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Cost-benefit analysis of specialised components in homegardens of Kerala

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Abstract

This research paper spotlights to delineate the cost-benefit analysis of specializations in home gardens involving a total of 90 respondents from Thiruvanthapuram district that comprised of 60 specialized home garden farmers and 30 Agricultural Officers. Commercial interest over years have transformed the subsistence production system, to a means of supplementary income generation system with the inclusion of various specializations such as aquaculture, floriculture, sericulture, animal husbandry thus making it unique, ever-evolving and holistic system. It was imperative to study the economics associated with specialized components to make the system more remunerative and sustainable. The benefit-cost ratio as perceived by the farmers undertaking specialisations at the time of data enumeration showed that ornamentals derived maximum profit (B: C ratio-3.44) followed by rubber (3.15), livestock –cow (2.76), fruit trees (2.4) and aquaculture (2.15).

Keywords: cost-benefit analysis, specializations, supplementary income

Introduction

Specialised homegarden is a system that can overture current limitations of time, space and capital that should be triangulated with effective extension interventions at ground level for the overall remunerativeness and sustainability of homegardens. Das (1988) ^[1] reported that in the case of multi-storied cropping under irrigation in coconut garden the benefit: cost ratio was 1.76 and the internal rate of return was higher than 20 per cent and the net present value worth Rs. 32,700/-. He also opined that different varieties of cereals, pulses, oil seeds, tubers and rhizomatous crops were relatively more compatible and remunerative intercrops than the other annuals in coconut garden of Kerala. Homegardens plays a pivotal role in enhancing the economic and subsistence income by supplying products cultivated in their own land. Homegardens ensures year round income as a result of diversity of crops which can be harvested at different times. Galhena *et al.* (2013) ^[2] opined that home gardens are mainly intended to grow and produce food items for family consumption, but they can be diversified to produce outputs that have multiple uses including indigenous medicines and home remedies for certain illnesses, alternative fuel source, manure, building material, and animal feed. Krishnan (2013) ^[3] reported that high B:C ratio was observed for fruit trees in the homegardens. This can be attributed to the fact that being perennial in nature and the nature of its survivability the expenditure for inputs is low when compared to the modest returns through sale of its produce. In addition to this it has a nursery for sale of saplings. Followed by fruit tree nursery maximum weighted B:C ratio was observed for aquaculture followed by terrace farming.

Objectives

- To determine perceived cost-benefit analysis in specialised components in homegardens
- To study the contribution of specialised components to total homegarden income

Methodology

'Ex-post-facto' research design was used for conducting this study. The study was conducted in the Thiruvananthapuram district comprising five Agro Ecological Units where the specialized home garden systems are in vogue. It includes AEU-1, AEU-8, AEU-9, AEU-12 and AEU-14. A list of panchayats in each AEU's of study was prepared and panchayats with potentially active and operational home garden units were identified. From each AEU, one panchayat each was selected randomly in consultation with Agricultural Officers. From each panchayat

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12 specialized home gardens were selected randomly, thus making a total of 60 specialized home gardens.

Cost-benefit analysis was worked out for each specialization considering the net income as perceived by specialised homegarden farmers. It was calculated by asking the respondents their returns and expenses for the specialisations in homegardens. The actual amount in rupees received by the homegarden respondent annually from those specialized components and other dominant components were arrived at and subjected to statistical analysis. Also, the extent of contribution of mean homegarden income to total annual income was also tabulated for each agro- ecological unit and expressed in percentage. The extent of contribution of specialised homegarden income to total homegarden income was also estimated for different specialisations.

Results And Discussions

The perceived benefit-cost ratios of the specialized components in the homegardens under study analysed is presented in Table 1.

Table 1: Cost-benefit analysis in specialisations

Specialisations	Class Size	Average farm size	B :C Ratio
Vegetables	3	3.4	1.07
Poultry	4	0.45	1.16
Livestock -cow	8	2.52	2.76
Animal Husbandry	6	2.64	1.03
Goat	1	1.32	0.88
Aquaculture/Farm tourism	7	2.6	2.15
Banana	6	3.8	1.02
Coconut	4	3.6	1.98
Tubers	2	2.6	0.79
Fruit trees	2	1.8	2.40
Rubber	3	4.5	3.15
Polyhouse vegetables	4	2.5	0.98
Mushroom	1	0.5	1.10
Terrace garden	3	0.4	0.417
Orchids	1	0.9	0.680
Ornamentals	4	2.3	3.44
Apiary	1	0.3	0.750

The benefit-cost ratio as perceived by the farmers undertaking specialisations at the time of data enumeration showed that ornamentals derived maximum profit (B:C ratio:3.44) followed by rubber (3.15), livestock –cow (2.76), fruit trees (2.4) and aquaculture (2.15).

