Country Name United Republic of Tan	Technical Cooperation in Supporting Service Delivery Systems of Irrigated Agriculturenia(TANRICE)						
. Project Outline							
Background	The Government of Japan implemented coordinated ODA projects in the Lower Moshi irrigation scheme of Kilimanjaro Region. As a result, high yields of rice were achieved in the Lower Moshi irrigation scheme, and the rice cultivation technology spread to the surrounding areas. Based on the results of those projects, the agricultural development center in the Lower Moshi irrigation scheme was upgraded to the "Kilimanjar Agricultural Technician Training Center" (KATC) to train agricultural technicians from all over the country is order to disseminate irrigated rice cultivation technology nationwide. In addition, a technical cooperation project was implemented to improve the capacity of KATC and to train irrigated rice cultivation technicians. If the subsequent project, irrigated rice cultivation training by using farmer-to-farmer extension methods was conducted, and the average yield at the model sites increased by 1.4 times, thus establishing a training mode that directly benefits farmers. In order to disseminate irrigated rice cultivation technology throughout Tanzania in the midst of the tren toward decentralization, it was necessary to transfer the knowledge and technology accumulated at KATC to the agricultural training centers in charge of each region (Ministry of Agriculture Training Institute : MATI) and the Government of Tanzania requested the Government of Japan a project aimed at strengthening the support system for disseminating irrigated agriculture technology and improving rice productivity.						
Objectives of the Project	 Through (1) conducting training to farmers on rice cultivation practices, (2) strengthening capacity of research training and extension institutions on seed multiplication of rice varieties and rice cultivation technologies, the project aimed at increasing productivity of rice cultivation, and thereby contributing to the rolling out of the training developed under the project to other irrigation schemes as well as to increasing the income from rice production in the priority/target irrigation schemes. 1. Overall Goal: (1) The training^{*1} developed by the TC is implemented in other irrigation schemes. (2) The income from rice production among smallholder rice farmers in priority/target irrigation schemes^{*2} increased. 2. Project Purpose: Productivity of rice cultivation in priority/target^{*2} irrigation schemes is increased throug strengthening service delivery systems of irrigated agriculture. *1 The Standard Training consists of a baseline survey, residential training at MATI (12 days for key farmer and extension officers), field training in each irrigation scheme (3 days x 3 times for key farmers an intermediate farmers), and monitoring (3 days). A field day will be held in the third session of the fiel training, and the results of the training will be widely shared with other farmers. *² Priority for Mainland Tanzania and target for Zanzibar. 						
Activities of the project Project Period	 Project site: (1) 40 priority irrigation schemes in Mainland Tanzania, and (2) 4 schemes in Zanzibar Main activities: (1) conducting training to farmers on rice cultivation practices, (2) strengthening capacit of research, training and extension institutions on seed multiplication of rice varieties and rice cultivation technologies Inputs (to carry out above activities) Japanese Side Experts: 19persons Staff allocated: 140 persons Local cost: project administration, training cost, cost for local adaptation test, etc. (ex-ante) 5 years from June 2007 (actual) June 2007-June 2012 Project Cost (ex-ante) 568 million yen, (actual) 645 million yen 						
Implementing Agency	 Ministry of Agriculture Food Security and Cooperatives (MAFC, currently Ministry of Agriculture, MoA) Mainland Tanzania: Kilimanjaro Agriculture Training Centre (KATC) and Ministry of Agriculture Training Institute (MATI-Igurusi, Ilonga, and Ukiriguru), Agricultural Research Institute (ARI, currently Taznania Agriculture Research Institute, TARI) Zanzibar: Kizimbani Agricultural Training Institute (KATI, currently School of Agriculture(SoA) , State University of Zanzibar) and Kizimbani Agriculture Research Institute (KARI, currently Zanzibar) 						
Cooperation Agency in Japan	Ministry of Agriculture, Forestry and Fisheries						
Related Project	 Technical cooperation: The Kilimanjaro Agricultural Training Centre Project (Technical cooperation, 1994-2001), The Kilimanjaro Agricultural Training Centre Phase II Project (Technical cooperation, 2001-2006), Technical Cooperation for Capacity Development for the Promotion of Irrigation Scheme Development Under the District Agricultural Development Plans (DADPs) (2010-2014), Project for Supporting Rice Industry Development in Tanzania (2012-2019) (the "Phase 2 project") 						

1

< Special Perspectives Considered in the Ex-Post Evaluation >

- · Continuation status of the project effects are analyzed as factors to achieve the Overall Goal.
- The effects of the Phase 2 project is included for the analysis of the Overall Goal.

