Sustainable Management Plan

(2077/78— 2086/87)

of

Sagarnath Forestry Development Project

VOLUME ONE

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Acronyms and Abbreviations

ADB	Asian Development Bank
AFU	Agriculture and Forestry University
CBA	Cost and Benefit Analysis
CBR	Cost Benefit Ratio
CITES	Convention on the International Trade in Endangered Wild Fauna and Flora
DCC	District Coordination Committee
DoFS	Department of Forests and Soil Conservation
DFO	Division Forest Office
EMP	Environmental Management Plan
EPR	Environmental Protection Rule
EPA	Environmental Protection Act
EIA	Environmental Impact Assessment
FGD	Focus Group Discussion
FPDB	Forest Products Development Board
GoN	Government of Nepal
GGN	Green Governance Nepal
Ha	Hectare (an area of 100m*100m)
IAIA	International Association for Impact Assessment
ILO	International Labour Organization
IUCN	International Union for Nature Conservation
IoF	Institute of Forestry
IEE	Initial Environment Examination
KAFCOL	Kathmandu Forestry College
KII	Key Informant Interview
LPG	Liquefied Petroleum Gas
LRP	Local Resource Person
MoFE	Ministry of Forests and Environment
NGO	Non-Governmental Organization
NPV	Net Present Value
NTF	Non Timber Fore product

PA	Protected Areas
RAP	Ratuwamai Afforestation Project
RM	Rural Municipality
SFDP	Sagarnath Forestry Development Project
ToR	Terms of Reference
TSI	Timber Stand Improvement
VDC	Village Development Committee

Executive Summary

The "Sustainable Management Plan" for Sagarnath Forestry Development Project (SFDP) has been prepared for 10 years i.e. 2077/78-2086/87. The report of Environment Impact Assessment (EIA) has been approved from Ministry of Forests and Environment on May 2019. The SFDP under Forest Products Development Board (FPDB), which was initiated in 1977 by Government, is basically responsible for the implementation of this management plan. Initially, the SFDP aimed to augment fuelwood and timber supply as there was serious problems of deforestation and degradation in the Terai region. The vision of the management plan is **forest for prosperity** whereas mission is **to improve planation forest management for forest-based economy.** The goal of the management is to enhance forest productivity and generate employment through sustainable plantation forest management, whereas the objectives are as follows:

- To increase the supply of forest products
- To enhance forest-based enterprises
- To enhance the protection of forest
- To diverse the supply of ecosystem services in plantation forest management
- To assess the possibility for local community involvement in plantation forest management

The SFDP covers five municipalities and one rural municipality in Mohottari and Sarlahi districts and is managed from three different divisions viz Sagarnath, Hatilet and Murtiya. The total area is 13,500 hectares, spread over Mahottari, Sarlahi and Rautahat, however , the effective plantation area is less than the actual area due to greenbelt, forest roads, rivers/streams and other infrastructures. Primarily, 10740 ha of low grade land was clear felled and planted with fast growing and high yielding species. Each block is equal to 100 hectares comprising 4 plots. The area of various species in different regions are given **Table A**:

Table A: Area (ha) occupied by various species

SN	Species/Regions	Sagarnath	Bhaktipur	Phuljor	Parwanipur	Hatilet	Kusmari	Lakshminiya	Murtia
1	*Eucalyptus*	178	1148	78	87	604	511	404	324
2	*Eucalyptus and others*	1097	380	57	17	864	854	880	51
3	*A. catechu*						11	23	
4	*S. robusta*							94	17
5	*S. robusta and other*	346					21	120	
6	*D. sissoo*	9			26	18			
7	*T. grandis*	104	25	24		28		14	31
8	*T. grandis & other*		24	25					
	Total	1733	1577	184	130	1514	1397	1535	423

An area of 2610 ha is planned for harvesting for a period of 10-years. Plantation of veriuos tree species has to be completed in 3305 ha within a plan period. Plantation area encroached and clear felled areaa. The sum of areas of various management activities are given in **Table B.**

Table B: Ten years' forest management activities (area in ha)

Year Activites	1	2	3	4	5	6	7	8	9	10	Total (ha)
Plantation	248	612	489	410	285	253	279	225	279	225	3305
Singling	202	70	158	49	115	47	141	93	171	163	1209
Weeding	941	432	1068	1491	866	515	231	173	163	109	5989
Thinning	77	81	153	0	3	123	387	326	83	59	1293
Cleaning	445	576	587	443	696	1358	649	818	462	601	6635
Harvesting	506.7	476.6	298.3	194.7	134.2	296.5	86.9	240.3	145.6	230.6	2610

Likewise, plots for each management activity are given in **Table C.**

Table C: Ten years' forest management activities (No. in plots)

Year	Plantation	Harvesting	Cleaning	Weeding	Singling	TSI	Thinning
1	20	44	43	47	13	4	11
2	33	49	46	45	4	7	13
3	19	32	40	68	11	10	32
4	13	17	42	74	5	13	4
5	10	15	68	48	8	35	4
6		25	111	26	4	13	15
7	4	13	58	14	13	25	51
8		16	70	8	7	23	49
9	4	12	41	8	11	18	15
10	-	17	72	4	12	16	9

Besides regular forest management activities, other activities relate to capacity building, upgrading of existing machinery and infrastructure along with researches and innovation. Activities are proportionately divided into 10 years. Based on the costs and benefit analysis for a plan period of 10-years, the benefit cost ratio was found as 1.61, which indicates that the project is beneficial and feasible. Total benefits received from SFDP was NPR 1,28,13,02,860 while the total cost was NPR 79,33,96,290 for a plan period.

It is assumed that the project will be operated fully and functioned smoothly to implement all the prescribed activities in the management plan. However, the condition of the particular and market demand will decide the areas and plots of harvesting operation and other management activities as well. Any kind of deviation that is felt required based on situation analysis of plots, market and other circumstance will be endorsed from the FPDB. Likewise, regular monitoring, federal or provincial level monitoring and third-party independent monitoring are devised from various stakeholders and experts for checking out how SFDP is functioning and should move ahead. A mid-term evaluation is necessary at the end of 5^{th} year to revise the plan to catch up the need of that particular time. Given the sufficient human resource, budget allocation and implementation of plan carried out, the SFDP would turn out to be a model plantation project.

CHAPTER 1: INTRODUCTION

1.1 Background

Sagarnath Forestry Development Project (SFDP), the only semi-mechanized man-made forest, lies in Terai region of central Nepal. It was emerged from the Government's recognition of the serious problems in forests of Terai region. An intensive management plan was essential to address the issues on shrinking forest resources and rapidly increasing demand of fuel wood and other forest products and to replace degraded and non-productive forests in this region. In such a prevailing a scenario, a joint mission of Food and Agriculture Organization (FAO) and Asian Development Bank (ADB) identified a forest plantation project in the central Terai; the government of Nepal (GoN) concurred with the idea of undertaking a feasibility study in anticipation of subsequent project financing.

The project was approved on 20 December,1977 and became effective only in September, 1978. The Forest Products Development Board (FPDB) was the executing agency. The project completed in 1986, after a major reformulation in 1982, when the plantation area was scaled down to 4,150 ha (ADB, 1987). The primary focus of the project was to establish plantations of fast-growing and short rotation tree species in 10,000 hectares by replacing depleted forests of *Shorea robusta* in Sarlahi, Mahottari and Rautahat districts to meet the domestic supply of fuel wood. The aim of the plantation was to augment the supply of fuel wood to Janakpur cigarette factory and cities like Kathmandu and Pokhara. The total effective area of the SFDP is 10,289.9 ha after excluding areas of roads, green belts and other structures.

After decision made by the Supreme Court, the SFDP will get its apex governing body. Either federal government or provincial government will take charge of implementing this management 2020 onward. The Environment Impact Assessment report of this management is already approved in May, 2019. The management plan has been prepared for 10 years, beginning from 2077/2078 (2020/2021 AD) which is mentioned as year 1 in the plan and the 10^{th} year will be 2086/2087 (2029/2030 AD).

Since, Sagarnath Forestry Development Project is only one plantation forest project of this scale, it has huge potential to serve national prosperity through high quality timber and can support forest-based industries. The prime challenges of the SFDP are lack of human resources according to position allotted, existence of outdated menial technologies, insufficient budget allocation and instability in senior management employees. Given the proper arrangement of

technical and non-technical human resources with well-equipped new technologies and budget allocation, the SFDP could achieve its target and goals along with primary objectives. This can be a model project.

Two major species, *Eucalyptus camaldulensis* (exotic) and *Dalbergia sissoo* (native) were planted in the project area. *Tectona grandis* was also planted in a small scale at the initial stage of the project.

During the running of the project, it was known that the plantation has much more value from other products than fuel wood. The project produced small logs and poles, which were more valuable in the market than fuel wood. *E. camaldulensis* has manifold industrial uses. The option of generating value through sale of electricity transmission poles was seen during the continuation of the project not undermining the fuel wood production. So, the management objective was changed towards the production of transmission poles and fuel wood.

There is no formal management plan of SFDP since 2064/65. The SFDP has been working by preparing annual plan to conduct different activities each year. The project focuses mainly on supply of different forest products for which a clear management plan is needed to implement the activities in future. The Sustainable Management Plan for SFDP has been prepared and different activities have been prescribed for 10 years. Previously, one of the major objectives of the SFDP was to produce electric transmission poles from *Eucalyptus* species and timber from *Eucalyptus* species and *T. grandis* to make furniture. However, government has encouraged other types of electric poles, so management objectives have been shifted to production of quality timber. The regeneration of Sal is vigorous in a number of blocks in SFDP area, for which the management plan has prescribed to produce timber. In addition, the plan has emphasized to fulfill the demand of fuel wood in different regions, to add value on the timber by seasoning and sell them at markets.

The SFDP has adjoining five municipalities and one rural municipality in Mahottari and Sarlahi districts (Table 1).

Table 1: Adjoining districts, municipalities and rural municipality of SFDP

SN	Municipality/Rural Municipality	Previous Municipality and VDCs	District
1	Bardibas Municipality	Bardibas Municipality, Hatilet VDC	Mahottari
2	Gausala Municipality	Gausala Municipality, Laxminiya, Belgachhi VDC	
3	Ishworpur Municipality	Ishworpur, Guarisankhar,	Sarlahi
4	Bagmati Rural Municipality	Dhungrekhola, Shankarpur, Rajghat, Karmaiya VDCs	
5	Hariwan Municipality	Hariwan Municipality	
6	Lalbandi Municipality	Ranigunj VDC, Parwanipur VDC	

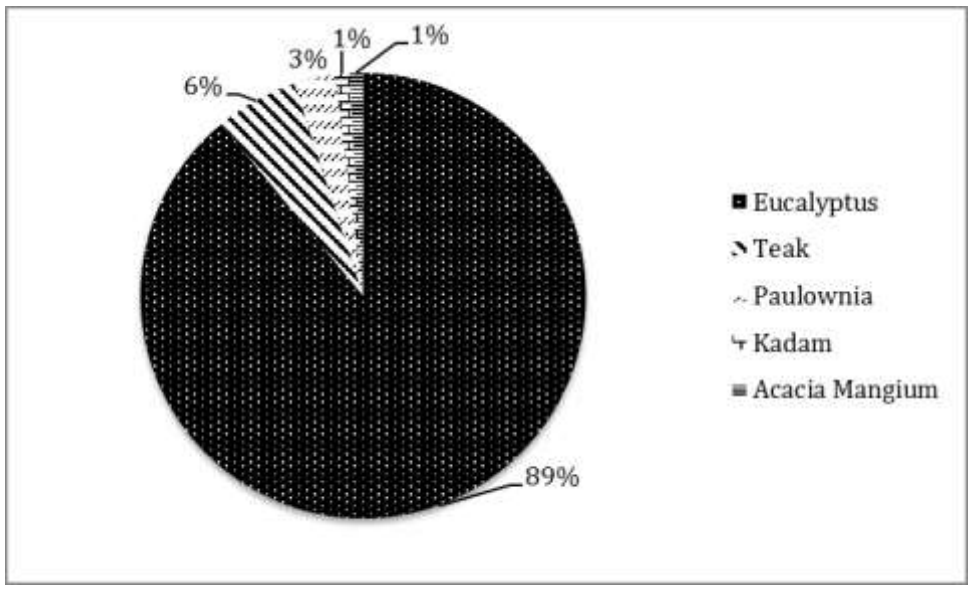
1.1.1 Plantation management

The plantation and natural stands are divided into square blocks of 100 ha (1 km x 1 km) and then each block is further divided into 4 plots of 25 ha (500 m x 500 m). These 25 ha plots are the smallest management unit of the project. In general, the same species is planted in a particular block having four plots. The planted stands are clear-cut at the rotation period followed by replanting or leaving stumps for coppice growth of *Eucalyptus* sp. and *T. grandis*.

Plantations were established by clearing natural forest one to two years before initiation of the project. The area was ploughed with heavy bulldozer discs. Plantation was carried out at a spacing of 4 m x 2 m (1,250 plants/ha) in the beginning of the Project and the area was distributed to local farmers for intercropping for the first three years. At present, the spacing of plantation followed in the SFDP, in general, is 2.5 m x 2.5 m and the management activities are mainly focused on weeding and protection. *Imperata* grass and *Chromolaena odorata* (banmara) have created problem for the growth of seedlings. Similarly, fire is the prominent threat to the plantation every year. Currently, the rotation period used in the SFDP is 20 years for *E. camaldulensis*, 30 years for *D. sissoo*, and 50 years for *T. grandis*.

1.1.2 Nursery

The project has its own nursery with an area of 20 ha at Sagarnath and 5 ha at Murtiya. In 2073, the nursery had supplied about 1.4 million seedlings, mostly of *Eucalyptus* sp. to individuals and organizations. It indicates that there is high demand of fast growing species that can provide quick returns. Production of quality seedlings of multipurpose fast growing species and their sale could be one of the important sources of income for the SFDP in future.



Source: Annual report (2071/2072)

Figure 1: Species wise seedling production

About 89% of *Eucalyptus* sp. seedlings is produced annually which is followed by 6% of *T. grandis*, 3% of *Paulownia* sp., 1% of *Anthocephalus chinensis* (kadam) and 1% of *Acacia mangium* (Figure 1 and Annual report, 2071/2072)

1.2 Rationale of the Project

At present, the SFDP faces several challenges, which need to be addressed carefully. The success of the SFDP does not only provide financial benefits to the project itself but also promotes plantation forestry and encourage private forest owners. The SFDP has several challenges and opportunities to develop itself as a center of excellence for the forest management in Nepal. Encroachment, forest fire, proper forest management, and infrastructure development are major challenges for the project, whereas tourism development and replacement of fast growing species are some major opportunities.

In addition, existing institutional framework and management is a serious concern, which could jeopardize the project sustainability, as it has contributed to sub-optimal yields and financial and economic benefits. At central level, upgrading FPDB to a fully autonomous organization with total accountability is critical to ensure its profitability and sustainability. At a project level, development of management plans and manuals, strengthening management information system, commercial accounting systems, marketing, equipment maintenance, procurement and inventory control deserve priority. In addition, capacity building of the project staff is crucial to make project competitive in the market. This management plan is expected to address some of these pertinent issues.

During the elapse of the time, the objectives of the project changed towards fulfilling demand of electricity poles in rural areas as well as for fulfilling timber and fuel wood needs. But electric wooden poles are now being replaced by concrete or metal poles. So, the SFDP needs to change its objectives. The SFDP will produce higher quality timber and fuel wood in which local people will be benefitted by getting these products at lower rates. The involvement of local people in different types of jobs (semi-skilled and skilled) in the SFDP helps to improve livelihood of local people.

Similarly, the project site is one of the research centers for the students of Institute of Forestry (IoF) from Pokhara, Hetauda and Kathmandu Forestry College (KaFCOL) and other institutes like AFU, IAAS. In the project site, in addition to forest management, students and researchers can learn different silvicultural operations like harvesting, thinning, pruning, cleaning, timber stand improvement, fire line construction and so on.

Looking at the scenario the proposed project is very appropriate, as it will help in minimizing the gap of forest products in national market as well as fulfilling the timber and fuelwood need. Similarly, the project will help to fulfill the demand of employment at local level as well as it will be major learning center for new students and researchers.

1.3 Objectives

The overall objective of this management plan is to enhance the efficiency of SFDP. This sustainable management plan has following specific objectives:

- To analyze the present status and prepare detail year wise plantation, harvesting and thinning schedule,
- To suggest economically and ecologically acceptable and financially viable marketing strategies with linkage between market and production,
- To prepare and regulate forest management strategies to achieve high productivity of the land area covered by the project,
- To strengthen institutional capacity through research, capacity development and co-ordination,
- To assess opportunities for the production, sales and processing of Non Timber Forest Products (NTFPs) and Medicinal and Aromatic plants (MAPs) in collaboration with other line and corporate agencies,
- To explore research and educational opportunities in SFDP and identify collaborative partners and activities
- To suggest way-outs that will harmonize People-Project relationship there by reducing pressure on the forest,

1.4 Human resources

The SFDP has provision of 148 staff, headed by the joint secretary as the Project Manager. The capacity of staff ranges from field level forestry worker to forest manager. Among the total 148 posts, only 121 posts have been fulfilled while remaining 27 posts are vacant. In addition, many employees (about 140 others) in SFDP work on a daily basis. Administrative and finance staffs provide administrative support to facilitate day-to-day activities. One of the key challenges of the SFDP is lack of sufficient human resources. The list of the SFDP human resources is given in **Annex 1**.

1.5 Infrastructure and facilities

Altogether, there are 127 buildings, which are SFDP main building, workshop, management units, range units, guard quarter and guest house. More than 50% of the buildings and houses (75) including guest house and quarter are in very poor condition due to lack of timely maintenance and damage by earthquake.

Almost all vehicles of the SFDP are in poor condition. Although, SFDP has its own workshop for vehicle maintenance, but nearly all well skilled staffs have been retired and remaining others are in a way of retirement. A large number of vehicles used for forestry operations such as dozer, loader, truck and jeep are in a state of auctioning. The list of vehicle is given in **Annex 2** and the list of infrastructure like quarter and office building is provided in **Annex 3.**

The project has its own saw mill to produce sawn timber. Now, it is in poor condition and planned either to be auctioned or reviewed with a new electric motor. The distillation plant close to the SFDP main compound is in operation to extract oil from *Eucalyptus* leaves. Presently, the distillation plant is provided by the SFDP on lease. The level of water table is low in most places of the SFDP, therefore there is scarcity of water in guard quarters of Hatilet, Maisthan, Kusmari, Lakshminiya and Phuljhor. Drinking water is supplied by tanker in these places from Sagarnath, which is costly.

1.6 Administrative Division of SFDP

Administratively, the SFDP consists of three divisions, which are Sagarnath, Hatilet, and Murtiya (Figure 2). Each division is composed of regions (Figure 3). The brief description of each region under different divisions is given below.

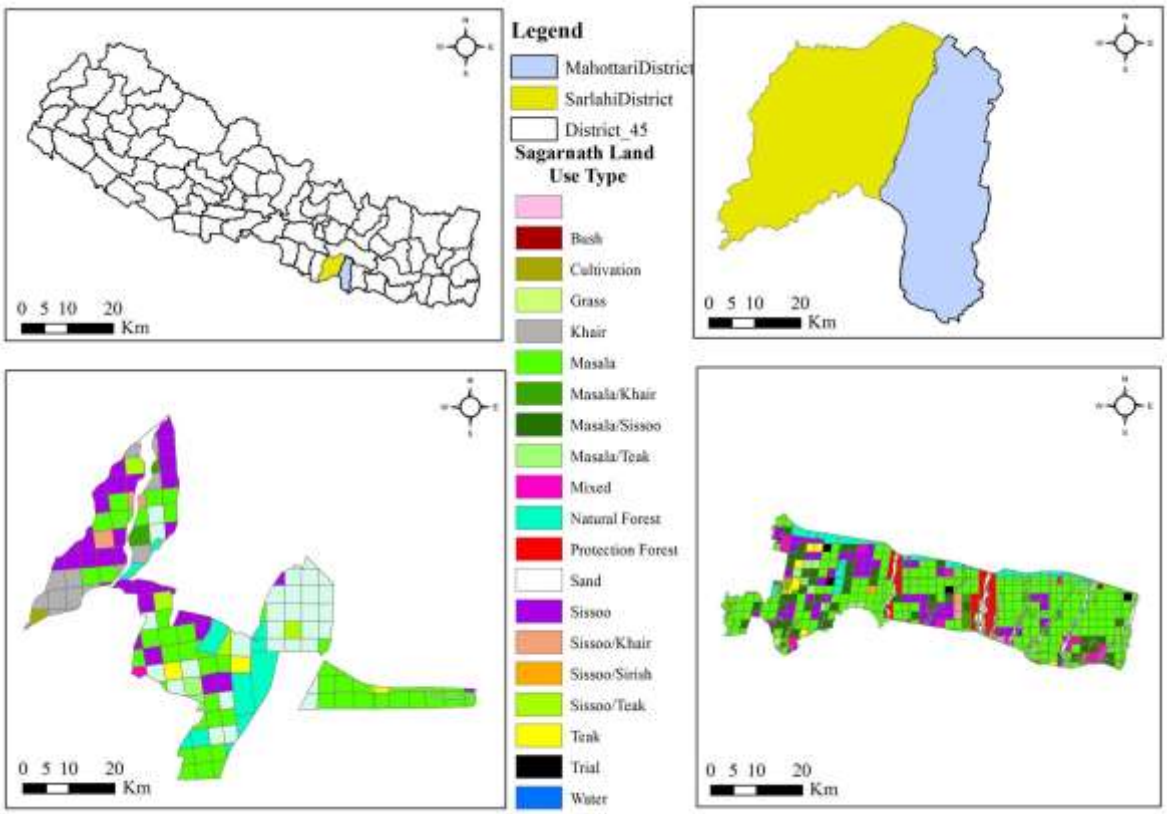


Figure 2: Divisions of SFDP showing in the map

Three divisions are divided into nine regions (Figure 3).

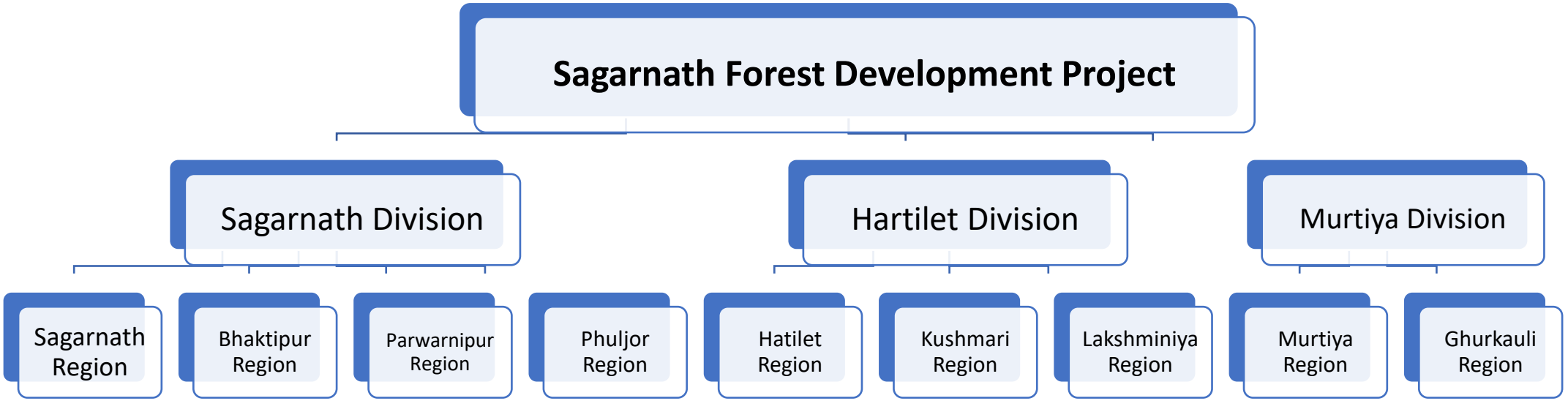


Figure 3: Regions by Division in SFDP

1.6.1 Sagarnath division

Sagarnath division covers an area of 3624 ha in 196 plots/sub-plots. There are 4 regions under the Sagarnath division viz: Sagarnath, Bhaktipur, Phuljor and Parwanipur. The following Table 2 shows the number of plots and area covered by each species in Sagarnath division. Of the four regions, Sagarnath region covers 1733 ha in 76 plots/sub-plots, whereas Parwanipur region has 130 ha in 15 plots/sub-plots. *Eucalyptus* sp. combined with other species has the largest area in this region, which is followed by *S. robusta* and other species.

Table 2: Plots/sub-plots and area covered by different species in Sagarnath Division

SN	Species	Sagarnath		Bhaktipur		Parwanipur		Phuljor	
		P/SP*	A	P/SP	A	P/SP	A	P/SP	A
1	*Eucalyptus* sp.	8	178	67	1148	8	87	5	78
2	*Eucalyptus* and others	48	1097	19	380	2	17	6	57
3	*S. robusta* and others	**15**	346						
4	*D. sissoo*	1	9			5	26		
5	*T. grandis*	4	104	4	25			1	24
6	*T. grandis* and others			2	24			1	25
	Total	**76**	**1733**	**92**	**1577**	**15**	**130**	**13**	**184**
Total area of Sagarnath Division: 3624 ha; Total plots/sub-plots: 196									
*P/SP: no. of plots and subplots, A: area in hectare									

Source: SFDP, 2016

1.6.2 Hatilet division

There are three regions under Hatilet division, which are Hatilet, Kusmari and Lakshminiya. This division comprises an area of 4446 ha and 231 plots/sub-plots (Table 3).

Hatilet region covers an area of 1514 ha in 82 plots/sub-plots. *Eucalyptus* sp. combined with other species has the largest area in this region, which is followed by *Eucalyptus* sp. Kusmari region comprises an area of 1397 ha in 77 plots/sub-plots. *Eucalyptus* sp. combined with other species has the largest area in this region, which is followed by *Eucalyptus* sp. Lakshminiya region covers

an area of 1535 ha in 72 plots/sub-plots. *Eucalyptus* sp. combined with other species has the largest area in this region, which is followed by *Eucalyptus* sp. (Table 3).

Table 3: Plots/sub-plots and area occupied by different species in Hatilet division

SN	Species	Hatilet		Kusmari		Lakshminiya	
		P/SP	A	P/SP	A	P/SP	A
1	*Eucalyptus* sp.	32	604	30	511	19	404
2	*Eucalyptus* and others	46	864	45	854	39	880
3	*Acacia catechu*			1	11	1	23
4	*Shorea robusta*					4	94
5	*S. robusta* and other species			1	21	5	120
6	*Dalbergia sissoo*	1	18				
7	*Tectona grandis*	3	28			4	14
	Total	**82**	**1514**	**77**	**1397**	**72**	**1535**
Total area of hatilet division: 4446 ha; Total number of plots/sub-plots:231							
*P/SP: no. of plots and subplots, A: area in hectare							

Source: SFDP, 2016

1.6.3 Murtiya division

Murtiya division has two regions, which are Murtiya and Ghurkauli. This division comprises 3100 ha of area in 128 plots/sub-plots.

Murtiya region is the second largest region of the SFDP. This region covers an area of 2677 ha in 102 Plots/sub-plots. Ghurkauli region has an area of 423 ha in 26 plots/sub-plots. Eucalyptus sp. is a major species in this region, which is followed by *Eucalyptus* sp. combined with other species. The total area of Murtiya region is encroached and new plantation has been started in the area. In the FY 2073/74, an area of 500 ha has been already planted and new plantation in other area has been started.

1.6.4 Number of plots/sub-plots and area covered by different species

Eucalyptus sp. is a major plantation species in different sites of the SFDP and it covers an area of 3,334 ha (39.3%) of the total land area of existing plantations and natural stands (excludes encroached area). In addition, the large area (4200 ha) in the SFDP is covered by *Eucalyptus* sp. mixed with other species. It indicates that *S. robusta* has been regenerating in *Eucalyptus* sp. plots significantly. Some other species grown in the SFDP are *Acacia catechu, S. robusta, D. sissoo* and *T.grandis*. *D. sissoo* covers only an area of 53 ha in the SFDP (Table 4).

Of the 453 plots/sub-plots, *Eucalyptus* sp. alone or mixed with other species are in 397 plots/sub-plots (87.7%). *T. grandis* is in 18 plots/sub-plots whereas *D. sissoo* is only in 7 plots/sub-plots (Table 4).

Due to epidemic of *D. sissoo*, most of its plantations was dismantled and replaced by *Eucalyptus* sp. Besides these, plenty of natural regeneration of *S. robusta* and *T. grandis* is coming up profusely. In some places, *Eucalyptus* sp. and *D. sissoo* plantations were damaged by fire in the past, which have been replaced by Sal regeneration in some places of the SFDP.

Table 4: Area and plots covered by various species

S.N	Species	Plots/sub-plots	Area (ha)	Per cent by area
1	*Eucalyptus* sp.	187	3334	39.3
2	*Eucalyptus* and others	210	4200	49.5
3	*Acacia catechu*	2	34	0.4
4	*Shorea robusta*	5	111	1.3
5	*S. robusta* and others	21	486	5.7
6	*Dalbergia sissoo*	7	53	0.6
7	*Tectona grandis*	18	227	2.7
8	*T. grandis* and others	3	49	0.6
	Total	**453**	**8,493**	**100.0**

Source: SFDP, 2016

1.6.5 Area and number of plots/sub-plots of mixed species in different regions

Eucalyptus sp. mixed with other species cover 4200 ha in eight sites of the SFDP. The sites with large area of *Eucalyptus* sp. mixed with other species are Sagarnath, Bhaktipur, Hatilet, Kusmari and Lakshminiya. Both planted and natural species are mixed with *Eucalyptus* sp. The species mixed with *Eucalyptus* sp. are *S. robusta*, Bamboo, *T. grandis, A. catechu, D. sissoo, Albizia* spp., *Dalbergia latifolia, Melia azedarach, Terminalia alata* and *Pterocarpus marsupium*. Natural species, e.g., *S. robusta* have been regenerated after plantation establishment in a number of plots/sub-plots. *S. robusta* and other species cover an area of 486 ha, mostly in Sagarnath region. The planted and natural species mixed with *S. robusta* are *T. alata, Anoegeissus latifolia, D. sissoo, Albizia* spp., *T. grandis* and *A. catechu*. The species mixed with *T. grandis* are *Gmelina arborea, A. catechu, Paulownia* spp., *Cassia siamea* and *S. robusta* (**Annex 4**). *Eucalyptus* species mixed with other species are distributed in 210 plots/sub-plots. Sagarnath, Bhaktipur, Hatilet, Kusmari and Lakshminiya regions have higher number of plots/sub-plots of *Eucalyptus* and other species.

S. robusta mixed with other species are in 21 plots/sub-plots whereas *T. grandis* and other species are only in three plots/sub-plots in two sites (**Annex 5**).

CHAPTER 2: EXISTING CONDITION

2.1 Physiography

2.1.1 Physiographic region

The project area mainly lies in the terai region (88%) with small portion in the Siwalik region. Terai area covers 2, 87,872 ha of land and Siwaliks covers 39,335 ha of land.

