

6. Enrichment Planting in an Early Stage of Forest Succession

6.1 Justification

Forest succession has a great potential to achieve the long term goal of permanent forest estate with high economic benefits. The advantage of using existing forests is that the cost of retaining these and developing ways of managing them is likely to be much lower than clearing and replanting the site. Their retention also ensures that many ecological services and socially important products are retained.

The early stage of forest succession has the following characteristics:

- Trees occur in groups and patches of varying density and from different origins (seeds, coppices, root shoots) and vegetation is below 3 m height.
- There are patches without trees.
- Forest microclimates are not yet developed, climate extremes are prevalent.

6.2 Implementation

Protect these forests from further significant disturbance (such as removal of tree or shrubs, cutting of branches or barks, agricultural clearing, grazing and fire).

Enrich the forest with commercially or socially valuable species. Enrichment planting must be done in areas where sufficient canopy openings are present. The density of planted trees is at least 2 x 2 m.

Species use:

All trees, shrubs, bamboos etc, which produce NTFPs (see Table 2, Appendix 10) and meet the requirements of local people are of highest priority for use in this form of reforestation.

Please refer to 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

Appendix 8 – Procedure in species selection for poverty reduction

Appendix 10 – Some tree species producing non-timber forest product

Annex 1 – Seed requirement calculations

7. Small Scale Plantation by Individual Farmers

7.1 Justification

The local scarcity of forest resources provides farmers with opportunities to diversify farm production and develop a new income stream through tree farming systems. In some parts of the country (for example, Kampong Chhnang and Takeo), smallholder farmers are initiating tree-farming schemes on land under their tenure with little assistance or encouragement from outside agencies. These farmer-initiated systems are generally successful for two reasons: (i) smallholder farmers have limited financial resources, and each tree planted often represents a conscious investment for which another option may have been forfeited; and (ii) farmers restrict plantings to the number of trees that can be properly maintained. Smallholder farmers' main reason to get involved in tree farming is a

keen self-interest to succeed and improve their families' livelihood through the production of tree products for home-use or market sale.

7.2 Implementation

A farmer or a group of farmers can establish small scale plantations of multipurpose tree species that can provide valuable crops such as timber, poles, fuelwood, food, fodder, and other non-timber forest products for home use or for sale. The plantation helps to protect the farm environment by enhancing soil fertility and reducing soil erosion, provide shade for people and farm animals as well as environmental improvement.

Please refer to 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

Appendix 8 – Procedure in species selection for poverty reduction

Appendix 9 – Consolidated farmer-specified ideotypes

Appendix 10 – Some tree species producing non-timber forest product

Annex 1 – Seed requirement calculations

8. Agro-Forestry Systems^{*}

8.1 Justification

Agroforestry is a system consisting of a tree component with a crop component and sometimes with an animal component on the same plot.

Agro-forestry practices can increase farmer's annual incomes. Some increases in revenue come from harvesting different tree crops in different seasons. The result is that income and employment are distributed more evenly throughout the year. There are also many other reasons for growing trees on farms, such as the provision of shade for cooler soil temperatures, reduction of soil moisture loss, and protection of the soil from wind and water erosion. Agro-forestry systems can reduce the risk of total crop failure. For example, if the viability of one crop is reduced by pest damage or market failure, the farmer can make up for it by harvesting another crop.

In many cases, the easiest way to create agro-forests is to focus on the domestication of non-timber forest products (NTFPs). For agro-foresters, NTFPs are simply under-storey crops and their domestication offers a means for bringing agro-forestry into community forestry and farmers into forests. The main management technique for achieving this is enrichment planting with NTFPs.

8.2 Implementation

There are various agroforestry options that permit the simultaneous or sequential planting of various agricultural crops, animal rearing and cultivation of timber and non-timber species.

This section was extracted and modified from Kathleen et al, 1999.