



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2022; SP-11(6): 1574-1580  
© 2022 TPI

[www.thepharmajournal.com](http://www.thepharmajournal.com)

Received: 14-04-2022

Accepted: 17-05-2022

#### Adarsh Kumar

Student MBA (Agri-Business),  
Department of Agricultural  
Economics, Sam Higginbottom  
University of Agriculture  
Technology and Sciences,  
Prayagraj, Uttar Pradesh, India

#### Dr. Nitin Barker

Assistant Professor, Department  
of Agricultural Economics,  
Sam Higginbottom University of  
Agriculture Technology and  
Sciences, Prayagraj,  
Uttar Pradesh, India

#### Dr. Ramchandra

Department of Agricultural  
Economics, Sam Higginbottom  
University of Agriculture  
Technology and Sciences,  
Prayagraj, Uttar Pradesh, India

#### Dr. Mukesh Maurya

Department of Agricultural  
Economics, Sam Higginbottom  
University of Agriculture  
Technology and Sciences,  
Prayagraj, Uttar Pradesh, India

#### Dr. Pratyasha Tripathi

Department of Agricultural  
Economics, Sam Higginbottom  
University of Agriculture  
Technology and Sciences,  
Prayagraj, Uttar Pradesh, India

#### Corresponding Author

#### Adarsh Kumar

Student MBA (Agri-Business),  
Department of Agricultural  
Economics, Sam Higginbottom  
University of Agriculture  
Technology and Sciences,  
Prayagraj, Uttar Pradesh, India

## Study on marketing of hybrid paddy (VNR 2245) in Saran district of Bihar

**Adarsh Kumar, Dr. Nitin Barker, Dr. Ramchandra, Dr. Mukesh Maurya and Dr. Pratyasha Tripathi**

#### Abstract

Agricultural marketing plays an important role not only in stimulating production and consumption, but in accelerating the pace of economic development also. Company should do more demonstration and that should be done authentically so that the message conveys properly to the farmers and the Company should aware the farmer about the new variety as the new people are not aware and they don't have knowledge and its benefit so they are not ready to pay more money for new variety, so initially its Paddy should be reduce. Company should direct the co-operation and support of the Agriculture University for creating awareness for the efficient use of resources in paddy cultivation. The company may arrange periodical seminars and training programmes in which farmers should be imparted adequate and improved training in paddy cultivation practices at regular intervals of time. Lack of awareness of such practices ultimately resulted in a low level of production and unjustified profit margins with respect to paddy.

**Keywords:** Marketing, hybrid paddy, VNR 2245, agricultural

#### 1. Introduction

India is a country about 1.3 billion people. More than 65 percent of India's people live in rural areas and their main occupation is agriculture. Agriculture is the backbone of Indian economy because it contributes to economic and social well-being of entire nation through its influence of the GDP and employment. The history of Agriculture in India dates back to Indus Valley Civilization Era and even before that in some parts of Southern India. Today, India ranks second worldwide in farm output. Agriculture and allied sectors like forestry and fisheries accounted for 13.7% of the GDP (gross domestic product) in 2013, about 50% of the workforce. The economic contribution of agriculture India's GDP is steadily declining with the country's broad-based economic growth. Still, agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India Rice production in India is an important part of the national economy. Rice is the most important food crop of India covering about one-fourth of the total cropped area and providing food to about half of the Indian population. This is the staple food of the people living in the eastern and the southern parts of the country, particularly in the areas having over 150 cm annual rainfall. There are about 10,000 varieties of rice in the world out of which about 4,000 are grown in India. Rice is life for thousands of millions of people. In Asia alone, more than 2,000 million people obtain 60 to 70 per cent of their calories from rice and its products. Recognizing the importance of this crop, the United Nations General Assembly: declared 2004 as the "International Year of Rice" (IYR). The theme of IYR-Rice is life" reflects the importance of rice as a primary food source, and is drawn from an understanding that rice based systems are essential for food security, poverty alleviation and improved livelihood Rice is the most important food crop of India covering about one-fourth of the total cropped area and providing food to about half of the Indian population. This is the staple food of the people living in the eastern and the southern parts of the country, particularly in the areas having over 150 cm annual rainfall.

