

JICA Technical Cooperation
Market-Oriented Rice Development Project
(MOReDeP)

INTERIM PROGRESS REPORT

(October 2019 – September 2022)

November 2022

Table of Contents

1. Background of the Project	1
2. Outline of MOREDeP	1
2.1. Counterpart Agency	2
2.2. Target Group of the Project	2
2.3. Period of the Project	2
2.4. Implementation Structure of the Project	2
2.5. Project Design Matrix (PDM)	4
3. Input for the Project	6
3.1. Input from Japanese Side	6
3.2. Input from Zambian Side	7
4. Major Activities conducted in the First Half Project Period	7
4.1. General Activity	8
4.2. Activity under Output 0	9
4.3. Activity under Output 1	10
4.4. Activity under Output 2	14
4.5. Activity under Output 3	18
5. Activity Photos	23

Annex

- Annex 1: Record of Discussion (R/D)
- Annex 2: Minutes of 1st Joint Coordination Committee
- Annex 3: Minutes of 2nd Joint Coordination Committee
- Annex 4: Input from Japanese Side
 - 4-1 List of Japanese Experts
 - 4-2-1 List of Counterpart Personnel Trained in Japan
 - 4-2-2 List of Counterpart Personnel Trained in the Third Countries
 - 4-3-1 List of Equipment A (Purchased as donation to Counterpart)
 - 4-3-2 List of Equipment B (Project use)
 - 4-3-3 List of Equipment C (Handed-over to counterpart after the use of the project)
 - 4-3-4 List of Vehicles Provided for the Project
 - 4-4 List of Facilities Developed/Improved
- Annex 5: Input from Zambian Side
 - 5-1 List of Zambian Counterpart Personnel
 - 5-2 List of Land and Facilities Provided by Zambian Side
- Annex 6: List of Products Produced by the Project
- Annex 7: List of PR Activities

Abbreviation

AfDB	African Development Bank
APMEP	Agriculture and Marketing Enhancement Project
BEO	Block Extension Officer
CARD	Coalition for African Rice development
CEO	Camp Extension Officer
E-COBSI	Expansion of Community Based Smallholder Irrigation Development Project
ESAPP	Enhanced Smallholder Agribusiness Promotion Programme
EU	European Union
GOJ	Government of Japan
GRiP	Good Rice Practice
GRZ	Government of the Republic of Zambia
IFAD	International Fund for Agricultural Development
JCC	Joint Coordinating Committee
JFY	Japanese Fiscal Year
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteers
MeRiP	Mechanized Rice Production
MoA	Ministry of Agriculture
MOReDeP	Market-Oriented Rice Development Project
M/M	Minutes of Meetings
NRDS	National Rice Development Strategy
PACO	Provincial Agricultural Coordinating Officer
PDM	Project Design Matrix
R/D	Record of Discussions
RDP	Rice Dissemination Project
SCCI	Seed Control and Certification Institute
SHEP	Smallholder Horticultural Empowerment and Promotion
TOF	Training of Farmers
TOT	Training of Trainers
UNHCR	United Nations High Commissioner for Refugees
WB	World Bank
WFP	World Food Programme
ZARI	Zambia Agriculture Research Institute
ZCARD	Zambia Consortium for Accelerated Rice Development

1. Background of the Project

In the Republic of Zambia, 53.6% of the labour force is engaged in agriculture (ILOSTAT., 2019) and the agriculture sector contributes approximately 2.7% to their GDP (Zambia Central Statistical Office, 2019). Until the recent years, Zambia as a country has experienced deficits in food production. This is mainly due to the fact that most of the farmers depend on maize production. In fact, 70% of agricultural budget was devoted to supporting maize farmers, putting significant pressure on the agricultural sector's finances. Although it is difficult to make a rapid change in this policy, the government is aiming at diversifying in the cropping system that is extremely dependent on maize in order to enhance food security.

In the 7th National Development Plan (2017-2021), rice was mentioned as one of the important cash crops and was selected as a strategic crop for "Crop Diversification" in the Second National Agricultural Policy (SNAP) for 2016-2020. Rice is genuinely becoming an important crop in the country since consumption is increasing rapidly, especially in urban areas. However, the productivity of rice in the country is quite low as 1.42 ton/ha on a national average due to improper cultivation and post-harvesting practices (FAOSTAT, 2018). This productivity level is lower than neighbouring countries as 1.76 ton/ha in Malawi and 2.26 ton/ha in Zimbabwe (FAOSTAT, 2018).

In the Second National Rice Development Strategy 2016-2020 (2nd NRDS), the Government of Zambia (GRZ) targets to increase at least 50% of the production as well as to enhance the rice value chain including the improvement of market access in rice-producing areas. Although this strategy has increased domestic production, the national deficit has been increasing year by year. In 2021, domestic production of rice is 65,880 ton/year compared to domestic demand of 111,860 ton/year, resulting in a national deficit of 45,000 ton/ha (National Food Balance for Zambia, 2021). This is approximately 4.5 times the national deficit in 2011. The shortfall is imported from neighbouring countries and South-East Asia.

Japan has been supporting the efforts of GRZ to develop the rice sector through several technical cooperation projects through Japan International Cooperation Agency (JICA). The first technical cooperation project of JICA in the rice sub-sector was the Food Crop Diversification Support Project Focusing on Rice Production (FoDIS-R) which was implemented from 2012 to 2015 aiming improvement of research and extension systems on rice production which followed by Rice Dissemination Project (RDP) from 2015 to 2019 for the establishment of extension system for rice cultivation. GRZ requested the Government of Japan to implement further technical cooperation projects in the later stages of the RDP and it was agreed to implement a new technical cooperation project, the Market Oriented Rice Production Project (MOREDeP, hereafter called "the Project") for six (6) years from October 2019. The project aims to improve rice farming techniques and increase farmers' incomes by utilising assets acquired through previous technical cooperation projects and by encouraging rice farmers to shift from a "Grow and Sell" approach to a "Grow to Sell" market-oriented approach.

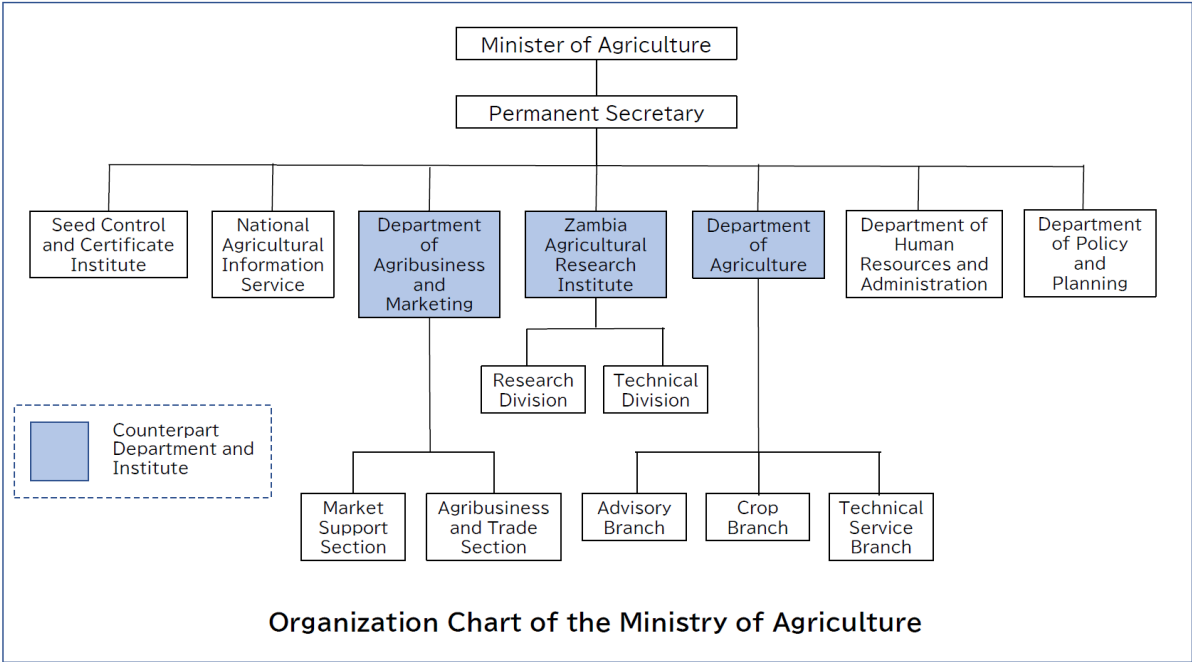
2. Outline of MOREDeP

The MOREDeP was launched on 1 October 2019 as a six-year JICA technical cooperation project with the project purpose to increase farmers' income through promoting rice production in Zambia. For this purpose, MOREDeP has been conducting a number of activities, including 1) researching and developing rice cultivation techniques that are flexible and favourable to various ecologies in Zambia, 2) formulating "Rice Clusters" while conducting extension activities to spread the use of the techniques across farmers, and 3) enhancing farmers' knowledge and business skills to improve their income by selling produced rice.

