conducted by Brazil Office: February 2019

Country Name		Project for Capacity Development of Post-harvest and Marketing Practices in Jaiba Region				
Brazil		110ject 101 Cupucity 2010tophicit of 1 00t har 10st and 11at heting 1 factices in outou region				
I. Project Outline						
Background	climate year ar season, approxi and the 19,000 acquire (2,493 of: i) co far from produce informa coopera	The Jaíba region, which is located in the northern part of Minas Gerais State across Cerrado, has a warm climate throughout a year. The region had drawn attention with high potential of agricultural production because of year around cultivation and harvest by using irrigation systems to be less affected by changes of rainfalls by season, such as rainy season and dry season. The Jaíba Irrigation Project (I-IV) (planned irrigation area of approximately 230,000 ha) was planned and promoted by collaboration between the Federal Government of Brazil and the State Government of Minas Gerais. With supports from development partners, including JICA, around 19,000 ha became irrigated area in the 2000s. Also, the quality of fruits as main agricultural products in the region acquired good reputation. However, the proportion of irrigated areas against the irrigable areas was limited to 31% (2,493 ha against 8,043 ha) in the District C2, for the project sites of the Jaíba Irrigation Project (I) area and 60% (9,846 ha against 16,276 ha) in the project site of the Jaíba Irrigation Project (II). That was attributed to the factors of: i) comparatively high distribution and transportation cost of agricultural products because the Jaíba region was far from domestic markets and export bases in Brazil, and 2) limited incentives for many small and medium scale producers due to low profitability caused by sales of their products to middlemen at low price without market information. Under those situations, the government of Brazil requested the government of Japan a technical cooperation project aiming at institutionalizing small and medium scale famers in the Jaíba region, increasing added values of agricultural products and reducing distribution and sales costs.				
Objectives of the Project	Through delivery of trainings on information collection and analysis about markets and agricultural products, preparation of mid and long term marketing plans, preparation of the operation manuals on post-harvest process and delivery of trainings, as well as construction and operation of the Public Packing House ¹ , the project aimed at strengthening competitiveness of small and medium scale farmers (less than 1,000 ha) in the Jaíba region, thereby contributing to further development of irrigation agriculture in the region. 1. Overall Goal: Irrigation agriculture is further developed in the Jaíba region. 2. Project Purpose: Competitiveness of small and medium scale farmers in the Jaíba region is strengthened.					
Activities of the Project	1. Pro 2. Ma agn ma opo 3. Inp Japanes 1) Ex 2) Tr 3) Ec	oject Site: The Jaiba region, Minas Gerais State ain Activities: (1) Delivery of trainings on information collection and analysis about markets and ricultural products, (2) Preparation of mid- and long-term marketing plans, (3) Preparation of the operation anuals on post-harvest process, (4) Delivery of trainings on post-harvest process, (5) Construction and eration of Public Packing House puts (to carry out above activities)				
Project Period		y, 2012 – December, 2014 Project Cost (ex-ante) 250 million yen, (actual) 290 million yen				
Implementing		Gerais State Export Support Agency (Exportaminas)				

II. Result of the Evaluation

Cooperation Agency

< Special Perspectives Considered in the Ex-Post Evaluation >

Nippon Koei LAC, INC.

[Target of verifiable indicator for the Overall Goal]

• The verifiable indicator for the Overall Goal of "further development of irrigation agriculture in the Jaíba region" is "increases in irrigated areas and production in the Jaíba region". On the other hand, the target group of the project was only small and medium scale farmers. Therefore, this ex-post evaluation confirmed data on small and medium scale producers in addition to data on the region, and the achievement level of the Overall Goal was verified and judged by both data in order to clarify contribution of the project to it.

1 Relevance

Agency

in Japan

< Consistency with the Development Policy of Brazil at the Time of Ex-Ante Evaluation and Project Completion>

Minas Gerais State Export Support Agency (Exportaminas)

The project was consistent with Brazil's development policies of "The Multiple-year Plan" (2008-2011), a national development plan, and "The National Irrigation Policy" (2013) aiming at restarting agricultural production in 50,000 ha out of the idled plots in the existing public irrigation areas as one of development goals.