#### 2. Review of Literature

##### 2.1 Cropping pattern and socioeconomic farm structure

Meena (2001) [12] In his study "Production and Marketing of Rapeseed and Mustard in Sriganganagar District of Rajasthan" computed the growth rates in area, production and productivity of rapeseed and mustard for Ganganagar District of Rajasthan for the period

1980-81 to 1999-2000. He revealed that growth of area under Rapeseed and mustard in Rajasthan and Sriganganagar District was 9.76 and 5.97 percent per annum, respectively, while growth of production was 11.37 and 7.85 percent per annum. # respectively. The growth in productivity was more in Sriganganagar District (1.67 percent per annum) as compared to the state as a whole (1.20 percent per annum).

Kalamkar *et al.* (2002)<sup>[9]</sup> conducted a study to examine the growth in area, production and yield of principal crops in India over the period of five decades (1949-50 to 1997-98) and concluded that the growth rates of area, production and yield of principal crops. India over the period were positive and significant. High growth in production accompanied by increased variability in production, increased risk associated with the production. The yield effect was the most important factor for increase in production of rice, jowar, maize, cotton and sugarcane.

Singh and Chandra (2003) tested various functional forms and found that exponential function was the most appropriate to examine the growth trends of area, production and yield of paddy in India. They studied the growth rates in area, production and productivity and found that as a result of increase in area under cultivation and yield, the overall growth rate in paddy production had been very significant (2.96) during the 1975/76-1990/00 period. Yield increased by 2.42 per cent whereas acreage increased by 2.52 percent.

Verma *et al.* (2006) worked out the annual compound growth rates of area, production and productivity of principal crops in Madhya Pradesh for the period 1986-87 to 2000-01 the trend analysis indicated that there was a major break-through in the annual compound growth rates of area and productivity of oilseeds at 2.35 per cent and 1.68 percent, respectively. Resulting in higher growth of production at 4.03 per cent per annum.

## 2.2 Marketing Cost Margins and Price Spread

Santha *et al.* (1993) worked out the cost of cultivation and profitability of paddy crop in Kerala using primary data collected for three cultivation seasons, the findings showed that the cost of cultivation per hectare was minimum for Viruppa season, which was found to be RS.3726.16 while there was not much difference between the cost of cultivation during Mundakan and Punja, which was Rs.4641.51 and Rs 4625.50, respectively. The input-wise split-up revealed that the major share of the total cost was on hired human labour, which accounted for 22.62 per cent for Viruppa and 25.57 per cent for Mundakan and 27.22 per cent for Punja. The next important input was the imputed value of rent on land. The cost A, which forms the paid out cost accounted only for 62.54 per cent in Viruppa, 65.04 per cent in Mundakan and 67.74 per cent in Punja. The profitability analysis revealed that return per rupee invested was the highest for Vinuppa (14) followed by Mandaka (1.33) and Punja (1.27).

Mohandas and Thomas (1997) studied the economics of rice production for different size holders such as small, medium and large farmers in Kuttanad areas of Kerala. The analysis showed that the percentage increase in gross income per hectare from rice cultivation was highest among marginal farmers followed by large and small farmers. The results of the study showed that cost escalation is the most important factor, which makes rice cultivation a relatively less remunerative enterprise. They suggested that mechanization should be followed wherever possible to reduce the cost of human labour.

