

**"Project Formulation Survey" under the
Governmental Commission on the
Projects for ODA Overseas Economic
Cooperation in FY2012**

Summary Report

**Survey on ODA Project Formulation for
Modernization of Small-scale Rice Milling
Industries in the Kingdom of Cambodia**

March, 2013

Taiwa Seiki Corporation / Japan Development Institute

I. Description of the Current Situation and Development Needs of the Concerned Development Issues in Cambodia

In Cambodia, 4 million tons of surplus paddy which is the half of total paddy production, is informally traded to Thailand and Vietnam in the form of paddy and is milled in respective countries, some of which are exported to other countries as Thai-produced and Vietnam-made rice. Recognizing this unfavorable situation, Cambodian government has set the Promotion of Paddy Rice Production and Export of Milled Rice so called “Rice Policy” in 2010 to add value in the country.

Rice producers and small/medium rice millers constitute the base of rice industry who are the majority of agriculture population and rice millers. Therefore the modernization of rice mill business directly benefits this sector and can strengthen the rice industry from the bottom. In other words, introduction of high performance rice milling facility and assistance of milling technology and management leads to contribute to the small/medium industry development, improvement of rural economy, poverty reduction, and provide quality milled rice in the domestic market.

(1) Current Status and Issues of Agricultural Cooperatives and Farmer’s Groups

The main issues for the AC to start business are 1) Lack of management capacity, 2) Small number of corporative members and small amount of capital, 3) No business plan, and 4) Large part of the profit goes to dividends thus less reserve remained for investment. There are many case studies of assistance agencies including international NGOs introducing rice mill business to farmers’ group and agriculture cooperatives. However, they have not sustained as a successful case at present. Based on the analysis of the past experiences, the project shall at least be successful in 1) identifying the capable target group, 2) building ownership, 3) strengthening management and marketing capacity.

Considering the current status of Agriculture Cooperatives, the proposed ODA projects should provide facilities for the whole process of post harvest, and at the same time technical assistance for the milling technology, management and marketing shall be provided.

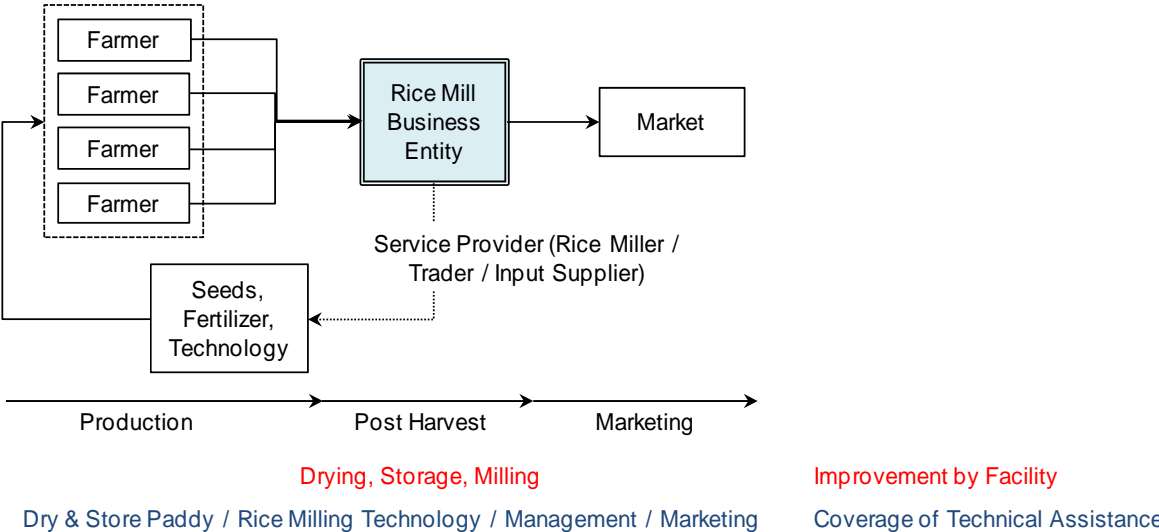


Figure A: Project Scope for Agriculture Cooperatives

(2) Current Status and Issues of Small and Medium Rice Millers

Small/medium rice millers, which account for the majority of the rice mill industry, are supplying their products for the domestic market. Due to their outdated rice mill facilities, milled rice produced is not in the good quality so the sales price is low. In order to upgrade the capacity and to improve their business, rice millers are to be trained to understand the mechanism of rice milling facilities to operate efficiently and also to understand the market.