Within the three priority activities above, the promotion of cluster formation and the introduction of market-oriented rice cultivation are new initiatives for the Zambian rice sector, and not much knowledge has been accumulated on what approaches are more effective. Therefore, the project is expected to promote activities to achieve the indicators listed in the Project Design Matrix (PDM), as well as to promote the collection of various information for effective implementation of both initiatives.

2.1. Counterpart Agency

MoA is the official counterpart agency of the Project. In day-to-day activities of the Project, Department of Agriculture, Department of Agribusiness and Marketing, and Zambia Agriculture Research Institute (ZARI) act as project counterpart. It is envisaged that ZARI is the main counterpart in the activities on “Improvement of rice cultivation techniques”, Department of Agriculture on” Formulation of rice clusters” and Department of Agribusiness Management on “Improvement of market access of the rice farmers”. Organization Structure of Ministry of Agriculture is shown below:



2.2. Target Group of the Project

Target group of the Project are officers, extension staff and researchers of MoA, farmers in the target areas, persons concerned in rice processing and marketing (rice millers, rice traders, and retailers etc.).

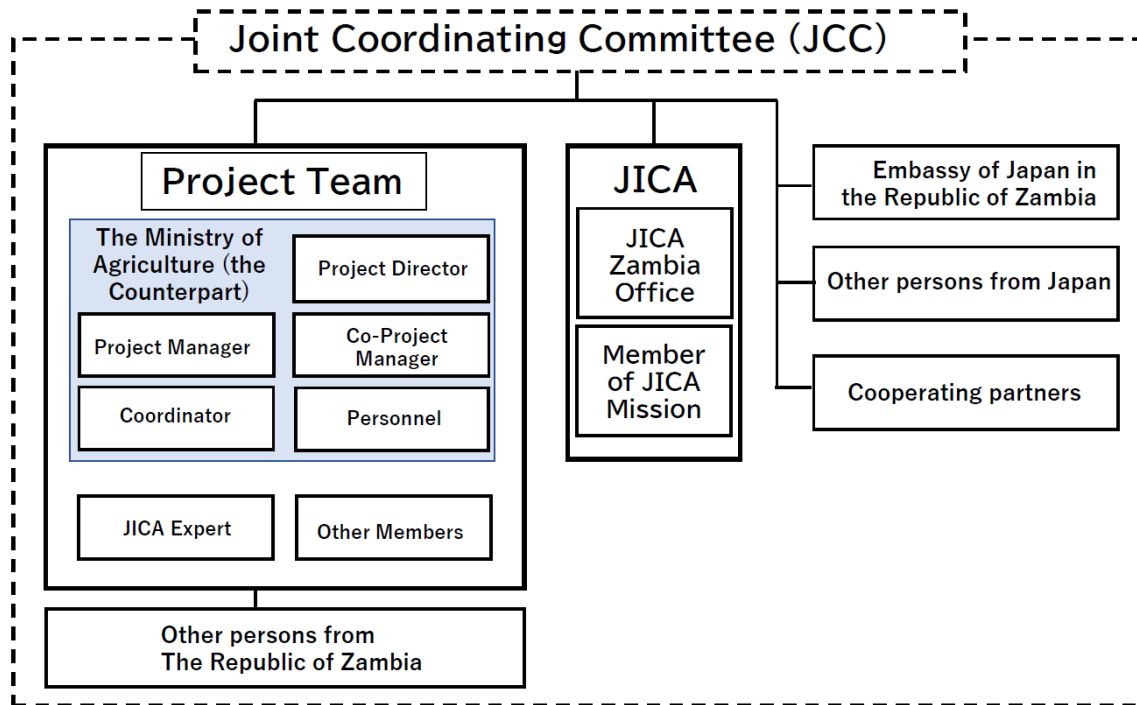
2.3. Period of the Project

Project period is six (6) years from 1st October 2019 to 30th September 2025.

2.4. Implementation Structure of the Project

The Project is implemented under the following structure which was agreed in the Record of Discussion (R/D) signed in June 2019 by both JICA and MoA (see Annex-1).

Market-Oriented Rice Development Project Implementation Structure



The Joint Coordinating Committee (JCC) is the governing body of the project; the composition and members of the JCC are as follows:

(1) Project Team

- 1) Project Director: Permanent Secretary of the Ministry of Agriculture
- 2) Project Manager: Director of Department of Agriculture
- 3) Co-Project Manager: Director of ZARI
- 4) Co-Project Manager: Director of Department of Agribusiness and Marketing
- 5) Coordinator: Chief Extension Officer
- 6) Personnel from the Counterpart:
 - Director of Policy and Planning
 - Deputy Director of Agriculture (Advisory Branch)
 - Deputy Director of Agriculture (Crop Branch)
 - Deputy Director of Agriculture (Technical Service Branch)
 - Deputy Director of ZARI (Technical)
 - Chief Agricultural Extension Officer
 - Chief Field Crop Officer
 - Chief Crop Improvement Agronomy
 - Principle Agricultural Research Officer – Rice Team Leader
- 7) JICA Experts

(2) Other members from Zambian side

- 1) Cooperation partners
- 2) Related Ministries and Agencies, when necessary
- 3) Other persons that Zambian side might consider necessary
(Consultant, technicians, etc)

- (3) Other members from Japanese side
- 1) Chief Representative, representative and staff of JICA Zambia Office
 - 2) Representative of the Embassy of Japan
 - 3) Members of JICA missions
 - 4) Other related personnel, when necessary

2.5. Project Design Matrix (PDM)

Project Design Matrix (PDM) including Overall goal, Project purpose, Outputs, and Activities for each Output of the Project was officially agreed between MoA and JICA through the signing of R/D in June 2019 as PDM (Ver. 0). Overall goal, project purpose and three (3) outputs and their objectively verifiable indicators of PDM (Ver. 0) are shown in the following table.

Table 1. Narrative Summary and Objectively Verifiable Indicators of PDM (Ver. 0)

Narrative Summary	Objectively verifiable indicators
Overall Goal:	<i>* to be achieved after 3 years of the project completion</i>
Number of rice farmers' household, whose income is improved through rice cultivation, is increased in the target areas of the Project.	1. Rice cultivation area is increased from XX ha to XX ha.
	2. Income ^(¹) from rice cultivation of rice farmers is increased.
	3. Recognition of nutrition of food is improved at target farmers' households of the Project.
Project Purpose:	<i>* to be achieved at the project completion</i>
Rice cultivation is promoted as a cash crop in the target areas.	1. Number of rice farmers in the target areas of the Project is increased XX%.
	2. Income from rice of rice farmers' households in the target areas of the Project is increased XX%.
	3. Rice yield of existing rice farmers in the target areas of the Project becomes XX t/ha and rice cultivation areas of new rice farmers increase to more than XX ha compared with the rice cultivation areas of newly started year.
Outputs:	
Output 1. Rice cultivation techniques are improved in order to increase rice productivity.	1-1. Rice cultivation techniques suitable to cultivation environments and farming conditions, which farmers in the target areas of the Project require, are identified.
	1-2. Rice varieties suitable for each rice cultivation environment are identified for rice farmers in the target areas of the project.
	1-3. Technical instruction methods suitable for rice farmers in the target areas of the project are developed and utilized.
	1-4. XX improved rice cultivation technologies are added in the Rice Extension Package (which was prepared under the Rice Dissemination Project).
	1-5. Results of development of rice technologies are compiled in journal etc. and are presented to rice stakeholders.
Output 2. Rice clusters are formulated in the target areas of the Project through dissemination of rice cultivation techniques.	2-1. Number of rice farmers who started rice cultivation in the newly selected rice cluster is increased more than XX households.
	2-2. Number of rice traders who come to the selected rice clusters is increased by more than XX%.
	2-3. Quantity of rice from the selected rice clusters to rice millers is increased by XX%.
	2-4. Rice production in the selected rice clusters is increased.
Output 3. Market access by rice farmers is improved in the target areas of the Project.	3-1. XX% of rice farmers access information on rice market.
	3-2. Rice sales channel is increased more than one compared with number of existing sales channels.
	3-3. Market oriented rice cultivation is practiced continuously by more than XX% of farmers who participated in training on market-oriented approach.
	3-4. Average rice selling unit price obtained by trained farmers is XX% higher than average selling unit price obtained by other rice farmers in general

The PDM lists the activities expected to achieve each indicator and these are listed below. Furthermore, this PDM raises activities (0-1 to 0-4) without indicators to promote synergies with other stakeholders.

