Analysis of the Marketing Potential of SRI Rice in Kegalle District, Sri Lanka

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1. Introduction

For almost 30 years Oxfam Australia (OAus) has been working to alleviate poverty among very poor families in Sri Lanka through participatory community-based development. In 2003, it recognised the System of Rice Intensification (SRI) as an approach to rice cultivation that could increase the household food security, and possibly income, of poor farming families and reduce their dependence on costly farming inputs. OAus teamed up with Mr. H. M. Premaratne, a SRI farmer, to evaluate and promote SRI techniques in various parts of the country, primarily through OAus' community-based organisation (CBO) partners. OAus' involvement in the initial years was tentative, small-scale and mostly experimental, assessing the feasibility and possibilities of SRI techniques for very poor, mostly women, farmers.

As OAus' confidence in the potential benefits of SRI cultivation grew, the agency gradually increased its commitment and is now preparing to publicise and popularise the approach in a more considered and strategic manner. Hence, it was decided to undertake a multi-faceted exploration that could be used to inform strategies and guide the setting of priorities in the future. This report documents the findings of a preliminary investigation into the marketing potential of SRI rice in Sri Lanka and forms part of the larger study.

The SRI approach is currently being promoted by OAus through partner organisations in Anuradhapura, Kegalle, Polonnaruwa, Hambantota, Matara, and Ampara districts. OAus' experience has shown, as documented in a companion report on SRI productivity, that the use of SRI techniques can improve yield, sometimes quite significantly, and substantially reduce the cost of inputs. However, the SRI approach is significantly more labour-intensive, at least at first, than conventional paddy-growing methods. This increased labour requirement, along with scepticism over yield potential among government officials and extension workers, has slowed the adoption rate of this approach. Another OAus report, also part of the same study, looked at farmers' perceptions of SRI rice and indicates that most people believe SRI rice to be better tasting and healthier than conventionally-grown rice that is cultivated using mostly chemical inputs.

OAus instigated this pilot project primarily to explore whether people would purchase SRI rice at slightly higher than the market rate for other rice varieties and, through this, determine whether SRI farmers could also sell their produce at above-market rates. This would provide an added incentive for farmers to adopt this approach.

2. Objectives of the study

The main purpose of this study was to inform OAus' efforts in promoting SRI cultivation techniques among very poor farmers by investigating the marketing potential of SRI rice through analysing customer responses to a SRI rice marketing initiative. The study covers a period of 5 months, from mid November 2006 to mid April 2007, and is based on the transactions in various SRI rice varieties from a sales outlet in Warakapola town, Kegalle district.

The specific objectives of the study were:

1. To assess the market potential for a higher-priced SRI rice among consumers in one district.
2. To identify consumer preferences from among varieties of SRI rice.
3. To examine consumer perceptions and issues of SRI rice marketing and solicit ideas for promoting SRI rice as a value added and higher priced alternative to conventional rice.