Shaikh *et al.* (1998) worked out costs and returns of major crops grown in Andhra Pradesh. The overview of the study revealed that human factor accounted for major share in total cost of all the crops including paddy in all the zones of Andhra Pradesh, while the adoption of plant protection measures was abysmally low in almost all the crops except in cotton. The analysis of profitability in case of cereals indicated that paddy claimed a lion's share of higher profitability in high potential irrigated zone of Krishna-Godavari compared to other zones. Similar situation was observed in case of maize in Krishna-Godavari zone, which was due to wider acceptance of technology by the farmers.

Umashankara, C. (1998) worked out costs and returns in paddy farming in hilly zone of Karnataka. The cost of cultivation per acre in low land situation (transplanted) was higher (Rs.4930.96) than upland situation under drill sown (Rs.4716.04). This was due to increased usage of labour, fertilizers, pesticide and improved varieties of seeds in anticipation of higher yield. The share of variable cost was 96 per cent of total cost in both situations. Among the variable costs, the cost on human labour was the single largest item. The average yield was found to be 15.1 qtls per acre for lowland situation as compared to for upland districts. The net returns were RS.3498.46 per acre in lowland and RS.2442.38 per acre in upland area. Chinnappa, B. (2001)<sup>[11]</sup> conducted a study to examine the cost and resource use structure and profitability of rice based cropping system in southern transition zone, Karnataka. He found per acre cost of cultivation RS.15391,35,12689.14 and 13954.34 for rice-rice, rice-jowar, rice groundnut system respectively. Net return on a per acre basis was highest in the rice-rice system and lowest the rice-ground nut system.

Krishna, V.V., (2001)<sup>[10]</sup> conducted a study to work out costs and returns of paddy cultivation in Kerala state through a sample of 100 farmers. The total cost of cultivation per hectare was RS 31043.75. In this, human labour share was 61.46 per cent of total cost. Total returns per hectare of cultivation were RS.27023,68 which was below the total cost incurred and the net income was negative with a loss of Rs.4020.08 per hectare and B-C ratio was 0.87, indicating unprofitable situation. However, rice and prawn cultivation together pushed B-C ratio to 1.27. The study concluded that there was an increased trend towards double crop of prawn one of the major recommendations made in the study was mechanization of rice farming operations.

## 2.3 Constraints

Verma (1991) studied problems in marketing of groundnut in Indore District of Madhya Pradesh the analysis suggested that the modernizing the processing industry, cheaper credit facility, proper storage facility, improvement of transportation and communication facility, strict enforcement of market regulation act, supply of electricity to processing units at cheaper rates etc. are the main components to increase the processing capacity up to the level specified.

Joshi, N.P., (2004)<sup>[8]</sup> conducted a study on production and marketing of rice in different development regions of Nepal and concluded that farmers were facing several production problems such as lack of technical knowledge, lack of irrigation, lack of organized credit facilities, lack of quality inputs, diseases and pests. They also reported marketing problems such as low price of produce, unorganized market and lack of appropriate transportation facilities.

Hangchaun *et al.* (2005) [7] conducted a study to examine characteristics of the rice marketing system in Cambodia. They analyzed that poor roads and illegal fee collection by Govt. officials increased the marketing costs and created distribution barriers to deficit areas. Farmers' income remained very low because they had poor bargaining power for price due to limited chances to meet buyers and inadequate availability of information on agro-product prices. They suggested an open paddy market Grover *et al.* (2007) [3] conducted a study to examine sesamum cultivation in Punjab State. The study observed that to give a boost to the sesamum cultivation in the state, two dimensional efforts, viz technological up-gradation and effective market support are required.