Table 2. Proposed Activities for the Achievement of Each Output in PDM (Ver. 0)

Activities:
0-1. Conduct information sharing, coordination and collaborative activities with ZCARD and other partner organizations (IFAD, AfDB, WB, WFP and EU etc.)
0-2. Conduct collaborative activities with the project on Expansion of Community Based Smallholder Irrigation Development (E-COBSI) (a JICA supporting project)
0-3. Conduct baseline survey and end line survey
0-4. Conduct publicity activities for disseminating outcomes of the Project
1-1. Conduct review and analysis on rice experiments and research activities carried out by ZARI
1-2. Conduct detailed classification of rice cultivation environments in Zambia and identify rice cultivation environments which have higher needs for improving rice cultivation technologies.
1-3. Conduct survey on issues of current rice cultivation techniques used in rice cluster candidates and the existing rice clusters
1-4. Prepare the mid-term plan (revise annually) and annual plans on development of rice cultivation techniques and improvement of rice research facilities at research stations (including the plan for human resource development) in order to promote the participation of non-rice farmers into rice cultivation and to improve productivity and value addition in the rice production of existing rice farmers.
1-5. Conduct rice cultivation experiments at research stations and on-farm experiments in the target areas.
1-6. Compile results of rice cultivation experiments and prepare training materials. Presentation of the research results (in journals and others dissemination channels)
1-7. Multiplication and maintenance of high quality rice seeds which to be used for project activities
2-1. Collect information of existing rice clusters, rice millers and traders and analyze it (baseline survey)
2-2. Set up criteria for selecting rice clusters and select candidates for the clusters
2-3. Survey technical issues among the candidates of rice clusters and existing rice clusters and formulate the rice extension plan
2-4. Carry out rice training and extension to farmers through ZARI officers and extension staff
2-5. Conduct monitoring on activities of trained farmers and analysis of monitored information, to revise rice extension plan.
2-6. Promote new rice clusters for attracting new buyers (rice millers, traders, and consumers etc.) using various approached, including through field days (harvesting events) and agricultural shows, among others.
2-7. Promote interactions among rice farmers within rice cluster for information sharing
3-1. Survey the current situation of rice value chain and market
3-2. Develop farmer training plan which includes market-oriented approach and preparation of training materials (training plan includes selection of target areas and target farmers, training curriculums for each target area, training for practicing better negotiation with market etc.)
3-3. Conduct training of trainers (ToT) on market-oriented approach
3-4. Conduct market-oriented trainings (marketing, rice cultivation, farming records, post-harvest, and nutrition etc.)
3-5. Provide opportunities for creating linkages between rice farmers and market (rice millers and traders)
3-6. Facilitate business communication between large milling companies and farmers
3-7. Revise training programme based on results of project activities and its analysis
3-8. Accumulate obtained outcomes and lessons learned and share them with other provinces for their rice extension activities

After commencement of the Project, the details of the PDM (Ver. 0) were reviewed and minor amendment was made in the 1st Joint Coordinating Committee (JCC) to become the PDM (Ver. 1). The Minutes of Meetings of 1st JCC is attached as Annex-2.

In the PDM (Ver. 0), several “Objectively Verifiable Indicator” have unfixed target as XX. Therefore, the Project carried out some baseline surveys in the initial stage of the project period and set the proposed

targets for the Objectively Verifiable Indicators using the results of the baseline survey. Those were presented to the 2nd JCC (virtual) on 26th August 2021 and approved after discussion. Through this process, PDM (Ver. 1) was revised to PDM (Ver. 1.1). The Minutes of Meetings of second JCC including PDM (Ver.1.1) is attached as Annex-3.

3. Input for the Project

In the R/D, it was agreed that JICA will dispatch a professional team consists of long-term experts and short-term experts with several specialities to achieve the project purpose and Japan Overseas Cooperation Volunteers, and provide Physical input (Materials, tools and equipment for implementing the Project) and training of counterpart personnel in Japan or other countries and local expenses, while Zambian side (MoA) assign the counterpart personnel who work with JICA project team, office spaces and financial input as counterpart fund (running expenses necessary for the implementation of the Project). Major counterparts are from Department of Agriculture, Department of Agribusiness and Marketing and ZARI. Project offices were set at MoA HQ, ZARI Mt. Makulu and ZARI Mansa.

3.1. Input from Japanese Side

(1) Dispatch of Japanese experts and volunteers

A total of six (6) long-term experts and seven (7) short-term experts in the fields of expertise relevant to the project activities have been dispatched to the Project, so far. Fields of expertise of the long-term experts are Chief Advisor/Training, Rice Research, Project Coordinator/Human Resource Development planning, Project Coordination/Extension, Agribusiness, and those for short-term experts are Agribusiness, Baseline survey, Rice Breeding, Post-harvest, Research field improvement, Nutrition. In addition to those experts, JICA HQ dispatched Senior Advisors as the Operational Guidance and Investigation Team. The details are shown in attached Annex 4-1.

Dispatch of Japan Overseas Cooperation Volunteers (JOCV) was planned as the input from Japanese side in PDM, but so far, no JOCV was dispatched due to the pandemic of COVID-19.

(2) Training of counterpart personnel

Three (3) counterpart personnel were sent to Japan for post-graduate study. Due to the COVID-19 pandemic, most of JICA Knowledge Co-creation Programme (Technical training) and 3rd Country Training were implemented as online training course. Thirteen (13) counterpart personnel were trained in Knowledge Co-creation programme and one (1) in 3rd Country Programme (see Annex 4-2).

(3) Major equipment procured

A total of JPY 23 million worth of equipment was provided to the MoA, although JICA's original plan was to spend JPY 5 million on equipment. This consisted of 1) one tractor and attachments for rice cultivation (especially seed multiplication) in ZARI Mansa, and 2) a total of 49 motorcycles to be used for extension activities in Luapula (32), Central (6) and Western (11) provinces. In addition, small equipment worth 30 million was procured for project implementation (only items worth 50,000 or more were counted). In addition, five 4x4 vehicles were purchased, in addition to four 4x4 vehicles taken over from the previous project (Rice Dissemination Project: RDP). Three of these vehicles were used for two years before being transferred to the MoA (see Annex 4-3).

(4) Facilities developed/improved

With an aim to develop and improve the facilities to proceed the project activities effectively, the following three inputs were made by injecting a total of 3.71 million ZMW (see Annex 4-4).

(5) Local expenses borne by JICA

JPY 223 million will have been disbursed by the end of JFY2022 (31st March 2023) while JPY 105 million was originally planned to be spent for this period in total and JPY 180 million by the end of project period 30th Sept. 2025).

(JPY, million)

	<i>JFY2019</i>	<i>JFY2020</i>	<i>JFY2021</i>	<i>JFY2022</i>	<i>JFY2023</i>	<i>JFY2024</i>	<i>JFY2025</i>	<i>Total</i>
Plan	15	30	30	30	30	30	15	180
Actual	37	35	98	53(*)				223

* “Actual” for JFY2022 is an estimated amount as of Nov 2022

Please see Annex 4 which includes following items for more details about inputs from Japanese side.