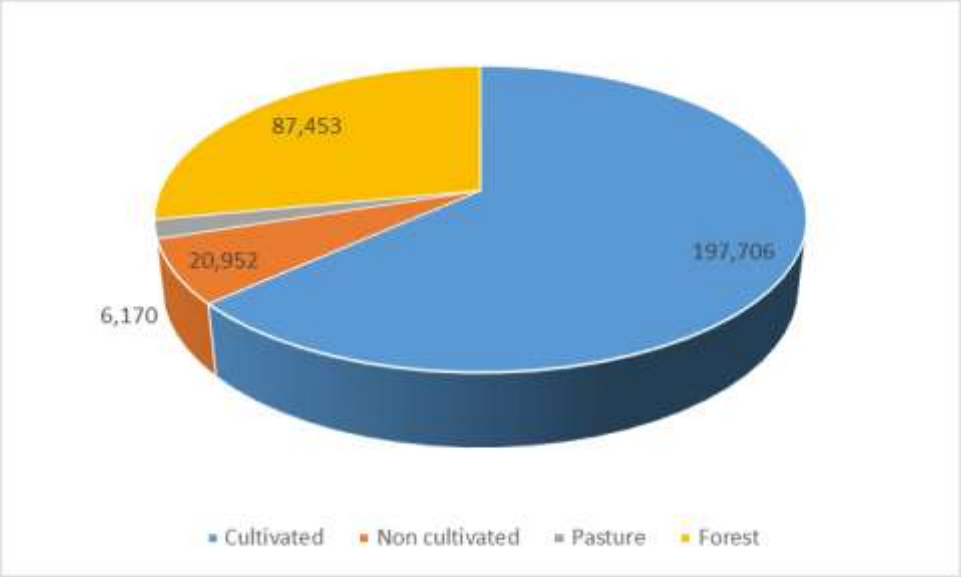
Table 5: Area of different physiographic zone

District	Headquarter	Siwalik	Terai	Total
Mahottari	Jaleshwar	14,926	79,947	94,873
Sarlahi	Malangawa	16,708	1,02,810	1,19,518

Source: District profile, 2014

2.1.2 Land use

About two-third (63%) land is under cultivation, which is followed by the forest (28%) and non-cultivated land (7%). Here, non cultivated land refers to barren land



Source: District Profile of Nepal, 2014/15

Figure 4: Land use category (ha)

2.1.3 Climate

The project area lies in a sub-tropical region. Both districts (Mahottari and Sarlahi) have more or less the same maximum and minimum temperature. Mahottari district has less annual precipitation than Sarlahi district (Table 6).

Table 6: Temperature and annual precipitation of Mahottari and Sarlahi districts

District	Temperature (^{o} C)		Annual precipitation (mm)
	Maximum	Minimum	
Mahottari	41.2	7.5	691
Sarlahi	40.0	5.0	1198

Source: District Profile of Nepal, 2014/15

2.1.4 Drinking water

More than 75% of the total population depend on hand pump for drinking water, followed by tap, well, spout water and others, respectively (Table 7).

Table 7: Dependency of people in drinking water sources (%)

Water sources → District	Tap/Piped	Hand pump	Well	Spout water	River/Stream	Other	Non-Stated
Mahattori	14.08	76.34	5.96	1.60	0.34	158	0.54
Sarlahi	11.77	77.22	7.30	0.23	0.52	1.90	1.06

Source: District Profile of Nepal, 2014/15

2.1.5 Air, water and noise

Generally, the quality of air and water is good in the project area and noise pollution is insignificant. Though, the implementation of the project has caused a little effect in the project area. The heavy equipment and vehicles of the project have caused noise and air pollution to some extent. Similarly, the construction of different infrastructures has also caused different types of pollution inside the project area. The east-west highway is connected to the northern border of the project and a number of vehicles moving there have caused air and noise pollution. But the project itself does not have any significant amount of pollution in various forms.

2.1.6 Soil

The soil, weakly developed over small gravel and boulders, is freely draining and water deficit period is from November to May. The project area includes three ground water zones varying in depth from 5-80 m. About 20-30% of the project area is silty clay loam over sand, 10-20% of the area is sandy clay loam over sand, and 30-40% of the area is loam sand over sand i.e. sandy loam. This shows the major area is well tramped soil. The pH value of the project is 5.1 to 6.4. Only 10-15% of the project area is covered by very coarse textured fine sand and 5-10% by excessively coarse textured boulder. These results are based on the soil survey carried out in the SFDP in 1985.

2.2 Biological Environment

2.2.1 Flora

Eucalyptus is the most abundant species in the project area. Other tree species found in the area are *D. sissoo, S. robusta, Bombax ceiba, A. catechu, Albizzia* spp., and *T. grandis* including miscellaneous species. Some trees, shrubs and herb species found in the project area (**Annex 6**).

2.2.2 Fauna

There is a diversity of faunal species in the project area. The major faunal species in the project area are wild boar, deer, monkey, blue bull, etc. A list of faunal speceis is provided in **Annex 7**.

2.2.3 Non-timber forest products (NTFPs)

The people living in the vicinity of the project area are not very much aware of the medicinal, ethno-botanical and NTFP species. The NTFPs observed during the field visit were lemon grass, eucalyptus leaf, sajiwan, and kurilo and so on. The list of NTFPs found in the project is given in **Table 8**.

Table 8: List of NTFP species in the project area

SN	Common Name	Scientific Name	Category
1	Lemon grass	*Cymbopogon citratus*	
2	*Eucalyptus* leaf	*Eucalyptus* sp.	Tree leaf
3	Sajiwan	*Moringa oleifera*	Shrub
4	Kurilo	*Asparagus racemosus*	Shrub
5	Harro	*Terminalia chebula*	Fruit
6	Barro	*Terminalia belerica*	Fruit

2.3 Socioeconomic and cultural environment

Existing socio-economic and cultural environment of the project affected VDCs are described below. The data are based on the record of the district and VDC profile, 2014/15.

2.3.1 Demographic pattern

Demograpic data of the project district are provided in **Table 9**.

Table 9: Demographic data

District	Male	Female	Total	HH	Average HH	Density
Mahottari	3,20,772	3,39,602	6,60,374	1,18,989	5.55	658.61
Sarlahi	4,16,999	4,14,067	8,31,067	1,42,702	5.82	660.00

Source: District Profile of Nepal, 2014/15

2.3.2 Ethnicity

The project area possesses various races, castes and creeds with a religious harmony existing among the people. Yadav comprises the highest population with around 15.15% of total population followed by Musalman (15%) and other all ethnicity comprises of around 70%. The ethnic composition of project district is provided in **Table 10**.

Table 10: Percentage of total population in different ethnic groups

District	Population by ethnic group (%)		
	Yadav	Muslim	Others
Mahottari	15.15	13.36	71.49
Sarlahi	15.51	7.89	76.6

Source District Profile of Nepal, 2014/15

2.3.3 Religion and culture

Most of the people are Hindu followed by Islam and Buddhist, respectively. The percentage of Hindu religion in Mahottari and Sarlahi districts is slightly varied. Religious composition of project district is provided in Table 11.

Table 11: Religious composition of Project district

District	Religion (%)			
	Hindu	Buddhist	Islam	Total
Mahottari	84.24	2.02	13.34	100%
Sarlahi	85.56	5.72	7.88	100%

Source: District Profile of Nepal, 2014/15

CHAPTER 3: METHODOLOGY

Many interaction meetings and consultations with stakeholders and key persons, field works and observations, local and national level workshops followed by expert consultation and reviews were conducted during preparation of this management plan. The comments and suggestions were incorporated in the management plan. The plan is prepared for conservation, management and utilization of the Sagarnath forest in scientific and participatory approach with due consideration of its significance and integrity for human being. The following methods were used in preparation of management plan for the SFDP.

3.1 Literature review/Desk study

Based on previous experiences and review of relevant literature associated with management plans of various projects, demographic tables were developed. To fill these tables, a desk study was conducted. All the relevant information associated with socio-economic and cultural environment was reviewed. While carrying out the study, literature review of data of Central Bureau of Statistics, district profile of concerned districts and municipality, rural municipality, reference manuals and other guidelines, published literatures, documents, textbooks and other relevant workbooks was carried out. Desk study of review of existing management plan report of the project as well as related environmental reports was also carried out. Map of the project sites was studied in detail. The geographic boundary of the influence area was delineated tentatively so that these can serve as the base map to present the information collected during the field survey using Geographical Information System (GIS). Different acts, policies and other legal documents related to the plantation forest were studied.

Different other documents reviewed during the preparation of management plans were: management plans, technical notes and reports, annual reports, guidelines, Acts and regulations, articles, theses/dissertations, policy, District and VDC profile, soil survey reports.

3.2 Data collection

Primary data were collected for preparation of the management plan using following methods:

3.2.1 Key Informant Interview (KII)

Fourteen key informants were interviewed from various sectors. Representatives from District Forest Office, Department of Forests, FPDB, SFDP, Department of Forest Research and Survey, and Forestry Institutes were interviewed. During interview an array of issues were discussed with key informants particularly on plantation management strategy, involvement of local communities, and opportunities in SFDP including research and collaboration. Discussions on plantation management were mainly focused on introduction of new species, management of bush and banmara (*Chromolaena odorata*, a invasive species), and hazards particularly fire, pests and diseases. The checklist of KII is provided on **Annex 8.**

3.2.2 Focus group discussion

Three focus group discussions (FGDs) were held with local communities at Gausala, Ishworpur and Hariwan municipalities. The objectives of FGDs were to understand issues between SFDP and local communities, and possibility of engaging local communities in the plantation management. A total of 75 participants (41 male and 34 female) participated in focus group discussions. During FGDs, background information was collected to prepare questionnaires for rapid household survey. The checklist of FGD is provided on **Annex 9**.

3.2.3 Rapid household survey

A total of 120 households of Sagarnath, Hatilet, Lakshminiya and Bhaktipur regions were interviewed using a set of questionnaires (**Annex 10**). The households were selected based on systematic random sampling and the questionnaire was mainly focused on to assess their perception on SFDP, their willingness to participate in plantation management, and the possible strategies they would like to be adapted by the project to enhance their welfare.

3.2.4 Consultation

A number of consultations were made during the management plan preparation process. The participation of local Non-Governmental Organization (NGO) in the activities of the SFDP was analyzed.

3.2.5 Direct observation

Detail walkover survey was carried out in and around the project sites to collect the necessary information. Prescribed formats and models for check lists/ matrices, equipment, and process were

used to collect specific data on physical, biological, socio-economic and cultural environmental condition of the project affected areas. The survey sheet was used to gather information regarding physical, biological and socio-economic environment. The checklist for data collection is provided on **Annex 11 and 12.**

3.2.7 Forest inventory

Detail information of all blocks (age, species, and mode of regeneration) was collected. Then, the blocks were stratified based on species, their age and mode of regeneration. A total of 135 plots out of 453 plots/sub-plots was selected randomly for the inventory. Out of them, 83 plots were planted and 52 plots were naturally regenerated. On an average, two plots were selected randomly from each plot, hence 248 sample plots (158 planted and 90 naturally regenerated) were inventoried.

Systematic random sampling was applied to select sample. To select the sample plots, first plot was selected 100 m inside the forest from the border then next plot was selected 50 m further

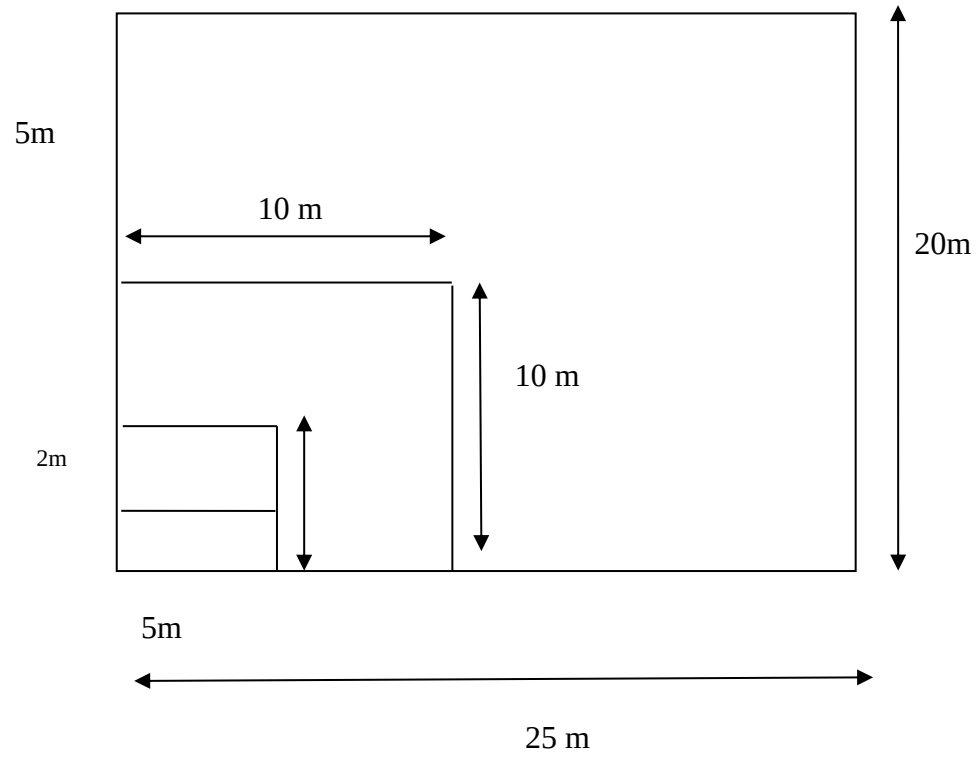


Figure 5: Sample plot design

from the first plot. A rectangular plot of 500 m^2 (25 m x 20 m) was laid to measure trees (≥30 cm dbh), a square sub-plot of 100 m^2 (10 m x 10 m) nested in 500 m^2 tree plot for the measurement of pole (≥10-29.9 cm dbh), then a square plot of 25 m^2 (5 m x 5 m) was laid inside the pole plot to measure saplings (height ≥1 m and dbh <10cm), and then a rectangular plot of 10 m^2 (5 m x 2 m) to count seedlings or regeneration (30 cm to 1 m in height).

The inventory was carried out in 17 blocks containing 28 plots/sub-plots in Sagarnath region. Two blocks with 3 plots and one block with two plots were inventoried in Phuljor and Parwanipur regions, respectively. Twenty-one plots in 12 blocks of Bhaktipur region, 21 plots in 13 blocks of Lakshminiya region, 39 plots in 17 blocks of Hatilet region and 20 plots in 10 blocks of Kusmari region were inventoried (**Annex 22**).

T. grandis, Eucalyptus sp., *S. robusta, Bombax ceiba* and *A. catechu* were sampled in Sagarnath region. The data of *D. sissoo* and *Eucalyptus* sp. were collected in Phuljor and Parwanipur regions, respectively. Similarly, the data of *Eucalyptus* sp. and *T.grandis* in Bhaktopur region, *Eucalyptus sp*., *T, alata, S. robusta, A. catechu* and miscellaneous species in Lakshminiya region, *Eucalyptus* sp., *D. sissoo, T. grandis, S. robusta, A. catechu, B. ceiba* and miscellaneous species in Hatilet region and *A. catechu, S. robusta, Eucalyptus* sps, *T. alata, T. grandis* and miscellaneous species were captured. Twenty-one coppice plots of *Eucalyptus* sp. were covered in the inventory (**Annex 22**).

3.2.8 Measurement of stem (bole) for volume determination

Data of sixty trees of each *Eucalyptus* sp. (coppice) and *T. grandis* were collected. DBH of each selected tree was measured using a caliper before felling. Then, stump height and total length (excluding stump) were measured after felling a tree. The stump diameter (over bark and under bark) at the top was measured. The total length of the tree was divided into 14 points (1%, 2.5%, 5%, 7.5%, 10%, 15%, 20%, 30%, 40%, 50%, 60%, 70%, 80% and 90% of total length) after calculating respective lengths and these points were marked. Over bark and under bark diameters were measured at each point and recorded. Over bark and under bark top diameters with total length were measured. In case of *Eucalyptus* sp., total lengths were measured up to over bark diameters of 10 and 13 cm.

3.3 Map preparation

Maps were prepared by using GIS, to visualize the state of SFDP and management options. Map was prepared to show updated area with species and silvicultural operations and others (pond, temple, stream, etc.) in each block and plot/sub-plot

3.4 Data analysis

All the technical data related to inventory, block description, local volume table were analyzed in excel while the data of household survey were analyzed in SPSS and analytical analysis were conducted to analyze the data collected through FGD and secondary data. GIS software was used to produce the map of the project area. Data analysis was conducted in three different ways

3.4.1 Social data analysis

Qualitative and quantitative analysis was done for the social data. The data collected through the KII, FGDs and consultation were qualitatively analyzed and incorporated in the management plan.

3.4.2 Forest inventory data analysis

Detail analysis was carried out for the forest product. The collected information was analyzed in the MS Excel. Mean basal area, mean height, and mean volume of every species was calculated. Similarly growing stock in each block, age-wise growing stock of each species, species wise growing stock were calculated.

3.4.3 Selection of volume models and preparation of local volume table

Volume of each sample tree of *T. grandis* and *Eucalyptus* sp. was calculated using Smalian's formula. The computer Program EXCEL was used to test ten volume models/equations (**Annex 13**) to select the best model to estimate stem volumes and develop local volume tables. The same package was used for data handling, regression and residual analysis. The coefficient of determination R^2, standard error, the variance ratio from the analysis of variance (F), and prediction error were some criteria used in selecting the equation of best fit. The number of trees used for selecting volume models of *Eucalyptus* sp. ranged from 37 to 39 (**Annex 14 and 15**), 36 to 38 for underbark and overbark volumes for timber use and 45 to 46 for underbark and overbark total stem volumes of *T. grandis* (**Annex 18 and 19**).

The predictor variable DBH only or combining DBH and height were used to select the volume models of *Eucalyptus* sp. and *T. grandis.* These models were then used to develop local volume tables of both species.

3.4.4 Validation of volume models

Seventeen trees were used to validate the selected models of *Eucalyptus* sp. (**Annex 14 and 15**), 9 trees for validation of over-bark and under-bark volume models of *T. grandis* to estimate timber volume and 11 trees for over-bark and under-bark volume models to estimate total stem volume (**Annex 18 and 19**). The prediction error (percent error) was calculated in each case. These models were tested as the predicted against the actual sample volumes.

3.5 Validation Workshops

Workshops were conducted at local and national levels to share information inviting the officials from relevant government agencies, conservation partners, donors, professionals, academicians and other stakeholders. The workshop identified key gaps in plan and provided important suggestions to fill up these gaps.

Local level workshop was conducted in the SFDP office. The workshop was conducted in presence of SFDP Officials, local government officials, other conservation partners. During the workshop, different feedback and suggestions were taken and incorporated in the report. National level workshop was conducted in the Ministry in presence of officials of then MFSC, DoF and FPDB and so on.

CHAPTER 4: FINDINGS

4.1 Volume models and development of local volume tables

The volume tables of *Eucalyptus* sp. and *T.grandis* are presented in Annexes 16, 17, 20 and 21. The presented local volume tables are based on predictor variable/s DBH only or combining DBH and height.

Improvement in coefficient of determination (R^2) and standard error was found with the inclusion of combining height and DBH as a predictor variable. The selected models are $V = a+b*DBH^2$ and $V = a+b*DBH^2*height$ for *Eucalyptus* species and $V= a+b*DBH+c*DBH^2$ and $V= a+b*DBH^2*height$ for *T. grandis* (where V is underbark or overbark stem volumes, DBH is diameter at breast height at 1.3 m, height refers to total height and a, b are regression constants).

Validation of volume equations

All the selected models provided a predicted volume within 10% of the actual volume for both species.

4.2 Biological

On the basis of inventory data, age class of all species is categorized as, 4-10 years, 11-20 years, 21-30 years and 31-40 years.

4.2.1 Growth and volume by species

The mean DBH of *A. catechu* ranged from 10.2 cm to 39.8 cm, whereas its mean height ranged 5.9 m to 22.3 m in Hatilet region. *Eucalyptus* sp. attained a mean dbh in a range of 10.7 cm in Kusmari and Lakshminiya regions to 36.6 cm in Hatilet region whereas mean height ranged from 5.8 m to 29 m in Lakshminiya region. *S. robusta* had mean dbh in a range of 12.3 cm in Lakshminiya region to 36.3 cm in Hatilet region whereas the mean height of this species ranged from 12 m to 24.5 m in Hatilet region. The highest mean dbh of *T. grandis* was 38.4 cm in Hatilet

region and the lowest mean dbh was 11.6 cm in Sagarnath region. The mean height of *S. robusta* ranged from 8.5 m in Hatilet region to 20.2 m in Sagarnath region **(Annex 22)**

The highest stocking (no. /ha) of pole was found to be 850 for *Eucalyptus* sp. in Bhaktipur region, whereas the lowest stocking was found to be 50 for *T. grandis, S. robusta*, *Eucalyptus* sp and *A. catechu* in Sagarnath, Bhaktipur, Lakshminiya, Hatilet and Kusmari regions. The stocking of pole of *Eucalyptus* sp. ranged from 50 in Kusmari and Hatilet regions to 850 in Bhaktipur region. In general, stocking of pole of this species was higher in Bhaktipur region. The stocking of *Eucalyptus* trees was found very low, which ranged from 10 in Kusmari, Hatilet, Lakshminiya and Bhaktipur regions to 120 in Sagarnath region. The variation in stocking of pole of *S. robusta* was large, which was in a range of 50 in Kusmari and Hatilet regions to 700 in Sagarnath region. The lowest stocking of trees of *S. robusta* was 10 in Sagarnath, Lakshminiya, Hatilet and Kusmari regions, whereas the highest stocking was 110 in Sagarnath region. The stocking of combining pole and trees of *S. robusta* was higher in Sagarnath region. The stocking of pole of *T. grandis* varied from 50 in Bhaktipur and Sagarnath regions to 550 in Sagarnath region. The trees of *T. grandis* had a stocking in a range of 10 in Bhaktipur region to 150 in Sagarnath region **(Annex 22).**

The trees of *A. catechu* had lower basal area due to low stocking. In general, the basal area (m^2/ha) of *Eucalyptus* sp. was higher in Bhaktipur and Sagarnath regions than other regions. The poles had basal area in a range of 0.5 m^2/ha for *T. grandis* and *Eucalyptus* sp. in Sagarnath and Kusmari regions to 38.6 m^2/ha for S. robusta in Sagarnath region, whereas the basal area of trees ranged from 0.7 m^2/ha for *T. grandis*, *Eucalyptus* sp., *S. robusta* and *A. catechu* in Sagarnath, Bhaktipur, Lakshminiya and Kusmari regions to 18.5 m^2/ha for *T. grandis* in Sagarnath region (**Annex 23**). Poles of *S. robusta* had basal area in a range of 1.1 m^2/ha in Hatilet region to 38.6 m^2/ha in Sagarnath region whereas the trees of this species had basal area in a range of 0.7 m^2/ha in Lakshminiya to 12.5 m^2/ha in Sagarnath region. The basal area of pole of *T.grandis* ranged from 0.5 m^2/ha in Sagarnath region to 24.6 m^2/ha in Bhaktipur region whereas the range of basal area in case of trees of this species ranged from 0.7 m^2/ha in Bhaktipur region to 18.5 m^2/ha in Sagarnath region **(Annex 23).**

The volume production of of pole of *Eucalyptus* sp. ranged from 1 m^3/ha in Kusmari region to 183.6 m^3/ha in Bhaktipur region. Similarly, trees of this species had a volume in a range of 5.8 m^3/ha in Bhaktipur region to 84.2 m^3/ha in Sagarmath region. The variation in volume production per unit area was found to be large in both poles and trees of this species. The highest volume production of poles of *S. robusta* was 498.9 m^3/ha in Sagarnath region, whereas the lowest volume production of this species was 32.6 m^3/ha in Hatilet region. The volume production of trees of *S. robusta* varied from 7.3 m^3/ha in Lakshminiya and Hatilet regions to 80.7 m^3/ha in Sagarnath region. The volume production of pole of *T. grandis* was found in a range of 1.8 m^3/ha in Sagarnath region to 173.4 m^3/ha in Bhaktipur region. The volume production of trees of *T. grandis* varied from 5.4 m^3/ha in Bhaktipur region to 142 m^3/ha in Sagarnath region (**Annex 24).**

The variation of mean annual increment (MAI) of *A. catechu* was found large, which ranged from 0.7 to 9.6 m^3/ha/year. The MAI of *Eucalyptus* sp. ranged from 0.5 m^3/ha/year in Hatilet region to 32.3 m^3/ha/year in Bhaktipur region. Generally, the MAI of *Eucalyptus* sp. was lower in Hatilet and Kusmari regions. The MAI of *S. robusta* ranged from 0.5 m^3/ha/year in Hatilet region to 16.5 m^3/ha/year in Sagarnath region, which indicates a considerable site variation for the growth of this species. The lowest MAI of *T. grandis* was 1.3 m^3/ha/year in Bhaktipur region, whereas the highest MAI of this species was 11.2 m^3/ha/year in Bhaktipur region (**Annex 24**).

4.2.2 Growth and production by age

The age of *A. catechu* covered in the inventory ranged from 17 to 32 years, 3 to 34 years for *Eucalyptus* spp., 20 to 34 years for *S. robusta* and 4 to 36 years for *T. grandis*. The diameter growth of *A. catechu* was not in accordance with the increase in age of the stand. The mean dbh of 20-years old *A. catechu* varied from 15.4 cm in Lakshminiya region to 27.6 cm in Hatilet region. Such indefinite trend in diameter growth was found in *Eucalyptus* sp., *S. robusta* and *T. grandis* also (**Annex 22**).

Mostly, the stocking (number per ha) of pole of *A. catechu* was between 150 and 300. The pole of *Eucalyptus* sp. had the highest stocking (850) followed by stocking of 700 in *S. robusta* in Sagarnath region. Mostly, the poles of *Eucalyptus* sp. were less than 500 per ha. Out of 50 plots containing *S. robusta*, 42 plots (84%) had stocking less than 500 poles per ha. The lowest stocking

of trees was 10 per ha for *A. catechu, Eucalyptus* sp., *S. robusta* and *T. grandis* in different regions and the highest stocking was 120 stems per ha for trees of 10-years old *Eucalyptus* sp. followed by the stocking of 110 stems for ha for *S. robusta* in Sagarnath region (**Annex 22**).

The highest basal area was found 38.6 m^2/ha for poles of 32 years old *S. robusta* in Sagarnath region followed by the basal area of 24.2 m^2/ha for poles of *Eucalyptus* sp. in Bhaktipur region. In general, the basal area of poles of different species was less than 10 m^2 per ha and similar case was found for trees of different species (**Annex 23**).

The highest volume production of poles was found 498.9 m^3/ha for 32-years old *S. robusta* in Sagarnath region followed by the volumes, 488.1, and 374.1 m^3/ha for poles of 32 and 27-years old *S. robusta* in Sagarnath and Hatilet regions, respectively. It indicates that the growth of *S. robusta* in these sites is good (**Annex 24**).

4.2.3 Growth and stocking in different age-group

There is increasing trend in diameter growth of *A. catechu, Eucalyptus* sp., *S. robusta* and *T. grandis*. But the height growth of these species does not have the definite trend. In general, stocking of poles of these species is poor even in lower age class. The highest stocking of poles is 417 for *T. grandis* in an age class of 4-10 years and the lowest is 50 for *S. robusta* in an age class of 11-20 years and *T. grandis* in an age class of 21-30 years. The stocking of trees of these

Table 12: Mean dbh, height, basal area and stocking at different age class

SN	Latin name	Age class (year)	Mean DBH (cm)	Mean height (m)	Stocking (pole /ha)	Stocking (trees /ha)	Mean BA (m^2)	Mean BA (m^2)	Mean BA (m^2/ha	Mean BA (m^2/ha)
					Pole	Tree	Pole	Tree	Pole	Tree
1	*Acacia catechu*	4-10	-	-	-	-	-	-	-	-
		11-20	22.8	12.4	150	20	0.0306	0.0852	6.7	1.3
		21-30	25.6	16.7	200	27	0.0307	0.1126	6.1	2.9
2	*Eucalyptus* sp.	4-10	19.5	17.0	304	30	0.0289	0.0924	8.5	2.7
		11-20	24.3	17.3	317	48	0.0337	0.0876	9.0	4.1
		21-30	28.5	21.2	188	43	0.0484	0.0810	9.0	3.7
		31-40	29.6	19.6	275	65	0.0270	0.1172	8.2	7.0

3	*Shorea robusta*	4-10	-	-	-	-	-	-	-	-
		11-20	19.1	21	50	-	0.0287	-	1.4	-
		21-30	23.7	19.8	258	23	0.0373	0.0922	9.4	2.3
		31-40	29.4	19.7	360	59	0.0462	0.1034	17.0	6.1
4	*Tectona grandis*	4-10	12.1	11.3	417	-	0.0117	-	4.9	-
		11-20	25.5	16.7	300	30	0.0426	0.0736	13.1	2.5
		21-30	29.4	15.6	50	90	0.0092	0.0782	14.0	12.3
		31-40	33.5	18.2	283	107	0.0495	0.1153	14.0	12.3
Ub-underbark; Tree: DBH 30 cm or above; Pole: DBH from 10 to 29.9 cm; BA-basal area										

species is below 70 in all age-classes. Pole of *S. robusta* has the highest basal area per ha (17.0) in an age class of 31-40 years. The basal area of poles of *Eucalyptus* sp. is less than 10 m^2/ha in all age-classes but the basal area is higher than 10 m^2/ha in three age classes (11-20, 21-30 and 31-40 years) of poles of *T. grandis*. Only, trees of *T. grandis* have basal area higher than 10 m^2/ha in age classes of 21-30 and 31-40 years (Table 12)**.**

The pole of *S. robusta* has the highest volume production in an age class of 31-40 years followed by the same species in an age class of 21-30 years. There is presence of trees even in age class of 4-10 years of *Eucalyptus* sp, whereas it is found from age-class of 11-20 years in *A. catechu*

Table 13: Volume and MAI of poles and trees of major tree species in different age class in SFDP

SN	Latin name	Age class (year)	Mean ub stem vol. (m^3), pole	Mean ub stem vol. (m^3), tree	Ub stem volume (m^3/ha), pole	Ub stem volume (m^3/ha), tree	MAI (m^3/ha/yr), pole & tree
1	*Acacia catechu*	4-10	-	-	-	-	-
		11-20	0.7428	0.8144	110.7	16.3	6.1
		21-30	0.7437	0.8243	148.7	21.9	5.2
2	*Eucalyptus* sp.	4-10	0.1961	0.7712	57.2	22.6	8.4
		11-20	0.2409	0.7277	75.9	34.1	5.7
		21-30	0.3737	0.6681	69.0	30.2	3.3
		31-40	0.1864	1.0089	56.8	59.4	2.4
3	*Shorea robusta*	4-10	-	-	-	-	-
		11-20	0.6697	-	33.5	-	1.7
		21-30	0.3152	0.6757	173.9	18.1	6.4
		31-40	0.6977	0.7474	251.8	43.9	8.8

4	*Tectona grandis*	4-10	0.0525	-	26.8	-	5.7
		11-20	0.2867	0.6126	88.2	18.4	6.0
		21-30		0.5708	-	51.4	2.2
		31-40	0.3383	0.8796	95.8	93.8	5.6
Ub-underbark; Tree: DBH 30 cm or above; Pole: DBH from 10 to 29.9 cm, Only one data was in an age-class of 21-30 years for poles of *T. grandis*, so not included in the table.							

and *T. grandis* and 21-30 years in *S. robusta*. The highest MAI is 8.8 for *S. robusta* in an age class of 31-40 years. The MAI of *Eucalyptus* sp. is poor in higher age classes (21-30 and 31-40 years). The MAI of *A. catechu, Eucalyptus* sp., and *T. grandis* is similar in an age class of 11-20 years (Table 13).