The proposed project will improve the milling portion in the post harvest process. Because small/medium rice millers are already in the commercialized rice milling business, the project shall not only improve the milling technology but also nurture the owner to improve the quality of rice and provide marketing assistance to aim for higher value market.

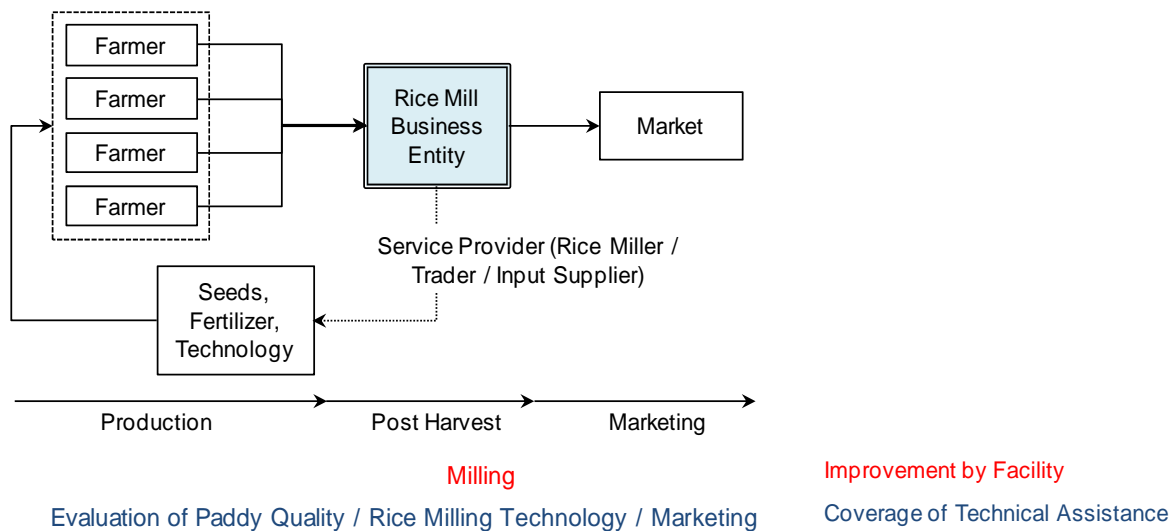


Figure B: Project Scope for Rice Millers

II. Possible Applicability of the SME's Products and Technologies, and Prospects for Future Business Development

(1) Proponent's Product

The Proponent's business for the start is to manufacture rice milling machines (Whiteners and Polishers) which are the heart of rice mill plant.

Characteristics of proponent's rice milling machines are the followings.

- 1) High recovery rate (ratio of milled rice from paddy),
- 2) Low broken rate (rate of broken rice out of the milled rice),
- 3) Appearances of milled rice (shininess)
- 4) High energy efficiency (electricity saving),
- 5) Automation (less man power saving),
- 6) Attentive after service provided from the manufacturing base in the country,
- 7) Compactness (Space saving),
- 8) Easy repair and maintenance (simple decomposition)

