



Research Article

Resource use management in coconut based homesteads among the small farm families of central Kerala

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SUMMARY : Present study was conducted in the six agro-ecosystems of Central zone of Kerala with the holistic approach in the coconut based homesteads of small farm families. To determine the performance of the selected homesteads, resource use management strategies practiced by the participating small farm families from each agro-ecosystem were assessed. It indicated that majority of the small farm families were not efficiently using the resources under integrated nutrient management (INM) and integrated pest and disease management practices (IPM). Among the components of resource use management, it was found that the contribution of water management was the maximum to the net income followed by capital management and integrated nutrient management. Therefore, the technologies related to these three areas have to be given more thrust in transfer of technology in increasing the net income of the coconut based homesteads.

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Resource use management, Coconut based homesteads, Small farm families

BACKGROUND AND OBJECTIVES

Homestead farming system is a highly complex and dynamic combination of crops, livestock and other related enterprises for achieving food, nutritional and economic security through the efficient utilization of available resources like land, solar energy, water and manpower. Homesteads or homegardens represent a promising land use system and are common in Kerala, where the average size of farm households is small.

Coconut based homesteads are the most prevalent in the state. But most of the farmers have no sustainable livelihood from their small holdings. A combination of two or more interactive farm enterprises in the same unit of land alone can make these small farmsteads' production enough to support a family (Subhadra, 2007). Farmers try diversification, but smallness of area stand in way

of any substantial livelihood enhancement (Helen and Baby, 2013).

Kerala being the state with limited land resources does not offer much scope for expansion of area under coconut cultivation. Small farm families are passing through a tough phase due to low productivity and high cost of cultivation coupled with highly fluctuating price for their produce. Struggling hard with the vagaries of nature, scarce resources and market uncertainty has forced small farm families to focus profoundly on the efficient management of available resources for their survival. Any attempt at increasing productivity and thereby income has to heavily depend on the efficient management of available resources. Resource use management is mainly concerned with efficient utilization of natural resources such as land, water, solar energy and inputs *viz.*, manures, fertilizers, plant protection inputs, labour, information and capital.

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Small farm families generally disregarded the vital components of resource management due to various reasons which requires reconsideration and corrective measures. With this in view, a study was conducted with an objective of assessing the resource use management strategies adopted by the small farm families and the influence of the same with the net income from the coconut based homesteads.

RESOURCES AND METHODS

Any attempt to increase productivity and farm income mainly depends on the efficient management of available resources rather than expansion of farm area. The efficient management of a farm or homestead depends on the judicious use of the available resources to enhance the income. Hence, to determine the performance of the selected homesteads, resource use management strategies practiced by the participating small farm families from each agro-ecosystem in Central Kerala were assessed. Land management, water management, integrated nutrient management, integrated pest and disease management, labour management, information management and capital management were the dimensions included under resource use management. The items under each dimension were measured on a five point continuum ranging from 'Always' to 'Never'. Scores were assigned to each response and mean scores were worked out and the distribution of small farm families were rated based on the resource use management of their homesteads. Annual net income obtained from the homesteads was derived by deducting operational costs from the annual income. Simple correlation analysis was done to study the relationship between the components of resource use management and the obtained net income from the coconut based homesteads.

OBSERVATIONS AND ANALYSIS

Results of the study on the resource use management strategies existing among the small farm families of the coconut based homesteads are presented in two tables *viz.*, overall performance of the selected homesteads on the different components of resource use management and the correlation of resource use management and its different components with net income from the coconut based homesteads.