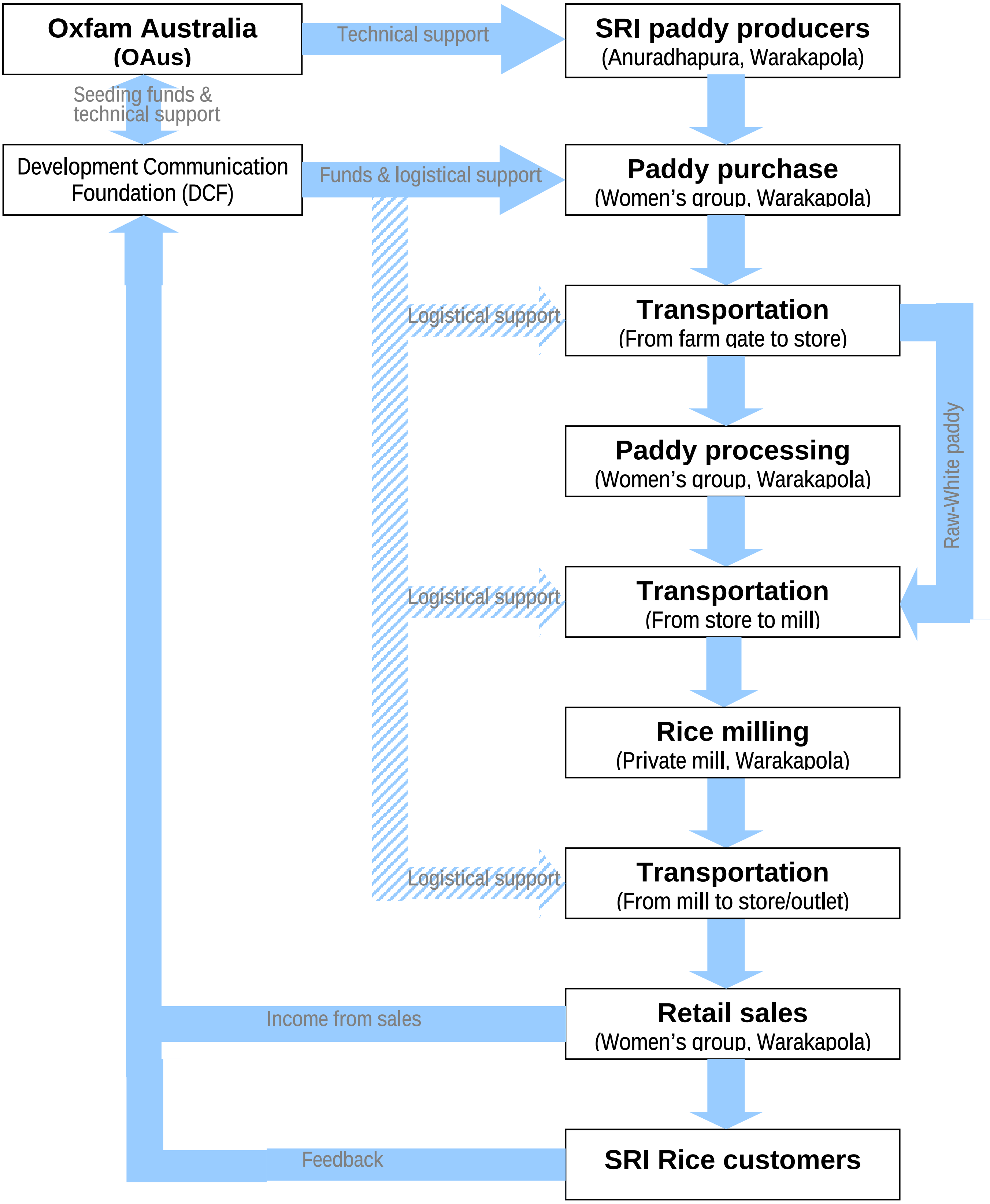


Figure 1: Schematic Presentation of Marketing Channel of SRI Rice Experiment

3. Methodology

This study was undertaken by Oxfam Australia (OAus) in conjunction with its partner Development Communication Foundation (DCF), a Kegalle-based community-based organisation (CBO), and involved the purchase, transport, processing, promotion and sale of SRI rice through a make-shift sales outlet in Warakapola. The choice of Kegalle, a relatively prosperous district close to Colombo, as the trial location means that great caution should be used in generalising these results. A 'livelihoods group' consisting of five poor women was engaged to collect, process and sell SRI products, with the paddy coming from SRI rice producers, again mainly groups of women in Anuradhapura and Kegalle districts (see Figure 1).

The paddy was purchased from the producers at approx. Rs.1.00/kg above prevailing farm gate rates and transported to Warakapola where it was processed into either raw or parboiled rice and sold as Samba, Nadu or Raw-White. An initial batch of Raw-Red was also produced and sold. The women who undertook the processing were also responsible for selling the products through the sales outlet in Warakapola town. The rice was sold loose, in 5 kg and later in 50 kg biodegradable bags.

A promotional campaign was conducted in Warakapola town by staff of DCF in late November 2006 and again in late January 2007, primarily targeting local government offices in the area. A 750g 'easy carry' pack was produced which carried information about the growing conditions, health benefits, quality and variety of the rice to promote SRI rice as a safe and nutritionally-rich alternative to conventional rice. The retail price of the SRI rice was determined at the sales outlet, set at approximately 10% above prevailing market prices for comparable, conventionally-grown rice varieties.

Promotional campaign team visiting the Agrarian Service Centre at Warakapola

Records were kept at the sales outlet on the selling prices, volume and value of transactions, variety preferences, and the number, characteristics and frequency of customers. These data were then aggregated by fortnight. Problems occurred in ensuring a steady supply of the SRI rice, and this affected sales of certain varieties at different times. This was particularly so with the Raw-Red that was only available during the first fortnight. A rapid marketing appraisal, consisting of several focus group discussions, was also conducted with a total of 39 regular customers to ascertain key factors influencing their purchases and to elicit their ideas for future marketing of SRI rice.

4. Market analysis

4.1 Pricing structure

The prices at which the SRI rice was sold varied over the period between November 2006–April 2007, in line with market rates. As indicated in Table 1 below, the average fortnightly retail price of SRI Samba, Nadu and Raw-White was approx. 10 percent (8.8%-11.3%) higher than the open market prices for similar conventionally-grown varieties. The sharp price drop in April reflects the entry onto the market of the 2006/2007 Maha season crop.