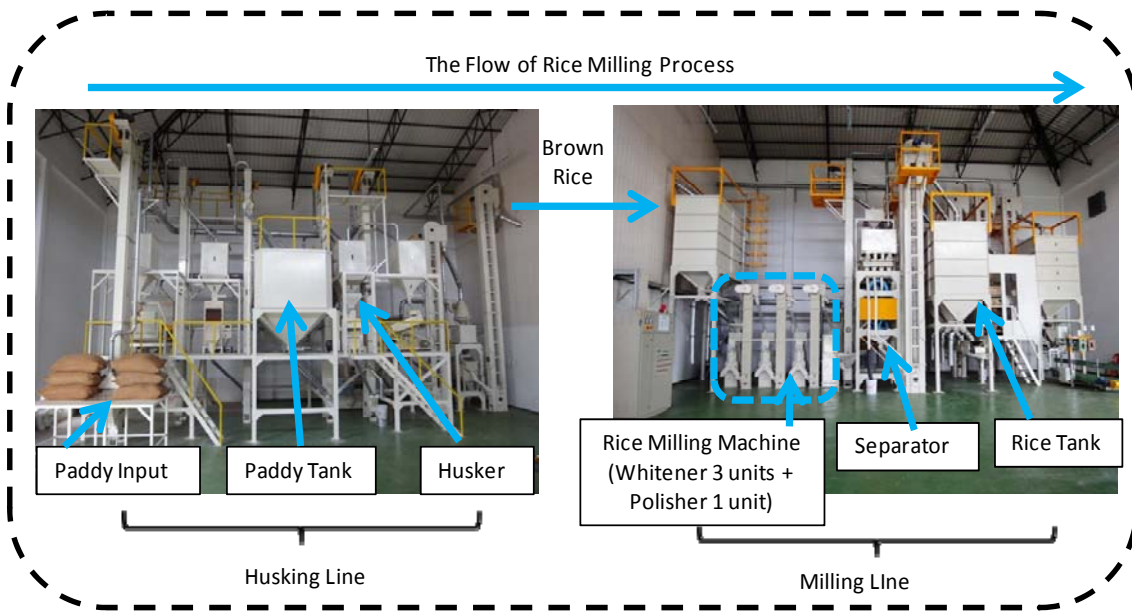


Figure C: Rice Mill Plant

The Proponent will be is the only rice milling machine maker locally manufacturing in Cambodia. Therefore the strength will be direct sales system, swift response to parts delivery and repairment request. The Proponent has the basic concept “5C (Cheap, Compact, Clean, Convenient, Comfort)”. In addition to 5S (Seiri, Seiton, Seisou, Seiketsu, Shitsuke), training for safe operation will be provided as service provision.

(2) Expected Business Scheme

The initial business model is to procure the parts from Japan and neighbouring countries such as Thailand and Vietnam and to assemble and sell in Cambodia. For the medium-term business model is to promote localization of parts procurement. The business model also plans to deliver a rice mill plant so other accessory facilities will be supplied by partner companies.

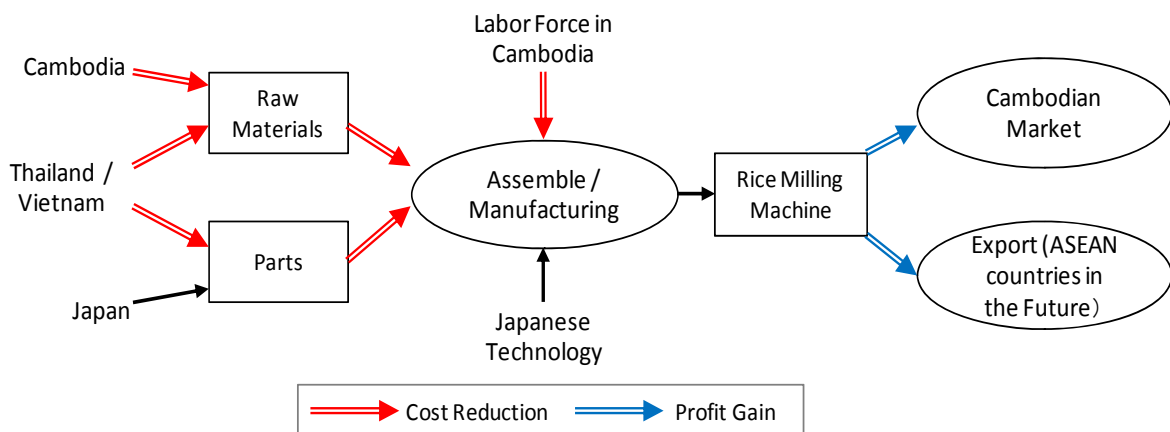


Figure C: Business Model

III. Expected Development Impact and Effect on Business Development of the Proposing SMEs in Cambodia through proposed ODA projects

(1) Consistency between Development Issues of the Country and Proposed Product and Technology

Beneficiaries targeted in the proposed ODA projects such as Agriculture Cooperatives and Small/Medium Rice Millers do not have a financial capacity to purchase large amount of paddy. Therefore installing large scale modern rice milling facilities is not necessarily the best option. In this respect, proponent’s rice milling machine is small scale but efficient. The high recovery rate and low broken rate can reduce loss, and the improvement of milled rice quality increases the sales price which contributes to the profitability of the rice milling business.