4.3 Perception of people

The results of rapid household survey and FGDs indicate that communities living around the project area have evaluated the effects of project from both positive and negative ways. Approximately, 46 per cent respondents have considered that SFDP has positive impacts on their

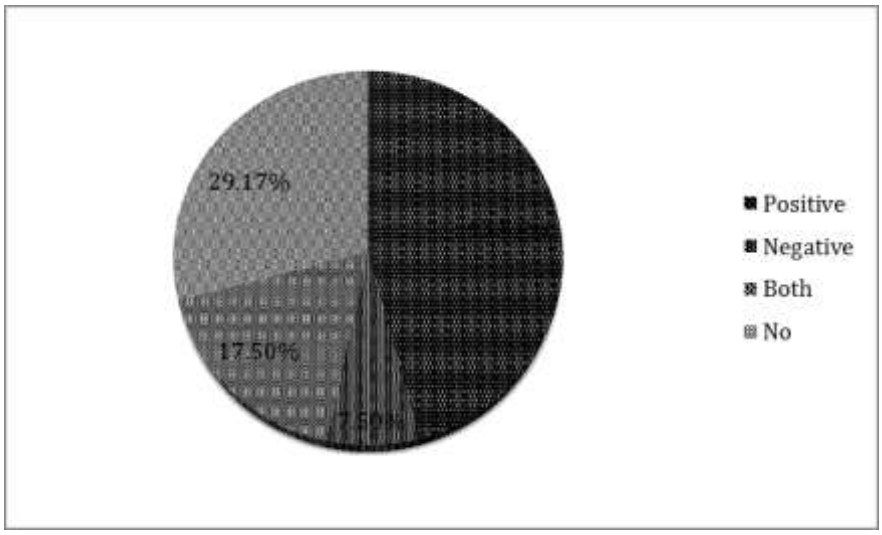


Figure 6: Perception of community

livelihoods, while 17 per cent have seen both negative and positive impacts and only 8 per cent have considered SFDP is negatively affecting their livelihoods. It is interesting to see that almost one-third (29%) respondents considered that SFDP has no impacts on their livelihoods.

Local communities see several advantages as well as disadvantages from SFDP management (Table 14). Local communities have observed an array of benefits in different aspects of social,

environmental and local economy. Provisioning of forest products such as fuel wood and fodder, grazing space for livestock in the forest, maintaining greenery in local area and providing employment are major benefits that SFDP is providing to local communities. However, SFDP management is facing great threat particularly to coppice and young plantation blocks due to grazing. In addition, adjoining villages are being benefitted from road constructed by the project. The SFDP provides vehicle to local villagers in emergency cases. Increased cost of plantations due to fencing is a main issue, which can reduce the pressure of livestock. One possible strategy could be to involve local community in the plantation management.

In addition, people see that lengthy administrative procedure to purchase timber and low wage rate are other disadvantages of SFDP. In the project area, daily wage rate of working in nursery is NRs 320 per day, while it is NRs 450 per day with one time meal working in agriculture sector. Therefore, local communities expect an increment in wage rate. In addition, local people considered that there is illegal logging in the project site due to which sometimes, they have to face problems.

Table 14: Benefits and negative impacts

Benefits	• Greenery • Fuel wood, fodder • Grazing space • Job opportunities (Nursery labour, Forest guard) • Greenery • Road construction • SFDP provides vehicle in emergency
Negative impacts	• Deficient of water table due to *Eucalyptus* • Illegal timber trade • Timber buying procedure is too lengthy • Low wage rate

Despite the effects on water table of *Eucalyptus* plantation, local people consider that it is not appropriate for them in terms of providing frequently required forest products such as fuel wood and fodder. They prefer *T. grandis* plantation in place of *Eucalyptus* to maintain existing water

table. However, a number of local people have realized that *Eucalyptus* sp. is a profit making species for SFDP.

Some of the villagers, who are encroaching SFDP forest land, have fear of evacuating from their land. Therefore, participation of local communities in SFDP management could be one of the appropriate strategies to reduce encroachment.

Local communities have suggested the following strategies those can enhance their welfare;

i. Selling timber to local community on subsidy rate on time ,
ii. Providing skill development training to local villagers such as NTFP management, carpenter etc.,
iii. Establishment of forest based enterprises in the periphery of the project area,
iv. Priority to *T. grandis* plantation over the *Eucalyptus* at least in the periphery of the human settlements, and
v. Improvement of forest road and linking with villages may improve both patrolling and accessibility of villagers to road facility.

CHAPTER 5: SUSTAINABLE FOREST MANAGEMENT PLAN

5.1 Vision

Forest for Prosperity

5.2 Mission

Improve Plantation Forest Management for forest-based economy

5.3 Goal

Enhance Forest Productivity and generate employment through sustainable plantation forest management

5.4 Objectives

- To increase the supply of forest products,
- To enhance forest-based enterprises,
- To enhance the protection of forest,
- To diverse the supply of ecosystem services in plantation forest management, and
- To assess the possibility for local community involvement in plantation forest management

CHAPTER 6: FOREST MANAGEMENT PLAN

6.1 Forest Management Activities

A silvicultural system is "the process by which the crops constituting a forest are tended, removed and replaced by new crops, resulting in the production of stands of distinctive form. The terms 'stand' and 'crop' are both used to denote silvicultural or management units that are homogeneous in one or several aspects".

A silvicultural treatment is a planned programme of silvicultural operations that can be implemented during the entire or partial rotation of a stand. Within the context of silvicultural stand treatment, each stand is assigned a specific silvicultural objective and separately assessed for the characteristics of its site (e.g. locality, slope and soil type) and stocking (e.g. composition, age, diameter distribution and regeneration). Based on this information, a silvicultural treatment regime is formulated.

Silvicultural operations are procedures that aim to achieve stand-specific objectives by using silvicultural techniques. Such techniques include, for example, canopy alterations to induce natural regeneration, the harvesting of mature trees, planting, and thinning to improve timber quality and stand growth. Silvicultural operations involve decisions on machinery and other equipment, techniques, work organization and human resources, as well as considerations of operational cost and investment.

Silvicultural interventions have been planned in accordance with the management objectives of the forest. The intensity of interventions has been varied depending on accessibility, markets, site quality, management objectives and ownership. One of the main objectives of SFDP was to produce poles of *Eucalyptus* sp. for electricity few years before but now objective of the management plan has been changed towards the production of timber of *T. grandis*. Silvicultural operations (management activities) are planned in accordance with the objectives set for ten years. Before moving towards the management activities, the importance and needs of the activities are given below.

- **Clear felling:** In simple terms, clear-felling is the removal of all trees from an area chosen for harvesting (logging). An area designated for logging is called a coupe. After the "bole" (the trunk section of a tree that is suitable for sawmilling or wood chipping) is removed from the site, all other logging residues such as branches, foliage and bark (called "slash") is left on the ground to dry.
- **Thinning:** Thinning is an operation that artificially reduces the number of trees growing in a stand with the aim of hastening the development of the remainder. The goal of thinning is to control the amount and distribution of available growing space. By altering stand density, foresters can influence the growth, quality, and health of residual trees. It also provides an opportunity to capture mortality and cull the commercially less desirable, usually smaller and malformed, trees. Unlike regeneration treatments, thinning is not intended to establish a new tree crop or create permanent canopy openings.
- **Coppicing:** A regeneration method which depends on the sprouting of cut trees. Coppicing is generally used to produce fuel wood, pulpwood, and other products dependent on small trees.
- **Cleaning and weeding:** Cleaning and weeding are two similar terms referring to the practice of selecting particularly desirable trees in a young stand and removing or killing trees that threaten their survival or development.
  - Cleaning refers to the removal or killing of overtopping competitors that are significantly taller than the desired trees, and is usually done in the sapling stage. Climbers, and invasive species like *C. odorata* (banmara) are removed in cleaning.
  - While the term weeding refers to the removal of mainly herbaceous plants and shrubs that are of the same height, but still competing for the resources that could be used by the selected trees. It is usually done in the seedling stage.

6.1.1 Forest Management Activities

Silvicultural operations have been prescribed as per the objective set for ten years. The area covered by each activity with number of plots/sub-plots in Sagarnath and Hatilet divisions is presented in the following tables. Plantation is proposed for about 3300 ha, whereas harvesting is proposed for 2610 ha. Plantation includes both regular plantation and enrichment plantation/replacement. The detailed activities for 10 years are given in **Annex 25**. Murtiya

division comprises mostly encroached area which is mostly for plantation purpose. SPDP will prepare the separate detail annual plan and implement the plantation and plantation management activities

6.1.2 Year wise management activities

It is necessary to know the area of each activity with their blocks and plots/sub-plots for annual planning. The area and number of plots/sub-plots of each activity is calculated on an annual basis up to 10-years for Sagarnath and Hatilet. Year 1 refers to the fiscal year 2077/078, year 2 is FY 2078/2079 and so on.

6.1.2.1 Harvesting

Harvesting is the final felling in each plot/sub-plot after the rotation period is completed. It is the major activity of SFDP garnering revenue, creating space for new plantation and setting up for future species composition. Region wise and year wise area of harvesting is given in Table 15. An area of 2610 ha has to be harvested in a plan period of 10-years (Table 15). Harvesting of different species in different blocks and plots of SFDP is based on the following criteria.

i) The rotation age of different species is reached (Rotation age: *Eucalyptus* sp- 20 years for timber, 10 years for pole; *T. grandis*-25 years; *D. sissoo*-25 years in good sites, *A. catechu*- 40 years, *M. azedarach*-12 years; *N. cadamba* (kadam)-10 years).
ii) Tree species have already crossed the rotation age.
iii) Tree species have very poor growth performance.
iv) Trees are damaged by fire.

Provision for the collection and utilization of naturally fallen, illicit felled and dangerous/ risky tree

The project manager should manage and inspect the naturally fallen, illicit felled and dangerous /risky tree in project area through the project staff. With the detail inspection field report, SFDP will make plan and decide for the collection and utilization accordingly to timber collection and sale procedure of the FPDB. The record must be kept up-to-date for these forest products.

Table 15: Area of harvesting (ha) for 10-years

Year	Sagarnath	Phuljor	Parwanipur	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Total area (ha)
1	93.5	6.9	10.6	29.1	180.3	154.6	30.1	1.6	**506.7**
2	66.5	1.2	11.2	83.9	134.4	79.9	99.5		**476.6**
3	24.3	1.0	2.2		42.1	71.7	157.0		**298.3**

4	40.3	26.5	2.1		21.5	11.1	93.2		**194.7**
5	37.2	4.3			66.7	4.0	22.0		**134.2**
6	254.5			7.0	11.0	24.0			**296.5**
7	70.1			11.0		5.0			**86.1**
8	148.3	24.3		1.7	24.1		41.8		**240.3**
9	32.6			67.1	22.4	23.5			**145.6**
10				94.2	25.2	29.4	81.8		**230.6**
Total	**767.3**	**64.2**	**26.1**	**294.0**	**527.7**	**403.2**	**525.5**	**1.6**	**2610**

Altogether , harvesting has to be carried out in 239 plots/sub-plots. Sagarnath region has the highest number of plots to be harvested whereas Ghurkauli has just one plot. Maximum 49 plots have to be harvested in second year and a minimum of 7 plots in seventh year (Table 16). The area of harvesting of major tree species in eight regions given in **Annex 26**.

Table 16: Number of plots/sub-plots of harvesting for 10-years

	Sagarnath	**Phuljor**	**Parwanipur**	**Bhaktipur**	**Kusmari**	**Hatilet**	**Lakshminiya**	**Ghurkauli**	**Total**
1	6	1	1	2	16	12	5	1	44
2	3	1	2	8	14	12	9		49
3	2	1	1		4	10	14		32
4	2	2	1		3	1	8		17
5	3	1			8	1	2		15
6	23			2	2	1			28
7	5			1		1			7
8	10	1		1	2		4		18
9	3			5	1	3			12
10				5	5	3	4		17
Total	**57**	**7**	**5**	**24**	**55**	**44**	**46**	**1**	**239**

The harvesting area occupied by *Eucalyptus* sp. is the largest of all, which is followed by *T. grandis, A. catechu, D. sissoo* and others (*Neolomarckia acadmba, Melia azaderach, Albizzia* spp. (Table 17). Year wise information on blocks and plots for harvesting in SFDP is presented in **Annex 27**.

Table 17:Area of harvesting by species for 10-years

Latin name	**Year**										**Total area (ha)**
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
Eucalyptus sp.	400.7	309.1	252.1	162.6	121.9	289.5	81.6	219.0	145.6	213.4	**2195**
Tectona grandis	49.6	56.3		25.0				8.0			**139**
Dalbergia sissoo	10.6	32.2	12.2	2.1		5.0					**62**
Acacia catechu	14.0	68.5	7.5	5.0	4.0	2.0		9.3		17.2	**127**
Shorea robusta	28.3										**28**
Other species	3.5	10.5	26.5		8.3		4.5	4.0			**57**

Total	**507**	**477**	**298**	**195**	**134**	**297**	**86**	**240**	**146**	**231**	**2610**

6.1.2.2 Plantation and replacement

The priority for planting of suitable plant species such as *Eucalyptus* sp., *T. grandis* has been given in those areas with diseased crops and failure plots. Similarly, it is planned for planting in those areas where *Eucalyptus* sp. and *T. grandis* have poor coppicing ability. Mainly fast growing timber species are recommended for planting during a plan period of 10-years. These species are *T. grandis, Eucalyptus* sp., *N. cadamba, A. catechu, Acacia mangium, Albizia chinensis, Albizia lebbeck, Albizia procera*, and *Melia azedarach*. The suggested spacing is 2 m x 2 m for the species to be grown for timber production and 2 m x 5 m for *Eucalyptus* sp. for pole production.

It is planned to plant some fodder species during 10-year period in few plots/sub-plots of the project. It is particularly for communities living around the SFDP. These types of plots are selected near to the villages surrounding the project area. Some recommended species for planting are *Bauhinia purpurea, Bauhinia variegata, Leucaena leucocephala, Artocarpus lakoocha, Guazuma ulmifolia, Ficus lacor, Ficus auriculata, Ficus semicordata* and *Garuga pinnata.*

The total area of the plantation in SFDP for a plan period of 10-years is 3306 ha. The largest area to be planted is in second year, which is followed by third year (Table 18).

Table 17: Area (ha) of plantation for 10-years

Year	Sagarnath	Phuljor	Parwanipur	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Murti
1				11.8		11.1		32	
2	37.4	6.9	10.6	7.6	138.3	145.0	41.3	32	
3			11.2	4.2	95.7	79.9	72.5	32	
4	24.3	1.0	2.2		23.0	61.8	73.1	32	
5	15.3	4.2	2.1		4.5	11.1	23.3	32	
6					27.9			32	
7	30.3					24.0		32	
8								32	
9	24.3						30.0	32	
10								32	
Total	**132**	**12**	**26**	**24**	**289**	**333**	**240**	**320**	**19**

Note: For replacement, 10% of total planted seedlings should be used, it is not included in the table. *proposed plantatio encroached area

The total number of plots/sub-plots is 103 for plantation to be carried out during 10-years of plan period. Hatilet region has more plots/sub-plots for planting than other regions (Table 19). The

priority of plantation is given for *T. grandis* for a plan period of 10-years. About 2000 ha has to be planted within this period (Table 20).

Table 19:Number of plots/sub-plots of plantation and replacement for 10-years

Year	Sagarnath	Phuljor	Parwanipur	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Plot
1				8	10	2		20
2	4	1	1	2	9	10	6	33
3			2	2	1	9	5	19
4	1	1	1			4	6	13
5	1	1	1		4	1	2	10
6								
7	3					1		4
8								
9	1						3	4
10								0
Total	**10**	**3**	**5**	**12**	**24**	**27**	**22**	**103**
Note: Plots of Murtiya Division is not included.								

Table 20: Area of plantation by species for 10-years

Latin name	Year										Total area (ha)
	1	2	3	4	5	6	7	8	9	10	
Eucalyptus spp.	118.5	124.6	113.5	131.4	112.5	112.5	112.5	112.5	112.5	112.5	1163.0
T. grandis	126.3	450.3	310.2	221.2	168.5	140.4	166.8	112.5	166.8	112.5	1975.3
A. catechu	3.1	36.2	39.6	8.0	4.5						91.3
Abizia spp.				10.8							10.8
N. cadamba			25.3	39.0							64.3

The fodder species and other species such as, *A. mangium*, *M. azedarach* and *M. oleofera* have to be adjusted with *Eucalyptus* spp., *Albizia* spp. and *N. cadamba.* The area of plantation of different species in nine regions is given in Annex 28.

6.1.2.3 Weeding

Weeding is prescribed two times a year for the first three years after plantation establishment. The total area of weeding is 5988 ha for a plan period of 10-years . The largest area to be weeded during 10-year period is in the fourth year (Table 21).

Table 181: Area (ha) of weeding in eight regions of SFDP for 10-years

Year	Sagarnath	Phuljor	Parwanipur	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Total area (ha)
1	24.2			35.9	14.0	75.8	49.0	742.4	**941**
2	36.0	6.9	10.6	33.6	138.3	165.1	41.3		**432**
3	72.9	13.7	34.7	43.9	368.8	420.8	112.9		**1068**
4	97.2	18.0	45.9	25.6	492.0	511.6	300.6		**1491**
5	63.9	6.2	29.0	8.4	238.4	294.5	225.5		**866**
6	79.2	10.4	8.6		78.4	145.8	192.7		**515**
7	60.9	8.4	4.1		64.7	46.2	46.6		**231**
8	60.6				64.7	48.0			**173**
9	84.9					48.0	30.0		**163**
10	48.6						60.0		**109**
Total	**628**	**64**	**133**	**147**	**1459**	**1756**	**1059**	**742**	**5988**

Weeding covers 342 plots in eight regions of three divisions (Table 22). The area of weeding of different species in nine regions is given in the **Annex 29.**

Table 19: Number of plots/sub-plots of weeding for 10 years

Year	Sagarnath	Phuljor	Parwanipur	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Total
1	1			8		6	5	27	**47**
2	3	1	1	11	10	14	5		**45**
3	3	1	3	12	18	22	9		**68**
4	4	2	4	5	19	24	16		**74**
5	4	2	4	2	9	14	13		**48**
6	2	2	2		5	7	8		**26**
7	4	1	1		4	2	2		**14**
8	3				4	1			**8**
9	4					1	3		**8**
10	1						3		**4**
Total	**29**	**9**	**15**	**38**	**69**	**91**	**64**	**27**	**342**

Year wise information on blocks and plots for plantation and weeding in SFDP is presented in **Annex 30**.The weeding of *T. grandis* plantation has to be carried out in about 4300 ha, which is followed by *Eucalyptus* spp. (Table 23).

Table 23: Area of weeding by species for 10-years

Latin name	Year										Total area (ha)
	1	2	3	4	5	6	7	8	9	10	
Eucalyptus sp.	720.5	28.6	40.1	51.0	39.8	37.8					917.8
T. grandis	162.3	360.9	909.5	1179.9	669.7	357.2	222.0	164.3	162.9	108.6	4297.3
A. catechu	23.0	42.3	118.1	159.6	95.2	20.5	9.0	9.0			476.6
Abizia sp.				10.8	21.6	21.6					54.0
N. cadamba	25.3			89.6	39.6	78.0					232.4
A. mangium	10.12										10

6.1.2.4 Cleaning

During cleaning, 4-D (dead, dying, diseased and deformed) and broken trees of *Eucalyptus* spp. are needed to cut and remove from the plot, as thinning is not prescribed for this species. The total area of cleaning planned for 10-years is 6635 ha. The largest area to be cleaned during 10-year period is in sixth year. The Bhaktipur region is on the top in terms of area of cleaning to be carried out during plan period of 10-years **(**Table 24**).** The area of cleaning of different species in eight regions is given in **Annex 31**.

Table 24: Area of cleaning (ha) in eight regions of SFDP for 10-years

Year	Sagarnath	Phuljor	Parwanipur	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Area (ha.)
1	34.5	29.1		78.8	106.3	51.3	124.6	20.0	**445**
2	52.1			19.8		90.4	54.4	359.1	**576**
3	36.8	25.6	86.2	266.7	42.2	59.6	70.4		**587**
4	23.4	28.8	15.0	153.7	109.2	42.2	70.8		**443**
5	73.6	34.2	10.6	42.9	207.9	170.4	136.4	20.0	**696**
6	33.2	6.9	23.9	186.0	231.5	315.1	202.6	359.1	**1358**
7	36.3	1.0	13.5	71.9	143.2	275.2	107.4		**649**
8	15.3	4.2	91.1	266.9	96.5	200.4	144.0		**818**
9	81.2	29.8	17.1	108.5	101.5	40.8	82.7		**462**
10	128.3		10.6	123.9	109.5	129.2	99.4		**601**
Total	**515**	**160**	**268**	**1319**	**1148**	**1375**	**1093**	**758**	**6635**

The cleaning has to be done in 591 plots of eight regions in SFDP. Bhaktipur region has the highest number of plots to be cleaned in a 10-year period (Table 25).

Table 25: Number of plots of cleaning in three divisions of SFDP for 10-years

Year	Area (ha)								Total plots
	Sagarnath Division				Hatilet Division			Murtiya Division	
	Sagarnath	Phuljor	Parwanipur	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	
1	3	5		9	12	**5**	7	2	**43**
2	4			2		**9**	7	24	**46**
3	3	2	7	15	5	**3**	5		**40**
4	2	3	1	13	11	**8**	4		**42**
5	5	4	1	11	20	**17**	8	2	**68**
6	2	1	4	17	20	**23**	20	24	**111**
7	2	1	3	10	10	**23**	9		**58**
8	1	1	10	18	10	**18**	12		**70**
9	5	3	2	12	9	**4**	6		**41**
10	7	20	1	11	11	**14**	8		**72**
Total	**34**	**40**	**29**	**118**	**108**	**124**	**86**	**52**	**591**

The area to be cleaned for *Eucalyptus* spp. and *T. grandis* is more or less the same. Other species have very less area of cleaning (Table 26).

Table 26: Area of cleaning by species for 10-years

Latin name	Year										Total area (ha)
	1	2	3	4	5	6	7	8	9	10	
Eucalyptus sp.	348.1	106.0	538.7	412.7	216.6	319.4	237.3	573.5	232.7	162.7	3147.7
T. grandis	56.1	469.7	48.8	27.3	399.6	918.0	290.6	186.9	224.4	397.8	3019.2
A. catechu	6.0	20.0		3.1	43.3	109.8	50.6	19.0	4.5	21.4	277.5
D. sissoo					8	3				19	30
Abizia sp.							10.8	10.8			21.6
N. cadamba						11.3	59.3	39.0			109.6
G. arborea	6					6					12
Others*	8.5				8.5						17

* *Paulownia* sp. and *Cassia siamea*

Year wise information on blocks and plots for cleaning in SFDP is presented in **Annex 32**.

6.1.2.5 Thinning

The total area of thinning of *T. grandis* planned for 10-years is 1293 ha. *Eucalyptus* species have been kept separate and other species are recommended for thinning. Hatilet and Kusmari regions of Hatilet division have larger areas of thinning of *T. grandis* than other regions (Table 27). The area of thinning of different species other than *T. grandis* is presented in **Annex 33**.

Table 20: Area (ha) of thinning of *T. grandis* in three dividions of SFDP for 10-years

Yr	*Tectona grandis*								
Division	Sagarnath				Hatilet			Murtiya	
Plots	Sagarnath	Phuljor	Parwanipur	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Total area (ha)
1	24.3	24.3		8.8		20.0			**77.4**
2	12.2	1.2		47.8	14.5	5.2			**80.8**
3	4.0	7.0		24.3	12.0	63.9	18.9	23.0	**153.1**
4									-
5				3.1					**3.1**
6	36.5	24.3		11.5	23.1	28.0			**123.3**
7	25.0	8.0	10.6	27.2	129.7	125.4	61.2		**387.1**
8	39.7	7.0	11.2	15.2	81.2	115.2	33.2	23.0	**325.7**
9			2.2		23.0	24.1	34.1		**83.4**
10	15.3	4.2	2.1	3.1		34.4			**59.1**
Total	**157**	**76**	**26**	**141**	**283**	**416**	**147**	**46**	**1293**

The thinning of *T. grandis* has to be carried out in 203 plots in eight regions of SFDP for a plan period of 10-years (Table 28). Year wise information on blocks and plots for thinning in SFDP is given in **Annex 34**.

Table 21: Number of plots/sub-plots of thinning of *T. grandis* for 10-years

Year	Sagarnath	Phuljor	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Parwanipur	Total

1	3	1	3		4				11
2	1	1	3	3	5				13
3	2	1	1	2	9	6	11		32
4					4				4
5	1		2		1				4
6	2	3	5	1	3	1			15
7	3	2	13	12	12	8		1	51
8	3		4	7	18	9	7	1	**49**
9	1		4		3	6		1	15
10	1	1	2	1	1	2		1	9
Total	**17**	**9**	**37**	**26**	**60**	**32**	**18**	**4**	**203**

6.1.2.6 Timber Stand Improvement (TSI)

The total area of timber stand improvement planned for 10-years is 1924 ha. It is prescribed for *S. robusta* only. The largest area of TSI is in fifth year. Similarly, Sagarnath region has the largest area for TSI to be accomplished in a plan period of 10-years, which is followed by Lakshminiya region (Table 29).

Table 29: Areas of TSI of *S. robusta* in seven regions of SFDP for 10 years

	Sagarnath	Phuljor	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Total
1						60.4		**60**
2	93.8					37.0		**131**
3	60.1			41.1	30.0			**131**
4	55.6		11.0	41.5	6.0	23.9		**138**
5	168.2		16.1	42.5	57.8	111.8		**396**
6	56.8			17.0	17.0	81.6		**172**
7	67.0			41.0	47.0	100.8	3.3	**259**
8	119.1	15.0	12.0	12.5	18.0	81.9		**258**
9	67.0		22.9	60.2	33.0			**183**
10	46.3			50.1	23.2	74.6		**194**
Total	**734**	**15**	**62**	**306**	**232**	**572**	**3**	**1924**

TSI has to be carried out in 164 plots, in which Sagarnath region has 51 plots followed by Lakshminiya region. The number of plots for TSI is the highest in fifth year (Table 30)

Table 30: Number of plots of TSI for 10-years

	Sagarnath	Phuljor	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Plots
1						4		**4**
2	4					3		**7**
3	3			4	3			**10**
4	4		1	5	1	2		**13**
5	13		2	5	7	8		**35**
6	3			2	2	6		**13**
7	5			4	5	10	1	**25**
8	10	1	1	2	3	6		**23**
9	5		2	7	4			**18**
10	4			5	2	5		**16**
Total	**51**	**1**	**6**	**34**	**27**	**44**	**1**	**164**

6.1.2.7 Coppice management

Eucalyptus sp. and *T. grandis* have good coppicing abilities, so these species are considered for singling after harvesting. The total area of coppice management planned for 10-years is 1208 ha.

Table 31: Area (ha) of singling in six regions of SFDP for 10-years

Year	Sagarnath	Phuljor	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Total area (ha)
1	79.7		37.9	36.0	47.9		**202**
2	36.6		22.0	11.1			**70**
3	66.5	1.2	79.7			11.0	**158**
4						49.0	**49**
5	25.0	22.3		10.0		57.9	**115**
6	24.9					22.0	**47**
7	139.2		1.4				**141**
8	53.3		11.0	24.1		5.0	**93**
9	110.7	24.3	1.7	22.4		11.8	**171**
10	12.3	47.8	67.1		23.5	12.3	**163**
Total	**548**	**96**	**221**	**104**	**71**	**169**	**1208**

Sagarnath region has the largest area (548 ha) for coppice management. The area planned for coppice management i.e., singling is the highest in first year (Table 31). The area of coppice management of *Eucalyptus* spp. and *T. grandis* is given in **Annex 35**.

The number of total plots of coppice management in six regions of two divisions is 88 for a plan period. Sagarnath region has the highest number of plots for coppice management in a plan period of 10-years (Table 32).

Eucalyptus is a major species for singling in SFDP. Of the 1208 ha, only this species covers 1046 ha for singling (Table 33). Detailed information on blocks and plots for coppice management in SFDP is presented in **Annex 36**.

Table 32: Number of plots of singling in two divisions of SFDP for 10-years

Year	Number of plots						
	Sagarnath division			Hatilet division			
	Sagarnath	Phuljor	Bhaktipur	Kusmari	hatilet	Lakshminiya	Total plots
1	4		3	4	2		13
2	2		1	1			4
3	3	1	6			1	11
4						5	5
5	2			1		5	8
6	2					2	4
7	12		1				13
8	3		1	2		1	7
9	7	1	1	1		1	11
10	1	2	5		3	1	12
Total	**36**	**4**	**18**	**9**	**5**	**16**	**88**

Table 33: Area of singling of *Eucalyptus* sp. and *Tectona grandis* in SFDP for 10-years

Latin name	Area (ha) and year										Total area (ha)
	1	2	3	4	5	6	7	8	9	10	
Eucalyptus sp.	133.2	58.0	113.1	49.0	80.2	56.9	140.6	69.3	172.7	173.1	**1046**
Tectona grandis	32.3	36.6	56.3		25.0					12.3	**162**
Total	**165.5**	**94.5**	**169.4**	**49.0**	**105.2**	**56.9**	**140.6**	**69.3**	**172.7**	**185.4**	**1208**

CHAPTER 7: FOREST PROTECTION

Different activities are needed for better protection of the forest. It is essential to identify the major threat from the local societies and natural environment. The major threats for the project from local societies are illicit felling and encroachment. The forest guards need to be trained and well equipped to minimize the illegal felling and proper management strategies and rules are necessary to minimize the encroachment from the project area. Fire is one of the major issues for the protection of the forest.

Community participation in different project activities should be done for the protection and sustainability of the project. Local people should be involved in different employment generation and implementation activities so that they feel ownership of the project.

7.1 Fire management

7.1.1 Fire watch towers

The purpose of fire watch towers is to provide early warning of fire occurrence and inform to the concerned authority. Five fire watch towers with steel frame and wooden fire towers have been built at several points in the project area. Since watch towers are wooden, they require repair and maintenance, and some of them have not been used for some time. Now, the height of trees is more than fire watch towers, so there is difficulty in monitoring the fire. Watch towers need to be repaired in time

7.1.2 Fire break/Fire line

The roads and fire line in the SFDP have a crucial role in protecting the plantations and natural forests from wild fire. So, regular maintenance of the roads and cleaning of fire line are necessary on an annual basis.

7.1.3 Fire Fighter Equipment

The project should purchase some firefighting equipment and required amount of water should be reserved in a proper place. Three different sets of fire fighter equipment are needed to protect the forest from fire in the SFDP. Each set of fire fighter equipment should be provided to each division.

