

Japan International
Cooperation Agency
(JICA)

Royal Government of
Cambodia

THE FEASIBILITY STUDY
ON
ESTABLISHMENT OF OPEN PADDY MARKET
IN CAMBODIA

FINAL REPORT

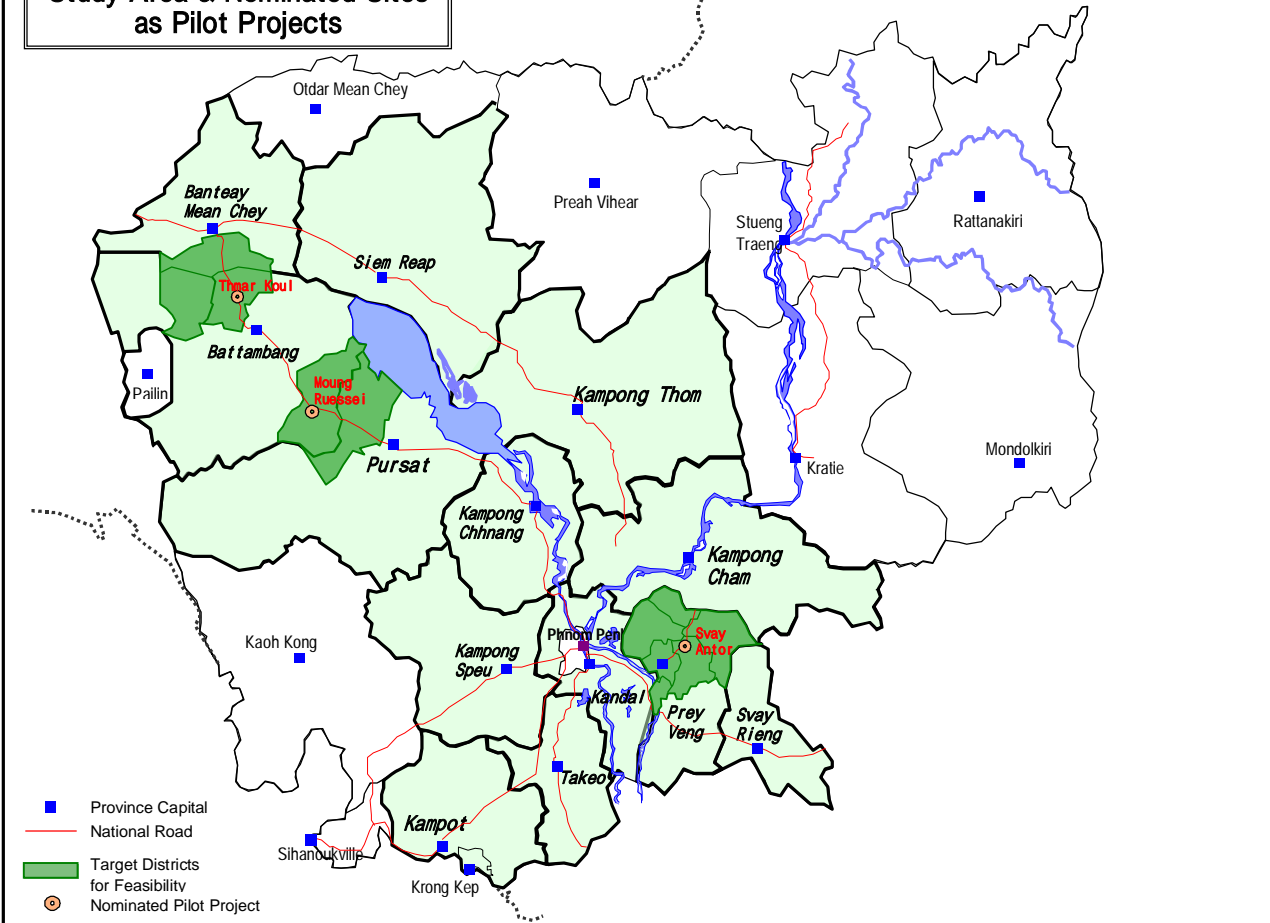
October 2006

Overseas Merchandise Inspection Co., Ltd. (OMIC)

SANYU CONSULTANTS INC.

Study Area & Nominated Sites as Pilot Projects

Provinces listed in Black Italic: Target 13 Provinces



- Province Capital
- National Road
- Target Districts for Feasibility
- ⊙ Nominated Pilot Project

Effects of OPM functions



Daily pursuits at Svay Antor OPM



Purchasing paddy by Vietnamese trader through a Cambodian side trader at Svay Antor OPM (Loading paddy to the truck)

Collection of paddy to OPM



Threshing service: Though OPM had a 800 to 1,000ton of OPM annual service amount, because of excessive rain precipitation in this year, threshing co efficiency of OPM is low 2 to 3ton/ machine-day with a high moisture content. Besides, there was more than expected competition by private threshing services to create a low level of effectiveness for OPM business.



Drying service: Paddy is dried if demands after scaling.



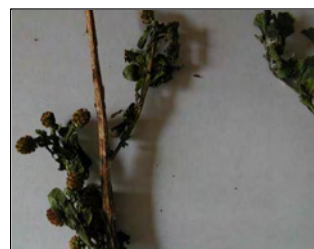
Bagging by OPM packing device after drying. The device makes quicker operation work.



Cleaning service: Using returnable bags (big; flexible bag, 800 to 1,000kg/bag, small; 55 to 65kg/bag), it is possible to reduce workers, decreasing from 5 to 2 people.



Two workers can manage the cleaning section work.



ASTREREAE, Indian weeds, a kind of annual herb



POACEAE, jangle rice, seed physical property is paddy like.



Special cleaner, Svay Antor made, to remove weed seeds.

It is difficult to remove jangle rice kind of weed seed from paddy, even in the rice mill, that reduces the value of rice in the market.

Storing service; 850 tons to be stored at the middle of January 2006. Accordingly, without combining treatment of lot units of paddy, 1,200 to 1,300 tons of paddy would be limited to store.



Payment to the seller; After settlement with the buyers, the sellers (farmers) can have payment. There is a detailed statement with receipt that the sellers could refer their questions to OPM. It is transparent OPM system for any paddy transaction through OPM.



Settlement from the buyer: OPM staffs are counting money received from the buyer (Cambodian side collector). Fractional note is a mainstream of money circulation to take time for counting, and to take up much space (be voluminous). The use of banks should be considered promotion of streamlining for annual treatment of 8,000 lots.



Correct proofs: Metrology department (MD) of the Ministry of Industry, Mining and Energy checked such weights of all scales at Svay Antor OPM.

Provincial department of industry, mining and energy checked scales' tolerance.



Effects of OPM functions



OPM style



Ordinary style with straw cap for bagging

Improved style with seaming

Improvement of bagging style: OPM recommend that people concerned paddy business shouldn't use straw cap to disturb from mixture of impurities to paddy. There was idea of local collectors to try to put large amount of paddy a bag to keep scaling trick to reduce unsolicitedly small amount against . However, it is a Cambodian side condition. Vietnamese traders and rice millers insist on changing bagging without straw to keep high recovery only because they could know OPM system and policy.

វិទ្យុស្រូវត្រួតត្រាយន្តរៈ		
គំរូប្រតិបត្តិការស្រូវ (កម្ពុជា/កម្ពុជា)		
គុណភាពស្រូវ	គុណភាពស្រូវ	
ស្រូវស្រស់	715	675
ស្រូវស្រួច	670	605
ស្រូវបង្ហាញ	605	550
ស្រូវស្រស់	610	575
ស្រូវស្រួច	605	550
ស្រូវស្រស់ (IR)	595	495

Price information board: This information has a strong impact on the people concerned about paddy transactions. Especially the farmer-selling price is based on this in the surrounding area. It is reflecting to paddy price in Northern part of Cambodia, reducing distribution fee. In contrast, all the Vietnamese side traders and rice millers using OPM state that price for ordinary quality of paddy was lower price by 100 to 150riel/kg, especially during the harvest season in Vietnam. OPM bears the price of Cambodian paddy, not lower than 450riel/ k g of mix varieties at Prey Veng at the middle of harvesting peak.



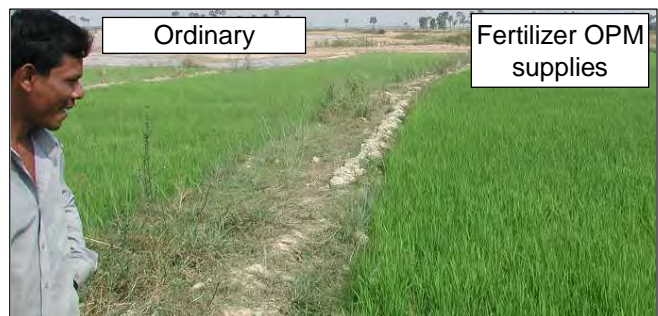
Vietnamese trader coming to Svay Antor OPM: It allegedly said in Cambodia that any Vietnamese didn't care about moisture content and quality of paddy. Vietnamese traders and rice millers, however, fold low moisture content that is to be 14%w,b, after milling, and uniformed quality in high esteem to gain high recovery. It is not too much to say that regardless of Vietnamese for paddy quality is a haphazard remark with whimsical speculation/ convenient fiction of the Cambodian side. This situation is to be testimonial evidence that OPM could disseminate its tactics to people concerned about paddy transaction. It is important to proceed with those activities through OPM so that paddy transaction is priced by quality grade.