(2) Impact on Proponent’s Business Deployment from ODA Project Implementation

Table D: Types of Facility and Schedule of Proposed ODA Projects

	Beneficiary	Type of Facility	No of Rice Milling Machines	Budget (in USD)	Expected Installation
1	Small and Medium Rice Millers	Rice Mill Plant (10 units)	40	1 million	2014
2	MIME / Small and Medium Rice Millers	Demonstration Plant (1 unit)	4	2 million	2014
3	NGO / Agriculture Cooperatives	Mini-Rice Center (4 units)	16	1 million	2014
4	Agriculture Cooperatives	Mini Rice Center (2 units)	8	1 million	2015

Currently, there are no 1t/h capacity rice milling machines of Japanese brand in Cambodia. Therefore in order to gain reputation, it is the best way to show the profitable business operation with the newly installed rice milling machines. With one successful case others tend to follow in Cambodia. It will possibly open the market for 1t/h milling machines which is currently found difficult in commercial bases. Up-scaling demand will lead to sales promotion of 3t/h rice milling machine in the future.

IV. Proposals for Formulating ODA projects

The Proponent proposes Four Scenarios of ODA Projects. The basic concept of the project formulation is to position 1) Small and Medium Rice Millers, 2) MIME / Small and Medium Rice Millers, 3) NGO / Agriculture Cooperatives, 4) Agriculture Cooperatives as the Rice Mill Business Entity. The contents and necessary assistance to be provided in each scenario are described in the next page.

In project formulation, special attention was paid to building business model for the practical operation and demonstrating the model case for small scale rice milling business to operate. Project content is not only to install high-performance facilities but also to provide trainings in technical and management aspects necessary to run the business.

	Scenario①(1 year later)	Scenario②(2 year later)	Scenario③(1-2 year later)	Scenario④(3 year later)
(1) Scheme/ Budget	SME Non-Project Grant Aid: USD1 million	General Project Grant Aid: USD 2 million	Grant Aid for Community Development: USD1 million (ODA Demonstration Project)	General Project Grant Aid: USD1million Technical Assistance Project
(2) Type of Facility	Rice mill plants (10 units)	Integrated Rice Center: 1 unit (Storage + Gasifier + 20t/d Dryer + 1t/h Rice Mill Plant)	Mini-Rice Center: 4 units (Storage + 20t/d Dryer + 1t/h Rice Mill Plant)	Medium Rice Center: 2 units (Storage + 20t/d Dryer + 1t/h Rice Mill Plant)
(3) C/P	MIME (DIT, NPCC)	MIME	MAFF (DIC)	MAFF (DAE / DAEng)
(4) Beneficiary	Tender by Small and Medium Rice Millers	MIME Laboratory Center / Small and Medium Rice Millers	NGOs / ACs 4units (CEDAC/FNN, ABK, FAEC, ISC, etc)	Agriculture Cooperatives: 2 units
(5) Technical Assistance	<ul style="list-style-type: none"> • MIME (DIT, NPCC) • BDS TA Project 	<ul style="list-style-type: none"> • MIME (DIT, NPCC) • Taiwa Seiki (Cambodia) 	<ul style="list-style-type: none"> • NGOs • IRRI Post Harvest Project Team 	<ul style="list-style-type: none"> • MAFF (DAE / DAEng) • “AC Strengthening TA” Requested by MAFF • Expert of rice mill business
(6) Features	<ul style="list-style-type: none"> • Seminar→Invitation→ Selection (Document, Visit, Interview) • Assist farmers to prevent mixing the paddy 1) Accurate evaluation of paddy provided by farmers or farmer groups, 2) Secure inputs for rice production (seed, fertilizer, etc) • Rice Milling Facilities will be 1t/h plant (4 rice milling machines) • Beneficiary pay half of the price 	<ul style="list-style-type: none"> • Demonstration of integrated rice plant project with Japanese technology • Demonstration Plant of MIME for the Training of 1) Heat Management, 2) Dry/Store, 3) Milling Technology • MIME provides Training Program for Rice Millers 	<ul style="list-style-type: none"> • Business Collaboration with NGOs assisting Farmers and ACs to establish Model Cases for Rice Milling Business • Use the Marketing Routes of NGOs • Technical Assistance from IRRI Post Harvest Project Team • AC Management Training to be provided through possible collaboration with “AC Strengthening TA” Requested by MAFF • Beneficiary pay a portion of the cost 	<ul style="list-style-type: none"> • Equipment to be installed and utilized for “AC Strengthening TA” • Establish Rice Center to build a Model Case for AC Rice Milling Business • Budget for TA Project 1) Training Center for AC Management, 2) Rice Mill Business Administration, 3) Rice Milling Technology, 4) Marketing • Beneficiary pay a portion of the cost

Attachment: Outline of the survey (1)

1. Background:

Taiwa Seiki Corporation, a Japanese small-medium scale rice mill machine manufacturer, is now establishing their manufacturing base in Cambodia to promote their high quality rice mill machines (capacity: 1~3 ton/hour). One of the intentions to develop small scale of 1 ton/hour machine is to improve farmers' income and achieve self reliance of rural economy by providing quality rice mill machines to agriculture cooperatives and small/medium-scale rice millers.

