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# Impact of the Interventions in Coconut Based Homesteads as Perceived by Small Farm Families of Central Kerala

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**ABSTRACT**

An ICAR adhoc scheme on 'Possible Diversifications and Restructuring of Coconut based Homesteads' was implemented in the six agro-ecosystems of Central zone of Kerala covering three districts namely Palakkad, Thrissur and Ernakulam with the holistic approach in coconut based homesteads with the participation of all the stakeholders. The impact of the interventions as perceived by the participating farmers were assessed after three years of creating the preferred enterprises. When overall mean of positive effects in all the six agro-eco situations were assessed, it was found that the 'Increased income' was realised as the highest positive effect with 4.97 mean score in the High Elevation Medium Rainfall situation (HEMR-Kizhakkenchery). 'Discouraged because of slow growth of animals' was reported as the highest negative impact with the mean score of 2.40 by the farmers of High Elevation-High Rainfall (HEHR) situation (Pananchery), that too showed 'lower' magnitude of negative effect. The interventions made under participatory mode created 'higher' positive effects and 'lowest' negative effects in the small holdings of coconut based homesteads.

**Keywords:** Consequences, coconut based homesteads ,interventions, perception, small farm families.

## INTRODUCTION

Coconut is the principal crop in majority of the small homesteads of Kerala. The small and marginal farmers who are economically backward seldom give attention for the proper management of coconut palm. Low productivity in the coconut based homesteads is causing utmost concern to the farm families. The poor small and marginal farm families who depend on their tiny holdings for sustenance are the worst hit. Fall in price of the farm commodities of the state has aggravated the situation making livelihood of these families very difficult. The traditional concept of integration in homestead farming in Kerala is declining because of various socio- economic reasons. Under such situation, it was felt that the interventions on appropriate combinations of enterprises based on the preferences of participating families in the coconut based homesteads would rejuvenate the integration of coconut based homesteads.

## METHODOLOGY

This in view, the ICAR adhoc scheme on 'Possible Diversifications and Restructuring of Coconut based Homesteads' was conducted in the six agro-ecosystems of Central zone of Kerala covering three districts namely Palakkad, Thrissur and Ernakulam. The scheme was implemented with the holistic approach in coconut based homesteads with the participation of all the stakeholders. In this research scheme, it was aimed to generate additional income for the sustenance of the families depending on coconut based homesteads with the major thrust on conserving natural resources apart from meeting the basic needs of a family. The gradual shift in the socio-economic development in Kerala forces many families to move away from traditional conservation practices to money spinning vocations. To prevent non-judicious use of resources, encourage conservation practices, increase employment opportunities and thereby enhancing income of families, it was planned to take up interventions in farmer participatory mode.

Representing an agro-ecological situation, a panchayat was selected on the basis of discussion with the extension personnel working at the block level. Two wards from each selected panchayats were selected based on the discussions with respective Agricultural Officers, Panchayat Presidents, Chairpersons of the agricultural development council and board members, with the criteria of intensive coconut based homestead farming in the panchayat. Sixty small farm families, mainly involved in coconut based homestead farming, representing the selected two wards were invited for a Participatory Rural Appraisal (PRA) session. In addition household surveys were conducted. Based on the discussion in the PRA session, farmers' interest and preferences, ten small farm families were selected randomly for practicing the viable models in their homesteads from each of the six agro

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ecological situations constituting sixty small farm families in the sample. Details of interventions made in the coconut based homesteads of the project area are given in the Table 1.

**Table 1: Details of interventions made in the small coconut based homesteads**

| Agro- ecological situations | Selected Panchayats | Interventions made based on the individual preference of farmers | Number of components | Number of farm families involved |
|---|---|---|---|---|
| High Elevation- High Rainfall (HEHR) | Pananchery | Goats- Malabari | 14 | 6 |
| | | Heifers- Cross breeds | 4 | 4 |
| | | Fodder- Co-1 | 450slips | 9 |
| | | Turmeric- Sona and Kanthi | 10kgs of rhizomes | 2 |
| | | Vegetables | | 10 |
| Medium Elevation- High Rainfall (MEHR) | Karukutty | Goats- Malabari | 16 | 8 |
| | | Chicks- Gramapriya | 55 | 7 |
| | | Turmeric- Sona and Kanthi | 40kgs | 8 |
| | | Fruit tree seedlings | 4 | 1 |
| | | Vegetables | | 10 |
| Low coastal area, Low Elevation- High Rainfall (LEHR) | Thalikulam | Goats- Malabari | 6 | 3 |
| | | Heifers- Cross breeds | 2 | 2 |
| | | Chicks- Gramapriya | 45 | 2 |
| | | Banana- Njalipoovan | 75 | 4 |
| | | Turmeric- - Sona and Kanthi | 50kgs | 9 |
| | | Fodder- Co-1 | 250slips | 5 |
| | | Vegetables | | 10 |
| High Elevation- Medium Rainfall (HEMR) | Kizhakkenchery | Goats- Malabari | 20 | 10 |
| | | Chick- Gramapriya | 20 | 4 |
| | | Fodder- Co-1 | 300 slips | 6 |
| | | Vegetables | | 10 |
| High Elevation- Low Rainfall (HELR) | Muthalamada | Chicks- Gramapriya | 140 | 9 |
| | | Biocontrol agents for vegetables | 1 | 1 |
| | | Vegetables | | 10 |
| Medium elevation- black soil- Low Rainfall (MELR) | Eruthenpathy | Heifers- Cross breeds | 10 | 10 |
| | | Vegetables | | 10 |