There are problems of immigration procedures for Vietnamese coming to OPM, and finding needs of Cambodian side trader except running interference for immigration problem. It is to solve those problems for Cambodian government to ensure, by official low/ regulation, with opened border gate and authorized border trade. Traders move freely in a districted area and they should pay simplified/ fixed taxation or trading license method to the Cambodian government but illegal levy. At least OPM can record the amount of paddy flown out to the neighboring countries as food security data.

Cambodian side collectors and traders must place strict controls on paddy transactions by quality level in a serious manner.

Improvement tendency and actions by users:

This photo shows the commune chief of the Choung Ampil commune, Khan Chriech district, was checking scaling of paddy collector. It was 117kg gross of two bags by collectors scale, which 118.7kg net was confirmed. There was a difference of approximately 2.3% as blowing off action and cheating someone finally. After OPM set at Svay Antor, users themselves still consider whether OPM is good and creditable for them. In contrast, some users move to confirm a current status of scaling accuracy. Nowadays there is tendency that they make the buyer use a farmer scale. This is the one of the OPM effects, too.



Fertilizer supply service: Svay Antor OPM purchases fertilizer from the Vietnamese border of Svay Rieng. The fertilizer is effective without any problems in quality and quantity. OPM asked the farmers to do trials of its effectiveness. This role spreads the idea for any supplier not to be put in an unfair situation. Moreover, it is better that OPM reduces farmer credit for buying fertilizer.



Post harvest technology (Problem of piling for paddy bundle): After the harvest, the farmer has normally brought paddy bundle to home since 2002 for security reasons. There is a problem to produce yellowish kernels, caused by compression from the high pile of high moisture content of them with heat damage. The Cambodian government has never instructed the farmers. OPM, therefore, tries to tell farmers that they shouldn't make a piling paddy bundle with high moisture content as OPM post harvest technology service. Little by little, this view is beginning to have an impact on the farmers.

Renovation works for drying bed at Svay Antor OPM from the end of October 2004 to the middle of January 2006



Check the excavation bottom level



Backhoe excavation of the area of drying bed
Casting concrete and checking finishing



Ceremony of turning-over facilities, equipment, materials and operation management for OPM from JICA and Co-GM organization to the Ministry of Commerce on March 18, 2006



Workshop



Workshop at Prey Tbal



Study tour for collectors from the Khan Chriech district and Southern part of Prey Veng district in October 2005



Demonstration of using a moisture meter at Prey Tbal village after the workshop



Workshop at Plear En Smot; the commune chief gives a speech for the opening of the workshop.

Visitors to OPM



CIDA delegation visited OPM with MAFF staff. The delegation surveyed the price information method and background of OPM systems and functions.



Mr. Chan Saruth, Deputy Director of Personnel and HRD Department of MAFF, visited. He focused on human resource topics.



Delegation of land allocation for social and economic development from the Ministry of Interior, Ministry of Commerce, Ministry of Land Use, and others.

Interviews in Chon Bok village, Choung Ampil commune, Khan Chriech district



OPM carries price information to Prey Tbal village, Choung Ampil commune

Completion of the construction work - the shed and supply devices, Pea Rong village, Choung Ampil commune, Khan Chriech district



Display of OPM fertilizer at the farmers' group of Chom Bok village, Chorn Ampil commune



Confirmation of shed and devices under the control of a farmers' group at Chpeus village, Thmar Poun Commune, Khan Chriech district.



Confirmation of shed and devices under control of farmers' group at Preh En Smoth village, Thmar Poun Commune, Khan Chriech district



Co-GM of Svay Antor OPM explains the pricing mechanism by the type of paddy at Prey Tbal, Chorn Ampil commune.

Summary

Chapter I Introduction

1.1 Background of the study

Cambodia, with the liberalization of rice distribution, has achieved the self-sufficiency of rice in 1995 and has been producing surplus every year. However, the price fall, which was caused by the low quality paddy and the limited domestic market, became the problem. Having these facts as a background, this study has been carried out.

1.2 Objectives of the study

The study is to formulate the plan of the establishment of open paddy market, and to attempt to enhance the ability of concerned parties of the open paddy market at the same time.

1.3 Study area

The total of 13 provinces of rice production area: Battambang, Banteay Mean Chey, Siem Reap, Kampong Chhnang, Kampong Speu, Takeo, Prey Veng, Kampong Thom, Kampot, Pursat, Kampong Cham, Kandal and Svay Rieng

1.4 Period of the study

From January 2004 to September 2006

1.5 Executing agency of the study

Ministry of Commerce (MOC) and Ministry of Agriculture, Forestry and Fisheries of the Government of Cambodia

Chapter II General Condition of Rice Production

2.1 Rice Production

Main rice growing areas are the surrounding area of Lake Tonle Sap and the Mekong Basin. The harvested area of the whole country in the last 5 years is 2.11 to 2.44 million hectares, its yield is 1.9 to 2.5 tons/hectare and its production is 3.82 to 5.98 million tons. The targeted 13 provinces of the study area account for 92.5% compared to the planted area, and 93.1% of the production of the whole country. The proportion of cropping season is 87% of rainy season crop and 13% of dry season crop.

2.2 Supply and demand of rice

Rice is a staple food of Cambodian people and the self-sufficiency has been achieved every year after 1995. Although the present volume of consumption is 143kg/person/year, it is expected to decline gradually in future considering the diversification of eating habit and the population dynamic state.

The average surplus of the last 5 years was 20% of the production and in the latest year (2005/06) it was 34.4%. As the surplus has been produced every year, the rice export is inevitable because domestic market is unable to absorb it.

2.3 Social condition of rural society

Local administrative organization ranges from Province to District, Commune and Village. Agricultural cooperatives have been organized in some parts of the country, but there is no cooperative that is conducting business activities continuously and they have become a recipient of the outside support.

Farmers sell paddy mainly to paddy collectors but they have complaints about cheating weight and delaying payment. Having information gap, farmers have to accept the asking price of collectors and the motivation to improve the quality is not working accordingly. Most of areas have a custom of cooperative work for rice cultivation but it is charged in principle. About 40% of farmers purchase mainly fertilizers on credit (more than 3% of monthly interest rate) in the pilot project area. Motorcycle has been popularized even in the village and some farmers have started to own a cellular phone. The rural society is definitely changing.

Chapter 3 Present condition and issues of post-harvest practices, quality and transaction/distribution of paddy

3.1 Post-harvest practices by farmers and issues

A sickle usually does the reaping of rice. The mixing in of weed seeds might be the problem in future as weeds are cut together with rice by the introduction of the reaper. A thresher mostly does the threshing and paddy with high moisture paddy/ many foreign materials has been produced, which causes a risk of the yellowish rice outbreak by the fermentation. Although farmers know how to dry/clean paddy, it has not been done at the moment as there is no motivation for them without the reflection of by doing so in a higher paddy price when selling. While paddy for self-consumption is stored in a long period after drying and cleaning, no specific measure against insect has been done.

Farmers sell their paddy just after the harvest for the repayment of fertilizers. They also sell during the preparation period of the coming crop. The paddy collectors lead the passive sale as farmers are waiting them to collect. Although the paddy collectors present a buying price, the actual price will be lower than that as the cheating on a scale and the weight deduction by quality. In the paddy transactions between farmers and paddy collectors, unfair transactions have been the practice. Farmers have no cooperative shipment and their community has a weak bond.

3.2 Present condition and issues of paddy quality

The paddy quality directly affects the quality of milled rice. And the taste of rice (milled rice) is greatly dependent on the variety. Drying, storage method and the way to cook also affect the taste.

It is important that the quality of paddy is uniform. The improvement of paddy quality has not been advanced as high moisture paddy with lots of foreign materials caused by a wet threshing of thresher is in distribution widely. On the other hand, rice millers are demanding the improvement of paddy quality and the uniformity in order to reduce broken rice and to improve the milling rate. However, they cannot present a proper price difference based on the quality difference, which results in the stagnation of the quality improvement.

The purpose of paddy quality improvement is to increase the market value of paddy by preventing the heated grain by high moisture content and cracked grain at drying and removing immature grain, dust and weed seeds. Farmers as a producer have no popular belief how the paddy quality should be.

If paddy export to Thailand and Vietnam is done by brown rice, the quality inspection will be easy and it leads to the quality improvement. For that reason, a moisture meter as well as a scale needs to be popularized.

3.3 Present condition and issues on paddy distribution

Each step of distribution route:

About 90% of paddy selling farmers sells paddy to collectors and the rest sell to rice millers in the pilot project area. The primary paddy collectors transport paddy within the province and the secondary collectors transport to the Thai/Vietnamese border of the outside province.

Distribution direction of paddy:

Paddy moves from a place with low price to a place with high price under the free distribution. While paddy for domestic consumption is milled mainly in the province, paddy for export heads to the Thai/Vietnamese border. The volume of paddy heading to Vietnam has been increased recently.

Volume of distribution:

It is estimated that paddy transported from the production area to the outside province is 1 million to 1.5 million tons (1.5 million to 2.0 million tons in 2005/06) per year.

Domestic distribution:

The sellers and buyers of paddy are farmers, paddy collectors, rice millers and traders. Transaction modes are negotiated transactions with cash settlement in principle. The buyers usually present the price. The price presented by Thai/Vietnamese traders is communicated through the opposite direction of the paddy flow up to farmers.

Distribution to neighboring countries:

A large amount of paddy is unofficially exported to Thailand/ Vietnam from Cambodia. During the transportation, the army/ police/ local government and customs have collected unclear tools. As the amount of tools varies with the place, the least costly route is selected although it requires transshipment from big truck to a small one and goes on bad road, which is the opposite of distribution streamlining.

