Evaluation >

The projects were consistent with the development policy of Malawi at the time of ex-ante evaluation. Irrigation development was a priority for national food security and was identified as one of the priority areas in "the Malawi Growth and Development Strategy" (MGDS) (2007 – 2011) and "MGDS II" (2011 – 2016), the mid-term strategies of "VISION 2020".

<Consistency with the Development Needs of Malawi at the Time of Ex-Ante Evaluation >

The projects were consistent with the development needs of Malawi at the time of ex-ante evaluation. As mentioned in the "Background" above, there was a need to stabilize and improve the agricultural productivity of the small-scale farmers who accounted for most of the farming population in Malawi and were mostly engaged in rain-fed agriculture.

<Appropriateness of Project Design/Approach>

The project design/approach of the two projects was appropriate. No problem attributed to the project design/approach was confirmed in both phases.

<Evaluation Result>

[5] 60 months are as per the Ex-ante Evaluation Sheet (Phase 2).

[6] Although they are 61 months when calculated with both ends in, the actual months are 60 months as originally planned because the project started on 26 March 2015 and ended on 25 March 2020.

[7] In Phase 1, the DoI was under the MoWDI and the DAES was under the MoAFS. In 2014/15, the two ministries were integrated as the MoAIWD.

[8] In Phase 2, the DAES of the MoAIWD was a cooperating agency.

[9] Phase 1 used the term "pilot" and Phase 2 used the term "model". Both are the same in meaning that they were constructed by the projects.

In light of the above, the relevance of the projects is ③[10].

[Coherence]

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The projects were consistent with the Japan's ODA policy to Malawi at the time of ex-ante evaluation. At the time of the Phase 1 ex-ante evaluation, in the policy consultation conducted in June 2009, the three priority areas were identified. "Agriculture and rural development" was included in one of the priority areas - sustainable economic growth, and "water resource development" was included in another priority area - social development[11]. At the time of the Phase 2 ex-ante evaluation, "the Country Assistance Policy for the Republic of Malawi" (April 2012) included "Infrastructure development to foster agriculture, mining, and other industries" as one of the priority areas. Under that, to maintain food self-sufficiency against a high population growth rate, it was essential to improve the productivity of agriculture, which was a major industry, and support was to be provided for irrigation development and soil fertility improvement.

<Collaboration/Coordination with JICA's other interventions>

The collaboration/coordination between the projects of JICA was planned at the time of ex-ante evaluation and during the project period and was implemented, and the positive effects were confirmed at the time of ex-post evaluation. Collaboration with the Sustainable Land Management and Promotion (SLMP) Project (2011 – 2015) and the Project for Market-oriented Smallholder Horticulture Empowerment and Promotion (MA-SHEP) (2017 – 2023) contributed positively to the production and income of the farmers in the project sites of both phases. This has contributed to increasing motivation of the farmers for irrigation development, continuous use and maintenance of the irrigation schemes to date.

<Cooperation with other institutions/ Coordination with international framework>

The cooperation/coordination with other development partners and institutions was planned at the time of ex-ante evaluation and during the project period and implemented as planned, and the positive effects were confirmed at the time of ex-post evaluation. Resources developed by the projects, such as trained officers/engineers, training materials, etc., were utilized in the projects such as IRLAD[12], MDRRP[13], PRIDE[14], and TAPP[15] in both phases. This has contributed to the replication of the MIDP approach. In the development of the accreditation system of Professional Irrigation Engineers (PIEs), Phase 2 collaborated with the Board of Engineers, currently the Malawi Institute of Engineers (MIEs). Collaboration with the Lilongwe University of Agriculture and Natural Resources (LUANAR) was also realized through the work of the task force on the accreditation of PIEs.

<Evaluation Result>

In light of the above, the coherence of the projects is③.

[Evaluation Result of Relevance/Coherence]

In the light above, the relevance/coherence of the projects is③.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the Time of Project Completion>

At the time of project completion, the Project Purpose of Phase 2 was mostly achieved as planned. In the MIDP 2 Closing Workshop in February 2020, it was announced that the MIDP approach was officially adopted by the MoAIWD (Indicator 1). At the HQ level, it is not clear who were specifically nominated as administrative responsible IO and technical responsible IO for replication of the MIDP training program as per the defined job responsibilities. However, there were officers who acted as administrative responsible IOs and in charge of all training for IOs across the country. They were part of the MIDP implementation team, and therefore, were able to function as resource persons for replication of the MIDP training program. In each region (North, Central, and South), 2 officers (administrative and technical) for replication of the MIDP training programme were nominated as shown in the Human Resources Development Strategy (Indicator 2 and 3).

