

## Plant biodiversity in the homegardens of South Kerala

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### SUMMARY

A survey was conducted in the homestead farms of the South Zone of Kerala comprising of the three districts of Thiruvananthapuram, Kollam and Pathanamthitta using the personal interview method. The collected data showed that the home gardens, though under threat from monocultures of commercial crops like natural rubber (*Hevea brasiliensis*), were repositories of plant biodiversity and warranted to be documented and conserved.

Key words: Homestead farms, Nutritional security, Diet diversity, Risk spreading.

A homestead farm in Kerala refers to an operational unit, which is adjacent to or surrounds the farmer's home and is generally occupied by a wide array of crops along with or without livestock and other subsidiary income generating activities for subsistence and for generation of cash income. Kerala, the southernmost State of India is a land of smallholdings – 84 per cent of the operational holdings being below 0.5 hectares in size and occupying more than 80 per cent of the total cultivated area of the State. Subdivision and fragmentation of holdings and the mounting pressure on scarce land resources for non-agricultural purposes further reduces the size of holdings. Land resources thus being very limited, the agricultural scenario of Kerala becomes unique in that it is concentrated in and around the farmer's home, hence the name home garden or homestead farms.

Kerala homegardens had been studied to some extent and reports on the structure, species composition (Fernandes and Nair, 1986) socio-economic aspects and management (Kumar *et al.*, 1994; Santhakumar, 1996) of these systems are available in literature. However not many attempts at scientific restructuring and modification of the system had been done. Hence a National Agricultural Technology Project titled "Analysis and development of Homestead farms of Kerala and Andaman & Nicobar – A farmer participatory approach" was sanctioned to the Kerala Agricultural University with Farming Systems Research Station, Sadanandapuram as lead Centre. This paper is based on the data generated through personal interview with 450 homestead farmers selected from among the farmers of South Kerala as part of the NATP on Homestead Farming.

### MATERIALS AND METHODS

The South zone of Kerala comprises of the three southern districts of Thiruvananthapuram, Kollam and Pathanamthitta and has ample representation of the four agro-ecological regions of the State, viz., lowland, upland, midland and the hill zone. The topography is undulating with elevations ranging from below the Mean Sea Level to 2694 m above MSL. The region receives an annual mean rainfall of around 2500 mm distributed over the two monsoons with maximum in the South West monsoon during May- June to July- August. The temperature ranges from 23° C to 33° C. Irrigation facilities are limited and most of the homesteads are rainfed.

The farmers for the study were selected based on stratified multistage random sampling procedure. Twenty five per cent of the panchayaths of the three districts coming under the zone were randomly selected to form the first strata. The lists of homestead farmers from the selected panchayaths were collected and ten farmers were selected from each panchayath to form a sample of 450 farmers. Since according to the basic concept of the homestead farms being subsistence oriented and managed by the farm family, the sample was predominantly constituted by farmers belonging to the holding size group below 0.4 ha. Data for the study was generated through the personal interview method with the help of a pre-tested questionnaire. Each selected household was surveyed independently. Parameters such as tree density (> 5 cm DBH), species composition and distribution of plants were directly enumerated. Vertical stratification was measured through visual observation. The collected data were subjected to simple statistical analysis to arrive at results and conclusions.