Market price:

The paddy price of the last two years more or less has been kept high compared to several years before, yet the range of fluctuation is 40 to 50%. The annual movement in the price of paddy has its peak in September to October and declines in the period from November to January, and then raises gradually. In area wise, the northwest part near Thailand is low and the southeast part near Vietnam is high. The price difference just about corresponds to the transportation costs.

Operation of rice millers:

The number of commercial rice mills nationwide is estimated to be around 300. One third of them are considered to be excessive, and the selection of rice millers has been started. The rice mill association is established in the major provinces.

Distribution policy:

【Domestic distribution policy】 The rice distribution is completely liberalized under the market economy policy.

【Import/export and policy】 Although both paddy and rice can be exported freely, the export through the official procedure is limited to some milled rice. The negotiation between the governments is required to make the export official as the unofficial export of paddy from Cambodia means also the unofficial import for the importing side.

【Food reserve policy】 The food reserve system of ASEAN and the emergency reserve for disaster have been done somehow.

Market information:

MOC/MAFF each is conducting the fixed-point observation for the market price of agricultural products and distributing the results as data. Its information however lacks the timeliness.

Retail market/wholesale market:

There is no retail/wholesale market specialized in rice (paddy) and rice retailers are conducting their business in the retail store or in the public retail market.

Problems/Issues of paddy distribution:

【Lack of price information】 Farmers have less information on the paddy price and are in a weak position than buyers in the paddy transactions.

【Inaccurate weighing and poor quality】 Sellers and buyers are not in an equal position and the vicious circle of “poor quality to low price to further poor quality” has been occurring.

【Poor maintenance of branch road】 Roads other than the national road are not paved and in bad conditions.

【Unofficial export of paddy to official export】 The unofficial export of paddy from Cambodia can be said the result of the convenience of Thai/Vietnamese side at the same time.

Chapter 4 Outlining Plan on Establishment of Open Paddy Market

4.1 Reasons for necessity of the open paddy market

4.1.1 Necessity of the open paddy market for paddy transaction

Cambodia set down liberalization on rice transaction/distribution; unregulated marketing/business practice is widespread under the undeveloped socioeconomic system. There are shifty scaling, willful mixture with foreign matters/impurities, and climate of disregard for drying/cleaning treatment, which develops a bad habit against relevant transaction and quality control improvement. At the same time, the farmers have a difficulty to receive market information, which are different from paddy collectors/traders/rice millers as information gaps. A big amount of unofficial exported paddy without any trading procedure and record makes condition of ungraspable balance calculation between surplus and deficit of rice. Furthermore, such transactions have been done with paddy that is low-value-added products as milling material and non-uniform quality not dried and cleaned.

The open paddy market is to be effective methodology for initiation of fair and equitable trade and quality improvement of paddy through supply of market information, right scaling, reasonable quality assessment, relevant pricing by quality level.

4.1.2 Necessity of the open paddy market for developing rice industry

There is no total power for exporting milled rice directly that is required technology/ budget/ management, except niche trade. The necessary step up of Cambodian people, as a realistic approach, is to learn the international market demands with continuous exporting paddy to Thailand and Vietnam in paddy. This is an idea to improve paddy quality and strengthen competitive pricing power. The open paddy market will practically be able to contribute it along such an improvement direction but not mere theory/ academic plan ending.

4.2 Result of the general survey and F/S

According to the result of the abovementioned survey conducted in 13 provinces, 3 areas stretching over 4 provinces (12 districts) where the paddy production (surplus), the number of buyers and the distribution scale are adequate have been selected as shown in the table.

Area	The south area of Banteay Meanchey and the north area of Battambang	The south area of Battambang and the north area of Pursat	The north area of Prey Veng
District	Mongkol Borei (BTMC) Thmar Koul (BTB) Bavel (BTB)	Moung Ruessei (BTB) Bakan (Pursat)	Kanh Chhriech, Sithor Kandal, Pea Rang, Kam Chae Mear, Prey Veng, Kampong Leav, Peam Ro
Production (ton)	192,962	144,432	283,866
Surplus amount of paddy (ton)	78,404	56,353	96,272
No. of rice mills	63	21	26
Scale of paddy distribution	Huge	Big	Big
Feature of area	To receive an economic impact from Thailand. Developed area of commercial agricultural production	Rice miller with budget enough to keep more than 1,000ton paddy can run the factory. 20-30% of rice millers shifted to collectors or closed because of shortage of budget.	There is the largest production; both, dry/wet season cropping in the recession rice area. Rice here has low brand potential not same as Battambang rice.

4.3 Outlining of the open paddy market development plan

4.3.1 Objectives of the open paddy market development plan

The objectives of the open paddy market development plan are listed.

- The aim of open paddy market establishment is to develop the environment where fair and equitable transactions will be conducted in the paddy transactions.
- Open paddy market is to benefit participating farmers and distribution dealers and to contribute to the local economic development (rice industry in particular).

4.3.2 Target area (districts) of the development plan in 13 provinces

Based on the study result, the open paddy market development plan is best to be reviewed district by district. By combining these districts, the development of open paddy market becomes possible.

4.3.3 Requirements for open paddy market operation

Desirable functions of open paddy market: Each function is reviewed as the following. Weighing service, quality grading, threshing service, transportation service, drying service, cleaning service, storage business (deposit function), financing function, financial settlement, seed distribution, fertilizer distribution, provision of market information, instruction on post harvest practices improvement, sale of paddy bag, PR and business activities

Specifications of open paddy market: Specifications are as follows.

【Setting conditions】

Annual transaction volume: 10,000 tons
Peak period of incoming paddy: 90 to 120 days
Maximum incoming paddy: 200 tons/day,
Sun-drying capacity: approximately 40 tons/day

【Basic specifications】

Storage capacity: 5,000 tons (paddy)
Floor space: approximately 5,000 m²
Sun-drying field/loading area 2,500 m²
Office/Testing room: 50 m² each
Equipment: weighing equipment, transportation equipment, cleaning equipment, testing equipment and others

【Service fees】

The service fees must be kept as low as possible by enhancing working efficiency of open paddy market.

Management body: The required quality to be the management body is to be trusted by users as a business body, to be equal (neutral) to sellers and buyers in order to guarantee the sustainability of the business and to have a transparent and aggressive business mind without being an extreme profit seeker. Although the credibility of NGO is generally considered to be high in Cambodia, the project without aiming profit including the activities of local NGO is considered difficult.

Operational funds: Although the operational costs need to be covered by the service fees, to solicit investors according to the local situations or low interest public funds are necessary as the amount required for the paddy mortgage scheme is huge.

4.4 Necessity of implementation of the pilot project

4.4.1 Necessity of the pilot project

It was difficult to make open paddy market users understand open paddy market system and policy, an open paddy market concept as a wholesale market, despite new idea for Cambodian people. Through the pilot project, to make them physically use open paddy market as a real experience is the best way to gain an understanding of local residents. To develop a methodology of transaction system and to show it to the users and staff of open paddy market using/ operating open paddy market during the pilot project performance is to be important. Through the pilot project, it will be remedied, especially whether there is user paying open paddy market service charges or not, otherwise hard to say. Under the circumstance, profitability should be verified.

4.4.2 Implementation of the pilot project

In order to verify an outlined plan and raise the precision of open paddy market function/system/management, the pilot project is to achieve. Open paddy market at Svay Antor, Prey Veng was achieved from December 2004 to March 2006, and the cooperative shipping (joint delivery) project by farmers' group in Khan Chhriech district was achieved from December 2005 to February 2006.

Chapter V Implementation of the Pilot Project

5.1 Brief description of Pilot Project

5.1.1 Brief description of Svay Antor Open Paddy Market

The repair of existing storage house and the procurement of equipment and materials had started in September 2004 and completed on December 14, and the operation was started. The establishment of management body and the fundraising had been linked. The actual business had been implemented through the pilot project having important and difficult issues for the establishment of open paddy market. Although the closure of open paddy market had been discussed, the Ministry of Commerce announced to take over it just before the completion of the third year. It was handed over to the Ministry of Commerce on March 18, 2006 and the operation is entrusted to the newly established “NGO Svay Antor Open Paddy Market.”

5.1.2 Brief description of Cooperative Paddy Collection and Shipment by Farmer Groups in Kanhchriech District in Prey Veng Province

In order to verify the experience and lessons gained through the operation of the Svay Antor Open Paddy Market, it was decided to implement a small-scale project concerning the establishment of cooperative collection and shipment system by farmers’ group in Kanhchiriech District, Prey Veng Province.

5.2 Implementation of Svay Antor Open Paddy Market

5.2.1 Objectives of Svay Antor Open Paddy Market

- 1) It is to enhance the accuracy of the outlining of the open paddy market development plan and to finalize it through the demonstration study by the pilot project.
- 2) It is to transfer technology on the planning methods of open paddy market development plan to the counterpart staff and on the operation methods of OPM to the OPM staff and the counterpart through the demonstration study by the pilot project.

5.2.2 Activities of Svay Antor Open Paddy Market

Function	Activities
<u>Provision of a place (function as a wholesale market)</u>	This is to create an appropriate transaction form and to provide storage space until transactions complete (without fees). The commission is set around 1% of paddy price as a basic fee when OPM is used.
<u>Weighing</u>	In order to establish an accurate weighing, OPM uses a high precision standard weight upon the request.