Annex 4: Input from Japanese Side

- 4-1 List of Japanese Experts
- 4-2-1 List of Counterpart Personnel Trained in Japan
- 4-2-2 List of Counterpart Personnel Trained in the Third Countries
- 4-3-1 List of Equipment A (Purchased as donation to Counterpart)
- 4-3-2 List of Equipment B (Project use)
- 4-3-3 List of Equipment C (Handed-over to counterpart after the use of the project)
- 4-3-4 List of Vehicles Provided for the Project
- 4-4 List of Facilities Developed/Improved

3.2. Input from Zambian Side

Although a counterpart fund of ZMW 100,000 was budgeted in FY2022 for the first time, there has been no major financial input by the Zambian side from the commencement of the project in the reporting period. On the other hand, the Zambian side provides several physical inputs to the Project, such as lands and facilities including the office spaces at MoA headquarters, ZARI Mt. Makulu and ZARI Mansa together with counterpart personnel.

The inputs from Zambian side are described in Annex 5.

Annex 5: Input from Zambian Side

- 5-1 List of Zambian Counterpart Personnel
- 5-2 List of Land and Facilities Provided by Zambian Side

4. Major Activities conducted in the First Half Project Period

As described in 2.5 Project Design Matrix (PDM), there are three outputs in PDM of MOREDeP for achieving the project purpose. Output 1 aims to improve rice cultivation techniques through research, and development of training materials using developed techniques with the counterpart as ZARI. Output 2 aims to formulate rice clusters through dissemination of rice cultivation techniques using developed training materials, and evaluate the developed technologies for the improvement of extension effect. Output 3 aims to improve market access of the rice farmers through introduction of Market-Oriented rice cultivation. Major project activities conducted in the first half project period are summarized in ① **General Activity**, ② **Activity for Output 1**, ③ **Activity for Output 2** and ④ **Activity Output 3** and the products (report. Training materials, poster, etc.) are listed in Annex 6.

4.1. General Activity

After the project started in October 2019, 1st JCC was held on 17 November to foster a common understanding of the project among stakeholders. There, PDM (Ver.0) was reviewed and small modification was made and the Project embarked on full-scale activities. During the first six months after the commencement, the Project worked hard to create a mechanism to promote information sharing and communication among project stakeholders together with the preparation of action plan to dispatch short-term experts in several fields including baseline survey. However, the outbreak of the COVID-19 pandemic brought the project activities to a standstill from March 2020. All JICA Experts were mandated by JICA to return to Japan by the end of March 2020 as a safety measure for the increase of COVI-19 infections around the globe and all JICA short-term expert missions have been cancelled. Zambian counterparts also stopped the implementation of project activities from March to May 2020. The Project fully utilized communication tools through internet within stakeholders of the Project. Even after the JICA team of experts returned to Zambia in January 2021, strict codes of conduct were set and they were not allowed to go to Luapula and Western Provinces, the main target areas for Outputs 2 and 3. Despite the restriction condition, several project activities were conducted with ownership of the Zambian counterparts under full utilization of possible communication measures. 2nd JCC meeting was planned to be held in the late 2020 but postponed. JICA's action restrictions on COVID-19 were lifted and JICA experts were allowed to travel to the targeted areas in March 2021 for the Western Province and December 2021 for Luapula Province.

The 2nd JCC meeting was conducted on 26th August 2021 using zoom (virtual) meeting system. In the meeting, progress made during November 2019 to August 2021 were presented and appreciated by the members. The target for each Objectively verifiable indicator was proposed by the Project and approved by the floor. Following this, planned activities for the coming one year was presented and approved.

Table 2: Summary of Major Functions in the First Half Project Period

Date	Activities	Participants	Objectives/Agenda
27 Nov. 2019	1 st JCC	JCC members	<ul style="list-style-type: none">Review the outline of the Project and revising the PDMForming a common understanding among the stakeholdersGiving a input into the upcoming survey to determine the key features to look out for in planning for rice development in Zambia
26 Aug. 2021	2 nd JCC (Virtual)	JCC members	<ul style="list-style-type: none">Reviewing the progress of the ProjectSetting up Objectively Verifiable Indicators and revising the PDMMaking agreement on the planned activities for upcoming season 2021/22

The Project had the opportunity to demonstrate its activity at the 94th Agricultural and Commercial Show with the theme "Innovation through Technology - Technology Transforms Business". The show was held from July 27th to August 1st, 2022 in Lusaka. The MOREDeP was among the 17 organizations that set up exhibition booths in the Ministry of Agriculture Hall and subsequently scooped the 2nd Best Position in the "Best Exhibit in the Ministry of Agriculture Hall" category. The MOREDeP booth attracted the attention of many showgoers who flocked to the booth to get a glimpse of what was on display and insights about the project. The exhibition of MOREDeP was given a second prize out of 18 exhibitors under the same category of Best Exhibition.



4.2. Activity under Output 0

The PDM of MOREDeP raises activities without indicators to promote synergies with other stakeholders. After the commencement of the project activity, the Project started to have discussion and close communication with other related stakeholders, i.e., ESAPP (IFAD), APMEP (AfDB), UNHCR, UNDP and E-COBSI (JICA), and confirmed their intention to promote collaborative activities with MOREDeP. However, many of collaborative activities were postponed due to the COVID-19 pandemic. The followings are the major activities under Output 0 within the reporting period according to the Activities in PDM.

0-1. Conduct information sharing, coordination and collaborative activities with ZCARD and other partner organizations (IFAD, AfDB, WB, WFP and EU etc.)

- The Project established collaborative relationship with other partner organizations, NGOs and some private firm and have been conducting several training activities under this relationship.
- The Project started another collaboration with UNHCR and organized trainings for farmers in 3 refugee camps, namely Mantapala (Luapula Province), Mayukwayukwa (Western Province) and Meheba (Northwestern Province) together with distribution of high-quality seeds (800 kg) produce at ZARI Mansa in 2020. Furthermore, nine (9) extension officers from those 3 camps were invited to ZARI Mansa for rice training. Following this, farmers in the camps were guided on post-harvest handlings.
- MOREDeP visited Luombwa Irrigation Scheme in Chitambo District of Central Province where APMEP (AFDB) support the rice production activities. There it was agreed between MOREDeP and DACO Chitambo to work together in terms of rice related technical development and farmers' training. The Project implemented the Training of Trainers (TOT) for twenty (20) extension officers and seventy (7) lead farmers in the scheme in 2021.
- Chitambo district was identified as the entry site of nutrient improvement programme (under Initiative for Food and Nutrition in Africa) and the baseline survey was conducted in June 2021.
- The Project conducted the training on tractor hiring business to the engineers from several organizations under the collaboration with Enhanced Smallholder Agribusiness Promotion Programme (E-SAPP) which is financed through the loan from IFAD taking the opportunity of project management advisory mission on agricultural mechanization in July 2022. However, the cancelation of the E-SAPP as of end of October 2022 was announced by MoA.
- Some project members were assigned to work with the technical working group of the Commodity Action Plan (CAP) and Task force members of the National Rice Development Strategy (NRDS).

With the said contribution to NRDS task force from the Project, review of the Second NRDS started in September 2021 and the third NRDS was drafted and ready for the printing.

0-2. Conduct collaborative activities with the project on Expansion of Community Based Smallholder Irrigation Development (E-COBSI) (a JICA supporting project)

- The Project had several discussions about the possibility of collaboration with E-COBSI team. According to this, a small-scale rice farming was conducted at the site of E-COBSI using COBSI irrigation facility as the trial and the result was good enough. However, the followings were raised from this trial.
 - Small-scale rice cultivation in isolated situations is prone to bird damage and the labour and expense involved in preventing it.
 - When irrigation facilities are available, it is less labour intensive and more profitable for farmers to grow horticultural crops than to grow rice in an environment where there are no post-harvest facilities nearby.

As a result of this trial, the Project judged that it is not attractive for farmers to implement rice cultivation at the E-COBSI site.

