



POST-HARVEST INFRASTRUCTURE DEFICIT AND FARMER BEHAVIOUR IN DAVANGERE DISTRICT OF KARNATAKA: EVIDENCE FROM A FIELD STUDY

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ABSTRACT Post-harvest infrastructure plays a crucial role in ensuring production efficiency and improving farm income. But it remains severely inadequate in dryland regions. This study examines the post-harvest infrastructure deficit and farmer behaviour in Davangere district. The study is based on the primary data collected from 800 farm households. The results reveal that only 25 per cent of farmers expressed a desire to own harvesting yards. The perceived need observed to be increasing significantly with farm size. Structural constraints such as small landholdings, low production volume, and high land values emerged as key deterrents. Actual ownership was highly skewed in favour of large farmers. More than 70 per cent of harvesting activities were carried out on public roads. The study highlights serious safety and efficiency implications. The study underscores the need for community-based post-harvest infrastructure in dryland areas.

KEYWORDS : Post-Harvest Infrastructure, Harvesting Yard

1. INTRODUCTION

Post-harvest infrastructure is one of the most important component of agriculture development. But it is widely neglected in dryland regions where production risk is high and profit margin are low. Harvesting yard, threshing floors, drying space and storage structures are most important in not only reducing post-harvest losses but also in; maintaining quality, ensuring food safety and increasing net returns to the farmers. Post-harvest losses, in India, are estimated to be in the range of 6 to 18 percent across the crops due to inadequate infrastructure and poor handling practices (NABARD, 2018; Planning Commission, 2014). Policy attention being focussed on production enhancing inputs, investment in post-harvest infrastructure at the village level has remained insufficient. The problem is particularly acute in dryland district of Karnataka like Davangere.

Agriculture of Davangere district particularly taluks coming under Central Dry Zone is predominantly rainfed and characterised by small and fragmented landholdings. Crops like ragi, jowar and pulses like red gram are important component of cropping pattern of the district. They require open space for threshing and sun-drying. Farmers are increasingly depending on public space like village roads, temple premises and school grounds for post-harvest operations due to lack of private harvesting yards. These practices beset with several problems. They expose the farmers to the risk of post-harvest losses and crop contamination. Performing post-harvesting operations in the public roads create traffic congestion, safety hazards as well as risk of accidents.

Critical review of the literature reveals that research on agriculture infrastructure in India is largely concentrated on macro-level trends in public investment, storage capacity and marketing infrastructure (Shetty, 1990; Gulati & Bathla, 2002). Farm level studies focussing on the farmers behavioural response to infrastructure deficit like; farmers perceived needs and actual ownership of post-harvest facilities are relatively scarce. It is particularly true for the study area. Moreover, most studies treat infrastructure gaps as a supply-side issue. They have given limited attention to how farm size, production scale, and economic viability shape farmers' investment decisions. The widespread use of public roads for harvesting operations, despite its serious safety and efficiency implications, has received very little systematic empirical analysis. In this backdrop, this study undertaken with the specific objectives: to analyse farmers' perceived desire to own harvesting yards 2) to identify and rank the key reasons for lack of desire to own harvesting yards, 3) to examine the ownership status of harvesting yards among farm households.

2. METHODOLOGY

This study is based on primary data collected from sample farm households of Davangere district of Karnataka. Davangere district has been purposively selected for this study due to widespread dependence on public spaces for post-harvest operations. Predominance of rainfed agriculture is another rational for the selection of Davangere district for this study. In order to ensure adequate representation to different strata of the farmers, multistage random sampling method has been used. In the first stage, taluks categorised under the Central Dry Zone were identified and two taluks were randomly selected. In the second

stage, from each of selected taluk, villages not covered under canal irrigation were listed. From such list of selected two taluks, 10 villages were randomly selected. Thus totally 20 villages were selected in the second stage. In the third stage, 40 farmers' households were randomly selected from each village.

A total sample of 800 farm households was surveyed. Primary data were collected using a pre-tested structured interview schedule. Information about the size of holding, perceived need (desire) to own harvesting yards, actual ownership status, and spaces used for harvesting and post-harvest operations were collected. Post enumerative classification of respondents into marginal, small, medium, and large farmers was made based on the farm size category. Results were presented in the tabular format. The reasons for lack of desire were ranked using Garrett's ranking technique, which converts ranks into mean scores for prioritisation of constraints.

3. RESULTS AND DISCUSSION

Information about the farmers' perceived need to own the harvesting yard has been collected from sample farmers. Results have been consolidated across the different farm size category and presented in table-1. The results reveal a pronounced variation in perceived need across farm-size categories. It highlights the role of structural and economic constraints in shaping post-harvest infrastructure decisions.

Table-1: Farmers Perceived Desire/Need to Own Harvesting Yards

Desire to Own Harvesting Yard	Marginal Farmers	Small Farmers	Medium Farmers	Large Farmers	Total
Have Desire	8 (2.2)	47 (23.3)	86 (55.1)	59 (72.0)	200 (25.0)
Not having desire	352 (97.8)	155 (76.7)	70 (44.9)	23 (28.0)	600 (75.0)
Total Farmers	360 (100)	202 (100)	156 (100)	88 (100)	800 (100)
Chi-square Value	271.866*				

* Indicate significance at 1 percent probability level.