Function	Activities
<u>Quality grading</u>	This is to provide equal pricing (tentative) standards to sellers and buyers by verifying the paddy quality and grading according to the grading classification. Physical properties items will be tested in a short time and the paddy will be graded.
<u>Threshing</u>	This is to materialize higher price transactions by preventing the mixing in of foreign materials and improving the paddy quality.
<u>Transportation</u>	It is in actual conditions where middlemen and rice millers are providing the transportation service to farmers and at the same time purchasing paddy from them.
<u>Drying</u>	This is to eliminate the weight loss by over dried paddy due to the fact that farmers are unable to control moisture properly, the pest damage caused by high moisture and the rejected buying and unreasonable discount for the reason of high moisture.
<u>Cleaning</u>	This is to improve the paddy quality by removing lightweight foreign materials such as empty grain and straw from low moisture paddy.
<u>Storage service (deposit function)</u>	The storage service will be a part of function as a storage space for mortgage paddy and for sellers until selling price rises and as a temporary storage space of purchaser until rice mill processing and resale. The fee is set by the product of the quantity and the period.
<u>Financing function</u>	This is to secure the income of farmers as much as possible by using the seasonal price difference. As this is a loan with high credibility and without collateral and below 3% of monthly interest rate, it will be started from September 2006 with less than 2% of interest rate by using the counterpart funds of KR2.
<u>Settlement</u>	This is to verify what the transparency of transactions (receipt, statement and other documents) is.
<u>Seed distribution</u>	This is to introduce and to provide information on proper seeds and their acquiring methods/price.
<u>Fertilizer distribution</u>	There was a strong demand from farmers at the workshop before the beginning of the pilot project. Fertilizer can be said to be the root cause of the suffering from the debt. This can facilitate off-season employment in the OPM operation. The service was started in October 2006.
<u>Provision of market information</u>	A large size price display board will be placed at the front of the market and cellular phone and wireless radio facilities will be provide. The service will be offered free of charge to users.
<u>Instruction of post-harvest treatment improvement</u>	Techniques on post-harvest treatment, water management, pesticide application and fertilizer application (recommendation of appropriate fertilizer) will be provided to farmers.
<u>Sale of paddy bag</u>	This is to verify whether the ultimate buyers can bear the costs of paddy bag or not.
<u>PR and business activities</u>	This is to conduct business activities to improve the utilization rate and to facilitate the efficient use of the open paddy market.

Moreover, There is an activity for altering the fee for each service.

5.2.3 Results of Svay Antor Open Paddy Market

(1) Business environment

The site is located along the National Highway No. 11; 14 km north of the capital of Prey Veng Province and about 30 rice millers concentrate in the area. There is also more than 100 thousand tons/year of the surplus. The yield was low in the 2004-05-crop year due to the drought. In the 2005-06-crop year, the rainy season crop had a bumper crop thanks to the abundant precipitation. The number of paddy collectors had doubled in a year and there was excessive competition of

paddy collection in some areas.

(2) Management body

Although various organizations from governmental to private and national corporation were considered for the management body, they are existing organizations and do not meet the criteria. The operation of Svay Antor OPM was decided to be operated by 3 parties of PDOC/PDAFF/mission team being the management body.

(3) Transaction volume

At the beginning of the pilot project, it was planned to provide truck transportation service upon the request of collection from farmers. However, in order to increase collection volume, the collection activity to go around villages actively and to collect paddy has to be performed. In other words, in order to sell paddy through OPM, farmers have to wait the payment settlement until paddy is sold. It was therefore designed to utilize the funds of wholesalers for paddy purchasing and after the preparation; the system to pay cash in exchange with paddy at the time of collection has been introduced from January 2006.

1) Transaction volume of paddy

As a result of 2-year operation, in 34 Communes (approximately 52%) of the total 65 Communes, Commune where paddy can be collected in the range of 20 km radius is all covered. Also, there are customers in 127 villages (approximately 22%) of 590 villages. As for the user, it is approximately 4.8% of utilization rate and it means that 4 to 6% of the surplus has been dealt with. After the handover, the use of Mid-trader is declined, although little, (negotiated transactions of farmers increased). That means farmers of sellers are now able to wait the payment. Also, the weight per lot has increased, which means that the confidence in OPM has not changed after the handover. Although expenses have increased due to the repair for the truck accident after the handover to MOC, the balance has been kept. With regard to the ultimate buyers, the transaction volume of Vietnamese traders tends to increase reaching approximately 39% of the total transactions.

For varieties, the choice of high quality variety has increased and it tends to be considered that it can be sold definitely at higher price by using the open paddy market. As for the low quality variety, sellers tend to sell with high moisture.

(2) Transaction volume of fertilizer (sales)

Although many farmers had requested the credit, the fertilizer sale has been done basically in cash. It can be sold from 200 to 300 tons per year. In case the credit sale is introduced, the number of users is expected to increase about 3 to 5 times.

(4) Balance and result of each service

1) Balance

The monthly balance for both cases with and without rental vehicle is shown in the following table. After the handover in March 2006, i.e. from April 2006, the balance has been in a positive trend. The absence of expenses for the rental vehicle, more than the sale of stored paddy, is the major factor of that.

2) Costs incurred for experiment/demonstration concerning the pilot project

For the introduction of new system in Cambodia called the central wholesale market, costs on business promotion was required.

3) Result of major service items

In terms of low working efficiency and working scale, the transportation service is the most troublesome. The introduction of piecework system is required. The transaction capacity is around 5,600 tons based on the drying capacity. Also, as a storage house, the effective storage space was around 45 to 50%. The weight per area was 0.8 tons/m² as the size of bag differs and small lot was unable to pile high. The average storage period was 17 days. The sale of fertilizer can secure the income efficiently. For the paddy mortgage scheme, the owners of paddy are anxious about the fact that they have to borrow money while the price of paddy is rising and that they cannot keep collateral under their hands.

In January 2005 (the first year), the collection of paddy by the direct sale of paddy of farmers to buyers became difficult. There was sometimes a time lag of more than one week and the paddy purchasing funds was required. The purchase by using the cash flow of the open paddy market was tried but it had to be abandoned due to the lack of funds and losing the neutrality, which was the concept of the market. For the source of paddy purchasing funds, the participation of wholesalers was attempted. In the second year of the pilot project, the funds of wholesalers were collected about 89,000 US dollars and it accounted approximately 66% of the whole transactions. The capital turnover ratio was 5.12 times and the transactions of approximately 5,000 to 5,300 tons can be possible with the present funds.

(5) Quality of paddy dealt by Svay Antor OPM

Note: For grade 2, the convenient figure by which about 5 to 10% of lot has actually cleared in each test item among the whole sample was applied.

In the test result, the quality difference becomes small and the quality as a whole has been improved.

(6) Formation and movement of price

The price difference of 30 to 60 riels occurs between sellers and buyers when OPM service is used. It takes time to be understood by the users. However, there are cases when farmers choose

between paddy collectors and OPM, which shows that the concept of price formation based on the quality is being formulated.

(7) Transaction list price of OPM

In case the buying price of Vietnam side is 600 riel/kg, the price of 540 to 560 riel/kg depending on the quality can be listed, which means that the price can be raised nearly up to the buying price of Vietnam.

(8) Retention rate of OPM staff

The retention rate of staff is low (11%).

(9) Limitations of computer processing (accounting and other processing)

Although the computer processing was tried to expedite cash management, even the computer can not be the perfect management tool.

5.2.4 Evaluation of the Svay Antor Open Paddy Market

Relevance

The needs of Svay Antor Open Paddy Market are extremely high until now. It was confirmed that the market could play a useful role for rice millers/wholesalers as well as farmers. “Fair and equal transactions” which are the slogan of OPM and “distribution of good quality paddy” which is the basic policy are in line with the needs of paddy distribution in Prey Veng Province. In case the productivity of wet rice culture will be improved and the distribution volume will be increased in the near future, it is expected that the necessity of OPM will be greater than ever.

Validity

As the operation of Svay Antor Open Paddy Market had been in deficit until the end of pilot project implementation period, the validity of this project must be low during the period of almost a year.

Efficiency

Although the maximum efforts had been devoted to the operation of Svay Antor Open Paddy Market, the efficiency had been kept low compared to the target. In other words, in order to introduce fully the new mechanism called open paddy market into the Cambodian society, the efficiency of the project must be enhanced up to the minimum level where OPM can be maintained independently.

Impact

The activities of Svay Antor Open Paddy Market are in line with the life of local residents and it is basically operated by the hands of residents. All staff except the manager is nearby farmers and most of them are wet rice growing farmers. The positive impact of OPM which is rooted in the area can be described in one word that the Svay Antor OPM had changed the conventional paddy

distribution of the target area into a fair and equal one. The negative impact was only the balance of operation. The issue has to be cleared in order to sustain Svay Antor OPM and to proceed with the open paddy market development plan.

Possibilities of independence

If the possibilities of independence of Svay Antor Open Paddy Market is judged at the time of July 2006, it can be considered that the possibilities of business development is low and it will be in a tough situation to maintain the operation for a while.

5.3 Implementation of Cooperative Paddy Collection and Shipment by Farmer Groups in Kanhchriech District in Prey Veng Province

(1) Objects:

- 1) Increase the farm household income through the cooperative paddy shipment by Farmer Groups.
- 2) Strengthen the price bargaining power of farmers by giving them the chance to experience accurate measurement and price setting based on paddy quality.
- 3) Procure enough volume of safe fertilizers through the implementation of cooperative fertilizer purchase.
- 4) Increase handling amount of the Svay Antor OPM

(2) Result

31 % of target collecting amount (approximately 770 ton: 30% of estimated surplus amount in the target areas, 2005-06; 10.4% of the estimated surplus amount; 2.5 times more than the other areas) from the areas was performed up to the end of June 2006. During the short period cooperative paddy collection/ shipment by farmer group can be effective.