< Consistency with the Development Needs of Brazil at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Brazil's development needs to improve an issue of limited proportion of irrigated areas in the irrigable areas due to: i) relatively expensive transport and distribution cost for agricultural products in the Jaíba region which is far from the major domestic markets and export bases, and ii) limited incentives of small and medium scale farmers by low profitability with sales of agricultural products to middlemen at low price without market information.

¹ Public Packing House is a public facility for sorting and packing of agricultural products.

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

This project was consisted with Japan's ODA Policy for Brazil² prioritizing 5 areas, including "agriculture", under the top-level agreement on the priorities areas for assistance, when the President Lula visited Japan in May, 2005.

<Appropriateness of Project Design/Approach>

The project approach to increase competitiveness of small and medium scale producers in the Jaiba region for further development of irrigation agriculture was appropriate. On the other hand, the Directorate of Agriculture of the Minas Gerais State or the Minas Gerais State Company for Technical Assistance and Rural Extension (Empresa de Assistência Técnica e Extensão Rural do Estado de Minas Gerais : Emater) should have been more adequate as an implementing agency in addition to Exportaminas in order to increase competitiveness of small and medium producers. However, for the implementing arrangement of the project, the Joint Coordination Committee, the decision making mechanism of the project, was chaired by the Minas Gerais state government and the project was implemented with involvement of the Bureau of Agriculture and Emater under coordination by the state government. Therefore, there was no negative impact on the project implementation practically.

<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 project completion. At the major wholesale markets in Brazil, while the proportion of the number of target agricultural products with more than 80% of the target value in the growth rate of sales volume in the year of project completion (2014) compared to the ones in the 1st year of the project was 4 out of 5 in São Paulo, 2 out of 5 in Belo Horizonte, only 1 out of 5 in Rio de Janeiro, and the number of the target product with more than 50% of the target value was only 1 out of 5 in Belo Horizonte (Indicator 1). Among the target agricultural products, lime and mango started to be exported. The growth rates of the number of small and medium scale farmers entering export of lime and mango exceeded the target value (30%), respectively (Indicator 2). The fluctuations of sales volumes of the target agricultural products in each target area may have been attributed to impacts of external factors, such as market behaviors and climates. However, those external factors affecting the sales volumes were not analyzed in detail by the terminal evaluation of the project.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued since the project completion. Precise data at the major markets, such as São Paulo, Belo Horizonte and Rio de Janeiro, on sales volumes of the target agricultural products produced by the small and medium scale farmers in the target areas were not available since those data were not disclosed. In terms of banana production, according to Emater, the sales volumes by the target regions at the São Paulo market increased since the production volume in São Paulo State decreased in 2016 because of damages by frost. While the sales volume after the project completion exceeded the ones during the project at the São Paulo market, the figures were far below the ones during the project in other two markets. Also, the number of small and medium scale farmers participating in exporting limes increased 11 in 2015 to 25 in 2017, and the same level sustained in 2018. The data was only available for limes among the target agricultural products.

The project attempted to expand sales volumes of the target agricultural products through enhancement of marketing capacities of Producer Associations (PA) instead of using the channels of middlemen. The system introduced by the project has sustained or expanded for only bananas and limes. For lime, the number of farmers selling directly at the market without middlemen dramatically increased from 6 in 2012 to 40 in 2018. In addition, new PA consisting of 25 farmers was established. Since the project delivered trainings to make farmers deeper understanding on importance of post-harvest and quality control, the farmers have taken more interests in certification systems and some of them have received a certification of fair trade market and shipped their agricultural products to the markets. For banana as well, the number of farmers selling their products without middlemen increased from 9 in 2012 to 32 in 2018, and 20 farmers started to process establishment of a new PA because they had deepened their recognition of benefits of collective sales through PA without middlemen, such as expansion of sales and reduction of transportation cost, by the trainings and other activities conducted by the project. As mentioned above, the expansion of sales volume of banana produced in the Jaíba region and the increasing sales price were attributed to poor harvest in São Paulo state in 2016. On the other hand, the number of farmers producing atemoya and mango just slightly increased from 2 to 8 and from 2 to 5, respectively. Papaya cultivation was demolished in the target area because of disease damage.