0-3. Conduct baseline survey and end line survey

- Baseline surveys were conducted for Output 2 and 3 in the early stage of reporting period but JICA experts could not access to the target areas due to strict safety measures against COVID-19 pandemic. Therefore, some additional surveys are planned to be carried out in coming year.

0-4. Conduct publicity activities for disseminating outcomes of the Project

- In total, 60 SNS articles, 23 website articles, 3 JICA magazine articles were published to widely disseminate the project activities and its achievements, and two types of project brochures were created and distributed to the project stakeholders. Also, the project run a booth at an agricultural and commercial show to demonstrate the project activities and the impact made among small-scale farmers. In addition, 4 TV programs and 3 newspaper articles covered the project activities. List of public relation activities are shown in Annex 7.

4.3. Activity under Output 1

Output 1 aims to improve rice cultivation techniques in order to increase rice productivity, and five (5) objectively verifiable indicators were set in the PDM together with seven (7) activities to achieve this output. As those indicators and activities will be able to achieve through research and development, ZARI was selected as the main counterpart agency.

GRZ is working to increase Zambia's domestic rice production as it is significantly below domestic demand and the shortfall is imported from neighbouring countries and South-East Asia. The low domestic production is due to the low productivity as well as low number of rice farmers and small rice cultivation areas despite the country's great potential for rice cultivation.

Through the survey in the initial stage of the Project, it was confirmed that the reason of low productivity depends on poor farming practices and low-quality seeds with high levels of impurities as well as poor harvest and post-harvest exercise. On top of those, it was identified that labour availability is also a major challenge in promoting rice cultivation by small-scale farmers. Therefore, the Project decided to tackle those issues in the course of project activities.

The followings are the major activities under Output 1 within the reporting period according to the Activities in PDM.

1-1. Conduct review and analysis on rice experiments and research activities carried out by ZARI

- Reports on major rice-related projects in the past have been collected and the main activities were summarised. As far as research was concerned, much of it was carried out in relation to breeding. However, not many researches were summarised in a report. Even if clear results were not obtained, it is important to leave a report and link it to the next study. Therefore, as part of the training of young researchers, activities to summarise the conducted studies in a simple report will be promoted. In addition, the limited capacity of irrigated plots on which to conduct experiment or research on rice that the credibility of the data is limited. In order to conduct cultivation experiment or research with a view to writing a paper in the future, there is an urgent need to improve the trial environment so that external factors other than those to be investigated can be eliminated.
- Approximately 0.5 ha of rice experiment plots at ZARI Mt. Makulu have been developed to provide an environment in which rice cultivation experiment can be conducted.

1-2. Conduct detailed classification of rice cultivation environments in Zambia and identify rice cultivation environments which have higher needs for improving rice cultivation technologies.

- Literature on the cultivation environment for rice cultivation reported in African countries was collected and the environmental classifications used were summarised.
- At the commencement of the Project, the Project visited a possible range of rice fields in Luapula Province to observe the growing environment and found that rice cultivation is dominated in so-called “Dambo” which refers to one form of wetland. However, Dambo often has both rainfed upland and rainfed lowland characteristics, making it difficult to spread rice cultivation using a single technology.
- The project is developing a manual in which technologies are modularised and farmers themselves can select the technology they need according to their own rice growing environment.

1-3. Conduct survey on issues of current rice cultivation techniques used in rice cluster candidates and the existing rice clusters

- At the commencement of the Project, a baseline survey was conducted in Luapula Province to summarise the technical challenges faced by existing rice farmers. The challenges were found to range from the purity of the seeds used to the harvesting operations.
- Through extension monitoring activities, research on farmers' technical issues has continued, and an outbreak of blast disease was observed in Luapula Province during the 2021/2022 cropping season; a survey was conducted in collaboration with ZARI's plant pathology team, which also verified the effectiveness of commercial pesticides. A method of seed disinfection with hot water has also been developed to combat seed-borne diseases, and farmers have been trained in the technique.

1-4. Prepare the mid-term plan (revise annually) and annual plans on development of rice cultivation techniques and improvement of rice research facilities at research stations (including the plan for human resource development) in order to promote the participation of non-rice farmers into rice cultivation and to improve productivity and value addition in the rice production of existing rice farmers.

- The activities were based on the mid-term plan set up at the start of the Project, but the location and contents of the activities were changed due to COVID-19.
- As the baseline survey in Luapula Province revealed a wide range of technical challenges faced by rice farmers, it was decided to divide the research into five fields to address these challenges. The research fields are: seeds, cultivation, harvesting and post-harvest handling, mechanisation and breeding. Mid-term plan for details of each research area is under compilation.
- From now on, each research area will be assigned a researcher in charge and personnel development specialising in the respective area will be promoted. Human resource development has so far been carried out through the dispatch of short-term experts and training in Japan, and will continue to be carried out in the future.
- Strengthening of facilities at the experiment sites is being carried out, particularly at ZARI Mansa and ZARI Mt. Makulu. At ZARI Mansa, a rice-specific tractor was introduced to strengthen seed production, and a new garage and other facilities were built to provide an environment for proper management. At ZARI Mt. Makulu, paddy field of about 500 m² was developed together with irrigation facilities, as there was no facility to irrigate the field and carry out experiment. As for the development of rice fields at ZARI Mansa, it has been decided that rice field development at ZARI Mansa will be implemented through Japanese Grant Aid Project (to be implemented from 2023).

1-5. Conduct rice cultivation experiments at research stations and on-farm experiments in the target areas.

- Validation of innovative technologies such as Rice Scouter (application soft to estimate rice yield by taking pictures of standing rice in the field), Smart glass (a remote working tool for rice research and training) were conducted in the reporting period for further improvement of technologies. The project members learnt modern style of rice research and training activities out of the experience.
- Cultivation experiments have been carried out on the basis of a mid-term plan at ZARI Mansa and ZARI Mt. Makulu.
- With regard to farmer field trials, the Project is planning to conduct variety comparison trials with a view to registering new varieties.

1-6. Compile results of rice cultivation experiments and prepare training materials. Presentation of the research results (in journals and others dissemination channels)

- For the technical manuals, it was clear from the baseline survey in Luapula Province that basic techniques such as weeding need to be thoroughly implemented to improve yields, so these were compiled into Good Rice Practice (GRiP) as a technical manual for beginners. The results of the research activities being carried out in 1-4 will be reflected in the GRiP and eventually compiled into a rice farming manual with modularised elemental technologies.
- In Chitambo District, Central Province, where rice cultivation using tractors and other agricultural machinery was being promoted, the mechanised rice cultivation being implemented was manualised as Mechanised Rice Practice (MeRiP) and training was provided to farmers in the district.

- As market-oriented rice farming with SHEP elements is desired in the Western Province, Market Oriented Rice Practice (MORiP) manual has been developed, detailing cultivation techniques and knowledge, as well as how they affect sales prices, together with SHEP elements.
- A survey of plant pathology revealed a disease that has not been reported in Zambia and is summarised in the paper.

1-7. Multiplication and maintenance of high quality rice seeds which to be used for project activities

- The project has started producing seed for farmer distribution at ZARI Mansa in 2019, with 11 ton of SUPA-MG and 3.7 ton of NERICA4 certified seed produced in 2022.
- The Project organized seed auditor training for ZARI staff under support by Seed Control and Certification Institute (SCCI) to improve seed quality. For seeds in the research sector, staff who have attended this training take the lead in managing basic and pre-basic seeds and in producing certified seeds.
- One of the challenges facing rice seed is the inability of rural farmers to purchase rice seed for commercial sale. One measure to solve this problem is to consider an initiative to train farmers to become seed producers. Specifically, farmer training will be commissioned by SCCI and the trained farmers will start commercial seed production using the certified seed produced by the Project as source seed (QDS: Quality Declared Seed System).

