

# TABLE OF CONTENTS

	<u>Page No.</u>
Acknowledgement .....	I
Preface .....	II
Introduction .....	III
Table of Contents .....	IV
Chapter 1 – Advantages of Tree Planting .....	1
1. As a Plantation .....	3
2. As Fencing around the Homestead and Fields .....	4
3. Along Roadsides .....	5
4. In Public Places .....	6
5. To Prevent Erosion .....	7
6. For Animal Fodder .....	8
7. As Part of Agro-Forestry Systems .....	9
8. As Barriers Against Storms and Floods .....	10
Chapter 2 – Planning Farmers’ Tree Planting .....	11
1. Forest Land Situation Analysis .....	13
2. Planning Tree Planting .....	14
3. Group Formation and Management in Tree Planting .....	15
4. Improving Knowledge of Tree Planting Techniques .....	16
5. Seeking Support in Tree Planting .....	17
Chapter 3 – Tree Planting Techniques .....	19
Seed Collection .....	21
1. Selecting Trees for Seed Production .....	23
1.1 Appropriate Selection of Mother Tree .....	23
1.2 Selection of Tree by Purpose .....	25
1.3 Location of Source for Appropriate Seeds .....	26
2. Seed Harvesting Methods .....	27
2.1 Time Limits for Seed Collection .....	27
2.2 Seed Collection Methods .....	27
2.2.1 Collecting Fruits from Branches .....	27
2.2.2 Other Means of Seed Collection .....	27
2.2.2.1 Collection of Naturally Fallen Fruits .....	27
2.2.2.2 Shaking the Tree or its Branches .....	29
2.2.2.3 Cutting Fruit Bearing Branches .....	30
2.2.2.4 Tree Climbing to Collect the Fruits or Seeds .....	31

3. Seed Treatment .....	32
3.1 Seed Picking .....	32
3.1.1 Pod Drying .....	32
3.1.2 Pod with flesh inside .....	34
3.2 Seed Drying for Long Storage .....	35
4. Seed Storage and Maintenance .....	35
4.1 Seed that can be Stored for Long or Short Term .....	36
4.2 Storage.....	37
5. Transport of Seed .....	41
5.1 Transport of Quickly Rotting Seeds .....	41
5.1.1 Pack in a Bag .....	41
5.1.2 Burying in Sand.....	42
5.2 Transport of Long Lasting Seeds.....	42
Seedling Nursery .....	45
1. Nursery Bed Preparation for Seedling Germination .....	47
1.1 Selection of Bed Location .....	47
1.1.1 Permanent Nursery Bed .....	47
1.1.2 Temporary Nursery Bed .....	48
1.2 Fence Building .....	49
1.2.1 Bed for Sowing Seeds .....	49
1.2.2 Bed for Preparing Bagged Seedlings .....	50
1.3 Shelter of Each Nursery Bed .....	51
1.4 Building a Fence Around the Seedling Nursery Bed .....	52
1.5 Water Sources .....	53
1.6 Compost .....	54
1.6.1 How to Make Compost.....	54
1.6.1.1 Building a Store for Composting .....	54
1.6.1.2 How to Produce Compost .....	55
1.6.1.3 Collecting Compost .....	56
1.6.2 Use of Compost and its Advantages .....	57
2. Germination Preparation .....	58
2.1 Preparing Plastic Bags for Soil .....	58
2.1.1 Type of Soil and Soil Treatment.....	58
2.1.2 Selecting Plastic Bags and Punching.....	59
2.1.3 Filling Plastic Bags with Soil.....	60
2.2 Seed Treatment .....	61
2.2.1 Treatment Using Normal Water for Seeds that can be kept for a Long Period and Quickly Soaked with Water, and Seeds that Rot Quickly .....	61
2.2.2 Treatment Using Hot Water for Seeds that can be kept for a Long Period .....	65