Table 1: Sale prices, by rice variety

Fortnight	Samba (Rs/Kg)				Nadu (Rs/Kg)				Raw –White (Rs/kg)			
	SRI Rice		Open Market		SRI Rice		Open Market		SRI Rice		Open Market	
	Range	Average#	Range	Median	Range	Average#	Range	Median	Range	Average#	Range	Median
Nov-02	28-40	33.3	25-32	28.5	26-32	27.0	24-30	27.0	27	27.9	26	26
Dec-01	38-40	38.6	32-35	33.5	n/a	n/a	n/a	n/a	26	26.0	25	25
Dec-02	n/a	n/a	n/a	n/a	36	36	29-30	29.5	36	36.0	29	29
Jan-01	39	39.0	34-36	35.0	31-36	32.6	28-30	29.0	27	27.0	26	26
Jan-02	36-41	38.9	34-36	35.0	33-36	36.0	29-32	30.5	33	33.0	30	30
Feb-01	32-41	35.6	31-38	34.5	27-38	28.8	25-27	26.0	27-39	29.8	26-30	28
Feb-02	32-37	37.7	30-33	31.5	30-32	31.0	29-31	30.0	30-32	31.0	n/a	n/a
Mar-01	32-35	35.0	29-33	31.0	32	32.0	29-31	30.0	32	32.0	26-29	27.5
Mar-02	32-35	34.4	29-31	30.0	28-32	31.9	25-30	27.5	30-32	31.3	27-30	28.5
Apr-01	26-28	27.7	24-28	26.0	25-28	25.9	24-27	25.5	25-28	26.5	25-27	26
Average#		35.14		31.68		31.55		28.34		29.75		27.35
SRI selling price above open market				10.9%				11.3%				8.8%

Sales weighted average price. n/a = Not available

4.2 Quantity of sales (by rice variety)

The quantities of SRI rice sold during each fortnightly period are shown in Table 2 below. The total sales of Samba, Nadu and Raw-White were 2,171 kg, 1,972 kg, and 593 kg, respectively, but the fortnightly averages of 241 kg, 282 kg, and 59 kg, respectively, are more representative due to the unavailability of certain varieties at different times. (There is clearly insufficient data on Raw-Red variety to include in the analysis.)

Table 2: Fortnightly sales, by rice variety

Fortnight	Quantity sold (Kgs)				Total (Kgs)
	Parboiled		Raw		
	Samba	Nadu	Raw - White	Raw - Red	
Nov-02	345	Not available	152.5	91.5	589
Dec-01	236.75	Not available	2.25	Not available	239
Dec-02	Not available	86	60	Not available	146
Jan-01	61	594	4	Not available	659
Jan-02	274.75	139	10	Not available	423.75
Feb-01	438	558	250.5	Not available	1246.5
Feb-02	97	Not available	6	Not available	103
Mar-01	420	453	35	Not available	908
Mar-02	78	86	9	Not available	173
Apr-01	221	56	64	Not available	341
Total	2,171.5	1,972	593.25	91.5	4,828.25
Average#	241.3	281.7	59.3	N / A	582.3

Average excludes periods when variety not available

Based on these averages, the market share within the SRI segment for Samba, Nadu and Raw-White was 41.4%, 48.4% and 10.2%, respectively, as represented in Figure 2 below. However, the strong preference for parboiled compared with raw rice is tempered by the unavailability of Raw-Red, and may simply reflect consumer preference in the Warakapola area.

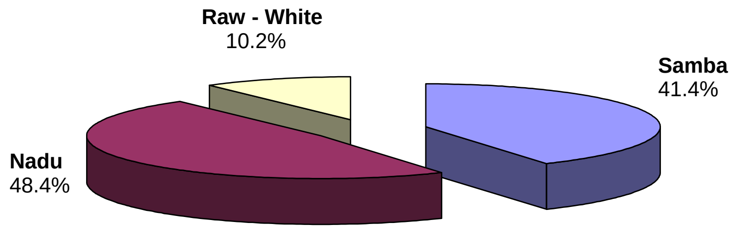


Figure 2: Composition of rice sold (by variety)

While the total monthly sales from January, February and March were reasonably stable at 1,083 kg, 1,350 kg, and 1,081 kg, three months are clearly insufficient to reliably predict any future volume of sales. Also, the level of sales fluctuated widely between fortnights, as seen more clearly in Figure 3 below. Aggregate sales during the first half of the month amounted to 3,384 kg compared with 1,425 kg during the second half, or an average of 677 kg and 285 kg, respectively. Discounting the fortnights when sales were directly influenced by the promotions (Nov-02, Jan-02 and Feb-01), average sales during the first fortnight were still over 50% more than the second, e.g., 335 kg compared with 210 kg.