(3) Evaluation

Relevance

The improvement of paddy selling capacity is essential for the income increase of farmers and the cooperative shipment by farmers' group is an effective means, which can be implemented without requiring new inputs. It can be said that it is a realistic measure, which can solve the issues such as "inaccurate weighing" and "low sale price" in a short period.

Validity

The validity of cooperative shipment of farmers' group was confirmed by the achievement of sale price improvement, increased number of clients and reduction of shipment work. It can be said that the paddy selling capacity of farmers' group was enhanced at least at the level of regular cooperative shipment in the whole target villages. On the other hand, it became clear that the

validity of cooperative shipment of small group differs widely from villages.

Efficiency

The farmers' group has conducted efficient activities utilizing OPM service by cooperating with Svay Antor OPM.

Impact

The activities of pilot project had a positive impact on the improvement of quality. The use of Svay Antor OPM as well as the activities stimulated the eagerness of farmers to sell at a higher price. The introduction of market price classified by the quality is considered to be clearly understood farmers of the price difference between "good" and "fair" and to lead to the quality improvement.

Possibilities of independence

The possibilities of independence of activities differ widely from villages. For 2 villages where cooperative shipment by small group was practiced, the original activities of farmers' group are expected to be continued. The activities of other villages are dependent on the continuation of Svay Antor OPM operation. In case OPM continues its operation, they can be continued as all of the regular cooperative shipment, cooperative purchase of fertilizer and cooperative use of thresher are profiting farmers' group considerably.

5.4 Evaluation on Related Issues in the Both Pilot Projects

With regards to the cooperative shipment by farmers' group, the attention must be paid fully to produce the autonomy of farmers' side considering the incorporation of function of open paddy market as much as possible and the independent management.

As the cooperative shipment of farmers' group was confirmed to be the effective means to increase transaction volume for OPM, to incorporate regular cooperative shipment system into its activities is considered to be important especially for the production area type OPM in the promotion of open paddy market activities.

5.5 Lessons learned from the Pilot Projects

(1) Defining the main counterpart agency

As this development study has two ministries as a counterpart agency, the pilot project was also implemented by the joint implementation among the two ministries and the mission team. It was thus ended up as an inefficient mission spending an enormous time to coordinate between two

ministries. A fundamental contradiction having two final decision makers was revealed at the issue concerning continued operation of Svay Antor OPM. In case there are several counterpart agencies, the main agency must be designated.

(2) Establishment of management body

As the management body which will continue the project and its person in charge were not designated until the end, an illogical situation in which the subject to be fostered was not decided although the project aimed to foster an independent management organization had continued. Unless the management body is designated, all inputs injected can only be a demonstration project. The project aiming to foster the organization needs to build an organizational system including a person in charge at first.

(3) Reinforcement of local civil servant

The field of paddy distribution is in the local area. How hard the central government tries to promote the open paddy market development plan, it is not conceivable that the new system will be popularized unless there is a facilitator in the field and the role can not expect to the private sector. As the role of local civil servant for the implementation of local project is essential, the reinforcement of local civil servant is urgently called for.

(4) Development with confirming the profitability

It is considered that the approach to expand activities little by little for the service in order of importance with confirming the profitability was necessary as the new system called open paddy market was introduced in a situation where the management body, which would continue the project, was not designated.

(5) Increasing the number of users

For every aspect, to increase transaction volume or to secure profits, it is important that the user understands at first the system of OPM. Those who understand the system have deepened their understanding by using OPM several times. In order to increase the number of users, to make repeated customers is vital than any other activities.

(6) Size and transaction volume of OPM

The transaction volume is greatly dependent on the available funds for paddy purchasing. While Svay Antor OPM had collected 89 thousand US dollars, that is not enough to collect more than 5 thousand tons of paddy. It was also known that to deal more than 6 thousand tons of paddies is difficult due to the size of drying field and storage house. In addition to the increase of funds, attempts such as the increase of direct negotiated transactions, drying at the farmers' place and the integration of small lot are required.

5.6 Results of Svay Antor Open Paddy Market after handing-over

(1) Situation after handing-over (result and evaluation)

Financial management of the OPM kept above the break-even point after handing over to MOC, March 2006, though there was theft case of a pump and a truck accident, which needed to spend extra money. The mid-trader use increased, keeping level of confidence of them to the Open Paddy Market. The fertilizer sale increased causing merchandising and promotional activities of the Svay Antor Open Paddy Market from November 2005. It helps financial situation for both, Open Paddy Market/ farmers, and good reform for fertilizer market with a big problem in quality and quantity in Cambodia.

- 1) There are plans of paddy collection; Average of collecting amount: 9 to 10 ton/day
- 2) Fertilizer sale in year 2006-07 should be promoted up to double of the last year record (approximately 230 ton). This idea is to boost retention of staff of Open Paddy Market during the off-season, reducing a fluctuation of business volume.
- 3) Salary system of the staff will be considered to make the job procedure effective.
- 4) For manpower saving and security, the method of handing over money should be change to the betterment.
- 5) Svay Antor Open Paddy Market will open up a milled rice market for Prey rice millers.
- 6) To promote a good use of Open Paddy Market by Vietnamese trader.
- 7) Increasing in service fees will thoroughly be checked up. (Threshing, transporting, storing, etc.,)

The main reason of deficit financial condition is a cost of rental vehicles (tracks and a forklift 2.5ton capacity). The Svay Antor Open Paddy Market require smart twists to have margin of financial management and consideration of their solution as stated as below:

- OPM needs mid-traders' funds for fertilizer business, paddy transaction and paddy bags.
 - Fund for paddy transaction US\$ 100,000 to 110,000.
 - Fund for fertilizer transaction US\$ 5,000 (30% possible credit to users)
 US\$ 10,000 (50% possible credit to users)
 - Fund for paddy bag US\$ 5,000 to 6,000.
- Open Paddy Market shall be spread to the entire Cambodia through the Cambodian government plan. However, the Svay Antor Open Paddy Market shall continuously run on as a basic form (businesslike footing) as every new open paddy market refer it.
- All the reserve funds are set for 1) Maintenance fee/ enlargement of business including purchase of equipment, vehicles with saving benefit of 30 to 50%. 2) Paddy bag with saving all of benefit for sale, recording inventory individually. The management shall

- consider a new accounting process.
- A bank function should be in heavy usage.
 - To promote handling in bulk to the seller/ buyer because paddy bags cost is an affect-pricing paddy.

(2) Outlook of future management

Under the result of the present management, it can reach to break-even point with handling amount of approximately 5,800 ton. It isn't so easy to always keep 9 to 10 ton/day for a year. There is a requirement to collect more amount of paddy and store the paddy corresponding to the buyer's request for having service charge.

In this case, in an inefficient running of fuel consumption and workers during the busy season, 20million riels (approximately US\$4,900. -) should be estimated. 250 ton (5,000 bags) of fertilizer sale should be needed to make 28 million riels benefit. A balance of 8 million riels will be the reserve fund.

The Open Paddy Market has a grade standard as target of quality improvement and base for calculating correct price of transaction. This is a previous step for the Cambodian government to institutionalize the rice standard. Specific quality information at least shall be necessary to compare others. It will be spread to the entire Cambodia little by little. Even though it is drastic solution of quality level, market of paddy requires specific quality level (standard) as a basis for.

Chapter VI Planning method on Establishment of Open Paddy Market

6.1 Relation between plan outlining and pilot project

The pilot project was implemented in order to enhance the accuracy of the outlining. It is necessary to prepare the development plan which can respond to changes as the business environment is changing dynamically at all times.

6.2 Major components of open paddy market development planning

【Final goal of the development plan】 Through the quality improvement of paddy and the distribution improvement, the rice industry of Cambodia is to be developed.

【Target year】 Understanding that the project cycle is 30 years, 5 years is set until the completion of development plan.

【Target area】 Although the target area is 13 provinces, it is equivalent to the development plan for the whole Cambodia as their rice production accounts 93.1% of the whole country.

【Target people】 The target people are those who establish the open paddy market and those who use the market.

【Basic policy of development planning】 After reviewing various conditions (framework) for the existence of the open paddy market, and then the business model will be reviewed. After that, it will converge into the open paddy market development plan.

Chapter VII Investigation of Framework on Establishment of Open Paddy Market

7.1 Positioning of open paddy market from the viewpoint of essentiality and public ness

【Background】 The open paddy market is a project with public interests as many residents are going to use it. Besides, the open paddy market provides an essential service to living and economic activities of users.

【Analysis/ Issues】 By clarifying the public interests and the necessity of the open paddy market, it will be the starting point of the development planning. In other words, there are some possibilities to be considered: operated directly by the government as a public project, operated by the private sector as a commercial enterprise, operated by the private sector with limited involvement of the government as a social project.

【Observation】 The proportion of users to residents as the parameter of public interests is, based on the experience of the pilot project, targeted at around 10% of paddy selling farmers. It is proved by the experience of the pilot project that the fair and equal transactions as the necessity have a significant impact on the existing paddy transactions. The open paddy market is thus the field providing an essential service from the viewpoint of public interests and the necessity and the field the market principle does not fit well. Furthermore, in order to maintain fair and equitable transactions, the involvement of the government is better to be limited though the involvement is necessary in this field.