Results reveals the fact that only 25 per cent of the total sample households expressed a desire to own a harvesting yard. It means substantial portion (75 per cent) farmers reported did not have the desire to own the harvesting yard. The lack of perceived need is particularly acute among marginal farmers. An overwhelming 97.8 per cent of marginal farmers did not have the desire to own a harvesting yard. This proportion remains high among small farmers (76.7 per cent). It declines sharply for medium farmers (44.9 per cent) and large farmers (28.0 per cent). The desire to own a harvesting yard increases consistently with farm size. It increases from a negligible 2.2 per cent among marginal farmers to 72.0 per cent among large farmers. The calculated chi-square value (271.866) is statistically significant at the 1 per cent level. It confirms a strong association between farm size category and perceived need to own the harvesting yards. This finding indicates that harvesting yards are viewed primarily as scale-dependent infrastructure. Harvesting yard found to be important mainly for farmers with larger operational holdings and higher production volumes.

The Garrett ranking results of the reasons for lack of desire to own harvesting yards among farmers is given in table-2. Smaller size of holding emerged as the most important reason, with the highest Garrett mean score (72.48). It was followed by low production volume (66.35). It is directly limiting the economic viability of maintaining a dedicated harvesting yard. Increasing value of land around the village settlements another important reason for lack of desire to own the harvesting yard. It is reflecting the high opportunity cost of allocating land for post-harvest purposes.

Table-2: Reasons for Lack of Desire/Need to Own the Harvesting Yard

Sl. No.	Reasons for Lack of Desire	Garrett Mean Score	Rank
1	Small landholding size	72.48	I
2	Low production volume	66.35	II
3	High land value	59.82	III
4	Economically unviable investment	53.41	IV
5	Availability of public spaces	47.96	V

The perception that owning a harvesting yard is an economically unviable investment rated at fourth rank. It suggests that farmers compare the expected benefits against costs before making investment decisions. Finally, the availability of public spaces like village roads, ranked fifth. The results highlight that the absence of desire to own harvesting yards is driven more by economic and structural limitations.

Ownership status of the harvesting yard across the farm size category is given in the table-3. The values of marginal farmers and small farmers has been merged due to very low cell values. The results reveal the fact that only 21 percent of the farmers who expressed a desire to own a harvesting yard actually owned the harvesting yard. Majority of the farmers (79%) could not translate desire into ownership.

Table-3: Ownership Status of Harvesting Yard

Ownership Status	Marginal & Small Farmers	Medium Farmers	Large Farmers	Total
Owned	3 (5.5)	12 (14.0)	27 (45.8)	42 (21.0)
Not owned	52 (94.5)	74 (86.0)	32 (54.2)	158 (79.0)
Total	55 (100)	86 (100)	59 (100)	200 (100)
Chi-square Value	32.393*			

* indicate significance at one percent probability level.

Ownership is extremely limited among marginal and small farmers (5.5%). This highlight severe financial constraints that prevent smallholders from investing in harvesting yard. Ownership appeared to be consistently increases with increase in size of holding. It is 14 percent among the farmers belong to medium size category and 45.8 percent among the large size category. The calculated chi-square value (32.393), significant at the 1 per cent level. It confirms the statistical significance of association between farm size category and ownership status. The results reveal the fact that even when the perceived need exists, economic capacity and scale of operation play a decisive role in determining actual ownership. It underlines the necessity of collective or shared ownership model.

Sample respondents during the survey year reported 630 instances in which they were in need of using the Harvesting Yard. Out of 630 reported instances, 71.3% of the operations were carried out on the public roads. Only 7.7% of the farmers used their own harvesting yard and 9.2% depends on fellow farmers yard. It indicates the over dependence on the public roads for the harvesting operations. Crop threshing, winnowing and other such post-harvest operations performed on the public roads exposes farmers to multiple risks. It includes crop contamination, post-harvest losses, accidents and weather-related damages. Simultaneously, it creates problems for road users. It includes traffic congestion, vehicle damage and accidents and so on. Overall, the findings reflect a critical post-harvest infrastructure deficit with significant safety and efficiency implications.

4. CONCLUSION

Post-harvest infrastructure deficit is one of the critical constraints having its having its implications on production efficiency as well as farmer behaviour. The results of the study show that the perceived need as well as actual ownership of harvesting yards are strongly influenced by farm size. Marginal and Small farmers observed to be largely

excluded due to structural and economic limitations. The widespread dependence on public roads and common spaces for harvesting and post-harvest operations reveals two important aspects. First one is absence of affordable private infrastructure and Second one is lack of organised community facilities. Prevailing coping strategy address space constraints. But it imposes significant economic losses, safety risks, and negative externalities for farmers and road users alike. The results underline the urgent need to promote community-based or shared harvesting yards. Integrating post-harvest infrastructure into dryland development strategies can reduce losses, improve safety, and enhance farm-level income sustainability.

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