

# Efforts to improve rice quality both on-farm (**small holder**) and down the value chain

CARD Seminar via video conferencing

Seminar #2

October 19, 2012

## 1. Summary of Rice farming in Viet Nam

- **Overview of the country**
  - Located between 9 and 23 degrees north.
  - Climate is a tropical monsoon type with the northern area has cold winters.
  - Area of 331,000 km<sup>2</sup> km<sup>2</sup> with a coastline more than 3,000 km long.
  - 5 regions: the mountainous north with peaks above 3,000 meters; the Red river delta, the Annamite mountain range (AMR); the narrow coastal strip between AMR and the South China sea; and the Cuu Long (Mekong) delta.
  - Total population: 87 million inhabitants in which 70% living in rural areas.
  - Agriculture area is 25 million ha, in which 9.6 million ha for agricultural production.



## 1. Summary of Rice farming in Viet Nam


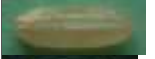





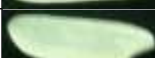

- Key data of national rice farming
  - Tropical monsoon climate suitable for Indica rice type
  - Rice cultivation area # 3.8 million ha  
(Cuu long delta # 2.0 million ha, Central rice growing area # 0.8 million ha and Northern rice growing area # 1,0 million ha )
  - Area of photosensitive, local rice varieties occupies about 7% of total rice growing area in Viet Nam.
  - Rice production # 41.5 million tons in the year of 2011.
  - The average of rice yield is about 5,3 tons/ ha in 2011.
  - Export of rice kernels reached 7.1 million tons in 2011.
  - The average export price of rice kernels = 495USD/ton in the year 2011

- 3 main rice growing ecosystems: the Cuu Long delta (irrigated rice variety); the Red river delta ( irrigated and rainfed rice); and the highlands of the north (upland rice).
- Improved rice varieties account for more than 80% rice growing areas in Viet Nam.
- Area of 2 rice crops/year # 3.2 million ha
- Rice-Shrimp farming system accounts for more than 120,000.0 ha in the Cuu Long delta.
- 100% mechanization in soil preparation, 50% of rice areas harvested by combine harvester in the Cuu Long delta.
- About 40% rice growing area using qualified rice seeds nowadays.

## 2. Rice varieties produced in Viet Nam

Variety	Production Area (ha)	Amount (Mil. tons)	Consumption (%)	
			Domestic	Export
Khang Dan	400,000.0	2,080,000.0	Yes, 50%	Yes, 50%
ML48	100,000.0	520,000.0	Yes, 100%	No
IR 50404	500,000.0	2,600,000.0	Yes, 50%	Yes, 50%
Jasmine 85	200,000.0	1,040,000.0	Yes, 50%	Yes, 50%
OM 2517	200,000.0	1,040,000.0	Yes, 50%	Yes, 50%
OM 5451	300,000.0	1,560,000.0	Yes, 50%	Yes, 50%
OM 4900	400,000.0	2,080,000.0	Yes, 50%	Yes, 50%
OM 6976	500,000.0	2,600,000.0	Yes, 50%	Yes, 50%
OM 4218	300,000.0	1,560,000.0	Yes, 50%	Yes, 50%
Other varieties	900,000.0	4,680,000.0	Yes, 100%	No
National Total	3,800,000.0			

## 2. Rice varieties produced in Viet Nam

Variety	Photo of rice grain	Main usage	Cooking method
Khang Dan		Meal, Animal Feed	Boiling
ML48		Meal, Animal Feed	Boiling
IR 50404		Meal, Animal Feed	Boiling
Jasmine 85		Meal	Boiling
OM 2517		Meal, Animal	Boiling
OM 5451		Meal	Boiling
OM 4900		Meal	Boiling
OM 6976		Meal, Animal Feed	Boiling
OM 4218		Meal, Animal Feed	Boiling

## **2. Rice varieties produced in Viet Nam**

- Quality standard for rice
  - Long grain  $\geq 7.0$  mm
  - Moisture # 13%
  - Foreign material # 0%
  - Total white # 70% ( $\pm 0.5$ )
  - Whole grain # 58% ( $\pm 0.5$ )
  - Chalky kernels # 5%
  - Disease # 0.25 - 0.50%
  - Amylose content  $< 25\%$

## **3. Pre/Post-harvest works on paddy fields**

- Water management prior to harvesting:
  - Apply Alternative wet dry water management method.
  - Water or wet soil should be kept in the field when flowering until 2 weeks after that.
  - Discharge water to dry the soil before harvest:
    - Yes, normally 1 - 2 weeks before harvest
  - In some areas, specially in the wet season, water still stands in the field when harvest.

