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Domestic Rice Marketing Structure and Marketing Margins in Pakistan

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Abstract

Agriculture plays a key role in the economic development of Pakistan. Its contribution to GDP in Pakistan accounts 25% and it is a major source of raw material for different industries in Pakistan. Punjab is one of the four provinces of Pakistan and is a major producer of agricultural commodities. Rice is one of the most important agricultural commodities in Pakistan. The Punjab province produces 56% of the total rice in Pakistan as well as this province is solely producer of basmati rice variety which is a type of fragrant rice and is very famous for its aroma. For the development of agricultural sector, the importance of agricultural marketing cannot be ignored. In developing countries like Pakistan where the population is growing rapidly, an efficient internal agricultural marketing system for agricultural commodities can be very useful for not only to meet the domestic food needs but also for the development of rural economy. The aim of this study was to analyze the current status, structure and operations of rice marketing in Pakistan as well as to explore the marketing margins of different marketing intermediaries and to identify the respective marketing problems faced by those marketing intermediaries. Three districts famous for rice production were purposely selected for this study and a sample of 120 small, 45 medium and 45 large farmers was obtained from the study area. Along with the rice growing farmers, 45 commission agents, 45 rice millers, 45 rice traders, 45 whole sellers and 45 retailers in the study area were also contacted for the purpose of data collection. Three majorly grown rice varieties of basmati and non basmati rice were found being cultivated in the study area. The results revealed that majority of the rice producers were involved in selling their produce (paddy) to commission agents at their farm gate. The absolute cash margins for different marketing channel members were estimated and it was found that the rice producer was earning the maximum share for both varieties in the marketing chain i.e. 62.57% and 47.71% respectively for basmati and non basmati rice varieties. Along with the absolute cash margins, the net marketing margins were also calculated by deducting the marketing cost of respective marketing chain members. The overall domestic rice marketing structure was found to be efficient yet there is need for further improvement in order to enhance the rice production and exports from Pakistan.

Keywords: Agricultural marketing, Rice, Rice marketing, marketing margins, Rice marketing problems

1. Introduction

Agriculture sector of Pakistan engages 43.7% of the entire labor force and contributes 23% to GDP. This sector of Pakistan is further divided into livestock, important crops and minor crops. The major crops which include rice, wheat, maize and sugarcane account for 25.6% of the overall agricultural value added and 5.4% to GDP (Government of Pakistan, 2014). Two crop seasons exist in Pakistan namely “Kharif” and “Rabi”. The “kharif” season is the 1st season in which sowing starts from April-June and the crops sown are harvested during October-December. The "Rabi" season is the second season in which the sowing starts during October-December and the crops sown are harvested during April-May. Rice in Pakistan falls under “Kharif” season along with cotton, maize and sugarcane crops (Government of Pakistan, 2014). In terms of area, rice is the second staple food in Pakistan after wheat and covers 10% of the total cropped area of Pakistan. Rice is also one the most important sources of foreign exchange earnings (Wahid et al 2011). Rice accounts 3.1% of the value addition in agriculture and 0.7%of the GDP of Pakistan (Government of Pakistan, 2014).

Though rice is grown in all four Provinces of Pakistan but Punjab and Sindh are the major rice producing provinces. Basmati rice (a type of fragrant rice) is mainly grown in Punjab Province while IIRI type rice varieties are usually grown in Sindh Province. In Punjab, from 2001-02 to 2010-11, rice was grown on an average of 1732.1 thousand Ha area and the average production was recorded as 3097.9 thousand tons. During the same period, the growth in area under rice in Punjab was observed to be 17.35% while the growth in production was observed to be 36% which shows an increase in yield in Punjab Province (Government of Punjab, 2012). During the same period, basmati was grown on an average of 1418.3 thousand Ha in Punjab province (81.88% of area under rice in Punjab) and average production was recorded 2377.7 thousand tons (76.75% of the total production of rice in Punjab). IRRI based varieties were grown on an average of 9.09% area of Punjab while the production remained 11.80% of the total rice production in Punjab. Other varieties contributed 11.44% in production and occupied average area of 9% of the total area (Government of Punjab, 2012). In Pakistan, from 2005-2010, on average basis, the share in rice cultivation area for Punjab, Sindh, Khyber PK and Baluchistan were recorded as 67.26%, 23.79%, 2.18% and 6.74% respectively while their contribution in total rice production was recorded as 55.62%, 33.77%, 1.97 and 8.64% respectively (AMIS,2014).

Pakistan has been 14th largest producer and 5th largest exporter of rice in 2011. Every year Pakistan exports a considerable quantity of rice in the world rice market. European Union, Saudi Arabia, USA, UAE and Kuwait are the major basmati rice importers from Pakistan (Slayton and Muniroth 2011). Rice yields in Pakistan are quite low as compare to other major rice producing and exporting countries. In 2011, among the top 10 rice exporting countries, Pakistan was ranked 5th after Thailand, India, Viet Nam and USA with respect to export quantity of rice but as per the per hectare yield, Pakistan was the last one in the top ten exporting countries of rice as the yield per hectare was recorded only 2.40 tons/ha. Uruguay, USA, China, Argentina and Italy were the top five yield obtaining countries among the top ten exporters of rice in 2011 with yields of 8.38, 7.92, 6.69, 6.79 and 6.05 tons per hectare respectively (FAO, 2011). Yield gaps are mainly due to post harvest losses and poor management practices. Quality issues also exist due to admixtures at different stages of processing and the use of outdated processing technology. In Pakistan, the post harvest losses are up to 30% while in developed countries these losses accounts up to 14-16% only (TDAP, 2010). Rice production in Pakistan has witnessed great fluctuations due to floods, shortage of water, costly inputs, etc., and as a result, the export quantity level also falls down. The fluctuations in production cause variation in domestic prices and also this fluctuation and uncertainty in production de-motivates the rice growers for further production of rice. Therefore it is necessary to study the existing rice marketing system in Pakistan as well as to pinpoint the problems faced by the rice producers as well as other marketing channel members involved in rice marketing. The specific objectives of this study were