<Continuation Status of Project Effects at the Time of Ex-Post Evaluation>

By the time of the ex-post evaluation, the project effects have been partially continued. With regard to the MIDP training program, it was confirmed that a complete cycle of 5 different types of training had not been implemented in any non-target ISDs as planned in the Human Resources Development Strategy[16] due to government funding constraints. However, it was confirmed that the MIDP training programme had been implemented partially. Out of the 5 types of training, Selected Registered Engineer (SRE) training and Training of Trainer (TOT) at the HQ level have been conducted for Graduate Engineers (GEs). As for IO training, On-the-Job Training (OJT), and Extension Officer (EO) training to be conducted locally, figures directly collected from the 3 target DIOs show some implementation including farmers' training[17]. However, they do not represent pure MIDP training but rather other training by other projects adopting some of the components from the MIDP approach. As for the nominated officers at HQ and in the regions for replication of the MIDP training programme, their functionality has been affected by the non-availability of funds since the government does not have direct financial support for post project activities. Replication has been partly done through projects funded by other development partners, but there is no agreed collaboration with other resources. The IOs developed by the projects use their own initiative to include MIDP approach in the trainings. The nominated officers do not have the overall information/data on the status of the replication of the MIDP training programme. The actual information needs to be collected directly from respective DIOs as the database does not have such specific information. Regarding the pilot/model irrigation schemes constructed in both phases, most of them have been maintained by farmers to date. As enhanced by the projects as an important element of MIDP approach, cooperation between DoI and DAES was confirmed, and extension

[10] ④ : very high, ③ : high, ② : moderately low, ① : low

[11] ODA Country Data Collection (2009)

[12] "Irrigation Rural Livelihoods and Agricultural Development Project" (IRLADP) (2006 - 2014) supported by the World Bank

[13] "Malawi Drought Recovery and Resilience Project" (MDRRP) (2016 – 2021) supported by the World Bank

[14] "Programme for Rural Irrigation Development" (PRIDE) (2015 - 2024), supported by the International Fund for Agricultural Development (IFAD), targeted 15 irrigation schemes in 12 districts. Mzimba, Dowa and Machinga are amongst their targeted districts, and it was reported that they at least applied some contents of MIDP in the construction and maintenance.

[15] Trustees of Agricultural Promotion Program (TAPP) is an NGO.

[16] It was expected to target one ISD yearly depending on the availability of the budget.

[17] Building capacities of farmers to implement small and medium irrigation development projects based on the MIDP approach was also developed during Phase 1.

workers work with the farmers at the schemes.

<Status of Achievement of the Overall Goal at the Time of Ex-Post Evaluation>

At the time of ex-post evaluation, the Overall Goal of Phase 2 has been not achieved. Regarding Indicator 1, there is no comprehensive data on the irrigation facilities that have been constructed (new or rehabilitation) and maintained in a sustainable manner through the MIDP approach in the country. Available figures collected through visits to target ISDs and/or DIOs (except for Lilongwe) show there are irrigation facilities that adopted all the 3 concepts of the MIDP approach in construction and maintenance after the project completion. As for non-model schemes in the target ISDs which were constructed during the project implementation periods and maintained, the JICA Office visited 4 schemes. Out of them, 3 schemes have adopted all the 3 concepts of the MIDP approach (1 in Mzimba DIO, 1 in Dowa DIO and 1 in Machinga DIO) and 1 in Machinga DIO has adopted some elements of the MIDP approach. Regarding the 7 pilot/model schemes of the projects, it is confirmed that 6 schemes have been maintained by farmers to date. It is therefore confirmed that there are irrigation schemes constructed and maintained through MIDP approach in the target ISDs and their DIOs other than the pilot/model schemes constructed by the projects. However, as mentioned above, since no pure MIDP training program has been conducted after the project completion in any of the non-target ISDs, it is assumed that replication of the MIDP approach in the construction and maintenance of the medium-scale irrigation facilities in non-target ISDs through an established system by the project has been limited. Considering that the target value was purposedly removed when modifying the indicator because the Overall Goal of the project was not to increase the number of irrigation schemes but to develop the irrigation scheme through the application of the MIDP training program, the achievement is considered as "partially achieved". As for Indicator 2, two officers have been newly accredited as PIEs after the completion of Phase 2, and there are 11 PIEs at the time of ex-post evaluation. The number of those who have joined the accreditation process has been very low. Basically, for one to be accredited as PIE, it's a personal choice and officers cannot be pushed according to the DoI. Although there is no target value, considering that the target by the end of the project was 20 PIEs which was not achieved at the time of project completion, it is assumed to be the level of "not achieved".

