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A Glimpse into the Multiplicity of Traditional Home Garden Agroforestry Systems in the Wet Lowlands of Sri Lanka: A Qualitative Study

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Abstract

Traditional homegardens (HGs) of Sri Lanka represent small-scale agroforestry systems. However, across the country they vary due to bio-climatic conditions, resource availability, land size and other socio-cultural factors. While Kandyan HGs in wet highlands are well-studied, traditional wet lowland HGs (WLHGs), comprising 28.8% of Sri Lanka's total HGs, are less explored. The study aims to qualitatively categorize WLHGs based on landscape arrangement, plant selection, and adoption of indigenous knowledge practices. The study used 30 randomly selected homegardens (<1 ha) for observations across 22 GN divisions in Matara, Galle, Kalutara, and Colombo districts, following an initial screening through local contacts on willingness to share information, access and photograph homegardens. Householders were interviewed using a questionnaire with both closed and open-ended questions. Based on the position in relation to the landscape features, vertical structure, and predominant crops, six distinct types of traditional HGs were identified: island-type in paddy field, mixed, *Ovita*, *Wadula*, multi-component and communal HGs. Island-type HGs, situated as small plots within paddy fields, frequently employ vertical stratification to grow multiple crops, demonstrating an effective way of land optimization. *Ovita* HGs adjoining paddy fields are continued as an indigenous practice for growing vegetables. *Wadula* HGs, typically located near forested areas, feature unorganized landscapes that blend cultivated and wild plants, forming natural arbors that create shaded, cooling, and visually pleasing environments, while supporting to deliver many ecosystem services. Multi-component HGs (usually >0.5ha), though more maintenance-intensive, demonstrate the highest land-use efficiency, offering many provisioning services including food, medicine, energy and construction materials for the neighborhood. *Wadula* and multi-component HGs, typically over 10 years old, are valuable repositories of genetic resources, particularly traditional crop varieties and landraces. Communal HGs (usually >0.5 ha) represent a new model in which multiple families share a home garden, either on private or communal land. This approach encourages the exchange of indigenous knowledge and expertise, highlighting socio-cultural benefits while focusing on commercial production alongside supplementary subsistence farming. Many WLHGs exhibit indigenous practices for fencing and cultivation set-ups, including methods like *Paththi*, *Mesi*, *Koratu*, and *Wala*. Diverse water management systems can be seen, with dug wells being a common feature in nearly every traditional WLHG. Additionally, WLHGs incorporate pollinator attraction and pest control methods, notably through traditional *Kem* practices, especially in certain GN divisions of Matara and Galle. Commercial monocropping, frequent floods following monsoon rain, lack of motivation for maintenance by the family members, diminishing use of indigenous knowledge are identified key threats for the existence of WLHGs. These are vital reservoirs of biodiversity and culture, and their conservation value is recognized as a unique sustainable agro-ecosystem in wet lowlands benefiting both nature and people.

Keywords: *Agroforestry, Homegardens, Traditional, Wet lowlands, Sri Lanka*