Also, it was confirmed by the filed survey of this ex-post evaluation that sorting and packing of agricultural products based on the selection criteria introduced by the project have been undertaken under responsibilities of each PA for each agricultural product. Through the project implementation, the small and medium scale farmers have recognized importance of product sorting. Furthermore, the farmers received certifications of GLOBAL G.A.P³ (certification for agricultural products) and of the fair trade market in order to ensure competitiveness in the domestic market and the export market. As a result, the proportion of non-standard agricultural products among the target products in the target areas has been decreasing. For banana, the proportion of non-standard products was 100% in 2012 but improved to 21% at the time of project completion (2014), and has sustained at the same level since then. On the other hand, although the proportion of non-standard mango improved from 100% in 2012 to 61% at the time of project completion, the same level has continued without further improvement. For lime, while the number of lime farmers sorting has significantly increased from 6 in 2012 to 112 in 2018, the proportion of non-standard lime is 90% even in 2018. The Public Packing House constructed by the project has been utilized by each PA.

SMIM installed in Emater by the project has not been in use. Since Emater is an institution aiming at extension of agricultural technologies for small scale farmers, no budget for operation and maintenance of information system has been secured.

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

The Overall Goal has been partially achieved. According to the Jaiba Irrigation District (Distrito de Irrigação de Jaíba:DIJ), the

² Ministry of Foreign Affaires "Japan's ODA Data by Country" (2012)

³ A certification system defining quality standard of agricultural products and hygiene standards of each workplace for each process from harvesting to shipping, including harvesting, sorting, and packing. The system covered not only quality standards to check damages on products but also hygiene standards for each of workplace such as farm, sorting house, and packing house.

irrigated cultivation area and the total agricultural production in the entire Jaiba region have increased every year. Although it is not possible to compare the baseline data for the entire region in 2011 and the data for small and medium scale farmers in 2017 collected at the time of ex-post evaluation, the irrigated cultivation area of the small and medium scale farmers in the irrigated cultivation area of small and medium scale farmers in the target region has been increasing year by year since 2015 and increased by 21% in 2017 from 2015 (Indicator 1). Regarding the agricultural production, the data in 2017 was available but no comparable data was available since the baseline data in 2011 was only for the entire region (Indicator 2). However, it can be reasonably assumed that the agricultural production of small and medium scale farmers might have been in a upward trend because the agricultural production in the entire region doubled from 211 and 2017 and the irrigated cultivation area of the small and medium farmers has increased. On the other hand, the contribution of the project to the increase in the agricultural production of the small and medium farmers can be limited because reduction of planting space and introduction of new varieties may have positively affected the agricultural production.

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

Some positive impacts have been observed at the time of ex-post evaluation. The number of farmers selling their products at a fair-trade market has been increasing. As the project contributed to awareness raising among the farmers on the necessity of thorough post-harvest management and sorting, and to the expansion of sales of agricultural products at more value-added markets. In addition, according to DIJ, as a result of encouraging women to participate in the trainings implemented by the project, female executives have been active in management of DIJ. Also, in PAs for agricultural product, such as the Association of Producers' Union of Jaíba and the Region (Associação União dos Fruticultores do Jaíba e Região: AFRUTJA) and the Association of Lemon Producers (Associação de Produtores de Limão ASLIM) (PA for lemon), women have been active as an executive manager. In particular, 60% of employees of ASLIM is female. <Evaluation Result>