<Other Impacts at the Time of Ex-Post Evaluation>

Positive impacts were confirmed. Collaboration with other projects of JICA and other development partners such SLMP, MA-SHEP, PRIDE, etc., captured as synergy effects in "Coherence" above, have also positively impacted the continuation and sustainability of their own project effects. Farmers from the communities in the pilot/model sites were economically empowered, and their well-being has improved using the schemes. The people in these communities also have enjoyed the right to association by joining the membership of the schemes. There was full participation of the women in all the project works and they were involved in the construction of canals. In terms of usage of the schemes, the women have enjoyed a fair share and their livelihoods have improved. With regards to leadership, they have equally held leadership positions in the schemes. Students of LUANAR were assigned to DIOs under the internship program in Phase 2, which is a contribution to the capacity development of human resources. No negative impacts including environmental and social aspect were observed. There was no major environmental challenge identified in the project sites, as the pilot/model irrigation schemes involved the rehabilitation of existing canals. Through interviews with DIOs and farmers in the visited irrigation schemes, it was confirmed that there had not been a negative impact on the environment and any issues related to land acquisition and resettlement[18].

<Evaluation Result>

In light of the above, the effectiveness/impact of the projects ②.

Achievement of Project Purpose and Overall Goal (Phase 2)

Aim	Indicators	Results	Source
(Project Purpose) A system for professional development for irrigation officer in Medium-scale irrigation scheme development is established in the DoI.	Indicator 1 MoAIWD officially adopts MIDP training programme as an official process of human resource development for irrigation officers.	Status of the Achievement (Status of the Continuation): mostly achieved as planned (partially continued) (Project Completion) • In the MIDP 2 Closing Workshop in February 2020, it was announced that the MIDP approach was officially adopted by the MoAIWD. (Ex-Post Evaluation) • MIDP training programme has been continuously adopted as an official process of human resource development for IOs. • A complete cycle of 5 different types of training as MIDP training programme has not been implemented in any non-target ISDs as planned in the Human Resources Development Strategy due to government funding constraints. • The MIDP training programme has been implemented partially. Out of the 5 types of training, SRE training and TOT at the HQ level have been conducted for Graduate Engineers (GEs). As for IO training, OJT, and EO training, figures directly collected from the 3 DIOs targeted by the projects show some implementation including farmers' training. However, they do not represent pure MIDP training but rather other training by other projects adopting some of the components from the MIDP approach. No. of trained Graduate Engineers (GEs)* after the project completion	Terminal Evaluation Report (Ph2)、Project Completion Report (Ph2), Questionnaire & interview with DoI, Interview with ISDs & DIOs

[18] The category of the Environmental and Social Considerations: The projects were categorized as Category B because the projects did not fall into any of the sensitive sectors, characteristics, or sensitive areas listed in the "JICA Guidelines for Environmental and Social Considerations" (April 2004 and April 2010) and were judged to have no significant undesirable effects on the environment. As for the Environmental Impact Assessment (EIA) reports, the Environmental Audit (EA) was conducted as per the instruction by the Environmental Affairs Department (EAD) which decided that EIA was not mandatory and EA was sufficient as a result of the initial screening by the EAD. There were no issues of land acquisition and providing alternative land as well. The projects were implemented in already existing sites which only required the lining of the earth canals. The following supplement information can be deducted based on the interviews with farmers during the field survey. In a pilot/model site, farmers resorted to using stones instead of burnt bricks as construction materials for rehabilitation/repairing the canals due to concern about cutting down trees, but later, this was abandoned since it was not cost-effective. Significant negative effects on the forests were not observed at the site. Farmers were also trained on how to make manure and integrated pest management, which could be regarded as mitigation measures against water pollution and soil contamination caused by the use of agricultural chemicals such as pesticides and fertilizers.