Based on the preferences of the participating farmers, interventions were made with fifty per cent contribution from the project. For adopting each intervention, they were trained and exposed to various technologies developed by the Kerala Agricultural University. Most of the inputs required to adopt the interventions were also made available through the University. Field visits were made to solve the field problems in adopting the technologies taken up by the small farm families.

After creating the preferred enterprises, the impact of the interventions as perceived by the participating farmers were assessed after a period of three years of interventions. Possible positive and negative effects were identified during the field visits and measured in terms of a five point continuum ranging from five scores to one score for 'highest' to 'lowest' continuum respectively.

Mean scores were arrived to assess the impact of the interventions as perceived by the participating farmers.

## RESULTS AND DISCUSSION

### Impact of the interventions in coconut based homesteads as perceived by the participating small farm families after three years of interventions

The data given in the Table 2 revealed that the impact of the interventions as perceived by the participating farmers. Among all the positive effects of the interventions, 'increased income' was realised as the highest positive effect with 4.97 mean score in the High Elevation Medium Rainfall situation (HEMR-Kizhakkenchery) followed by 'increased soil fertility because of additional manuring' with the mean score of 4.89 in the same situation. Thampan (1999) reported the similar nature of findings. It indicated that the intervention on goats and poultry rearing along with growing fodder and vegetables in small coconut based homesteads of HEMR situation created the highest positive effects. This finding is in line with the results of Jayanthi *et al* (2009), Gangadharappa *et al* (2007), Devendra and Thomas. (2002).

When overall mean of positive effects in all the six agro-eco situations were calculated, it was found that the highest mean score was obtained by HEMR situation (Kizhakkenchery). Both these situations achieved more 'higher' positive effects with the interventions on goats or heifers rearing with fodder and turmeric cultivation and goats and chicks rearing along with growing fodder respectively. There was a better utilization of underemployed labour throughout the year in the coconut based homesteads. This finding is in confirmation with the results of Parawan (1999). The interventions created in the MELR situation (Eruthenpathy) alone had shown 'lower' positive effect since all the participating farmers preferred to rear heifers and just started yielding during the assessment period.

**Table 2: Impact of the interventions in coconut based homesteads as perceived by the participating small farm families after three years of interventions**