Progress on the each Objectively Verifiable Indicator (OVI) and planned activities in the second half period are summarized below:

OVI	Progress	Activity in the 2 nd Half
1-1. Rice cultivation techniques suitable to cultivation environments and farming conditions, which farmers in the target areas of the Project require, are identified.	Study was done and the results were documented into the report.	Follow-up study might be done if the need arises.
1-2. Rice varieties suitable for each rice cultivation environment are identified for rice farmers in the target areas of the project.	Study of the adaptability of SUPA-MG and NERICA4 is underway through dissemination activities. Trials of new varieties adapted to the Zambian environment are underway.	The studies continue and results will be compiled into the report.
1-3. Technical instruction methods suitable for rice farmers in the target areas of the project are developed and utilized.	Guidelines (GRiP, MeRiP & MORiP) were developed.	Guidelines will be reviewed and improved including translation to local language.
1-4. Five (5) improved rice cultivation technologies are added in the Rice Extension Package (which was prepared under the Rice Dissemination Project).	After reviewing the current package, it was concluded that it should focus on training and promoting the five basic skills rather than developing and adding new minor skills.	Continues to develop new technologies

1-5. Results of development of rice technologies are compiled in journal etc. and are presented to rice stakeholders.	Several research were conducted and the results are expected to be documented.	From the perspective of human resource development, continue technological development through cultivation trials, etc., leading to the publication of papers.
---	--	--

4.4. Activity under Output 2

Output 2 aims formulation of rice clusters through the dissemination of rice cultivation techniques, and four (4) objectively verifiable indicators were set together with seven (7) activities to achieve this output. As those are expected to be achieved through dissemination of rice cultivation techniques, Department of Agriculture (especially Advisory Branch) was selected as the main counterpart agency.

To increase the production of rice in Zambia, it is crucial not only to improve the productivity but also increase the number of rice farmers and enhance the expansion of rice cultivation area. For this purpose, the Project adopted the “Rice Cluster Approach” for the extension activities. It is aiming at not only spreading the use of the techniques but also forming new rice production areas - "rice clusters" through increase of new rice farmers. However, “Rice Cluster Approach” is new initiatives for the Zambian rice sector, and not much knowledge has been accumulated on what approaches are more effective. Therefore, the Project is expected to promote activities to achieve the indicators listed in the PDM, while finding out the most appropriate measures to promote “Rice Cluster Approach”.

In early stage of the reporting period, various surveys were conducted to analyse and extract factors of the formation of the existing rice clusters so as to gain further insights to be utilized for the formation of new rice clusters. As a result, confirmed factors of the formation of existing clusters in Zambia were only environmental (access to water, road and rice mills). Therefore, the project decided to conduct the extension of rice cultivation techniques using GRiP which was developed through activities for Output 1 to the areas where high environmental potential for clustering.

Extension activities in Output 2 started in the second year of the project period. The first Training of Trainers (TOT) was conducted in September 2020 through virtual lecture due to the pandemic of COVID-19 and those trained extension officers carried out Training of Farmers (TOF) in their own camps. Through these activities, the Project recognised that only the information in GRiP is not good enough to empower the rice farmers for them to carry out the rice cultivation as business, and decided to provide further information which contribute the promotion of market-oriented rice cultivation. Then the Project decided to utilize the guideline “MORiP (Market-Oriented Rice Production)” which was compiled through the activities for Output 3 and has two major objectives 1) improvement of rice cultivation practice and 2) improvement of market access by farmers. The detail of this process is explained in **4.5. Activity under Output 3.**

On top of this exercise, the Project also established hypotheses that promotion of following two interventions is very effective for the acceleration of the formation of rice clusters as those factors act to improve the human environment in the clusters. Those two factors are 1) the promotion of farmer-to-farmer extension and group activities in conjunction with farmer groupings, and 2) the training of extension workers to support farmers and human resources for farmer-to-farmer extension. Therefore, the project decided to conduct the extension of rice cultivation techniques using MORiP to the areas where high environmental potential for clustering, together with the promotion of two human environment factors.

Activities based on such hypotheses are being conducted according to the situation of each cluster to supplements the extension activities of the techniques. A rice cluster does not just simply mean a group

of rice farmers, but it refers to an economic block formed around rice. Therefore, the Project conducted the surveys for rice mills and buyers/middlemen to study their needs and the trade terms, and is trying to share the attained information with farmers and the MoA's officers, as well as utilizes the data to prepare technical training sessions for farmers.

It is critical to better understand the whole value chains and picture ideal rice clusters so that everyone involved in the rice industry benefits from and advances towards their successful formation and enhancement.

The followings are the major activities under Output 2 within the reporting period according to the Activities in PDM

2-1. Collect information of existing rice clusters, rice millers and traders and analyze it (baseline survey)

- Baseline survey was conducted among a total of 425 rice farmers in nine (9) districts in Luapula Province. The survey was conducted to collect basic information on existing rice farmers (household income and information related to rice cultivation) and to identify technical issues and factors that contribute to the formation of rice in Luapula Province. Based on the technical issues identified in the survey, a cultivation technology guideline, GRiP (Good Rice Practice), was developed.

2-2. Set up criteria for selecting rice clusters and select candidates for the clusters

- The above-mentioned baseline study conducted in Luapula Province at the start of the Project was designed to identify "existing clusters" where there were more than 300 rice farmers in the camps, and to identify which environmental factors were significantly related to cluster formation, based on the results of water environment, household and community survey analysis. However, as each camp has a wide variety of local characteristics and cluster formation is likely to be caused by a combination of factors, it was difficult to find common factors other than the two items 1) abundant water environment and 2) environment that is easy to sell. Therefore, for the first crop season, only the above two items were set as the selection criteria, and it was decided to verify several promising candidate factors in the selected target areas of 18 camps in four (4) districts.
- The selection criteria for the second and subsequent cropping seasons were set in more detail in terms of regional characteristics, with the above-mentioned criteria 1) and 2) as essential conditions, and 12 camps in three districts were selected as new target sites together with the officials of Province and Districts in accordance with the same criteria. In addition, at the time of the selection of the second crop season and target area (May-August 2021), the COVID-19 infection situation had not subsided in Zambia, and Japanese experts were prohibited by JICA from travelling to Luapula Province, and there was no indication of when the travel ban would be lifted, so the Project could have been carried out remotely during the entire crop season. Therefore, an environment that allowed smooth communication with the counterpart personnel in each district was an important selection criterion, as well.

2-3. Survey technical issues among the candidates of rice clusters and existing rice clusters and formulate the rice extension plan

- In the first cropping season, a training plan focusing on cultivation techniques was developed for 900 target farmers in 18 camps in 4 districts, based on the selection criteria mentioned earlier, to improve the technical issues identified from the baseline. Rice farmer groups were also formed in each target camp to strengthen the information sharing network among farmers. Monitoring was then conducted twice during the cropping season to determine the adoption rate of cultivation

techniques trained by the Project, as well as the effectiveness of the training and challenges. It was found that the challenges in rice farming in Luapula Province are not only technical, but that the lack of a market for rice is also a major challenge for rice farmers. Without solving this problem, farmers' incomes will not increase even if they improve cultivation techniques and achieve higher yields. It was also considered that if income could not be obtained or improved, the continuation rate of rice cultivation could not be maintained. Therefore, from the second cropping season, the “MORiP (Market-Oriented Rice Production)” technical guidelines were developed, which included marketing knowledge aimed at developing sales channels and improving sales prices, rather than technical training alone.

2-4. Carry out rice training and extension to farmers through ZARI officers and extension staff

- The training achievements made by the project during the reporting period are as follows:

[2020-2021 season]

Training of Trainers (TOT)

- GRiP (Technical training)	61 officers
- Harvest/Post-harvest training	22 officers
- RiceSHEP (Marketing)	7 officers

Training of Farmers (TOF)

- GRiP (Technical training)	95 farmers
- Harvest/Post-harvest training	22 farmers
- RiceSHEP (Marketing)	0 farmers (Cancelled due to COVID-19)

[2021-2022 season]

Training of Trainers (TOT)

- MORiP (Technical & marketing training)	56 officers
- Harvest/Post-harvest training	40 officers

Training of Farmers (TOF)

- MORiP (Technical & marketing training)	3,268 farmers
- Harvest/Post-harvest training	3,104 farmers

2-5. Conduct monitoring on activities of trained farmers and analysis of monitored information, to revise rice extension plan.