Shivamurthy *et al.* (2008) conducted a study on constraints of farmers cultivating rain fed paddy in eastern dry zone of Karnataka. Of the 24 taluks from 3 districts, 6 taluks (Kanakapura, Channapatna, Tumkur, Gubbi, Kolar and Bangarpet) were selected based on the size of area under rice cultivation. One hundred rice farmers from 25 villages who cultivated rice during the kharif of 2003-04 were interviewed. Of the farmers interviewed, 89 percent expressed problems associated with high cost of inputs and rising cost of cultivation. The other constraints in rice cultivation consisted of the non-availability of loans (84.16%), high interest rate on loans (64%), inadequate insurance coverage (<48%), susceptibility of the area to drought (90%), pest and disease epidemics (40%), lack of market facilities (71%), lack of transport facilities (52%), lack of profitable marketing channels (79%), shortage in labour resources (61.0%), high wages (51.0%) and shortage of skilled labour (41.0%)

Aamer *et al.* (2009) conducted a study to find out production, protection and marketing problems faced by the rice growers in "Tehsil Hafizabad, Dist. Hafizabad (Pakistan). They found that timely unavailability of fertilizers, high prices of inputs and expensive labour for nursery transplantation, lack of finance, high prices of pesticides, adulteration in fungicides and monopoly of middle men, lack of storage facilities and distant markets were the major problems faced by the rice growers in the study area. In nut shell, it can be inferred that different studies have been conducted on growth rates, cost and return paddy cultivation. Marketing cost and price spread in different marketing channels of paddy. No study on these aspects has been conducted in Rajasthan. Therefore the present study was undertaken.

### 3. Materials and Method

#### 3.1 Selection of district

There are 38 District in Bihar state and district name Saran was selected purposively for the study on the basis of maximum area under Paddy cultivation. The net sown area of the district Saran is 182986 hectares as per KVK Saran. The land situation of Saran is divided in four types- Upland, Low land, Medium land and Diara land. The most part of the district is Upland (34%).

#### 3.2 Selection of Block

There were 20 Blocks in district. Masharakh block was selected purposively for the study. Because in this Block farmers are progressive and ready to use Hybrid paddy products, Masharakh block is situated 30 km away from the District Head Quarter on the Chhapra. The farmers of this block have been growing Hybrid paddy for several years.

Numbers of villages in different blocks of Saran district.

Sr. No	Name of blocks	No. of villages in Block
1	Amnour	118
2	Baniyapur	114
3	Taraiya	88
4	Chapra	111
5	Dariapur	196
6	Dighwara	54
7	Ekma	98
8	Garkha	113
9	Ishuapur	68
10	Jalalpur	71
11	Lahladpur	42
12	Maker	44
13	Manjhi	136
14	Marhaura	107
15	Mashrakh	70
16	Nagra	64
17	Panapur	69
18	Parsa	90
19	Revelganj	55
20	Sonepur	880

#### 3.3 Selection of villages

Randomly 6 villages were selected out of 70 villages of Masharakh block for the study of VNR 2245 Hybrid Paddy Seed, 6 villages from the block is select purposively where maximum number of farmers grows Hybrid paddy. The villages selected as per conducted namely not in sequence.

List of selected villages

Sr. No	Selected Village
1	Arna
2	Bahuara
3	Bansohi
4	Chainpur
5	Dumarsan
6	Gorhna

Respondents divided into 5 groups according to their land holdings.

Sr. No.	Respondents	Land Holdings
1.	Marginal Farmers	0-1 Hectares
2.	Small Farmers	1-2 Hectares
3.	Semi Medium Farmers	2-4 Hectares
4.	Medium farmers	4-10 Hectares
5.	Large farmers	Above 10 Hectares

#### 4. Analytical Tools

Results were expressed as mean and average. find out the percentage of responded using a percentage formula are following: -

[Percentage= (Value/Total Value) × 100]. The market share of different brands was calculated by index of market efficiency.