a) To find out the rice marketing structure and operations in the study area and to find out the marketing margins of rice producers as well as of different marketing channel members involved in domestic rice marketing.
b) To identify the problems faced by the rice marketing channel members.
c) To suggest policy recommendations for the improvement in domestic rice marketing system.

2. Materials and Methods

This study is based upon the primary data collected through a survey from rice marketing channel members including rice growers and the markets located in rice growing and consuming areas. Since Punjab Province is the largest producer of rice in terms of area and production so for this study, Punjab Province was selected for the collection of primary data. In Punjab, rice is mainly grown in Gujranwala, Sialkot, Sheikhupur, Okara, Pakpatan, Hafizabad and Gujrat districts. Among the major rice growing areas in Punjab, three districts namely Gujranwala, Sialkot and Sheikhupura were selected for this study because of their high contribution in rice production. Among the total five tehsils of Gujranwala district, two tehsils namely Kamoke and Wazirabad were randomly selected for data collection. Two tehsils namely Daska and Sialkot were randomly selected from Sialkot district and two tehsils namely Ferozewala and Sheikhupura were randomly selected from Sheikhupura district for the data collection purpose. In order to gain an understanding of the existing production and marketing structure in the study area, an informal survey was conducted and during this survey, discussion with farmers and other marketing channel members was made. Since rice millers in Pakistan are also engaged in rice export business so the export structure and relevant issues were also discussed with rice millers. This informal survey was helpful to understand the prevailing domestic rice marketing system as well as to develop the final questionnaire for the rice growers and other rice marketing channel members. After the informal survey in the selected areas, a formal sampling frame was designed and 40 small rice farmers, 15 medium and 15 large farmers from each pre selected district were selected to collect the primary data hence for this study, total 120 small, 45 medium and 45 large farmers were selected from all 6 tehsils of three districts. Besides this, from the study area, different rice marketing intermediaries like commission agents, rice millers, rice trader, rice wholesalers and retailers (15 from each district) were randomly selected for this study. In a nutshell, total 210 rice growing farmers, 45 commission agents, 45 rice millers, 45 traders, 45 wholesalers and 45 retailers were selected to collect data for this study. It was ensured that selected villages are located at fairly large distance from each other to achieve as wide geographic coverage as possible. In order to achieve wide geographic coverage in terms of selection of respondents, it was ensured that the selected farmers are not concentrated in the same location. The prices received by farmers for different rice varieties grown by them were recorded, similarly the purchase price and sale price for each marketing intermediary was recorded. Based upon the prices collected and the information regarding the cost incurred by different marketing channels, the absolute cash margins and net cash margins were estimated. The absolute cash margins were estimated by taking the difference between the price paid and received by two marketing channel members. Similarly the net marketing margins were calculated by subtracting the cost of each marketing chain members from its relevant absolute cash margin. The percent share of consumer rupee was calculated by dividing the absolute cash margin by the price paid by consumers (retail price)

3- Results

3.1- Rice Marketing System in Punjab

The agricultural marketing channels are the entities who are involved in the transfer of goods from producers to the consumers. The rice marketing system in Punjab consists of rice marketing channels who are involved in transferring paddy from rice growers to the final consumers in the form of milled rice. The structure of the rice marketing system in Punjab, Pakistan is given in figure 1. The marketing channel members involved in the rice marketing in Punjab, Pakistan, include the following along with their services.

(i) Rice producers

Almost 90% of the rice producers in the study area were involved in selling paddy to the commission agents who are also called *beoparies* in the local language. Three main reasons behind this practice were found to be following; firstly the commission agents provide credit to the farmers at the time of sowing as well as at the time when they need pesticides and fertilizers. In return, the rice growers are bound to sell their produce to the commission agents at the prevailing market price. The price of different rice varieties is not determined by any government authority. It is determined by the marketing forces i.e. demand and supply of rice at domestic as well as at international markets. Other factors which determine the price of rice at domestic level include the quality of rice, variety of rice, moisture level at the time of harvesting, condition of roads near to the farm gate, availability of transportation facilities and distance of farm gate from the nearest rice mill. At the time of harvesting, the farmers prefer to sell the produce to the commission agents as they need money for the fulfillment of the financing needs of their next crop and to meet their personal financial needs and the middlemen deduct the money (including interest amount as decided earlier at the time of financing) already provided to the farmers from the total price of paddy calculated at the marketing prevailing rates and handover the remaining amount to the farmers. Some commission agents also run their own business of selling pesticide and other inputs so they allow the farmers to buy seeds, pesticide, weedicides and fertilizer etc. at credit terms. The price for such items is charged higher as compare to the current market price and the rice growing farmers payback the money to commission agents/beoparies at the time of harvesting. In this case too, the farmers are bound to sell the rice crop to those particular commission agents and they deduct the money of such items from the price of the harvested crop. Secondly, majority of the farmers cannot afford the transportation cost for moving the produce to the rice mills from their farm gate. The commission agents collect paddy from different farmers and when the quantity of paddy is up to the maximum capacity of the truck owned by them, they move it towards the rice mills. Some of the commission agents also have storage facilities where they can also store paddy for short time and after their dealing with rice mills regarding price, they move the stored paddy to the rice mills. Farmers also need cash payments to fulfill their personal needs as well as to buy seed/inputs for the cultivation of next crop. So in order to avoid the transportation cost and to fetch cash for the cultivation of their next crop, the farmers sell paddy to the rice commission agents at their farm gate. In some cases, the large farmers were found to be owners of rice mills so they utilize their produced rice for their own rice mills. Most of the farmers were not involved in growing the recommended varieties of the rice research institutes and the reason behind this practice was found that they did not have the seed easily available of the recommended varieties. The farmers also use their produced rice for their personal use. Since the paddy cannot be used without removing the husk so for this purpose they use a local husk remover machine. In almost all the villages of the study area, there exist husk remover service providers. Before taking paddy to such plants, the paddy is kept under sunlight to dry and then it is taken for the removal of husk. The reasons to prefer to sell the paddy to rice commission agents at the farm gate are given in table 1.

