

APPENDIX N3 : MARKETING

APPENDIX-N3 MARKETING

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N.3 MARKETING

N.3.1 Linkage between Cooperatives and SOEs

To attain the benefit of high quality paddy/rice by collective marketing, there should be solid market channels for the cooperatives. SOEs will be one of the most important clients for cooperatives since SOEs are established to contribute to the economic development of the province, particularly to the rural economy.

(1) Cooperative Supporting Plan of SOEs

Following the direction of provincial PC for encouraging development of agricultural cooperatives, leading rice exporter in Dong Thap Province, DAGRIMEX, have formulated the supporting plan and approved by PC in 1998. Plan consists of three (3) supporting schemes : i) direct purchase of paddy, ii) consignment rice export and iii) supply of agricultural material. To implement the plan, three (3) cooperatives were selected by DARD and recommended to DAGRIMEX.

So far none of these schemes have been implemented due to following reasons.

i) Direct purchase of paddy :

Due to difficulty in guaranteeing purchase price of paddy above floor price as the market price declined lower than floor price, the company could not implement this scheme though a selling offer was made from cooperative side.

ii) Consignment rice export :

This scheme can be effective only if the market price is higher than floor price. It is reported that to implement this scheme seems difficult because farmers (cooperative) do not trust the company.

iii) Supply of agricultural material :

A contract to provide fertilizer with due date of 4 months after delivery almost concluded but it did not come to effect in 1999. Because the district PC did not sign on the contract paper as verified party due to the clause of " in case the cooperative does not pay debt on the due date, the Commune PC and District PC are in charge of liquidating property of the cooperative for repayment to the company".

As of now, this plan is still valid but it is presumed as less feasible particularly the schemes of i) direct paddy purchasing and ii) consignment rice export.

(2) Support from SOEs

1) Financial support

Through several meeting with SOEs (rice exporters in Dong Thap Province), it have become clear that both of DAGRIMEX and DOCIMEXCO have no intention to provide any financial support, including JV form, to cooperatives due to a risk of irrecoverable debt.

2) Technical support

Following technical assistance may be obtained from SOEs.

- Training

Training for Rice mill operation (receiving trainee and dispatch of engineer)

Training for Quality inspection of paddy and milled rice

- Design and construction of warehouse (DOCIMEXCO)

(3) Establishment of Solid relationship

One of the major reasons for inferior quality of rice is the lack of marketing information/knowledge of farmers. Most of farmers have never had business relation with any SOEs who are the final buyers of rice in the region and source of market information. This is due to the difference of economic scale, farmers' marketing method through the collectors and simply farmers did not know the importance of information. Now, farmers are paying an attention to produce the high quality export rice, (in other words pay an attention to produce rice which SOEs are willing to buy) and to have the direct sales channel with SOEs for marketing their product and for obtaining the information.

But, there is quite wide distance between the cooperatives and SOEs at present time, due to limited chances to discuss with each other.

To establish solid relationship between cooperatives and SOEs, following actions will be taken. PC particularly DARD will be involved directly as a coordinator.

- Regular information exchange between cooperatives and SOEs
 - Production forecast
 - Market information
- Technical assistance by SOEs
 - Training on rice mill operation
 - Training on quality control (paddy/rice)
- Business support
 - Favorable contract with conditions not less than those given to private millers/suppliers (*)

(*) Typical contract exchanged between SOEs and private millers is as follows:

- advance payment 50-60% of contract value in cash
- scale of each contract : 100 - 150 ton (material rice)
- shipment : within 20 days after order
- actual shipment : 30-50 ton/day, within 7 days for contract quantity, max.10 days

N.3.2 Impact of Collective Marketing to Existing Marketing Intermediaries

(1) Marketing Intermediaries in the Commune

1) Paddy collectors

	Total number in Commune	Coop member, out of total number	Note
Phu Tho Coop, An Long Commune	About 10 persons	1 * (have no boat, seasonal engaging)	- Usually 2-3 persons are working in one boat. - About half of them are farmers.
Gao Giong Coop, Gao Giong Commune	About 10 persons	2 ** (each have 10 - 12 ton boat)	

Note : * attendant of PCM workshop.

** one collector (coop. member) attend PCM Workshop.

2) Rice mill

	Station-type Rice mill		Mobile-type Rice mill
	for Marketing rice processing	for Self consumption rice processing	for Self consumption rice processing
Phu Tho Coop, An Long Commune	1 * (capacity 30ton/day)	4	(5) (all come from outside of commune)
Gao Giong Coop, Gao Giong Commune	Nil	3 (owned by coop member : 1)	1

Note : * owner was attendant of PCM workshop.

(2) Result of Hearing Survey

1) Paddy collectors

Through the hearing and discussion with collectors who live in commune of the two (2) selected cooperatives about possible negative impacts on them in case the coop. start a direct sale to SOEs, following positive opinions were obtained. No negative opinions were expressed.

- Collectors do not image negative impacts such as difficult situation of collecting paddy because the cultivation area under the coop. is very small compared to their activity range.
- 2 collectors in Gao Giong Coop. who are also coop. members stated that Gao Giong Commune area is not very important collection area because the paddy varieties are mixed.
- Collectors pay more attention to an aspect of paddy quality improvement because they know that good quality paddy can increase their profit.
- Collectors are welcome rice mill operation by coop. because they may be able to have milling service

with good return rate and at near their home.

- Collectors, specially who are coop members, are willing to cooperate with coop. by utilizing their functions such as paddy collection from other area to keep rice mill busy all year around, provision of transportation service to coop., collection of market information and also by utilizing their knowledge and experience of marketing.

2) Rice mill

Through the hearing and discussion with rice mill owner in An Long Commune about possible negative impacts on him in case the coop. start a operation of rice mill , following positive opinions are obtained. No negative opinions were expressed.

(Due to processing of self consumption rice is not included in activity of the cooperatives, hearing was made only form rice mill which process for marketing purpose.)

- Owner of rice mill does not imagine any negative impacts such as severe competition or losing his market share because he has already have good relations with some rice exporters in Dong Thap province and in other province and have quite large business result (about 5000 tons material rice sales in year 1999).
- Owner of rice mill pay more attention to an aspect of paddy quality improvement because he know that good quality of paddy can increase his selling price to exporters.
- Owner of rice mill is welcome to rice mill operation by coop. and willing to support the development of the cooperative by giving sub-contract to the cooperative or by introducing his clients to the cooperative.

N.3.3 Design Concept

(1) Form of Sales Product

There are two possible forms of sales product, paddy or material (milled) rice, for the collective marketing. From the following reasons, it takes a form of material rice in this plan.

i) Sale opportunity

Both of SOEs and private polishing factories who become the clients of collective marketing are now purchasing most of their raw material as milled rice and it is judged as difficult to have many sales opportunities with a form of paddy. In addition, paddy quality is hard to be proved clearly than milled rice and a profit of quality improvement must not be returned to farmers sufficiently.

ii) Quality improvement

Paddy quality directly affects the profit of rice processing. That is to say, rice processing by farmers can be a strong motivation for farmers to improve the quality of their paddy

iii) Model effect

In case of material rice sales, not only profit of value-added but also profit of by-product sale is expected. That is to say, larger profit and larger impact on other farmers is expected than the case of the paddy sales.

(2) Scale of Collective Marketing

1) Target area and cropping pattern

Put Tho Cooperative

- Farm field of all cooperative members are located in the same dike unit. Scale of collective marketing is set based on the size of this dike unit (370 ha).
- Improvement works for heightening the north part of the dike unit is scheduled to be completed before flood season of this year. Paddy production amount is based on 3 paddy cropping.

Gao Giong Cooperative

- 217ha of farm field owned by the cooperative members are scattered in hamlet 2 (660 ha) where the cooperative is providing irrigation service. After the study tour to SOHAFARM, cooperative members recognized necessity of variety unification and of establishing export rice production block in their hamlet. With initiative of leader/key staff of cooperative, general agreement to set 450 ha of export rice production block in hamlet 2 among cooperative members and non-cooperative members. Scale of collective marketing is set based on the size of this export rice production area (450 ha).
- Hamlet 2 is located in the F/S area for Small Dike System Project and paddy production amount is

based on 3 paddy cropping with rotation system.

2) Paddy quantity for collective marketing

Based on the target area and cropping pattern, paddy quantity for collective marketing of model cooperatives are set as follows.

		Gao Giong Coop.	Phu Tho Coop.
Paddy field	ha		
WS Crop		450	370
SA Crop		450	270 * 1
AW Crop		450	370
Yield *2	ton/ha		
WS Crop		6.0	6.5
SA Crop		5.1	5.5
AW Crop		5.1	5.5
Paddy production	ton	<u>7,300</u>	<u>5,900</u>
WS Crop		2,700	2,400
SA Crop		2,300	1,500
AW Crop		2,300	2,000
Paddy consumption *3	ton	<u>1,720</u>	<u>1,310</u>
WS Crop		570	460
SA Crop		575	420
AW Crop		575	430
Paddy for collective marketing	ton		
WS Crop		<u>5,580</u>	<u>4,590</u>
SA Crop		2,130	1,940
AW Crop		1,725	1,080
		1,725	1,570

*1 : 100 ha out of 370 ha is planned for upland crop by cooperative.

*2 : Gao Giong Coop. is target yield after introducing the dike system. Phu Tho Coop. is present yield.

*3 : Paddy for self-consumption, seed use, payments for farm works such as harvesting, threshing and etc.

Consumption rate : Gao Giong Coop. 850kg /ha, Phu Tho Coop. 600kg/ha

(3) Contents of Activity

1) Paddy collection

At the present time, after harvesting and threshing at field, paddy grains are carried to farmers' houses for drying and short period storage until marketing. Farmers personally employ a transportation service from boat/truck owners to carry paddy grains.