The statistical analysis revealed that there does not exist any significant relation among the specialization he chose. B: C ratio was worked out for each specialization and the result was that high B:C ratio was obtained for the ornamentals, followed by rubber, livestock –cow, fruit trees and aquaculture. Ornamentals and rubber was said to have high B: C ratio due to high expected returns and least affected by risks. Commercialisation tends to overrule the farming sector and has not spared the specialized homegarden sector. Ornamentals have a high export quality and play significant role in the marketing sector. Terrace garden was said to have least B : C ratio due to the fact that vegetables grown are mainly utilized for household consumption than marketing purpose. Aquaculture sector framed with modern and advanced yet simple technology had high returns irrespective of initial expenditure. Similarly due to perennial nature of fruit trees, expenditure is comparatively less hence B: C ratio was high enough.

Contribution of mean homegarden income to mean annual income

The percentage contribution from mean homegarden income to mean annual income is illustrated in Table 2.

Table 2: Percentage contribution from mean homegarden income to mean annual income

AEU	Mean AI (Rs)	Mean HI (Rs)	Per Cent Contribution (HI/AI) (%)
1	449916	198558	44.12
8	426166	194258	45.58
9	194000	103746	53.47
12	3438333	179666	52.25
14	2766666	134166	48.49
AI-Annual income, HI- Homegarden income			

The highest per cent contribution of mean HI to mean AI was found to be highest for AEU -9 (53.47%) followed by AEU-12 (52.25%) and AEU- 14 (48.49%). Similarly it can be noticed that in all the homegardens contribution of mean homegarden income to mean annual income is 50 per cent or tending to 50 per cent. The incorporation of more specialisations further contributes to the annual income. Similarly results cannot be generalized owing to a relatively small sample size under each AEU.

Contribution of specialised components to total homegarden income

The extent of contribution of income from specialized components to total homegarden income of the respondent family is illustrated in table 3.

Table 3: Extent of contribution of income from specialized components to total homegarden income of the respondent family

Specialised component	TAI (Rs)	THI(Rs)	SI(Rs)	SI/THI (%)
Vegetables	338562	158275	118725	75
Poultry	395625	225000	157500	70
Livestock -cow	290714	185000	172500	93.24
Animal Husbandry	431500	250766	180733	72.07
Goat	153000	100000	53000	53
Aquaculture/Farm tourism	139865	177160	121854	68.78
Banana	278750	450180	236937	52.63
Coconut	294571	416640	198400	47.61
Tubers	297500	202300	95200	47.05
Fruit trees	210000	125000	250000	20
Rubber	266250	129500	127200	98.22
Polyhouse vegetables	345000	198000	147000	74.24
Mushroom	300000	120000	110000	40
Terrace garden	125000	100000	25000	25
Orchids	267000	122500	102000	83.26
Ornamentals	236250	126750	113250	90.57
Apiary	125000	100000	75000	75
TAI – Total annual income, THI- Total homegarden income, SI- Income from Specialised components				

It is significantly understood that livestock-cow (93.24), rubber (98.22) and ornamentals (90.57) significantly contributes to the total homegarden income. This large contribution could be also due to large area under homegarden and already established units at the time of investigation. Fruit trees (20) and terrace garden (25) contribution was comparatively less. This is because these components satisfy the subsistence need of homegarden farmers.

It can be generalized that incorporation of more and more specialisations fetches more income and contributes significantly to the total homegarden income. Similarly, it can be concluded that more than 50 per cent of income is contributed from specialization irrespective of its type and nature that signifies the importance of studies in specialized homegardens.

Conclusion

To conclude, the benefit-cost ratio as perceived by the farmers undertaking specialisations at the time of data enumeration showed that ornamentals derived maximum profit (B:C ratio-3.44) followed by rubber (3.15), livestock –cow (2.76), fruit trees (2.4) and aquaculture (2.15). Extent of contribution of income from specialized components to total homegarden income of the respondent family was worked out and revealed that rubber (98.22%) livestock-cow (93.24%) and ornamentals (90.57%) significantly contributed to the total homegarden income. If due thrust is given to the value addition aspects of specialised components of homegarden, it is certain that productivity and sustainability of the production system will boost up in future.

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