#### 5. Result and Discussion

##### 5.1 To study the socio-economic Profile of the respondents in the study area.

Number of Respondent 120

Marginal, Small, Semi medium, Medium and large = 38+40+16+24+2= 120

## Description of the cultivated land holdings in different Size of Farm Group.

Sr. No.	Particulars			Size of farm groups					Sample Average
				Marginal	Small	Semi. Medium	Medium	Large	
1.	Size of farm group (in number)			38	40	16	24	2	120
2.	Average size of cultivated holding in hectares			0.74	1.68	3.44	7.16	12.52	5.10
3.	Land utilization of def. Crops ( in hectare)								
I	Kharif	1.	Paddy	0.42	0.88	1.89	3.94	6.72	2.77
		2.	Maize	0.14	0.28	0.59	1.36	2.18	0.91
		3.	Bajra	0.18	0.52	0.96	1.86	3.62	1.42
Ii	Rabi	1.	Wheat	0.38	0.72	1.98	3.78	6.84	2.74
		2.	Mustard	0.12	0.38	0.55	1.32	2.14	0.90
		3.	Gram	0.24	0.58	0.91	2.06	3.54	1.46
Iii	Zaid	1.	Fodder	0.12	0.17	0.19	0.22	0.27	0.19
		2.	Vegetable	0.08					
4.	Total sown area			1.68	3.67	7.35	14.89	25.83	10.68

Revealed that size of the farms group in numbers for marginal, small, semi-medium, medium and large size farms were 38,40,16,24 and 2 respondents respectively. Altogether 120 respondents were selected for study. Average size of the cultivated holdings per hectare for marginal size farms was 0.74 ha , small size farms 1.68 ha , Semi-Medium 3.44 followed by 7.16 ha for medium size farms and 12.52 ha large size of farms group, which, constituted on Average sample of 5.10 ha respectively.

It could also be seen that land utilization pattern in different

crops. The crops sown in Kharif season in this area are Paddy, Bajra and Maize. In Rabi and Zaid season the crops grown were Wheat, -Gram, Mustard, vegetables, Fodder and others. Among this Paddy occupied major area by Average sample of 2.77 ha in farm households. The season which selected for study was Kharif season because paddy crop occupies maximum area during kharif season. Total sown area for marginal, small, Semi-Medium, medium and large size of farms group was 1.68 ha followed by 3.67 ha and 7.35 ha and 14.89 and 25.83 respectively.

## Distribution of the respondents on the basis of Gender

Sr.no	Gender	Respondent Number	Size Group									
			Marginal Farmers		Small Farmers		Semi-Medium Farmers		Medium Farmers		Large Farmers	
			Number	%	Number	%	Number	%	Number	%	Number	%
1.	Male	80	30	37.5	28	35	9	11.25	11	13.75	2	2.5
2.	Female	40	8	20	12	30	7	17.5	13	32.5	0	—
	Total	120	38	—	40	—	16	—	24	—	2	—

**Interpretation:** The above table shows that out of 120 respondents 67% were male and out of that maximum no. 37.5% are marginal size farmers and 35% are small and semi-Medium size farmers 11.25% and medium Farmers 13.75% rest are large size farmers (2.5%). 33% were females out of

which 20% are marginal size female farmers and 30% are small farmers and 17.5% are semi-medium and 32.5% are medium farm group, and there was no female in large size farmers.

## Distribution of the respondents on the basis of age

Categories	Respondent No	Marginal Farmers	%	Small Farmers	%	Semi-Medium	%	Medium Farmers	%	Large Farmers	%
I Below 15 year	20	6	30	8	40	2	10	4	20	0	—
II 15-60 year	72	24	33	20	28	12	17	14	19	2	3
III 60 year above	28	8	29	12	43	2	7	6	21	0	—
Total	120	38	32	40	33	16	13	24	20	2	2

**Interpretation:** The above table shows that out of 120 respondents 17% were below 15 yr. out of which maximum were in small size farmers and 60% were of age group between 15-60 yr. out of which maximum farmers were in

marginal size. And 23% respondent comprises of age above 60 yr. out of which maximum no. of farmers in small farm group.