Currently, rice farmers are unable to negotiate decent price for their paddy having no choice but to sell right after the harvest to return the debt for rice cultivation. On the other hand, while large scale rice millers are upgrading their facilities supported by the government's rice export promotion policies, small/medium rice millers are having difficulty finding profitable market with their old-model insufficient rice-milling machines, many of which are to be put out of business by low profit margins.

Considering the rice producers and small/medium scale rice millers constitute the majority of rice industry in Cambodia, introducing rice milling machine together with the trainings for the operational improvement and efficient milling technology could lead to the strengthening rice industry from below.

2. Objective:

The objective of the study is to formulate ODA Project to introduce compact and high performance rice milling machine to Agriculture Cooperatives (ACs) and small/medium rice millers. In this study, appropriate business model for those targeted group and necessary technical assistance will be considered to make sure the project is viable and could potentially be the model case for their successful operation.

- 1) To identify the project coverage in the rice sector supply chain
- 2) To consider viable business model for target groups (ACs and small/medium rice millers)
- 3) To identify selection criteria for the beneficiaries
- 4) To formulate implementation mechanism (counterpart / implementation agencies)
- 5) To propose project content and methodology

3. Survey Period:

1st Field Survey: 9th to 21st December, 2012

2nd Field Survey: 6th to 28th January, 2013

4. Survey Team:

- 1) Mr. Ryoichi Takai (Overall Management/Business Model Development): Taiwa Seiki
- 2) Mr. Eiichi Narikwa (Technical Assessment/medium): Taiwa Seiki
- 3) Mr. Toshiharu Tanaka (Technical Assessment/medium): Taiwa Seiki
- 4) Mr. Vuthy Monyrath (Demand Survey): Taiwa Seiki (Cambodia)
- 5) Ms. Michiko Hatakeyama (Project Manager/ ODA Project Formulation): JDI
- 6) Mr. Tomio Takahashi (ODA Project Formulation)
- 7) Mr. Yukio Tohge (Demand Survey): JDI
- 8) Mr. Tsumio Hatsukade (Demand Survey): JDI
- 9) Ms. Tomoko Hattori (Development Impact): JDI

Project Formulation Survey on

Modernization of Small-scale Rice Milling Industries in the Kingdom of Cambodia

SMEs and Counterpart Organization

- Name of SME : Taiwa Seiki Cooperation, Japan Development Institute
- Location of SME : Toyama Prefecture, Tokyo
- Counterpart Organization : MAFF(for Agriculture Cooperatives), MILME (for Small/Medium Rice Millers)

Concerned Development Issues

- Surplus paddy, half of the paddy production, is informally traded to neighboring countries without being processed in Cambodia.
- Government promotes rice milling within the country to add value to the commodity.
- Farmers constituting the base of rice industry are selling harvested rice in paddy with low price, and Small/Medium rice millers (S/M Rice Millers), the majority of rice millers in Cambodia, produce low quality rice due to old rice milling facilities.

Products and Technologies of SMEs

- The capacity of rice milling machine (1t/h: Paddy base) is suitable for the small scale rice mill business.
- The rice milling machine is able to minimize the milling loss (high recovery rate), to produce high quality milled rice (low broken rate) which improves efficiency.
- The local manufacturing base provides 5S training and attentive after-sales service including on-the-day-repair service.

Proposed ODA Projects and Expected Impact

- Introduction of rice mill facilities to Agriculture Cooperatives (ACs) with comprehensive assistances from the C/P and NGOs contributes to establishing ACs' rice mill business model and appropriate dissemination mechanism.
- Upgradation of rice mill facilities and provision of technical training to S/M Rice Millers could improve the quality of milled rice, strengthen their management skills and increase their income.
- Establishment of demonstration plant promotes the understanding of rice milling processes and technologies as well as efficiency to the of rice mill operators.

Future Business Development of SMEs

- Promote dissemination of rice milling machine by establishing successful business model for S/M Rice Mill operators.
- Expand business opportunities by developing ACs to be the rice milling operator in the future.