| Particulars | Mean values | | | | | |
|---|---|---|---|---|---|---|
| | Name of the situations and panchayats | | | | | |
| Positive effects | HEHR - Pananchery | MEHR- Karukutty | LEHR- Thalikulam | HEMR- Kizhakkenchery | HELR- Muthalamada | MELR- Eruthenpathy |
| Increased income | 4.88 | 4.83 | 4.33 | 4.97 | 4.25 | 3.78 |
| Increased employment generation | 4.88 | 4.83 | 4.33 | 4.44 | 4.50 | 4.56 |
| Increased soil fertility because of additional manuring | 4.88 | 4.83 | 4.33 | 4.89 | 4.25 | 4.56 |
| Increased yield of other crops | 4.88 | 4.67 | 4.17 | 4.67 | 4.25 | 4.22 |
| Increased consumption of nutritious food | 4.63 | 4.67 | 4.17 | 4.78 | 4.38 | 3.44 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Improvement in the health of family members | 4.13 | 4.50 | 4.17 | 4.67 | 4.38 | 3.33 |
| Utilized free time for productive purpose | 4.13 | 4.83 | 4.17 | 4.44 | 4.50 | 4.78 |
| Developed infrastructure at home / farm | 4.13 | 3.83 | 3.83 | 4.00 | 3.25 | 3.11 |
| Invested in other enterprises | 3.50 | 2.83 | 3.33 | 2.67 | 2.75 | 2.89 |
| Repaid loans | 4.00 | 2.33 | 3.17 | 3.78 | 2.88 | 2.89 |
| Could meet contingencies | 4.00 | 2.33 | 3.17 | 4.00 | 2.88 | 3.11 |
| Enhanced social relationship by exchange of products/ by products/ offspring | 4.25 | 3.33 | 3.33 | 4.11 | 4.00 | 2.67 |
| Increased my savings | 4.63 | 3.00 | 3.67 | 4.00 | 3.13 | 2.67 |
| Spent the income for better education | 4.13 | 3.17 | 3.67 | 3.89 | 3.00 | 2.11 |
| Spent the income for better food habits | 3.88 | 3.50 | 3.83 | 4.11 | 3.13 | 2.44 |
| Spent the income for better health care | 4.13 | 3.50 | 4.00 | 4.22 | 3.00 | 2.44 |
| Extended the diversification in terms of livestock/ crops. | 4.25 | 4.00 | 3.83 | 4.11 | 3.00 | 3.33 |
| Enhanced the recycling of farm produce because of the adoption of diversification | 4.25 | 4.33 | 3.83 | 4.22 | 4.00 | 3.89 |
| Adopted biogas | 4.00 | 1.67 | 2.00 | 2.11 | 2.38 | 1.56 |
| Adopted bio composting | 4.00 | 1.67 | 2.00 | 2.44 | 2.38 | 1.56 |
| Overall mean values | **4.28** | **3.63** | **3.67** | **4.03** | **3.51** | **3.17** |
| **Negative effects:** | | | | | | |
| Affected the growth of intercrops | 1.00 | 1.33 | 1.00 | 1.89 | 1.38 | 1.22 |
| Discouraged because of loss incurred | 1.00 | 1.67 | 1.00 | 1.67 | 1.50 | 1.56 |
| Discouraged because of the outbreak of diseases of animals | 1.00 | 1.67 | 1.00 | 1.67 | 1.75 | 1.56 |
| Discouraged because of slow growth of animals | 2.40 | 2.00 | 1.00 | 2.33 | 1.88 | 2.11 |
| Because of the adoption of the particular diversification, stopped other productive enterprises | 1.00 | 1.17 | 1.17 | 1.44 | 1.00 | 1.00 |
| Created enmity with neighbours because of the disturbance caused by animals and strained social relationship with neighbours | 1.13 | 1.00 | 1.17 | 2.11 | 1.00 | 1.44 |
| Created health problems among the persons who have taken care of the animals/ birds | 1.00 | 1.00 | 1.00 | 1.44 | 1.00 | 1.67 |
| Affected the education of children to take care of animals/birds | 1.00 | 1.00 | 1.00 | 1.44 | 1.00 | 1.33 |
| Overall mean values | **1.19** | **1.35** | **1.04** | **1.75** | **1.31** | **1.49** |

HEHR- High elevation and High rainfall, MEHR- Medium elevation- high rainfall, LEHR- Low coastal area, low elevation- high rainfall, HEMR- High elevation-Medium rainfall, HELR- High elevation- low rainfall, MELR- Medium elevation- black soil- low rainfall

Among all the negative effects of interventions, 'discouraged because of slow growth of animals' was reported as the highest negative impact with the mean score of 2.40 by the farmers of HEHR situation (Panenchery), that was also 'lower' magnitude of negative effect. It was observed that those who reared the animals as their main occupation with much care showed better growth and those who preferred goats/heifers rearing as the subsidiary occupation with less care showed slow growth.

When overall negative effects felt in all the six agro-ecosystems were compared, HEMR situation (Kizhakkenchery) reported the highest man score of 1.75 and that too with lower magnitude of negative effect. In all the six agro-ecosystems, generally 'lowest' magnitude of negative effects was reported. Therefore it can be concluded that the interventions made under participatory mode created 'higher' positive effects and 'lowest' negative effects in the small holdings of coconut based homesteads.

Participatory mode of interventions in the small coconut based homesteads created such a lot of positive consequences within a short period. It was also observed that the positive consequences diffused among the neighbouring farm families by way of sharing either the qualitative products or planting materials or selling the off springs of farm animals. Long term benefits will be much more which are to be regenerated and promoted among farmers to keep up the integrative nature of traditional homestead farming. Value addition and marketing were practiced in none of the homesteads. Therefore efforts are necessary to promote value addition and processing of the surplus produce to improve the employment opportunities and retain the integration in homesteads. Since the holdings are very small, to ensure continuous supply of produce, the chances of group or co-operative efforts may also be explored.

## CONCLUSION

Among the positive effects of interventions made, 'Increased income' was realised as the highest positive effect with 4.97 mean score in the HEMR situation (Kizhakkenchery). When overall mean of positive effects in all the six agro-eco situations were assessed, it was found that the highest mean score was obtained by HEMR (Kizhakkenchery).

The interventions made under participatory mode created 'higher' positive effects and 'lowest' negative effects in the small holdings of coconut based homesteads. For maintaining the sustainability of the interventions, small farm families must be exposed to different appropriate options of value addition of the farm produce in a co-operative manner.

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