In the collective marketing, paddy grains need to be collected at rice mill facility from each farmer's house after drying. In case of a faraway farmer's house, there are about 4 km distance to proposed site for rice mill facility and charge for a transportation service of this 4 km is about @25 VND/kg. On the other hand, transportation cost (fuel and labor only) is computed as about @7 VND/kg/4 km with 15-20 tons boat.

To prevent a profit disparities by location of farmer's house and to reduce a cost of transportation, cooperative will provide a free paddy collection service to all members. In case farmer carries paddy by

himself, cooperative will pay transportation expense based on a unit price of cooperative.

At the selected cooperatives, about 80% of members rely on a loan to buy agricultural inputs. Those farmers oblige to pay interest after WS crop and to pay back loan after SA crop, and they usually cash paddy not later than 1 month after harvesting. To facilitate a shipment to cooperative from members, payment should be made by cash within several days after receiving paddy.

Period of paddy collection service is set as 45 days based on a period of harvesting work (10-15 days) and a maximum period of holding paddy until cashing (30 days).

2) Processing

Adding to the processing of cooperative members' paddy, it is also planned to apply the best use of facility for more profit by means of providing a commission processing service to collectors. Operation period of processing facility is set as 60-70 days for WS crop and SA crop, 40-50 days for AW crop, based on the harvest time in the central and northern parts of Dong Thap province (shown in Table N3.3.1). The harvest time will differ between inundation block and non-inundation block by introduction of rotational inundation control system.

To provide processing service to collectors, facility is desired to be equipped with an ability to finish processing of a collector's cargo within 3 - 4 hours. Necessary capacity is set as 3-4 ton/hr., based on the general cargo size (10 - 15 ton paddy per boat) in the region.

Operation time per day is set as 2 shifts (16 hours) and actual processing hours is set as 14 hours per day. Quantity of commission processing service is set as 40-50% for WS crop and SA crop, 10-20% for AW crop of the actual processing hours.

3) Shipment

Shipment of product should be completed before harvest of the following crop and shipment period is set as 90 days in each crop season. According to general practice (*) of private rice millers and SOEs, it is assumed that the shipment unit is 50 - 100 tons.

Transportation to polishing factories will be made with chartered vessel according to the regional practice.

* General dealing between SOEs and private millers is as follows:

- advance payment 50-60% of contract value in cash
- scale of each contract : 100 - 150 ton (material rice)
- shipment : within 20 days after order
- actual shipment : 30-50 ton/day, within 7 days for contract quantity, max.10 days

4) Storage

To reduce the initial investment, raw material (paddy) and product (material rice) will be stored in the same warehouse.

5) Quality inspection

At the time of the receipting of paddy, cooperative will conduct a quality inspection and compute its value according to the result of inspection. To make a quality difference and a price difference clear, will increase a motivation for further quality improvement.

Buying price is computed by weight revised with moisture content of grain and also of inert matters against the standard quality. Market information and/or contract contents are also taken into consideration in price setting.

Inspection and analysis method are set with advice of SOEs/DARD. It stipulates following contents :

- Method of sampling
- Inspection item and definition
- Procedure of analysis
- Method of weighing of paddy
- Method of weight revision

6) Collection of market information

Utilizing the available price information such as a market information magazine and information of Provincial Dept. of Pricing, cooperative collects information from polishers (SOEs / private) and paddy collectors. Collected information is provided to cooperative members at any time. The information should include as following.

- Information for setting buying price of paddy
 - Polishers' buying price of material rice and its quality
- Sale information
 - Situation of rice export contracts of exporters (SOEs)
 - Paddy prices at each district in Dong Thap and other neighboring province

(4) Expect Profit of Quality Improvement

1) Contents of expected profit

Paddy price in Mekong River Delta is connected with the export price and is directly influenced with price fluctuation in the international market. Paddy price isn't stable and there is a risk of falling below the production cost. This plan aims at making a higher profit at all times through quality improvement and collective processing/marketing compared to the case of the present practice of production and sale. Even in case of fall in the price of paddy, a risk of deficit is reduced by higher selling price than market

price by higher quality and a profit from processing.

Profits of the paddy quality improvement will be realized in the processing as : i) improvement of milling yield (increase of sales quantity) and ii) improvement of product quality (increase of sales price). Moreover, increase of sales price is expected by means of the scale merit of collective marketing. The relations between paddy quality items which should be improved and expected profits are as follows.

Paddy quality items to be improved	Expected profits
a) Reduction of Immature kernel, Dead rice and Inert matter	i) Improvement of milling yield
b) Reduction of Cracked kernel and Damaged kernel, Uniformity of paddy grain in shape and moisture contents	ii) Improvement of product quality (Grade up with less broken kernel)
c) Reduction of Red rice, Chalky kernel, and Colored kernel	ii) Improvement of product quality (Value up with better appearance)

2) Target of quality improvement

Presumption of present paddy quality

The result of paddy quality analysis (excerpt) at the selected cooperatives is shown in the following. The comparison of two different varieties shows that there are definite differences in Inert matter and Red grain. Also, about 3 % of differences are seen in total milling yield.

Detailed result of paddy quality analysis are shown in Attachment N3.1.

Result of paddy quality analysis

(Unit %)

Items	IR 841			VND95-20		
	Farmer 1	Farmer 2	Farmer 3	Farmer 1	Farmer 2	Certified seed
Moisture content	14.4	12.2	13.1	13.7	13.2	13.1
Inert matter	2.98	3.54	3.78	1.60	2.10	0.40
Husk	22.30	21.47	21.55	22.65	21.9	20.80
Brown rice (after husking)	74.72	74.99	74.67	75.75	76.00	78.80
Red grains (after husking)	7.70	2.74	1.08	2.37	3.61	0.50
Immature grains (after husking)	4.07	2.15	3.46	3.22	3.64	3.01
Total milled rice *	66.07	66.65	66.73	67.84	68.33	70.01

* Milling degree : Well-milled rice

Presumption of present material rice quality

Quality of material rice in the study area varies very much. Some polishers individually set their own

standard of material rice for their procurement by referring the Vietnamese export rice standard and/or export contracts. Though the contents of such standards are not uniform among polishers, material rice are commonly categorized into two grades : Grade I for export 5% - 10% broken rice and Grade II for export 15% - 25% broken rice. Based on the various information such as hearing from private polishers and export rice inspectors, export results, cost composition of SOEs in Dong Thap province and so on, quality level of material rice in Dong Thap province is presumed as Grade II (for export 15%-25% broken rice) in general.

Yield in paddy to material rice processing also varies due to the differences in milling degree and paddy quality. In general, yield in paddy to material rice processing is presumed as 60 - 66 % with about 80% milling degree

Target of quality improvement

Referring to the milling characteristic of some export varieties and quality test result of certified seed, possible target of quality improvement is set as follows.

- i) Improvement of milling yield : Increase the yield 3% in paddy to material rice processing
- ii) Improvement of product quality : Grade up of the material rice to Grade I (for export 10% broken rice) from Grad

3) Estimation of expected profits

Expected profits of the paddy quality improvement are computed as follows.

- i) Improvement of milling yield (increase of sales quantity)

@ sales price of material rice / kg × 3 %

- ii) Improvement of product quality (increase in sales price)

Because the price of material rice and price difference among the grades fluctuate according to the export market conditions, absolute value of improvement can not be computed. In this section, material rice prices which are computed by using the export rice cost composition data of DAGRIMEX are shown as an example of increase in sales price. Also, price data of export rice and material rice of DAGRIMEX and monthly average paddy price of Dong Thap province are shown as the comparative reference.

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Computation of material rice prices and export rice cost

(unit : VND/kg)

Paddy Price	1650	1700	1800	1900	2000
Price of 2nd Grade Material rice	2306	2381	2531	2681	2831
Price of 1st Grade Material rice **	2426	2534	2749	2963	3178
Price of Export rice *					
25% Broken	2607	2699	2884	3070	3254
20% Broken	2604	2702	2897	3091	3285
15% Broken	2687	2801	3028	3255	3481
10% Broken	2727	2852	3102	3352	3601
5% Broken	2744	2877	3145	3413	3680
cost difference (10%broken-25% broken)	120	153	218	282	347
FOB Saigon price (US\$)					
25% Broken	\$201	\$207	\$220	\$234	\$247
20% Broken	\$200	\$207	\$221	\$235	\$249
15% Broken	\$206	\$214	\$231	\$247	\$263
10% Broken	\$209	\$218	\$236	\$254	\$272
5% Broken	\$210	\$220	\$239	\$258	\$277
cost difference (10%broken-25% broken)	\$7	\$11	\$16	\$20	\$25

* Subject to use same quality of 2nd Grade material rice for all grade. Price at polishing factory.

** Calculated as "cost difference + price of 2nd grade material rice". Price at polishing factory.

Comparative reference data

A. Export rice and material rice price of DAGRIMEX													
year 1999	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	average
Export rice *													
5%	--	--	228	222	--	238	--	231	213	200	--	--	222
10%	--	--	217	--	--	--	--	--	--	199	--	--	208
15%	257	226	214	220	220	--	--	222	--	186	--	--	221
25%	--	214	--	199	199	212	210	211	202	178	--	--	203
100%	--	205	188	--	206	--	--	--	192	--	--	--	198
Material rice **													
1st grade	2,700	2,600	2,400	2,400	2,450	2,550	2,500	2,450	2,350	2,350	2,550	2600	2,492
2 nd grade	2,550	2,400	2,300	2,300	2,350	2,450	2,400	2,400	2,200	2,200	2,400	2500	2,371
B. Monthly average price of Dong Thap Province													
year 1999	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	average
Ordinary paddy	1,861	1,712	1,650	1,675	1,708	1,736	1,762	1,761	1,705	1,675	1,682	1,909	1,736
Ordinary rice	3,300	3,167	2,933	2,967	3,000	3,000	2,983	2,900	2,900	2,900	2,800	3,017	2,989

A : Source DAGRIMEX * USD/ton, FOB Saigon ** VND/kg, Buying price at factory

B : Source Dept. of price, Dong Thap Province

In addition to the grade up, around 50VND/kg increase in price of material rice is presumed with improvement of quality factors relating to an appearance of commodity such as reduction of Red rice, Chalky kernel and Colored kernel

It is difficult to value the scale merit of collective marketing. About 30-50 VND/kg increase in price of material rice is presumed with wishful expectation.