## Distribution of the respondents on the basis of qualification

Sr. No.	Categories	Respondents Number	Farm size group									
			Marginal		Small		Semi medium		Medium		Large	
			No.	%	No.	%	No.	%	No.	%	No.	%
A.	Illiterate	41	12	29	14	34	7	17	8	20	—	—
B.	Literate	79	26	33	26	33	9	11	16	20	2	3
	Total	120	38	32	40	33	16	13	24	20	2	2
I	Primary School	18	6	33	5	28	7	39	—	—	—	—
Ii	Secondary school	20	1	5	8	40	1	5	10	50	—	—
Iii	High school	22	10	45	8	36	1	5	2	9	1	5

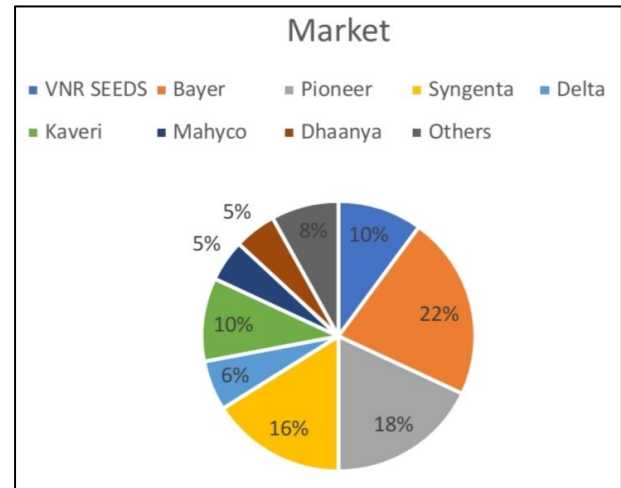


Iv	Intermediate	16	8	50	4	25	—		3	19	1	6
V	Graduate	3	1	33.33	1	33.33	—		1	33.33	—	
Total		79										

**Interpretation:** The above table shows that out of 120 respondents 34% are illiterate and 66% are literate out of which 15% have done their studies till primary school only out of which maximum no. of farmers 39% were Semi medium level farmers. 17% respondents have done secondary school out of which maximum no. of respondents 50% were medium level farmers. 18% are high school passed out of which maximum no. of farmers 45% are Marginal scale farmers .13% respondents are intermediate out of which 50% are Marginal scale farmers. And the remaining 3% respondents are graduated here, 1 in Marginal group and other 2 in small and medium group.

**5.2 To find out the market share of hybrid paddy in Saran district**

VNR 2245 is a newly emerging company contains a premium quality of hybrid paddy seeds, due to the quality of product the company has acquired a good amount of market share in quick time. Company also provides various offers and gifts which attracts the customers to buy the product. By the help of these diagram and charts I would like to show you the farmers response over questionnaire and personal interaction.



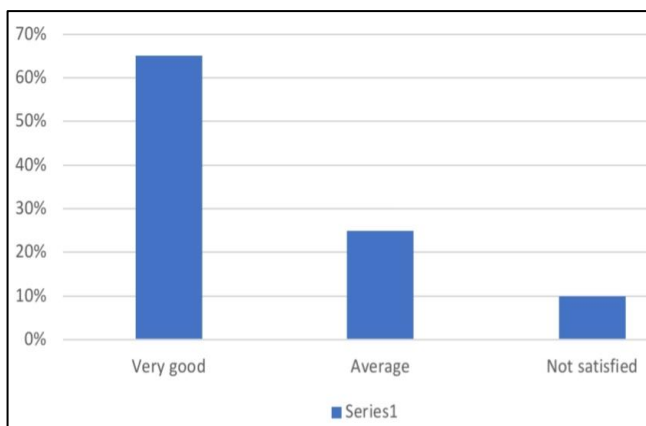
VNR Seeds acquires a total market share of 10% in Saran district

**5.3 To estimate the marketing cost, market margin, price spread and market efficiency of hybrid paddy in the study area.**

