The Andhra Agric. J 67 Spl: (IARD-2020): 105-108

Marketing Inter-Linkages in Major Farming Systems in Srikakulam District of Andhra Pradesh

H Srinivasa Rao , D V Subba Rao and Y Radha, P Rambabu and V Srinivasa Rao
Scientist, Cost of Cultivation Scheme, RARS, Anakapalle, A. P.

ABSTRACT

This study has attempted to understand the marketing inter-linkages among the components of major farming systems in Srikakulam. Primary data was collected from a sample of 120 farmers from the existing six farming situations in Srikakulam. The study was carried out for five major farming systems out of nine farming systems identified in Srikakulam. Marketing inter-linkages among major farming systems were found out by MDR (Marketing Dependency Ratio) of inputs technique. The lowest MDR (0.59) was observed in FS-IV (Crops+Sheep&goat) due to the efficient utilization family labour, whereas highest MDR (0.85) has seen in FS-III (Crops+Poultry) due to over dependence on market for poultry feed. RPI (Response Priority Index) was used for the ranking of marketing constraints. Non-remunerative price and price fluctuations were the major marketing constraints in all farming systems except FS-III. High transportation cost, lack of market information and lack of storage facilities were other marketing problems faced by the respondents.

Key words: *Constraints, Farming systems, Marketing inter-linkages, MDR, RPI* .

The focus on Farming System Approach (FSA) gradually gained momentum when GoI (Government of India) announced its vision of doubling the farmer's income by the year 2022. Farming system referred as combination of enterprises involving crops and non crop enterprises like dairy, poultry, sheep & goat rearing, sericulture, apiculture, mushroom culture *etc*. together. The components of farming systems are selected in such a way that there would be material flows from one component to other component, thus by reducing the dependency on markets for inputs. The output of one component of the farming system may be served as an input for the other component. Thus, Farming System Approach (FSA) provides an opportunity to minimize the cost of production by efficient utilization of inputs which are generated within the system (Rao *et al*., 2017). Farming systems in India are characterized by small land holdings, scarcity of labour and resources, inadequate capital and lack of knowledge on FSA. Hence, an attempt was made to estimate the extent of marketing inter-linkages in major farming systems practiced by the farmers of Srikakulam district with following objectives, 1. to identify major farming systems and the extent of marketing inter-linkages in major farming systems of Srikakulam district. 2. to prioritize the marketing constraints associated with major farming systems

MATERIAL AND METHODS

Srikakulam district was purposively selected as this district has considerable coastal corridor, high altitude zone, plains and variable climatic conditions. Based on the irrigation facilities and soil types, the DAATT (District Agricultural Advisory and Transfer of Technology) Centre of Srikakulam divided the district in to six farming situations. The mandals under each situation were listed out and arranged in ascending order based on acrage and the mandal with highest area was selected. Similarly, two villages from each mandal were selected. Later, 10 farmers from each village were selected randomly. Thus, a sample of 120 farmers were interviewed for the study. The primary data on crops, allied activities, input utilization and their procurement were collected through well structured pre tested questionnaire. A total of nine farming systems were practiced by the sample respondents of Srikakulam district (table 1). A sample of more than 10 respondents practicing any of the nine farming systems were considered as major farming systems for further analysis *i.e.*, farming systems practicing by less than 10 respondents were not considered as major farming systems. For identifying extent of marketing inter-linkages and ranking marketing constraints, MDR (Market Dependency Ratio) and RPI (Response Priority Index) techniques respectively were employed .