7.2 Positioning of open paddy market in rice distribution system

【Background】 The open paddy market must be considered as a part of rice distribution from paddy production by farmers to milled rice purchased by consumers and its role/function must be clarified. The pilot project reviewed the open paddy market as the market which farmers of rice producer and the surrounding rice miller use. It was the open paddy market in the production area. On the other hand, the transactions mainly between the paddy collectors for Vietnam and traders have been conducted intensively and on a large scale at the temporary river port and at the border. In other words, the open paddy market targeting them as a user can be planned.

【Analysis/ Issues】 The open paddy market does not engage in paddy transactions in order to maintain its neutrality to sellers and buyers. In other words, it is neither a seller nor a buyer in the distribution. However, at the early stage of the pilot project, users understood it as if the open paddy market itself is engaging transactions. Users did not understand its position in the distribution accurately. As the pilot project has been conducting the verification study according to the actual conditions of Cambodia, the position in the distribution is yet to be determined clearly.

【Observation】 The pilot project was the open paddy market in the production area. There is a place where Vietnamese traders purchase paddy from Cambodian traders. That can be considered as an imperfect form of the open paddy market and the establishment of large-scale open paddy market can be considered also.

7.3 Role of open paddy market in development of rice industry

【Background】 The rice production is an important industry in an economic sense. However, the viewpoint of stable supply of food as a staple food of people is also necessary. Considering the actual conditions that most of people live in the rural village and engage in the rice cultivation, the rice production can be considered as an important industry for the social stability. The possibility of yield increase in future is high and the production increase is expected. The development of export market is thus called for.

【Analysis/ Issues】 This study has been aiming to expand the open paddy market, the one in the pilot project as a starting point, to other area and to develop the rice industry. By the implementation of the pilot project, it was proved that the open paddy market has an impact on the conventional paddy transactions and can be contribute to improve paddy quality as demanded by buyers. The development of domestic market is then a prerequisite of the development of rice industry in Cambodia. If the paddy export to Vietnam is halted suddenly, the domestic price of paddy will decline sharply and its risk has to be bore by farmers. Eventually, the rice production will decrease substantially.

【Observation】 The open paddy market has an impact to solve the problems in the conventional paddy transactions by conducting fair and equal transactions and being a bellwether of quality improvement. Also, it can be an important tool for the concentrated rice mill processing and the uniformity of quality in future from the viewpoint of rice industry development. On the other hand, it can be a promising place for storage capacity, quality improvement, speeding up of loading and the quality confirmation of actual paddy as the export facilities of paddy (brown rice) for Thailand/Vietnam. However, the paddy export with the absence of rule tends to be over exported ignoring the supply and demand of food. There is no way to stop that at the moment. By reducing and fixing the amount of collected tools at the time of export, to make export official can be facilitated.

7.4 Role of open paddy market in the development of regional economy

【Background】 What determines the operation range of the open paddy market in the production area for sellers is the range which can collect economically more than 10 thousand tons per year and the collection from the upper stream of the distribution direction. As for buyers, sometimes buyers come from a distant place (other provinces/Vietnam).

【Analysis/ Issues】 Although Svay Antor, the location of the pilot project is a local town, it is a distribution center of agricultural products as there was a large storage house during the government food control days and the center of local industry where thresher makers concentrate.

【Observation】 If the pilot project is considered to be the open paddy market in the production area, the wide area open paddy market which covers the whole Cambodia or the southeast part and the northwest part can be developed. Based on the experience in pilot projects, the establishment of business confidence has been behind much for implementing the contract that is basic concept for business, especially in rural communities in Cambodia.

7.5 Selection of the site for open paddy markets

【Background】 The preliminary survey shows that there are 31 districts in 13 provinces surveyed where 10,000 tons or more of surplus paddies are produced a year. Some of these districts are adjacent with each other and at the same time in the same province or adjacent with each other but in different provinces.

【Analysis/ Issues】 Banteay Meanchey/ Battambang/ Siem Reap, Battambang/ Pursat, Takeo, and Prey Veng/ Kampong Cham are formed as 4 regional groups. These regional groups are aggregations of districts with a lot of paddy production and surplus.

【Observation】 Open paddy market in production area is starting point for transportation, and marketing base becomes terminal point. Open paddy market is preferably located at starting point and/or terminal point if necessary amount paddy is available. Marketing base indicates the gate for paddy export to Thailand/Vietnam, to Thailand is of Banteay Mien Chey/Battanbang, and to Vietnam is of Takeo/Prey Veng. After the analysis, open paddy market could be typified as the table below, considering their locations and positioning of marketing route.

Type	Position of distribution	Main sellers	Main buyers	Site of OPM for example
Productive area type	Upstream/Start point for transport (direct relation to farmers with small size of lots)	Farmers	Rice millers>traders	Mongkol Borei (Vanteay Meanchey) Bakan (Pursat) Svay Antor (Prey Veng)
Intermediate type (wide area type partly involves production)	Mainly down stream, partly involves upstream	Collectors> Farmers	Traders>rice millers	Ankor Borey (Takeo)
Wide-area type	Down stream/Terminal point for transport (traders' segment using)	Primary/secondarycollectors> Farmers	Traders>rice millers	Poipet (Banteay Meanchey) Peam Ro (Prey Veng)

7.6 Consistency with national development program and formulation of distribution policy

【Background】 While development areas having direct relations with the open paddy market are diverse, as policy areas directly related to the open paddy market, food production policy, food control and distribution policy and agricultural import/ export policy can be pointed out. Production and domestic distribution of rice (paddy) are not at all restricted, and no restrictions are in place with regard to people engaging in the transaction and geographical area. Though not apparent in statistics as export items, in reality paddy export is by far big in volume.

【Analysis/ Issues】 It is expected that in an average year the supply and demand of rice will be stable. As farmers seek to grow rice that will bring them more profit, the government needs to formulate appropriate measures in that respect. Cambodia, which is situated adjacent to Thailand and Vietnam or the two major rice exporters, has a high potential with respect to rice export. It is an urgent task for the Cambodian government to develop a system that can cope with such a development.

【Observation】 Large volume of paddy export to adjacent countries, which is seen now, is in alignment with the national development plan. The large paddy export is the result of increased rice production under unrestricted distribution. However, in reality, there are many problems such as imbalance of national power between Cambodia and neighboring countries, indefinite charges on the way of transportation and national boundary measures, and rampant unfair and unjust business practice seen in the country. Cambodian paddy distribution is highly dependent on paddy export to Thailand and Vietnam, in reality, no effective measures being in place, risky rice production is being performed and all the risks are being put on farmers. Cambodian rice industry has strong ness in production field, but weakness in processing and marketing. And paddy quality improvement by an open paddy market powers up the export competitiveness for Cambodian rice/paddy from the experience of pilot project. This could alleviate the farmers' risk aforementioned.

7.7 Development of legal systems for open paddy market

【Background】 As a legal system required for the development of an open paddy market, Agricultural Product Wholesale Market Law, Rice (Paddy) Standards, and Weights and Measures Law are important. Agricultural Product Wholesale Market Law is related to the establishment of an open paddy market. Rice (Paddy) Standards and Weights and Measures Law are related to paddy transactions at the open paddy market. The governmental authority responsible for the enforcement of Weights and Measures Law is the Ministry of Industry, Energy and Mine.

【Analysis/ Issues】 Market laws in neighboring countries are Regulation of Internal Trade

Department for Promotion of Agricultural Goods Central Market Establishment B.E.2541(1998) in Thailand, and The Government Decree No.02/2003/ND-CP of January 14,2003 on Development and Management of Marketplaces in Vietnam.

【Observation】 Experiences from the pilot project indicate that hasty development of legal systems is not necessary. It is a more serious problem that Weights and Measures Law, which is already in place, is not strictly observed as is the case with other laws. Rice standards may be more practically utilized as the target of quality improvement as a kind of quality self-control.

Chapter 8 Review of Business Model on Establishment of Open Paddy Market

8.1 Review of the business model

In order to carry out a business called open paddy market, a business model that utilizes fully tangible and intangible resources such as management philosophy, material, human, information and financial assets is required.

8.2 Understanding of business environment

【Background】 The pilot project was implemented at Svay Antor in the northern part of Prey Veng province. In the target area of the pilot project, the road condition of north-south direction is relatively good with National Road 11 running through north and south, but its east-west direction is quite poor. Svay Antor has supplied milled rice mainly to the metropolitan area but it also supplies paddy to Vietnam in recent years.

【Analysis/ Issues】 Based on the experience of the pilot project, the business environment is reviewed from the viewpoints of nature, society and economy. Considering its business nature, subjective opinions of buyers and sellers must be taken into account.

【Observation】 The business environment of open paddy market changes like its common business. The basic factor is the distribution volume of paddy but it is based on the supply and demand. Another factor is the activity of farmers, paddy collectors, rice millers and traders who are the user of open paddy market. The open paddy market cannot be sustained without being both operationally and economically independent.

8.3 The management body of the open paddy market

【Background】 The management body needs to maintain its neutrality. The pilot project used the government owned existing facilities. It was however unable to establish a specific management body before the beginning of the project and it was thus operated tentatively by the implementing organization of the study (PDOG/PDAFF/the study team). MOC expects provincial the chamber of commerce to take initiative as an operation body for open paddy markets to be established in the future.

【Analysis/ Issues】 This study, before the beginning of the pilot project, investigated the management body of local retail market, state company GTC and existing NGO but as they are yet to have experience in open paddy market, the study was not able to find suitable organization to

entrust/to be assumed the operation of the pilot project. It was also clear that according to the baseline/opinion survey conducted during the preparation stage of the pilot project, more than 80% of the survey subjects (expected users) wished the management body to be the private (mainly NGO) but not the government institution.