1 Relevance

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

The project was consistent with the development policy of Tanzania. In the "National Strategy for Growth and Poverty Reduction (NSGRP)" (2005), Tanzania's medium to long-term development strategy, the Government identified agricultural sector development as an important issue for poverty reduction and economic growth. In the "Agricultural Sector Development Strategy (ASDS)", the Government formulated a strategy to revitalize the country's agriculture. In addition, in order to realize the goal of the ASDS, which was to "increase farmers' income through the creation of an environment that improves agricultural productivity and profitability," the "Agricultural Sector Development Program" (ASDP) was formulated and the ASDP basket fund, which was jointly established by the Government of Tanzanian and the Development Partners including Japan, was utilized. It was also decided to allocate the development budget for the agricultural sector to the District Agricultural Development Programme (DADP).

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

The project was consistent with the development needs of Tanzania for improving irrigated rice cultivation. In the midst of the trend toward decentralization, transferring the knowledge and technology of irrigated rice cultivation from KATC to MATI was needed. <Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was also consistent with the Japan's ODA policy to Tanzania. Agriculture was one of the priority areas under the "Country Assistance Program to Tanzania" (2000)

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

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

The Project Purpose was partially achieved by the time of project completion. Rice yield per unit increased from the status before the project (Indicator 1). 53% and 50% of irrigation schemes increased the paddy yields more than 1 t/ha in the main season and the second season, respectively. As for the annual monitoring and planning on rice farming (Indicator 2), though the monitoring and planning had been conducted utilizing project funds, but not verified on the practice by the Local Government Authority (LGA) officers and farmers. <<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued at the time of ex-post evaluation. As mentioned above, it is analyzed as a part of factors that influenced on the achievements of the Overall Goal indicators. (The training conducted in the irrigation schemes by 2015 and the income increase from rice production by 30%, etc.)

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been achieved. As for the training for other than the priority/target schemes (Indicator 1), the training under the succeeding project (Phase 2 project) was conducted in more than 12 other irrigation schemes, and some irrigation schemes have been covered by LGA funds. The project worked with MoA through MATI tutors and LGA through extension officers; however, after the end of the Phase 2 project, MATI did not have direct role of training farmers unless there was a request form LGA. It was originally expected that project would utilize MATI resource person to conduct training for farmers, through training MATI will provide knowledge and experience to LGA extension staff and in future LGA can request MATI tutors for training whenever there is need. However, due to limited fund disbursement to LGA and also by considering MATI structure where they do not have direct component of farmers training, it was difficult to continue farmers training and monitoring by MATIs.

The income from rice production among smallholder rice farmer has increased (Indicator 2). The income increased by 121% in 2015/16, 176% in 2019/2020 and 199% in 2020/2021 on average comparing 2013/14. The evaluation team for this ex-post evaluation visited 4 schemes in 3 districts and interviewed farmers associations, farmers and extension officers. Farmers mentioned that the yield increased after taking part in training and applying techniques. They have adopted the various technology introduced by the project such as bund making, leveling, transplanting, transplanting in straight row, proper seedling at transplanting stage, and planting in a recommended width. The approach of farmer to farmer extension under the project also has been well adopted. In addition to that, the extension officers backstop the farmers in the area where the rice growth and performance are not well. Farmers' income has also increased because of the yield of rice increased. Most of the farmers could manage to build improved houses and purchase agriculture inputs with the profits. Also, in other schemes, farmers became able to send their children to school, some bought power tillers and farming tools, according to district staff.

The interviews with farmers mentioned above reveals that their application of techniques contributed to the increase in the yield and income; however, there are many factors for increase/decrease. With regards to the overall trends at the target schemes, there has been a big increase in income at Mvumi and Ilonga. According to an irrigation engineer and District Agricultural Irrigation and Cooperative Officer (DAICO) of Kilosa DC, there are many factors contributed to the production increase and income at Mvumi and Ilonga as they are the target projects of a project supported by the World Bank which implemented some infrastructure development, provided subsidy for fertilizer, seeds and chemicals. They were also provided training as they were target areas of the Government policy "Big Result Now" (2013-2016). In case of Magozi the yield drop was significantly affected by floods. In case of Irienyi, although the yield has increased, the income has decreased, because farmers lost markets as the cross borders trade was closed and were forced to sell the paddy locally where the price was very cheap.