	2020	2021	2022	2023	Total
1) SRE	3	3	4	5	15
2) TOT	3	4	6	0	13

* Candidate for PIE

No. of trainees trained after the project completion in 4 target ISDs
(available information/data only)

Region	ISD	DIO	3) IO	4) OJT	5) EO	Farmers training
North	Mzuzu	Mzimba	1	15	8	439
Central	Kasungu	Dowa	0	8	150	1,600
South	Blantyre	Mulanje	0	0	0	320
	Machinga	No training at the district level according to ISD				

Indicator 2
Administrative responsible irrigation officers*1 are nominated in DoI (both HQs and each region) for replication of the MIDP training programme.
**1: Administrative responsible IOs are the people who coordinate and supervise overall trainings.*

Status of the Achievement (Status of the Continuation): mostly achieved as planned (partially continued)
(Project Completion)
- At HQs, it is not clear who were specifically nominated as administrative responsible IO and technical responsible IO for replication of the MIDP training program as per the defined job responsibilities at the time of project completion. However, there were officers, the Chief IO for Lilongwe ISD, the Principal IO for Lilongwe ISD, and the Deputy Director, who acted as administrative responsible IOs. The Principal IO for Lilongwe ISD based at HQ was also in charge of all training for IOs across the country. They were part of the MIDP implementation team and, therefore, were able to function as resource persons for MIDP replication. In each region (North, Central, and South), 2 officers (administrative responsible IO & technical responsible IO) for replication of the MIDP training programme were nominated as shown in the Human Resources Development Strategy.

(Ex-Post Evaluation)
- Both at HQs and in the regions, there are nominated officers. However, their functionality has been affected by the non-availability of funds since the government does not have direct financial support for post-project activities. Replication has been partly done through projects funded by other development partners.
- The nominated officers do not have the overall information/data on the status of the replication of the MIDP training programme. The actual information needs to be collected directly from DIOs as the database does not have such specific information.

Same as above

Indicator 3
Technical responsible irrigation officers*2 are nominated in DoI (both HQs and each region) for replication of the MIDP training programme.
**2: Technical responsible IOs are master trainers who conduct TOT trainings and support IO and OJT trainings.*

Status of the Achievement (Status of the Continuation): mostly achieved as planned (Partially continued)
(Project Completion)
Same as Indicator 2 above
(Ex-Post Evaluation)
Same as Indicator 2 above

Same as above

(Overall Goal)
Medium-scale irrigation scheme development is promoted at national level.

Indicator 1
Medium-scale irrigation facilities are constructed and maintained in a sustainable manner through the MIDP approach.

Status of the Achievement: partially achieved
(Ex-Post Evaluation)
- There is no comprehensive data in the country.
- Available figures collected through visits to target ISDs and/or DIOs (except for Lilongwe) show there are irrigation facilities that adopted the MIDP approach in construction and maintenance after the project completion. The figures represent schemes that adopted all the 3 concepts of the MIDP approach.

No. of constructed & maintained facilities through MIDP approach
(available information/data only)

Region	ISD	DIO*	No. of constructed facilities (new or rehabilitation) between 2020 and 2023**	No. of facilities maintained at the time of ex-post evaluation
North	Mzuzu	**Mzimba** (2)	3	5
Central	Lilongwe***	Lilongwe***	10	10
	Kasungu	**Dowa** (2)	9	11
South	Machinga	**Machinga** (1)	2	3
	Blantyre	Blantyre	2	2
		Mulanje (2)	1	2
		Phalombe	5	5
		Thyolo	1	1

* Figures in the ( ) show the number of pilot/model schemes. All of listed DIOs are under the target ISDs and target DIOs except for Lilongwe. In Blantyre ISD, there are 7 other target DIOs. Bold-lettered 4 DIOs were visited by the JICA Office.
** Figures include pilot/model schemes of both phases and represent total numbers achieved between 2020