【Observation】 It is appropriate that the Social Enterprise, which contributes to the local society, plays the role of management body of the open paddy market as an administrative service that is difficult with the market mechanism. The non-profit organizations like NGO and association can be considered for the Social Enterprise.

MOC expects that chamber of commerce becomes management body for open paddy market; it takes some advantages that firm foundation and organization under the relevant law, financial capability by businessperson as members, business experience, and additionally business members as rice miller/ traders. On the other hand, sustainability is worry about public benefit and neutrality by prioritizing benefits for members.

Possibility for the participation in paddy market by farmers' organization: In regard with possibility for agricultural cooperative of farmers to become the operation body for an open paddy market, it is quite difficult for them to manage open paddy market at neutral position. And it is assumable that village/ commune level of agricultural cooperatives is unable to collect needful paddy volume in the limited area. Joint shipment by farmers' group/ agricultural cooperative contributes to decrease unfair and inequitable transaction by increasing bargaining power by farmers themselves, quality improvement, and increase paddy transaction volume at an open paddy market as well.

8.4 Setting the size of the open paddy market

【Background】 A prerequisite conditions of the open paddy market to function is the required volume (scale) of paddy for transactions, and to be economically independent for the management body, to come to the market.

【Analysis/ Issues】

Required volume for buyers: Paddy collectors as buyers collect paddy from unspecified many farmers. The volume of purchase by a rice mill at one time is a full of truck, approximately 3 to 10 tons and traders buy and sell approximately 10 to 50 tons.

Transaction volume to be economically independent for the open paddy market: The pilot project estimated the volume to be 8 thousand tons per year (from September 2005 to August 2006), and expected the final balance to be favorable.

【Observation】

Achievement of planned scale: The pilot project had a plan to collect one thousand tons per month, several dozen tons per day in the transaction peak of January to February. The experience in pilot project showed 10% of surplus in the districts enough for this target.

Size of wide-area open paddy market: The annual transaction volume of 100 to 200 thousand tons corresponding to 10% of distribution volume can be planned as 2 thousand to 3 thousand tons/location of paddy is shipped to Vietnam at the peak from several locations in Prey Veng Province.

8.5 Function/Service of the open paddy market

【Background】 The function/service, in addition, is classified into the basic service and the optional service. The basic service is essential for the transactions and it covers loading (unloading/loading), measuring, quality test (mainly moisture test) and settlement. The optional service is the one provided upon the request of users.

【Analysis/ Issues】

Understanding of the functions: Many workshops were held to explain about the functions of open paddy market, and experience in using the services might help users understand the functions, but it was not so easy especially for farmers. The problem is that people often misunderstand open paddy market has merely the functions of paddy drying and cleaning, because they forget the fundamental function of open paddy market as a wholesale market

Selection of services: Considering the development of open paddy market, to narrow services at the early stage is realistic.

Appropriateness of collection service: The transportation service is to provide the transportation service for paddy collection with a fee upon the request of farmers who do not have transportation means or live in a remote area. It means for farmers that the choice of where to sell their paddy is increased.

Review of service quality: Unless the selection of service quality was done properly while keeping the direction of service, improvement under the competition with paddy collectors, increasing costs cannot be absorbed.

Paddy mortgage scheme service: The paddy mortgage scheme service was ended up in the unexpected result that very few farmers used the service in the pilot project.

【Observation】 Combination patterns of sellers/ buyers:

- Between farmers and paddy collectors, between farmers and rice millers
- Between paddy collectors and rice millers, between paddy collectors and Cambodian traders
- Between Cambodian traders and Vietnamese traders

Paddy Mortgage Scheme (PMS): The reason farmers need financing is basically for the production funds to purchase fertilizers and fuel of agricultural machinery besides for their living expenses. It can be said that the time paddy is available and the time funds are needed have a gap. A certain amount of resources (paddy) is required, but most of farmers have none. The latest paddy price is strongly influenced by the international market. 2% of monthly interest is not attractive to rice millers.

8.6 Funds

【Background】 Funds prepared in advance for the pilot project was the initial funds for storage repair and equipment and materials purchase and a part of operational funds provided by JICA.

【Analysis/Issues】 The required funds found out during the pilot project are investment funds, operation funds, fertilizer procurement funds, paddy mortgage scheme funds, and paddy procurement funds

【Observation】 The financial planning for the fertilizer/seed distribution plan was difficult to make without the possible materialization. Later, the fertilizer distribution was implemented and funds were needed. The funds for paddy mortgage scheme were expected to be large. For general cases, the institutional finance that requires collateral is to be used. Funds for paddy transactions, the largest amount of funds, needed for the open paddy market as they are basically covered by their own funds of buyers and sellers and the financing of financial institutions.

8.7 Review of balance

【Background】 With regard to the operational costs, to keep the balance is a target. The market cannot be sustained without being economically independent while service fees must be kept low in view of its public nature.

【Analysis/ Issues】 The balance of the pilot project is a collection of income from individual service and the costs of the service. Therefore, the balance of each service needs to be reviewed if the whole balance is to be checked.

【Observation】 Depreciation cost for initial investment is practically hard to be added to service charge because it increases marketing cost that makes paddy less price competitiveness. Labor fee on a superficial level is quite low, but low working efficiency denies its advantage. Best mix of human power and machines must be investigated. The balance of sellers and buyers who are the user of the open paddy market also needs to be reviewed.

Balance of middleman in the market: The case resulted in gained profit as a whole and the annual yield was 6.55%. It can be said that it provides high yields than the interest (4 to 6% depending on the period) of fixed time deposit of other banks, however not enough for risky investment.

Profitability analysis of each service: The total income and total expenses of the whole open paddy market are as the following table. The transportation service accounts 45% and the basic service accounts 30% of the total income. Each service of cleaning, storage and threshing accounts for below 10%. The ratio of expenses is almost similar to the one for the income. The Benefit/Cost ratio for the whole open paddy market of the second phase was calculated at 0.41.

Chapter 9 Action Plan of Project on Establishment of Open Paddy Market

9.1 Purpose of the project

The purposes of the open paddy market development project are; to achieve equitable weighing and fair quality inspection and to materialize fair pricing in the paddy transaction, and to disseminate market price information; to increase the profit of paddy producers and dealers through the uniformity of paddy and the quality improvement by establishing the wholesale market for paddy transactions; and to enhance the international competitiveness of rice export by facilitating streamlining of paddy distribution.

9.2 Outline of the project

(1) Management form

Potential market of the open paddy market (market scale): The potential market of the open paddy market is targeted at a maximum of about 2 million tons of paddy for domestic consumption and 2 million tons of export paddy.

Business model of an open paddy market: The investigation has clarified the following business model. To form fair price that depends on quality inspection, to provide equitable weighing, to provide written records (evidence), to differentiate paddy quality, and to handle actual paddy resulting in prompt delivery.

Function of the open paddy market: It is to be the function of loading, measure, quality inspection and settlement. Also, in order to store paddy free from rain, the storage house is required facilities. Other various functions such as drying and cleaning are for the needs of users.

Management body: The management body of the open paddy market should be, under the present condition, association/ NGO as the Social Enterprise.

Raising funds: Compound/ building/ facilities of open paddy market should be established by the public fund; however, it is difficult to achieve it in Cambodia. The management body has to prepare a fund for operating open paddy market.

Comparison of the types of open paddy markets: Types of open paddy market are typified on the basis of position of distribution process, sellers and buyers as criteria.

(2) Plan of operation for each management model

Production area type:

【Bakan, Pursat Province】

Bakan has the geographical advantage for paddy export to the both markets in Thailand and Vietnam. The existing facilities constructed as rice bank in 2004 by the Rice Millers Association has an excellent access for transportation facing the National Road 5 (total area 20,000 m², warehouse 2,560 m², large-size drying yard). Therefore it possibly requires \$100,000 for additional facilities and \$50,000-100,000 as operation funds. It is possible that the management body will be Pursat Provincial Chamber of Commerce that some local rice millers becomes members.

【Svay Antor, Prey Veng province】

Here is a site which was performed the pilot project. The project continues in at the same place by NGO Svay Antor OPM. Svay Antor open paddy market needs the additional operation funds \$20,000-30,000 in the days ahead for revolving paddy bag and fertilizer.

Intermediate type:

【Ankor Borei, Takeo Province】

Ankor Borei is not easy accessible because of traveling about 40 km through unpaved rural road from National Road 2, there is a aging warehouse (800 m²) owned by MOC/PDOC and drying yard. Furthermore they are not so big enough for using an open paddy market. Expandable for its extension possibility should be confirmed. Initial investment cost will be estimated around \$500,000 though it depends on facilities/ scale, and operation funds will be minimum \$100,000.

Wide area type:

【Peam Ro, Prey Veng Province】

The potential site is better being the river side place where the National Road 1 and 11 are directly connected, and besides, where boats (100 tons class) can land throughout the year. The open paddy market at Peam Ro requires not only warehouse/ drying yard but also paddy loading facilities to boats. The initial investment cost is possibly estimated \$1,000,000-2,000,000 including land procurement cost (4-5 ha). Sellers are assumed to be paddy collectors in principle. Paddy is brought from Prey Veng province and neighboring provinces by the primary paddy collectors and from distant provinces by the secondary paddy collectors. Buyers are Cambodian traders and rice millers in the open paddy market. Vietnamese traders might purchase paddy directly.