N3.4 Preliminary Design

(1) Equipment Plan

Item	unite	Gao Giong	Phu Tho	Total	Remarks
Rice mill equipment	set	1	1	2	4t / hr.
Paddy dryer	set	2 *	2 *	4	8t / batch / set
Quality inspection equipment	set	1	1	2	
Information and Office equipment	set	1	1	2	
Office furniture	set	1	1	2	
Paddy handling and transportation equipment	unit	1	--	1	15t local boat with engine
		--	1	1	35hp tractor with trailer
Spare parts	set	1	1		

* 1 set is installed in resident area.

Major contents of quality inspection equipment and information & office equipment are shown in Table N3.4.1.

(2) Facility Plan

Item	unit	Gao Giong	Phu Tho	Total	Remarks
Office	m ²	40	30	70	
Quality inspection room	m ²	30	30	60	inside of Rice mill facility
Store	m ²	30	30	60	for consumable, inside of Rice mill facility
Rice mill facility	m ²	600	600	1200	
Warehouse (paddy / rice)	m ²	700	600	1300	
Paddy dryer area	m ²	100	100	200	with roof
Paddy sun drying yard	m ²	400	500	900	
Boat landing place	place	2	2	4	

Layout Plan

Facilities are categorized into 3 blocks with its function as i) Processing block, ii) Storage block and iii) Drying block. Layout plan has been prepared to minimize the carrying distance of loading/unloading works and secure the smooth movement of paddy/rice among above 3 blocks. Layout plan is shown in Fig.

N3.4.1.

(3) Organization Plan

A new service team will be formulated for collective marketing activity with additional staff. Further, ability for practical business management of staff will be strengthened.

System for collective decision-making and management of activities will not be changed. General assembly shall continue to be the supreme decision making body and management board shall continue to be responsible for its implementation.

1) Formation of a new service team

In the formulation of a new service team for collective marketing activity, some talented persons will be recruited to cover the shortage of knowledge/experience of present staff in the field of business management, rice marketing, operation of rice mill equipment and quality control/inspection. Proposed recruitment plan is as follows:

- i) A person who has experiences in rice mill management, including experiences of sales activity and quality control.
- ii) A person who has experiences in operation of rice mill equipment and quality inspection.

Proposed arrangement of staff in a new service team is shown in next table.

Staff arrangement

Field	Major tasks	Staff arrangement
Paddy collection	Operation & maintenance of boat/truck	Chief staff x 1 Staff x 1
Store manage	Stock control & book keeping, Pest control	
Shipment	Boat charter, Labor arrangement	
Paddy drying	Operation & maintenance of dryer, Quality control	Chief operator x 1 Staff x 2
Quality inspection	Quality inspection, Price determination, Maintenance of equipment, Quality data manage	<i>(Quality Inspector x1)</i> <i>Chief operator x 1 *</i>
Processing	Operation & maintenance of rice mill facility, Quality control	Asst. operator x 1
Sales	Sales promotion, Contracting, Collection & manage of market information	Coop. leader * <i>Manager x 1</i>
Business manage	Business manage, Business planning and implementation	Staff x 1
Accounting and Financing	Sales and expenditure book keeping, Capital manage	Accountant x 1 ** Cashier x 1 **

Italic letter indicates new staff with experience.

* Chief operator or Manager will hold a task of Quality Inspector.

** present staffs

Unskilled simple works such as handling of material in rice mill facility and warehouse can be conducted by seasonal employees workers. Unloading/loading works for collection/ shipment can be made with term of payment at piece rate in accordance with the regional practice.

Organization chart of model cooperatives are shown in Fig.N3.4.2.

2) Strengthening the ability for practical business

To strengthen the ability for practical business of present management staff, following measures will be taken.

- Cooperative leader will get a training in the practices of business at SOE (rice polishing & export) and/or private enterprise (e.g. fish processing & export) to have a practical knowledge/experience of business management. About 3 months training is proposed during the off-season for rice farming, for instance 1 month during SA crop season and another 2 months during flood season.
- Cooperative management staff will get a on-the-job training from the talented persons who will be recruited as a member of a new service team.
- Accountant will have advanced training program at Cooperative Alliance or at private schools.

3) Preparation for smooth launch of a new activity

After formulating a new service team, following preparations will be made by the staffs of the team for smooth launch of collective marketing activity.

- Preparation of job systems and work manuals for following jobs/method.
 - Paddy collection service
 - Store (Inventory) management
 - Paddy drying service
 - Method of quality inspection and quality data management
 - Setting of standard paddy quality and its price
 - Method of price determination by quality
- Amendment of articles relating to the authority of management staffs
- Preparation of working regulations for new staffs
- Preparation of capital for paddy collection

(4) Support Plan

1) Support system and contents of support

Implementation body of the model project is DARD of province. Under PC of province, Project Management Board will be established consisting of DARD, Extension Center, SOEs and other relevant organizations. This board has a responsibility for management of the project and guidance / overall supervision of activities of model cooperatives.

As a unit for practical works, Project Team will be established within DARD with officials who have been engaging in the field of Cooperative development, Rice processing and marketing and Rural finance. Project team will have a task of project management and supervision of the model cooperative's activity. In addition to those, project team will give various supports to the model cooperatives

a) Preparatory stage

- Coordination between the model cooperatives and relevant organizations such as other sections of DARD (specially Extension Center, Seed Farm), rice exporters (SOEs), Cooperative Alliance, Agricultural Bank and etc.

b) Implementation stage

- Coordination between the model cooperatives and relevant organizations such as other sections of DARD (specially Extension Center, Seed Farm), rice exporters (SOEs & private), Cooperative Alliance, Agricultural Bank and etc.
- Training support : Project team will arrange the following training for the model cooperatives with collaboration of relevant organizations.

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Contents	Trainee		Period	Method	Trainer
Technique for seed production and quality control (*1)	Member of seed production group (seed club)	10-20 farmers	2-3 days	Lecture & study tour (*2)	DARD (Extension center and/or Seed station)
Technique for proper husbandry to improve paddy quality	Selected advanced farmers (*3)	20 farmers	2 days	Lecture	DARD (Extension center)
Technique for proper post-harvest practices to improve paddy quality			2 days	Lecture & practice	DARD (Project team and/or Extension center)
Practical method of paddy quality inspection of farmers			2 days	Lecture & practice	Project team and/or SOEs
Store management and pest/rodent control	Staff(s) assigned to store management and key members of coop.	10 persons	2-3 days	Lecture & study tour (*4)	Project team and/or SOEs
Method of quality inspection	Staff(s) assigned to paddy collection and key members of coop.	10-20 persons	2 days	Lecture & practice	Project team and/or SOEs
Rice marketing and price formation	Staff(s) assigned to sales activity and key members of coop.	10-20 farmers	1-2 days	Lecture	Project team and/or SOEs

Notes: *1 Strengthening of high quality seed (certified seed) production system of Dong Thap province is proposed as an another project in this Study and basically model cooperatives must no need to multiply seed by themselves. But considering the unfortunate cases such as being selected variety which is not covered by that system and so on, plan to upgrade a present function for seed production of model cooperatives.

*2 Seed Station

*3 Selected advanced farmers will disseminate the contents of training to other members.

*4 Warehouse of SOEs or Dept. of Food Reservation

- Consulting support : Project team will provide following consultations to the model cooperatives.

Field	Contents
Variety selection	Supply of variety information and advice on marketability
Formulation of service team	Assist on recruitment of talented persons
Strengthening the ability for practical business	Assist on finding enterprises for the practical business training of leader
Marketing	Assist on pre-sales promotion. Introducing polishers (SOEs of other provinces/private) in Sa Dec district. Advice on sources of market information and its utilization
Shipment	Introducing shipping enterprises

(continue)

Field	Contents
Financing	Assist on getting a property certificate. Assist on getting a subsidy/fund.
Job system and work manual	Assist on preparation of job systems and work manuals for following jobs/method - Paddy collection service - Store (Inventory) management - Paddy drying service - Method of quality inspection and quality data management - Setting of standard paddy quality and its price - Method of price determination by quality Advice on amendment of articles and preparation of working regulations

c) After implementation

- Supervision of the model cooperative's activity.
- Seminar program : Disseminate a group activity of quality improvement and marketing to other farmers' groups through a seminar program.