A systematic analysis of the Table 1 revealed that integrated nutrient management and integrated pest and disease management were the components of resource management that majority of the participating small farm families scored very low mean score of 8.19 and 7.27, respectively. It indicated that majority of the small farm families were not efficiently using the resources under integrated nutrient management and integrated pest and disease management practices. Except very few small farm families, none of them had tested their soils for nutrient management. Recycling of manures was done by them, but not on need basis. Approximate quantity which were assumed by them, the fertilizers which were available in the market or recommended by dealers were applied. They were also not much clear about the split doses of fertilizer application. Therefore, soil testing facilities should be developed at Panchayat level to support these families for taking up soil testing and adopt need based application of inputs. Santha *et al.* (1997) reported that coconut growers were not efficient in fertilizer management and utilization of plant protection chemicals. Importance of balanced use of fertilizers needed emphasis while motivating small farm families for adopting fertilizer recommendations for increasing efficiency in production. Integrated pest and disease management (IPM)

Table 1 : Overall performance of the selected homesteads on the different components of resource use management (n= 60)

Sr. No.	Components	Category	Score range	Mean	Frequency	Percentage
1.	Land management	High	1-20	11.90	35	58.33
		Low			25	41.67
2.	Water management	High	4-25	14.52	31	51.67
		Low			29	48.33
3.	Integrated nutrient management	High	6-17	8.19	28	46.67
		Low			32	53.33
4.	Integrated pest and disease management	High	0-17	7.27	29	48.33
		Low			31	51.67
5.	Labour management	High	3-16	9.10	30	50.00
		Low			30	50.00
6.	Information management	High	4-28	12.13	33	55.00
		Low			27	45.00
7.	Capital management	High	6-26	14.38	32	53.33
		Low			28	46.67

was also not taken care off since farmers realised the infestation or infection only at the advanced stage. The knowledge on scientific plant protection aspects was also found very low. They were aware of bio control agents but they lack knowledge on their dosage and the technique of using them. They also complained that bio control agents were not available in their vicinity and hence, they opted for the other methods for which the inputs were available locally. Therefore, steps may be initiated to improve the knowledge and skill in adopting INM and IPM among the participating small farm families as well as the inputs either in the form of manures, fertilizers, bio control agents need to be made available in their neighborhood at all seasons for better resource use management.

Results of the simple correlation analysis between resource use management and its components and income of the small farm families are presented in Table 2. It was apparent from the table that resource use management and its components were positively and significantly related with the net income of the homesteads. Kahlon and Acharya (2007) established strong correlation between input management and farm income. From these results it could be noted that better care and management on these components the higher would be their income from the homesteads. Therefore, it could be concluded that the efficient resource use management has got much implications on the income from the small coconut based homesteads.

Table 2 : Correlation of resource use management and its different components with net income of the coconut based homesteads

Sr. No.	Items	Correlation co-efficient
1.	Land management	0.524 **
2.	Water management	0.790 **
3.	Integrated nutrient management	0.686 **
4.	Integrated pest and disease management	0.593 **
5.	Labour management	0.541 *
6.	Information management	0.640 **
7.	Capital management	0.695 **
8.	Resource use management	0.807 **

* indicate significance of value at P=0.05 and 0.01, respectively

It was also found that among the components of resource use management, the contribution of water management ($r = 0.790$) was the maximum to the net income followed by capital management ($r = 0.695$) and integrated nutrient management ($r = 0.686$). Haridasan *et al.* (2004) also supported this finding, stating that water management, fertilizer management and capital management were found to be more important with respect to their contribution to income. Therefore, these three areas such as water management, capital management and integrated nutrient management will be given more thrust on increasing the net income of the

small coconut based homesteads. Similar findings were obtained by Jayanthi *et al.* (2009) and Krishna Kumar *et al.* (2006).

Conclusion :

It is evident from the study that majority of the participating small farm families were distributed under low category in practicing the dimensions of resource use management such as integrated nutrient management and integrated pest and disease management. Therefore, steps may be initiated to improve the knowledge and skill in adopting INM and IPM among the participating small farm families for better resource use management in coconut based homesteads. Among the components of resource use management, the contribution of water management was the maximum to the net income followed by capital management and integrated nutrient management. Therefore, these three subject areas such as water management, capital management and integrated nutrient management have to be given more thrust on increasing the net income of the small farm families of coconut based homesteads.

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