Table 1: Reasons behind the sale of paddy to the commission agents immediately after harvesting

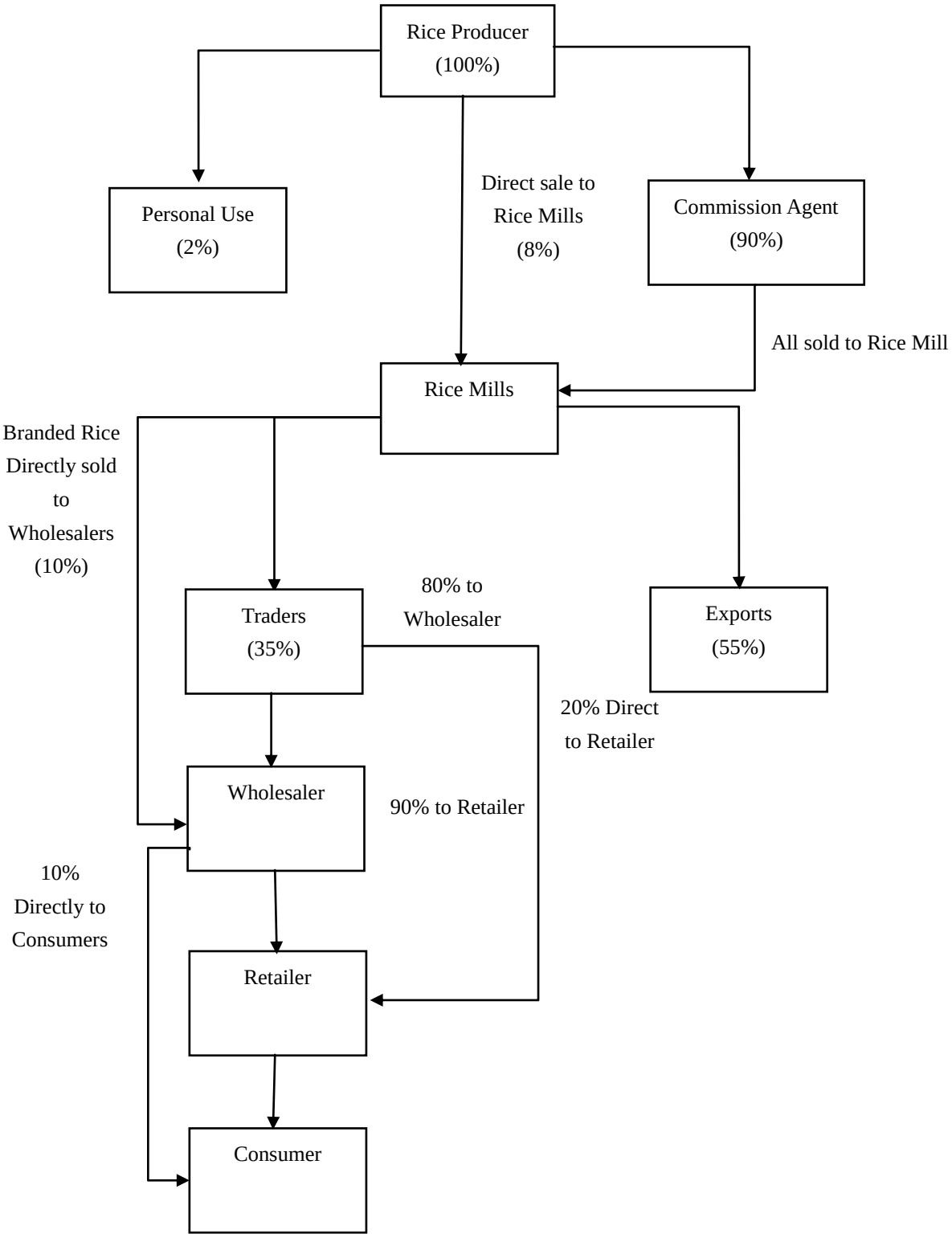
Reasons	Number of Responses	Percent
They fulfill credit/inputs needs	147	77.78%
High transportation cost	112	59.25%
Lack of storage facilities	58	30.68%
Immediate cash needed for next crop	128	67.72%

Source: survey data

(ii) Commission agents

They are the small businessmen working privately in the rice producing areas on personal financing or at rice mills payroll. Usually they work on the rice mills payroll and the rice mills provide them money to give it to the farmers as credit and in return they make an informal contract with the farmers. Under this contract the farmers are morally bound to sell their produce to the commission agents. The commission agents own truck/ mini truck and at the time of harvesting, they collect paddy from different farmers and move towards the rice mills. These commission agents operate in the study area for whole year as during rice off season, they are involved in wheat marketing. The commission agents are local people and they know other farmers personally so the farmers who borrow money from them for sowing/input purchase, they must have to payback them in the form of cash/ rice produced with equivalent value. They charge their profit/commission with respect to the variety, quality of produce and distance from the rice mills with which they have already established contacts. They usually don't have any central office and they keep in touch with rice millers and farmers with mobile phone.

