

Agricultural Practices in Rajasthan: A Case Study of Ajmer District in Rajasthan

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Abstract—For the study, Ajmer district is randomly selected from Rajasthan. The aim of the paper is to study different agricultural practices prevalent in Ajmer. It also focuses on profitability and input use among different agricultural practices. Economic condition of farmers prevents them from indulging in usage of more inputs. Thus, the input costs and the profitability vary greatly depending upon different regions, as these regions vary from each other in their physical, economic and social set-up.

Keywords: Agriculture, Input, Profitability, Yield, Cultivator.

1. INTRODUCTION

Increasing profitability in agriculture through higher productivity has been an important goal in developing countries like India. It has become more relevant in recent years due to limited scope for expansion of arable land. Increasing yield to their technically highest level may be feasible, through adequate investment in infrastructure and technology i.e. irrigation, land development, storage, markets, etc. The input costs and the profitability vary greatly depending upon the different regions, as these regions vary from each other in their physical, economic and social set-up. There are a number of hidden costs in agriculture, making them difficult to recognize and compute. It is generally seen that the input costs in most of the areas is less; this is due to the unpredictable nature of agriculture and the high amount of risk involved. Taking a risk and moving away from the traditional practices and adopting new means for increasing production leads to increased profit; along with this transfer of information plays an important role.

2. STUDY AREA

Three villages- Ganaheda, Chawandia and Tilora, in the district of Ajmer in Rajasthan were surveyed. These villages are located very near to the town of Pushkar. The sites of the three villages indicate their proximity in distance but their situational location varies greatly. Distance between Ganaheda and Pushkar is the least, also Ganaheda is located along a highway. This has allowed the residents of Ganaheda more exposure, making them more conscious and smoothening their rural kinks. Earlier sugarcane, “ganna” cultivation was

practiced here but because of scarcity of water it is no longer possible. Indeed most people now are employed in the service sector. Chawandia is the one which has the most interior location and rural characteristics. Tilora lies on a different road from Pushkar and it is located on higher ground. Quarrying was widely practiced here earlier but now has decreased.

3. OBJECTIVES

The objective of the paper is to study different agricultural practices prevalent in Ajmer. The second objective is to recognize and analyze the intra and inter village disparities in input usage and profitability in agriculture.

4. METHODOLOGY AND DATABASE

Compilation of the primary data was done with the help of SPSS software. For this study simple percentages have been calculated. Agricultural profit (in monetary terms) was measured using the following formula,

Agricultural Profit = Agricultural Income – Agricultural Input Cost.

To study disparity, Coefficient of Variation (C.V) has been calculated. Further, to understand correlation between input use and profit, Karl Pearson’s Product Moment Correlation Coefficient calculation method has been used.

5. LIMITATIONS

Some of the limitations of the study are small sample size, sample biasness, reluctance of respondent to answer certain questions, ambiguous answer of respondent, all input and income are in monetary values, no data regarding yield quantity was available.

6. ANALYSIS

This parts deals with study of various agricultural practices and relation between profit and input use.

6.1. Subsistence agriculture

The maximum i.e. 71.4%, proportion of cultivators of all the three villages are subsistence farmers having no monetary income from their agricultural production. This is because they do not use mechanization or any advanced techniques, and they consume the produce by themselves. The maximum concentration (11.4%) is of the cultivators having agriculture income between Rs. 1- 20000, followed by the range Rs. 50001- 1 lakh i.e. (8.6%). The picture varies greatly when looking at the individual villages. Out of the three villages, the maximum subsistence farmers are present in Chawandia(82.9%), followed by Tilora(75%) and Ganaheda (57.5%).

6.2. Commercial farming

6.2.1. Input Use

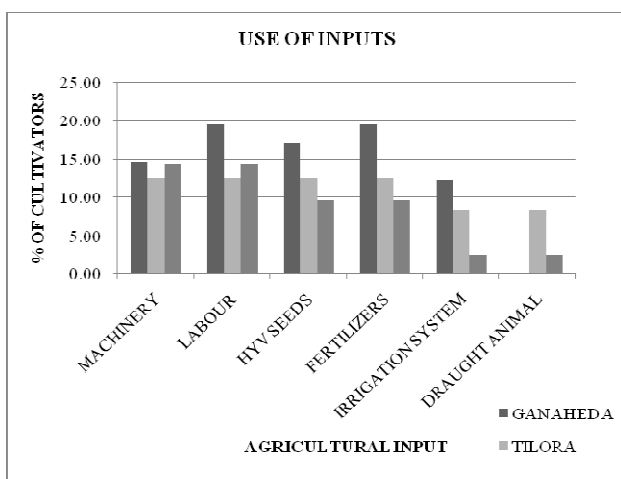


Figure 1: Use of inputs among commercial farmers

The commercial farmers use the modern machines (such as tractor, thresher, etc.), chemical fertilizers and HYV seeds and draught animals mostly as compared to subsistence farmers.