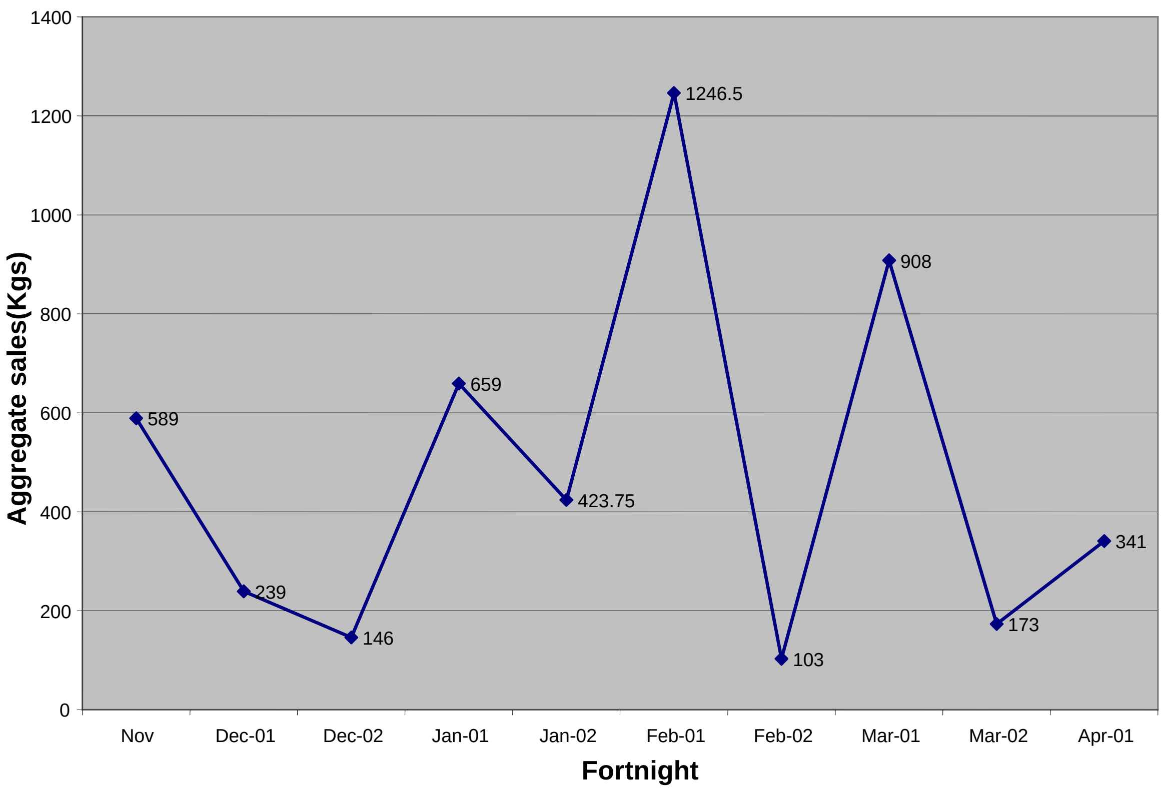


Figure 3: Aggregate of fortnightly sales (in kg)

4.3 Quantity of sales (by price)

Based on limited data, an analysis of Tables 1 & 2 suggests that price bears little relationship to total sales each fortnight, at least within the range tested during the trial. However, there has been no attempt to compare sales with the demand curve for rice in general, of which SRI rice is one segment. Even though the highest monthly aggregate sales were recorded in February when the sales-weighted average price was lowest, Figure 3 indicates that this is mainly due to the promotional campaign at the end of January. Total sales in January and March were virtually identical while the aggregate sales-weighted average price fell almost 5%, from Rs. 34.98/kg to Rs. 33.32/kg.

The choice between varieties varied between fortnights, with some indication that customers wavered between Samba and Nadu depending on the price differential. For example, in early January when sales-weighted average price of Samba and Nadu was Rs. 39.00/kg and Rs. 32.60/ kg, Nadu accounted for 90% of total sales. Later that same month when the sales-weighted average price of Samba remained relatively constant, at Rs. 38.90/kg but Nadu rose to Rs. 36.00/kg, Samba's share of total sales rose from 9.3% to 64.9%. The sales of Raw-White were insignificant throughout the month of January. However, the amount of data and the period under investigation are both inadequate to make any definitive conclusions here.

4.4 Purchasing Behaviour of Customers

The following Table 3 records the number of customers and visits to the sales outlet and the total SRI rice purchased each fortnight. From this, it can be interpreted that customers purchased an average of 13.7 kg on each visit, and each customer purchased on average 19.4 kg per fortnight, or approx. 40 kg/month.