Figure 1. Rice Marketing Channels in Punjab, Pakistan. 2015



(iii) Rice millers

After harvesting, the rice is in such a form which is called paddy and it is not possible to consume rice in its raw form. To enable it for the human consumption, it is necessary to process the paddy and this task is performed by rice mills. There exists large number of rice milling units in the study area. During the first step towards value addition in rice, the hulls and bran is removed from the raw paddy and as a result the polished rice is obtained. Most of the rice millers in the study area were also involved in rice exporting business. They have their own rice processing plants which consist of quite large area as

mostly rice millers dry the rice at the open space under the sunlight. Some rice millers owned rice drying plants but due to shortage/high cost of electricity, they preferred to dry the paddy in the sunlight. After drying the rice, they perform the grading, polishing etc. The export quality rice is further tested for shipment and remaining rice is delivered in the domestic market in two forms under the classification of different varieties i.e. either under a brand name (as many rice mills have their own brands or the traders buy rice from mills and sell under their own brand name) or under a generic product. The low quality rice is usually sold under generic name i.e. different IRRI or non recommended varieties. The premium rice i.e. basmati and Kernnal rice varieties are sold under different brand names at domestic and international markets. Branded rice in domestic markets is sold in the packing of 1/2 kg, 1 kg and 5kg. The processing flow of paddy at rice mills is shown in figure 2.

(iv) Rice traders

These are the marketing intermediaries who buy rice from the rice mills, store and then gradually sell to the wholesalers in different markets of the country at different intervals. They have large and properly equipped warehouse facilities to store rice for longer period of time. They sell the rice to the rice wholesalers on cash as well as on credit terms. They also supply rice to business entities i.e. hotels and restaurants in bulk quantities as per their demand. The rice traders are financially strong entities and buy rice in bulk quantity from rice mills i.e. in the form of trucks loaded with 30 tons rice and they also store rice for short and long time because the old rice can be sold at higher price.

(v) Wholesalers

They operate in different markets located in different provinces at district and sub district (tehsil) level. They buy rice from the rice traders in bulk quantity and then sell to the retailers in small quantities as well as they also buy branded rice from traders and rice mills who sell rice with their own brands at domestic market. They have very little interaction with the consumers. At the same time they deal with different agricultural commodities i.e. processed sugar, corn, peanut, etc. They have contacts with the retailers operating in the nearby area and based upon these relationships, they also sell rice to the retailers on credit basis. The whole sellers also sell rice in bulk quantity to the small and medium size businesses i.e. small hotels and restaurants located in their nearby areas. Government marketing committees exist to maintain the prices at wholesale/retail level and the prices of different commodities including rice with respect to different varieties at different whole sale/retail markets are also updated at the agricultural marketing website. The price list is also distributed to the relevant people registered under the market committee.

