

COST OF PRODUCTION AT THE MILL LEVEL

NATIONAL RICE INDUSTRY
CONFERENCE

Monday July 27, 2015

Arthur Chung Convention Center

RICE MILLING FLOW PLAN

▣ **PADDY INTAKE**

- Weighing, sampling, dockage, moisture testing, grading
- DETERMING PADDY PRICE
- Weighing – to determine quantity of paddy delivered (KG)
- Dockage – to determine waste material (%)
- Moisture Testing – to determine size of parcel – mts or bag (%)
- Grading – to determine grade and price to be paid (\$)

▣ **PADDY DRYING & STORAGE**

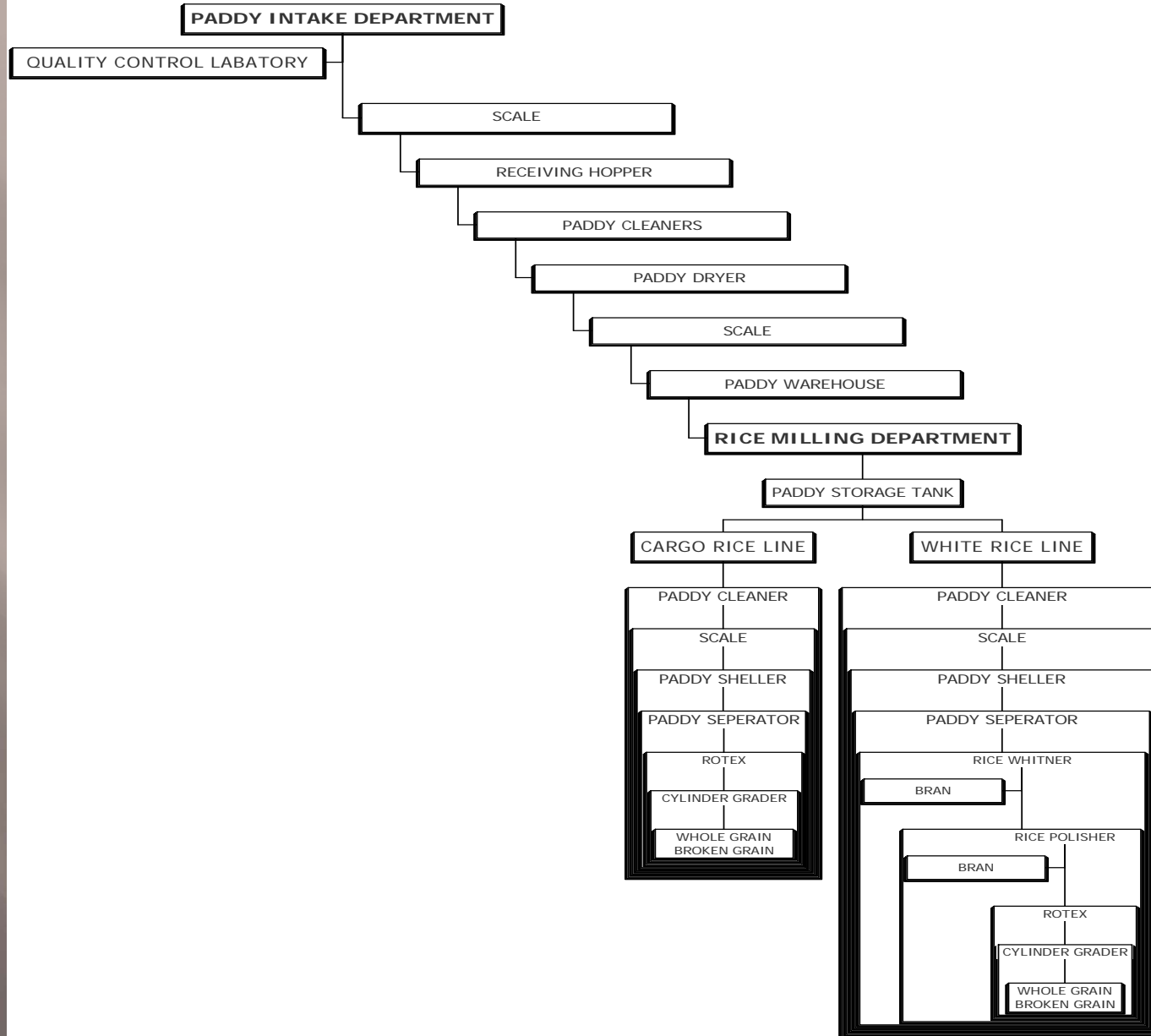
- Cleaning, drying & storage

▣ **MILLING**

- Cargo Rice, White Rice, Parboil Rice

FAIRFIELD RICE INC.