【Poipet, Banteay Meanchey province】

Poipet is located at the west side of Banteay Meanchey province waiting in the wings of production area, Banteay Meanchey, Siem Reap, Battambang. There is the important international gate to Thailand at the end of national road 5, which many people and goods move. There is the large-sized wholesale market vision, Wholesale and Export Marketplace including with Agricultural Marketplace, which the Ministries of Commerce of the governments of Cambodia and Thailand are planning.

The list of nominal open paddy markets by type: The list shows site condition/ targeted handling amount of paddy/ plan of financial management for five nominal sites of open paddy markets.

Place-name/ Type	Location	Annual Transaction Volume	Balance Plan
Poi Pet (Banteay Mean Chey)/ wide area	Near the international gate of National Road 5, Near to the production area such as Banteay Mean Chey, Siem Reap and Battambang. There is a project of Wholesale and Marketplace for agricultural products.	Paddy 50-100 thousand tons, Brown rice 100-200 thousand tons	FIRR11-16%、 ROE 24-34% (Ref. the report)
Bakan (Pursat)/production area	Along the National Road 5, center of the production area.	Paddy 10-20 thousand tons	Business balance (excluding depreciation) will be proportionate from the beginning
Ankor Borei (Takeo)/ intermediate	River port of branch river of the Pasak River, surrounded by the production area, paddy from the northwest part/the central part gathers, there are small-scale existing facilities.	Paddy 50 thousand tons	Business balance (excluding depreciation) is in red at the beginning and later it is balanced
Peam Ro (Prey Veng)/ wide-area	River port of the main and branch river of the Mekong River, paddy gathers from nationwide through paddy collectors and is exported mainly by boat by Cambodian/ Vietnamese traders	Paddy 100-200 thousand tons, Brown rice 10-20 thousand tons	Business balance (excluding depreciation) may be positive from the beginning
Svay Antor (Prey Veng)/production area	Center of the production area, site of the pilot project	Paddy 5-10 thousand tons	It expects to be balanced from the red

9.3 Plan of operation

(1) Operation support system

Government agencies: DTD/PDOC are supposed to promote the expansion of the open paddy market. MAFF is requested to promote cooperation shipment for paddy by farmers' group/ agricultural cooperative, as one of countermeasures to increase the handling amount of open paddy markets.

Local support of the market location (Chamber of Commerce, Rice Millers Association): To create new open paddy market requires the support.

Donor country: MOC is requesting donor countries for technical assistance on the support to create the project of open paddy market, the management after the establishment and distribution/quality fields.

(2) Implementation process

Time and order of implementation: The life span of an open paddy market for creating the environment of fair and equitable transaction could be limited around 30 years based on the experience in Thailand. In other words, the implementation of the plan is preferably to be

completed until around 2010 as MOC makes the plan. Accordingly, establishment of open paddy market should be started from area that has high demand for open paddy market, and synergy between wide-area type and production area type should be worked.

Planning and discussion of the plan of implementation: The process of the establishment of individual open paddy market development preparation committee with a focus on agricultural members of each local chamber of commerce, the preparation of the plan of operation and the government approval can be considered.

Implementation procedures for each establishment plan: Implementation procedures to be tackled in the days ahead for each establishment plan are mentioned in the report.

(3) Financial plan

In order to maintain financial independence of the project, funds are from the private capital in principle. Keeping that in mind, whether a part of funds can depend, as a social enterprise, on the public funds or the support from donors can be considered.

Chapter X Evaluation of the Open Paddy Market Development Plan

10.1 Relevance

It was confirmed by the pilot project that OPM matches the needs of the target group (producer, rice miller/middleman). Considering 66% of the production is in the market, fair paddy transactions can be said to be the needs of the whole Cambodian society.

10.2 Validity

The objectives of the project are clear and it was confirmed through the implementation of the pilot project that if the outputs of activities were produced, the immediate objectives can be achieved. The relation between immediate objectives and outputs is clear. The problem is however whether the project can keep the balance. OPM must be financially free-standing at present circumstances. The pilot project was however merely pointed out its possibility to balance the budget. When individual financial plan is prepared, it must be highly realistic by using the result of the pilot project.

10.3 Efficiency

The outputs of the pilot project are well worth the inputs as far as the whole area is concerned. However, in order OPM to achieve financially self-standing, further enhancement of efficiency is required. As the limit of productivity was pointed out in the pilot project, it is proposed in the development plan to start from the development of wide-area type OPM which can fully utilize existing paddy flow. The costs cut to the limit are necessary in the actual operation. There are two points to be reminded: 1) to narrow activities to the minimum; 2) to respond without waste to seasonal changes.

10.4 Impact

The present paddy distribution, from producers to the border, is done only by the private business transactions in principle. Its scale has already passed the stage where the traffic control by the policy and the deliberate efforts are required. Considering that rice is the main product of Cambodian people, that it is a staple food, and the response of neighboring countries, the improvement of paddy distribution using OPM is one of the most important issues of the nation concerning the life of people and the national security.

10.5 Possibilities of independence

For the operation of OPM, the creation of independent organization and the balance of the budget are prerequisite. If this condition is cleared, then the possibility of continued operation is relatively high. Because the operation of OPM is conducted as business for not only the paddy transactions but also the securement of staff and everything. This is where the difficulties of business lie and at the same time the necessity of business exists.

Chapter XI Conclusion and Proposals

Domestic distribution of rice in Cambodia is outdated, but in recent years large amount of excess rice (unhulled rice) is unofficially exported to Thailand and Vietnam. Unofficial export of unhulled rice will not only make supply-and-demand balance unclear, but also involves dubious taxation, transport on bad roads, mixing of different types, heterogeneous mixture, undried and unselected products. In addition, there are issues of measurement cheating and mixing of foreign objects. If export is suspended, however, domestic price for unhulled rice might plunge.

In the pilot project, verifications were made in order to solve these issues. Specifically, farms, rice milling operators, and traders take stock of major functions of the project, such as accurate measurement, scientific quality assessment, pricing based on quality, and quality improvement. As a result, the number of participants is increasing. The pilot project was transferred to the Cambodians for continued operation, but its economic independence is difficult to achieve.

Open unhulled rice market in production sites require spontaneous shipping by farmers, but currently this is difficult. Instead, the possibility to set up inter-area open markets for unhulled rice, with cargo collecting/rice milling/trading operators as buyers and sellers, is high. This is because these operators have stakes in having an impact from distribution downstream to upstream. Since the concept and achievement of open unhulled rice market were confirmed in the pilot project, it should be expanded to other areas.

[Proposals]

The Need for Improvement in Unhulled Rice Quality and Distribution

Cambodian rice is often sold cheaply in hard bargains due to its quality problem. However, rice milling operators desire to have homogenized, quality unhulled rice. Pricing system should be developed so that quality is fairly reflected in price.

Establishment of Open Unhulled Rice Market

Candidates for the production site model are Banteay Mean Chey, Pursat, Takeo and Prey Veng, and the inter-area model in Prey Veng and Battam Bang.

Business Operators of the Open Unhulled Rice Market

The operator's attribute should not matter as long as it is a neutral party in selling and buying, but it should be noted that in Cambodia, NGOs (social corporations) are most trusted by participants in the open unhulled rice market.

Functions of the Market

Required functions include cargo handling, measurement, inspection, account settlement, and

storage. Other functions may be added in order to meet participants' needs.

Operation of the Open Unhulled Rice Market

The operation should be kept within the level of breaking even in regards to actual cost, so that the market's service fee may be maintained at a low level. The operator should receive some kind of tax exemption from the government.

The Market's Fund Procurement

In order to stabilize the market's operation, it is desirable for the market to receive government subsidy, donations, and public fund injection.

Support System for the Market

The MOC and MAFF need to cooperatively execute the PRAKAS regarding open unhulled rice market. Upon this cooperation, chambers of commerce and rice milling associations in each province should actively involve themselves in open market operations. However, supporting nations are urged to provide technical assistance in the project.

Final Report for the Feasibility Study on Establishment of Open Paddy Market in Cambodia

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Abbreviation

MOC	Ministry of Commerce
MAFF	Ministry of Agriculture, Forestry and Fisheries
MIME	Ministry of Industry, Mines and Energy
JICA	Japan International Cooperation Agency
PDOC	Provincial Department of Commerce
PDAFF	Provincial Department of Agriculture, Forestry and Fisheries (At the end of this project, changed name was PDA: Provincial Department of Agriculture)
DTD	Domestic Trade Department (MOC)
EPD	Export Promotion Department (MOC)
GTC	Green Trade Company
CAMCONTROL	Cambodia Import Export Inspection and Fraud Repression Department (MOC)
CARDI	Cambodia Agriculture Research and Development Institute (MAFF)
DOA	Department of Agronomy (MAFF)
DPSC	Department of Planning, Statistic and International Co-operation (MAFF) (At the end of this project, changed name was DPS: Department of Planning and Statistic)
DAE	Department of Agricultural Extension (MAFF)
S/W	Scope of Work
WB	World Bank
ADB	Asian Development Bank
AQIP	Agricultural Quality Improvement Program, AusAID
PDM	Project Design Matrix
OPM	Open Paddy Market
NGO	Non Governmental Organization
NPO	Nonprofit Organization
WFP	World Food Program, the United Nations
NCRMA	National Cambodia Rice Millers Association
GNI	Gross National Income
SME	The Small and Medium Enterprise
DOA	Department of Agronomy (At the end of this project, changed name was DAALI: Department of Agronomy and Land Improvement)
BAAC	Bank for Agriculture and Agricultural Cooperatives
F/S	Feasibility study
FIRR	Financial Internal Rate of Return
ROE	Rate of Return On Equity
B/C	Ratio of Benefit/ Cost