One set of equipment is for four regions (Sagarnath, Phuljor, Parwanipur and Bhaktipur) of Sagarnath division. Other two sets of equipment are for three regions (Hatilet, Lakshminiya and Kusmari) of Hatilet division and two regions (Murtiya and Ghurkauli) of Murtiya division.
Each set consists of the following equipment:

- Swater
- Shovel
- Rake
- Rake-hoe
- Axe-hoe
- First Aid Kit
- Gloves
- Jump Suit
- Helmet
- Boot
- Torch
- Socks
- Water Bottle
- Face Mask
- Water Bag

7.1.4 Responsibility of the Range Unit

Range Unit is responsible for controlling the fire hazards in the project area. Reporting system needs to be developed by the Range Unit. The report of each fire forms the official record and it is used to get information on the numbers of fire in different years with their locations, extent of damage and their impact. Reports also help ensure the continuous improvement of fighting capability. Analysis of the reports leads to the identification of fire causes, high fire risk areas, economic losses, firefighting costs, and the effectiveness of firefighting and pre-suppression measures.

7.1.5 Involvement of community

Greater cooperation from the neighboring village/communities should also be solicited. The SFDP needs to provide activities related to welfare to encourage local communities to participate in fire

prevention. The success can be achieved through compensating local communities to prevent fires, as well as paying them to form volunteer's fire crews. Key communities need to be identified and included in fire protection. Key communities are those with access to the area to collect forest produce. In addition, incentive to community involvement, properly trained and equipped village fire crews can be paid to patrol close to the village. The success of community involvement schemes depends on mutual trust, it takes time and patience to develop in the future.

7.2 Encroachment control

An area of about 2248 ha of land has been encroached in the SFDP, in which around 2246 ha has been encroached in Murtiya region only (**Annex 37**). In the Fiscal Year 2073/74 around 500 ha of land has been replanted in Murtiya region. Training to forest guards and proper information technologies and access to the forest are crucial to control the encroachment. Mobile set, bicycle and motorbike will be provided to the forest guards to update the encroachment status in the project area. Similarly, the staff of SFDP should get training on evacuating the encroached land and tackling the people to control massive forest land encroachment.

7.3 Illegal felling control

Illegal felling is one of the major problems of the SFDP. Illegal logging causes enormous damage to forests, forest people, and the economies of producer. Illegal logging is the cause of widespread environmental damage and presents a grave threat to biodiversity of an area. Effective control of illegal logging requires action across many policy areas: the promotion of good governance, action to tackle corruption, land reform, industrial and fiscal policy reform, development assistance, and so on.

CHAPTER 8: ENTERPRISE DEVELOPMENT

Sagarnath Forestry Development Project (SFDP) must think of its sustainability through enterprise development. Since, there are major cities like Birgunj, Hetauda, Biratnagar nearby SFDP, forest-based industries have potentials, and hence should be established for the sustainability of the project. Different types of enterprises should be established like pellet factory, solid board factory and so on. The potentiality of developing enterprises based on NTFPs (such as commercial production of medicinal and essential oils, bee keeping, briquetting, charcoal, and eco-tourism, etc.) will be examined and necessary initiatives will be taken. Private sectors and NGOs/INGOs will be collaborated for better development of enterprises with the support and participation of local people. The following are potential forest based enterprises that are focused in management plans of SFDP.

8.1 Solid wood pellet preparation

Invasive alien species colonize aggressively which is threatening biodiversity. The success of invasive alien plants is due to their opportunistic exploitation of anthropogenic disturbances, the absence of natural enemies, and, frequently, their allelopathy competitive strategies. Invasive species can have a significant impact on development, affecting sustainability of livelihood, food security and essential ecosystem services and dynamics. *Chromolaena odorata* (forest killer, local name banmara) is unpalatable and highly competitive. It has taken hold in scattered sites throughout eastern and central Nepal. Currently, it is also rapidly spreading westward. Efforts are being made to control established invasive species, but a better understanding of why species become invasive offers the possibility of taking pre-emptive measures.

According to the study "Biomass Estimation of Ground Vegetation at Sagarnath Forestry Development Project" carried by SPDP, the ground vegetation of Sagarnath Forestry Development Area Project can produce 84,240 tonne fresh biomass (considering average biomass content 6.24 mt/ha in 12000 ha land).

In order to avoid fire intensity and frequency, it is highly recommended that, the ground vegetation

should take out in a planned manner so that the quantity of the fuel in the forest floor is reduced substantially. Wood pellet production from unwanted weed and vegetation should be initiated.

8.2 Upgrading and operation of Saw mill

The project has its own saw mill to produce saw timber. Now it is in poor condition. It is planned for auctioning it. The SFDP should give it to any interested parties to operate this sawmill as soon as possible. This will help the SFDP in their economic sector as well as to produce saw timer in moderate cost.

This will help the SFDP in their economic aspects as well as to produce saw timer in moderate cost. The operation of saw mill will help to generate the employment in three different levels. Firstly the people living in the buffer area of the project can be utilized to saw the timber after harvesting from the forest. These people cut the timber in different sizes as per the requirement of the market.

8.3. Enhancement of timber quality

There are a number of methods to improve quality, which would rather increase market value and market itself. The following ways can enhance timber quality and durability.

8.3.1 Storage of timber

Timber storage is a major part for the protection of timber after it is prepared in different sizes from the sawmill. Storage of timber should be maintained properly. The flow chart of processing of timber is given in Figure 7.

Figure 7: Flow chart for final products

Potentiality of forest-based industries (e.g., seasoning/preservative plant, saw mill), that can be developed, has to be indicated. Requirement of raw materials that might be needed for the proposed enterprise development during the plan period needs to be indicated.

8.3.2 Distillation plant

Distillation is the process of separating the component or substances from a liquid mixture by selective evaporation and condensation. Distillation may result in essentially complete separation (nearly pure components), or it may be a partial separation that increases the concentration of selected components of the mixture. In either case, the process exploits differences in the volatility of the mixture's components. In industrial chemistry, distillation is a unit operation of practically universal importance, but it is a physical separation process and not a chemical reaction.

There is a distillation plant close to the SFDP main compound to extract oil from *Eucalyptus* leaves. Nowadays, it is in lease. The SFDP should operate distillation plant with the support of private sector and private farmers. *Eucalyptus* leaves from private farmers should be utilized which helps to build good rapport with public. Public Private Partnership (PPP) is the most necessary for this. The economic terms for the installment of distillation plant should be in coordination with SFDP, local people and private sector.

8.3.3 Treatment plant

A number of treatment methods can add to durability of the timber.

Seasoning plant

Seasoning plant helps to wood seasoning that is decreasing the moisture quantity of the wood. Moisture content is one of the key components, which makes wood vulnerable to attack of various germs and decrease the quality of timber.

Machinery and equipment

Machinery and equipment are the most important for the proper management of the forest resources. The machinery and equipment in the project are not properly managed. New machinery technologies need to be introduced for efficient and effective quality of forest works in future.

Regular maintenance of machine should be carried out regularly as prescribed by manufacturer

and the machine should be replaced after their economic life is completed. Funds should be allocated for regular repair and maintenance of equipment on an annual basis. New machinery equipment could be purchased as mentioned below for the proper functioning of the project.

Logging machines

Purpose- built to move logs and trees from the stump to the roadside log landing.

Forwarder

It carries short and small logs; short-log self-loader carries small logs from the stump to the roadside landing. Operator uses a loader heel boom grapple to load logs onto the forwarder bunk, to off-load logs at the roadside, and can also load logs onto log trucks. This machine is suited for thinning.

Small Skidder

Wheeled or tracked small log puller; this small-sized purpose-built machine grabs logs, or whole trees, with grapples or choker cables—lifts the front ends of logs off the ground, then pull logs to the roadside landing. It is suitable for thinning and partial cutting on gentle terrain.

Fire Trailer

Trailer equipped with a fire pumper. Small firefighting trailer pulled by a heavy truck; pumper includes a small water tank, pump, and hose reel, hose and fire tools. It is used to extinguish unwanted fires near forest operations, and also for controlling prescribed burning of forest fuels.

8.4 Sand and Gravel

There are several rivers inside the project which need to be utilized without disturbing the river banks and without adversely affecting the ecosystem. Sands and gravel need to be extracted without negatively impacting the surrounding environment and river system itself.

The details of streams/rivers is given in table 34.

Table 34: Sand and gravel sites

S.N.	Name	GPS location		References	River from starting location point	Channel Size (m)	Per channel volume cuq m.	Chanel to channel distance	Number of channel	Total volume cu.m.
		Latitude	Longitude							
1	Banke khola	374798	2986215	0.6 km south from railway	1500 m	100*75*10	75000	20 m.	12	900000
2	Mahara khola	379757	2984806	0.5 km south from railway	300 m	100*75*10	75000	10 m.	3	225000
3	Belgachhi	381881	2983842	1 km south from railway	650 m	50*30*5	7500	11 m.	10	75000
4	Gadanta khola	383825	2983822	1.1 km south from railway	1450 m	75*50*5	18750	12 m.	17	318750
5	Jangha khola	385176	2983976	0.9km south from railway	2250 m	75*50*10	37500	13 m.	26	975000
6	Bhabsi khola	388198	2983848	1km south from railway	2300 m	75*50*5	18750	14 m.	26	487500
7	Budhi Bagmati	348598	2999736	-	7000 m	20*10*10	2000	15 m.	175	350000
	Total									**3331250**

Utilization of riverbed materials for minimizing flood hard and local development

Utilization of riverbed materials for local development annual accumulation of the gravel and sand in the rivers of the project area, causes change of water courses and flood into the forests and settlements. It is recommended to remove these materials annually in a planned way to mitigate the impact of river flood caused by the riverbed materials. This management allows the project to manage and utilize riverbed materials (sand and gravel stones) on time with following below producer.

1. The project can sell yearly up to 25000 cubic meters of riverbed materials by adding 20% to the existing revenue rate to the local user's committee for use in small development activities at the local level with the request of user committee and recommendation of the local government.
2. The project must analyze the need of local community and environmental impacts before making decision on removal such materials.
3. The project should make an appropriate monitoring measures to ensure the physical condition doesn't deteriorate and quantity doesn't over use while extracting the riverbed materials.
4. The income collected in excess of the revenue will be deposited in the main treasury of the FPDB as the income of the board.
5. If the state and provincial level projects request for the riverbed materials, Sagarnath Forest Development Project will provide but before providing the material Sagarnath Forest Development Project must get final decision from Forest Product Development board.

CHAPTER 9: NURSERY MANAGEMENT

The SFDP has its own two nurseries. The area occupied by first nursery at Sagarnath region is 18 ha and the area of second nursery at Murtiya region is 5 ha. These nurseries have high potentiality of producing large number of seedling for its own purpose and sale as well. Till date, it has been producing the seedlings of different species for its own purpose. The condition of nurseries is getting worse as they are not maintained well. The nursery should be technically sound and high demanding species should be produced for the sustainability of the SFDP.

9.1 Species production in Nursery

SFDP is producing a number of species each year. According the annual report of SFDP 2070/71, the following species were produced:

- ✓ Masala *(Eucalyptus sp.)*
- ✓ Teak *(T. grandis)*
- ✓ Kadam *(N. cadamba)*
- ✓ Sajiwan *(Jatropha* sp.)
- ✓ Khayer *(A. catechu)*
- ✓ Sisau *(Dalbergia sissoo)*
- ✓ Gamhari *(Gmelina arborea)*
- ✓ Ashok (*Saraca indica*) for ornamental purpose
- ✓ Siris *(Albizia* species*)*

The new species recommended for introduction are

- ✓ Sahijan (*Moringa* sp.)
- ✓ Latahar (*Artocarpus chaplasha*)

In coming years, nursery needs to be designed and upgraded to be a multi-purpose nursery. Seedlings of high demanding various multipurpose species should be prioritized and produced from these SFDP nurseries. The priority should be given to multi-year seedlings. The nursery should be upgraded in consideration of marketing of planting materials. One of the probable technique could be hi-tech tissue culture technique to produce seedlings of high demanded species in large number. Some other areas to be considered are as follows:

- ✓ Nursery should be upgraded in technical and management aspects. Multi-year seedlings should produced. The production of seedlings and stumps should be market-oriented.
- ✓ There should be massive seedlings production using tissue culture technique.
- ✓ Large sized seedlings should be produced for urban forestry, e. g. ornamental plants
- ✓ Seedlings should be produced for Chure
- ✓ Highly valued and marketable NTFPs should be produced.
- ✓ Highly demanded seedlings should be produced for sale: timber, fuel wood, fodder
- ✓ Production of cuttings of commercially important bamboo species should be through culm cuttings.

The proposed number of seedlings of different species to be produced in two nurseries is given in Table 35. seedling.

Table 35: Year wise seedlings production of various species in SFDP nurseries for 10-years

Year	Number of seedlings in '000							
	Eucalyptus	**Teak**	**Khair**	**Siris**	**Kadam**	**Internal use**	**External (for sale)**	**Total**
1	237	252.52	6.1			495.62	495.62	991.24
2	251.1	900.54	72.4			1224.04	1224.04	2448.08
3	227	620.4	79.16		50.56	977.12	977.12	1954.24
4	262.8	442.36	16	21.6	78	820.76	820.76	1641.52
5	225	336.96	9			570.96	570.96	1141.92
6	225	280.7	0			505.7	505.7	1011.4
7	225	333.6	0			558.6	558.6	1117.2
8	225	225	0			450	450	900
9	225	333.6	0			558.6	558.6	1117.2
10	225	225	0			450	450	900
Total	**2327.9**	**3950.68**	**182.66**			**6461.24**	**6461.24**	**12922.48**

9.2 Infrastructure of nursery

The infrastructure needed for SFDP nursery are water supply all the year round, green house, various types of nursery beds, water channels, and well-equipped residence guards. The nursery situated near to the SFDP office building is a permanent nursery, so it should also have one or more ground-level water reservoir (GLR) or overhead water reservoir (OHR), a seed store, and irrigation sprinklers. Similarly, simple tools and equipment are necessary to carry out nursery work efficiently and effectively.

CHAPTER 10: BIODIVERSITY CONSERVATION

Biodiversity is sum of all species, ecosystem and genetic pools available in a particular area. Sagarnath has some places where biodiversity conservation are crucial like wetlands and green belts. Several activities have been recommended for the conservation of biodiversity.

10.1 Wetland management

Wetlands are important features in the landscape that provide numerous beneficial services to people, fish and wildlife. Some of these services, or functions, include protecting and improving water quality, providing fish and wildlife habitats, storing floodwaters and maintaining surface water flow during dry periods. These valuable functions are the result of the unique natural characteristics of wetlands.

The SFDP with communities can establish programmes that engage volunteers to monitor and adopt wetlands in the watershed. Volunteers adopt a specific wetland and can perform a range of general maintenance such as trash removal, invasive species removal, and buffer plantings. These types of programmes provide educational and research opportunities for residents and can lead to increased concern, understanding, and stewardship or wetlands. Another way to engage the community is through a wetland monitoring programme that can range from simple, qualitative assessments to more advanced monitoring including surveys of invasive species, water quality, amphibians, and benthic macro invertebrates. Volunteers can range from school children to scout groups.

- Trash removal
- Invasive plant removal (e.g., buckthorn, purple loosestrife)
- Native buffer planting
- Water quality monitoring
- Wetland data collection
- Wetland monitoring
- Community education

10.2 Green belt management

Green belt management is a new concept in case of SFDP. Considering the importance of green belt, few management interventions have been proposed. Sal trees need to be promoted in the green belt and TSI should be conducted for the species for effective management. The green belt will help to protect the core area of the forest and reduce the illegal cutting and encroachment in the forest.

CHAPTER 11: INFRASTRUCTURE DEVELOPMENT

11.1 Infrastructure and Facilities

The existing infrastructure (fire lines, roads, buildings, machinery and equipment, vehicles) of SFDP needs to be examined. Detail operational mechanism for nursery, plantations, logging and additional infrastructure need to be provided.

11.2 Road network and fire breaks

Plantation sites are south to the east-west highway. One needs to travel 1-5 km through gravel road to reach the plantation sites in Sarlahi and Mahottari districts from the highway.

The project area is well covered by road networks; each block and plot is surrounded by fire line and boundary road, which are not graveled. Culverts and causeways are constructed on the access road at river crossings. The access roads and compartment boundary need regular maintenance.

By the end of the fiscal year 1985/86 season, a total of 41 km of all-weather roads and 201 km of fair-weather roads were built, their status is not fair. These roads have provided access to the planting areas, demarcated the 100 ha blocks (into which the plantations are divided for easy identification), and served as firebreaks.

Even though a railway line passes through SFDP, railway line has its own work plan and the plot that lies in railway track is given in **Annex 38**.

CHAPTER 12: ORGANIZATIONAL STRENGTHENING AND CAPACITY BUILDING

12.1 Database management system (DBMS)

Sagarnath Forestry Development Project, started about four decades before, is a model project of plantation forests in Nepal. It cover an effective area of 10,000 ha. It has both exotic and native species. Some *Eucalyptus* plantations have even surpassed three coppice rotations while most have surpassed two coppice rotations. The silvicultural and tending operations are carried out regularly. But, these data are not maintained in usable forms. Due to lack of proper management system of these data and information, concerned stakeholders face problems while carrying out the studies and researches. This is a long felt need that database management should be developed and maintained. The categorical information once garnered can be maintained with the help of existing staffs. Maintenance of database system does not require high skills and efficiency. The database system would be helpful in following:

- Easy monitoring and evaluation
- Growth data
- Block wise species and their rotations
- Locations of various amenities within SFDPs
- Human resource
- Documentation of activities

12.2 Institutional strengthening

The existing human resource and institutional set up require an over haul. Even though there are many competent officers and dedicated staffs, the number of vacant staffs is there and number of staffs who require training and skills development are there. The SFDP requires to be restructured and human resource development needs to be prioritized to get better outputs and efficient management of SFDP.

12.3 Training and capacity building

It is notable that SFDP is a semi-mechanized man made forests, which requires many different interventions. Since, things get changing and staffs need to update themselves with the change in time. An integrated training and capacity building programme is plausible for existing staffs. The ground level staffs required forestry related technical skills whereas the managerial or officer level staffs require documentation, and data management skills. Public relation, market growth, value chain development are some of the faculties of development that SFDP requires.

Following sorts of training and capacity development are recommended.

a) Training for management plan implementation for Forest Officers and Rangers
b) Reorientation training for labour, supervisor and other field staff
c) Training/Seminar for local community
d) Community level motivation workshops/meetings
e) Nursery techniques (making mixture, sowing techniques, seed bed preparation, pricking out and transplanting, root pruning, record keeping, cuttings production of bamboo species through culm cuttings, etc.)

12.3 Research and Development

The SFDP exists as the one and only large-scale plantation forest. There are many issues and themes that can be studied. Hence, research is one of the major components for the sustaining and upgrading SFDP. Some short term and long term researches are recommended for SFDP; several academic institutions as well as other institutions can be collaborated for research studies. IoF, FRTC, AFU, IAAS, DoFS, DoP can be some of the institutions which can collaborate for research studies. Even SFDP can set up a separate research unit for soil test, species ecological study etc.

Short term research requires short period of time, small number of people and a smaller amount of money, whereas long term research requires long time, large amount of money, multiple data sets of long time range. In some cases permanent plots are established. The list of short-term and long-term research, that can be executed in collaboration with several research institutions or organizations, are as follows.

Short-term Research

- Soil mapping in SFDP area based on soil properties
- Species trial, particularly fast growing species (some species are Malaysian Sal, hybrid teak, high yielding clones of *Eucalyptus* sp., *Acacia mangium*, *Paulownia* spp., etc.)
- Update of the volume models of *Eucalyptus* sp., *T. grandis* and *S. robusta*
- Biomass tables to be produced, it is useful for quantifying fire wood and foliage
- Potentiality of NTFPs in SFDP area
- Marketing aspects of forest products and NTFPs
- Detailed inventory of each block and plots/sub-plots
- Tissue culture techniques to be used in production of planting materials for important multipurpose fast growing species and their field trials
- Nursery research of tree species and NTFPs (fertilizer application, grafting, multi-year seedlings, cutting, etc.)
- Interrelationship between SFDP and the community

Long-term research

- Growth plot/sample plot of each planted species up to the rotation period
- Agro forestry trial
- Depletion of water table due to *Eucalyptus* plantation
- Depletion of soil nutrients due to *Eucalyptus* plantation
- Studies on resistance to diseases and pests; early detection and eradication of pests and diseases
- The biology, population genetics, epidemiology of pests and pathogens

12.4 Marketing aspects

The SFDP has a number of products but it does not have an organized menus or marketing for its product. Marketing refers to creating market linkage. For better marketing, various ways and means of marketing of matured and over-matured crop of *Eucalyptus, Dalbergia sissoo, T. grandis* and *S. robusta* needs to be devised.

One of the key aspects of marketing is products diversification based on market demand. Diversification and specialization should be based on public demand, as there are towns nearby. Traditional electric poles and timber are less in demand nowadays, so that, new modern timber products need to be prioritised.

Value chain development is another aspect of marketing. Value chain, also known as supply chain, is a key to understanding the final destination of any product and mode of its mobility.

Value addition is equally important. Semi-processed as well as fully processed products are necessary to be prepared. There are a number of ways to add value to the timber like seasoning, preservation, sawing logs, etc.

Another idea can be producing timber based on species, as some species are good for furniture, whereas some species are good for ornamental or decorative purpose. Some species may be just good for firewood purpose. So, timber must be produced and processed considering their qualities, and merits.

Besides above-mentioned techniques or ideas, a publication focusing on the products, should be published to better outreach the public.

CHAPTER 13: BENEFIT-COST ANALYSIS

13.1 Background

All kinds of developmental activities involve certain cost inputs associated with its operation and returns as an outputs. Since, there are many competing activities, which require investments. Hence, every activity or project needs to consider its investments against its return. For a project to be viable economically, the internal rate of return has to be larger. The following topics give a brief picture of cost and benefits analysis.

13.2. Project Economic Benefit

Harvesting of the timber from clear felling is a major source of direct revenue, however, TSI and thinning also generate revenue through selling firewood and poles. The total area of harvesting of mainly *Eucalyptus* spp., *T. grandis* and *A. catechu* is 2610 ha for a plan period. The details of the harvesting, thinning, TSI and their revenue generations is given in the following table. Timber, logs and firewood are sold based on the Forest Products Sales and Distribution Guidelines, however while analyzing the direct revenue part, the minimum pricing has been used. In addition, there are two nurseries, which can produce a large number of seedlings. Seedling are not all planted in the clear-felled sites, they are sold to the public or public institutions.

There are a number of supplementary benefits, which make SFDP more valuable and desirable project. There are greenbelts and wetlands, whose services are very valuable. One of the prime benefits is the environmental service, for which valuation is very hard to do. Its ecosystem services (regulatory, provisional) are very valuable, giving habitats to several flora and fauna and some avian too.

Employment generation is another important factor. The staffs of SFDP itself is not enough, while forest management and other activities are carried out annually, several skilled and semi-skilled manpower are required, which creates opportunity of employment.

There are many modern equipment like seasoning plant, distillation plant, and saw mill, which need to be operated by the involvement of private sectors. The SFDP will be benefitted through rent and other revenues from the use of such machineries. It has been kept as supplementary benefits. Similarly, sand and gravel can be utilized from various rivers and streams, which provide benefits to the SFDP.

One of the major supplementary benefits that must be mentioned is its support to both long-term and short-term research, that will provide quality inputs to Sagarnath and academia as a whole. The research that we support annually will be based on operations of SFDP, which will help to find out the pros and cons of existing operations, or also can give out the better ways of managing the plantation forest.

13.3 Project Cost

Broadly, two kinds of activities are set in management plan, which are core forest management activities and supporting activities. Forest management activities are cleaning, weeding, thinning, harvesting, singling and TSI, whereas others activities refer to training for staff and capacity building, upgrading existing machineries, nurseries, building, and repairing and maintaining firebreaks and forest roads, construction of pond, etc.

Not only forest management activities bear costs but they provide certain returns also. Products like timber and firewood are acquired from harvesting. The activities like weeding, cleaning, thinning and TSI are carried out to provide better yield of tree crops in future. Similarly, the cost of other activities are also contributing to betterment of forest condition and finally to get better yield.

The cost of nursery management, illegal felling control, human resource training, logistic arrangement, biodiversity conservation, database management, research and few others is goven in **Annex 39**. Besides, there is regular administrative cost, which includes salaries, stationeries, electricity. However, the cost of maintenance is not a regular cost, as maintenance is not carried out annually. Maintenance and repair or upgrading has been planned once in a 3 or 5 years.

13.4 Summary of Benefit-Cost Analysis

Benefit-cost analysis of the management plan was carried out considering the proposed activities and expected forest products from different silviculture activities. The cost includes administrative cost and the cost of tending operation. The administrative cost includes training, salary, office expenses and machinery purchase and activities like fire control, nursery etc. Similarly, tending operations include plantation, replacement plantation, singling, weeding, cleaning, TSI, thinning and harvesting. At the same time, the plantation project generates benefits from TSI, thinning and harvesting. The unit cost of forest management activities is estimated from current year expenditure. Likewise, benefits in terms of timber and fuelwood were calculated based on the existing growing stock, and expected number of trees per ha during the harvesting period. This estimation assumes that only fuelwood is derived from thinning and TSI. This is the conservative estimation, and benefits may underestimate, as there is a chance of having pole and timber production during silviculture treatments.

The present value (PV) of costs and benefits were estimated for the 10-year period in 10% discount rate. The selection of the discount rate is based on the rate of returns on debenture provided by the banks in Nepal at the time of the study. Based on these assumptions, the estimated PV of costs for the plan period is NPR 793 million, and PV of benefits is NPR 1,281 million (Table 36 and 37).

The estimations also indicate that administrative cost dominates the cost headings, which shares 61% of the total cost over the time period. This is followed by thinning and harvesting. Replacement plantation and singling are minor activities, which share less than one percent of the total cost individually. Similarly, in benefits side, as expected harvesting produces the highest benefit, which consist of almost 70% of the total benefits, followed by thinning (24%) and TSI (6%). The estimated benefit-cost ratio in the given condition is 1.61.

If discount rate is reduced to five percent, which is equivalent to agriculture loan, then the PV of cost is NPR 928 million, and PV of benefits is NPR 1,481 million.

Table 36*:* Costs of SFDP (Amount in NRs .'000)

Year	Admin+Other cost	Thinning	Cleaning	Weeding	TSI	Harvesting	Plantation	Replacement plantation	Singling	Total
1	116,145.00	26,152.00	6,476.40	2,661.85	242.80	22,801.50	2,458.88	614.72	1,324.00	178,877.15
2	56,645.00	13,492.80	5,797.30	2,417.70	2,375.20	21,447.00	13,716.80	3,429.20	756.24	120,077.24
3	59,895.00	19,113.20	6,507.35	3,887.10	2,908.00	13,423.50	7,830.40	1,957.60	1,355.52	116,877.67
4	57,495.00	6,034.20	3,826.00	4,184.50	2,409.80	8,761.50	5,250.56	1,312.64	404.80	89,679.00
5	110,345.00	2,419.40	4,490.05	2,324.90	7,931.60	6,039.00	1,791.36	447.84	841.36	136,630.51
6	59,895.00	22,669.80	9,195.70	1,055.60	3,108.00	13,342.50	1,035.20	258.80	454.96	111,015.56
7	58,345.00	20,458.00	4,905.75	629.85	5,116.20	3,874.50	1,719.36	429.84	1,200.24	96,678.74
8	56,595.00	19,755.60	5,918.90	283.70	6,023.80	10,813.50	-	-	647.28	100,037.78
9	56,395.00	7,233.20	4,204.65	540.15	3,487.20	6,552.00	1,737.60	434.40	1,541.68	82,125.88
10	57,585.00	3,581.40	4,757.75	388.65	4,395.00	10,377.00	-	-	1,243.36	82,328.16
NPV Total	**485,601.26**	**101,055.40**	**38,561.50**	**14,377.42**	**23,432.95**	**87,578.09**	**28,992.36**	**7,248.09**	**6,549.21**	**793,396.29**
									CBA	**1:1.61**

Table 22*:* Benefits from SFDP (Amount in NRs. '000)

Year	Thinning	TSI	Harvesting	Total
1	78,516.00	919.80	233,082.00	312,517.80
2	40,538.40	8,383.20	219,236.00	268,157.60
3	57,399.60	10,248.00	137,218.00	204,865.60
4	18,162.60	8,504.30	89,562.00	116,228.90
5	7,318.20	27,830.60	61,732.00	96,880.80
6	68,069.40	10,948.00	136,390.00	215,407.40
7	61,434.00	17,976.70	39,606.00	119,016.70
8	59,326.80	21,153.30	110,538.00	191,018.10
9	21,759.60	12,275.20	66,976.00	101,010.80
10	10,804.20	15,452.50	106,076.00	132,332.70
NPV Total	**303,571.75**	**82,488.45**	**895,242.67**	**1,281,302.86**

CHAPTER 14: MONITORING AND EVALUATION

14.1 Monitoring

Monitoring follows the implementation. Once the management plan is started to implement then various types of monitoring will be carried out, because regular monitoring is required to ensure whether the management plan is effective and prescribed activities are actually reducing the impacts. Two kinds of monitoring have to be followed in the SFDP, viz: Impact and compliance monitoring. Impact monitoring is usually concerned with impacts caused by management plan implementation, which is physical, biological and socio-economic, whereas compliance monitoring is concerned procedural aspects. The table 38 gives the monitoring details of the management plan.

Forests Guards are the ground level vigilant for all time monitoring. The concerned officers should do the documentation with the help of Forest Guards. The SFDP should carry out its regular monitoring with the help of its staffs and prepare reports accordingly.

Compliance monitoring should be carried out once in a year, whereby staffs from federal level participate to see whether management activities prescribed in the plan are implemented in the right way. Third party monitoring should be carried with the help of thematic specialists. The table 38 shows the team composition and other monitoring details.

Table 23: Components of Monitoring

Monitoring	Monitoring team	Responsibility/TOR	Time/Period
Activity or Regular Monitoring	Staffs of SFDP	Annually prescribed activities their impacts	Activity implementation time
Compliance Monitoring	1-SFDO 1-FPDB 1- MoFE 1-MOITFE 1-CBOs,	Whether the prescribed activities are in line with the objectives. Providing corrective measures if otherwise.	Once in year

Monitoring	Monitoring team	Responsibility/TOR	Time/Period
Impact monitoring (Third Party Monitoring)	Each one from MOFE, MOITFE, and Representative from each municipalities	Monitoring regular activities, their impacts. The impact monitoring comprises monitoring of the key baseline indicators whose pre-project baseline is well documented for a comparative environmental assessment in various stages of project development.	4th year, 7th year and 10th year

14.2 Evaluation

Periodic evaluation of annual works should be conducted by the SFDP itself. Mid-term evaluation of the management plan should be conducted after the completion of 5th year and it will be amended as per the need of the time.

