

1. Monoculture Plantation

1.1 Justification

Large scale plantations are appropriate for establishment on non-forest land, or in areas of forest that are so heavily degraded that it is no longer feasible to attempt rehabilitation efforts.

The vast majority of reforestation work has used single species, plantation concepts. Commercial profits were the main consideration, and as a result, many fast growing exotic species were used (Appanah, 2003).

Monocultures are attractive because trees are planted at a high density in easily accessible areas; and are easy to manage. Fast growing species have been favoured in the past because the volume increments of these are high and, consequently, they have short rotations. However, the economic value of fast-growing exotic species is now being questioned and the potential gained from using slow-growing but higher-valued native species are looking rather more commercially and environmentally attractive. Besides commonly having a higher market value, native species often provide some additional ecological benefits by being better adapted to local conditions and being more attractive to local wildlife.

The ecological benefits of monocultures can be enhanced in two ways. One is to use buffer strips of natural vegetation, regrowth along streams or rivers protects against erosion. Similarly, buffer strips can be used to separate compartments of the plantation and act as firebreaks. The other way ecological benefits might be enhanced is by using a mosaic of various monocultures. The advantage of the monoculture plantation is that it can provide high timber yields per hectare. High-value tree species can be used and the buffers contribute to watershed protection and biodiversity conservation (David, 2003).

Monoculture with under-storeys: Many monoculture plantations acquire an under-storey of other plant species over time as a result of colonization by species from nearby intact native forests. Such under-storey can be deliberately planted by using the original plantation as a nurse crop. However, their principles require intensive and knowledgeable management to prevent the nursing crop from eliminating the main species.

1.2 Implementation

Please refer to the following Appendices and Annex below:

- Appendix 1 – Species selection
- Appendix 2 – Seed procurement
- Appendix 3 – Nursery operation
- Appendix 4 – Plantation operation
- Appendix 5 – Tending the plantation
- Annex 1 – Seed requirement calculations