There is system of monitoring and planning of rice farming managed by district through ARDS (Agricultural Routine Data System format)¹. Through the site visit, this practice has been seen at 2 districts. At the same time MATI also obtains the reports upon request basis from LGA.

<Other Impacts at the time of Ex-post Evaluation>

¹ The system introduced under JICA technical cooperation project, and later approved and formalized by MoA as a special mechanism to collect data and monitor farming activities

There is positive impact related to gender. After the training especially on gender subject matter training, many families in the project areas are now doing collective decision making especially after they received income out of their production. In the past, most men were the one to decide on income and women were the one who were mostly doing farming activities. This point has been shared by most of the farmers visited by the evaluation team. Additionally, because of gender awareness, some women have lands either they own or rent it. There is less conflict between men and women, , changes in way of decision making, plan and utilize collected income jointly by men and women.

As expected, the total area of irrigation schemes where the training developed by the project is conducted is deemed to exceed 15,000 ha., according to LGAs.

No negative impact on the natural environment has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

		Achievement of	of Project P	urpose and (<u> Overall</u> Goal					
Aim	Indicators		~		Results					
(Project	Indicator 1: Rice yield	Status of the Acl	nievement:	Partially acl	hieved/					
Purpose)	per unit area is	(Project Comple	tion)							
Productivity of	increased at least by 1	It was partly fult	filled. Out	of 30 irrigati	on schemes	(including	Zanzibar),	where data	of paddy	
rice cultivation	ton/ha in each	yields both befor	re and after	r the standar	d training we	ere availabl	e from the	first cropp	ing season	
in priority/target	priority/target irrigation	in a year, the pac	in a year, the paddy yields increased in 23 irrigation schemes. In the second season, out of 4 irrigation schemes, where sets of paddy yields data were available, the paddy yields increased							
irrigation	scheme.	irrigation schemes, where sets of paddy yields data were available, the paddy yields increased in all of them. In addition, there were 3 irrigation schemes which started rice doubled cropping								
schemes is										
increased		in a year after co	onducting t	he standard	training. 53%	6 and 50%	of irrigatio	on schemes	increased	
through		the paddy yields								
strengthening		mean of paddy y	vields, there	e was an inci	rease of 1.1 t	/ha in the f	irst season	(from 2.6	/ha before	
service delivery		to 3.7 t/ha after								
systems of		after the training	g).							
irrigated		_								
agriculture.		(Ex-post Evalua	tion)							
0		Refer to the Ove		elow.						
	Indicator 2: Annual	Status of the Acl	nievement:	Partially acl	hieved					
	monitoring and	(Project Comple								
	planning on rice	Not known. At t		project com	oletion, conti	inuous mor	itoring an	d planning	on rice	
	farming is continuously	farming had bee								
	conducted by the	simpler method	of monitor	ing which is	implementa	ble within	limited res	ources of th	ne districts	
	relevant district officers			e	1					
	and farmers in priority	(Ex-post Evalua								
	/target irrigation	The project is co	<i>,</i>	being moni	tored by exte	ension offic	cer in each	respective	areas	
	schemes.	annually through	-	Ð	5			1		
(Overall Goal)	Indicator 1: 1. The	(Ex-post Evalua	tion) Achie							
1. The training	training are conducted	Training was con			schemes.			l		
	in at least 12 other		S	cheme		Trainin	g year			
TC is	irrigation schemes by	1 Mtambo 2 Kwamngu								
implemented in	2015. (Mainland)	3 Maendeleo				2013	R/17			
other irrigation	2. The training are	4 Majengo	,			201.	/14			
schemes.	conducted in at least	5 Kigugu								
	XX other irrigation	6 Komtonga								
2. The income	schemes by 2015.	7 Nyatwali								
from rice	(Zanzibar)	8 Mangola b								
production	*No numerical target	9 Mbuga ny 10 Gonja	ekundu			201	1/1 5			
among	was set for Zanzibar,	10 Gonja 11 Mafuruto				2014	/15			
smallholder rice	but the terminal	12 Jikomboe								
farmers in	evaluation interpreted it									
priority	as 12.	14 Maki								
irrigation		15 Mangula y								
schemes is		16 Mgongola								
increased.		17Lukenge18Bugorola								
		Number of trai	<u>ning c</u> ours	es						
		Institutions	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19		
		KATC	2	3	3	3	2	1		
		MATI-Igurusi	2	3	3	3	3	2		
		MATI-Ilonga	2	4	3	3	2	2		
		MATI-Ukiriguru	1	1	1	2	3	1		
		SoA	0	0	3	3	3	1		
		Total	7	11	13	14	13	7		
		The training afte	er 2013 wei	re mostly con				•		