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Sustainable Management Plan

(2077/78— 2086/87)

of

Sagarnath Forestry Development Project

VOLUME TWO

ANNEX COMPILATION

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ANNEX 1: Human resources of SFDP

SN	Designation/Position	Number	Remarks
1	Project Manager	1	
2	Under Secretary	2	
3	Store Officer	1	
4	Procrument Officer	1	Vacant
5	Account Officer	1	
6	Assistant Forest Officer	3	2 posts fulfilled, 1 post vacant
7	Nayab Subba	3	
8	Accountant	2	
9	Ranger	8	
10	Me. Subba	1	Vacant
11	Overseer	1	1 post is vacant
12	Dozer Operator	4	3 posts fulfilled 1 post vacant
13	Grader Operator	1	Vacant till now
14	Loader Operator	1	
15	Labor Supervisor	38	29 posts fulfilled, 9 posts vacant
16	Saw Mechanic	3	2 posts fulfilled, 1 post vacant
17	Recorder	1	
18	Typist	2	
19	Pump Operator	2	1 post fulfilled, 1 post vacant
20	Chain Saw Mechanic	1	
21	Carpenter	1	
22	Driver	15	11 posts fulfilled, 4 posts vacant
23	Peon	10	
24	Guard	24	22 posts fulfilled, 2 posts vacant
25	Helper	18	14 posts fulfilled, 4 posts vacant
26	Gardener	1	
27	Sweeper	3	
	Total	**150**	121 posts fulfilled, 29 posts vacant

ANNEX 2: List of vehicles and their present status

S.N	Vehicle	Number	Status	Used by
1	Jeep	1	Old	SFDP Manager
2	Pickup	1	Old	Murtiya Division
3	Pickup	2	Old	Hatilet Division
4	Tractor	2	Old	Hatilet Division, Sagarnath Division
5	Truck	1	Old	Hatilet Division, Sagarnath Division
6	D.C.M	1	Old	Sagarnath Division
7	Red Jeep	1	Old	Sagarnath Division
8	Water Tanker	1	Old	Workshop
9	Jeep	1	Old	SFDP
10	Motocycle	7	Running	Bhaktipur, Sagarnath, Hatilet office

ANNEX 3: Types of buildings in SFDP

S.N	Buildings
1	Office Buildings
2	Quarters
3	Store house
4	Workshop
5	Generator House
6	Shade house
7	Guard House
8	Saw Mill

ANNEX 4: Area of mixed species in different sites of Sagarnath Forestry Development Project

SN	Latin name	Sagarnath	Bhaktipur	Phuljor	Parwanipur	Hatilet	Kusmari	Lakshminiya	Murtia (Ghurkauli RU)	Total
1	***Eucalyptus* and other species**									
	Eucalyptus sp., *S. robusta*, Bamboo	24								**24**
	Eucalyptus sp., *S. robusta*	625	117			298	336	747	7	**2131**
	Eucalyptus sp., *T. grandis*	198	128			147	65	19	9	**567**
	Eucalyptus sp., *S. robusta, A. catechu*	58				121	188	69		**435**
	Eucalyptus sp., *A. catechu*	24		37		31	53	21	16	**182**
	Eucalyptus sp., *An. chinensis*	70	24	20						**115**
	Eucalyptus sp., *D. sissoo*		24		17		43	-		**85**
	Eucalyptus sp., *S. robusta, Albizia* sp.	25				82				**107**
	Eucalyptus sp., *S. robusta, D. sissoo*	49								**49**
	Eucalyptus sp., *S. robusta, T. grandis*	24	23				41	24		**112**
	Eucalyptus sp., *D. latifolia*		23						18	**41**
	Eucalyptus spp., *D. sissoo, A. catechu*		23				18			**41**
	Eucalyptus sp., *D. sissoo, A. catechu,*		18							**18**

	An. chinensis									
	Eucalyptus sp. ,*A. catechu, Albizia* sp.					15				**15**
	Eucalyptus sp., *A. catechu, T. grandis*					47				**47**
	Eucalyptus sp., *Albizia* sp.					14				**14**
	Eucalyptus spp., *T. grandis, D. sissoo*					7				**7**
	Eucalyptus sp., *S. robusta, Albizia* sp., *A. catechu*					102				**102**
	Euc. spp., *A. catechu, Melia azedarach*						20			**20**
	Eucalyptus sp., *S. robusta, Terminalia alata*						18			**18**
	Eucalyptus spp., *S. robusta, T. alata, A. catechu*						61			**61**
	Eucalyptus spp., *S. robusta, Pterocarpus marsipium*						12			**12**
	Sub-total	**1097**	**380**	**57**	**17**	**864**	**854**	**880**	**51**	**4200**
2	***Shorea robusta* and other species**									
	S. robusta, T. alata, Anogeissus latiofolia	22								**22**
	S. robusta, D. sissoo	278						48		**325**
	S. robusta, Albizia sp.	23								**23**
	S. robusta, D. sissoo, Allbizia sp.	23								**23**
	S. robusta, A. catechu						21			**21**
	S. robusta, T. alata							48		**48**
	S. robusta, T. grandis							24		**24**
	Sub-total	**346**					**21**	**120**		**486**
3	***Tectona grandis* and other species**									
	T. grandis, Gmelina arborea		18							**18**
	T. grandis, A.		5							**5**

	catechu									
	T. grandis, Paulownia sp,. *Cassia siamea, S. robusta*			25						**25**
	Sub-total		**23**	**25**						**48**
	Total	**1443**	**403**	**82**		**864**	**875**	**1000**	**51**	**4734**

Source: SFDP, 2016

ANNEX 5: No. of plots/sub-plots of mixed species in different sites of Sagarnath Forestry Development Project

SN	Latin name	Sagarnath	Bhaktipur	Phuljor	Parwanipur	Hatilet	Kusmari	Lakshminiya	Murtia (Ghurkauli RU)	Total
1	***Eucalyptus* and other species**									
	Eucalyptus spp., *S. robusta*, Bamboo	1								**1**
	Eucalyptus species, *Shorea robusta*	27	5			14	16	32	1	**95**
	Eucalyptus species, *Tectona grandis*	9	7			10	5	2	2	**35**
	Eucalyptus species, *Shorea robusta, Acacia catechu*	3				6	10	3		**22**
	Eucalyptus species, *Acacia catechu*	1		5		2	3	1	1	**13**
	Eucalyptus species, *Anthocephalus chinensis*	3	1	1						**5**
	Eucalyptus species, *Dalbergia sissoo*		1		2		2			**5**
	Eucalyptus spp., *S. robusta, Albizia* sp.	1				4				**5**
	Eucalyptus spp., *S. robusta, D. sissoo*	2								**2**
	Eucalyptus spp., *S. robusta, T. grandis*	1	1				2	1		**5**
	Eucalyptus spp., *D. latifolia*		1						1	**2**
	Eucalyptus spp., *D. sissoo, A. catechu*		2				1			**3**
	Eucalyptus spp., *D. sissoo, A. catechu, An. chinensis*		1							**1**
	Eucalyptus spp. *A. catechu, Albizia* sp.					1				**1**
	Eucalyptus spp., *A. catechu, T. grandis*					2				**2**
	Eucalyptus spp., *Albizia* sp.					1				**1**
	Eucalyptus spp., *T. grandis, D. sissoo*					1				**1**
	Eucalyptus spp., *S. robusta, Albizia* sp., *A. catechu*					5				**5**

	Eucalyptus spp., *A. catechu, Melia azedarach*						1			**1**
	Eucalyptus spp., *S. robusta, Terminalia alata*						1			**1**
	Eucalyptus spp., *S. robusta, T. alata, A. catechu*						3			**3**
	Eucalyptus spp., *S. robusta, Pterocarpus marsipium*						1			**1**
	Sub-total	**48**	**19**	**6**	**2**	**46**	**45**	**39**	**5**	**210**
2	***Shorea robusta* and other species**									
	S. robusta, T. alata, Anogeissus latiofolia	1							1	**2**
	Shorea robusta, Dalbergia sissoo	12						2	14	**28**
	S. *robusta, Albizia* sp.	1							1	**2**
	S. robusta, D. sissoo, Aslbizia sp.	1							1	**2**
	S. robusta, A. catechu						1		1	**2**
	S. robusta, T. alata							2	2	**4**
	S. robusta, T. grandis							1	1	**2**
	Sub-total	**15**					**1**	**5**		**21**
3	***Tectona grandis* and other species**									
	T. grandis, Gmelina arborea		1							**1**
	T. grandis, A. catechu		1							**1**
	T. grandis, Paulownia sp,. *Cassia siamea, S. robusta*			1						**1**
	Sub-total		**2**	**1**						**3**
	Total	**63**	**21**	**7**	**2**	**46**	**46**	**44**	**5**	**234**

Source: SFDP, 2016

ANNEX 6: List of flora in SFDP

SN	Local name	Scientific name	Category
1	Masala	*Eucalyptus camaldulensis*	Tree
2	Sagwan	*Tectona grandis*	Tree
3	Sal	*Shorea robusta*	Tree
4	Kadam	*Anthocephalus chinensis*	Tree
5	Khair	*Acacia catechu*	Tree
6	Sissoo	*Dalbergia sissoo*	Tree
7	Siris	*Albizia* spp.	Tree
8	Simal	*Bombax ceiba*	Tree
9	Asna	*Terminalia alata*	Tree
10	Harro	*Terminalia chebula*	Tree
11	Barro	*Terminalia belerica*	Tree
12	Rajbriksha	*Casia fistula*	Tree
13	Khamari	*Gmelina arborea*	Tree
14	Lampate	*Duabanga grandiflora*	Tree
15	Raajbeli, Bhant	*Clerodendron infortunatum*	Shrub
16	Banmara	*Chromolaena odorata*	Shrub

ANNEX 7: List of fauna in SFDP

SN	Common Name	Scientific Name	IUCN Red list	Category
1	Wild Boar	*Sus scrofa*	Least concern	Mammal
2	Rehus Monkey	*Macaca mulatta*	Protected	Mammal
3	Blue Bull	*Boselaphus tragocamelus*	Least concern	Mammal
4	Common leopard	*Panthera parades*	Vulnerable A2 cd ver 3.1	Mammal
5	Indian Nightjar	*Caprimulgus indicus*		Bird
6	Dusky eagle owl	*Bubo coromandus*		Bird
7	White tailed stonechat	*Saxicola leucurus*		Bird
8	Large adjutant storke	*Leptoptilos dubius*		Bird
9	Common gold eye			Bird
10	Barn owl	*Tyto alba*	Least concern	Bird
11	Black Spined Toad	*Bufo melanostictus*	Least concern	Amphibian
12	Common Garden Lizard	*Calotes versicolor*		Reptile

ANNEX 8: Checklist for Key Informant Interview (KII)

Basic Information

1. How are they involving in Sagarnath plantation project ?
2. Are they receiving any benefits from the project, if so what are they?
3. How do they want to participate in the project ?
4. Are they member of any other forest regimes such as collaborative or community or leasehold forest?
5. What would happen in their livelihoods if they are not involved in or allowed to collect forest products form Sagarnath?
6. How much forest area they require to maintain their livelihoods- from the boundary of forest how far?
7. Do they expect forest products from Sagarnath? If yes, then what products they would like to have?
8. They want to pay for the products? Or they want to contribute to forest management ?
9. What are the types of land use that people have practiced around the Sagarnath forest?
10. What are the strategies applied by SFDP for the management of Sagarnath forest?
    ……
11. Do you think, there are any issues and problems in Sagarnath forest management strategy? If yes, what……
12. Your suggestion for Sagarnath forest management plan?

Marketing Aspects

1. Does the market of your area fulfill the needs of local people?
2. Classification of tree species as per demand and supply

SN	Tree species	Demand	Supply

3. In your opinion, which species will be better for durable furniture?
4. Do you find the market value of species is justifiable? If no, then what are the reasons behind the high or low market value of species?

5. Has the total income generated from the sale of forest product, increased over the year?
6. Do you think, there are any issues and problems, which is directly or indirectly hampering the market of the species?

Research and educational purpose

1. Do you think, Sagarnath forest is a better place to visit for research and educational purpose?
2. What are the objectives of visits?
   a. Recreation and natural sight-seeing b. Religious purpose
   c. Observing wildlife and plant species d. Research and survey
   e. Others (specify)……..
3. What types of flora and fauna are found in Sagarnath forest?

SN	Flora	Fauna

4. What are the major things in Sagarnath forest which attracts researchers, students and tourists?
5. Is there any facilities provided for recreation such as sight-seeing and bird watching?
   a. Yes b. No
   If yes, please specify……..

Forest resources including NTFPs

1. Do you use the forest products or resources of Sagarnath forest?
2. If yes, what types of forest products do you use?
3. Does this forest fulfill the demand of your community? If no, then what are the reasons behind it?

…….

4. Classification of tree species as per demand and supply

SN	Tree species	Demand	Supply

5. What is your expectation from SFDP for further/better fulfillment of the demand?
6. Do you want to conduct NTFPs based or any income generation activities (IGA) in Sagarnath forest? If Yes, what

   …….

   And why……
7. What are the possible potential IGAs in your opinion?

SN	Alternative IGA	Why?

8. What are the problems related to income generation activities?

ANNEX 9: Check list for Focus Group Discussion (FGD)

Basic Information

1. How are they involving in Sagarnath plantation project ?
2. Are they receiving any benefits from the project, if so what are they?
3. How do they want to participate in the project ?
4. Are they member of any other forest regimes such as collaborative or community or leasehold forest?
5. What would happen in their livelihoods if they are not involved in or allowed to collect forest products form Sagarnath?
6. How much forest area they require to maintain their livelihoods- from the boundary of forest how far?
7. Do they expect forest products from Sagarnath? If yes, what products they would like to have?

8. Do they want to pay for the products? or Do they want to contribute to forest management ?
9. What are the types of land use that people have practiced around the Sagarnath forest?
10. What are the strategies applied by SFDP for the management of Sagarnath forest?

    ……
11. Do you think, there are any issues and problems in Sagarnath forest management strategy? If yes, what……
12. Your suggestion for Sagarnath forest management plan?

Marketing Aspects

1. Does the market of your area fulfill the needs of local people?
2. Classification of tree species as per demand and supply

S.N.	Tree species	Demand	Supply

3. In your opinion, which species will be better for durable furniture?
4. Do you find the market value of species is justifiable? If no, then what are the reasons behind the high or low market value of species?
5. Has the total income generated from the sale of forest product increased over the year?
6. Do you think, there are any issues and problems, which is directly or indirectly hampering the market of the species?

Research and educational purpose

1. Do you think, Sagarnath forest is a better place to visit for research and educational purpose?
2. What are the objectives of visits?

    b. Recreation and natural sight-seeing b. Religious purpose

    c. Observing wildlife and plant species d. Research and survey

    e. Others (specify)……..
3. What types of flora and fauna are found in Sagarnath forest?

SN	Flora	Fauna

4. What are the major things in Sagarnath forest which attracts researchers, students and tourists?
5. Is there any facilities provided for recreation such as sight-seeing and bird watching?

   a. Yes b. No

   If yes, please specify……..

Forest resources including NTFPs

1. Do you use the forest products or resources of Sagarnath forest?
2. If yes, what types of forest products do you use?
9. Does this forest fulfill the demand of your community? If no, what are the reasons behind it?

…….

10. Classification of tree species as per demand and supply

S.N.	Tree species	Demand	Supply

11. What is your expectation from SFDP for the further/better fulfillment of the demand?
12. Do you want to conduct NTFPs based or any income generation activities (IGA) in Sagarnath forest? If yes, what

    …….

    And why……
13. What are the possible potential IGAs in your opinion?

SN	Alternative IGA	Why?

14. What are the problems related to income generation activities?

ANNEX 4: Questionnaires for Household Survey

घरधुरी सर्वेक्षण प्रश्नावली

अन्तरवार्ता दिनेको नाम :

उमेर : पेशा : जाति : जिल्ला :
गा.वि.स.: वडा नं.: टोल/गाउँ :

१. व्यक्तिगत विवरण

क. परिवार संख्या :

क्र.सं.	लिङ्ग	
	महिला	पुरुष

ख. मुख्य पेशा :

ग. वार्षिक आम्दानी : -

क) ५०,००० सम्म - ख) ५० हजार देखि १ लाख सम्म (ग) १ देखि २ लाख सम्म
(घ) २ देखि ५ लाख सम्म (ङ ५ लाख माथि

२. भू-स्वामित्व (कट्ठा)

सिंचाई हुने .....
सिंचाई नहुने .....

३. उत्पादित खाद्यान्नले धान्ने अवस्था

१. ३ महिना भन्दा कम पुग्ने ( )
२. ३-६ महिना मात्र पुग्ने ( )
३. ६-९ महिना मात्र पुग्ने ( )

४. वर्षभरिलाई पुग्ने ( )

५. वर्षभरि पुगेर पनि बिक्री गर्ने ( )

४. पशुपालन तथा चरिचरन

किसिम	संख्या	चरिचरनको किसिम				
		बधुवा	खुला			अन्य
			सागरनाथ वन	सरकारी वन	निजी वन	
गाई/बाच्छा गोरु						
भैंसी/राँगा						
खसी/बोका/बाखा						
भेडा						
घोडा/खच्चर						

वन पैदावार र गैर काष्ठ वन पैदावर

५. सागरनाथ वनमा वन पैदावार संकलन गर्नुहुन्छ ?

क. हुन्छ..... ख. हुदैन.....

यदि हुन्छ भने कति भित्रसम्म जानुहुन्छ.....किमी

६. गएको १२ महिनामा वन पैदावार र गैर काष्ठ वन पैदावर माथि निर्भरता

वन पैदावर र गैर काष्ठ वन पैदावर	इकाई भारी.....१ कुन्टल.....२ नम्बर.....३ अन्य.....४	गएको १२ महिनासम्म आवश्यक भएको	गएको १२ महिनासम्म आपुर्ति भएको				
			सागरनाथ वन	कबुलियती वा सामुदायिक वा साझेदारी वन	किन्ने	निजी जग्गा	राष्ट्रिय वन
दाउरा							
घाँस							
ठार्का							
पतकर							

अन्य							

क. तपाईले संकलन गर्नु भएको वन पैदावार घरायसी प्रयोजनको लागि मात्र हो कि बिक्रि पनि गर्नुहुन्छ ?

घरायसी प्रयोजनको लागि मात्र..... बिक्रि गर्छु.....

यदि विक्रि र खरिद गर्नु हुन्छ भने के के पैदावार र कतिमा ?

क्र.म बिक्री गर्ने वन पैदावार एकाइ मूल्य प्रति एकाइ

१
२
३
४
५

ख. सागरनाथबाट उत्पादन भएको वन पैदावार खरिद गर्नु भाको छ ?

छ..... छैन.....

क्र.म खरिद गर्ने वन पैदावार एकाइ मूल्य प्रति एकाइ

७. सागरनाथ परियोजनामा सहभागी हुनुभएको छ ?

क. छ..... ख. छैन.....

यदि छ भने कसरी

क. श्रमिक..... ख. कृषि वन.....

८. परियोजनाबाट तपाईको जीविकोपार्जनमा वा घरायसी कृयाकलापमा केहि असर परेको छ ?

क. छ..... ख. छैन.....

यदि छ भने केके हुन ?

क्र.म	असरहरु	कारणहरु
१		
२		
३		
४		
५		

९. तपाईको विचारमा सागरनाथ परियोजनाबाट तपाईको घर परिवार र समुदायले कसरी फाईदा लिन सक्छन् ?

क. सक्छ..... ख. सक्दैन.....

बनको संक्षिप्त जानकारी

१०. बनमा पाइने वनस्पतिका प्रजातिहरु

क्र.सं.	वनस्पतिका प्रजातिहरु
१	
२	
३	
४	
५	

११. बनमा पाइन वन्यजन्तुका प्रजातिहरु

क्र.सं.	वन्यजन्तुका प्रजातिहरु
१	
२	
३	
४	
५	

वातावरणीय प्रभाव मुल्याङ्कनको लागि

१२. भौतिक सुविधा

क्र.सं.	सुविधाहरु	छ/छैन	दूरी
१	खानेपानी		
२	अस्पताल		
३	स्वास्थ्य चौकी		
४	शिक्षा		
४.१	प्रा.वि.		
४.२	नि.मा.वि.		
४.३	मा.वि.		
४.४	उच्च मा.वि.		
५	बैंक		
६	हुलाक		
७	टेलिफोन		
८	बस आउने सडक		
९	विद्युत		
१०	प्रहरी चौकी		
११	रेञ्ज पोष्ट		
१२	पशु चिकित्सालय		
१३	कृषि सेवा केन्द्र		
१४	हाट/बजार		
१५	अन्य		

१३. व्यापार व्यवसायका प्रकारहरु :

१.
२.
३.

१४. परम्परागत शीपहरु :

१.
२.

१५. प्रमुख रोग तथा उपचार विधिहरु :

क्र.सं.	प्रमुख रोगहरु	उपचार विधि
१		
२		
३		
४		
५		

१६. भाषा :

क्र.सं.	भाषाको प्रकार	बोल्नेको संख्या (%)
१		
२		
३		
४		
५		

१७. मुख्य चाड-पर्वहरु :

१.
२.
३.

१८. ऐतिहासिक तथा पुरातात्विक महत्वका सम्पदाहरु :

१.
२.
३.

१९. मठ मन्दिर तथा धार्मिक स्थलहरु :

१.
२.
३.

२०. प्रमुख नदी-नाला तथा पोखरीहरु :

१.
२.
३.

२१. सम्वेदनशील क्षेत्रहरु :

१.

२.

३.

२२. अन्य सुझावहरु :

१. भौतिक वातावरण तर्फ :

२. जैविक वातावरण तर्फ :

३. सामाजिक-आर्थिक वातावरण तर्फ :

४. साँस्कृतिक वातावरण तर्फ :

५. रसायनिक वातावरण तर्फ ::

ANNEX 11: Checklist for data collection (Inventory)

(A) Preliminary Information of Forest													
Name of forest:				Plot number:								Block number:	
Forest condition:				Plot type (species):								Age group:	
Year of plantation:				Tree status: Plantation( ), 1st Coppice( ), 2nd Coppice( )								Information collection date:	
GPS: X ( ) Y ( )				Distance from water source/body								Info collected by:	
(B) Plots description													
Slope			Aspect:			Natural disaster:						Canopy density (%) Tree pole regenaration	
(C) Regeneration, Pole and Tree													
Regeneration					Pole (DBH 10-30 cm)					Tree (DBH> 30 cm)			
Seedling Height< 1m (Plot size 10m)			Sapling Height > 1m and DBH <10cm (plot size 25msq.)										
S.N	Species/ Local Name	No.	Species/Local Name	No.	Species/Local Name	DBH (cm)	Height (m)	Quality		Species/Local Name	DBH (cm)	Height (m)	Quality

(D) Small plant, Climber and NTFP Tree level				
S.N	Species/ Local Name	Species/Local Name	No.	Remarks
(D1) Forest Products	Forest Products			
Plot Type				
Regenaration				
Sapling				
Pole				
Tree				
(E) Endangered Species, wildlife				

S.N	Name	No.	Remarks
(F) Other Important Information from Ecosystem, Biodiversity, wildlife, soil and watershed management point of view:			
1			
2			
3			
(G) Existing and Possible Threat from Ecosystem, Biodiversity, soil and watershed management point of view			
1			
2			
(H) Forest management activities:			
(I) Ecosystem servises (other then products listed ni D1):			

ANNEX 12: Checklist for data collection history

(A) Preliminary Information of Forest		
Division:	Region:	Compartment number
Block number:	Plot number:	Species:
Age group:	Stand status: Plantation( ), 1st Coppice( ), 2nd Coppice( )	Information collection date:
Forest condition: Good ( ) Fair ( ) Poor ( )	Year of plantation:	Info collected by:
GPS: X ( ) Y ( )	Team leader:	

(B) Plots description			
Slope	Aspect:	Natural disaster:	Canopy density (%) Tree ( )pole( ) regenaration ( )

(C) Regeneration, Pole and Tree												
Regeneration					Pole (DBH 10-30 cm)			Tree (DBH> 30 cm)				
Seedling Height< 1m (Plot size 10m)			Sapling Height > 1m and DBH <10cm (plot size 25msq.)									
S.N	Species/	No.	Species/Local Name	No.	Species/Local	DBH	Height	Quality	Species/Local	DBH	Height	Quality

	Local Name				Name (cm)	(m)		Name	(cm)	(m)	

(D) Small plant, Climber and NTFP Tree level

S.N	Species/ Local Name	Species/Local Name	No.	Remarks
(D1) Forest Products	Forest Products			
Plot Type				
Regenaration				

Sapling				
Pole				
Tree				

(E) Wildlife

S.N	Name	No.	Remarks

(F) Other Important Information from Ecosystem, Biodiversity, wildlife, soil and watershed management point of view:

1
2
3

(G) Existing and Possible Threat from Ecosystem, Biodiversity, soil and watershed management point of view

1
2

(H) Forest Management activities:

Singling year ( )	Thinning Year ( )	Prunning year( )	Weeding year( )	Weeding frequency:	Weeding method: Clear ( )
Fertilizer application		Forest fire year	forest fire occurrence %	Fire management	

Site conditions:

(I) Ecosystem servises (other then products listed ni D1):

ANNEX 13: Tested 10 volume models of *Eucalyptus* sp. and *Tectona grandis* in SFDP

S. No.	Model Type
1	$V = a+b*DBH$
2	$V = a+b*DBH^2$
3	$V=a+b*DBH+c*DBH^2$
4	$V=a+b*DBH^2*height$
5	$V=a+b*DBH+c*height$
6	$Ln(V) = a+b*Ln(DBH)$
7	$Ln(V) = a'+b*Ln(DBH)+c*Ln(height)$
8	$V= a+b*DBH^3$
9	$V=a+b*DBH^2+c*height$
10	$V=a+b*DBH^2*height+(DBH^2*height)^2$
	V refers to the over bark and under bark different volumes in cubic meter, DBH refers to the over bark diameter at 1.3 m in cm Height refers to total height of tree in m a, b and c are regression constants

ANNEX 14: Details of selected volume models of *Eucalyptus* sp. (predictor variable:DBH)

Description	**Ub stem volume (m^3), upto 9 cm (ub) top diameter**	**Ob stem volume (m^3), upto 10 cm (ob) top diameter**	**Ub stem volume (m^3), upto 12 cm (ub) top diameter**	**Ob stem volume (m^3), upto 13 cm (ob) top diameter**	**Ub total stem volume (m^3), upto 7cm (ub) top diameter**	**Ob total stem volume (m^3), upto 8 cm (ob) top diameter**
Model	$V=a+b*DBH^2$	$V=a+b*DBH^2$	$V=a+b*DBH^2$	$V=a+b*DBH^2$	$V=a+b*DBH^2$	$V=a+b*DBH^2$
Predictor variable	DBH	DBH	DBH	DBH	DBH	DBH
Total no. of observations	43	43	43	43	43	43
No. of observations in selected models	37	37	39	37	37	38
No. of observations to validate the models	17	17	17	17	17	17
DBH range	12.7-35.3 cm	12.7-35.3 cm	12.7-35.3 cm	12.7-35.3 cm	12.7-35.3 cm	12.7-35.3 cm
Intercept (a)	-0.1016	-0.1071	-0.1334	-0.1557	-0.0639	-0.0731
Regression constant (b)	0.0008	0.00088	0.00075	0.0009	0.00071	0.00085
Standard error	0.0423	0.0484	0.0477	0.0468	0.0422	0.0519
R^2 (%)	96.4	96.5	95.5	96.9	95.8	95.8
Prediction error (%)	3.3	3.6	5.7	3.9	4.7	3.7
Over/under estimation	over	under	under	under	under	under
Ub-underbark, ob-overbark, predictor variable: DBH in cm						

Annex 15: Details of selected volume models of *Eucalyptus* sp. (predictor variable: DBH and height)

Description	**Ub stem volume (m^3), upto 9 cm (ub) top diameter**	**Ob stem volume (m^3), upto 10 cm (ob) top diameter**	**Ub stem volume (m^3), upto 12 cm (ub) top diameter**	**Ob stem volume (m^3), upto 13 cm (ob) top diameter**	**Ub total stem volume (m^3), upto 7cm (ub) top diameter**	**Ob total stem volume (m^3), upto 8 cm (ob) top diameter**
Model	V=a+b*DB H^2*height	V=a+b*DB H^2*height	V=a+b*DB H^2*height	V=a+b*DB H^2*height	V=a+b*DB H^2*height	V=a+b*DBH ^{2}*height
Predictor variables	DBH, Height	DBH, Height	DBH, Height	DBH, Height	DBH, Height	DBH, Height
Total no. of observations	43	43	43	43	43	43
No. of observations in selected models	39	38	39	38	39	37
No. of observations to validate the models	17	17	17	17	17	17
DBH range	12.7-36.6 cm	12.7-36.6 cm	12.7-35.3 cm	12.7-36.6 cm	12.7-36.6 cm	12.7-36.6 cm
Height range	8.3-24.3 m	8.3-24.3 m	8.3-24.3 m	8.3-24.3 m	8.3-24.3 m	8.3-24.3 m
Intercept (a)	-0.0120	-0.0029	-0.0435	-0.0478	0.0097	0.0219
Regression constant (b)	0.000032	0.000037	0.000033	0.000038	0.000031	0.000036
Standard error	0.0377	0.0353	0.0353	0.0388	0.0355	0.0299
R^2 (%)	97.7	98.5	97.6	98.3	97.8	98.9
Prediction error (%)	0.2	0.3	1.7	0.6	0.8	1.2
Over/under estimation	over	under	over	over	over	under
Ub-underbark, ob-overbark, predictor variables: DBH in cm and total height in m						

Annex 16: Volume tables of *Eucalyptus* sp. (Predictor variable: DBH)

Eucalyptus sp.

DBH (cm)	Ub stem volume (m^3), upto 9 cm (ub) top diameter	Ob stem volume (m^3), upto 10 cm (ob) top diameter	Ub stem volume (m^3), upto 12 cm (ub) top diameter	Ob stem volume (m^3), upto 13 cm (ob) top diameter	Ub total stem volume (m^3), upto 7 cm (ub) top diameter	Ob total stem volume (m^3), upto 8 cm (ob) top diameter
12	0.0136	0.0196			0.0383	0.0493
13	0.0336	0.0416			0.0561	0.0706
14	0.0552	0.0654	0.0136	0.0207	0.0753	0.0935
15	0.0784	0.0909	0.0354	0.0468	0.0959	0.1182
16	0.1032	0.1182	0.0586	0.0747	0.1179	0.1445
17	0.1296	0.1472	0.0834	0.1044	0.1413	0.1726
18	0.1576	0.1780	0.1096	0.1359	0.1661	0.2023
19	0.1872	0.2106	0.1374	0.1692	0.1924	0.2338
20	0.2184	0.2449	0.1666	0.2043	0.2201	0.2669
21	0.2512	0.2810	0.1974	0.2412	0.2492	0.3018
22	0.2856	0.3188	0.2296	0.2799	0.2797	0.3383
23	0.3216	0.3584	0.2634	0.3204	0.3117	0.3766
24	0.3592	0.3998	0.2986	0.3627	0.3451	0.4165
25	0.3984	0.4429	0.3354	0.4068	0.3799	0.4582
26	0.4392	0.4878	0.3736	0.4527	0.4161	0.5015
27	0.4816	0.5344	0.4134	0.5004	0.4537	0.5466
28	0.5256	0.5828	0.4546	0.5499	0.4927	0.5933
29	0.5712	0.6330	0.4974	0.6012	0.5332	0.6418
30	0.6184	0.6849	0.5416	0.6543	0.5751	0.6919
31	0.6672	0.7386	0.5874	0.7092	0.6184	0.7438
32	0.7176	0.7940	0.6346	0.7659	0.6631	0.7973
33	0.7696	0.8512	0.6834	0.8244	0.7093	0.8526
34	0.8232	0.9102	0.7336	0.8847	0.7569	0.9095
35	0.8784	0.9709	0.7854	0.9468	0.8059	0.9682
36	0.9352	1.0334	0.8386	1.0107	0.8563	1.0285
37	*0.9936*	*1.0976*	*0.8934*	*1.0764*	*0.9081*	*1.0906*
38	*1.0536*	*1.1636*	*0.9496*	*1.1439*	*0.9613*	*1.1543*
39	*1.1152*	*1.2314*	*1.0074*	*1.2132*	*1.0160*	*1.2198*
40	*1.1784*	*1.3009*	*1.0666*	*1.2843*	*1.0721*	*1.2869*
41	*1.2432*	*1.3722*	*1.1274*	*1.3572*	*1.1296*	*1.3558*
42	*1.3096*	*1.4452*	*1.1896*	*1.4319*	*1.1885*	*1.4263*
43	*1.3776*	*1.5200*	*1.2534*	*1.5084*	*1.2489*	*1.4986*
44	*1.4472*	*1.5966*	*1.3186*	*1.5867*	*1.3107*	*1.5725*
45	*1.5184*	*1.6749*	*1.3854*	*1.6668*	*1.3739*	*1.6482*

ub-underbark, ob-overbark; Italic volume figures are outside the sample range.

