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“Development on the margin”

Structural Configuration and Functional Dynamics of Kerala Homegardens in South India

ALLAN THOMAS¹, ALIYARU KUNJU SHERIEF¹, USHA C. THOMAS¹, SREEJITH ARAVINDAKSHAN²

¹*Kerala Agricultural University, Dept. of Agricultural Extension, India*

²*Technische Universität Dresden, Inst. Intern. Forestry and Forest Products, Germany*

Abstract

Homegardens in Kerala represents a subsistence land-use system typical of tropical Indian South, where interaction and intimate association of different production components (crop-tree-animal mix combine) insitu are intensively facilitated and managed by family labour so as not only to meet the food production but also to generate additional income through sale of farm surplus. This interaction and intimate association makes it ever evolving and adds significance to the structure of homegardens. Unlike the other land use systems, homegardens exhibit varying dominances and great diversity of species with many life forms. In such a system, structurally dominant crop component need not be economically dominant or technology needy whereas a transient crop which is numerically and economically dominant need not be structurally dominant but technology needy. Towards understanding more, 208 homegardens of South Kerala was studied using multi-stage stratified random sampling technique. The structural configuration was identified using the measure of Shannon and Wiener diversity index, Margalef's species richness and Pileou's measure of evenness. The structural, numerical and economical dominance was developed. The technology needs were inferred under four criteria employing Kruskal - Wallis test. Primarily a system with dominance was developed derived from diversity index, species richness, evenness and measure dominance. Biodiversity varied in homegardens within regions (mid region in case of all districts had the highest biodiversity), within and between districts, but was not influenced by holding size. Ten major dominance systems and eight specialised homegardens were identified. 3-4 of eight dominant components contributed significantly to annual homegarden income with varying contributing component. The highest needs for technology were recorded for under and unexploited horticultural tree crops. To conclude, the effect of zonation and variance of structure implies that the match between the variation in priorities of the home and the spatial arrangement of the homegarden was strong both socio-economically and bio-physically. Increase in population, emerging nucleotide family structure and high rate of fragmented holdings year round leading to decreased land for agriculture raises the conservation status of these land-use systems and makes it necessary for a 'homegarden policy' in regions where they are found.

Keywords: Functional dynamics, homegardens, India, structural configuration