2.2.3 Treatment with Frequent Dampening and Drying .....	66
of the Seeds	
2.2.4 Treatment by Filing the Seed Pods .....	67
2.3 Planting Seeds into Plastic Bags .....	68
2.4 Transplanting Seedlings into Plastic Bags .....	69
2.4.1 Broadcasting .....	69
2.4.2 Transplanting .....	69
2.5 Grafting .....	70
3. Seedling Care at the Nursery Bed .....	71
3.1 Watering .....	71
3.2 Weeding .....	71
3.3 Selective Picking and Replacement Planting.....	72
3.4 Insect Control .....	73
3.5 Fertilizer Application .....	73
3.6 Cutting the Seedling's Roots that Grow Outside the Plastic Bag.....	74
3.7 Changing Seedling Bags .....	74
3.8 Exposure to Sunlight of Seedlings in the Nursery Bed .....	75
3.9 Increasing Sunlight and Decreasing Moisture .....	75
Tree Planting Activities .....	77
1. Preparation of the Tree Planting Site .....	79
1.1 Site Preparation for Tree Planting .....	80
1.1.1 Identification of Site and Size of Land for Planting .....	80
1.1.2 Building Drainage Canals .....	81
1.1.3 Clearing the Planting Site and Ploughing the Area .....	81
1.1.4 Using Lines to Dig Holes for Planting the Seedlings.....	81
1.1.5 Fencing .....	81
1.2 Planting Seedlings .....	82
1.2.1 Open Plantation.....	82
1.2.2 Tree Planting in Fields Abundant with Tall Grass .....	83
1.2.3 Planting Between Existing Trees .....	85
1.2.4 Tree Planting as Fields in Shrub Land .....	87
1.2.5 Tree Planting as a Wind Break .....	89
1.2.6 Tree Planting Along the Road .....	92
1.2.7 Tree Planting for Shade on the Plateau .....	94
1.2.8 Tree Planting to Prevent Soil Erosion and for Drainage .....	95
1.2.8.1 Prevention of Soil Erosion along Waterways .....	95
1.2.8.2 Prevention of Soil Erosion on Slopes.....	99
1.2.9 Tree Planting for Fodder.....	100
1.2.10 Tree Planting in Agro-Forestry Systems.....	102
1.2.10.1 Agricultural Land Development in the Slope Area ...	102
1.2.10.2 Multiple Tree Planting Diversified with Crops .....	104

2. Hole Digging Methods for Planting Seedlings .....	105
3. How to Plant Seedlings.....	106
<b>Seedling Maintenance .....</b>	<b>109</b>
1. Replacement Planting.....	111
1.1 Percentage Calculation of Dead Seedlings .....	111
1.2 Appropriate Time for Replacement Planting .....	112
1.3 Replacement Planting Methods .....	112
2. Prevention of Seedling Destruction by Animals .....	113
2.1 Protective Fence.....	113
2.2 Education for Cattle Herding Children.....	115
2.3 Implementing the Rules and Regulations of the Village.....	115
3. Prevention of Seedling Destruction by Rodents, Termites or Worms...	116
3.1 Problems.....	116
3.2 Protection Measures.....	117
4. Forest Fire Prevention.....	118
4.1 Forest Fire Prevention Measures .....	118
4.1.1 Building Fire Barriers.....	118
4.1.2 Work to be Carried out with People in the Local Area .....	121
4.2 Extinguishing Forest Fires .....	122
4.2.1 Tools to Extinguish Forest Fires.....	122
4.2.2 Methods to Extinguish Forest Fires .....	123
5. Weed Clearance .....	125
6. Trimming .....	127
7. Thinning-Out .....	128
8. Maintenance of Coppice .....	129
8.1 Additional Work to Enable the Coppice to Grow Well after the Harvest..	130
8.2 Coppice Maintenance.....	131
8.2.1 First Year.....	131
8.2.2 Subsequent Years.....	132
<b>Reference .....</b>	<b>134</b>
<b>Annex 1 – Seed Treatment for Some Species .....</b>	<b>137</b>
<b>Annex 2 – Differences Between Fruits and Seeds .....</b>	<b>140</b>
<b>Annex 3 – Donor Profiles .....</b>	<b>141</b>