ANNEX 17: Volume tables of *Eucalyptus* sp. (Predictor variable: DBH and height)

Underbark stem volume (m^3) up to 9 cm (ub) top diameter, *Eucalyptus* sp. (Masala)

	Height (m)																					
DBH (cm)	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
12	0.0294	0.0341	0.0387	0.0433	0.0479	0.0525	0.0571	0.0617	0.0663													
13	0.0366	0.0421	0.0475	0.0529	0.0583	0.0637	0.0691	0.0745	0.0799													
14	0.0444	0.0507	0.0570	0.0632	0.0695	0.0758	0.0821	0.0883	0.0946	0.1009	0.1071											
15	0.0528	0.0600	0.0672	0.0744	0.0816	0.0888	0.0960	0.1032	0.1104	0.1176	0.1248	0.1320	0.1392									
16	0.0617	0.0699	0.0781	0.0863	0.0945	0.1027	0.1109	0.1190	0.1272	0.1354	0.1436	0.1518	0.1600	0.1682	0.1764							
17	0.0712	0.0805	0.0897	0.0989	0.1082	0.1174	0.1267	0.1359	0.1452	0.1544	0.1637	0.1729	0.1822	0.1914	0.2007							
18			0.1020	0.1124	0.1228	0.1331	0.1435	0.1539	0.1642	0.1746	0.1850	0.1953	0.2057	0.2161	0.2264							
19			0.1150	0.1266	0.1381	0.1497	0.1613	0.1728	0.1844	0.1959	0.2075	0.2190	0.2306	0.2421	0.2537							
20			0.1288	0.1416	0.1544	0.1672	0.1800	0.1928	0.2056	0.2184	0.2312	0.2440	0.2568	0.2696	0.2824							
21			0.1432	0.1573	0.1714	0.1855	0.1997	0.2138	0.2279	0.2420	0.2561	0.2702	0.2843	0.2984	0.3125							
22					0.1893	0.2048	0.2203	0.2358	0.2513	0.2668	0.2822	0.2977	0.3132	0.3287	0.3442							
23					0.2080	0.2250	0.2419	0.2588	0.2757	0.2927	0.3096	0.3265	0.3435	0.3604	0.3773							
24					0.2276	0.2460	0.2645	0.2829	0.3013	0.3197	0.3382	0.3566	0.3750	0.3935	0.4119							
25					0.2480	0.2680	0.2880	0.3080	0.3280	0.3480	0.3680	0.3880	0.4080	0.4280	0.4480	0.4680						

26					0.2692	0.2908	0.3125	0.3341	0.3557	0.3773	0.3990	0.4206	0.4422	0.4639	0.4855	0.5071						
27					0.2912	0.3146	0.3379	0.3612	0.3845	0.4079	0.4312	0.4545	0.4779	0.5012	0.5245	0.5478	*0.5712*					
28					0.3141	0.3392	0.3643	0.3894	0.4145	0.4396	0.4646	0.4897	0.5148	0.5399	0.5650	0.5901	*0.6152*	*0.6403*				
29						0.3647	0.3917	0.4186	0.4455	0.4724	0.4993	0.5262	0.5531	0.5800	0.6069	0.6339	*0.6608*	*0.6877*				
30						0.3912	0.4200	0.4488	0.4776	0.5064	0.5352	0.5640	0.5928	0.6216	0.6504	0.6792	*0.7080*	*0.7368*				
31						0.4185	0.4493	0.4800	0.5108	0.5415	0.5723	0.6030	0.6338	0.6645	0.6953	0.7260	*0.7568*	*0.7875*	*0.8183*			
32								0.5123	0.5450	0.5778	0.6106	0.6433	0.6761	0.7089	0.7416	0.7744	*0.8072*	*0.8399*	*0.8727*	*0.9055*		
33								0.5455	0.5804	0.6152	0.6501	0.6849	0.7198	0.7546	0.7895	0.8243	*0.8592*	*0.8940*	*0.9289*	*0.9637*		
34								0.5798	0.6168	0.6538	0.6908	0.7278	0.7648	0.8018	0.8388	0.8758	*0.9128*	*0.9498*	*0.9868*	*1.0237*		
35									0.6544	0.6936	0.7328	0.7720	0.8112	0.8504	0.8896	0.9288	*0.9680*	*1.0072*	*1.0464*	*1.0856*	*1.1248*	*1.1640*
36									0.6930	0.7345	0.7759	0.8174	0.8589	0.9004	0.9418	0.9833	*1.0248*	*1.0662*	*1.1077*	*1.1492*	*1.1907*	*1.2321*
37									0.7327	0.7765	0.8203	0.8641	0.9079	0.9517	0.9956	1.0394	*1.0832*	*1.1270*	*1.1708*	*1.2146*	*1.2584*	*1.3022*
38									*0.7735*	*0.8197*	*0.8659*	*0.9121*	*0.9583*	*1.0045*	*1.0508*	*1.0970*	*1.1432*	*1.1894*	*1.2356*	*1.2818*	*1.3280*	*1.3742*
39									*0.8154*	*0.8641*	*0.9127*	*0.9614*	*1.0101*	*1.0588*	*1.1074*	*1.1561*	*1.2048*	*1.2534*	*1.3021*	*1.3508*	*1.3995*	*1.4481*
40									*0.8584*	*0.9096*	*0.9608*	*1.0120*	*1.0632*	*1.1144*	*1.1656*	*1.2168*	*1.2680*	*1.3192*	*1.3704*	*1.4216*	*1.4728*	*1.5240*
41									*0.9024*	*0.9562*	*1.0100*	*1.0638*	*1.1176*	*1.1714*	*1.2252*	*1.2790*	*1.3328*	*1.3866*	*1.4404*	*1.4941*	*1.5479*	*1.6017*
42									*0.9476*	*1.0040*	*1.0605*	*1.1169*	*1.1734*	*1.2298*	*1.2863*	*1.3427*	*1.3992*	*1.4556*	*1.5121*	*1.5685*	*1.6250*	*1.6814*
43									*0.9938*	*1.0530*	*1.1122*	*1.1713*	*1.2305*	*1.2897*	*1.3488*	*1.4080*	*1.4672*	*1.5263*	*1.5855*	*1.6447*	*1.7038*	*1.7630*
44									*1.0412*	*1.1031*	*1.1651*	*1.2270*	*1.2890*	*1.3509*	*1.4129*	*1.4748*	*1.5368*	*1.5987*	*1.6607*	*1.7226*	*1.7846*	*1.8465*

45									*1.08 96*	*1.15 44*	*1.21 92*	*1.28 40*	*1.34 88*	*1.41 36*	*1.47 84*	*1.54 32*	*1.60 80*	*1.67 28*	*1.73 76*	*1.80 24*	*1.86 72*	*1.93 20*
Itallic volume figures are outside the sample range																						

Overbark stem volume (m^3) up to 10 cm (ob) top diameter, *Eucalyptus* sp. (Masala)

	Height (m)																					
DBH (cm)	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
12	0.0451	0.0504	0.0557	0.0610	0.0664	0.0717	0.0770	0.0823	0.0877													
13	0.0534	0.0596	0.0659	0.0721	0.0784	0.0846	0.0909	0.0971	0.1034													
14	0.0624	0.0696	0.0769	0.0841	0.0914	0.0986	0.1059	0.1131	0.1204	0.1276	0.1349											
15	0.0720	0.0804	0.0887	0.0970	0.1053	0.1137	0.1220	0.1303	0.1386	0.1470	0.1553	0.1636	0.1719									
16	0.0823	0.0918	0.1013	0.1108	0.1202	0.1297	0.1392	0.1487	0.1581	0.1676	0.1771	0.1865	0.1960	0.2055	0.2150							
17	0.0933	0.1040	0.1147	0.1254	0.1361	0.1468	0.1575	0.1682	0.1789	0.1896	0.2003	0.2110	0.2217	0.2323	0.2430							
18			0.1290	0.1410	0.1529	0.1649	0.1769	0.1889	0.2009	0.2129	0.2249	0.2369	0.2488	0.2608	0.2728							
19			0.1440	0.1574	0.1707	0.1841	0.1975	0.2108	0.2242	0.2375	0.2509	0.2642	0.2776	0.2910	0.3043							
20			0.1599	0.1747	0.1895	0.2043	0.2191	0.2339	0.2487	0.2635	0.2783	0.2931	0.3079	0.3227	0.3375							
21			0.1766	0.1929	0.2092	0.2255	0.2419	0.2582	0.2745	0.2908	0.3071	0.3234	0.3398	0.3561	0.3724							
22					0.2299	0.2478	0.2657	0.2836	0.3015	0.3194	0.3374	0.3553	0.3732	0.3911	0.4090							
23					0.2515	0.2711	0.2907	0.3103	0.3298	0.3494	0.3690	0.3886	0.4081	0.4277	0.4473							
24					0.2742	0.2955	0.3168	0.3381	0.3594	0.3807	0.4020	0.4233	0.4447	0.4660	0.4873							
25					0.2977	0.3209	0.3440	0.3671	0.3902	0.4134	0.4365	0.4596	0.4827	0.5059	0.5290	0.5521						
26					0.3223	0.3473	0.3723	0.3973	0.4223	0.4473	0.4723	0.4973	0.5224	0.5474	0.5724	0.5974						

27					0.3477	0.3747	0.4017	0.4287	0.4556	0.4826	0.5096	0.5366	0.5635	0.5905	0.6175	0.6445	*0.6714*					
28					0.3742	0.4032	0.4322	0.4612	0.4902	0.5192	0.5483	0.5773	0.6063	0.6353	0.6643	0.6933	*0.7223*	*0.7513*				
29						0.4327	0.4639	0.4950	0.5261	0.5572	0.5883	0.6194	0.6506	0.6817	0.7128	0.7439	*0.7750*	*0.8061*				
30						0.4633	0.4966	0.5299	0.5632	0.5965	0.6298	0.6631	0.6964	0.7297	0.7630	0.7963	*0.8296*	*0.8629*				
31						0.4949	0.5305	0.5660	0.6016	0.6371	0.6727	0.7082	0.7438	0.7794	0.8149	0.8505	*0.8860*	*0.9216*	*0.9571*			
32								0.6033	0.6412	0.6791	0.7170	0.7549	0.7927	0.8306	0.8685	0.9064	*0.9443*	*0.9822*	*1.0201*	*1.0580*		
33								0.6418	0.6821	0.7224	0.7627	0.8030	0.8433	0.8835	0.9238	0.9641	*1.0044*	*1.0447*	*1.0850*	*1.1253*		
34								0.6815	0.7242	0.7670	0.8098	0.8525	0.8953	0.9381	0.9809	1.0236	*1.0664*	*1.1092*	*1.1519*	*1.1947*		
35									0.7676	0.8130	0.8583	0.9036	0.9489	0.9943	1.0396	1.0849	*1.1302*	*1.1756*	*1.2209*	*1.2662*	*1.3115*	*1.3569*
36									0.8123	0.8602	0.9082	0.9561	1.0041	1.0520	1.1000	1.1479	*1.1959*	*1.2439*	*1.2918*	*1.3398*	*1.3877*	*1.4357*
37									0.8582	0.9089	0.9595	1.0102	1.0608	1.1115	1.1621	1.2128	*1.2634*	*1.3141*	*1.3647*	*1.4154*	*1.4660*	*1.5167*
38									*0.9054*	*0.9588*	*1.0122*	*1.0657*	*1.1191*	*1.1725*	*1.2259*	*1.2794*	*1.3328*	*1.3862*	*1.4397*	*1.4931*	*1.5465*	*1.5999*
39									*0.9538*	*1.0101*	*1.0664*	*1.1226*	*1.1789*	*1.2352*	*1.2915*	*1.3477*	*1.4040*	*1.4603*	*1.5166*	*1.5729*	*1.6291*	*1.6854*
40									*1.0035*	*1.0627*	*1.1219*	*1.1811*	*1.2403*	*1.2995*	*1.3587*	*1.4179*	*1.4771*	*1.5363*	*1.5955*	*1.6547*	*1.7139*	*1.7731*
41									*1.0544*	*1.1166*	*1.1788*	*1.2410*	*1.3032*	*1.3654*	*1.4276*	*1.4898*	*1.5520*	*1.6142*	*1.6764*	*1.7386*	*1.8008*	*1.8630*
42									*1.1067*	*1.1719*	*1.2372*	*1.3025*	*1.3677*	*1.4330*	*1.4983*	*1.5635*	*1.6288*	*1.6941*	*1.7593*	*1.8246*	*1.8899*	*1.9551*
43									*1.1601*	*1.2285*	*1.2969*	*1.3654*	*1.4338*	*1.5022*	*1.5706*	*1.6390*	*1.7074*	*1.7758*	*1.8443*	*1.9127*	*1.9811*	*2.0495*
44									*1.2148*	*1.2865*	*1.3581*	*1.4297*	*1.5014*	*1.5730*	*1.6446*	*1.7163*	*1.7879*	*1.8595*	*1.9312*	*2.0028*	*2.0744*	*2.1461*
45									*1.2708*	*1.3458*	*1.4207*	*1.4956*	*1.5705*	*1.6455*	*1.7204*	*1.7953*	*1.8702*	*1.9452*	*2.0201*	*2.0950*	*2.1699*	*2.2449*

Italic volume figures are outside the sample range

Underbark stem volume (m^3) up to 12 cm (ub) top diameter,, *Eucalyptus* sp. (Masala)

	Height (m)																					
DBH (cm)	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
13	0.0007	0.0063	0.0119	0.0174	0.0230	0.0286	0.0342	0.0397	0.0453													
14	0.0087	0.0152	0.0217	0.0281	0.0346	0.0411	0.0475	0.0540	0.0605	0.0669	0.0734											
15	0.0173	0.0248	0.0322	0.0396	0.0470	0.0545	0.0619	0.0693	0.0767	0.0842	0.0916	0.0990	0.1064									
16	0.0265	0.0350	0.0434	0.0519	0.0603	0.0688	0.0772	0.0857	0.0941	0.1026	0.1110	0.1195	0.1279	0.1364	0.1448							
17	0.0363	0.0459	0.0554	0.0650	0.0745	0.0840	0.0936	0.1031	0.1126	0.1222	0.1317	0.1413	0.1508	0.1603	0.1699							
18			0.0681	0.0788	0.0895	0.1002	0.1109	0.1216	0.1323	0.1430	0.1537	0.1644	0.1750	0.1857	0.1964							
19			0.0816	0.0935	0.1054	0.1173	0.1292	0.1411	0.1530	0.1649	0.1769	0.1888	0.2007	0.2126	0.2245							
20			0.0957	0.1089	0.1221	0.1353	0.1485	0.1617	0.1749	0.1881	0.2013	0.2145	0.2277	0.2409	0.2541							
21			0.1106	0.1251	0.1397	0.1543	0.1688	0.1834	0.1979	0.2125	0.2270	0.2416	0.2561	0.2707	0.2852							
22					0.1581	0.1741	0.1901	0.2061	0.2220	0.2380	0.2540	0.2700	0.2859	0.3019	0.3179							
23					0.1775	0.1949	0.2124	0.2298	0.2473	0.2647	0.2822	0.2997	0.3171	0.3346	0.3520							
24					0.1976	0.2166	0.2356	0.2546	0.2736	0.2927	0.3117	0.3307	0.3497	0.3687	0.3877							
25					0.2186	0.2393	0.2599	0.2805	0.3011	0.3218	0.3424	0.3630	0.3836	0.4043	0.4249	0.4455						
26					0.2405	0.2628	0.2851	0.3074	0.3297	0.3521	0.3744	0.3967	0.4190	0.4413	0.4636	0.4859						
27					0.2633	0.2873	0.3114	0.3354	0.3595	0.3835	0.4076	0.4317	0.4557	0.4798	0.5038	0.5279	*0.5519*					
28					0.28	0.31	0.33	0.36	0.39	0.41	0.44	0.46	0.49	0.51	0.54	0.57	*0.59*	*0.62*				

					68	27	86	45	03	62	21	80	38	97	56	14	*73*	*32*				
29						0.33 91	0.36 68	0.39 46	0.42 23	0.45 01	0.47 78	0.50 56	0.53 33	0.56 11	0.58 88	0.61 66	*0.64 43*	*0.67 21*				
30						0.36 63	0.39 60	0.42 57	0.45 54	0.48 51	0.51 48	0.54 45	0.57 42	0.60 39	0.63 36	0.66 33	*0.69 30*	*0.72 27*				
31						0.39 45	0.42 62	0.45 79	0.48 96	0.52 13	0.55 31	0.58 48	0.61 65	0.64 82	0.67 99	0.71 16	*0.74 33*	*0.77 50*	*0.80 68*			
32								0.49 12	0.52 50	0.55 88	0.59 26	0.62 64	0.66 01	0.69 39	0.72 77	0.76 15	*0.79 53*	*0.82 91*	*0.86 29*	*0.89 67*		
33								0.52 55	0.56 14	0.59 74	0.63 33	0.66 93	0.70 52	0.74 11	0.77 71	0.81 30	*0.84 89*	*0.88 49*	*0.92 08*	*0.95 67*		
34								0.56 09	0.59 90	0.63 72	0.67 53	0.71 35	0.75 16	0.78 98	0.82 79	0.86 61	*0.90 42*	*0.94 24*	*0.98 05*	*1.01 87*		
35									0.63 77	0.67 82	0.71 86	0.75 90	0.79 94	0.83 99	0.88 03	0.92 07	*0.96 11*	*1.00 16*	*1.04 20*	*1.08 24*	*1.12 28*	*1.16 33*
36									0.67 76	0.72 03	0.76 31	0.80 59	0.84 86	0.89 14	0.93 42	0.97 69	*1.01 97*	*1.06 25*	*1.10 52*	*1.14 80*	*1.19 08*	*1.23 36*
37									*0.71 85*	*0.76 37*	*0.80 89*	*0.85 41*	*0.89 92*	*0.94 44*	*0.98 96*	*1.03 48*	*1.07 99*	*1.12 51*	*1.17 03*	*1.21 55*	*1.26 06*	*1.30 58*
38									*0.76 06*	*0.80 82*	*0.85 59*	*0.90 36*	*0.95 12*	*0.99 89*	*1.04 65*	*1.09 42*	*1.14 18*	*1.18 95*	*1.23 71*	*1.28 48*	*1.33 24*	*1.38 01*
39									*0.80 38*	*0.85 40*	*0.90 42*	*0.95 44*	*1.00 46*	*1.05 48*	*1.10 49*	*1.15 51*	*1.20 53*	*1.25 55*	*1.30 57*	*1.35 59*	*1.40 61*	*1.45 63*
40									*0.84 81*	*0.90 09*	*0.95 37*	*1.00 65*	*1.05 93*	*1.11 21*	*1.16 49*	*1.21 77*	*1.27 05*	*1.32 33*	*1.37 61*	*1.42 89*	*1.48 17*	*1.53 45*
41									*0.89 36*	*0.94 90*	*1.00 45*	*1.06 00*	*1.11 54*	*1.17 09*	*1.22 64*	*1.28 19*	*1.33 73*	*1.39 28*	*1.44 83*	*1.50 38*	*1.55 92*	*1.61 47*
42									*0.94 01*	*0.99 83*	*1.05 65*	*1.11 48*	*1.17 30*	*1.23 12*	*1.28 94*	*1.34 76*	*1.40 58*	*1.46 40*	*1.52 22*	*1.58 04*	*1.63 87*	*1.69 69*
43									*0.98 78*	*1.04 88*	*1.10 98*	*1.17 09*	*1.23 19*	*1.29 29*	*1.35 39*	*1.41 49*	*1.47 59*	*1.53 70*	*1.59 80*	*1.65 90*	*1.72 00*	*1.78 10*
44									*1.03 66*	*1.10 05*	*1.16 44*	*1.22 83*	*1.29 22*	*1.35 60*	*1.41 99*	*1.48 38*	*1.54 77*	*1.61 16*	*1.67 55*	*1.73 94*	*1.80 33*	*1.86 72*
45									*1.08 65*	*1.15 34*	*1.22 02*	*1.28 70*	*1.35 38*	*1.42 07*	*1.48 75*	*1.55 43*	*1.62 11*	*1.68 80*	*1.75 48*	*1.82 16*	*1.88 84*	*1.95 53*
Itallic volume figures are outside the sample range																						

Overbark stem volume (m^3) up to 13 cm (ob) top diameter, *Eucalyptus* sp. (Masala)

	Height (m)																					
DBH (cm)	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
13	0.0100	0.0164	0.0228	0.0293	0.0357	0.0421	0.0485	0.0550	0.0614													
14	0.0192	0.0267	0.0341	0.0416	0.0490	0.0565	0.0639	0.0714	0.0788	0.0863	0.0937											
15	0.0292	0.0377	0.0463	0.0548	0.0634	0.0719	0.0805	0.0890	0.0976	0.1061	0.1147	0.1232	0.1318									
16	0.0398	0.0495	0.0592	0.0689	0.0787	0.0884	0.0981	0.1078	0.1176	0.1273	0.1370	0.1468	0.1565	0.1662	0.1759							
17	0.0510	0.0620	0.0730	0.0840	0.0950	0.1059	0.1169	0.1279	0.1389	0.1499	0.1609	0.1718	0.1828	0.1938	0.2048							
18			0.0876	0.0999	0.1123	0.1246	0.1369	0.1492	0.1615	0.1738	0.1861	0.1984	0.2108	0.2231	0.2354							
19			0.1031	0.1168	0.1305	0.1443	0.1580	0.1717	0.1854	0.1991	0.2128	0.2266	0.2403	0.2540	0.2677							
20			0.1194	0.1346	0.1498	0.1650	0.1802	0.1954	0.2106	0.2258	0.2410	0.2562	0.2714	0.2866	0.3018							
21			0.1365	0.1533	0.1701	0.1868	0.2036	0.2203	0.2371	0.2538	0.2706	0.2874	0.3041	0.3209	0.3376							
22					0.1913	0.2097	0.2281	0.2465	0.2649	0.2833	0.3016	0.3200	0.3384	0.3568	0.3752							
23					0.2135	0.2336	0.2537	0.2738	0.2939	0.3140	0.3341	0.3542	0.3743	0.3944	0.4145							
24					0.2367	0.2586	0.2805	0.3024	0.3243	0.3462	0.3681	0.3900	0.4118	0.4337	0.4556							
25					0.2610	0.2847	0.3085	0.3322	0.3560	0.3797	0.4035	0.4272	0.4510	0.4747	0.4985	0.5222						
26					0.2861	0.3118	0.3375	0.3632	0.3889	0.4146	0.4403	0.4660	0.4916	0.5173	0.5430	0.5687						
27					0.3123	0.3400	0.3677	0.3954	0.4231	0.4508	0.4785	0.5062	0.5339	0.5616	0.5893	0.6170	*0.6448*					
28					0.3395	0.3693	0.3991	0.4289	0.4587	0.4885	0.5182	0.5480	0.5778	0.6076	0.6374	0.6672	*0.6970*	*0.7268*				

29						0.3996	0.4316	0.4635	0.4955	0.5274	0.5594	0.5914	0.6233	0.6553	0.6872	0.7192	*0.7512*	*0.7831*				
30						0.4310	0.4652	0.4994	0.5336	0.5678	0.6020	0.6362	0.6704	0.7046	0.7388	0.7730	*0.8072*	*0.8414*				
31						0.4635	0.5000	0.5365	0.5730	0.6095	0.6460	0.6826	0.7191	0.7556	0.7921	0.8286	*0.8652*	*0.9017*	*0.9382*			
32								0.5748	0.6137	0.6526	0.6915	0.7304	0.7694	0.8083	0.8472	0.8861	*0.9250*	*0.9639*	*1.0028*	*1.0417*		
33								0.6143	0.6557	0.6971	0.7385	0.7798	0.8212	0.8626	0.9040	0.9454	*0.9868*	*1.0281*	*1.0695*	*1.1109*		
34								0.6550	0.6990	0.7429	0.7868	0.8308	0.8747	0.9186	0.9625	1.0065	*1.0504*	*1.0943*	*1.1383*	*1.1822*		
35									0.7436	0.7901	0.8367	0.8832	0.9298	0.9763	1.0229	1.0694	*1.1160*	*1.1625*	*1.2091*	*1.2556*	*1.3022*	*1.3487*
36									0.7894	0.8387	0.8879	0.9372	0.9864	1.0357	1.0849	1.1342	*1.1834*	*1.2326*	*1.2819*	*1.3311*	*1.3804*	*1.4296*
37									0.8366	0.8886	0.9406	0.9926	1.0447	1.0967	1.1487	1.2007	*1.2528*	*1.3048*	*1.3568*	*1.4088*	*1.4608*	*1.5129*
38									*0.8850*	*0.9399*	*0.9948*	*1.0496*	*1.1045*	*1.1594*	*1.2143*	*1.2691*	*1.3240*	*1.3789*	*1.4337*	*1.4886*	*1.5435*	*1.5984*
39									*0.9348*	*0.9926*	*1.0504*	*1.1082*	*1.1660*	*1.2238*	*1.2816*	*1.3394*	*1.3972*	*1.4549*	*1.5127*	*1.5705*	*1.6283*	*1.6861*
40									*0.9858*	*1.0466*	*1.1074*	*1.1682*	*1.2290*	*1.2898*	*1.3506*	*1.4114*	*1.4722*	*1.5330*	*1.5938*	*1.6546*	*1.7154*	*1.7762*
41									*1.0381*	*1.1020*	*1.1659*	*1.2298*	*1.2936*	*1.3575*	*1.4214*	*1.4853*	*1.5492*	*1.6130*	*1.6769*	*1.7408*	*1.8047*	*1.8685*
42									*1.0917*	*1.1588*	*1.2258*	*1.2928*	*1.3599*	*1.4269*	*1.4939*	*1.5610*	*1.6280*	*1.6950*	*1.7621*	*1.8291*	*1.8961*	*1.9632*
43									*1.1467*	*1.2169*	*1.2872*	*1.3574*	*1.4277*	*1.4980*	*1.5682*	*1.6385*	*1.7088*	*1.7790*	*1.8493*	*1.9195*	*1.9898*	*2.0601*
44									*1.2029*	*1.2764*	*1.3500*	*1.4236*	*1.4971*	*1.5707*	*1.6443*	*1.7178*	*1.7914*	*1.8650*	*1.9385*	*2.0121*	*2.0857*	*2.1592*
45									*1.2604*	*1.3373*	*1.4143*	*1.4912*	*1.5682*	*1.6451*	*1.7221*	*1.7990*	*1.8760*	*1.9529*	*2.0299*	*2.1068*	*2.1838*	*2.2607*

Italic volume figures are outside the sample range

Underbark stem volume (m^3) up to 7 cm (ub) top diameter, *Eucalyptus* sp. (Masala)

	Height (m)																						
DBH (cm)	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
12	0.0499	0.0543	0.0588	0.0633	0.0677	0.0722	0.0767	0.0811	0.0856													
13	0.0569	0.0621	0.0673	0.0726	0.0778	0.0830	0.0883	0.0935	0.0988													
14	0.0644	0.0705	0.0765	0.0826	0.0887	0.0948	0.1008	0.1069	0.1130	0.1191	0.1251											
15	0.0725	0.0795	0.0864	0.0934	0.1004	0.1074	0.1143	0.1213	0.1283	0.1353	0.1422	0.1492	0.1562									
16	0.0811	0.0891	0.0970	0.1049	0.1129	0.1208	0.1287	0.1367	0.1446	0.1525	0.1605	0.1684	0.1764	0.1843	0.1922							
17	0.0903	0.0993	0.1082	0.1172	0.1262	0.1351	0.1441	0.1530	0.1620	0.1710	0.1799	0.1889	0.1978	0.2068	0.2158							
18			0.1202	0.1302	0.1403	0.1503	0.1604	0.1704	0.1804	0.1905	0.2005	0.2106	0.2206	0.2307	0.2407							
19			0.1328	0.1440	0.1552	0.1664	0.1776	0.1888	0.1999	0.2111	0.2223	0.2335	0.2447	0.2559	0.2671							
20			0.1461	0.1585	0.1709	0.1833	0.1957	0.2081	0.2205	0.2329	0.2453	0.2577	0.2701	0.2825	0.2949							
21			0.1601	0.1738	0.1874	0.2011	0.2148	0.2284	0.2421	0.2558	0.2694	0.2831	0.2968	0.3105	0.3241							
22					0.2048	0.2198	0.2348	0.2498	0.2648	0.2798	0.2948	0.3098	0.3248	0.3398	0.3548							
23					0.2229	0.2393	0.2557	0.2721	0.2885	0.3049	0.3213	0.3377	0.3541	0.3705	0.3869							
24					0.2418	0.2597	0.2775	0.2954	0.3133	0.3311	0.3490	0.3668	0.3847	0.4025	0.4204							
25					0.2616	0.2810	0.3003	0.3197	0.3391	0.3585	0.3778	0.3972	0.4166	0.4360	0.4553	0.4747						
26					0.2821	0.3031	0.3240	0.3450	0.3660	0.3869	0.4079	0.4288	0.4498	0.4707	0.4917	0.5126						
27					0.3035	0.3261	0.3487	0.3713	0.3939	0.4165	0.4391	0.4617	0.4843	0.5069	0.5295	0.5521	*0.5747*					