Contents	Trainee	Period	Seminar per year
- Introduce details of model cooperatives : contents of activities, organization, job system and etc. - Explain about conditions for introducing collective marketing into farmers' group and available supports of DARD, SOEs and other organizations. - Study tour to the models cooperatives.	30 persons per seminar	2-3 days	2 times

(5) Project Cost

1) Initial Investment

a) Equipment

No.	Item	Quantity	Amount (US\$)	
			Gao Giong Coop.	Phu Tho Coop.
1	Rice mill equipment	1 set	65,000	65,000
2	Paddy dryer	2 sets	6,000	6,000
3	Quality inspection equipment	1 set	12,200	12,200
4	Information and Office equipment	1 set	3,700	3,700
5	Office furniture	1 set	1,200	1,200
6	Paddy handling and transportation equipment	1 set	3,500	5,300
	(Sub total)		91,600	93,400
	(Total)		185,000	

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b) Facility

No.	Item	Amount (US\$)	
		Gao Giong Coop.	Phu Tho Coop.
1	Civil and Construction	437,000	438,000
2	Electric facility	14,000	14,000
3	Miscellaneous expense	10,000	10,000
4	Reserve cost	46,000	46,000
	(Sub total)	507,000	508,000
	(Total)	1,015,000	

c) Consultants Service

No.	Item	Amount (US\$)	
		Gao Giong Coop.	Phu Tho Coop.
1	Equipment portion	9,200	9,400
2	Facility portion	50,700	50,800
	(Sub total)	59,900	60,200
	(Total)	120,100	

(6) O/M Cost (annual)

1) Expenditure

Item	Amount (US\$)	
	Gao Giong Coop.	Phu Tho Coop.
Operation of paddy collection and processing *	75,400	73,100
Operation of paddy dryer *	2,500	2,500
Cost for material paddy **	519,900	538,600
(Total)	597,800	614,200

* including salary for staffs, labor fee, office expense and depreciation reserve.

** subject to paddy price @1650 VND/kg.

2) Revenue

Item	Amount (US\$)	
	Gao Giong Coop.	Phu Tho Coop.
Operation of rice mill and collective marketing	605,800	621,700
- Sales of material rice	(554,500)	(574,300)
- Sales of by-products	(27,100)	(27,500)
- Commission processing service	(24,300)	(19,900)
Operation of paddy dryer	2,700	2,700
(Total)	608,500	624,400

Revenue is subject to following price condition : Material rice @2550 VND/kg, Husk @30 VND/kg, Bran @1000 VND/kg, Commission processing fee @65 VND/kg

3) Profit

Item	Amount (US\$)	
	Gao Giong Coop.	Phu Tho Coop.
Operation of rice mill and collective marketing	10,500	9,900
Operation of paddy dryer	200	200
(Total)	10,700	10,100

Note : Expenditure, Revenue and Profit of Gao Giong Coop. are average of 3 years operation consists of 1 year with 3 crops and 2 years with 2 crops.

Table N3.3.1 Harvest time in Dong Thap province

Harvested area in year 1999 unit : ha

Year	1999												2000													
	Date	5-Feb	25-Feb	5-Mar	15-Mar	25-Mar	5-Apr	15-Apr	25-Apr	5-May	15-May	25-May	5-Jun	15-Jun	25-Jun	5-Jul	25-Jul	15-Aug	25-Aug	5-Sep	15-Sep	24-Sep	5-Oct	25-Oct	5-Nov	
Hong Ngu District	637	4,363	1,812	688	3,643	3,357	4,930	0	0	0	0	0	50	127	350	1,253	12,745	3,925	1,111	0	870	0	0	0	0	0
Tan Hong District	985	9,915	5,100	1,045	2,255	2,055	645	0	0	0	0	0	0	100	400	1,878	15,122	3,876	0	0	0	0	0	0	0	0
Tan Nong District	0	2,300	4,125	2,237	8,477	6,961	3,077	0	0	0	0	0	0	270	530	2,655	11,296	5,498	0	30	30	0	0	0	0	0
Thanh Binh District	251	2,949	4,581	5,879	3,887	2,253	1,325	0	46	64	0	0	430	691	1,604	3,129	11,070	3,856	128	530	1,069	351	248	0	0	
Cao Lanh District	30	8,360	5,457	5,435	5,896	2,067	1,594	0	113	63	0	0	3,496	10,574	5,031	1,125	6,777	1,222	5,315	1,226	8,889	49	151	0	0	
Thap Moui District	5,968	10,077	6,275	2,858	4,222	3,739	668	978	1,213	3,240	488	10,074	5,347	2,023	8,096	4,972	6,212	2,468	7,833	6,158	21,982	0	0	0	0	
Other Districts & Towns	2,476	10,946	12,544	7,577	7,756	3,418	3,091	3	12	257	488	4,387	10,360	8,096	4,972	6,212	5,181	1,663	7,330	10,615	6,935	5,296	0	0	0	

Harvested area in year 2000 unit : ha

Year	Date	10-Feb	25-Feb	5-Mar	15-Mar	25-Mar	5-Apr	15-Apr	25-Apr	5-May
Hong Ngu District	0	200	212	488	778	3,822	7,000	(continue...)	(continue...)	(continue...)
Tan Hong District	1,500	500	1,523	2,677	1,600	8,200	3,000	(continue...)	(continue...)	(continue...)
Tan Nong District	0	35	0	62	353	3,716	14,394	(continue...)	(continue...)	(continue...)
Thanh Binh District	13	82	110	440	1,365	5,457	5,947	(continue...)	(continue...)	(continue...)
Cao Lanh District	0	0	20	900	1,388	6,692	8,115	(continue...)	(continue...)	(continue...)
Thap Moui District	8,500	1	199	1,650	3,635	7,800	3,198	(continue...)	(continue...)	(continue...)
Other Districts & Towns	40	2,510	608	3,567	6,660	18,019	7,858	(continue...)	(continue...)	(continue...)

Source : Sawing & harvest reports, Dong Thap DARD

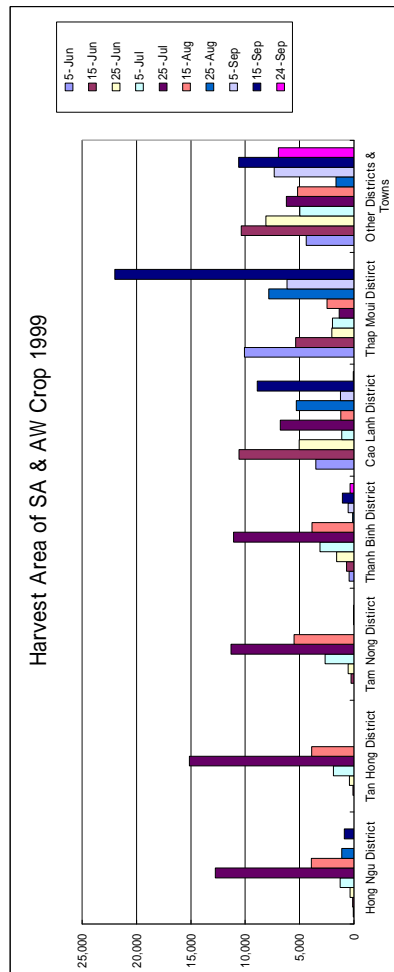
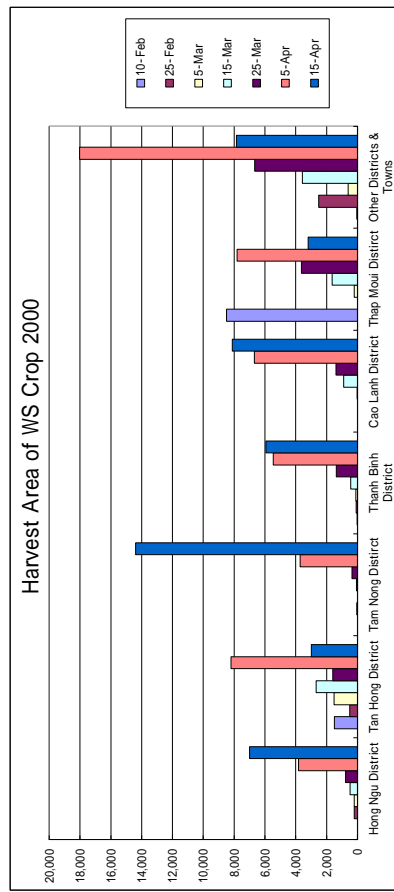
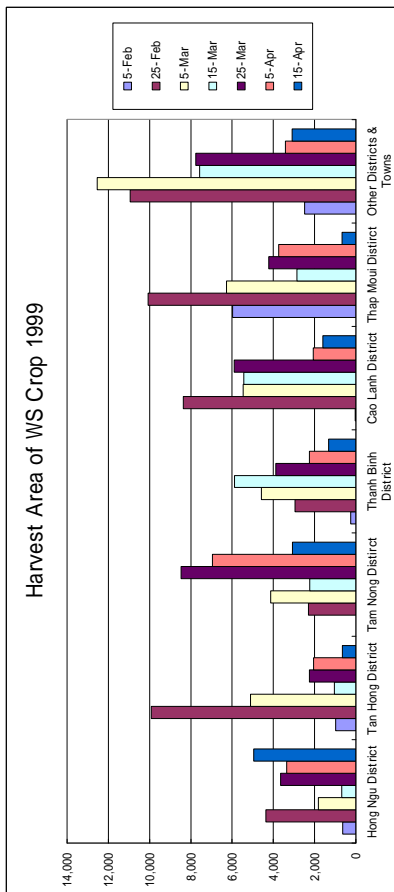


Table N3.3.2 Specification of Material Rice

PHAT TAI (private polisher) at Lap Vo, Dong Thap Province (April-6-2000)

	Grade I	Grade II
length of kernel	6.4 mm	6.2 mm
moisture content	15.5%	15.5%
chalky kernel	4%	6%
broken	20%	25%
buying price	@2150 /kg	@2100 /kg
processing return rate	* for 5% Broken Rice with 100 kg of material rice 60 kg product 30 kg broken 9 kg bran 1 kg loss * for 10% Broken Rice with 100 kg of material rice 65 kg product 25 kg broken 9 kg bran 1 kg loss	

TAN THANH 3 (private polisher) at Sa Dec, Dong Thap Province (April-8-2000)

	for export rice 5% broken	for export rice 10% broken
length of kernel	6.2 mm	6.2 mm
moisture content	max. 16.5%	max. 16.5%
chalky kernel	less 6%	less 6%
red kernel	4 - 5% acceptable	4 - 5% acceptable
paddy	40 grain /kg	40 grain /kg
broken	check by glance	check by glance
buying price	@2200 /kg	@2100 - 2150 /kg
processing return rate	* for 5% Broken Rice with 100 kg of material rice 57 kg product 26 kg broken { large 15 kg 16 kg bran { medium 7 kg 1 kg loss { small 4 kg need process 3 times	

Note : Have no definite specification for material rice.