Market inter-linkages in Farming Systems

To identify the extent of market inter-linkage among the farming systems, Market Dependency Ratio (MDR) is the best method (Rao *et al*., 2017). It is an important measure that reflects the dependency on markets for obtaining stable income. In farming systems, output of one component may be used as

Table 1. Farming systems practiced by the sample respondents in Srikakulam

S.No	Farming systems (FS)	Srikakulam (N=120)	
		No.	% to total
I	C	28	23.33
II	C+D	37	30.83
III	C+P	15	12.50
IV	C+S&G	11	9.17
V	C+D+P	21	17.50
VI	C+D+S&G	2	1.67
VII	C+P+S&G	2	1.67
VIII	C+D+P+S&G	3	2.50
IX	C+Mu	1	0.83
X	C+F	-	-
	Total	120	100

Note: C= Crops, D= Dairy, P= Poultry, S&G= Sheep & Goat, Mu= Mushroom unit, F=Floriculture

Table 2. Extent of inter-linkages among different components of major farming systems in Srikakulam district

Particulars	FS-I (C)	FS-II (C+D)	FS-III (C+P)	FS-IV (C+S&G)	FS-V (C+D+P)
Total value of inputs used (`Rs.)	167312	225322	347520	194082	441287
Total value of purchased inputs (`Rs.)	137885	178952	295392	114336	366558
MDR for inputs (%)	0.82	0.79	0.85	0.59	0.83

MDR: Market Dependency Ratio

Table 3. Farming system wise RPI for prioritization of marketing problems pertained to Srikakulam district

S.No	Marketing Constraints	Srikakulam				
		FS-I	FS-II	FS-III	FS-IV	FS-V
1	Non remunerative price of product	0.986 (1)	0.987 (1)	0.856 (2)	0.998 (1)	0.956 (1)
2	Price fluctuations	0.878 (2)	0.883 (2)	0.966 (1)	0.848 (2)	0.835 (2)
3	High transport cost	0.735 (3)	0.766 (3)	0.814 (3)	0.752 (3)	0.744 (3)
4	Lack of market information	0.612 (4)	0.633 (4)	0.514 (5)	0.655 (4)	0.578 (5)
5	Lack of storage facility	0.488 (5)	0.505 (5)	0.625 (4)	0.515 (5)	0.620 (4)
6	Exploitation of middle men	0.248 (7)	0.250 (7)	0.255 (7)	0.224 (7)	0.212 (7)
7	Lack of regulated markets	0.355 (6)	0.326 (6)	0.298 (6)	0.366 (6)	0.357 (6)
8	Malpractices in weighing	0.112 (8)	0.145 (8)	0.118 (8)	0.127 (8)	0.110 (8)

Note: Figures in parentheses indicate corresponding rank

input for other component. Hence, MDR helps to identify the inter-linkages of various components in farming systems.

MDR for inputs =

$$\frac{\text{Value of purchased inputs}}{\text{Value of total inputs used in the system}}$$

A higher MDR ratio indicates higher dependency on market for inputs and also reflects the inefficiency in utilization of inputs generated within system. Whereas the lower MDR ratio indicating not only the lower dependency on markets but also higher sustainability of the system.

Responses Priority Index (RPI)

In the quantification of constraints expressed by the respondents, there was a problem whether to give more emphasis for number of responses to a particular priority or to the highest number of responses to a constraint in first priority. But, both lead to different conclusion. To resolve this, Responses-Priority Index (RPI) as a product of Proportion of Responses (PR) and Priority Estimate (PE) was adopted (Rao, 2011). The PR for the i^{th} constraint will give the ratio of number responses for a particular constraint to the total responses as given below:

$$(RPI)_i = \frac{\sum_{j=1}^{k} f_{ij} \cdot X_{[(k+1)-j]}}{\sum_{i=1}^{I} \sum_{j=1}^{k} f_{ij}}$$

Where,

$(RPI)_i$ = Response Priority Index for i^{th} constraint.

$\sum_{j=1}^{k} f_{ij}$ = Total number of responses for the i^{th} constraint.

f_{ij} = Number of responses for the j^{th} priority of i^{th} constraint (i=1,2,3…...l; j= 1,2,3 …..k).

k = Number of priorities.

$X_{[(k+1)-j]}$ = Scores for j^{th} priority.

$\sum_{i=1}^{I} \sum_{j=1}^{k} f_{ij}$ = Total number of responses to all constraints.

Here, Larger the RPI, higher the importance for the particular constraint.

RESULTS AND DISCUSSION

The results pertaining to the identification of major farming systems, the extent of marketing inter-linkages and prioritization of marketing problems are discussed in this section.