Rice Mill Flow Chart



RICE MILLING COST OF PRODUCTION

% of TOTAL COST

- ▣ **PADDY INTAKE – 5%**
 - Human Resources
- ▣ **PADDY DRYING - 35-40%**
 - Electricity & Heat Generation
- ▣ **MILLING - 40-45%**
 - Electricity
- ▣ **MARKETING - 15-20%**
 - From Mill gate to Market
 - Freight, Export Costs

RICE MILLING COST OF PRODUCTION

- ▣ PADDY COST - >75% of Total Expenses
- ▣ Electricity/Fuel - 20-22 %
- ▣ Direct Expenses including Electricity - 60-62%
- ▣ Direct Expenses excluding Electricity - 40-42%
- ▣ Administrative Expenses - 15-18%
- ▣ Marketing Expenses - 3-5%
- ▣ Finance Expenses - 3-5%
- ▣ Shipment from Mill to Port - 17-18%
- ▣ Wages & Salaries - 18-20%
- ▣ Depreciation - 10%

RICE MILLING

REDUCING THE COST OF PRODUCTION

▣ PADDY INTAKE

- Not much can be done to lower cost of production

▣ PADDY DRYING

- Electricity - using biomass (shell) to generate power
 - In limited use in Guyana (Gasifier)
 - Major Capital Investment
- Heat Generation – using biomass (shell) to generate heat
 - Most of the larger mills either use shell or wood to generate heat

▣ MILLING

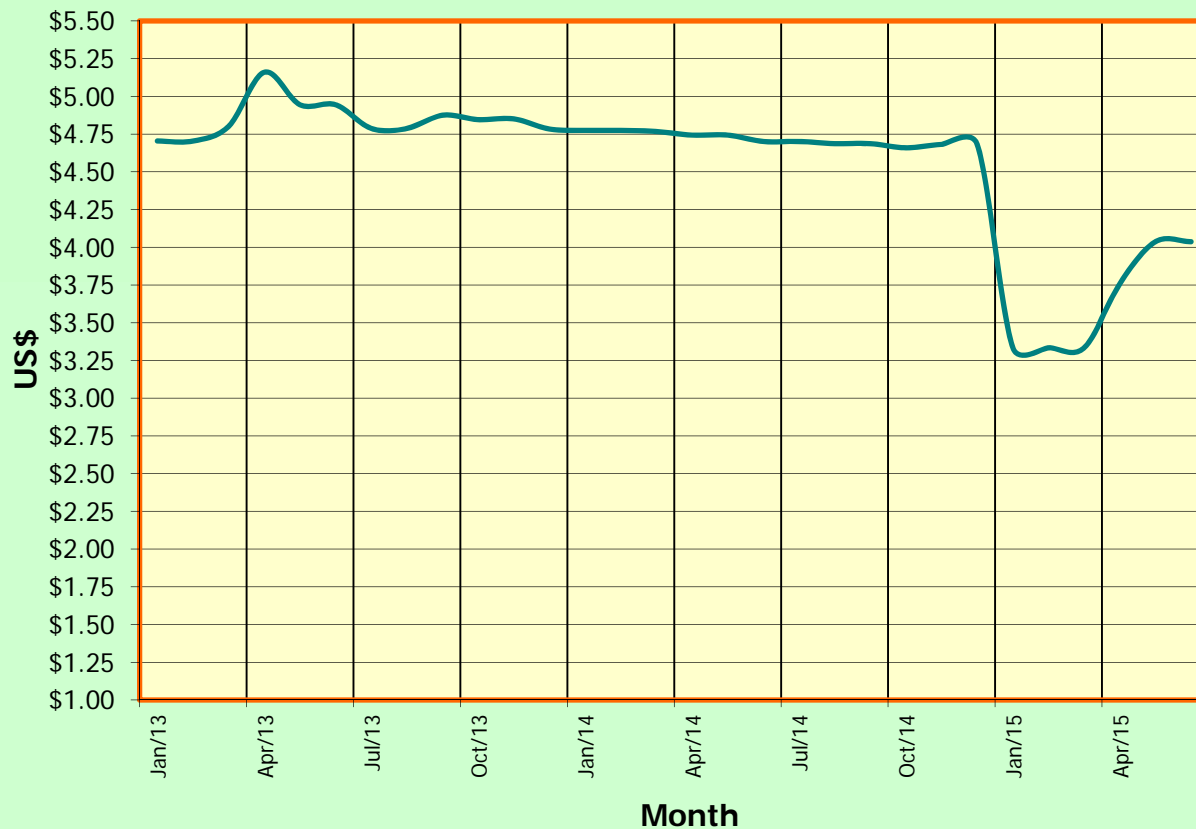
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▣ MARKETING

- Coordinated approach by GREMA with assistance from GRDB/Govt.
- Result in major boost to small millers

FUEL COSTS

Fairfield Rice Inc.
Fuel Cost - US\$/Gal - Jan '13 to Jul '15



After being stable for 2 years, in Jan '15 price reduced by 29%, but this has not lasted long - already up by 21%

COST OF PRODUCTION VARIABLE VS FIXED COSTS

- ▣ **Variable Costs** – those costs that vary depending on production e.g. large portion of electricity, mill & drier wages, rubber rolls, empty bags, export costs, etc.
- ▣ **Fixed Costs** – those costs that don't change according to production levels e.g. small portion of electricity, admin & supervisor wages, security, insurance, etc.

