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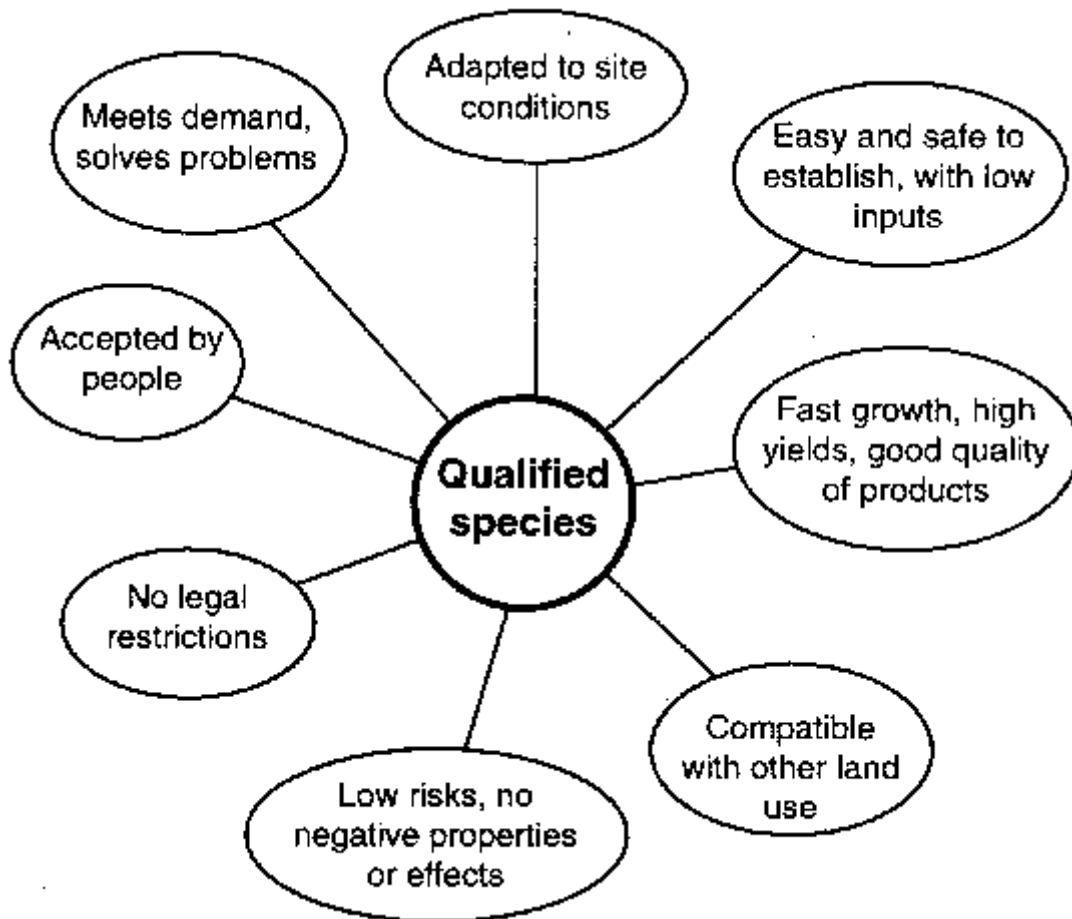
http://www.mamud.com/Docs/Biodiversity_in_the_Western_Ghats.htm

Biodiversity in the Western Ghats: An information kit. WWF-India and IIRR, Philippines. 1994

9.8 Reforestation to restore mining areas

Planting trees is one alternative for rehabilitating land after ore lying beneath the surface has been extracted. While it is impossible for humans to completely recreate the pre-existing vegetation, tree planting can help re-establish protective vegetation and accelerate the natural succession that will eventually restore a rich community of plants and animals in the area.

Careful study and planning is necessary before an area is reforested. The studies should include physical, hydrological, chemical and biological factors as well as vegetation mapping.