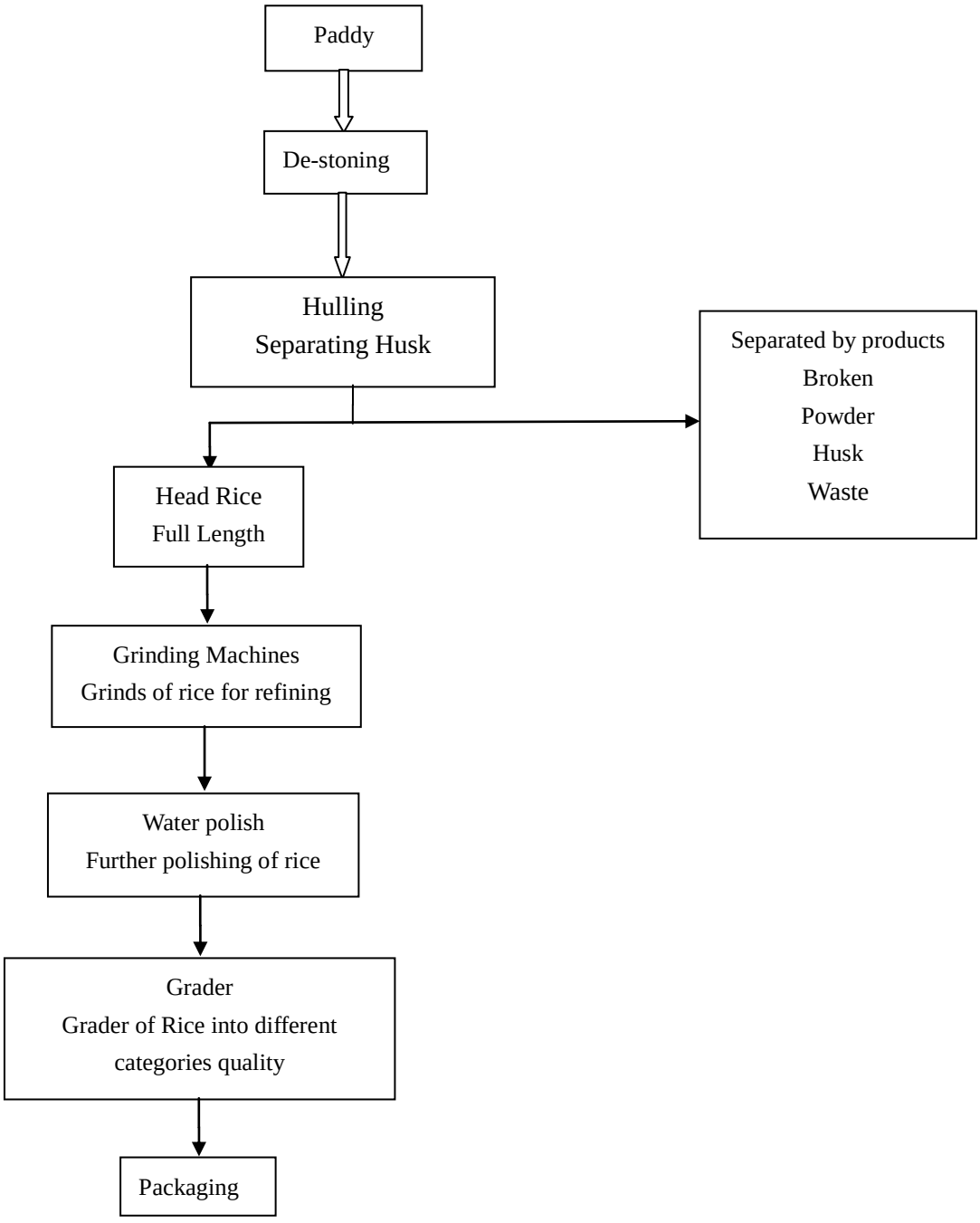
(vi) Retailers

All the marketing activities come to an end at the retailers point. They buy branded/non branded rice from wholesalers and traders (90% and 10% respectively) and then sell to consumers by breaking it into small quantities. They are located in all urban and rural areas. Along with rice, they deal with a lot of other daily use food/non food items. The retailers sell different varieties of rice.

3.2- Marketing Margins Analysis

The difference between the price of any product at one stage in the marketing process and the price of the equivalent product at another stage of marketing is called the marketing margin (Smith, 1992). Different marketing channel members perform services or add value in the product which may include the provision of convenience by purchasing at farm gate, store the agricultural commodities or products, process the raw commodities or products, packaging and transportation the commodities or products etc. For the measurement of marketing margins, the data regarding the rice prices was collected from different marketing channel members. Since different varieties of rice are grown in the study area as well as in the other areas of country so it was decided to analyze the marketing margin for two major categories of rice i.e. basmati rice varieties and non-basmati rice varieties. The prices of different rice varieties were collected on per 40 kg basis as it is the basic unit used for measuring the agricultural commodities at domestic level. The prices of rice at rice growers' and rice commission agents' level were collected by specifying to report the revealing prices at the time of harvesting. The data regarding the prices from the rice millers, rice traders, rice wholesalers and rice retailers were collected for the current crop and the prices of old rice (previously stored) were not considered as the prices of previous cropping season' stored rice are usually higher as compare to the rice obtained through processing of paddy of current cropping season. The average prices of the basmati and non-basmati varieties at different stages were calculated and used for the marketing margin analysis. Rice varieties are combination of husk, bran layer and starchy endosperm which is also called milled rice. From the paddy rice, after processing 68−72% milled rice is obtained (Rice Knowledge Bank web portal) but as per the responses from the rice millers in the study area, the paddy to basmati rice conversion ratio was 67kg to 40kg milled rice (nearly 59.70%) while for non-basmati this ratio was reported as 57kg to 40kg milled rice (nearly 70.17%). This ratio was kept in mind and in order to obtain prices of 40kg milled rice, the above stated ratios were used at farmer's level i.e. we used this ratio for our study and it was assumed that in order to produce 40kg basmati and non-basmati milled rice, the rice miller needed 67kg and 57kg of the paddy respectively as the raw material. The spread of prices for both rice varieties is given in table 2

Figure 2. Production process flow at Miller's end



Source: Survey findings

Table 2: Average sale price of basmati and non-basmati rice varieties for different marketing channel members

Marketing channel member	Basmati varieties	Non-Basmati varieties
Rice producers	2534	730
Commission agents	2658	800
Millers	2993	1025
Traders	3093	1100
Wholesalers	3393	1300
Retailers	4050	1530

Source: Survey data

(i) Absolute Cash Margins

In order to investigate the respective share of different rice marketing channel members, the price spread or absolute cash margins for the marketing channel members involved in rice marketing were calculated for basmati and non basmati varieties and given in table 3 and 4

Table 3: Absolute cash margins or price spread for marketing channel members involved in basmati and non-basmati rice marketing

Marketing channel members	Absolute cash margins
Rice growers	2534
Commission agents	124
Rice millers	335
Rice traders	100
Wholesalers	300
Retailers	657

Source: survey data

The sale price Rs.2534 per 67kg of basmati rice was the absolute cash margin earned by the rice growers by selling the paddy to commission agents. The commission agents earned their commission around Rs.124/67kg and sold paddy to the rice miller at Rs.2658/67kg so the difference between the prices paid by the rice millers and the farm gate price, became the absolute cash margin of the commission agents. The same formula was applied to calculate the price spread for other marketing channel members. The sale price Rs.730/57kg of non-basmati rice was the absolute cash margin earned by the rice grower by selling the paddy to commission agent. The commission agents charged their commission Rs.70/57kg and sold the it to the rice miller at Rs.800/57kg so the difference between the price paid by the rice millers and the farm gate price, became the absolute cash margin of the commission agents. The same formula was applied to calculate the price spread for other marketing channel members.