Table 3: Number of Customer Visits and Average Purchases (per fortnight)

Fortnight	No. of customers	No. of visits	Average no. of visits per customer	Total purchased (kg)	Average purchase per customer (kg)	Average purchase per visit (kg)
Nov-02	46	57	1.2	589	12.8	10.3
Dec-01	16	18	1.1	239	14.9	13.3
Dec-02	10	12	1.2	146	14.6	12.2
Jan-01	28	32	1.1	659	23.5	20.6
Jan-02	43	64	1.5	424	9.9	6.6
Feb-01	29	57	2.0	1247	43.0	21.9
Feb-02	14	18	1.3	103	9.4	7.4
Mar-01	28	41	1.5	908	32.4	22.1
Mar-02	17	24	1.4	173	10.2	7.2
Apr-01	18	29	1.6	341	18.9	11.8
Total	**249**	**352**	**1.4**	**4829**	**19.4**	**13.7**

On average, customers purchased rice from the sales outlet 1.4 times/fortnight, or approx. 3 times per month. The total number of visits per month ranged from a low of 30 in December 2006 to 96 visits the following month, with an average of 70 per month. If the promotional periods (Nov-02, Jan-02, Feb-01) are discounted, there is again a significant difference between the average number of visits during the first fortnight (30) compared with the second (18). There is also a difference in the average purchase per visit with 17.9 kg during the first fortnight, compared with an average of 8.4 kg during the second fortnight.

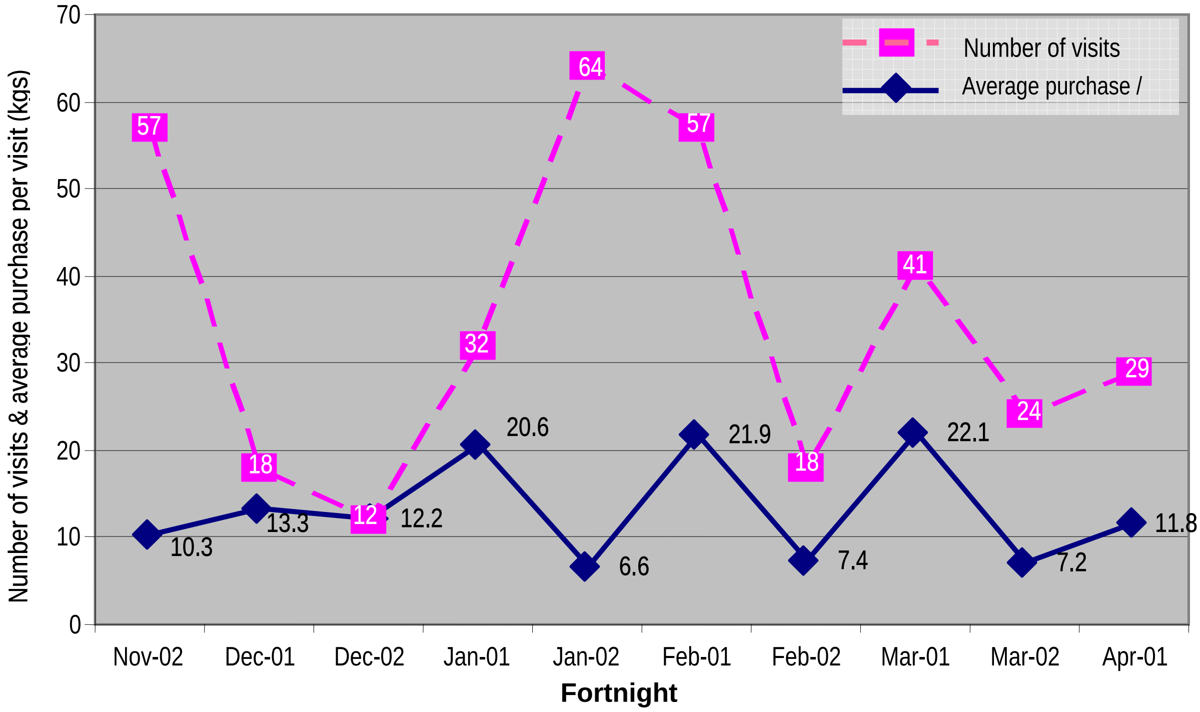


Figure 4: Number of visits and average purchase per visit.

5.0 Costing analysis

5.1 Costing structure of rice processing

For this pilot project, the groups involved in processing and selling the rice were paid a regular monthly allowance, comparable with open-market labour rates. This rate was not directly related to quantities handled and leaves some room for improved efficiencies. Based on a (very rudimentary) analysis of time required, the parboiling accounts for 80% of the labour cost, handling another 15%, and the remaining 5% in selling. While labour makes up much of the 'overhead costs', milling, transport and rent of the sales outlet are each significant. As seen from Figure 5, labour accounts for 35% of the total overhead costs, milling is 31%, rent 18%, and transport a further 16%.

