

## EXECUTIVE SUMMARY

Rice/paddy price stability is one of the important policy objectives of the government in view of welfare of the rural and urban poor. Domestic paddy price fluctuations are caused by several factors. Price fluctuation is primarily caused due to the seasonality in paddy production and the fluctuation in paddy production. Being a small open economy, Sri Lankan rice market is subjected to world market rice price fluctuations that are exemplified in the paddy market too. Nevertheless, intra seasonal and inter-regional paddy price variation and the sharp drop in paddy prices with the harvest coming to the market are the most disturbing factors in paddy price stabilisation in the country. Therefore management of paddy marketable surplus is important in terms of price stabilization. Marketable surplus could be managed to stabilize prices at various levels from farmer to collector to miller by adopting various strategies. Government had been intervening to paddy markets to manage the marketed surplus and thereby stabilizing prices. However government has withdrawn its role of managing large surpluses and currently the private sector has the main function of managing the surplus. Nevertheless, it is common that the paddy prices sharply go down with the onset of harvesting calling government intervention. These paddy prices some time hardly cover the costs of production and farmers on small plots of land end up with an inadequate income for their livelihoods.

It is vital therefore to understand the behaviour of marketed surplus from farm gate up to the paddy processor/miller and the price determination. This study focuses to understand the paddy price determination in Sri Lanka considering the behaviour of marketable and marketed surplus and the marketing mechanism of different market participants. Empirical information was gathered to elicit the behavior of farmer and the other market participants that would affect the paddy price determination in regional markets. Primary data collection involved a farmer survey and market participant survey in the major producing areas.

Farm survey revealed that about 4-10 Mt and 2-6 Mt of marketable surplus is generated on average at farm-gate in major producing during *Maha* and *Yala* seasons respectively. This surplus is disposed mainly as distress sales, sales due to lack of storage and high moisture content of paddy and as price responsive sales. Majority of Ampara and Hambantota farmers disposed more than 50 percent of their *Maha* surplus soon after harvesting which is driven by large marketable surpluses, the cash needs for repayment of loans, high moisture content of paddy, lack of storage facilities, immediate cash needs and to some extent the better price prevailing at the beginning of the season. Distress sales are common in Kurunegala and Hambantota districts primarily to pay credits where small farmers are dominant. Marketed surplus is spread over a period of 3 months in Polonnaruwa and Anuradhapura districts and price responsive sales take place commonly. Moreover Anuradhapura farmers keep part of the marketable surplus

for the next season as their *Yala* season is bleak. Although farmers tend to dispose their *Maha* harvest early as possible, *Yala* harvest is stored anticipating higher price towards the end of the *Yala* season. Therefore price responsive sales are the common way of disposing the marketable surplus during *Yala*. This behaviour leads to large stocks of paddy surpluses to be available with the onset of *Maha* at the market especially from Ampara where *Maha* harvesting begins first and tends to create more inelastic supply with the onset of *Maha* in Ampara that could lead to large price drops in the Ampara area depending on the intensity of buying operation in the area.

Farmers sell their surplus to village level collectors or to millers either at farm gate/house or by bringing their stocks to the mills. It is commonly observed that millers are operative in buying paddy in Hambantota, Kurunegala, Ampara and Polonnaruwa districts while village level collectors play a prominent role in Anuradhapura and also to some extent in Polonnaruwa. Frequently large millers buy paddy at farm-gate directly sending their Lorries to the farm or through village level collector. When a village level collector is operative in buying paddy, stocks are sold to the miller through a broker and he acts as an intermediary in the marketing channel. When small to medium scale millers are operative in buying paddy, often farmers carry their stocks to the mill as in the case of Kurunegala and Anuradhapura farmers.

When the buyer side of the paddy market and their buying behaviour of marketed surplus are considered, structure of the milling industry and large scale miller's buying behaviour are main determinant factors for intra-seasonal and inter regional paddy price fluctuation according to the findings.

According to the latest information collected on milling industry in the major producing areas, there has been an expansion of milling capacity of mills and now the majority of the rice millers are medium scale based on the scale of their business. Particularly, large scale millers have all the functions from farm gate up to the consumer. Large millers have modern machineries and have adopted new technologies. A majority of the large millers own large storage facilities. This vertical integration, mechanization and use of modern technology has increased the miller's ability of buying large quantities of paddy at once and to maintain large paddy storage capacities that can influence the paddy market. This scale of the operation with increasing return to scale can increase the productive efficiency of milling operation as well.