nom nee production	ost Evaluation y income tre i	n) Achieve nd	ed					(Unit:	shilli	
among smallholder rice		Paddy income trend						(Unit: shillin Comparison with 13/14		
	Scheme	2013/14		5/16	2019/20	2020/21	15/16	<u> </u>		
priority/target schemes) is increased by 30% in 1	Mvumi	343,20		437,580	1,570,20		128%	458%	572	
is increased by 5070 in	Ilonga	414,18		554,125	945,94		134%	228%	319	
3	Musa mwijanga	50,00	0	70,000	75,00		140%	150%	-	
4	Mahiga 216,000,0		0 258,	258,000,000 356,285,714		4 NIL	119%	165%	-	
5	Sakalilo	NI	L NIL		NI	L NIL	-	-	-	
6	Minepa	913,500,00	0 1,629,	720,000	2,259,360,00	0 NIL	178%	247%	-	
7	Njage	6,750,00	0 7,	050,000	8,250,00	9,000,000	104%	122%	133	
8	Irienyi	7,500,00	0 7,	000,000	5,000,00	0 5,250,000	93%	67%	70	
9	Tungamalenga	325,00	0	438,000	462,85	325,000	135%	142%	100	
10	Magozi	1,855,00	0	990,000	30,00	0 52,500	53%	2%		
11	Sawenge	NI	L 4,365,	000,000	NI	L NIL	-	-	-	
	Average 121% 176% 19 Note: Income is calculated based on average yield, total cultivated area and price per bag Yield									
	Scheme				eld ton / ha					
			2013/14	2015/16	2019/20	2020/21				
	2 Ilonga 3 Musa mwijanga		2	3.4	5	5.3				
			3	3.1	4.9	5.6				
			1	2.1	2.5 2.9	NIL NIL				
	Sakalilo		NIL	3.8	4.8	NIL				
	Minepa		4	4.4	3.6	5				
	Njage		4.5	4.7	5.5	6				
8	Irienyi		5	5.6	5	7				
8	8 Tungamalenga		3 .5	4.35	4.2	3.9				
	Magozi		5.3	4.4	1.2	1.5				
			NIII	5	NIL	NIL				
11	Sawenge Average		NIL 3.3	5 3.7	3.9	4.9				

3 Efficiency

Although the project period was as planned, the project cost exceeded the plan (the ratio against the plan: 100%, 114%). The outputs were produced as plan. Therefore, the efficiency of the project is fair.

4 Sustainability <Policy Aspect>

There has been policy support for improving irrigated rice cultivation. The main objective of "Agricultural Sector Development Plan Phase II" (ASDP II) (2017/18 -2027/28) is to transform the agricultural sector (crops, livestock & fisheries) towards higher productivity, commercialization level and increase smallholder farmer income for improved livelihood and guarantee food and nutrition security. Strategic objectives of the "National Rice Development Strategy Phase II" (2019-2030) includes "Expand rice cultivable area under irrigated, rain-fed lowland and upland ecosystems through new establishments and rehabilitation of existing irrigation infrastructures and management capacities".

<Institutional/Organizational Aspect>

MATIs (and SoA in case of Zanzibar) have been responsible for agricultural training in each region. The reporting structure concerning has been from Principal of MATIs, to Director of Training, Extension Services and Research, and to Permanent Secretary of MoA. While MATIs is under MoA, the extension officers who directly disseminate and backstop the activities is under Presidents Office Regional Administrative Local Government (PO-LARG). The reporting and communication system between both Ministries has not been established well that is why MATIs have a limitation to follow-up and obtain the actual information on the ground after completion of the project. However, during the training, DAICO representatives were involved baseline survey, residential and infield training. SoA is under the Ministry of Education and Vocational Training (MoEVT).