28					0.3257	0.3500	0.3743	0.3986	0.4229	0.4472	0.4715	0.4958	0.5201	0.5444	0.5687	0.5930	*0.6173*	*0.6416*				
29						0.3747	0.4008	0.4268	0.4529	0.4790	0.5050	0.5311	0.5572	0.5833	0.6093	0.6354	*0.6615*	*0.6875*				
30						0.4003	0.4282	0.4561	0.4840	0.5119	0.5398	0.5677	0.5956	0.6235	0.6514	0.6793	*0.7072*	*0.7351*				
31						0.4268	0.4566	0.4864	0.5161	0.5459	0.5757	0.6055	0.6353	0.6651	0.6949	0.7247	*0.7545*	*0.7843*	*0.8141*			
32								0.5176	0.5493	0.5811	0.6128	0.6446	0.6763	0.7081	0.7398	0.7716	*0.8033*	*0.8350*	*0.8668*	*0.8985*		
33								0.5498	0.5836	0.6174	0.6511	0.6849	0.7186	0.7524	0.7862	0.8199	*0.8537*	*0.8874*	*0.9212*	*0.9550*		
34								0.5831	0.6189	0.6547	0.6906	0.7264	0.7623	0.7981	0.8339	0.8698	*0.9056*	*0.9414*	*0.9773*	*1.0131*		
35									0.6553	0.6933	0.7312	0.7692	0.8072	0.8452	0.8831	0.9211	*0.9591*	*0.9971*	*1.0350*	*1.0730*	*1.1110*	*1.1490*
36									0.6927	0.7329	0.7730	0.8132	0.8534	0.8936	0.9337	0.9739	*1.0141*	*1.0543*	*1.0945*	*1.1346*	*1.1748*	*1.2150*
37									0.7312	0.7736	0.8160	0.8585	0.9009	0.9434	0.9858	1.0282	*1.0707*	*1.1131*	*1.1556*	*1.1980*	*1.2404*	*1.2829*
38									*0.7707*	*0.8155*	*0.8602*	*0.9050*	*0.9497*	*0.9945*	*1.0393*	*1.0840*	*1.1288*	*1.1736*	*1.2183*	*1.2631*	*1.3079*	*1.3526*
39									*0.8113*	*0.8584*	*0.9056*	*0.9527*	*0.9999*	*1.0470*	*1.0942*	*1.1413*	*1.1885*	*1.2356*	*1.2828*	*1.3299*	*1.3771*	*1.4242*
40									*0.8529*	*0.9025*	*0.9521*	*1.0017*	*1.0513*	*1.1009*	*1.1505*	*1.2001*	*1.2497*	*1.2993*	*1.3489*	*1.3985*	*1.4481*	*1.4977*
41									*0.8956*	*0.9477*	*0.9998*	*1.0519*	*1.1040*	*1.1561*	*1.2083*	*1.2604*	*1.3125*	*1.3646*	*1.4167*	*1.4688*	*1.5209*	*1.5730*
42									*0.9393*	*0.9940*	*1.0487*	*1.1034*	*1.1581*	*1.2127*	*1.2674*	*1.3221*	*1.3768*	*1.4315*	*1.4862*	*1.5409*	*1.5955*	*1.6502*
43									*0.9841*	*1.0414*	*1.0988*	*1.1561*	*1.2134*	*1.2707*	*1.3280*	*1.3854*	*1.4427*	*1.5000*	*1.5573*	*1.6146*	*1.6720*	*1.7293*
44									*1.0300*	*1.0900*	*1.1500*	*1.2100*	*1.2700*	*1.3301*	*1.3901*	*1.4501*	*1.5101*	*1.5701*	*1.6301*	*1.6901*	*1.7502*	*1.8102*
45									*1.0769*	*1.1397*	*1.2024*	*1.2652*	*1.3280*	*1.3908*	*1.4535*	*1.5163*	*1.5791*	*1.6419*	*1.7046*	*1.7674*	*1.8302*	*1.8930*
Itallic volume figures are outside the sample range																						

Overbark stem volume (m^3) up to 8 cm (ob) top diameter, *Eucalyptus* sp.(Masala)

	Height (m)																					
DBH (cm)	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
12	0.0499	0.0543	0.0588	0.0633	0.0677	0.0722	0.0767	0.0811	0.0856													
13	0.0569	0.0621	0.0673	0.0726	0.0778	0.0830	0.0883	0.0935	0.0988													
14	0.0644	0.0705	0.0765	0.0826	0.0887	0.0948	0.1008	0.1069	0.1130	0.1191	0.1251											
15	0.0725	0.0795	0.0864	0.0934	0.1004	0.1074	0.1143	0.1213	0.1283	0.1353	0.1422	0.1492	0.1562									
16	0.0811	0.0891	0.0970	0.1049	0.1129	0.1208	0.1287	0.1367	0.1446	0.1525	0.1605	0.1684	0.1764	0.1843	0.1922							
17	0.0903	0.0993	0.1082	0.1172	0.1262	0.1351	0.1441	0.1530	0.1620	0.1710	0.1799	0.1889	0.1978	0.2068	0.2158							
18			0.1202	0.1302	0.1403	0.1503	0.1604	0.1704	0.1804	0.1905	0.2005	0.2106	0.2206	0.2307	0.2407							
19			0.1328	0.1440	0.1552	0.1664	0.1776	0.1888	0.1999	0.2111	0.2223	0.2335	0.2447	0.2559	0.2671							
20			0.1461	0.1585	0.1709	0.1833	0.1957	0.2081	0.2205	0.2329	0.2453	0.2577	0.2701	0.2825	0.2949							
21			0.1601	0.1738	0.1874	0.2011	0.2148	0.2284	0.2421	0.2558	0.2694	0.2831	0.2968	0.3105	0.3241							
22					0.2048	0.2198	0.2348	0.2498	0.2648	0.2798	0.2948	0.3098	0.3248	0.3398	0.3548							
23					0.2229	0.2393	0.2557	0.2721	0.2885	0.3049	0.3213	0.3377	0.3541	0.3705	0.3869							
24					0.2418	0.2597	0.2775	0.2954	0.3133	0.3311	0.3490	0.3668	0.3847	0.4025	0.4204							
25					0.2616	0.2810	0.3003	0.3197	0.3391	0.3585	0.3778	0.3972	0.4166	0.4360	0.4553	0.4747						
26					0.2821	0.3031	0.3240	0.3450	0.3660	0.3869	0.4079	0.4288	0.4498	0.4707	0.4917	0.5126						
27					0.303	0.326	0.348	0.371	0.393	0.416	0.439	0.461	0.484	0.506	0.529	0.552	*0.574*					

					5	1	7	3	9	5	1	7	3	9	5	1	*7*					
28					0.3257	0.3500	0.3743	0.3986	0.4229	0.4472	0.4715	0.4958	0.5201	0.5444	0.5687	0.5930	*0.6173*	*0.6416*				
29						0.3747	0.4008	0.4268	0.4529	0.4790	0.5050	0.5311	0.5572	0.5833	0.6093	0.6354	*0.6615*	*0.6875*				
30						0.4003	0.4282	0.4561	0.4840	0.5119	0.5398	0.5677	0.5956	0.6235	0.6514	0.6793	*0.7072*	*0.7351*				
31						0.4268	0.4566	0.4864	0.5161	0.5459	0.5757	0.6055	0.6353	0.6651	0.6949	0.7247	*0.7545*	*0.7843*	*0.8141*			
32								0.5176	0.5493	0.5811	0.6128	0.6446	0.6763	0.7081	0.7398	0.7716	*0.8033*	*0.8350*	*0.8668*	*0.8985*		
33								0.5498	0.5836	0.6174	0.6511	0.6849	0.7186	0.7524	0.7862	0.8199	*0.8537*	*0.8874*	*0.9212*	*0.9550*		
34								0.5831	0.6189	0.6547	0.6906	0.7264	0.7623	0.7981	0.8339	0.8698	*0.9056*	*0.9414*	*0.9773*	*1.0131*		
35									0.6553	0.6933	0.7312	0.7692	0.8072	0.8452	0.8831	0.9211	*0.9591*	*0.9971*	*1.0350*	*1.0730*	*1.1110*	*1.1490*
36									0.6927	0.7329	0.7730	0.8132	0.8534	0.8936	0.9337	0.9739	*1.0141*	*1.0543*	*1.0945*	*1.1346*	*1.1748*	*1.2150*
37									0.7312	0.7736	0.8160	0.8585	0.9009	0.9434	0.9858	1.0282	*1.0707*	*1.1131*	*1.1556*	*1.1980*	*1.2404*	*1.2829*
38									*0.7707*	*0.8155*	*0.8602*	*0.9050*	*0.9497*	*0.9945*	*1.0393*	*1.0840*	*1.1288*	*1.1736*	*1.2183*	*1.2631*	*1.3079*	*1.3526*
39									*0.8113*	*0.8584*	*0.9056*	*0.9527*	*0.9999*	*1.0470*	*1.0942*	*1.1413*	*1.1885*	*1.2356*	*1.2828*	*1.3299*	*1.3771*	*1.4242*
40									*0.8529*	*0.9025*	*0.9521*	*1.0017*	*1.0513*	*1.1009*	*1.1505*	*1.2001*	*1.2497*	*1.2993*	*1.3489*	*1.3985*	*1.4481*	*1.4977*
41									*0.8956*	*0.9477*	*0.9998*	*1.0519*	*1.1040*	*1.1561*	*1.2083*	*1.2604*	*1.3125*	*1.3646*	*1.4167*	*1.4688*	*1.5209*	*1.5730*
42									*0.9393*	*0.9940*	*1.0487*	*1.1034*	*1.1581*	*1.2127*	*1.2674*	*1.3221*	*1.3768*	*1.4315*	*1.4862*	*1.5409*	*1.5955*	*1.6502*
43									*0.9841*	*1.0414*	*1.0988*	*1.1561*	*1.2134*	*1.2707*	*1.3280*	*1.3854*	*1.4427*	*1.5000*	*1.5573*	*1.6146*	*1.6720*	*1.7293*
44									*1.0300*	*1.0900*	*1.1500*	*1.2100*	*1.2700*	*1.3301*	*1.3901*	*1.4501*	*1.5101*	*1.5701*	*1.6301*	*1.6901*	*1.7502*	*1.8102*
45									*1.0769*	*1.1397*	*1.2024*	*1.2652*	*1.3280*	*1.3908*	*1.4535*	*1.5163*	*1.5791*	*1.6419*	*1.7046*	*1.7674*	*1.8302*	*1.8930*
Itallic volume figures are outside the sample range																						

Annex 18: Details of selected volume models of *Tectona grandis*

Predictor variable: DBH in cm

Description	**Underbark stem volume (m^3)_timber**	**Overbark stem volume (m^3)_ timber**	**Underbark total stem volume (m3)**	**Overbark total stem volume (m3)**
Model	$V=a+b*DBH+c*DBH^2$	$V=a+b*DBH+c*DBH^2$	$V=a+b*DBH+c*DBH^2$	$V=a+b*DBH+c*DBH^2$
Predictor variable	DBH	DBH	DBH	DBH
Total no. of observations	41	41	49	49
No. of observations in selected models	38	36	46	46
No. of observations to validate the models	9	9	11	11
DBH range	16.0-59.5 cm	16.0-59.5 cm	6.4-59.2 cm	6.4-59.2 cm
Intercept (a)	0.0410	-0.1199	-0.0021	-0.0193
Regression constant (b)	-0.0098	0.00068	-0.0047	-0.0024
Regression constant (c)	0.00077	0.00073	0.00072	0.0008
Standard error	0.0918	0.0945	0.0863	0.1036
R^2 (%)	97.6	97.8	98.1	98.0
Prediction error (%)	0.4	4.6	3.8	2.8
Over/under estimation	under	under	under	under

Annex 19: Details of selected volume models of *Tectona grandis*

Predictor variables: DBH in cm and total height in m

Description	**Underbark stem volume (m^3)_timber**	**Overbark stem volume (m^3)_ timber**	**Underbark total stem volume (m3)**	**Overbark total stem volume (m3)**
Model	$V=a+b*DBH^2*height$	$V=a+b*DBH^2*height$	$V=a+b*DBH^2*height$	$V=a+b*DBH^2*height$
Predictor variables	DBH, height	DBH, height	DBH, height	DBH, height
Total no. of observations	41	41	49	49
No. of observations in selected models	38	38	45	45
No. of observations to validate the models	9	9	11	11
DBH range	16.0-59.5 cm	16.0-59.5 cm	6.4-59.2 cm	6.4-59.2 cm
Height ramge	10.5-25 m	10.5-25 m	4.6-24.8 m	4.6-24.9 m
Intercept (a)	0.0295	0.0647	0.0459	0.0773
Regression constant (b)	0.000025	0.000029	0.000026	0.000031
Standard error	0.0671	0.0799	0.0657	0.0805
R^2 (%)	98.7	98.6	98.9	98.7
Prediction error (%)	6.3	2.0	6.7	4.1
Over/underestimation	under	under	under	under

Annex 20: Volume tables of *Tecyona grandis* (Predictor variable: DBH)

DBH (cm)	Underbark stem volume (m^3)_timber	Overbark stem volume (m^3)_ timber	Underbark total stem volume (m^3)	Overbark total stem volume (m^3)
7			0.0003	0.0031
8			0.0064	0.0127
9			0.0139	0.0239
10			0.0229	0.0367
11			0.0333	0.0511
12	*0.0386*		0.0452	0.0671
13	*0.0488*	*0.0123*	0.0585	0.0847
14	*0.0606*	*0.0327*	0.0732	0.1039
15	*0.0740*	*0.0546*	0.0894	0.1247
16	0.0890	0.0779	0.1070	0.1471
17	0.1056	0.1026	0.1261	0.1711
18	0.1238	0.1289	0.1466	0.1967
19	0.1436	0.1566	0.1685	0.2239
20	0.1650	0.1857	0.1919	0.2527
21	0.1880	0.2163	0.2167	0.2831
22	0.2126	0.2484	0.2430	0.3151
23	0.2388	0.2819	0.2707	0.3487
24	0.2666	0.3169	0.2998	0.3839
25	0.2960	0.3534	0.3304	0.4207
26	0.3270	0.3913	0.3624	0.4591
27	0.3596	0.4306	0.3959	0.4991
28	0.3938	0.4715	0.4308	0.5407
29	0.4296	0.5138	0.4671	0.5839
30	0.4670	0.5575	0.5049	0.6287
31	0.5060	0.6027	0.5441	0.6751
32	0.5466	0.6494	0.5848	0.7231
33	0.5888	0.6975	0.6269	0.7727
34	0.6326	0.7471	0.6704	0.8239
35	0.6780	0.7982	0.7154	0.8767
36	0.7250	0.8507	0.7618	0.9311
37	0.7736	0.9046	0.8097	0.9871
38	0.8238	0.9601	0.8590	1.0447
39	0.8756	1.0170	0.9097	1.1039
40	0.9290	1.0753	0.9619	1.1647
41	0.9840	1.1351	1.0155	1.2271
42	1.0406	1.1964	1.0706	1.2911
43	1.0988	1.2591	1.1271	1.3567
44	1.1586	1.3233	1.1850	1.4239
45	1.2200	1.3890	1.2444	1.4927
46	1.2830	1.4561	1.3052	1.5631

47	1.3476	1.5246	1.3675	1.6351
48	1.4138	1.5947	1.4312	1.7087
49	1.4816	1.6662	1.4963	1.7839
50	1.5510	1.7391	1.5629	1.8607
51	1.6220	1.8135	1.6309	1.9391
52	1.6946	1.8894	1.7004	2.0191
53	1.7688	1.9667	1.7713	2.1007
54	1.8446	2.0455	1.8436	2.1839
55	1.9220	2.1258	1.9174	2.2687
56	2.0010	2.2075	1.9926	2.3551
57	2.0816	2.2906	2.0693	2.4431
58	2.1638	2.3753	2.1474	2.5327
59	2.2476	2.4614	2.2269	2.6239
60	2.3330	2.5489	*2.3079*	*2.7167*
61	*2.4200*	*2.6379*	*2.3903*	*2.8111*
62	*2.5086*	*2.7284*	*2.4742*	*2.9071*
63	*2.5988*	*2.8203*	*2.5595*	*3.0047*
64	*2.6906*	*2.9137*	*2.6462*	*3.1039*
65	*2.7840*	*3.0086*	*2.7344*	*3.2047*
Italic volume figures are outside the sample range				

Annex 21: Volume models of *Tectona grandis* (Predictor variable: DBH and height)

Underbark stem volume (m^3) for timber use (mean underbark top diameter: 16 cm)

	Height (m)																					
DBH (cm)	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
12	*0.0619*	*0.0655*	*0.0691*	0.0727	0.0763	0.0799	0.0835	0.0871	0.0907													
13	*0.0675*	*0.0718*	*0.0760*	0.0802	0.0844	0.0887	0.0929	0.0971	0.1013													
14	*0.0736*	*0.0785*	*0.0834*	0.0883	0.0932	0.0981	0.1030	0.1079	0.1128	0.1177												
15	*0.0801*	*0.0858*	*0.0914*	0.0970	0.1026	0.1083	0.1139	0.1195	0.1251	0.1308	0.1364											
16			0.0999	0.1063	0.1127	0.1191	0.1255	0.1319	0.1383	0.1447	0.1511											
17				0.1162	0.1234	0.1307	0.1379	0.1451	0.1523	0.1596	0.1668	0.1740										
18				0.1267	0.1348	0.1429	0.1510	0.1591	0.1672	0.1753	0.1834	0.1915										
19					0.1468	0.1559	0.1649	0.1739	0.1829	0.1920	0.2010	0.2100	0.2190	0.2281								
20						0.1695	0.1795	0.1895	0.1995	0.2095	0.2195	0.2295	0.2395	0.2495								
21						0.1839	0.1949	0.2059	0.2169	0.2280	0.2390	0.2500	0.2610	0.2721	0.2831							
22						0.1989	0.2110	0.2231	0.2352	0.2473	0.2594	0.2715	0.2836	0.2957	0.3078							
23						0.2147	0.2279	0.2411	0.2543	0.2676	0.2808	0.2940	0.3072	0.3205	0.3337							
24						0.2311	0.2455	0.2599	0.2743	0.2887	0.3031	0.3175	0.3319	0.3463	0.3607	0.3751						
25						0.2483	0.2639	0.2795	0.2951	0.3108	0.3264	0.3420	0.3576	0.3733	0.3889	0.4045						
26						0.2661	0.2830	0.2999	0.3168	0.3337	0.3506	0.3675	0.3844	0.4013	0.4182	0.4351	0.4520					
27						0.2847	0.3029	0.3211	0.3393	0.3576	0.3758	0.3940	0.4122	0.4305	0.4487	0.4669	0.4851	*0.5034*				
28						0.3039	0.3235	0.3431	0.3627	0.3823	0.4019	0.4215	0.4411	0.4607	0.4803	0.4999	0.5195	*0.5391*				
29						0.3239	0.3449	0.3659	0.3869	0.4080	0.4290	0.4500	0.4710	0.4921	0.5131	0.5341	0.5551	*0.5762*				

30						0.3445	0.3670	0.3895	0.4120	0.4345	0.4570	0.4795	0.5020	0.5245	0.5470	0.5695	0.5920	*0.6145*				
31						0.3659	0.3899	0.4139	0.4379	0.4620	0.4860	0.5100	0.5340	0.5581	0.5821	0.6061	0.6301	*0.6542*	*0.6782*			
32						0.3879	0.4135	0.4391	0.4647	0.4903	0.5159	0.5415	0.5671	0.5927	0.6183	0.6439	0.6695	*0.6951*	*0.7207*	*0.7463*		
33						0.4107	0.4379	0.4651	0.4923	0.5196	0.5468	0.5740	0.6012	0.6285	0.6557	0.6829	0.7101	*0.7374*	*0.7646*	*0.7918*	*0.8190*	
34						0.4341	0.4630	0.4919	0.5208	0.5497	0.5786	0.6075	0.6364	0.6653	0.6942	0.7231	0.7520	*0.7809*	*0.8098*	*0.8387*	*0.8676*	
35								0.5195	0.5501	0.5808	0.6114	0.6420	0.6726	0.7033	0.7339	0.7645	0.7951	*0.8258*	*0.8564*	*0.8870*	*0.9176*	
36								0.5479	0.5803	0.6127	0.6451	0.6775	0.7099	0.7423	0.7747	0.8071	0.8395	*0.8719*	*0.9043*	*0.9367*	*0.9691*	*1.0015*
37								0.5771	0.6113	0.6456	0.6798	0.7140	0.7482	0.7825	0.8167	0.8509	0.8851	*0.9194*	*0.9536*	*0.9878*	*1.0220*	*1.0563*
38								0.6071	0.6432	0.6793	0.7154	0.7515	0.7876	0.8237	0.8598	0.8959	0.9320	*0.9681*	*1.0042*	*1.0403*	*1.0764*	*1.1125*
39								0.6379	0.6759	0.7140	0.7520	0.7900	0.8280	0.8661	0.9041	0.9421	0.9801	*1.0182*	*1.0562*	*1.0942*	*1.1322*	*1.1703*
40								0.6695	0.7095	0.7495	0.7895	0.8295	0.8695	0.9095	0.9495	0.9895	1.0295	*1.0695*	*1.1095*	*1.1495*	*1.1895*	*1.2295*
41										0.7860	0.8280	0.8700	0.9120	0.9541	0.9961	1.0381	1.0801	*1.1222*	*1.1642*	*1.2062*	*1.2482*	*1.2903*
42										0.8233	0.8674	0.9115	0.9556	0.9997	1.0438	1.0879	1.1320	*1.1761*	*1.2202*	*1.2643*	*1.3084*	*1.3525*
43											0.9078	0.9540	1.0002	1.0465	1.0927	1.1389	1.1851	*1.2314*	*1.2776*	*1.3238*	*1.3700*	*1.4163*
44											0.9491	0.9975	1.0459	1.0943	1.1427	1.1911	1.2395	*1.2879*	*1.3363*	*1.3847*	*1.4331*	*1.4815*
45											0.9914	1.0420	1.0926	1.1433	1.1939	1.2445	1.2951	*1.3458*	*1.3964*	*1.4470*	*1.4976*	*1.5483*
46											1.0346	1.0875	1.1404	1.1933	1.2462	1.2991	1.3520	*1.4049*	*1.4578*	*1.5107*	*1.5636*	*1.6165*
47											1.0788	1.1340	1.1892	1.2445	1.2997	1.3549	1.4101	*1.4654*	*1.5206*	*1.5758*	*1.6310*	*1.6863*
48											1.1239	1.1815	1.2391	1.2967	1.3543	1.4119	1.4695	*1.5271*	*1.5847*	*1.6423*	*1.6999*	*1.7575*
49											1.1700	1.2300	1.2900	1.3501	1.4101	1.4701	1.5301	*1.5902*	*1.6502*	*1.7102*	*1.7702*	*1.8303*
50											1.2170	1.2795	1.3420	1.4045	1.4670	1.5295	1.5920	*1.6545*	*1.7170*	*1.7795*	*1.8420*	*1.9045*
51											1.2650	1.3300	1.3950	1.4601	1.5251	1.5901	1.6551	*1.7202*	*1.7852*	*1.8502*	*1.9152*	*1.9803*

52											1.31 39	1.38 15	1.44 91	1.51 67	1.58 43	1.65 19	1.71 95	*1.78 71*	*1.85 47*	*1.92 23*	*1.98 99*	*2.05 75*
53											1.36 38	1.43 40	1.50 42	1.57 45	1.64 47	1.71 49	1.78 51	*1.85 54*	*1.92 56*	*1.99 58*	*2.06 60*	*2.13 63*
54											1.41 46	1.48 75	1.56 04	1.63 33	1.70 62	1.77 91	1.85 20	*1.92 49*	*1.99 78*	*2.07 07*	*2.14 36*	*2.21 65*
55											1.46 64	1.54 20	1.61 76	1.69 33	1.76 89	1.84 45	1.92 01	*1.99 58*	*2.07 14*	*2.14 70*	*2.22 26*	*2.29 83*
56											1.51 91	1.59 75	1.67 59	1.75 43	1.83 27	1.91 11	1.98 95	*2.06 79*	*2.14 63*	*2.22 47*	*2.30 31*	*2.38 15*
57											1.57 28	1.65 40	1.73 52	1.81 65	1.89 77	1.97 89	2.06 01	*2.14 14*	*2.22 26*	*2.30 38*	*2.38 50*	*2.46 63*
58											1.62 74	1.71 15	1.79 56	1.87 97	1.96 38	2.04 79	2.13 20	*2.21 61*	*2.30 02*	*2.38 43*	*2.46 84*	*2.55 25*
59											1.68 30	1.77 00	1.85 70	1.94 41	2.03 11	2.11 81	2.20 51	*2.29 22*	*2.37 92*	*2.46 62*	*2.55 32*	*2.64 03*
60											1.73 95	1.82 95	1.91 95	2.00 95	2.09 95	2.18 95	2.27 95	*2.36 95*	*2.45 95*	*2.54 95*	*2.63 95*	*2.72 95*
61												*1.89 00*	*1.98 30*	*2.07 61*	*2.16 91*	*2.26 21*	*2.35 51*	*2.44 82*	*2.54 12*	*2.63 42*	*2.72 72*	*2.82 03*
62												*1.95 15*	*2.04 76*	*2.14 37*	*2.23 98*	*2.33 59*	*2.43 20*	*2.52 81*	*2.62 42*	*2.72 03*	*2.81 64*	*2.91 25*
63												*2.01 40*	*2.11 32*	*2.21 25*	*2.31 17*	*2.41 09*	*2.51 01*	*2.60 94*	*2.70 86*	*2.80 78*	*2.90 70*	*3.00 63*
64												*2.07 75*	*2.17 99*	*2.28 23*	*2.38 47*	*2.48 71*	*2.58 95*	*2.69 19*	*2.79 43*	*2.89 67*	*2.99 91*	*3.10 15*
65												*2.14 20*	*2.24 76*	*2.35 33*	*2.45 89*	*2.56 45*	*2.67 01*	*2.77 58*	*2.88 14*	*2.98 70*	*3.09 26*	*3.19 83*

Italic volume figures are outside the sample range

Overbark stem volume (m^3) for timber use (mean overbark top diameter: 18 cm), *Tectona grandis* (Teak)

	Height (m)																					
DBH (cm)	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
12	*0.1023*	*0.1065*	0.1106	0.1148	0.1190	0.1232	0.1273	0.1315	0.1357													
13	*0.0652*	*0.1137*	0.1186	0.1235	0.1284	0.1333	0.1382	0.1431	0.1480													
14	*0.0651*	*0.1215*	0.1272	0.1329	0.1386	0.1443	0.1500	0.1556	0.1613	0.1670												
15	*0.0651*	*0.1300*	0.1365	0.1430	0.1495	0.1561	0.1626	0.1691	0.1756	0.1822	0.1887											
16			*0.1464*	0.1538	0.1612	0.1686	0.1761	0.1835	0.1909	0.1983	0.2058											
17				0.1653	0.1737	0.1820	0.1904	0.1988	0.2072	0.2156	0.2239	0.2323										
18				0.1775	0.1868	0.1962	0.2056	0.2150	0.2244	0.2338	0.2432	0.2526										
19					0.2008	0.2113	0.2217	0.2322	0.2427	0.2531	0.2636	0.2741	0.2845	0.2950								
20						0.2271	0.2387	0.2503	0.2619	0.2735	0.2851	0.2967	0.3083	0.3199								
21						0.2437	0.2565	0.2693	0.2821	0.2949	0.3077	0.3205	0.3333	0.3461	0.3588							
22						0.2612	0.2752	0.2893	0.3033	0.3173	0.3314	0.3454	0.3595	0.3735	0.3875							
23						0.2795	0.2948	0.3102	0.3255	0.3408	0.3562	0.3715	0.3869	0.4022	0.4175							
24						0.2986	0.3153	0.3320	0.3487	0.3654	0.3821	0.3988	0.4155	0.4322	0.4489	0.4656						
25						0.3185	0.3366	0.3547	0.3728	0.3910	0.4091	0.4272	0.4453	0.4635	0.4816	0.4997						
26						0.3392	0.3588	0.3784	0.3980	0.4176	0.4372	0.4568	0.4764	0.4960	0.5156	0.5352	0.5548					
27						0.3607	0.3818	0.4030	0.4241	0.4452	0.4664	0.4875	0.5087	0.5298	0.5509	0.5721	0.5932	*0.6144*				
28						0.3830	0.4057	0.4285	0.4512	0.4739	0.4967	0.5194	0.5422	0.5649	0.5876	0.6104	0.6331	*0.6558*				
29						0.40	0.43	0.45	0.47	0.50	0.52	0.55	0.57	0.60	0.62	0.65	0.67	*0.69*				

						61	05	49	93	37	81	25	69	13	56	00	44	*88*				
30						0.43 01	0.45 62	0.48 23	0.50 84	0.53 45	0.56 06	0.58 67	0.61 28	0.63 89	0.66 50	0.69 11	0.71 72	*0.74 33*				
31						0.45 49	0.48 27	0.51 06	0.53 85	0.56 63	0.59 42	0.62 21	0.64 99	0.67 78	0.70 57	0.73 36	0.76 14	*0.78 93*	*0.81 72*			
32						0.48 04	0.51 01	0.53 98	0.56 95	0.59 92	0.62 89	0.65 86	0.68 83	0.71 80	0.74 77	0.77 74	0.80 71	*0.83 68*	*0.86 65*	*0.89 62*		
33						0.50 68	0.53 84	0.57 00	0.60 16	0.63 32	0.66 47	0.69 63	0.72 79	0.75 95	0.79 11	0.82 26	0.85 42	*0.88 58*	*0.91 74*	*0.94 90*	*0.98 05*	
34						0.53 40	0.56 76	0.60 11	0.63 46	0.66 81	0.70 17	0.73 52	0.76 87	0.80 22	0.83 58	0.86 93	0.90 28	*0.93 63*	*0.96 98*	*1.00 34*	*1.03 69*	
35								0.63 31	0.66 86	0.70 42	0.73 97	0.77 52	0.81 07	0.84 63	0.88 18	0.91 73	0.95 28	*0.98 84*	*1.02 39*	*1.05 94*	*1.09 49*	
36								0.66 60	0.70 36	0.74 12	0.77 88	0.81 64	0.85 40	0.89 15	0.92 91	0.96 67	1.00 43	*1.04 19*	*1.07 95*	*1.11 71*	*1.15 46*	*1.19 22*
37								0.69 99	0.73 96	0.77 93	0.81 90	0.85 87	0.89 84	0.93 81	0.97 78	1.01 75	1.05 72	*1.09 69*	*1.13 66*	*1.17 63*	*1.21 60*	*1.25 57*
38								0.73 47	0.77 66	0.81 85	0.86 03	0.90 22	0.94 41	0.98 60	1.02 78	1.06 97	1.11 16	*1.15 35*	*1.19 54*	*1.23 72*	*1.27 91*	*1.32 10*
39								0.77 04	0.81 46	0.85 87	0.90 28	0.94 69	0.99 10	1.03 51	1.07 92	1.12 33	1.16 74	*1.21 15*	*1.25 56*	*1.29 98*	*1.34 39*	*1.38 80*
40								0.80 71	0.85 35	0.89 99	0.94 63	0.99 27	1.03 91	1.08 55	1.13 19	1.17 83	1.22 47	*1.27 11*	*1.31 75*	*1.36 39*	*1.41 03*	*1.45 67*
41										0.94 22	0.99 09	1.03 97	1.08 84	1.13 72	1.18 59	1.23 47	1.28 34	*1.33 22*	*1.38 09*	*1.42 97*	*1.47 84*	*1.52 72*
42										0.98 55	1.03 67	1.08 78	1.13 90	1.19 01	1.24 13	1.29 24	1.34 36	*1.39 48*	*1.44 59*	*1.49 71*	*1.54 82*	*1.59 94*
43											1.08 35	1.13 71	1.19 07	1.24 44	1.29 80	1.35 16	1.40 52	*1.45 88*	*1.51 25*	*1.56 61*	*1.61 97*	*1.67 33*
44											1.13 14	1.18 76	1.24 37	1.29 99	1.35 60	1.41 22	1.46 83	*1.52 44*	*1.58 06*	*1.63 67*	*1.69 29*	*1.74 90*
45											1.18 05	1.23 92	1.29 79	1.35 67	1.41 54	1.47 41	1.53 28	*1.59 16*	*1.65 03*	*1.70 90*	*1.76 77*	*1.82 65*
46											1.23 06	1.29 20	1.35 33	1.41 47	1.47 61	1.53 74	1.59 88	*1.66 02*	*1.72 15*	*1.78 29*	*1.84 43*	*1.90 56*
47											1.28 19	1.34 59	1.41 00	1.47 40	1.53 81	1.60 22	1.66 62	*1.73 03*	*1.79 43*	*1.85 84*	*1.92 25*	*1.98 65*
48											1.33 42	1.40 10	1.46 78	1.53 47	1.60 15	1.66 83	1.73 51	*1.80 19*	*1.86 87*	*1.93 55*	*2.00 24*	*2.06 92*
49											1.38 77	1.45 73	1.52 69	1.59 65	1.66 62	1.73 58	1.80 54	*1.87 51*	*1.94 47*	*2.01 43*	*2.08 39*	*2.15 36*
50											1.44 22	1.51 47	1.58 72	1.65 97	1.73 22	1.80 47	1.87 72	*1.94 97*	*2.02 22*	*2.09 47*	*2.16 72*	*2.23 97*