**Channel I: Producer- Wholesaler- Consumer**

Satisfaction level of respondents for VNR 2245

Satisfaction level	Respondents
Very good	65%
Average	25%
Not satisfied	10%



Satisfaction level of consumers of VNR 2245

Market Share of hybrid paddy in Saran district

Company	Trade Name	Market share (%)
Bayer Crop Science	Arize 6444	22%
Pioneer Seeds	27P37	18%
Kaveri	9090	10%
Delta	Sudha	6%
Syngenta	S 4001	16%
Dhanya	MC13	5%
Mahyco	Dhananjay	5%
VNR SEEDS	2245	10%
Others	-----	8%

Sr. No	Particulars	Value in Rupees	
		Rs	%
1.	Producer sale price to wholesaler	1300	91.54
2.	Cost incurred by the producer		
I	Packing cost	15.00	1.05
Ii	Packing material cost	12.00	0.84
Iii	Transportation cost	20.00	1.40
Iv	Market cost	18.00	1.26
V	Labor cost	10.00	0.70
Vi	Loading and Unloading cost	10.00	0.70
vii	Weighting Charges	8.00	0.52
viii	Miscellaneous charges	20.00	1.40
	Total cost (i-viii)	113.00	7.95
3.	Margin of Producer	30.00	2.11
4.	Net price received by producer	1157	81.47
5.	Wholesaler sale price to Consumer	1420	100
6.	Marketing Efficiency		11.50%

Above table reveals the marketing cost, marketing margin and marketing efficiency of the product in channel-I, Producer sale price to Wholesaler was 1300 rupees while consumer paid price was 1420 rupees.

**Channel II: Producer –Wholesaler – Retailer – Consumer**

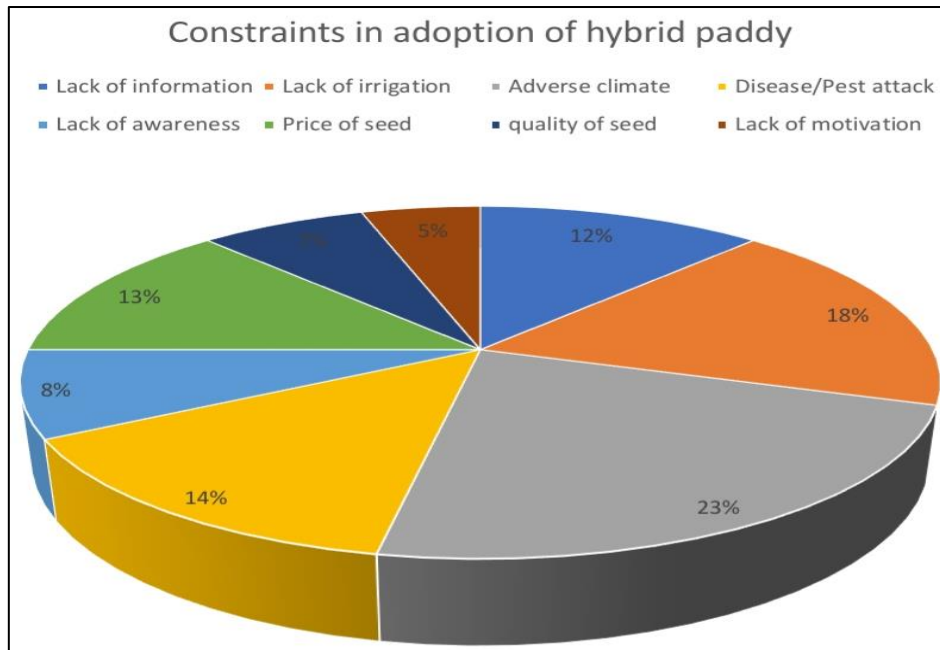
1.	Sales price of Wholesaler to Retailer	1420	98.61
2.	Cost incurred by the Wholesaler		
I	Loading & Unloading charges	8.00	0.55
Ii	Carriage up to shop	20.00	1.38
Iii	Weighting charges	11.00	0.76
Iv	Town charges	20.00	1.38
V	Transportation	25.00	1.73
Vi	Losses & Miscellaneous charges	16.00	1.11
	Total Cost (i-vi)	100.00	6.94
3	Margin of Village Merchant/Retailer	20.00	1.38
5.	Consumers paid price	1440	100
6.	Total marketing cost	100	6.94
7.	Total marketing margins	20	1.38
9.	Total Marketing Efficiency		14.20%

