B-46: Secondary succession in abandoned chenalands in the dry zone

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Changes in floristic composition and structure during the secondary succession of abandoned chena lands around Kahalla Forest Reserve, Andiagala, in Anuradhapura district in the dry zone of Sri Lanka were studied. This was compared with relatively undisturbed old-growth forest within the same reserve.

The chena lands selected for the study were abandoned 1, 3 and 5 years ago. Three replicates were selected from each age class. Five different plot sizes were used to enumerate the seedlings, saplings and the trees found in chena and the mature forest. Number of species and number of individuals of each species were recorded. All plants above 5 cm dbh (diameter at breast height) were measured and tagged. Diversity Indices (Shanon's) and Important

Value Indices (IVI) for species found in mature forest were calculated. A stand table was prepared for the plots enumerated in mature forest.

Plant specimens were collected from all plots and in the general area for preparation of herbarium material for identification. The number of plant species found in the 1 year, 3 year, 5 year old chena lands and the mature forest were 63, 36, 60, and 27, respectively. The diversity indices were 0.6802, 0.6123, 0.7768 and 0.6678, respectively.

The species composition replicates of abandoned chena lands varied although they were in the same age. The seedlings of species found in the mature forest were almost absent in abandoned chena lands up to 5 years.

Most of the mature forest species have been extinct locally due to long-term chena cultivation. Recovery of the sites may depend on the distance to the mature forest and the degree of disturbance.