Questionnaire & interview with DoI, Interview with ISDs, DIOs & farmers, Direct observation of pilot/model schemes and non-model schemes

		and 2023, except for Machinga, which was reported in 2021. Year-wise breakdowns and figures excluding pilot/model schemes were not obtained. Resources were from NGOs or other funding, except for Lilongwe which used the government Other Recurrent Transaction (ORT) funds. *** Lilongwe was not the target ISD of the projects, but officers from Lilongwe DIO participated in the MIDP trainings at the time of project implementation and applied their knowledge. Figures of Lilongwe DIO were obtained from the Principal IO for Lilongwe ISD based at HQs. • Apart from the above table, as for non-pilot/model schemes in the target ISDs, the JICA Office visited 4 schemes which were constructed between 2012 and 2018 during the project implementation periods and maintained through MIDP approach. Out of 4 schemes, 3 have adopted all the 3 concepts of the MIDP approach (1 in Mzimba DIO, 1 in Dowa DIO and 1 in Machinga DIO) and 1 in Machinga DIO has adopted some elements of the MIDP approach. • As for 7 pilot/model schemes of the projects, it is confirmed that 6 schemes have been maintained by farmers to date. 1 scheme was washed away with cyclone.	
	Indicator 2 The number of PIE is increased through MIDP training programme.	Status of the Achievement: not achieved (Ex-Post Evaluation) • Two IOs have been newly accredited as PIEs after the completion of Phase 2, and currently, there are 11 PIEs. The number of those who have joined the accreditation process has been very low. Basically, for one to be accredited as PIE, it's a personal choice and officers cannot be pushed. • The target by the end of the project was 20 PIEs which was not achieved at the project completion. Number of registered PIEs	Questionnaire & interview with DoI

2019* (project completion)	2020	2021	2022	2023
9	9	10	11	11

*As of September 2019

3 Efficiency

The project costs were within the plan (the ratio against the plan: 68 %) and the project periods were as planned (the ratio against the plan: 100%). The following are assumed to be contributing factors for the cost reduction. First, the construction of irrigation schemes at pilot/model sites was implemented efficiently in terms of construction cost based on the concept of the MIDP approach. The Japanese Experts also made sure that funds were strictly spent on the necessities. Second, allocation of Japanese Experts was less than the initial plan from the midterm, as long-term experts were reduced from 3 to 2, and an expert in irrigation facilities/water management was covered by frequent and extended period of stay of a short-term expert.

		Project Cost (Japanese side only, yen)	Project Period (months)
Phase 1 and 2	Plan (ex-ante)	906 million yen	96 months
	Actual	618 million yen	96 months
	Ratio (%)	68%	100%

Outputs for Phase 1 and Phase 2 were produced as planned.

In light of the above, the efficiency of the projects is ④.

4 Sustainability

<Policy Aspect>

"Malawi 2063", the successor of "VISION 2020", has three pillars, the first one being agriculture productivity and commercialization. Based on this long-term development plan, efficient, sustainable, and reliable irrigation infrastructure shall be developed and adopted across the country for enhanced productivity and full commercialization. The objectives of "the National Irrigation Master Plan" (2015 - 2035) include accelerating economic growth, reducing rural poverty, improving food security, and increasing exports. It consists of four mutually supporting components: New Irrigation Development, Sustainable Irrigation Management, Capacity Building, and Coordination and Management.

<Institutional/Organizational Aspect>

The government of Malawi is implementing a decentralized system of administration. To this end, the DIOs and extension officers are under the district councils and report to the District Commissioner (DC) administratively. Reports are sent to the DoI HQs for on-the-ground feedback on irrigation development. With decentralization, the district councils now have the power to recruit new officers without waiting for the central government to recruit officers and deploy them to the districts. In most cases, recruitment by the central government happens once in several years. It is expected that the districts will recruit based on the need at that particular time.