Based on the physical concentration of the mills and the buying behaviour, few regions can be distinguished as independent regional paddy markets. Demand for paddy arising in large scale milling centred in Polonnaruwa with the supplies from major paddy producing areas in Polonnaruwa, Ampara, Anuradhapura and Kurunegala including Mahaweli areas represents the largest regional paddy market. In Polonnaruwa, 75 % of the mills are large scale and are located near urban centers in Thamankaduwa and

Hingurakgoda DS divisions. Nearly 50 per cent of the millers in Polonnaruwa purchased paddy from collectors who are operative in purchasing paddy from long distance remote areas. Large millers have adopted new technology to improve the quality of rice and to increase the efficiency of resource use. The other important regional market, Hambantota, is composed of medium scale rice mills uniformly distributed in all major producing areas. In Hambantota, farmers transport their stock to the millers in most instances and therefore collector is absent in the marketing channel. Distinct price behavior is observed in these regional paddy markets and the inter-regional price differences are mainly depend on the structure and behavior of buyer side of the market.

According to the structural explanation presented in this study, the farmer's behaviour in disposing paddy at the beginning of *Maha* season and the behaviour of large millers in Polonnaruwa district are the most determinant factors for paddy price determination in Sri Lanka.

Concentration indices measured in terms of CR4, CR8, Herfindahl and Gini coefficient do not support that milling industry in Polonnaruwa is concentrated. However, physical concentration and the cooperative decision making in Polonnaruwa regional paddy market can exert market powers that may similar to a concentrated market. Based on the findings it is imperative that large millers concentrated in Polonnaruwa exert market power during the period of peak harvesting in Ampara when the supply is highly inelastic. These large mills can exert oligopsony power as their share of purchases in the paddy market is sufficiently large that it can cause the market price to fall by purchasing less during surplus seasons and cause it to rise by purchasing more during shortages. Speculation about marketed surplus is also determinant factor for their purchasing decisions. This market power can lead to repulsion of small millers and further consolidation and expansion of large millers

If there is a competitive fringe of small buyers that compete in the paddy (input) market with few large buyers who work cooperatively, then the buyer market power of the dominant mills (firms) will be constrained not only by the elasticity of supply of the sellers in the paddy (input) market, but also by the fringe of small buyers. The more elastic the demand by the fringe, the more their purchases rise as the price falls, and the more difficult it will be for the dominant firm to exercise buyer side market power. The reduction in its demand, and hence the profits foregone, as it attempts to depress the price, will be greater as suppliers can instead substitute and sell to the fringe.

In the absence of competitive fringe of small to medium buyers with a highly inelastic supply at the peak harvesting period, oligopsonic behaviour in the paddy market is unavoidable unless government intervene to the market. However the government's

role in managing the marketed surplus by way of direct intervention has been questioned in terms of its net economics benefits.

Particularly the role of Paddy Marketing Board (PMB), the main government agency established to implement the Guaranteed Price Scheme (GPS)/ government minimum purchasing price, for direct government purchasing and maintenance of buffer stocks has diminished with liberalizing the economy in 1977. Since then the role of government intervention was gradually withdrawn in terms of stabilizing price through its buffer stock program instead; private sector was promoted by expanding their marketing functions from purchasing of paddy to retailing of rice by providing tax concessions and incentives. PMB stopped actively purchasing paddy in 1996.

Currently the government mechanism for direct intervention in terms of direct purchases to the Guaranteed Price has its limitations due to infrastructure facilities and financial hardships. Current storage capacity of PMB is around 220 thousand Mt. Lack of rice producing centers is also a challenge to PMB. The loss occurred due to long time storage and lack of adequate and quantity warehouses are also causes for wastage which is a challenge for the board.

Considering the management inefficiencies and lack of infrastructure of the main government parastatal and government's role in price stabilization, study proposes few recommendations. Importance of government interventions at the main price determining months March to April and locations particularly in the main paddy producing areas in Ampara at least to the minimum intervention is highlighted. Importance of duly considering the current processes, trends and development in the paddy marketing sector in designing government buffer stock program is also highlighted. Public- private partnership for purchasing, milling and storage of paddy is proposed to increase the competitiveness of small and medium millers and, to increase the bargaining power of paddy farmers. Lack/absence of declared information on storage capacities of millers and the highly constrained access to information of large millers due to business ethics are main obstructions for further analysis on oligopsony power in the paddy market.