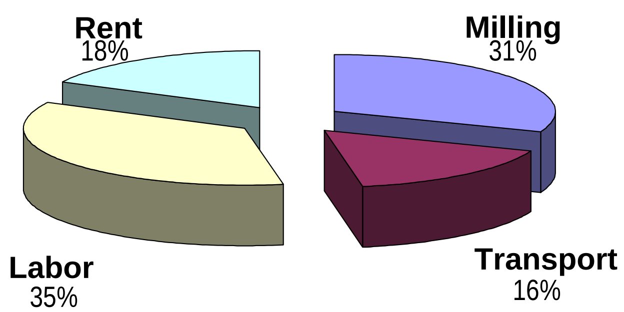


Figure 5: Processing and handling costs

5.2 Distribution of benefits

Total overhead costs varied between parboiled and raw rice, and this can be attributed almost wholly to the additional labour costs associated with the former. As seen in Table 4 below, the farmers' potential share of the retail price -- after overheads and an arbitrary but significant (25%) contingency to account for cost variations such as transport are deducted from the average selling price -- varies only slightly between varieties (54.5%-59.4%). But this represents an increase over the market price of conventionally-grown paddy of between Rs.1.81/kg (11.3%) for Raw-White to Rs. 4.18/kg (27.0%) for Samba and Rs. 2.43/kg. (16.2%) for Nadu.

Table 4: Farmer's Share, Marketing Cost and Margins of SRI Rice Marketing

Component	Samba		Nadu		Raw-White	
	Rs/kg	%	Rs/kg	%	Rs/kg	%
Average retail price	35.00	100.0	32.00	100.0	30.00	100.0
Processing costs	4.24	12.1	4.24	13.3	4.24	14.1
Labour costs	2.33	6.7	2.33	7.3	0.45	1.5
Contingency	8.75	25.0	8.00	25.0	7.5	25.0
Farmers' potential share	19.68	56.2%	17.43	54.5%	17.81	59.4%
Prevailing market price	15.50	44.3%	15.00	46.9%	16.00	53.3%

By closely monitoring the costs involved in handling, processing and selling of the paddy, then the farmers' share of the sale price may also rise from between 6%-12%.

6.0 Customer profile

6.1 Age and gender profile

On average, men comprised 69% of those purchasing rice from the sales outlet, with this ranging from 50% to 84% on a fortnightly basis. But on average, women bought almost twice that of men per visit, e.g. 28.0 kg/visit compared with 15.5 kg/visit. There is no apparent distinction between the varieties purchased by men and by women.

Figure 6 indicates that over 75% of customers were between 31-50 years of age, corresponding with the economically active sector in society and those most likely to be caring for dependents.

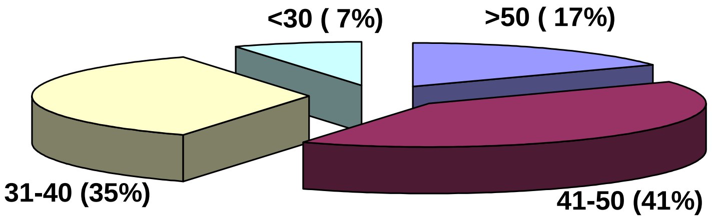


Figure 6: Age Distribution of SRI Rice Customers

6.2 Income characteristics

It was considered inappropriate to collect information on the income levels of customers directly, but the sellers observed that a majority appeared to be 'middle-class' wage earners rather than poor, daily labourers. This correlates with anecdotal evidence from prior OAus interviews of poor families being guided more by price than taste in purchasing their rice.

There is a danger that the purchase of SRI paddy at above-market value may encourage the poorest SRI farmers to sell their paddy and purchase lower-priced, conventionally-grown rice for personal consumption. However, the study into farmer's perceptions of SRI (Perera et al., 2007) concluded that poor farmers currently hand over most of their harvest to creditors, leaving them with insufficient stocks to last till the next harvest. A higher price for SRI rice would enable them to repay their debts with less paddy, leaving more for personal consumption.

7.0 Customer feedback

7.1 Key factors affecting the marketing of SRI rice

A Rapid Marketing Appraisal (RMA) was conducted with 39 customers to identify the factors and issues influencing the marketing of SRI rice. This was done in two focus group discussions in January and March 2007 where participants were asked to identify factors that would lead to increased sales of SRI rice in the future. The key factors were quality and choice, followed by price and the extent of the after-sales service.

Table 5: Problems/Issues Identified by the SRI Customers

Key factors	No of responses	% of responses	% of respondents
1. Improved quality control, e.g., stone-free, low moisture content	22	43	56
2. Greater variety of rice available, e.g., Samba, Kora, Nadu, Raw-white, Raw-red and traditional varieties	9	17	23
3. Sale of high-quality rice from paddy grown in other districts	8	16	20
4. Maintain a reasonable/affordable price	4	8	10
5. Delivery of rice purchases to customers' doorstep	3	6	8
6. Provision to return low-quality products	3	6	8
7. Opportunities to visit SRI fields and processing places	2	4	5
Total	51	100	131#

Some customers gave multiple responses.

The group of women who processed and sold the rice faced the following problems during their work.