In case collect material rice for 10% from An Giang, for 5% from Can Tho & Soc Trang,

Impossible to collect material rice for 5% from Dong Thap.

Total shipment quantity in 1999 : about 15,000 tons

DOCIMEXCO (Dong Thap Province SOE)

	Grade I		Grade II			
	for 5%	for 10%	for 15%	for 20%	for 25%	for 35%
Moisture content (Max.)	14.0 - 14.5%	14.5 - 15.0%	14.5 - 15.0%	14.5 - 15.0%	14.5 - 15.5%	14.5 - 15.5%
Foreign matter (Max.)	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%
Paddy grain (Max.) grain/kg	50	60	70	70	80	80
Broken kernel (Max.)	7%	12%	17%	22%	28%	38%
Whole grain (Min.)	65%	61%	57%	53%	49%	41%
cracked (Max.) out of whole	5%	6%	7%	8%	9%	9%
Chalky kernel (Max.)	6.0%	7.0%	7.0%	8.0%	8.0%	10.0%
Red kernel, Red stripe kernel	2.0%	3.0%	4.0%	6.0%	8.0%	8.0%
Yellow	0.4%	0.5%	1.0%	1.0%	1.0%	1.0%
Immature	0.5%	2.0%	2.5%	3.0%	3.5%	4.0%
Damaged (diseased)	0.75%	1.0%	1.2%	1.5%	2.0%	2.0%
buying price	WS-1999 : @2400/kg WS-2000 (April-25) : @1950/kg		WS-1999 : @2300/kg WS-2000 (April-25) : @1850-1900/kg			

Table N3.3.3 Rice Price Data of DongThap Province

(1) Jan. - Oct. 1999

(unit : VND/kg)

Date /2	06-Jan-99	03-Feb-99	12-Feb-99	03-Mar-99	08-Apr-99	06-May-99	02-Jun-99	01-Jul-99	04-Aug-99	08-Sep-99	06-Oct-99
Buying price of Food company											
Material Rice 1st grade		2700 - 2750		2,400	2400 - 2450				2,450	2380 - 2400	2,250
Material Rice 2 nd grade		2550 - 2600		2,300	2300 - 2350				2,380	2,350	2,150
Selling price of Food company											
Broken 1/2		2,500		2,300	2,300				2,600	2,600	2,350
Broken 2/3		2,400		2,000	1,800				2,200	2,150	2150 - 2200
Polishing bran		900 - 1000		900	900				1,050	950	1,250
Whitening bran		1200 - 1300		1,000	1,000				1,150	1,050	1,300
Paddy price at district /1											
Cao Lanh Town	1,925	1,975	1,925	1,725	1,800				1,775	1,750	1,700
Sa Dec Town	1,850	-	2,000	1,750	1,750				1,800	1,800	-
Lap Vo district	1,750	1,900	1,850	1,625	1,725				1,775	1,700	-
Chau Thanh district	1,900	2,100	2,000	1,650	1,725				1,775	1,800	1,600
Lai Vung district	1,700	-	1,800	1,600	1,775				1,800	1,750	-
Thap Muoi district	1,850	2,000	1,850	1,650	1,700				1,750		1,550
Thanh Binh district	1,850	1,900	1,800	1,600	1,650				1,775	1,775	1,600
Tam Nong district	1,850	-	1,950	1,650	1,700				1,775	1,775	1,650
Hong Ngu district	1,875	-	1,800	1,550	1,650				1,725	1,775	-
Tan Hong district	1,875	1,875	1,800	1,625	1,625				1,775	1,800	-
Average	1,843	1,958	1,878	1,643	1,710				1,773	1,789	1,620
Difference (highest - lowest price)	225	225	200	200	175				75	100	150
Average price of Dong Thap Province											
Ordinary paddy	1,925	1,850	1,950	1,750	1,750	1,700	1,800	1,775	1,800	1,750	1,650
Ordinary rice	3,300	3,300	3,400	2,900	3,000	3,000	3,000	3,000	2,900	2,900	2,900
		New crop					Old crop	New crop			SA crop

(2) Jan. - Apr. 2000

(unit : VND/kg)

Date /2	05-Jan-00	12-Jan-00	20-Jan-00	26-Jan-00	12-Feb-00	17-Feb-00	23-Feb-00	08-Mar-00	22-Mar-00	29-Mar-00	05-Apr-00	26-Apr-00
Buying price of Food company												
Material Rice 1st grade	2600	2550	2570	2560		2450 - 2480	2450	2200	2180	2180	2100	2000 - 2020
Material Rice 2 nd grade	2500	2500	2500	2500		2350 - 2400	2350	2150	2100	2020	2000	1850
Selling price of Food company												
Broken 1/2	2250	2250	2250 - 2300	2250		2200	2100	1950	1800	1800	1800	1800
Broken 2/3	2100	2150	2150	2000		1900	2000	1800	1700	1700	1700	1600
Polishing bran	1500	1700	1900	2100		2200	2200	1700	1600	1550	1250	1300
Whitening bran	1600	1800	2000	2200		2300	2300	1600	1650	1600	1300	1400
Paddy price at district /1												
Cao Lanh Town	2100 - 2150	2100 - 2150	2100 - 2150	1900 - 2000	1900 - 2100	1900 - 2200	1900 - 2000	1800	1500 - 1550	1500	1500	1350 - 1400
Sa Dec Town	2000	2100	2100	2100	1900 - 2100	2000	2000		1450 - 1500	1450 - 1500	1450 - 1500	1350
Lap Vo district	2000	2000	2000	2000		1900	1900	1550 - 1600	1500 - 1550	1400 - 1450	1400 - 1450	1250
Chau Thanh district	2100	2100	2100	2100		2050	2050	1650 - 1700	1400 - 1500	1400 - 1500	1500 - 1600	1350
Lai Vung district	1800	1950	1850	1850		2000	2000	1700 - 1750	1500	1400 - 1450	1400 - 1450	1300 - 1350
Thap Muoi district	1900 - 2000	2000	1800	1900		1900		1750	1400 - 1500	1400	1400 - 1500	1300 - 1350
Thanh Binh district	2000 - 2050	2000 - 2100	2000 - 2100	2000 - 2100		2100		1700 - 1750	1400 - 1500	1400	1400	1250 - 1300
Tam Nong district	2000	2000 - 2100	2000 - 2100	2000 - 2100		2100		1750	1450 - 1500	1500	1400	1250 - 1300
Hong Ngu district	1900 - 2000	1900 - 2000	1900 - 2000	1900 - 2000		1900 - 2000	1900 - 2000	1750	1400 - 1500	1350 - 1400	1400	1200 - 1250
Tan Hong district	1850 - 1900	1950	1950	1950		1900		1650	1500 - 1550	1500	1400	1200 - 1250
Average	1983	2,028	1,998	1,990	2,000	1,995	1,975	1,711	1,483	1,460	1,420	1,298
Difference (highest - lowest price)	350	250	350	300	200	300	150	200	150	150	200	200
Average price of Dong Thap Province												
Ordinary paddy	2100	2100	2100	2050		2050	1800	1650	1500	1450	1450	1350
Ordinary rice	3200	3200	3200	3300	3300	3300	3300	3000	2800	2800	2800	2700

Source: Thi trung (Daily price information magazine issued by Pricing Committee HCMC)

1/ price data collected by Pricing division of each district.

2/ issue date of the magazine

(3) Export price and its material rice price of private polisher

	Aug-99			March-00		
1st Grade material rice *	2700-2750	2700	2650	2250	2200	2180
2nd grade material rice *	2600	2550-2600	2500	2150	2100	2070
5% broken rice **	\$222	--	--	\$190	--	--
10% broken rice **	--	\$216	--	--	\$183	--
15% broken rice **	--	--	\$212	--	--	\$177

Source : Cty TNHH CHIEN THANG, Sa Dec, Dong Thap province

* VND/kg, buying price at factory

** US\$/ton, FOB Saigon port

Table N3.3.4 Export Rice Cost Composition of DAGRIMEX (for SA Crop-1999)

A. Milling paddy to material rice

	unit	5%	10%	15%	20%	25%
1 Paddy purchasing at warehouse	VND/kg	1,650	1,650	1,650	1,650	1,650
2 Milling to normal material rice						
Return rates						
- Material rice	%	66	66	66	66	66
- Milling bran	%	10	10	10	10	10
- Husk	%	20	20	20	20	20
- Broken	%	1	1	1	1	1
- Loss	%	3	3	3	3	3
3 Milling fee	VND/kg	40	40	40	40	40
4 Value of by-products						
- Milling bran	VND/kg	1,500	1,500	1,500	1,500	1,500
- Husk	VND/kg	50	50	50	50	50
- Broken	VND/kg	2,100	2,100	2,100	2,100	2,100
5 Sales of by-product						
- Milling bran	VND/kg	150	150	150	150	150
- Husk	VND/kg	10	10	10	10	10
- Broken	VND/kg	21	21	21	21	21
Total	VND/kg	181	181	181	181	181
6 Paddy cost + Milling fee	VND/kg	1,690	1,690	1,690	1,690	1,690
Price of Material rice at rice mill						
7 (not include by products)	VND/kg	2,286	2,286	2,286	2,286	2,286
Transport fee to company's						
8 polishing factory	VND/kg	20	20	20	20	20
9 Prime price of material rice	VND/kg	2,306	2,306	2,306	2,306	2,306