Table 4: Absolute cash margins or price spread for marketing channel members involved in non-basmati rice marketing (Rs/40kg)

Marketing channel members	Absolute cash margin
Rice growers	730
Commission agents	70
Rice millers	225
Rice traders	75
Wholesalers	200
Retailers	230

Source: survey data

(ii) Share in Consumer Rupee

The respective share of the marketing channel members involved in basmati and non-basmati rice marketing was calculated by dividing the absolute cash margin by the retail price or the consumer price and given in table 5 and 6

Table 5: Share of the marketing channel members in the rice consumers' Rupee

Marketing channel members	Sale Prices	Absolute cash margins	percentage of consumer price
Rice growers	2534	2534	62.57
Commission agents	2658	124	3.06
Rice millers	2993	335	8.27
Rice traders	3093	100	2.47
Wholesalers	3393	300	7.41
Retailers	4050	657	16.22

Source: survey data

The percentage value of consumer price calculated showed that the basmati rice farmers earned the greatest share of the consumer price i.e. 62.57% while the share of the rice miller was estimated to be 8.27%. The share of commission agent, rice trader, rice wholesalers and retailers were estimated to be 3.60%, 2.47%, 7.41% and 16.22% respectively.

Table 6: Share in rice consumers' Rupee of the marketing channel members for non-basmati rice

Marketing channel members	Sale Prices	Absolute cash margins	Percentage of consumer price
Rice growers	730	730	47.71
Commission agents	800	70	4.57
Rice millers	1025	225	14.71
Rice traders	1100	75	4.90
Wholesalers	1300	200	13.07
Retailers	1530	230	15.03

Source: survey data

The percentage value of consumer price was also calculated which showed that the rice growers earned the greatest share of the consumer price i.e. 47.71% while the share of the rice millers was estimated to be 14.71%. The share of commission agent, rice trader, rice wholesalers and retailers were estimated to be 4.57%, 4.90%, 13.07% and 15.03% respectively.

(iii) Marketing Cost and Net Profit Margins

The cost incurred at different marketing channel levels for basmati and non-basmati rice was calculated to find out the net marketing margins of different marketing channels involved in rice marketing. The total cost of rice growers for basmati and non-basmati was estimated to be Rs.1725/67kg and Rs.562/57kg which included ploughing (dry and wet), seeds, labor cost, weedicide cost, fertilizer cost, irrigation via canal system and private tube wells and land rent etc. The cost incurred by the commission agents for basmati and non-basmati was estimated to be Rs. 23/67kg and Rs.16/57kg which included cost of bags for packing purpose, cost of labor for loading and unloading of the paddy bags, transportation cost incurred for moving the produce from farm gate to the rice mills, toll tax paid imposed by the government, communication expenses like mobile phone usage, personal expenses i.e. lunch or tea, cost of labor hired to support during the purchase and sale activities etc. The cost of the rice millers for basmati and non-basmati was estimated to be Rs. 126/67kg and Rs. 125/57kg which was combination of fixed and variable costs and included labor cost, electricity and power generator cost, fuel cost for parboiling, packaging material cost, cost of repairing and maintenance of plant, storage cost, insurance expenses, depreciation expenses of the plant, administrative expenses, interest payments for any loan etc. The cost incurred at rice traders' level for basmati and non-basmati was estimated to be Rs.41/40kg and Rs.35/40kg which included transportation cost, storage cost, loading and unloading cost of the milled rice and warehouse management/rent charges etc. The cost of the rice wholesalers' for basmati and non-Basmati was estimated to be Rs.87/40kg and Rs.65/40kg respectively which included transportation cost, loading and unloading of the milled rice, rent of shop, personal expenses, wages of employees, electricity expenses etc. The

cost of the retailers for basmati and non-basmati was estimated to be Rs. 62/40kg and Rs.62/40kg which included transportation cost, loading and unloading cost, personal expenses, rent of the shop, electricity charges etc. Based upon the estimated cost, the net marketing margins of different rice marketing channel members were estimated and given in table 7 and 8.

Table 7: Net cash margins for basmati rice (Rs/40kg)

Marketing channel members	Absolute cash margin	Marketing Cost *(Fix and variable)*	Net margin
Rice growers	2534	1725	809
Commission agents	124	23	101
Rice millers	335	126	209
Rice traders	100	41	59
Wholesalers	300	87	213
Retailers	657	62	595

Source: survey data

Table 8: Net cash margins for non-basmati rice: (Rs/40kg)

Marketing channel members	Absolute cash margin	Marketing Cost *(Fix and variable)*	Net margin
Rice growers	730	562	168
Commission agents	70	16	54
Rice millers	225	125	100
Rice traders	75	35	40
Wholesalers	200	65	135
Retailers	230	62	168

Source: survey data

(iv) Percentage Profit Margin

After estimating the net profit margins of all the marketing channel members, the percentage profit margins were calculated for each marketing intermediary for basmati and non-basmati rice. The total net profit earned by all the marketing chain members was divided by the net profit of each marketing channel member. The estimations of percentage profit margin for basmati and non-basmati rice varieties are given in tables 9 and 10.