It is seen that labour is the most widely used input, it must be mentioned that this specifies, labours hired for monetary pay and does not include the unpaid labours of the cultivator's family. Thereafter, machinery and fertilizer are the inputs used by most labourers, followed by HYV seeds. Surprisingly though this is water scarce area but few cultivators uses some kind of irrigation. Draught animals are the least used input.

Among the three villages usually cultivators of Ganaheda uses more inputs except for in case of draught animals. Thereafter, between cultivators of Tilora and Chawandia, those of the latter use more inputs except for irrigation and draught animals. HYV seeds and fertilizers are used by almost same proportion of cultivators in both these villages. However, it is astonishing and interesting to note that considering the share of commercial cultivators, Ganaheda shows lesser usage of modern inputs than Tilora or Chawandia.

Within Ganaheda labour and fertilizer are the most widely used inputs and irrigation the least used. Tilora hardly shows any variation among inputs used and in Chawandia irrigation and draught animals is seldom used.

In Tilora only about 40% of the cultivators irrigate their field. Irrigation in Tilora is quiet costly compared to other villages. This is because of topography of Tilora, which is high and rugged, hence, water table maybe at greater depth. Therefore wells are not popular means of irrigation there. Tubewell serve most of the irrigational need. Ganaheda mostly depend upon tubewell irrigation (55%). Wells are also more in Ganaheda compared to other villages. This shows that Ganaheda have less irrigational problems than other. Likewise Chawandia also mostly depend upon tubewell for irrigation (50%).

6.2.2. Profitability

77% of the commercial cultivators in the region enjoy profit less than Rs.50, 000 and less than 10% reap a profit of over Rs.1 lakh. This is in keeping with the fact that majority are marginal and small farmers. The profit concentration is similar to that of input cost but doesn't exactly match. For eg: astonishingly nobody in Tilora invests more than Rs.1lakh but one cultivators profit lies in this category. This is difficult to explain because physical conditions of Tilora are also not very favourable for cultivation but it was seen that majority of the commercial farmers use most of the inputs. However, while in Ganaheda 55% earn a profit of Rs.20, 000-Rs.50, 000, in Tilora 50% earn less than Rs.20, 000 (but there is also the case of exceptionally high profit, thus, one can say Tilora shows a wide rich poor gap).In Chawandia majority has a profit of less than Rs.10, 000 but number of cultivators are more evenly spread across all profit groups. The absence of higher profit in Chawandia could be because the cultivators of Chawandia face more problem is selling their product (3 out of 7 cultivators face problem) than the cultivators of the two other regions (1/6 for Tilora and 3/9 for Ganaheda).

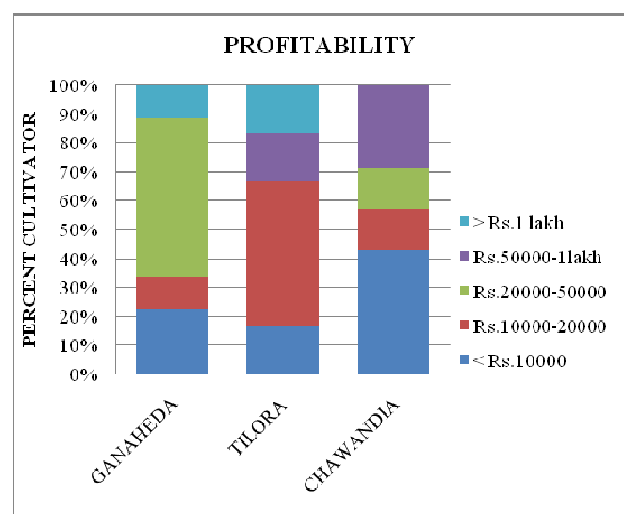


Figure 2: Profitability village wise

6.3. Contract farming

Survey of contract farmers was done in Ganaheda, Motisar, Tilora and Swaipura. Thirty four farmers were surveyed out of which twenty four farmers were from Motisar, eight from Ganaheda and one each from Tilora and Swaipura. All farmers surveyed were Hindu with maximum belonging to General class followed by OBC. Every farmer grows flowers under contract farming except one farmer at Motisar which grow vegetables. Most of them were big farmers (twenty) with large land holding. They have divided their holding into two parts area under contract and area not under contract. It was observed that area not under contract was more than area under contract. Area not under contract is used by farmers to grow vegetables and other crops like amla etc and three of the farmers were having flowers. This was done to maximize their income. Among them period of contract ranges from one to twenty years. These contracts are mostly oral in some cases they were written.

They even get facilities under these contracts in form of advance money and input (fertilizer, plants). Price of their produce is decided by market. Quantity of produce was decided by farmers and quality of produce was decided by contractor in all cases. Contractor in most of the cases have decided prices before the contract. Most of the farmers seem to be satisfied by contract. Farmers mostly prefer to take loan from contractor and some even take from banks. Most of them were literate.

6.3.1. Input Use

Input cost varies across cultivator and village. Maximum cultivators have annual input cost less than Rs 10000. Only eleven percent of them have more than one lakh rupees and twenty two percent of cultivators have between Rs 20000 to Rs 50000.