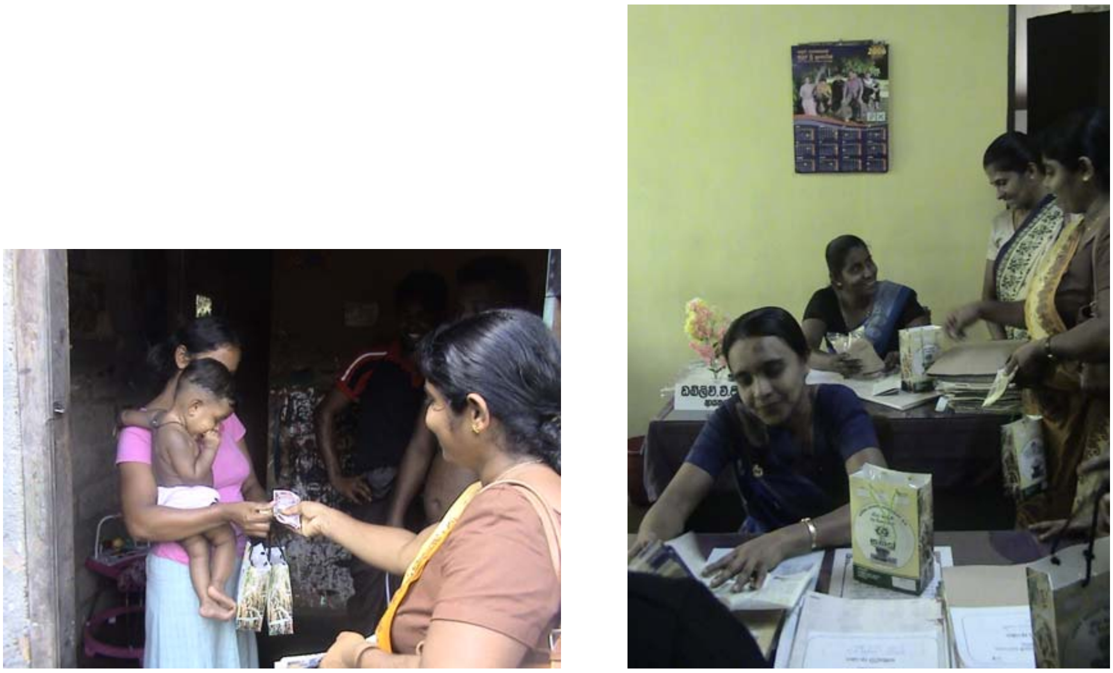
- Obtaining a reliable supply of high-quality SRI paddy throughout the year.
- Meeting customer demand for a wide range of SRI rice varieties, e.g., Samba, Nadu, Raw-Red, Raw-White and traditional rice such as *Suwadel, Suduru Samba* & *Mavee.*
- Transport facilities for collection of paddy from producing districts and transporting to and from the mill.
- Assistance needed from male members of CBOs for the heavy tasks of transporting, loading and unloading of paddy and rice.

During the RMA focus group discussions, customers offered the following suggestions for the promotion and marketing of SRI rice.

- Promote SRI rice as a safe, healthy and environmentally-friendly food product, i.e., pesticide/herbicide-free.
- Introduce various sizes of packages and good packaging materials to attract new customers.
- Provide opportunities for consumers and producers to interact as a way of raising awareness and promoting sales.
- Promote SRI rice especially to and within the government's agriculture extension service.
- Identify urban markets for SRI rice, such as supermarket chains, urban consumer groups, and office staff of both state and private sectors.
- Devise a promotional campaign to launch SRI rice as a 'branded' product.

The following suggestions came from staff of DCF and the women's group involved in the processing and sale of the SRI rice.

- Develop a national network for the supply of SRI paddy from producers known to and associated with OAus' CBO partners.
- Actively promote the production of SRI paddy among farmers who are not members of OAus' CBO partners.
- Devise a plan for producing and marketing a diversified range of SRI rice varieties.
- Use print and electronic media to build awareness of the taste and health benefits of SRI rice among the general public.
- Develop links with extension officers of the Department of Agriculture to promote SRI paddy production with their endorsement and technical support.
- Establish storage facilities in key SRI rice growing districts to ensure a reliable supply of SRI rice to customers and to minimise seasonal price fluctuations.



Introducing the promotional pack to different types of customers

8.0 Conclusions and recommendations

This report presents and analyses the findings from a 5-month-long pilot SRI rice marketing venture undertaken in Kegalle district of Sri Lanka by Oxfam Australia (OAus) in collaboration with Development Communication Foundation (DCF), a local community-based organisation and OAus partner. Paddy was purchased from known SRI farmers in Kegalle and Anuradhapura districts, processed and sold as parboiled or raw rice by a group of five women through a make-shift sales outlet in Warakapola town, Kegalle district. It should be noted here that Warakapola is a reasonably well-off rural town, not far from Colombo in the relatively prosperous Western Province of Sri Lanka and is not necessarily representative of much of the country. This means that the quantities and preferences of SRI rice purchased cannot be readily generalised. Data wwere collected on visits, sales, customer characteristics and preferences over the period from mid-November 2006 until mid-April 2007. The length and somewhat *ad hoc* nature of the survey prevents any definitive conclusions being drawn from these findings, but certain trends and areas for future investigation can be discerned.