B. Polishing material rice to export rice

	unit	5%	10%	15%	20%	25%
1 Price of material rice	VND/kg	2,306	2,306	2,306	2,306	2,306
2 Processing fee	VND/kg	90	90	90	60	60
3 Return rates						
- Rice	%	56	60	66	77	81
- Broken 1/2	%	25	21	16	6	
- Broken 3/4	%	2.5	2.5	2.5	2.5	4.5
- Bran	%	15	15	14	13	13
- Loss	%	1.5	1.5	1.5	1.5	1.5
4 Value of by-products						
- Broken 1/2	VND/kg	2,500	2,500	2,500	2,500	2,500
- Broken 3/4	VND/kg	2,200	2,200	2,200	2,200	2,200
- Bran	VND/kg	1,200	1,200	1,200	1,200	1,200
5 Sales of by-product						
- Broken 1/2	VND/kg	625	525	400	150	0
- Broken 3/4	VND/kg	55	55	55	55	99
- Bran	VND/kg	180	180	168	156	156
Total amount	VND/kg	860	760	623	361	255
6 Prime price of polished rice	VND/kg	2,744	2,727	2,687	2,604	2,607

C. Export price at Saigon port

	unit	5%	10%	15%	20%	25%
1 Prime price of polished rice	VND/kg	2,744	2,727	2,687	2,604	2,607
2 Packing	VND/kg	40	40	40	40	40
3 Transport to Saigon port	VND/kg	50	50	50	50	50
4 Handling charge	VND/kg	40	40	40	40	40
5 Management fee	VND/kg	10	10	10	10	10
6 Bank interest	VND/kg	60	60	59	57	57
7 Export cost	VND/kg	2,944	2,927	2,886	2,801	2,804
Exchange to USD (ex. 14000)	USD/MT	210.3	209.1	206.1	200.1	200.3

Source : DAGRIMEX (08 June 1999)

Table N3.3.5 Characteristic of Export Paddy Variety

Variety name	Yeild (ton/ha)		Length of grain (mm)	Total milled rice (%)	Whole grain (%)	Chalky level *
	WS crop	SA crop				
IR 62065	7 - 8	5 - 6.5	7.2	69.6	50.6	5
OM 1270	7 - 8	5 - 6	6.7	64.3	38.5	1
IR 56279	7 - 8	5 - 6.5	6.7	65.6	54.9	1
IR 64	7 - 8	5 - 5.5	6.8	68.7	48.5	0
OMCS 96	7 - 8	5 - 6	6.6	74.4	64.4	1
VND 95-20	7 - 8	5 - 6	6.8	68.2		1

Source : Report for Project on Development of Rice export area 1999-2010, Dong Thap Province

* Chalky level : 0/nil, 1/less 10%, 5/11-20%, 9/over 20%

Table N3.3.6 Milling yeild at Private rice mill in Phu Tho Hamlet

Paddy to Material rice	for 15% export rice (%)	for 10% export rice *
Paddy	100	100
Husk	22	22
Bran	7	7
Small broken	3.5	7.5
Medium broken	2.5	2.5
Loss	1	1
Material rice (product)	64	60
Whole grain **		67.6
Head rice **		10.2
Large broken **		5.4
Medium broken **		7.5
Small broken **		5.4
Chip **		nil
Paddy **	7 8 grains/kg	

Data collected by hearing, F/S

* : processing speed is 150 kg/hr lower than processing for 15% export rice

** : result of sample analysis in Japan. broken sizes are as follows.

Head rice : 8/10

Large broken : 8/10 - 5/10

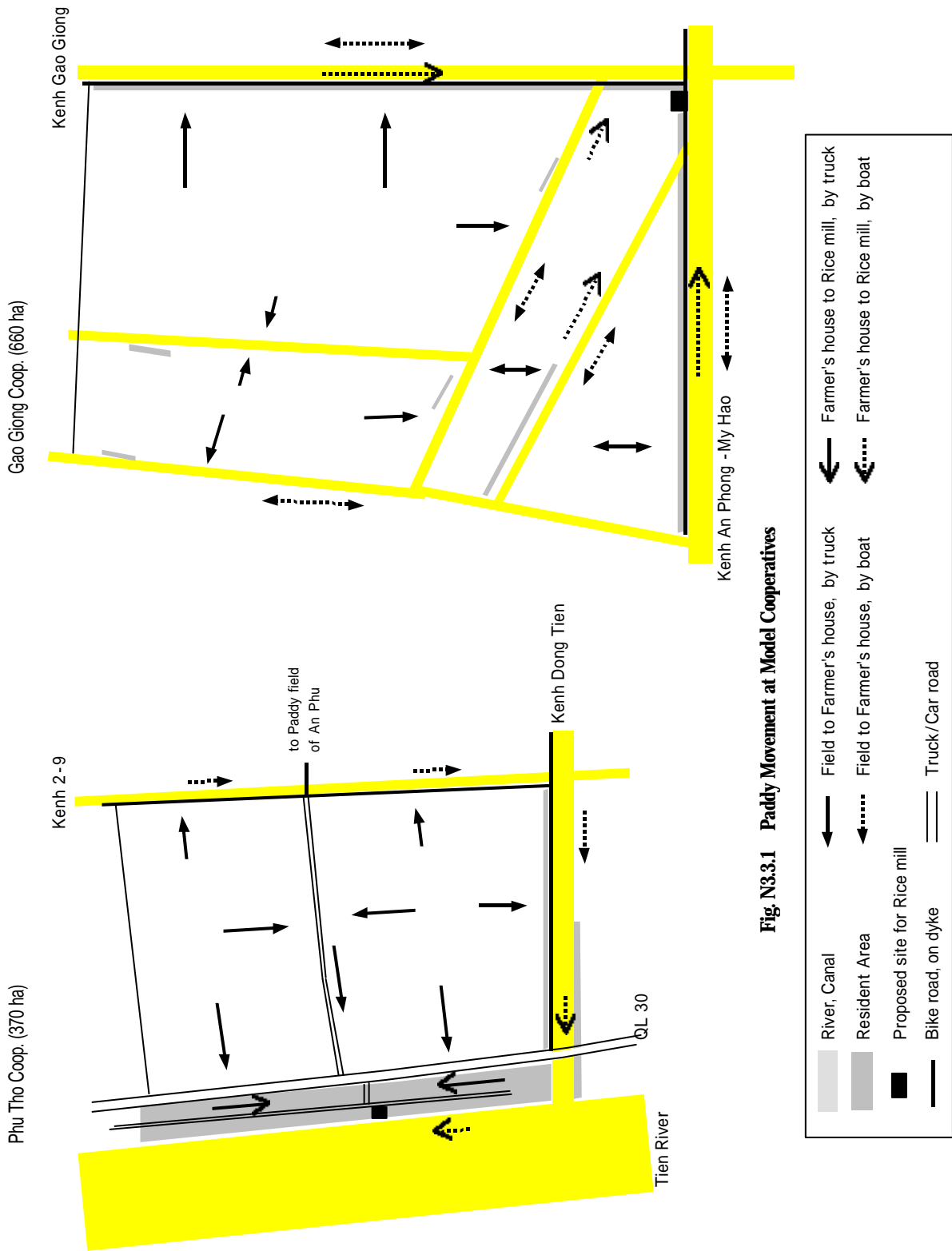
Medium broken : 5/10 - 2.5/10

Small broken : 2.5/10 - 1.4mm

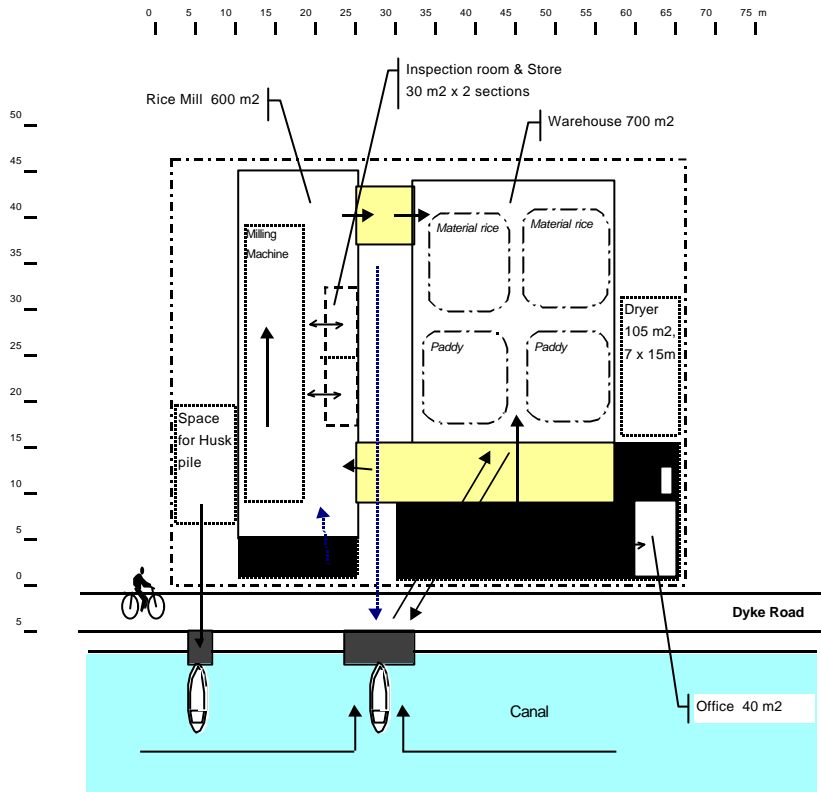
Chip : 1.4 - 1.0 mm

Table N3.4.1 Major contents of Equipment

Item	Unit	Gao Giong	Phu Tho	Remarks
Quality Inspection Equipment				
Grain moisture meter	unit	2	2	for milled rice for paddy
Grain moisture meter	unit	1	1	
Test husker	unit	2	2	Portable type Digital, 5kg/1g
Balance	unit	1	1	
Sample divider	unit	1	1	Brauer type
Whiteness meter	unit	1	1	
Grain volume-weight tester	unit	1	1	
Test milling machine	unit	1	1	
Information and Office Equipment				
Personal computer	unit	1	1	Desk top
Printer	unit	1	1	
Facsimile	unit	1	1	



Gao Giong Coop.