In the above table we can see the marketing cost, marketing margin and the marketing efficiency of Channel- II,

Wholesaler sales price to retailer is 1420 and consumers paid price is 1440 in this Channel.

To identify the constraints in adoption of hybrid paddy Constraints in adoption of hybrid paddy.

SI. No.	Constraints	Farmers Response	%	Rank
1.	Lack of availability of information at farm level	14	12	V
2.	Lack of irrigation	22	18	II
3.	Adverse climate	28	23	I
4.	Disease/Pest attack	17	14	III
5.	Lack of awareness	9	8	VI
6.	Price of seed	16	13	IV
7.	Quality of seed	8	7	VII
8.	Lack of motivation	6	5	VIII
Total		120	100%	



Constraints in adoption of hybrid paddy

**6. Conclusion**

There were five types of groups of farmer in study area with different land size holdings.

- VNR is a newly emerging company contains a premium quality of hybrid paddy seeds, due to the quality of product the company has acquired a good amount of market shear in quick time. Company also provides various offers and gifts which attracts the customers to buy the product.
- Brand promotions play an important role in promoting sales of a product so there is a need to increase the promoting campaigns.
- VNR Seeds acquires a market share or 10% with its four hybrid paddy seeds.

**7. Reference**

1. Chinnappa B. An economic appraisal of paddy based cropping system in southern transition zone (Zone-7) Karnataka Mysore Journal of Agricultural Science. 2001;1503:258-26.
2. Goyal SK, Berg. Ernst. An Analysis of Marketed Surplus Response of Cereals in Haryana State of India Agribusiness. 2004;20(3):253-268
3. Grover, DK, Singh M. Sesam Cultivation in Punjab, Status, Potential and Constraints Agricultural Economics

4. Research Review 2002, 2007.
4. Pl. Grover RK, Shuag KS, Niwas. Pattern of Market Arrival and their structural Development in Wholesale Markets of Haryana Ind. J Agril. Mktg. 1994;Special issue:92-98
5. Gupta S, Singh, B. Price spread in marketing of groundnut and Rapeseed and mustard in Punjab, Ind. J. Agril. Mktg. 1998;12(142):129-13
6. Gyanendra S, Chandra H. The Paradox of declining of agricultural output growth co-existing which declining prices of agricultural commodities. Agriculture, 2001.
7. Hang Chuon, C, Suzuki N. Characteristics of the rice marketing system in Cambodia Journal of the Faculty of Agriculture Kyushu University. 2005;50(2):693-714
8. Joshi NP. Production and Marketing of Rice in different Development Regions of Nepal institute of Agriculture and Animal Science (IAAS), 2004, 138p.
9. Kalamkar SS, Atkare VG, Shende NV. An Analysis of Growth Trends of Principal Crops in India Agricultural Science Digest, 2002;22(3):1
10. Krishna VV. Sustainability and economic efficiency of rice farming in the agro ecological problem area zone of Kerala. M.Sc. Thesis, Department of Agricultural Kumar, Arun and Mor, B.S. (2001) Analysis of Growth rates in Area, Production and Productivity of major Crops in Haryana. Research on crops. 2001;2(3):327-331

11. Kumara A, Singh RP, Pandey RK. Productivity, growth, and instability in rice Production-An Analysis of plateau region, Bihar The Bihar Journal of Agricultural, 1996.
12. Meena SK. Production and marketing of Rapeseed and Mustard in Sri Ganganagar Marketing. 2001;4(2):144-155.