> **Recommendation 1**: That OAus continue to collect, monitor and analyse the market for SRI rice from the existing sales outlet in Warakapola, but clarify the type of data required, agree on a reasonable piece-rate for labour, and formalise the procedures for managing the revolving fund.

> **Recommendation 2**: That OAus set up similar trial sales outlets in the east and south of the country, following a similar model, in order to better assess market potential across the country. Develop strong links with others who have set up similar SRI sales outlets to share marketing strategies and costs and, where feasible, SRI suppliers.

There is a market for higher-priced SRI rice, at least among middle and upper-income families, although this conclusion is based on a very limited survey in one, relatively well-off area of the country. This suggests a potentially large market may exist in Colombo itself. If demand is proven from similar trials in other parts of the country, the next step could be to negotiate contract marketing agreements with wholesalers and supermarket chains that could handle both the marketing and distribution of SRI. This would require the ‘branding’ of SRI so that customers recognise it from other varieties and some form of national certification to ensure its authenticity.

Customers appear willing to pay extra for rice that is known to be chemical-free and therefore better for their health. A companion study into farmer’s perceptions of SRI (Perera et al., 2007) also found that most farmers believed that organically-grown SRI rice tasted better than conventionally-grown rice. This trial sold SRI rice at approx. 10% higher than market rate for conventionally-grown rice. Most customers were judged to be from middle-upper income families and were not principally concerned with price. Total monthly purchases did not reflect fluctuations in prices, although some customers may have switched between SRI varieties when one appeared to be better value than another.

> **Recommendation 3**: That the promotion of SRI rice be aimed at middle-upper income groups who are less worried by price and should emphasise the health and taste benefits resulting from the use of SRI cultivation methods.

Most customers were aged between 31–50 and were primarily wage earners rather than farmers or daily labourers. Men accounted for almost 70% of customers visiting the sales outlet, but their purchases on each visit were on average only half that of women.

> **Recommendation 4**: That the pre-packaging of SRI rice take into consideration this trend of men purchasing smaller amounts but more frequently than women. Larger packages should be limited to a weight that can be more easily managed by women.

Within the limitations imposed by the data, an analysis of costs suggests that labour accounts for approx. 30% of all overhead costs, with transport, shop/store rent, and milling making up the remainder. This labour component can possibly be reduced through greater economies of scale as the group of women (hired labour) was not fully occupied during the trials. However, even allowing for an additional contingency (profit) margin of 25% of the final sale price, preliminary analysis indicates that SRI farmers could feasibly be paid between 10% and 25% more than the prevailing market value for their produce.

Recommendation 5: That OAus, through cooperating CBO partners, purchase paddy from reputable SRI farmers at 10% more than prevailing market rate for the equivalent conventionally-grown paddy to test whether the processing and sale of SRI rice is still financially viable and to assess the impact of this higher price on production and the adoption of SRI techniques among primarily poor farmers.

There was a problem during the trials in securing reliable supplies of different varieties of SRI rice, and this resulted in some being unavailable at certain times. While customers averaged almost three visits per month to the sales centre, over 60% of these occurred during the first half of each month. Similarly, 70% of all rice was purchased during the first fortnights, with a fortnightly average purchase of 677 kg compared with 285 k. during the second fortnight. This purchasing pattern may reflect the nature of family income, and the time when monthly wages are received.

Recommendation 6: That OAus use the marketing network already established for its Community Coalition for Alternative Marketing Program (CCAMP) to source, purchase and transport SRI stock to sales centres where it can be sold, either directly to the public or to 'ethical' wholesalers.

Recommendation 7: That at least two months' worth of stock of each variety of SRI paddy be kept on hand at all times, even if this requires paddy being purchased and transported from other districts. This paddy can be processed as and when needed, but the operation should anticipate a significantly greater demand during the first half of each month and immediately following any local promotional campaign.

Customers expressed concern over the quality of the rice being sold. Not only should the rice be clean of all extraneous material, e.g., stones, but it should be dried to a moisture content that will ensure a longer shelf-life after purchase. There was also a request for a greater variety in the rice sold, to the extent of bringing in familiar, high quality varieties from other districts.

Recommendation 8: That OAus purchase machinery, to be operated by the processors, to clean the paddy prior to processing and to dry it prior to milling and subsequent sale.

Recommendation 9: That OAus source a range of popular varieties in nearby districts and offer them to the market through the sales outlet to assess demand and the impact of greater transportation costs on viability of the venture.

9.0 References

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