Number of Technical Officers of DoI

	2018/19	2019/20	2020/21	2021/22	2022/23*
DoI (central)	10	12	12	12	16
ISDs	No data	25	25	25	25
DIOs	No data	126	126	126	126
All technical staff	165	163	163	163	163**

*As of October 2023

** Established posts are 487. The capacity fulfillment rate is 33.5 %.

Although the capacity fulfillment rate is 33.5 % in 2022/23 against the established post of technical officers, the DoI has ensured that there are people on the ground who can advance the MIDP approach. In all the districts visited by the JICA Office, there were at least 2 IOs and assistant IOs who were in a position to sustain the MIDP approach. At the target ISDs and HQ levels, there are also officers who are conversant with the approach. These IOs work hand in hand with their colleagues from the DAES. It is expected that decentralization will increase the number of officers at DIOs. It is already confirmed that districts like Mzimba have already recruited IOs and their assistants through decentralized recruitment. Another positive factor in the institutional aspect is that Malawi Engineering Institution Act of 2019 was enacted and the MIDP approach was reflected as a procedure/requirement for PIE registration.

<Technical Aspect>

Since counterparts of the projects have not been transferred to other regions, they use the knowledge they gained from MIDP training as resource persons in training others. Skills and knowledge have been maintained by using field equipment which was handed by the projects. Officers have also used some of the MIDP components in other donor-funded projects, thereby sustaining the knowledge. As mentioned above, the MIDP approach was reflected as a procedure/requirement for PIE registration in Malawi Engineering Institution Act of 2019. The act has been useful in sustaining the project effects since it enhances professional standards and ethics in the irrigation sector. The SREs are actively contributing to SRE training by providing mentorship to the officers who want to be accredited. The number of SREs was increased from 4 at the time of Phase 2 completion to 6 due to 2 more PIEs being accredited.

However, there are concerns affecting technical sustainability. First, as captured in Project Purpose Indicator 1, no pure MIDP training programme has been conducted after the project completion and not rolled out to non-target ISDs. Those who were trained during the projects have the technical capacity, but other officers need to be trained. Second, the status of distribution/accessibility of the manuals/guidelines/materials developed by the projects is low both at central and local levels. It has also been observed through the interviews that although some officers still use the training materials which they have, most officers no longer have such training materials and manuals. Third, the number of PIEs has not increased as expected, and those who joined the process are low. Such a situation does not guarantee a further increase in PIEs.

<Financial Aspect>

Regarding the budget of the DoI, there is a guarantee for the continuation of disbursement of ORT resources since they are meant for the daily operations of the institutions. As such, there is no way such resources would be stopped. Development Budget 1 depends on the programming of the donors. As for ISD and DIO levels, an average of Malawian kwacha (MWK)13 million and MWK9 million, respectively, per year have been allocated. However, ORT for the construction of irrigation schemes through the MIDP approach including implementing the pure MIDP training programme is limited. Construction/rehabilitation of new schemes depends on donor funds and other NGOs. Most of the equipment and vehicles provided by the projects are still up and running, but two vehicles (1 from MIDP 1 and another one from MIDP2) that were handed over are grounded due to high costs and not maintained from ORT. As for the maintenance of the pilot/model irrigation schemes constructed in both phases, they are expected to be financially sustainable because it was confirmed that most of them have been maintained by farmers, and in all the schemes visited by the JICA Office, they indicated that there was a collection of irrigation facility users' fees.

Current major external resources that can be used for roll-out and sustaining the MIDP approach are an FAO-supported technical cooperation program (2022 - 2024) with USD450,000 and IFAD-funded PRIDE (2015 - 2024) with USD125.88 million, but there is no agreed collaboration with such resources. As for basket funds, the basket was established, but in terms of functionality, it is lacking as most development partners are not injecting their resources into the basket. There are legal guidelines that need to be in place to guide the usage of the resources, and these have not yet been finalized.

Budget Expenditures of DoI (Unit: MWK)

Year*	2019/20	2020/21	2021/22	2022/23	2023/24***
Other Recurrent Transaction (ORT)	117,993,413	236,025,406	193,124,302	321,069,142	Not yet fixed
Development Budget 1 (Donor fund)	18,357,636,390	0	29,990,621,818	82,318,028,559	Not yet fixed
Development Budget 2 (Counterpart Fund) **	1,225,000,000	1,861,000,000	2,800,000,000	3,908,515,755	Not yet fixed

* Since 2018/19, all budgets for district levels have been directly allocated to each district.

** Development Budget 2 is usually subject to variation in the number, scale, and content of agreement of donors annually.

***Blank cells do not mean that there is no budget; the total figures will be available at the end of the financial year.