Table 9: Percentage profit margin of marketing channel members for basmati rice (Rs/40kg)

Marketing channel members	Percentage profit margin
Rice growers	40.74
Commission agents	5.08
Rice millers	10.52
Rice traders	2.97
Wholesalers	10.73
Retailers	29.96

Source: survey data

The results show that percentage profit margin of rice growers is greater than those of other marketing channel members. The percentage profit margin of retailers is quite high but overall a single retailer does not deal with too much quantity of rice as compare to other marketing channel members.

Table 10: Percentage profit margin of non-basmati rice marketing channel members (Rs/40kg)

Marketing channel members	Percentage profit margin
Rice growers	25.26
Commission agents	8.12
Rice millers	15.04
Rice traders	6.02
Wholesalers	20.30
Retailers	25.26

Source: survey data

The results show that percentage profit margins of rice growers and rice retailers are same but it is also a fact that they deal with minor quantity of rice. Besides, the rice wholesalers are earning almost 21% profit which is quite higher because they deal in large quantity so they are earning considerable share in the total profit of rice marketing chain.

3.3- Problems faced by rice marketing channel members

The rice marketing channel members i.e. rice growers, commission agents, rice millers and rice traders were asked to mention the problems which they face during rice marketing. The details of the findings are given below

(i) Problems Faced By Farmers During Rice Production:

During the production of rice, the farmers faced different issues and as per the survey results, high cost of inputs/the quality issues in the inputs was reported by 92.86% farmers and was found to be the leading problem faced by the rice growers in the study area. Besides this, water shortage issues/costly ground water irrigation was reported the second biggest issue by almost 89% farmers. High ratio of post harvest losses, lack of quality/recommended seed and lack of agricultural credit/difficulties to obtain agricultural credit were reported the problems by 80.48%, 74.29% and 70.95% respondents respectively. The details are also given in table 11.

Table 11: Problems faced by rice growers during rice production (n=210)

No.	Problem	Count	Percentage
1	Costly inputs/quality of inputs issues	195	92.85
2	Water shortage issues/costly tube well irrigation	187	89.05
3	High ratio of post harvest losses	169	80.48
4	Lack of quality/recommended seed	156	74.29
5	Difficulties to avail/lack of availability of credit	149	70.95

Source: survey data

(ii) Marketing Problems Faced By Small Rice Growers

Lack of bargaining power as well as the lack of support price were reported the biggest marketing problem by the small farmers. The prevailing rate in the market is determined by the rice millers and rice commission agents so the farmers are bound to sell their produce at this price. They need urgent cash to meet their financial need so they prefer to sell paddy at the farm gate at the rate described by the rice commission agents. Due to absence of support price, the marketing intermediaries exploit the farmers. A competitive support price can be very useful to facilitate the rice growers. Other problems reported while marketing of rice included variations in offered prices by commission agents, lack of market information and bound to sell to commission agents. The findings are also given in table 12.

Table 12: Marketing problems faced by small rice growers (n=120)

No.	Problem	Count	Percentage
1	Lack of bargaining power	120	100
2	Lack of support price by Government	120	100
3	Variations in offered price	113	94.17
4	Lack of market information	111	92.50
5	Bound to sell to commission agents	97	80.83

Source: survey data

(iii) Marketing Problems Faced By Medium Rice Growers

All the medium size farmers reported the lack of support price by Government as the biggest problem faced by them during rice marketing. The price determined by market forces is sometime the result of deal between the commission agents and the rice millers. The commission agents are the marketing intermediaries who usually buy paddy from the farmers and the farmers have to follow the price described by them. Improper/costly transportation facilities are hurdle for them to take their produce to the nearest rice mills. Other problems reported by medium size farmers included lack of storage facilities and lack of support price by Government authorities. The details are also given in table 13.

Table 13: Marketing problems faced by medium rice growers (n=45)

No.	Problem	Count	Percentage
1	Variation in price offered	42	93.34
2	Improper/costly transportation facilities	39	86.67
3	Lack of proper storage facilities	43	95.56
4	Lack of support price by Government	45	100

Source: survey data

(iv) Marketing Problems Faced By Large Rice Growers

The large farmers reported the non availability of proper storage facilities. In the start of season, the price is relatively low because of abundant supply of paddy but later on the prices go up. The large farmers usually don't face financial issues so they can store rice for a short time and when the price is higher, they can sell but they face lack of proper storage facilities. Variation in prices was also reported another problem by the large farmers. The large farmers also reported lack of transportation facilities as a problem for them while moving their produce to the rice mills from their farm gate. The details are given in table 14.

Table 14: Marketing problems faced by large rice growers (n=45)

No.	Problem	Count	Percentage
1	Lack of proper storage facilities	41	91.12
2	Variation in price offered	39	86.67
3	Lack of transportation facilities	40	88.89

Source: survey data

(v) Marketing Problems Faced By Commission Agents

High transportation cost was reported to be the leading problem by the rice commission agents. The commission agents collect paddy from different farms located at far away distances from the mills so they have to spend money for hiring transportation vehicles i.e. trucks and due to long distances from rice mills as well as poor conditions of roads, the fuel expenses rise which increase the cost of commission agents. Along with high transportation cost, mixing of different varieties by the farmers, lack of storage facilities and high demand of inputs on credit by the farmers were reported the major problems faced by the commission agents in the study area. The opinion of the commission agents regarding their problems along with number of responses and percentage is given in table 15.