Phu Tho Coop.

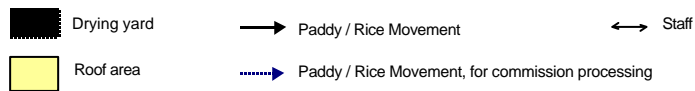
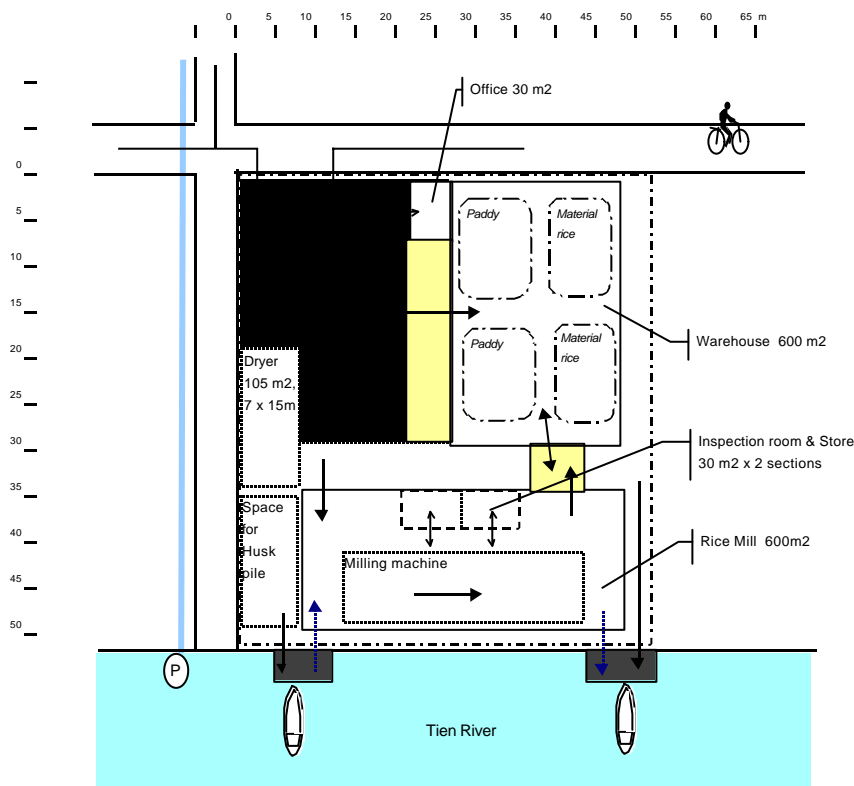
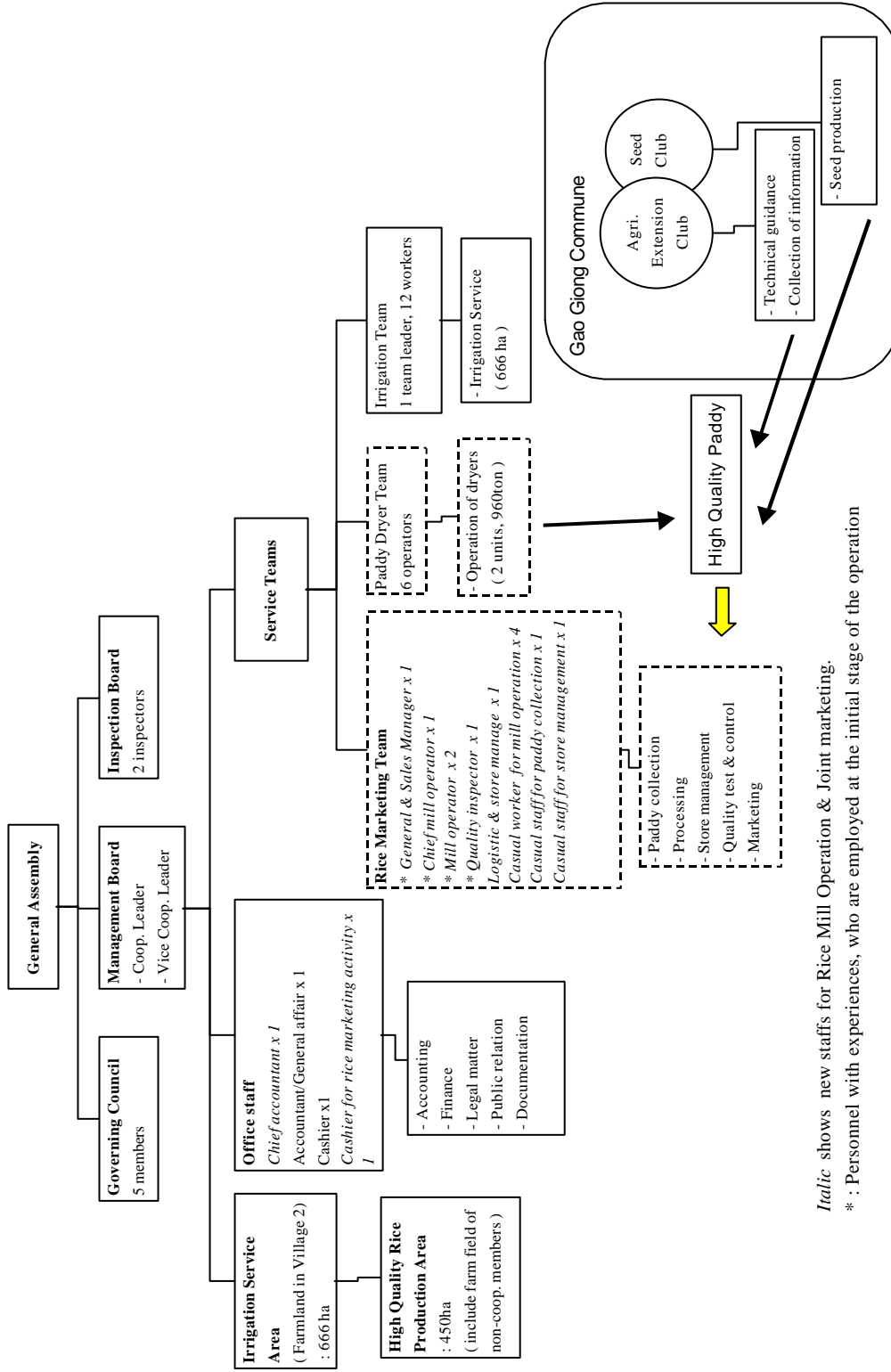


Fig N3.4.1 Facility Layout Plan

Organization plan

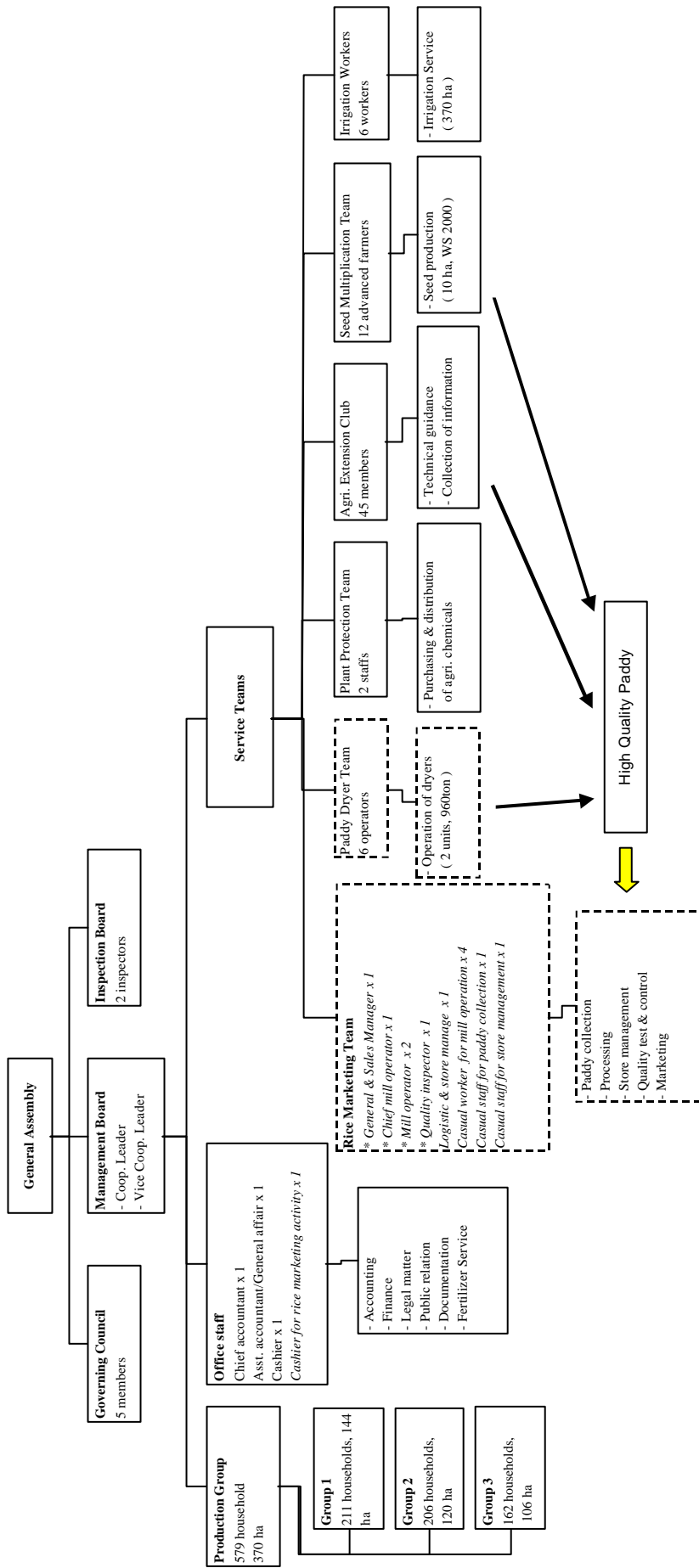


Italic shows new staffs for Rice Mill Operation & Joint marketing.