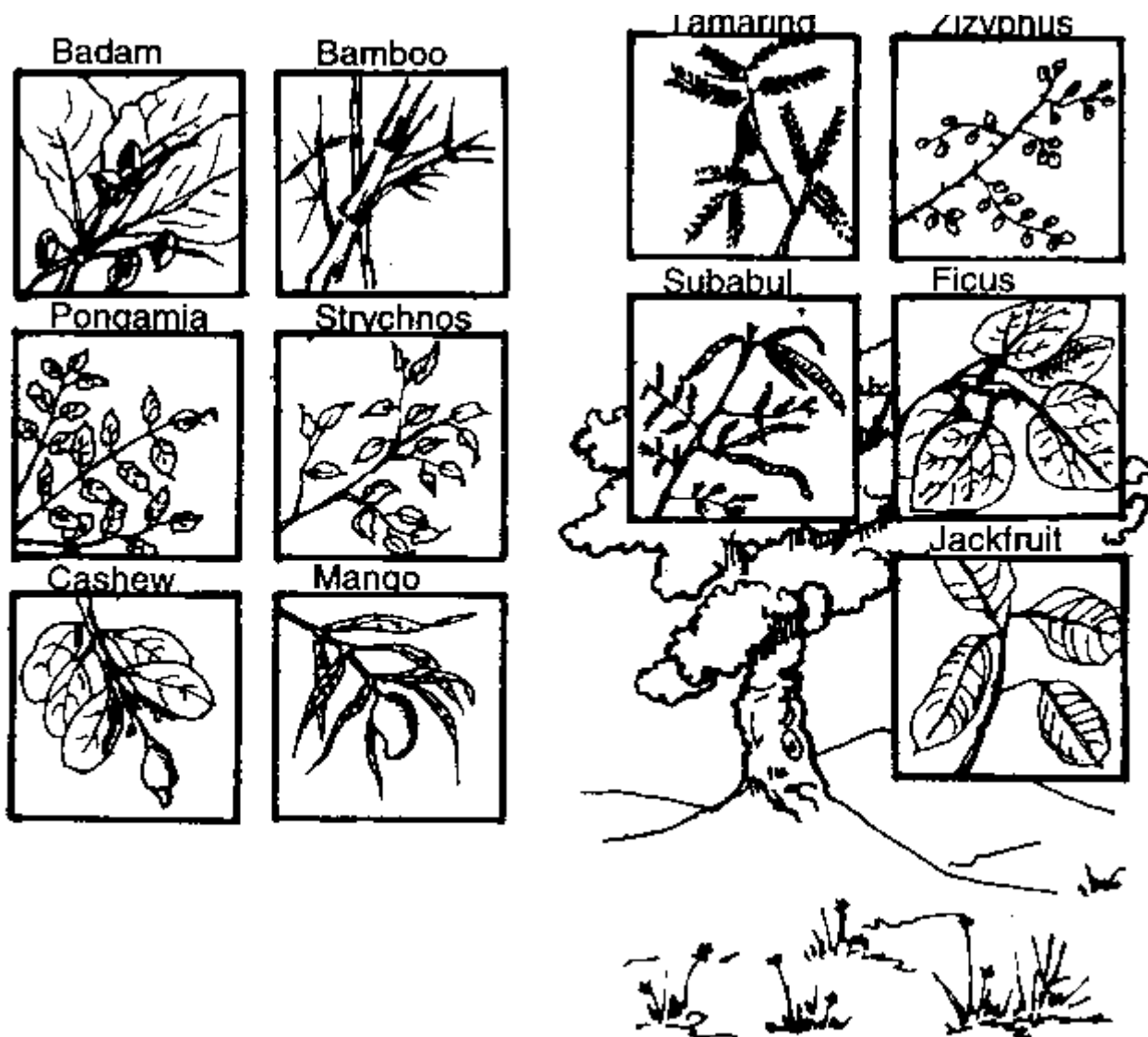
Plant species

Choosing plant species

The choice of plant species depends on many factors, including their use and the role they play in the ecosystem.

Meets demand, solves problems

This is the key to all further efforts in planning and organizing forest activities. The species introduced should meet the needs of the humans in the area. They should also attract insects, birds and other wildlife to increase the biodiversity.



Adapted to site conditions

Detailed information may be necessary to discover what species are suited to the site. Studies may be needed to collect data on:

- Climate: summer and winter temperatures, total annual rainfall, number of rain days, wind velocity and direction, etc.
- Soil: nutrient status and deficiencies, soil type and structure, organic matter, pH, etc.

Easy and safe to establish, low inputs

Seeds, seedling or other planting materials of the selected species must be available. Species that can be sown directly are preferred to keep costs low. They should be tolerant to conditions on the dumps, and the plant community should be able to regenerate and maintain itself.

Fast growth, high yields

This refers mainly to exotics but to some extent also to local species. Multiple uses are important, including suitability for intercropping in agroforestry. Leguminous plant species should be used for intercropping as they increase soil nitrogen levels due to their ability to fix atmospheric nitrogen.

Compatible with other land uses

Species chosen should have multiple uses-for instance, fruit, timber, windbreaks and pulp.



Low risks

Plants should be resistant to pests, fire, and other threats. Species that are weeds in farms should be avoided.



No legal restrictions

Phytosanitary regulations, laws protecting endangered plants and land tenure regulations must be observed.