### 3. Pre/Post-harvest works at paddy field (cont.)

- Harvesting
  - When to start harvesting  
After 100% grains fully matured.
  - Is machine used for harvesting?  
Yes, nearly 50% of rice production area in the Cuu Long delta using combined harvester nowadays.
  - If manually harvested, which part of the plant is cut?  
1/3 part of stem along with panicle harvested
  - How the harvested plants are treated immediately after harvesting (laid on the paddy field or not?)  
Laid on the field for 1 day in manual harvest

### 3. Pre/Post-harvest works at paddy field (cont.)

- Threshing
  - What kind of equipment is used? (Please insert picture if available)



Threshing machine



Combine harvester



Combine harvester

- Appearance of the rice grain after threshing (Please insert picture)



### 3. Pre/Post-harvest works at paddy field (cont.)

- Drying
  - Common drying practices (sun-drying, small dryer, etc.)



Sun drying



on farm dryer



heat dryer in the rice mill

- If dryer is used, to whom does it belong? (individual, group, a small company, or a large company)

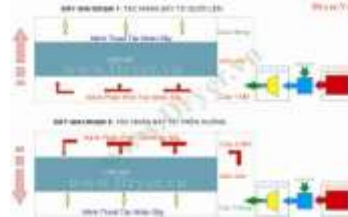
Individuals

Small and large companies.

### 3. Pre/Post-harvest works at paddy field (cont.)

- Drying

- Measures to dry the grains evenly (insert pictures if appropriate)



- Measures to prevent introduction of pebbles/foreign matters (insert pictures if appropriate): checked by brokers



### 3. Pre/Post-harvest works at paddy field (cont.)

- What are the specifications of the rice shipped out of the farms' gate (moisture content, pebbles, packed in sacks, etc.)? i.e. What are the responsibilities of the farmers before shipping?
- Properly stored at the right moisture content for storing.
- Insert pictures (mandatory)

	Specifications
Moisture content	< 13 %
Removal of pebbles	100% done by farmers
Packaging in sacks	Packed in 50 kg sack

#### 4. Milling facilities

- Data on the size and number of milling facilities in [your country]  
Capacity of 5-20 tons/hour/ unit, do not know how many units, but have the milling capacity is of 40 mil. tons/year.
- Main milling stations used by Small-scale farmers (insert pictures)
  - Small-scale milling facilities in the vicinity of the rice fields? Yes, a movable milling facility owned by individuals (figure 1) and usually small milling of just few kilometer away from farmers (figure 2)
  - Large-scale milling facilities far from their village? Yes



Figure 1



Figure 2

- Transport to the milling stations
  - Transported by farmers? brokers? Or Millers?: Farmers, Brokers
  - Mode of transport: Boat, motorcycle and small truck

#### 4. Milling facilities (cont.)

- Milling facilities
  - Outline of milling equipment and storage facility at milling facilities (insert pictures as appropriate)
    - Cleaning
    - Separating
    - Whitening
    - Polishing
    - (Grading and Color sorting)
  - Method of drying at milling facilities (What kind of equipment is used for drying?) (insert pictures as a
    - Heat drying





#### 4. Milling facilities (cont.)

- Quality of rice output from milling facilities
  - Appearance: 40% of whole kernels
  - Moisture content: 14 – 15%
- What tricks are being applied at milling facilities to ensure rice is milled properly?
  - Increase the moisture up to 14 - 15%

#### • Export standard of Vietnamese long grain rice

Specification	WR5%	WR10%	WR15%	WR25%
Broken ( % max)	5.0	10.0	15.0	25.0
Moistures ( % max)	14.0	14.0	14.0	14.0
Red streaked ( % max)	1.0	1.5	2.5	5.0
Yellow kernels ( % max)	0.5	0.75	1.0	1.0
Chalky kernel ( % max)	6.0	7.0	7.0	8.0
Damaged ( % max)	0.75	1.0	1.25	1.5
Immature kernels( % max)	0.2	0.2	0.3	0.5
Glutinous kernels ( % max)	1.0	1.0	1.5	2.0
Foreign matter ( % max)	0.1	0.2	0.2	0.5
Paddy ( grain/ kg max)	15	20	25	30
Milling degree	Well milled & polished	Well milled & polished	Well milled	Reasonable well milled