COST OF PRODUCTION VARIABLE VS FIXED COSTS

- ☐ SALES
- ☐ LESS EXPENSES
 - Paddy Cost
 - Variable Costs \$/mt
 - Fixed Costs \$/month
- ☐ NET PROFIT

PANAMA MARKET					
SALES	Mts	FOB PRICES	US\$		
White Rice	2,024.40	475.00	\$961,591		
Cargo Broken	32.20	233.00	\$7,503		
White Broken	276.75	263.00	\$72,785		
Bran	365.70	61.00	\$22,308		
	2,699.05			\$1,064,186	
EXPENSES					
Paddy (mts)	3,677				
Paddy (140lb bags)	56,672	2,735	\$754,248		
Variable Costs	2,024	91.73	\$185,698		
Fixed Costs			\$68,083		
TOTAL				\$1,008,029	
					\$56,157

COST OF PRODUCTION

- ▣ Unlike at the farm level COP at the mill level varies according to the product produced/sold
- ▣ Venezuela – Paddy (Bulk)
- ▣ EU – 70% Milling Yield Cargo Rice (Bulk)
- ▣ Jamaica – 20-25% Broken White Rice (45kg bags)
- ▣ Panama – 20% Broken White Rice (20lb bags)
- ▣ Venezuela - 5% Broken White Rice (50kg bags)
- ▣ Trinidad – 10% Broken Parboiled Rice (Packaged)

COST OF PRODUCTION AT THE MILL LEVEL

- ❑ Very complicated to determine
- ❑ Many variables –
 - Cost of Paddy
 - Quality of Rice to be Produced – this will determine Quantity of Paddy required to produce 1 mt of Rice
 - Efficiency of the mill's drying & milling systems
- ❑ Therefore, each mill will have a different cost of production and
- ❑ Therefore should independently determine the price it can afford to pay for paddy
- ❑ This should never be imposed by Government
- ❑ We need to let the market forces of supply & demand determine the price of paddy – these forces already determine the price of rice on the international market

REDUCING COSTS – ADDING VALUE

▣ REDUCING COSTS

- Using Biomass to generate heat to dry paddy
- Using Biomass to generate electricity
- Using modern advanced technology equipment

Unfortunately, all these require significant capital investment in order to accomplish

▣ ADDING VALUE

- Selling rice instead of paddy
- Producing Parboiled Rice
- Producing Packaged Rice
- Producing specialty rice products
- Using bi-products to produce value added products

INTERNATIONAL RICE PRICING

▣ IDEAL WORLD

Farmer's Cost of Production + Profit → Paddy Price → Miller's Cost of Production + Profit → FOB Rice Price → Exporter's Cost of Production + Profit → CIF Price → Foreign Buyer's Cost of Production + Profit → Market Price

▣ REAL WORLD

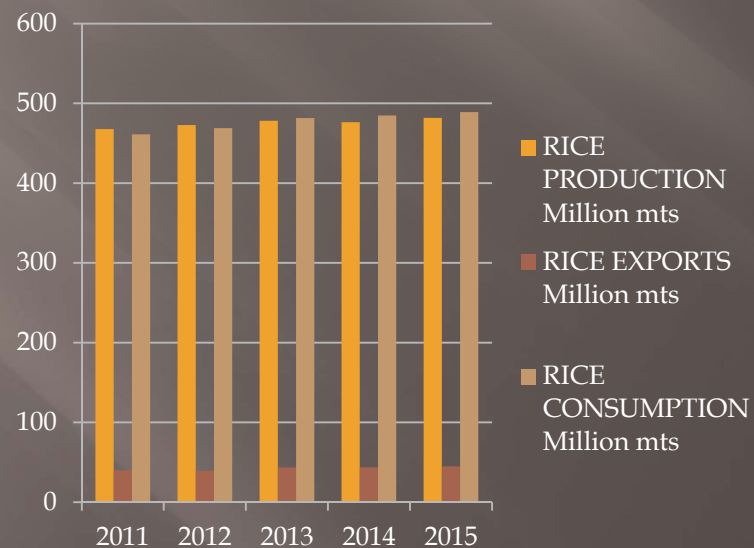
Farmer's Cost of Production +/- Profit ← Paddy Price ← Miller's Cost of Production + Profit ← FOB Rice Price ← Exporter's Cost of Production + Profit ← CIF Price ← Foreign Buyer's Cost of Production + Profit ← Market Price determined by the interaction of demand and supply