Most of training centers have had the sufficient number of staff. However, LGAs have limited number of staff especial extension officer as the area they cover has been too big.

<Technical Aspect>

Staff members at MATIs have had the opportunity to sustain necessary skills and knowledge through training and by visiting farmers, and taking part in seminars and workshops. Newly assigned staff members have learned through field work, use of manuals and guidelines.

However, some of DAICO and extension officers who are newly assigned in the area do not know the contents of the training and approach under the project.

Manuals developed under the project such as (i) operation manuals for Standard Training and Modified Standard Training, (ii) Subject matter training materials for gender, marketing, irrigation scheme management, agriculture mechanization and extension have been utilized. Extension officers have used the training manuals/guideline as reference materials to train farmers, and key farmers have been using the manuals/guideline to train their fellow intermediary and other farmers.

<Financial Aspect>

There has been no budget allocated to MATIs, and SoA for the training developed under the project by MoA after 2019. However, upon request basis MATI-Ilonga has received farmers who requests training on good agronomic practices on rice and sunflower. These farmers were supported by a World Vision project. Some farmers from Morogoro visited KATC for study tour to learn how farmers at Lower Moshi managed to be successful as a result of training conducted by the project. According to tutors and counterparts at SoA, they did not manage to conduct any training because no funds allocated for training farmers and by considering that at present the institute belongs under MoEVT and not MoA.

Some LGAs has secured own source for promotion/dissemination of training and rice cultivation technology under the project. However, most LGA have been unable to secure the funds. The challenge has been the disbursement depends mainly on what the priority/focus of the Government is, and if the sector is not given much priority then funds will not be disbursed, or it will be disbursed but very little or not on time. Thus, there has been less fund for capacity building and technical extension; however, during the field visit the evaluation team observed that at each village/scheme, there have been extension officers who work closely with farmers by proving them with technical support.

<Evaluation Result>

In light of the above, Slight problems have been observed in terms of the institutional/organizational, technical and financial aspects of the implementing agencies. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

The project partially achieved the Project Purpose. Rice yield per unit increased from the status before the project. As for the annual monitoring and planning on rice farming, though the monitoring and planning had been conducted utilizing project funds till the end of the project, but not verified on the practice by the Local Government Authority (LGA) officers and farmers. The Overall Goal has been achieved. Training was conducted in different schemes under the succeeding project. Farmer's income has increased after the project was implemented. As for the sustainability, slight problems have been observed in terms of institutional/organizational, technical and financial aspects. As for the efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be partially satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- 1. MoA and PO-RALG need to secure funds for agriculture activities such as for capacity building, monitoring and follow-up training to sustain the activities. PO-RALG should ensure that each LGA is securing the 20% of the crop cess for agriculture activities as it is stipulated in the guideline.
- 2. MoA should coordinate better with PO-RALG with respect to extension services and support for farmers. MoA provides support through project formulation but LGA who works with farmers falls under PO-RALG, after the projects phases out, all projects need to be sustained by PO-RALG support especially funds, as a results, LGA has its own priority and MoA as well, the situation will only become better only if the two Ministries harmonize their implementation structure.
- 3. The project prepared various training manuals for farmers and extension officers. Over time these guidelines will need to be revised, improved and be updated. At that time, we suggest that one of the key persons to be involved in the review process to be MATI trainers and extension staff in order to gain their experience and challenges.

Lessons Learned for JICA:

When formulate a new project, the structure and role of each organization need to be well analyzed. Considering the project approaches and modality, it could have been better to work with LGAs by formulating a Task Group that will involve not only MATI tutors but also representatives of PO-RALG -Sector Coordination Unit so that they sustain and upscale the necessary project output nationwide. It will orient LGA through District Executive Director (DED) to put more emphasis on importance of securing budget collected from crop cess for capacity building and establishing follow-up mechanism.



Paddy plot at Musa Mwijanga irrigation scheme at lower Moshi



Meeting with Key and Intermediary farmers of TANRICE 1 at Euga village