- In the first cropping season, monitoring was conducted in December 2020 and June 2021 with 900 target farmers. The monitoring implementer, the CEO, visited each target farmer's plot and conducted interviews mainly on cultivation techniques and sales, and the responses on a sheet were typed into an excel sheet by district officials in each district. Data were sent by district officials to the Japanese experts for tabulation and then the monitoring results were shared with all related counterpart personnel. The second cropping season monitoring took place in February 2022 and covered 3,416 farmers. To avoid typing errors due to manual input and to reduce the time required for monitoring, the monitoring software “Commcare” was used to improve the accuracy of the monitoring data. As in the previous cropping season, two rounds of monitoring were planned to check the effectiveness of training, activities and improvements through yield and sales price information, but implementation has been delayed. The monitoring is scheduled to be conducted from December 2022.

2-6. Promote new rice clusters for attracting new buyers (rice millers, traders, and consumers etc.) using various approaches, including through field days (harvesting events) and agricultural shows, among others.

- A stakeholder meeting was held on 22nd June 2022 to build relationships with stakeholders involved in the rice industry. The meeting presented the expected yields for each district and provided an opportunity for invited traders, agro-dealers and service providers to see that rice production in Luapula Province is on the rise, and to see the actual harvested paddy and white rice to promote the high quality of the rice. It was also confirmed that in many cases, farmers were unaware of the existence of the tractor hiring service due to the lack of links with the various sectors, even though there were many farmers who wanted to expand their planted area. Therefore, the Project introduced each of the stakeholders that participated in the meeting and shared contact details, and attempted to create a structure that would enable the stakeholders to work together to ensure that the rice business in Luapula Province could flourish.
- The Project had the opportunity to demonstrate its purpose and progress in implementation at the 94th Agricultural and Commercial Show with the theme "Innovation through Technology - Technology Transforms Business". The show was held from July 27th to August 1st, 2022 in Lusaka. The exhibition of MOREDeP was given a second price out of 18 exhibitors under the same category of Best Exhibition.

2-7. Promote interactions among rice farmers within rice cluster for information sharing

- In June 2021, the first cropping season, rice farmers were grouped in all target camps with the aim of strengthening the inter-farmer information-sharing network. If cultivation techniques and market information can be shared within the group, farmers can disseminate cultivation techniques among themselves without being affected by the absence or transfer of extension officers, and market information can be shared to avoid unfair prices for rice with traders and buyers. In doing so, it was seen as difficult for farmers to organise group meetings and other activities on their own initiative, and some form of intervention, in cooperation with the district government, was necessary to establish the structure of the groups. However, when the group was formed in 2021, Japanese experts were prohibited from travelling to Luapula Province throughout the year and could not focus on this activity. Therefore, activities and training are planned to enable farmer groups to actively carry out group activities on their own, including leadership development in the future.

Progress on the each Objectively Verifiable Indicator (OVI) and planned activities in the second half period are summarized below:

OVI	Progress	Activity in the 2 nd Half
2-1. Number of rice farmers who started rice cultivation in the newly selected rice cluster is increased more than 2,500 households.	3,400 farmers in Luapula Province and 1,000 farmers in Central Province were received training on rice cultivation.	Training activities continue and in total of 12,700 farmers (including 6,600 potential farmers) will be trained.
2-2. Number of rice traders who come to the selected rice clusters is increased by more than 20 %.	MORiP was introduced into the training of farmers.	Monitoring survey will be conducted where the trainings were done and identify the impacts.

2-3. Quantity of rice from the selected rice clusters to rice millers is increased by 50 %.	MORiP was introduced into the training of farmers.	Monitoring survey will be conducted where the trainings were done and identify the impacts.
2-4. Rice production in the selected rice clusters is increased.	MORiP was introduced into the training of farmers.	Monitoring survey will be conducted where the trainings were done and identify the impacts.

4.5. Activity under Output 3

Output 3 aims improvement of market access by rice farmers, and four (4) objectively verifiable indicators were set together with eight (8) activities to achieve this output. As those are expected to be achieved through introduction of market-oriented approach, Department of Agribusiness and Marketing was selected as the main counterpart agency.

JICA has been implementing the technical cooperation project with the Kenyan Ministry of Agriculture since the late 2000s aiming to improve farmers' incomes by changing the mindset of vegetable and fruit farmers from “Grow and sell” to “Grow to sell”, and has achieved very significant results. JICA calls it, the Smallholder Horticulture Empowerment & Promotion (SHEP) approach, which has been implemented in many countries around the world, particularly in Africa. During the preparation of this project, it was raised that efforts to increase farmers' income by introducing such an approach in rice were needed, and an initiative to increase income through improved market access by farmers was proposed as Output 3. Western Province was selected as the target region for this initiative, primarily because rice cultivation has been actively practised in Western Province for a long time and the rice value chain is presumed to be somewhat well established.

In the initial stage of the Project, several short-term experts were dispatched to the Project for identifying the actual situation of Western Province and the Project compiled guidelines for enhancing market access for rice using the SHEP concept as “RiceSHEP”. The Project started its activities for Output 3 using this guideline. However, a challenge was raised in the course of the project activities by the counterparts in the target area that productivity of rice farmers in the Western Province is still low and provision of rice cultivation techniques is crucial on top of the promotion of market access for them to increase the income from rice. Therefore, the Project decided to provide the basic rice cultivation techniques to the target farmers on top of the provision of market access improvement knowledge and techniques, and developed the guideline “MORiP (Market-Oriented Rice Production)” by combining the information on rice cultivation (GRiP) and that on market access improvement (RiceSHEP). Since then, the Project has been using the MORiP for the activities in Output 3.

The Project realised that the assignment of JICA long-term expert is very necessary to deal the Output 3 not only by short-term experts. Therefore, JICA started to nominate the long-term expert for Output 3 in 2021, and Ms Ami Soda was finally assigned from September 2022 although it took quite long time for the recruit.

The followings are the major activities under Output 3 within the reporting period according to the Activities in PDM

3-1. Survey the current situation of rice value chain and market
--

- Surveys on the current situation of rice value chain and market in Western Province were conducted by three short-term experts, two for agribusiness and one for baseline survey (agribusiness) between November 2019 and June 2021. The results were compiled into the activity reports.

3-2. Develop farmer training plan which includes market-oriented approach and preparation of training materials (training plan includes selection of target areas and target farmers, training curriculums for each target area, training for practicing better negotiation with market etc.)

- Two short-term experts on agribusiness developed farmer training plan based on the results of surveys individually. First short-term expert conducted the training of agribusiness referring the concept of SHEP (Smallholder Horticultural Empowerment and Promotion) and second short-term expert conducted the training using “RiceSHEP” Practical Handbook, which was compiled by the Project based on the experience of first training and the results of baseline survey.
- Through the above activities, the project's counterparts in the Western Province pointed out that rice productivity in the province remained low and that technical training in rice production was also needed. Therefore, the Project developed a new technical guideline, “MORiP (Market-Oriented Rice Production)”, which combines RiceSHEP and GRiP in August 2021. MORiP has since been used in project activities related to Outcome 3.

3-3. Conduct training of trainers (TOT) on market-oriented approach

- The Project conducted TOT on market-oriented approach using MORiP in September and October 2021 for forty (40) extension officers from thirteen (13) camps out of five (5) districts. This TOT was implemented at Lusaka, due to the COVID-19 pandemic.

3-4. Conduct market-oriented trainings (marketing, rice cultivation, farming records, post-harvest, and nutrition etc.)

- The participants in the TOT above conducted Training of Farmers (TOF) for 625 farmers in twenty groups from 13 camps with the support of the Project.

3-5. Provide opportunities for creating linkages between rice farmers and market (rice millers and traders)

- The project compiled the list of rice buyers and rice millers, and delivered it to the farmers who was trained in 2020. Furthermore, stakeholder meeting was organized by the Project so that linkage between rice farmers and market is strengthened in 2021.

3-6. Facilitate business communication between large milling companies and farmers

- Large milling companies were also invited to the stakeholder meeting explained above.

3-7. Revise training programme based on results of project activities and its analysis

- The Project is going to review and improve the training programme including MORiP.

3-8. Accumulate obtained outcomes and lessons learned and share them with other provinces for their rice extension activities

The Project has already introduced the market-oriented approach using MORiP in its extension activities in Luapula Province, the main target area for Output 2 and Central Province.