INTERNATIONAL RICE PRICES

- ▣ RICE IS ONE OF THE MOST VOLATILE AGRICULTURAL COMMODITIES PRICE WISE
- ▣ LESS THAN 10% OF THE WORLD'S PRODUCTION IS TRADED
- ▣ THEREFORE A 1 % INCREASE IN THE WORLD'S PRODUCTION CAN THEROTICALLY RESULT IN OVER 10 % INCREASE IN EXPORTS
- ▣ 1ST RULE OF ECONOMICS – SUPPLY AND DEMAND
- ▣ IF YOU INCREASE SUPPLY AND DEMAND REMAINS CONSTANT - PRICES WILL FALL

WORLD RICE STATISTICS

YEAR	RICE PRODUCTION Million mts	RICE EXPORTS Million mts	Exports as a % of Production	RICE CONSUMPTION Million mts	Consumption as a % of Production	RICE ENDING STOCKS Million mts
2011	467.7	40.0	8.6%	461.0	98.6%	106.9
2012	472.7	39.5	8.4%	468.9	99.2%	110.7
2013	478.2	43.4	9.1%	481.5	100.7%	107.4
2014	476.3	43.7	9.2%	484.7	101.8%	98.9
2015	481.7	44.9	9.3%	489.0	101.5%	91.4



EXPORTS TO VENEZUELA

VENEZUELA	2010	2011	2012	2013	2014	2015
PADDY	63,481	120,729	153,631	102,702	138,000	120,000
WHITE RICE	22,274	49,450	68,093	127,175	49,995	74,000
TOTAL	87,765	172,190	223,736	231,890	190,009	196,015
WHITE RICE EQUIVALENTS	54,015	109,815	144,909	178,526	118,995	134,000
PADDY EQUIVALENTS	108,029	219,629	289,817	357,052	237,990	268,000
PERCENT INCREASE/ DECREASE FROM PREVIOUS YEAR		103%	32%	23%	-33%	13%
					-25%	

GUYANA'S RICE EXPORTS BY DESTINATION

DESTINATION	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 Jan-Jun	2015 (Est)
EU	92,137	101,203	139,411	99,500	135,991	153,836	55,523	40,688	79,022	101,672	91,535	183,070
Holland	43,970	56,463	69,130	56,297	45,958	41,161	10,360	11,161	15,111	25,470	11,004	22,008
Portugal	36,268	34,400	59,161	33,165	54,678	65,851	20,547	7,851	28,201	41,479	39,367	78,734
UK	0	3,678	2,393	217	5,118	10,357	7,495	8,620	21,982	18,779	2,880	5,760
CARICOM	64,002	73,157	89,425	69,450	88,485	88,709	79,644	69,349	77,990	88,435	43,672	87,344
Jamaica	38,369	43,747	51,565	42,199	55,934	48,754	48,971	37,125	45,222	50,264	25,980	51,960
Trinidad	19,747	21,997	28,452	19,186	22,866	29,865	22,210	20,937	23,619	24,328	12,610	25,220
OCT	9,275	8,474	7,789	5,715	3,988	1,311	35	23	0	0	0	0
OTHERS	16,761	21,742	32,811	21,568	32,351	92,437	170,180	224,081	237,976	311,100	141,688	186,962
Venezuela	0	0	0	0	0	85,755	170,180	221,724	229,877	187,995	73,583	79,583
Panama	180	143	3,630	3,473	790	731	0	28	4,884	59,279	8,508	17,016
Nicaragua	0	0	0	0	0	0	0	0	0	35,170	30,693	45,693
Brazil	0	1,994	3,000	0	0	0	0	0	40	12,173	12,656	12,656
Haiti	15,313	19,127	20,791	13,703	24,881	5,766	0	468	1,175	10,350	10,021	20,042
Colombia	0	0	276	706	1,064	0	0	0	1,005	2,525	1,808	3,616
TOTAL	182,175	204,576	269,436	196,233	260,815	336,293	305,382	334,141	394,988	501,207	276,895	457,376
Venezuela as a % of Total						25.5%	55.7%	66.4%	58.2%	37.5%	26.6%	17.4%
EU as a % of Total	50.6%	49.5%	51.7%	50.7%	52.1%	45.7%	18.2%	12.2%	20.0%	20.3%	33.1%	40.0%
Caricom as a % of Total	35.1%	35.8%	33.2%	35.4%	33.9%	26.4%	26.1%	20.8%	19.7%	17.6%	15.8%	19.1%