
FOREST REGENERATION IMMEDIATELY, AFTER TRADITIONAL SHIFTING CULTIVATION IN THE NORTHERN DRY ZONE OF SRI LANKA

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The forest regeneration immediately after traditional shifting cultivation was studied in an abandoned shifting cultivation field at Sigiriya in the northern dry zone of Sri Lanka. Biotic and abiotic factors that are responsible for the forest regeneration process were also identified.

The vegetation and the soil seed bank (both surface and sub-surface) were enumerated before clearing the land for shifting cultivation and one month after the abandonment. In addition, the soil seed bank was investigated 15 hours after burning of the land (i.e. a 12-15 year old secondary forest) prior to cultivation. Some physical environmental parameters were recorded after the abandonment of the land.

Regeneration after traditional shifting cultivation was mainly by roots and stem bases of woody plants, which existed before cultivation. Thus, many early and late survival species were regenerated. The ground of recently abandoned shifting cultivation land was very open (% canopy openness = 69.39 ± 4.80) and this results in to have high soil temperatures and low soil moisture contents. Wind dispersed seeds of grass and agricultural weed species frequently disperse into the burnt land. Few seeds of some pioneer species are capable of withstanding fire and may occur as a soil seed store. However, seeds in the soil seed bank may not involve in forest regeneration at this early stage. Underlying reasons for that are also discussed.