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

	Achievement of Pr	oiect Purpose	and Overall	Goal						
Aim	Indicators	Results								
(Project Purpose) Competitiveness of small and medium scale farmers	(Indicator 1) Sales volumes (weight-base) of the target	Status of the Achievement: Partially achieved (Not continued) (Project Completion) [Sales volumes (weight-base :t) of the target products at the major market]								
in the Jaiba region is strengthened.	40% in Sao Paulo and Belo Horizonte, and 25% in Rio de Janeiro.	Major Market	Target Products	Year of Baseline (2012)	2013	Year of project completion (2014)	Growth rate (%)			
		Belo	Atemoya	4	15	62	1,450			
		Horizonte	Banana	30,208	40,735	34,782	15			
			Lime	5,091	4,589	4,488	-12			
			Mango	1,766	3,917	4,062	30			
			Papaya	5,020	6,613	11,398	127			
		San	Atemoya	501	670	666	33			
		Paulo	Banana	3,544	4,492	6,836	93			
			Lime	44	0	290	560			
			Mango	887	595	522	-41			
			Papaya	7,752	9,884	12,485	61			
		Rio de	Atemoya	N.A.	1	0	N.A.			
		Janeiro	Banana	17,256	13,197	11,732	-32			
			Lime	242	1	149	-38			
			Mango	493	229	332	-33			
			Papaya	118	384	378	220			
		(Ex-post Evaluation) [Sales volumes (weight-base: t) of the target product (Banana) in the major market]								
		Major Market		2015	2016	2017	2018 (as of May)			
		Belo Horizonte		6,285	5,893	6,715	3,709			
		Sao Pa		8,504	9,780	10,237	4,390			
		Rio de Ja	neiro	9,276	8,949	10,294	4,914			
	(Indicator 2) Increase in participation of farmers in exports by 30% (compared to the number of farmers involved in the Project)	Status of the Achievement: Achieved (Partially continued) (Project Completion) • Growth rate of the number of farmers participating in exports > Lime: 78% > Mango: 32% (Ex-post Evaluation) • Among the target products, only Lime has been exported. • The number of farmers exporting limes increased to 25 at the time of ex-post evaluation from 6 at the beginning of the project.								
(Overall Goal)	(Indicator 1)	(Ex-post Evaluation) partially achieved								
Irrigation agriculture is	Total area cultivated with irrigation as well	gation as well [Irrigated cultivation area in the Jaíba region (Unit: ha)]								

further developed in the Jaiba region.	as the total agricultural production in the region increase by 18% in comparison with those at beginning of the Project.		2011 (Baseline)	2015	2016	2017	2018 (Estimat		Growth Rate (%)		
		small and middle scale farmers	-	11,182	12,225	13,603	13,	603	21%*		
		large scale producers	1	-	15,800	15,218	15,	218	-		
		Total	19,590**	-	28,025	28,822	28,	822	47%		
Note: *The growth rate for small and medium scale								farmers is the ratio of the			
		irrigated cultivation area from 2015 to 2018. **The baseline data for 2011 was collected by the survey conducted by the expert									
		team.									
		[Agricultural production in the Jaiba region (Unit: tons/year)]									
			•		20	1 2017			ase Rate (%)		
		small and middle scale producers				- 1	08,916		-		
		large scale producers					285,481		-		
		Total					394,397		101%		
		Note: *The baseline data for 2011 was collected by the survey conducted by the									
expert team.											

Source: Terminal Evaluation Report (EN), Questionnaire and Interview with Emater, Jaiba Irrigaion District, Agricultural Cooperatives, PA, small and middle scale producers

3 Efficiency

The project cost and period exceeded the plan (against the plan: 116% and 102%, respectively). The output was produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

Policies and laws to strengthen the competitiveness of small and medium scale farmers in the Jaiba region were "Food Acquisition Program" (2003) that is a program to purchase agricultural products as food from small scale producers, "the National Program for Strengthening Family Agriculture" (1996) that is a loan program for small scale farmers, and "the National School Feeding Program" (1997) that is a program to purchase agricultural products as food from small scale producers for school lunch. Moreover, "the National Irrigation Policy" (2013) aims at resuming of agricultural production in fallow lands among the existing public irrigation areas. The related activities to the project have been endorsed by those policies and laws.