* : Personnel with experiences, who are employed at the initial stage of the operation

Fig. N3.4.2 (1) Organization Chart of Medel Cooperative, Gao Gieng Coop.

Organization plan



Italic shows new staffs for Rice Mill Operation & Joint marketing.

* : Personnel with experiences, who are employed at the initial stage of the operation

Fig. N3.4.2 (2) Organization Chart of Medel Cooperative, Phu Tho Coop.

Attachment N3.1 Result of Paddy Quality Test

(1) Test samples

Test A : - 3 samples of farmer's paddy from Phu Tho Coop

Variety : IR841

Crop : year 2000, WS Crop

These samples have used 4-5 crops. Original seed was obtained through the district extension officer.

Test B : - 2 samples of farmer's paddy from Gao Giong Coop.

Variety : VND95-20

Crop : year 2000, WS Crop

These 2 samples have used 2 crops. Original seed was obtained from An Phong Seed Station.

- 1 sample of certified seed (VND95-20) from An Phong Seed Station.

Variety : VND95-20

Crop : year 2000, WS Crop

(2) Test conducted by

South Regional Centre for Variety Evaluation and Seed Certification in HCMC

(3) Equipment and Glossary of rice quality terms

described in the attached results

(4) Test result

as per attached



SOUTH REGIONAL CENTRE FOR VARIETY
EVALUATION AND SEED CERTIFICATION (SCVESC)
135 Pasteur, HCNC. Tel/ Fax: 84-8. 8229085

TEST A

PADDY QUALITY TESTING

Unit: %

Serial No.	Specifications	Sample 1 (NGA)	Sample 2 (HAI)	Sample 3 HTX
1	Moisture content	14.4	12.2	13.1
2	Inert matter	2.98	3.54	3.78
3	Husk	22.30	21.47	21.55
4	Brown rice (after husking)	74.72	74.99	74.67
5	Red grains (after husking)	7.70	2.74	1.08
6	Immature grains (after husking)	4.07	2.15	3.46
7	Total milled rice	66.07	66.65	66.73
8	Bran	8.15	8.04	7.90
9	Whole grain	39.63	40.60	39.81
10	Big brokens	12.21	13.00	12.17
11	Small brokens	14.23	13.05	14.75
12	Red grains (after milling)	0.92	0.33	0.10
13	Streak grains (after milling)	4.72	4.81	3.98
14	Damaged grains (after milling)	0.35	0.32	0.15
15	Chalky grains (after milling)	2.51	4.92	3.00

Analyst

Huong Le Khang



SOUTH REGIONAL CENTRE FOR VARIETY
EVALUATION AND SEED CERTIFICATION (SCVESC)

135 Pasteur, HCNC. Tel/ Fax: 84-8. 8229085

TEST B

PADDY QUALITY TESTING

Unit: %

Serial No.	Specifications	Sample 1 VND 95-20	Sample 2 VND 95-20 6 Hùng	Sample 3 VND95-20 Mặt	Sample 4
1	Moisture content	13.1	13.7	13.2	14.5
2	Inert matter	0.40	1.60	2.10	2.40
3	Husk + inert matter	21.20	24.25	24.00	25.89
4	Brown rice (after husking)	78.80	75.75	76.00	74.11
5	Red grains (after husking)	0.50	2.37	3.61	3.84
6	Immature grains (after husking)	3.01	3.22	3.64	2.65
7	Total milled rice	70.01	67.84	68.33	65.58
8	Bran	8.13	8.51	8.25	9.04
9	Whole grain	49.82	39.82	44.71	39.38
10	Big brokens	10.69	13.90	11.52	10.74
11	Small brokens	9.50	14.12	12.10	15.46
12	Red grains (after milling)	0.16	1.64	1.88	1.40
13	Damaged grains (after milling)	0.31	0.35	0.72	0.48
14	Chalky grains (after milling)	3.86	4.25	4.67	9.01

* Sample 2 (6 Hùng) had very high moisture content (19,1 %), It was dried to 13.7 % before testing quality

Equipment:

Moisture content was determined by oven method

Oven: SHELLAB, USA, Made in 1999

Analytical balance SCIENTECH, USA, 1999, d = 0,1 mg

Milling machine: SATAKE, Japan, 1992

Glossary of rice quality terms:

- Chalky grains: Grains with > 50 % chalkiness
- Immature grains: Grains with greenish caryopsis or brown rice
- Damaged grains: Distinctly discolored or damaged by water, insects, heat, or any other means.
- Big brokens: grains which are of 0.5-0.8 the length of whole grain
- Small brokens: Grains which are of less than 0.5 the length of whole grain

Analyst

Bùi Ngọc Tuyền

Table 1 - Characteristics of white Rice

Grades	Grain classification			Grain composition			Other kernels, not exceeding (%)								Milling degree			
	Very long grain L > 7.0 mm	Long grain L : 6.0 - 7.0 mm	Short grain L < 6.0 mm	Whole kernel (%)	Size (mm)	Broken and small broken %	Small broken %	Red kernel	Red streaked kernel and under-milled kernel	Yellow kernel	Chalky kernel	Damaged kernel	Waxy kernel	Immature and malformed kernel		Impurities	Paddy (grain per kg)	Moisture
100% class A	≥ 10	.	≤ 10	> 60	(0.5 - 0.8)L	< 4.0	≤ 0.1	0	0.25	0.2	5	0.25	1.5	0	0.05	10	14.0	Extra well milled
100% class B	≥ 10	.	≤ 10	≥ 60	(0.5 - 0.8)L	< 4.5	≤ 0.1	0	0.5	0.2	5	0.50	1.5	0	0.05	10	14.0	Extra well milled
5%	≥ 5	.	≤ 15	≥ 60	(0.35 - 0.75)L	5.0 ± 2	≤ 0.2	2	2	0.50	6	1.00	1.5	0.2	0.1	15	14.0	Well milled
10%	≥ 5	.	≤ 15	≥ 55	(0.35 - 0.7)L	10 ± 2	≤ 0.3	2	2	1.00	7	1.25	1.5	0.2	0.2	20	14.0	Well milled
15%	.	.	< 30	≥ 50	(0.35 - 0.65)L	15 ± 2	≤ 0.5	5.00	5.00	1.25	7	1.50	2.0	0.3	0.2	25	14.0	Reasonable
20%	.	.	< 50	≥ 45	(0.25 - 0.60)L	20 ± 2	≤ 1.0	5.00	5.00	1.25	7	1.50	2.0	0.5	0.3	25	14.5	Reasonable
25%	.	.	< 50	≥ 40	(0.25 - 0.5)L	25 ± 2	≤ 2.0	7.00	7.00	1.50	8	2.00	2.0	1.5	0.5	30	14.5	Ordinary
35%	.	.	< 50	≥ 32	(0.25 - 0.5)L	35 ± 2	≤ 2.0	7.00	7.00	2.00	10	2.00	2.0	2.0	0.5	30	14.5	Ordinary
45%	.	.	< 50	≥ 28	(0.25 - 0.5)L	45 ± 2	≤ 3.0	7.00	7.00	2.00	10	2.50	2.0	2.0	0.5	30	14.5	Ordinary
5%	.	.	> 75	≥ 60	(0.35 - 0.75)L	5 ± 2	≤ 0.2	2.0	2.0	0.5	6	1.00	1.5	0.2	0.1	15	14.0	Well milled
10%	.	.	> 75	≥ 55	(0.35 - 0.7)L	10 ± 2	≤ 0.3	2.0	2.0	1.00	7	1.25	1.5	0.2	0.2	20	14.0	Well milled
15%	.	.	> 70	≥ 50	(0.35 - 0.65)L	15 ± 2	≤ 0.5	5.0	5.0	1.25	7	1.50	2.0	0.3	0.2	25	14.0	Reasonable
20%	.	.	> 70	≥ 45	(0.25 - 0.6)L	20 ± 2	≤ 1.0	5.00	5.00	1.25	7	1.50	2.0	0.5	0.3	25	14.5	Reasonable
25%	.	.	> 70	≥ 40	(0.25 - 0.5)L	25 ± 2	≤ 2.0	7.00	7.00	1.50	8	2.00	2.0	1.5	0.5	30	14.5	Ordinary
35%	.	.	> 70	≥ 32	(0.25 - 0.5)L	35 ± 2	≤ 2.0	7.00	7.00	2.0	10	2.00	2.0	2.0	0.5	30	14.5	Ordinary
45%	.	.	> 70	≥ 28	(0.25 - 0.5)L	45 ± 2	≤ 3.0	7.00	7.00	2.0	10	2.50	2.0	2.0	0.5	30	14.5	Ordinary

Notes

L Average length of rice kernel.