Accepted by people

Local people are key to the sustainability of the new vegetation. The species to be introduced should be acceptable to them. Demonstrations and other extension activities may be necessary to introduce them to the new species.

Benefits of trees

The species in the tables overleaf attract several birds and monkeys. Nectar-bearing trees are a haven for Sunbirds, Flower-peckers, Mynas and Drongos. Trees of the Ficus family are homes to gall-wasps which help in pollination; their seeds do not germinate unless they pass through the digestive tract of birds and mammals. Decomposing fruit attract several insect species, which in turn attract insectivorous birds. Growing these plants would help to bring back the diverse life forms in the area before mining began.



Tree species for reforestation of mining dumps

Plant name	Common name	Uses
Acacia catechu	Kath	Medicine, fuel wood and timber
A. chundra	Tambdi khair	Fuelwood and substitute for catechu
A. nilotica**	Gum arabic	Medicinal, timber, fuelwood, fodder and improves soil
Adenathera pavonia	Ratan gunj	Ornamental shade
Aegle marmelos	Bo	Medicinal
Albizzia lebbek	Shirish	Fuelwood, timber, fodder and medicinal
Alstonia scholaris	Satvan	Timber, medicinal and fuelwood, blackboards
Anacardium occidentale*	Cashew nut	Nut edible, fodder and medicinal
Artocarpus	Jack fruit	Fruit edible and as a timber heterophyllus **
Azadirachta indica*	Neem	As a fuel wood, medicinal and timber
Bambusa arundinacea**	Bamboo	Poles used in construction
Bauhinia purpurea**	Baktakanchan	Ornamental, as a fuelwood
Bombax ceiba**	Silk cotton	Capsule: floss for mattress filling
Careya arborea	Kumblyo	Medicinal and as a timber
Cassia fistula*	Laburnum	Medicinal
Ceiba pentandra**	Silk cotton	Floss for filling mattress
Dalbergia latifolia (Syn. D. emarginata)	Shisam	Timber and fuelwood
D. sisso	Rose wood	First grade timber
Delonix regia*	Gulmohar	Ornamental and as a fodder
Dendocalamus strictus**	Great bamboo	Used as poles
Dodonaea viscosa	--	Fodder and for improving soil
Embllica officinalis	Amla	Drupes edible and medicinal
Erythrina indica**	Corol tree	Ornamental and improves soil
Ficus asperrima**	Kharrat	Leaves for filling purpose
F. benghalensis**	Banyan	Leaves as fodder
F. callosa**	--	Ornamental
F. glomerata**	Rumad	Ornamental and religious
Garcinia indica	Kokum	Pulpy berry edible and medicinal
G. xanthochymus	Jharambi	Fuelwood
Gliricidia septum	--	Improves soil, rat poison
Helicteris ixora*	Murud sheng	Medicinal
Holorhena	Kudo	Medicinal antidysenterica*
Hydnocarpus laurifolia	Korut, Kashti	Medicinal
Leucaena glauca	Subabul	Fuelwood, medicinal, soil improvement
Mallotus albus		Leaves used as wrappes
Mangifera indica**	Mango	Edible drupe, fuelwood, timber and medicinal
Memecylon wightii	Anjan	Fuelwood
Mimusops elengi*	Bakul	Ornamental and fuelwood
Morus alba	Mulberry	Leaves fed to silkworms
Parkia biglandulosa		Fuelwood, fodder, soil improvement
Peltophorum pterocarpum		Ornamental
Phyllanthus reticulatus		Medicinal
Prosopsis juliflora		Fuelwood, fodder and medicinal
Santalum album**	Sandalwood	Carving, medicinal
Sapium insigne	Dudla	Fruit as fish poison
Sterculia urens	Caraya gum	Gum used for various purposes
Strychnos nux-vomica	Kajaro	Medicinal

Syzygium cumini)**	Jambul	Fruits edible and medicinal
S. zeylanicum	Bhensa	Fruits edible
Tamarindus indica**	Tamarind	Fruits edible, timber, fodder and fuelwood
Tectona grandis*	Teak	High quality timber
Terminalia arjuna*	Arjuna, Matti	Medicinal and timber
T. bellerica*	Ghotina	Medicinal and timber
T. catappa*	Badam, Indian Almond	Medicinal; fruits edible
T. chebula*	Hirda	Medicinal and timber
T. paniculata*	Kindal	Timber
T. tomentosa*	Ain	Timber
Trema orientalis*	Gol	Fuelwood, preparing coal
Vitex negundo		Medicinal
Zizyphus jujube**	. Bor	Fruits edible and medicinal
Zrugosa	Chunna	Fruit edible; fuelwood
Pongamia pinnate**	Karanj	Medicinal

* useful as wildilfe habitat, ** very useful

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