Progress on the each Objectively Verifiable Indicator (OVI) and planned activities in the second half period are summarized below:

OVI	Progress	Activity in the 2 nd Half
3-1. 90 % of rice farmers access information on rice market.	Training using the guideline of RiceSHEP were done for 170 farmers and the training using MORiP were done for 625 farmers	Follow-up trainings will be implemented and Empirical study on impact of Market-Oriented Rice Production will be carried. Monitoring of those will be carried out.
3-2. Rice sales channel is increased more than one compared with number of existing sales channels	Training using the guideline of RiceSHEP were done for 170 farmers and the training using MORiP were done for 625 farmers	Follow-up trainings will be implemented and Empirical study on impact of Market-Oriented Rice Production will be carried. Monitoring of those will be carried out.
3-3. Market oriented rice cultivation is practiced continuously by more than 80 % of farmers who participated in training on market-oriented approach.	Training using the guideline of RiceSHEP was done for 170 farmers and the training using MORiP were done for 625 farmers	Follow-up trainings will be implemented and Empirical study on impact of Market-Oriented Rice Production will be carried. Monitoring of those will be carried out.
3-4. Average rice selling unit price obtained by trained farmers is 20 % higher than average selling unit price obtained by other rice farmers in general	Training using the guideline of RiceSHEP were done for 170 farmers and the training using MORiP were done for 625 farmers	Follow-up trainings will be implemented and Empirical study on impact of Market-Oriented Rice Production will be carried. Monitoring of those will be carried out.

5. Planned Activity in the Fourth Year of the Project

Planned activities for each Output in the fourth year of the Project (Oct. 2022 – Sept. 2023) are summarised as follows:

5.1. Planned Activity for Output 0

- Basically, the Project will continue to work with the various organisations with which we have worked in the past, and will also work with new organisations to the extent possible.
- In Chitambo District, where mechanised rice cultivation is being promoted, extension challenges have also been identified. The mechanisation of field preparation and sowing has succeeded in increasing the scale of cultivation, but harvesting has not been mechanised, which has resulted in low quality paddy due to the lack of timely harvesting. In addition, due to personnel changes in district staff, a strategy meeting on future extension will be held at the beginning of year 2023.
- Under Output 1, joint research is being promoted with fertiliser companies and rice millers, and collaboration will continue to be pursued to revitalise the rice industry in Zambia.

5.2. Planned Activity for Output 1

- Finalise a mid-term plan and proceed with cultivation trials accordingly. Research will be divided into five areas (seed, cultivation, harvest/post-harvest handling, mechanization and breeding) and counterparts in charge of each area will be trained through on-the-job training, with human resource development in mind.

- The results from the research activities will be used to develop cultivation guidelines that expand on GRiP. Each element or technology will be compiled as a module and made into a manual so that farmers can choose the technology that suits their specific rice growing environment.
- In order to create an environment in which farmers can choose the rice varieties they grow, variety comparison trials with a view to registering promising varieties will be promoted in cooperation with SCCI. Cultivation trials will also be carried out in farmers' fields and farmers' opinions on the varieties will be surveyed.
- New certified seed production will also be started in ZARI Mongu. In addition, to improve the lack of commercially marketable rice seed in rural areas, the development of seed producers in Luapula and Central Provinces will be promoted with SCCI.








5.3. Planned Activity for Output 2

- The Project has realised from past experience that higher extension effectiveness can be achieved by inviting lead farmers as well as extension officers to the TOT together, and has decided to pair an extension officer from each camp with a lead farmer from the group at the TOT from this cropping season. Several officers from Province and Districts are also invited to TOT for them to understand the project activities. Through this mechanism, lead farmers trained in TOT will act as TOF trainers together with extension officers, which is expected to lead to more effective extension achievements.
- The Project conduct the monitoring in two times in one cropping season for target farmers for more accurate results.
- NANETTE is a private company based in Kasama that is developing a rice grain business in the Northern Province through contract farming. The project has started collaboration with the company when it started developing its rice business in Luapula Region. They have already started contract farming of about 32 ha in Kawambwa and the project is providing technical support to the contract farmers there.
- The followings are planned activities under Output 2 in the fourth year.
 - TOT and TOF for Rice cultivation technic (October - November 2022)
 - TOT for Monitoring (January 2023)
 - Conduct monitoring with target farmers (January - February 2023)
 - Knowledge exchange tour on the promotion of efficient rice farming to Mongwi District in Northern Province for farmers who have contract farming with NANETTE (February 2023)
 - TOT and TOF for Marketing including cost calculation (February - March 2023)
 - TOT and TOF for Harvest and Post-harvest handling (April - May 2024)
 - TOT for Monitoring (May 2023)
 - Implementation of Monitoring for project farmers (June 2023)
 - Stake-holder meeting includes market linkage between farmer and trader/ buyer (July 2023)
 - Making plan for extension strategy for next season (2023 to 2024) with CPs (July – August 2023)
 - TOT and TOF for Rice cultivation technical training (September 2023)

5.1. Planned Activity for Output 3

- Conduct monitoring for the farmers in January 2023 and results will be used to improve MORiP and training method in TOT and TOF.
- Conduct additional baseline surveys of farmers who have received training, as well as post-training monitoring in February 2023 and use the results to improve MORiP and training and dissemination methods.
- Improve MORiP and refine training and dissemination methods based on the results of the above monitoring.
- TOT and TOF for harvest/postharvest handling together with some other components of MORiP will be conducted in April – May 2023.
- Finalize the new version of MORiP together with improved training and extension methods will be developed by September 2023.
- The introduction of market-oriented rice cultivation are new initiatives for the Zambian rice sector, and not much knowledge has been accumulated on what approaches are more effective. Therefore, the project is expected to promote activities to achieve the indicators listed in the Project Design Matrix (PDM), as well as to promote the collection of various information for effective implementation. For this purpose, the Project is considering to conduct a kind of experimental study which confirm the effectiveness of market- oriented rice production approach, on top of the activities explained above.

6. Activity Photos

<p>Output 0</p>	
 <p>A group of people are gathered around a blue tarp on the ground, possibly for a training or distribution activity. A date stamp '06/18/2021 11:15' is visible in the bottom right corner of the photo.</p>	 <p>People are standing in a field next to a red tractor, engaged in a survey or discussion. A white building is visible in the background.</p>
<p>TOT for refugee camp (@ZARI Mansa)</p>	<p>Survey on tractors donated by IFAD (@Kasama)</p>
 <p>A group of people are standing in a lush green rice field, conducting a field survey.</p>	 <p>A man is presenting to a group of people seated at tables in a room. A screen in the background displays a diagram of a rice plant.</p>
<p>Luombwa Irrigation Scheme field survey (@Chitambo)</p>	<p>TOT (@Chitambo)</p>
 <p>People are gathered around a table in a room, looking at posters on the wall, likely during a training session.</p>	 <p>A wide view of a rice field with rows of young rice plants in the water.</p>
<p>Lead farmers training (@Chitambo)</p>	<p>Farmers' rice field (@Meheba camp)</p>
<p>Output 1</p>	
 <p>People are working in a field, possibly harvesting or conducting a survey. A blue machine is visible in the foreground.</p>	 <p>Two people are standing in a rice field, one holding a clipboard, possibly conducting an experiment or survey.</p>
<p>Harvest/Post-harvest survey by short-term expert (@Chitambo)</p>	<p>Rice experiment (@ZARI Mt Makulu)</p>



Rice reseachers' meeting (@ZARI Mt Makulu)



TOF on transplanting (@ZARI Mansa)



Seed auditor training (@Mongu)



New rice experiment fields (@ZARI Mt.Makulu)

Output 2



Rice market survey (@Chiengi)



Rice farmers survey (@Lunga)



TOT for GRiP (@Mwense)



TOT for harvest/post-harvest handling (@Luapula)



TOT for harvest/post-harvest handling (@Luapula)



Handing over ceremony of motorbike

Output 3



Sensitization for farmers (@Mongu)



TOT for MORiP (@Lusaka)



TOF for harvest/post-harvest handling (@Mongu)



Trial milling by small-scale milling machine (@Mongu)