It could be observed from the Table 1 that the major farming systems identified in Srikakulkam district were Crops + Dairy (FS-II: 37 No.), followed by Crops alone (FS-I: 28 No.), Crops + Dairy + Poultry (FS-V: 21 No.), Crops + Poultry (FS-III: 15 No.) and Crops + Sheep & goat (FS-IV: 11 No.).

Marketing inter-linkages of major farming systems

The MDR value ranged from 0.59 (FS-IV) to 0.85 (FS-III) in major farming systems of Srikakulam district (Table 2). The lower MDRs recorded in FS-IV and FS-II (0.79). The reasons for this low dependency were dairy and sheep & goat components provided FYM to crops, and crops in turn supplied by-products *i.e.*, fodder to allied activities. The highest MDR in FS-III (0.85) was due to complete dependence on markets for poultry inputs. Proper utilization of inputs takes place when ruminants were combined with crop activities. Similar results were reported by Khadese (2002) *i.e.*, crop and goat enterprise was efficient in utilizing inputs generated in the system. Rao *et al.* (2017) also confirmed that dairy component in any farming systems reduced the MDR and increased the efficiency of input usage.

Marketing Constraints

All the respondents of major farming systems except FS-III, expressed non remunerative prices of products as the major marketing problem in the Srikakulam district (table 3). Price fluctuations was the second major problem in all farming systems except FS-III. High transport cost was third major constraint in all farming systems which forced the farmers to sell their produce in the village itself. Lack of market information and lack of storage facilities were fourth and fifth major problems of FS-I, FS-II and FS-IV in Srikakulam district. Gireeshayya (2005) also identified non remunerative price as major marketing constraint from his study.

CONCLUSION

The marketing inter-linkages based on MDR values were lowest in FS-IV and FS-II where ruminants were the major components along with crops. Proper utilization of inputs/outputs has been taken place in those farming systems. The DAATT Centres/KVKs should encourage the farmers to maintain dairy animal or sheep&goat for reular and stabilized income.

LITERATURE CITED

Bhuwad S S 2012 Economics of farming systems in Ratnagiri district (Maharasthra state). *M.Sc. (Ag) Thesis*. Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.

Gireeshayya U 2005 An economic analysis of farming systems in tank command areas of Northern Karnataka. *M.Sc. (Ag) Thesis*. University of Agricultural Sciences, Dharwad.

Iqbal Md 2013 A study on inter-linkages of major farming systems. *Karnataka Journal of Agricultural Sciences.* 26 (2): 171-177.

Khadese A 2002 A study on inter-linkages in crop and livestock farming systems. *Agricultural Economics Research Review*- Conference issue on livestock in different farming systems. 52.

Nataraja H M 2016 An economic analysis of integrated farming systems in Sidlaghatta taluk of Chikkaballapura district of Karnataka. *M.Sc. (Ag) Thesis*. University of Agricultural Sciences, Bengaluru.

Pathania M S, Sharma K D and Lal H 2008 System synergy of farming system and common property resources in mountain regions: A case study of Himachal Pradesh. *Agricultural Economics Research Review.* 21(1): 99-108.

Rao I V Y R 2011 Estimation of efficiency, sustainability and constraints in SRI (system of rice intensification) *vis-a-vis* traditional methods of paddy cultivation in north coastal zone of Andhra Pradesh. *Agricultural Economics Research Review,* 24(2): 325-331.

Rao C A R, Raju B M K, Samuel J, Dupdal R, Reddy P S, Reddy D Y, Ravindranath E, Rajeswar M and Rao Ch S 2017 Economic analysis of farming systems: Capturing the systemic aspects. *Agricultural Economics Research Review.* 30 (1): 37-45.

Sharma K D, Pathania M S and Lal H 2006 Farming system approach for sustainable development of agriculture in mountain regions – A case of Himachal Pradesh. *Agricultural Economics Research Review.* 19 (Conference No.): 101-112.

Torane S R, Naik B K, Kulakarni V S and Talathi J M 2011 Farming system diversification in north konkan region of Maharashtra- An economic analysis. *Agricultural Economics Research Review.* 24: 91-98.