Table 15: Marketing problems faced by commission agents (n=45)

No.	Problem	Count	Percentage
1	High transportation cost	43	95.56
2	Mixing of different varieties	42	93.34
3	Lack of proper storage facilities	42	93.34
4	Demand of inputs on credit by the farmers	39	86.67

Source: survey data

(vi) Marketing Problems Faced By Rice Millers

The rice millers contacted in the study area reported high cost on energy as one of the most important problems during rice marketing process. The rising cost was due to increase in the electricity price as well as due to power outages caused by the shortage of electricity in the country. During such outages, the millers have to rely on electric power generators which are costly due to higher fuel prices. The other problems identified by the rice millers have been given in table 16.

Table 16: Marketing problems faced by rice millers (n=45)

No.	Problem	Count	Percentage
1	High cost on energy	45	100
2	Energy shortage issues	42	93.34
3	Weather related risks & Temperature	39	86.67
4	Mixing of different varieties (Quality issue	37	82.2
5	High fix cost on importation of machinery	37	82.2

Source, survey data

(vii) Marketing Problems Faced By Rice Traders

The rice traders identified increasing transportation cost as the leading problem for them. For loading and unloading of the milled rice, traders have to hire the labor which increases the cost of the traders. Along with these major problems, traders identified demand of trade credit by the wholesalers and the requirement of heavy investment for rice trading business as the important problems faced by them during rice marketing process. Te details are also given in table 17.

Table 17: Marketing problems faced by rice traders (n=45)

No.	Problem	Count	Percentage
1	Increasing transportation cost	45	100
2	Costly labor	41	91.1
3	Demand of trade credit by the wholesalers	37	82.2
4	Heavy investment requirement	36	80

Source: survey data

4- Discussion

In this paper the efforts were made to identify the rice marketing channel structure in Pakistan. During this study the data were collected from different marketing intermediaries and their marketing margins were estimated. The farmers were found to be the biggest beneficiary of the consumer rupee. The absolute cash margins for different marketing channel members were estimated and it was found that on average basis, rice growers received 62.57% share in the retail price of basmati rice varieties and 47.71% share in the retail price of non-basmati varieties against the supplied paddy equivalent to 40kg of milled rice. Similarly the marketing margins for other marketing chain members like commission agents, rice millers, rice traders, rice wholesalers and rice retailers for basmati rice varieties were estimated to be 3.06%, 8.27%, 2.47%, 7.41% and 16.22% respectively and for non-basmati rice varieties the marketing margins were estimated to be 4.57%, 14.71%, 4.90%, 13.07% and 15.03% respectively. The net marketing margins were also calculated by identifying and subtracting the cost of relevant marketing chain member from its absolute cash margins and the findings showed that the rice grower' net marketing margins for basmati and non-basmati varieties were Rs.809/40kg and Rs.168/40kg respectively. Based upon the net marketing margins of different marketing channel members, the percentage profit margin was estimated and for basmati rice, it was

found that the percentage profit margin for rice grower was the greatest as compare to other marketing channel members i.e. 40.74% and retailers' share was found to be 29.96% while the percentage profit margin for non-basmati rice was estimated and it was found that the rice growers' and rice retailers' share in terms of percentage profit margin was equal i.e. 25.26%.

5- Conclusions & Recommendations

The study was conducted to explore the marketing structure, marketing margin spread among the marketing intermediaries engaged in the rice marketing chain. In addition to this the bottlenecks faced by these marketing channel members were also sort out. The finding of study revealed that the rice marketing chain comprised of producers, beoparies, commission agents, miller, traders, wholesalers, retailers and finally the consumers. Each marketing channel member performs specific task against which he charges his profit. The present study explored that the high cost of inputs, water shortage and lack of appropriate loan at less mark up rates are production problems and lack of bargaining power, support price and accurate/timely market information are the marketing problems for farmer's point of view. The high cost for inefficient transportation means, adulteration of low quality rice varieties with good quality rice varieties by farmers, lack of storage space and frequently instant demand of credit by farmers are core problems faced by commission agents. The rice miller's important problems include as long power shortages, high cost bearing on the import of modern machinery, separation of good quality rice from adulated low quality rice and imposition of heavy taxes by government. The traders reported their problems as high cost for long distance transportation across the country, huge investment on the procurement of rice in bulk quantities, constructions of godown and high labor wages.

In the light of the results of study, the following specific recommendations are suggested to improve the current domestic rice marketing structure.

1-The farmers should be well informed about market information and they should be encouraged for direct marketing by selling their produce in rice mills at competitive prices. This will help to increase farmer share in consumer rupee.

2-The provision of agriculture credit on easy terms & conditions and at low mark-up rates can be very useful to enhance farmers' self sufficiency and help in curtailing the role of certain un-necessary middlemen.

3-To promote the agriculture industry environment the importation of latest machinery and spare parts can be be encouraged by exempting import duties. The uninterrupted supply of electricity to rice milling industry at reasonable price can be very helpful for the industry to continue the processing of paddy smoothly.

4-The market regulation wing of relevant ministry should safeguard the interests of farmers as well as consumers. The provision of effective law /policy is needed to be implemented in its true spirit to keep a healthy and fair business atmosphere.

5-There is also need of imparting the training to all rice marketing channel members in accordance of global rice marketing demand patterns.

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