<Environmental and Social Aspect>

No issues on environmental and social aspect that may risk sustainability were observed as explained in "Other Impacts at the Time of Ex-Post Evaluation" as above.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional/organizational and some problems have been observed in terms of the technical and financial aspects of the implementing agency. Therefore, the sustainability of the project effects is ②.

5 Summary of the Evaluation

The projects mostly achieved the Project Purpose as planned, which was to establish a system for professional development for IOs in medium-scale irrigation scheme development in the DoI. The projects did not achieve the Overall Goal, which was to promote medium-scale irrigation scheme development at the national level. Project effects have been partially continued in target ISDs through IOs trained by the projects at their own initiatives. Most of the pilot/model irrigation schemes constructed by the projects have been continuously maintained by farmers, which confirms the effectiveness and good sustainability of the MIDP approach itself. As for the efficiency of the projects, it is very high. However, when it comes to promoting irrigation scheme development to roll-out to non-target ISDs through the application of the MIDP training program after the project completion is considered to be limited. Number of PIEs have not been increased as expected. As for sustainability, technical and financial aspects have some problems.

Considering all of the above points, these projects are evaluated to be partially satisfactory.

III. Non-score Items

Adaption and Contribution:

・JICA staff in the Country Office provided overall direction by making recommendations in the submitted project monitoring sheets. They participated in the trainings as observers and supported with procurement of equipment when there was a need. The JICA Office maintained good communication with the DoI through both written and oral communications on pertinent issues.

・JICA experts worked hand in hand with their counterparts to make sure that planned activities were done timely. They supervised the implementation of training as well as construction works in the schemes. They also held meetings with the DoI on regular basis to inform each other on important issues.

Additionality and Creative Values:

・Officers from the DoI were dispatched to Japan to attend trainings on irrigation. Knowledge dissemination was done since they had to

share the knowledge with their colleagues at the respective offices. Participants learnt the Japan's legal system, project implementation system, environmental consideration, etc., for agricultural development projects. They also learnt the methods, from planning to maintenance and management, of irrigation facility projects. To this end, they learnt about the designs, operation and maintenance of irrigation and drainage facilities. Another interesting area is the advance technologies in Japan some of which they never used prior to their visits to Japan.

IV. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

・There is a need for the MoAIWD through the DoI to continuously conduct training on the MIDP approach for both irrigation and extension officers to cover all 28 DIOs for newly recruited officers. It was established through the interviews that the 2018 recruits which was the latest mass recruitment for IOs had not done training (inductions). This means that they only hear about the MIDP approach in passing. The DoI must secure funding for induction where, among other components, the officers will be trained on MIDP. This will assist in the maintenance of skill levels and knowledge of the MIDP approach, thereby enhancing the capacity of the DoI and the DAES.

・As MoAIWD officially adopted MIDP training programme as an official process of human resource development for IOs, it is recommended for DoI to take actions for more proactive and organized collaboration with other projects/fundings/development partners to promote MIDP approach through agreed framework etc.

・The projects distributed training materials and manuals to officers which were used as reference materials for both irrigation and extension officers. It has been observed through the interviews that most officers no longer have such training materials and manuals. The DoI should re-distribute MIDP training materials and manuals to officers, both old and new, to ensure accessibility and usage of the same.

・There is a provision in the irrigation code of conduct, which came into effect in January 2018, that for one to practice as an irrigation engineer, they need to be registered with MIEs. However, it appears that enforcement of this conduct is an issue, as non-registered engineers are still practicing. It is recommended for the DoI to put this code of conduct into practice, we could see more officers being registered as PIEs.

Lessons Learned for JICA:

・Effective collaboration amongst departments, irrigation and extension in this case, are key towards achieving the project goals and sustaining the project effects as observed in the target ISDs/DIOs. It is important that a project should not work in isolation but collaborate with other departments that have some commonalities.

・The participatory approach is very crucial when it comes to sustainability. Unlike in other projects where the schemes are just constructed and handed over to the farmers, MIDP involved farmers participation including in the construction of canals by self-help contributions of labour, materials, etc. in view of the sustainability. When farmers are involved in project implementation, they develop a sense of ownership and there is a likelihood of continuity of project activities beyond the project lifespan.

A well-maintained canal at Champhore Irrigation Scheme in Dowa

Interview with farmers at Zombe Irrigation Scheme in Mzimba