In Tilora and Sawaipura there were only one cultivator each while twenty four cultivators were surveyed from Motisar and eight from Ganaheda. The annual input cost of cultivator in Tilora is Rs 2000 and Rs 13000 in Swaipura. In Ganaheda forty percent farmer have annual input cost between Rs 20000 to 50000. 40% cultivators have annual input cost less than Rs 10000. Disparity in annual input of Ganaheda may be due to sample bias due to random sampling and very small sample size but in generally all the respondents complained about the water scarcity in the recent years.

6.3.2. Profitability

Tilora and Swaipura had one cultivator each earning profit of Rs 1180 and Rs 17000 respectively. While in Ganaheda and Motisar maximum percentage of cultivator have profit below Rs 10000. As Motisar have higher number of samples therefore it has more classes of profitability while Ganaheda have two classes due to fewer samples (eight).

Five percent cultivators in Motisar have annual profit more than rupees one lakh. These cultivators are owner of big holding in village but most of them have migrated to other places and have some workers who take care of their holding and contract. While in Ganaheda maximum profit is Rs 45000. Thus there is great difference in annual profitability within the village and between the villages.

6.4. Market Gardening and Horticulture

Market gardening is extensively practiced in Ajmer district. Cultivation of valued crops such as vegetables, fruits and flowers for the urban markets. Vegetables like brinjal, mushroom, maize. The region is famous for its rose cultivation for Gulkand factory. Amla and aloe vera are also cultivated in the region. Mostly all of these crops required extensive irrigation, fertilizer, insecticide and in some case green house. One such example is of mushroom cultivation.

Mushroom Cultivation, Ganaheda

For the case study 'Mushroom Cultivation' in Ganaheda has been studied. The cultivator was interviewed for the purpose. He had taken training at Solan for mushroom cultivation and even goes to Solan every month to buy mushroom seeds. Two varieties of Mushroom: Dingri and Button are grown. The mushroom is grown on compost and no chemical fertilizer is used. The growing area is enclosed and high temperature is maintained. Growing unit cost around rupees two lakhs. Selling rate of mushroom is Rs 500 to 1000 per kilogram. Production is 50 Kg per bed. The seed required is 2 Kg per 100 Kg of compost. In 2 Kg seed 20 to 30 Kg mushroom is produced. Cost of seed is Rs 80 per kg. Production cost of compost is Rs 5 per Kg. Total input cost for one Kg seed and fifty Kg compost is Rs 330. The first harvest comes after thirty days of seeding and continues for two months. One week is marked as high production and next as low production. Wet mushroom is sold at Rs 60 per Kg and dry mushroom is sold at Rs 600 per Kg.

6.5. Relation and variability in input and profit

Table 2: Relationship analysis of input and profit

Village	Input (Rs.)	Profit (Rs.)
Chawandia	1400	2000
Chawandia	5250	11550
Chawandia	8015	4900
Chawandia	11000	44800
Chawandia	20100	8800
Chawandia	28500	89000
Chawandia	121000	79000
Ganaheda	1500	9000
Ganaheda	3000	8800
Ganaheda	6000	11500
Ganaheda	10000	39696
Ganaheda	12800	32200
Ganaheda	19475	44800
Ganaheda	34500	25500

Ganaheda	55200	35800
Ganaheda	196000	204000
Tilora	1300	13700
Tilora	2800	1820
Tilora	4200	75500
Tilora	5200	11500
Tilora	5450	12050
Tilora	15950	124647
Mean	25847.27	40480.14
S.D	46319.9	49048.85
C.V	179.20	121.16
Correlation	0.774109	Significant at 5% (two-tailed)

It is seen that from Table 2, there exists a strong correlation between input use and agricultural profit in this region, reinforcing the claim of modern agriculturists that the methods of Green Revolution increase yield hence, profit. However, both input use and profit (in monetary terms) are highly variable among the villages. Both input and profit varies the most in Ganaheda, but while input variability is least in Tilora, profit variability is least in Chawandia (evident from the following table). This is because Ganaheda has the largest share of commercial farmers and the maximum mix of subsistence and commercial cultivators, the tendency of the former being not to use mechanization and that of the latter, to use. Whereas, Tilora has very few commercial farmers, hence little usage of modern inputs but those who does use, reap higher benefits than those of Chawandia.

7. CONCLUSION

Subsistence agriculture is prominent in the region. Commercial farming is hardly practiced in this region, hence limiting the use of inputs in general. However, even among commercial farmers many do not avail modern technological inputs because of unfavorable physical conditions which as it is restrict productivity hence, profit. Indeed low input usage and profit is also prevalent in contract farming. Despite high correlation between input usage and profit, the economic condition of farmers (mostly marginal and small cultivators) prevents them from indulging in usage of more inputs. This further limits their production and hence, reduces profit earning scope. However, to improve their condition the cultivators are now trying new type of agricultural practices in these areas, for eg: mushroom cultivation, green house farming, etc. Along with this better functioning of the Govt. institutions are required especially for supply of irrigation facilities and controlling interference of middlemen.

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