<Institutional Aspect>

[Marketing for agricultural products and Post-harvest quality control]

Pas and agricultural cooperatives for each agricultural product have practiced marketing and post-harvest quality control for their target product. Emater has been operating the Public Packing House constructed by the project, and has been sorting and shipping mangos under the agreement with a cooperatives for mango (COOPAIJA). On the other hand, SMIM introduced by the project has not been utilized at time of ex-post evaluation. This is because Emater is an organization in charge of extension of agricultural technologies for small scale farmers and has not secured any budget for operation and maintenance of such information system.

<Technical Aspect>

[Marketing for agricultural products]

PAs, agricultural cooperatives, and small and medium scale farmers have comprehended the importance of marketing for agricultural products (including market information collection and analysis) and sustained their knowledge and skills. However, as mentioned above, as Emater aims at extension of agricultural technologies, they have not had any specific budget for marketing and not actively utilized the manuals prepared by the project.

[Post-harvest quality control]

PAs and agricultural cooperatives have continuously utilized the operation manuals on post-harvest process prepared by the project. Part of trainings implemented through the project have been sustained by the National Service for Rural Apprenticeship (Serviço Nacional de Aprendizagem Rural: SENAR). Among the PAs and the agricultural cooperatives, some have acquired GLOBAL G.A.P. certification and been required to fully comply with the post-harvest process management.

<Financial Aspect>

[Marketing for agricultural products]

PAs and agricultural cooperatives have managed to raise their funds by collecting membership fees from each member to necessary costs and have covered the costs for the necessary activities, such as development of a tool for market information sharing. In terms of a budget for the operation and maintenance of SMIM, as mentioned above, since Emater is an institution for extension of agricultural technologies and does not undertake any marketing activities, they have not secured budget for marketing activities.

[Post-harvest quality control]

The the operation and maintenance cost of the Public Packing House has been secured by COOPAIJA through collecting membership fees from its members but no budget plan has been prepared and the necessary costs have been covered when needed. The trainings on the post-harvest quality control have been delivered by SENAR, and the training costs have been borne by PAs and agricultural cooperatives.

<Evaluation Result> Therefore, the sustainability of the effects through the project is fair.

5 Summary of the Evaluation

The project partially achieved the Project Purpose and its effects have partially continued through the strengthening of marketing

capacities and improvement of post-harvest quality control by PAs for each agricultural product associated with small and medium scale farmers in the Jaíba region. For the Overall Goal of further development of irrigation agriculture in the Jaíba region, although expansion of irrigated cultivation areas of small and medium scale farmers was confirmed, the contribution of the projects to that impact was not clarified. As for the sustainability, supports to small and medium scale farmers have been endorsed by the national policies, and the activities connected to the marketing and the post-harvest quality control of agricultural products have been sustained by PAs with participation of small and medium scale farmers in the Jaíba region. On the other hand, SMIM introduced by the project has not been utilized at the time of ex-post evaluation. As for the efficiency, the project cost and period 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:

• In order to ensure sustainability of the project effects, the results of the project need to be incorporated in administrative instruction of Minas Gerais State for the national policy of Brazil such as the National Irrigation Policy (issued in January 2013).

Lessons Learned for JICA:

• Although the Minas Gerais State Export Support Agency was set as a main implementation agency of this project at the beginning of the project, its main responsibilities are procedures related to exports and public relations. On the other hand, technical transfer to local farmerss is conducted by the Bureau of Agriculture and the associated institution of Emater. Therefore, it is necessary to assess responsibilities of each relevant institution in detail and consider appropriate implementing agencies at the stage of project formulation.



Small scale farmers with improvement of sales (Mango)



Public Packing House for sorting and packing of agricultural products by criteria introduced by the project (Lime)