51											1.49 79	1.57 33	1.64 87	1.72 41	1.79 96	1.87 50	1.95 04	*2.02 59*	*2.10 13*	*2.17 67*	*2.25 21*	*2.32 76*
52											1.55 46	1.63 30	1.71 14	1.78 99	1.86 83	1.94 67	2.02 51	*2.10 35*	*2.18 19*	*2.26 03*	*2.33 88*	*2.41 72*
53											1.61 25	1.69 39	1.77 54	1.85 68	1.93 83	2.01 98	2.10 12	*2.18 27*	*2.26 41*	*2.34 56*	*2.42 71*	*2.50 85*
54											1.67 14	1.75 60	1.84 05	1.92 51	2.00 97	2.09 42	2.17 88	*2.26 34*	*2.34 79*	*2.43 25*	*2.51 71*	*2.60 16*
55											1.73 15	1.81 92	1.90 69	1.99 47	2.08 24	2.17 01	2.25 78	*2.34 56*	*2.43 33*	*2.52 10*	*2.60 87*	*2.69 65*
56											1.79 26	1.88 36	1.97 45	2.06 55	2.15 64	2.24 74	2.33 83	*2.42 92*	*2.52 02*	*2.61 11*	*2.70 21*	*2.79 30*
57											1.85 49	1.94 91	2.04 33	2.13 76	2.23 18	2.32 60	2.42 02	*2.51 44*	*2.60 87*	*2.70 29*	*2.79 71*	*2.89 13*
58											1.91 83	2.01 58	2.11 34	2.21 09	2.30 85	2.40 60	2.50 36	*2.60 12*	*2.69 87*	*2.79 63*	*2.89 38*	*2.99 14*
59											1.98 27	2.08 37	2.18 46	2.28 56	2.38 65	2.48 75	2.58 84	*2.68 94*	*2.79 03*	*2.89 13*	*2.99 22*	*3.09 32*
60											2.04 83	2.15 27	2.25 71	2.36 15	2.46 59	2.57 03	2.67 47	*2.77 91*	*2.88 35*	*2.98 79*	*3.09 23*	*3.19 67*
61												*2.22 29*	*2.33 08*	*2.43 87*	*2.54 66*	*2.65 45*	*2.76 24*	*2.87 03*	*2.97 82*	*3.08 62*	*3.19 41*	*3.30 20*
62												*2.29 42*	*2.40 57*	*2.51 72*	*2.62 86*	*2.74 01*	*2.85 16*	*2.96 31*	*3.07 46*	*3.18 60*	*3.29 75*	*3.40 90*
63												*2.36 67*	*2.48 18*	*2.59 69*	*2.71 20*	*2.82 71*	*2.94 22*	*3.05 73*	*3.17 24*	*3.28 75*	*3.40 26*	*3.51 77*
64												*2.44 04*	*2.55 92*	*2.67 79*	*2.79 67*	*2.91 55*	*3.03 43*	*3.15 31*	*3.27 19*	*3.39 07*	*3.50 94*	*3.62 82*
65												*2.51 52*	*2.63 77*	*2.76 03*	*2.88 28*	*3.00 53*	*3.12 78*	*3.25 04*	*3.37 29*	*3.49 54*	*3.61 79*	*3.74 05*

Italic volume figures are outside the sample range

Underbark total stem volume (m^3) (mean underbark top diameter: 8 cm), *Tectona grandis* (Teak))

DBH (cm)	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
7	0.0523	0.05535	0.0548	0.0561	0.0574																					
8		0.05559	0.0575	0.0592	0.0609	0.0625	0.0642																			
9		0.05585	0.0606	0.0627	0.0649	0.0670	0.0691	0.0712																		
10			0.0641	0.0667	0.0693	0.0719	0.0745	0.0771	0.0797	0.0823																
11				0.0711	0.0742	0.0774	0.0805	0.0837	0.0868	0.0899	0.0931	0.0962														
12					0.0796	0.0833	0.0871	0.0908	0.0946	0.0983	0.1021	0.1058	0.1095													
13					0.0854	0.0898	0.0942	0.0986	0.1030	0.1074	0.1118	0.1162	0.1206													
14					0.0918	0.0969	0.1020	0.1071	0.1121	0.1172	0.1223	0.1274	0.1325	0.1376												
15					0.0986	0.1044	0.1103	0.1161	0.1220	0.1278	0.1337	0.1395	0.1454	0.1512	0.1571											
16							0.1191	0.1258	0.1324	0.1391	0.1457	0.1524	0.1591	0.1657	0.1724											
17								0.1361	0.1436	0.1511	0.1586	0.1661	0.1736	0.1812	0.1887	0.1962										
18								0.1470	0.1554	0.1638	0.1723	0.1807	0.1891	0.1975	0.2060	0.2144										
19									0.1679	0.1773	0.1867	0.1961	0.2055	0.2148	0.2242	0.2336	0.2430	0.2524								

20										0.191 5	0.201 9	0.212 3	0.222 7	0.233 1	0.243 5	0.253 9	0.264 3	0.274 7								
21										0.206 4	0.217 9	0.229 4	0.240 8	0.252 3	0.263 8	0.275 2	0.286 7	0.298 2	0.309 6								
22										0.222 1	0.234 7	0.247 2	0.259 8	0.272 4	0.285 0	0.297 6	0.310 2	0.322 7	0.335 3								
23										0.238 5	0.252 2	0.266 0	0.279 7	0.293 5	0.307 2	0.321 0	0.334 7	0.348 5	0.362 2								
24										0.255 6	0.270 5	0.285 5	0.300 5	0.315 5	0.330 4	0.345 4	0.360 4	0.375 4	0.390 3	0.405 3							
25										0.273 4	0.289 7	0.305 9	0.322 2	0.338 4	0.354 7	0.370 9	0.387 2	0.403 4	0.419 7	0.435 9							
26										0.292 0	0.309 5	0.327 1	0.344 7	0.362 3	0.379 8	0.397 4	0.415 0	0.432 6	0.450 1	0.467 7	0.485 3						
27										0.311 3	0.330 2	0.349 2	0.368 1	0.387 1	0.406 0	0.425 0	0.443 9	0.462 9	0.481 8	0.500 8	0.519 8	*0.538 7*					
28										0.331 3	0.351 7	0.372 0	0.392 4	0.412 8	0.433 2	0.453 6	0.474 0	0.494 3	0.514 7	0.535 1	0.555 5	*0.575 9*					
29										0.352 0	0.373 9	0.395 8	0.417 6	0.439 5	0.461 4	0.483 2	0.505 1	0.527 0	0.548 8	0.570 7	0.592 6	*0.614 4*					
30										0.373 5	0.396 9	0.420 3	0.443 7	0.467 1	0.490 5	0.513 9	0.537 3	0.560 7	0.584 1	0.607 5	0.630 9	*0.654 3*					
31										0.395 7	0.420 7	0.445 7	0.470 7	0.495 6	0.520 6	0.545 6	0.570 6	0.595 6	0.620 6	0.645 6	0.670 6	*0.695 5*	*0.720 5*				
32										0.418 6	0.445 3	0.471 9	0.498 5	0.525 1	0.551 8	0.578 4	0.605 0	0.631 6	0.658 3	0.684 9	0.711 5	*0.738 1*	*0.764 7*	*0.791 4*			
33										0.442 3	0.470 6	0.498 9	0.527 2	0.555 6	0.583 9	0.612 2	0.640 5	0.668 8	0.697 1	0.725 4	0.753 8	*0.782 1*	*0.810 4*	*0.838 7*	*0.867 0*		
34										0.466	0.496	0.526	0.556	0.586	0.617	0.647	0.677	0.707	0.737	0.767	0.797	*0.827*	*0.857*	*0.887*	*0.917*		

										7	7	8	9	9	0	0	1	1	2	2	3	*4*	*4*	*5*	*5*	
35												0.555	0.587	0.619	0.651	0.682	0.714	0.746	0.778	0.810	0.842	*0.874*	*0.905*	*0.937*	*0.969*	
36												0.585	0.618	0.652	0.686	0.719	0.753	0.787	0.820	0.854	0.888	*0.922*	*0.955*	*0.989*	*1.023*	*1.056*
37												0.615	0.651	0.686	0.722	0.757	0.793	0.829	0.864	0.900	0.935	*0.971*	*1.006*	*1.042*	*1.078*	*1.113*
38												0.646	0.684	0.721	0.759	0.796	0.834	0.871	0.909	0.947	0.984	*1.022*	*1.059*	*1.097*	*1.134*	*1.172*
39												0.678	0.718	0.757	0.797	0.836	0.876	0.915	0.955	0.995	1.034	*1.074*	*1.113*	*1.153*	*1.192*	*1.232*
40												0.711	0.753	0.794	0.836	0.877	0.919	0.961	1.002	1.044	1.085	*1.127*	*1.169*	*1.210*	*1.252*	*1.293*
41														0.832	0.876	0.920	0.963	1.007	1.051	1.094	1.138	*1.182*	*1.226*	*1.269*	*1.313*	*1.357*
42														0.871	0.917	0.963	1.009	1.054	1.100	1.146	1.192	*1.238*	*1.284*	*1.330*	*1.376*	*1.421*
43															0.959	1.007	1.055	1.103	1.151	1.199	1.247	*1.295*	*1.343*	*1.392*	*1.440*	*1.488*
44															1.002	1.052	1.103	1.153	1.203	1.254	1.304	*1.354*	*1.405*	*1.455*	*1.505*	*1.560*
45															1.046	1.098	1.151	1.204	1.256	1.309	1.362	*1.414*	*1.467*	*1.520*	*1.572*	*1.625*
46															1.091	1.146	1.201	1.256	1.311	1.366	1.421	*1.476*	*1.531*	*1.586*	*1.641*	*1.696*
47															1.137	1.194	1.252	1.309	1.366	1.424	1.481	*1.539*	*1.596*	*1.654*	*1.711*	*1.768*
48															1.184	1.244	1.303	1.363	1.423	1.483	1.543	*1.603*	*1.663*	*1.723*	*1.783*	*1.843*

49															1.232	1.2944	1.3568	1.4193	1.4817	1.5441	1.6066	*1.6690*	*1.7314*	*1.7938*	*1.8563*	*1.9187*
50															1.2809	1.3459	1.4109	1.4759	1.5409	1.6059	1.6709	*1.7359*	*1.8009*	*1.8659*	*1.9309*	*1.9959*
51															1.3308	1.3984	1.4660	1.5337	1.6013	1.6689	1.7366	*1.8042*	*1.8718*	*1.9394*	*2.0071*	*2.0747*
52															1.3817	1.4520	1.5223	1.5926	1.6629	1.7332	1.8035	*1.8738*	*1.9441*	*2.0144*	*2.0847*	*2.1550*
53															1.4335	1.5066	1.5796	1.6526	1.7257	1.7987	1.8718	*1.9448*	*2.0178*	*2.0909*	*2.1639*	*2.2369*
54															1.4864	1.5622	1.6380	1.7139	1.7897	1.8655	1.9413	*2.0171*	*2.0929*	*2.1687*	*2.2446*	*2.3204*
55															1.5403	1.6189	1.6976	1.7762	1.8549	1.9335	2.0122	*2.0908*	*2.1695*	*2.2481*	*2.3268*	*2.4054*
56															1.5951	1.6766	1.7582	1.8397	1.9212	2.0028	2.0843	*2.1658*	*2.2474*	*2.3289*	*2.4104*	*2.4920*
57															1.6509	1.7354	1.8199	1.9043	1.9888	2.0733	2.1578	*2.2422*	*2.3267*	*2.4112*	*2.4956*	*2.5801*
58															1.7077	1.7952	1.8826	1.9701	2.0576	2.1450	2.2325	*2.3200*	*2.4074*	*2.4949*	*2.5824*	*2.6698*
59															1.7655	1.8560	1.9465	2.0370	2.1275	2.2180	2.3086	*2.3991*	*2.4896*	*2.5801*	*2.6706*	*2.7611*
60															1.8243	1.9179	2.0115	2.1051	2.1987	2.2923	2.3859	*2.4795*	*2.5731*	*2.6667*	*2.7603*	*2.8539*
61																*1.9808*	*2.0776*	*2.1743*	*2.2711*	*2.3678*	*2.4646*	*2.5613*	*2.6580*	*2.7548*	*2.8515*	*2.9483*
62																*2.0448*	*2.1447*	*2.2447*	*2.3446*	*2.4446*	*2.5445*	*2.6444*	*2.7444*	*2.8443*	*2.9443*	*3.0442*
63																*2.1109*	*2.2213*	*2.3316*	*2.4419*	*2.5522*	*2.6625*	*2.7728*	*2.8832*	*2.9935*	*3.0038*	*3.1141*

																8	*0*	*2*	*4*	*6*	*8*	*9*	*1*	*3*	*5*	*7*
64																*2.175 8*	*2.282 3*	*2.388 8*	*2.495 3*	*2.601 8*	*2.708 3*	*2.814 8*	*2.921 3*	*3.027 8*	*3.134 3*	*3.240 8*
65																*2.242 9*	*2.352 8*	*2.462 6*	*2.572 5*	*2.682 3*	*2.792 2*	*2.902 0*	*3.011 9*	*3.121 7*	*3.231 6*	*3.341 4*
	Italic volume figures are outside the sample range																									

Overbark total stem volume (m^3) (mean overbark top diameter: 9 cm), *Tectona grandis* (Teak)

	Height (m)																								
DBH (cm)	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
7	0.0849	0.0864	0.0879	0.0895	0.0910																					
8		0.0892	0.0912	0.0932	0.0952	0.0971	0.0991																			
9		0.0924	0.0949	0.0974	0.0999	0.1024	0.1049	0.1074																		
10			0.0990	0.1021	0.1052	0.1083	0.1114	0.1145	0.1176	0.1207																
11				0.1073	0.1111	0.1148	0.1186	0.1223	0.1261	0.1298	0.1336	0.1373														
12					0.1175	0.1219	0.1264	0.1309	0.1353	0.1398	0.1443	0.1487	0.1532													
13					0.1245	0.1297	0.1349	0.1402	0.1454	0.1506	0.1559	0.1611	0.1664													
14					0.1320	0.1381	0.1441	0.1502	0.1563	0.1624	0.1684	0.1745	0.1806	0.1867												
15					0.1401	0.1471	0.1540	0.1610	0.1680	0.1750	0.1819	0.1889	0.1959	0.2029	0.2098											
16							0.1646	0.1725	0.1805	0.1884	0.1963	0.2043	0.2122	0.2201	0.2281											
17								0.1848	0.1938	0.2027	0.2117	0.2206	0.2296	0.2386	0.2475	0.2565										
18								0.1978	0.2079	0.2179	0.2280	0.2380	0.2480	0.2581	0.2681	0.2782										
19									0.2228	0.2340	0.2452	0.2564	0.2675	0.2787	0.2899	0.3011	0.3123	0.3235								
20										0.2509	0.2633	0.2757	0.2881	0.3005	0.3129	0.3253	0.3377	0.3501								
21										0.2687	0.2824	0.2960	0.3097	0.3234	0.3370	0.3507	0.3644	0.3781	0.3917							
22										0.2874	0.3024	0.3174	0.3324	0.3474	0.3624	0.3774	0.3924	0.4074	0.4224							
23										0.3069	0.3233	0.3397	0.3561	0.3725	0.3889	0.4053	0.4217	0.4381	0.4545							

24										0.3273	0.3451	0.3630	0.3809	0.3987	0.4166	0.4344	0.4523	0.4701	0.4880	0.5058						
25										0.3486	0.3679	0.3873	0.4067	0.4261	0.4454	0.4648	0.4842	0.5036	0.5229	0.5423						
26										0.3707	0.3916	0.4126	0.4336	0.4545	0.4755	0.4964	0.5174	0.5383	0.5593	0.5802	0.6012					
27										0.3937	0.4163	0.4389	0.4615	0.4841	0.5067	0.5293	0.5519	0.5745	0.5971	0.6197	0.6423	*0.6649*				
28										0.4176	0.4419	0.4662	0.4905	0.5148	0.5391	0.5634	0.5877	0.6120	0.6363	0.6606	0.6849	*0.7092*				
29										0.4423	0.4684	0.4944	0.5205	0.5466	0.5726	0.5987	0.6248	0.6509	0.6769	0.7030	0.7291	*0.7551*				
30										0.4679	0.4958	0.5237	0.5516	0.5795	0.6074	0.6353	0.6632	0.6911	0.7190	0.7469	0.7748	*0.8027*				
31										0.4944	0.5242	0.5540	0.5837	0.6135	0.6433	0.6731	0.7029	0.7327	0.7625	0.7923	0.8221	*0.8519*	*0.8817*			
32										0.5217	0.5535	0.5852	0.6169	0.6487	0.6804	0.7122	0.7439	0.7757	0.8074	0.8392	0.8709	*0.9026*	*0.9344*	*0.9661*		
33										0.5499	0.5837	0.6174	0.6512	0.6850	0.7187	0.7525	0.7862	0.8200	0.8538	0.8875	0.9213	*0.9550*	*0.9888*	*1.0226*	*1.0563*	
34										0.5790	0.6148	0.6507	0.6865	0.7223	0.7582	0.7940	0.8299	0.8657	0.9015	0.9374	0.9732	*1.0090*	*1.0449*	*1.0807*	*1.1165*	
35												0.6849	0.7229	0.7609	0.7988	0.8368	0.8748	0.9128	0.9507	0.9887	1.0267	*1.0647*	*1.1026*	*1.1406*	*1.1786*	
36												0.7201	0.7603	0.8005	0.8406	0.8808	0.9210	0.9612	1.0013	1.0415	1.0817	*1.1219*	*1.1621*	*1.2022*	*1.2424*	*1.2826*
37												0.7563	0.7988	0.8412	0.8836	0.9261	0.9685	1.0110	1.0534	1.0958	1.1383	*1.1807*	*1.2232*	*1.2656*	*1.3080*	*1.3505*
38												0.7935	0.8383	0.8831	0.9278	0.9726	1.0173	1.0621	1.1069	1.1516	1.1964	*1.2412*	*1.2859*	*1.3307*	*1.3755*	*1.4202*
39												0.8317	0.8789	0.9260	0.9732	1.0203	1.0675	1.1146	1.1618	1.2089	1.2561	*1.3032*	*1.3504*	*1.3975*	*1.4447*	*1.4918*
40												0.8709	0.9205	0.9701	1.0197	1.0693	1.1189	1.1685	1.2181	1.2677	1.3173	*1.3669*	*1.4165*	*1.4661*	*1.5157*	*1.5653*
41														1.0153	1.0674	1.1195	1.1716	1.2237	1.2759	1.3280	1.3801	*1.4322*	*1.4843*	*1.5364*	*1.5885*	*1.6406*
42														1.0616	1.1163	1.1710	1.2257	1.2803	1.3350	1.3897	1.4444	*1.4991*	*1.5538*	*1.6085*	*1.6631*	*1.7178*
43															1.1664	1.2237	1.2810	1.3383	1.3956	1.4530	1.5103	*1.5676*	*1.6249*	*1.6822*	*1.7396*	*1.7969*
44															1.2176	1.2776	1.3376	1.3977	1.4577	1.5177	1.5777	*1.6377*	*1.6977*	*1.7577*	*1.8178*	*1.8778*
45															1.2700	1.3328	1.3956	1.4584	1.5211	1.5839	1.6467	*1.7095*	*1.7722*	*1.8350*	*1.8978*	*1.9606*

46															1.3236	1.3892	1.4548	1.5204	1.5860	1.6516	1.7172	*1.7828*	*1.8484*	*1.9140*	*1.9796*	*2.0452*
47															1.3784	1.4469	1.5154	1.5838	1.6523	1.7208	1.7893	*1.8578*	*1.9262*	*1.9947*	*2.0632*	*2.1317*
48															1.4344	1.5058	1.5772	1.6486	1.7201	1.7915	1.8629	*1.9343*	*2.0057*	*2.0772*	*2.1486*	*2.2200*
49															1.4915	1.5659	1.6404	1.7148	1.7892	1.8636	1.9381	*2.0125*	*2.0869*	*2.1614*	*2.2358*	*2.3102*
50															1.5498	1.6273	1.7048	1.7823	1.8598	1.9373	2.0148	*2.0923*	*2.1698*	*2.2473*	*2.3248*	*2.4023*
51															1.6093	1.6899	1.7706	1.8512	1.9318	2.0124	2.0931	*2.1737*	*2.2543*	*2.3350*	*2.4156*	*2.4962*
52															1.6700	1.7538	1.8376	1.9214	2.0053	2.0891	2.1729	*2.2567*	*2.3405*	*2.4244*	*2.5082*	*2.5920*
53															1.7318	1.8189	1.9060	1.9930	2.0801	2.1672	2.2543	*2.3414*	*2.4284*	*2.5155*	*2.6026*	*2.6897*
54															1.7948	1.8852	1.9756	2.0660	2.1564	2.2468	2.3372	*2.4276*	*2.5180*	*2.6084*	*2.6988*	*2.7892*
55															1.8590	1.9528	2.0466	2.1404	2.2341	2.3279	2.4217	*2.5155*	*2.6092*	*2.7030*	*2.7968*	*2.8906*
56															1.9244	2.0216	2.1188	2.2161	2.3133	2.4105	2.5077	*2.6049*	*2.7021*	*2.7993*	*2.8966*	*2.9938*
57															1.9910	2.0917	2.1924	2.2931	2.3938	2.4946	2.5953	*2.6960*	*2.7967*	*2.8974*	*2.9982*	*3.0989*
58															2.0587	2.1630	2.2673	2.3715	2.4758	2.5801	2.6844	*2.7887*	*2.8930*	*2.9973*	*3.1015*	*3.2058*
59															2.1276	2.2355	2.3434	2.4513	2.5593	2.6672	2.7751	*2.8830*	*2.9909*	*3.0988*	*3.2067*	*3.3146*
60															2.1977	2.3093	2.4209	2.5325	2.6441	2.7557	2.8673	*2.9789*	*3.0905*	*3.2021*	*3.3137*	*3.4253*
61																*2.3843*	*2.4997*	*2.6150*	*2.7304*	*2.8457*	*2.9611*	*3.0764*	*3.1918*	*3.3071*	*3.4225*	*3.5378*
62																*2.4606*	*2.5797*	*2.6989*	*2.8181*	*2.9372*	*3.0564*	*3.1756*	*3.2947*	*3.4139*	*3.5331*	*3.6522*
63																*2.5381*	*2.6611*	*2.7842*	*2.9072*	*3.0302*	*3.1533*	*3.2763*	*3.3994*	*3.5224*	*3.6454*	*3.7685*
64																*2.6168*	*2.7438*	*2.8708*	*2.9977*	*3.1247*	*3.2517*	*3.3787*	*3.5057*	*3.6326*	*3.7596*	*3.8866*
65																*2.6968*	*2.8278*	*2.9588*	*3.0897*	*3.2207*	*3.3517*	*3.4827*	*3.6136*	*3.7446*	*3.8756*	*4.0066*

Italic volume figures are outside the sample range

ANNEX 22: Mean dbh, number of poles and trees per hectare of different species in SFDP

S.N.	Division	Region	Block	Plot	Age (year)	Latin namee	Coppice plot and frequency	Mean DBH (cm)	No. of poles/ha	No. of trees/ha	No. of Poles & trees/ha
1	Sagarnath	Sagarnath	1	C	36	*Tectona grandis*		38.4	50	150	200
2	Sagarnath	Sagarnath	2	A	11	*Eucalyptus* sp.		32.3		100	
3	Sagarnath	Sagarnath	3	A	20	*Eucalyptus* sp.		31.0	100	70	170
4	Sagarnath	Sagarnath	3	B	10	*Eucalyptus* sp.		32.8		120	
5	Sagarnath	Sagarnath	3	D	34	*Eucalyptus* sp.	1	21.3	400		
6	Sagarnath	Sagarnath	4	D	24	*Tectona grandis*		29.4	50	90	140
7	Sagarnath	Sagarnath	5	B	10	*Eucalyptus* sp.		22.0	400		
8	Sagarnath	Sagarnath	5	C	11	*Eucalyptus* sp.		17.1	450		
			5	C		*Shorea robusta*		34.0		10	
9	Sagarnath	Sagarnath	6	C	4	*Tectona grandis*	1	12.3	550		
10	Sagarnath	Sagarnath	7	A	34	*Eucalyptus* sp.		30.6	100	60	160
11	Sagarnath	Sagarnath	7	C	34	*Tectona grandis*		33.3	400	90	490
12	Sagarnath	Sagarnath	8	A	34	*Shorea robusta*		31.0	50	40	90
			8	A		Mis. (bajhi, harro)		31.2		20	
13	Sagarnath	Sagarnath	9	B	33	*Eucalyptus* sp.		17.2	450		
14	Sagarnath	Sagarnath	10	B	33	*Shorea robusta*		28.1	450	60	510
15	Sagarnath	Sagarnath	11	A	33	*Shorea robusta*		29.1	100	110	210
	Sagarnath	Sagarnath	11	A		*Bombax ceiba*		46.4		10	
16	Sagarnath	Sagarnath	14	A	32	*Tectona grandis*	1	28.8	400	80	480
17	Sagarnath	Sagarnath	17	A	32	*Shorea robusta*		27.4	550	50	600
18	Sagarnath	Sagarnath	17	D	32	*Shorea robusta*		26.5	700	30	730
19	Sagarnath	Sagarnath	18	A	32	*Shorea robusta*		28.2	700	40	740
20	Sagarnath	Sagarnath	18	B	32	*Shorea robusta*		31.5	200	80	280
21	Sagarnath	Sagarnath	21	A	32	*Shorea robusta*		28.0	450	60	510
22	Sagarnath	Sagarnath	21	C	32	*Acacia catechu*		37.3		40	
23	Sagarnath	Sagarnath	22	B	31	*Shorea robusta*		31.8	200	60	260

S.N.	Division	Region	Block	Plot	Age (year)	Latin namee	Coppice plot and frequency	Mean DBH (cm)	No. of poles/ha	No. of trees/ha	No. of Poles & trees/ha
24	Sagarnath	Sagarnath	22	C	31	*Shorea robusta*		34.0	300	60	360
25	Sagarnath	Sagarnath	23	A	31	*Shorea robusta*		28.3	450	70	520
26	Sagarnath	Sagarnath	23	B	31	*Shorea robusta*		30.1	350	90	440
27	Sagarnath	Sagarnath	23	C	31	*Shorea robusta*		34.3	350	80	430
28	Sagarnath	Sagarnath	23	D	31	*Shorea robusta*		30.1	500	80	580
29	Sagarnath	Bhaktipur	6	C	9	*Eucalyptus* sp.		21.9	500		
30	Sagarnath	Bhaktipur	9	C	5	*Eucalyptus* sp.		15.9	700		
31	Sagarnath	Bhaktipur	11	C	4	*Eucalyptus* sp.		15.1	350		
32	Sagarnath	Bhaktipur	11	D	9	*Eucalyptus* sp.		25.6	200	10	210
33	Sagarnath	Bhaktipur	12	C	6	*Eucalyptus* sp.		15.4	200		
34	Sagarnath	Bhaktipur	13	C	16	*Tectona grandis*		26.4	350	80	430
35	Sagarnath	Bhaktipur	14	A	8	*Eucalyptus* sp.		23.5	550		
36	Sagarnath	Bhaktipur	14	C	6	*Eucalyptus* sp.		21.5	400	10	410
37	Sagarnath	Bhaktipur	14	D	7	*Eucalyptus* sp.		25.2	60	50	110
38	Sagarnath	Bhaktipur	15	A	7	*Eucalyptus* sp.		16.6	600		
39	Sagarnath	Bhaktipur	15	B	7	*Eucalyptus* sp.		17.6	700		
40	Sagarnath	Bhaktipur	15	C	5	*Eucalyptus* sp.		19.2	150		
41	Sagarnath	Bhaktipur	15	D	6	*Eucalyptus* sp.		13.5	400		
42	Sagarnath	Bhaktipur	17	C	5	*Eucalyptus* sp.		18.7	850		
43	Sagarnath	Bhaktipur	18	A	6	*Eucalyptus* sp.		18.6	550		
44	Sagarnath	Bhaktipur	18	C	7	*Eucalyptus* sp.		12.9	400		
45	Sagarnath	Bhaktipur	18	D	16	*Tectona grandis*		28.2	400	10	410
46	Sagarnath	Bhaktipur	19	B	3	*Eucalyptus* sp.		13.3	200		
47	Sagarnath	Bhaktipur	21	A	11	*Eucalyptus* sp.		20.1	450		
48	Sagarnath	Bhaktipur	21	B	11	*Eucalyptus* sp.		21.8	500		
49	Sagarnath	Bhaktipur	21	D	11	*Eucalyptus* sp.		20.4	400		

S.N.	Division	Region	Block	Plot	Age (year)	Latin namee	Coppice plot and frequency	Mean DBH (cm)	No. of poles/ha	No. of trees/ha	No. of Poles & trees/ha
50	Sagarnath	Bhaktipur	24	D	8	*Eucalyptus* sp.		23.6	350		
			24	D	18	*Tectona grandis*		28.3	50	10	60
51	Sagarnath	Parwanipur	1	C	17	*Dalbergia sissoo*		28.7	400	80	480
52	Sagarnath	Parwanipur	1	D	17	*Dalbergia sissoo*		25.7	650	80	730
53	Sagarnath	Phuljor	2	C	29	*Eucalyptus* sp.		27.0	250	40	290
54	Sagarnath	Phuljor	3	A	29	*Eucalyptus* sp.		26.8	200	30	230
55	Sagarnath	Phuljor	3	C		*Eucalyptus* sp.		15.0	400		
						Eucalyptus sp.					
56	Hatilet	Laximiniya	1	C	3	*Eucalyptus* sp.		10.7	400		
57	Hatilet	Laximiniya	5	B	7	*Eucalyptus* sp.		20.2	400		
			5	B		*Terminalia alata*		52.8		30	
			5	B		Mis. Tatari, harro)		30.9		20	
58	Hatilet	Laximiniya	5	C	7	*Eucalyptus* sp.		19.5	200		
59	Hatilet	Laximiniya	6	B	30	*Shorea robusta*		23.4	400	10	410
60	Hatilet	Laximiniya	6	D	7	*Eucalyptus* sp.		20.4	350		
61	Hatilet	Laximiniya	7	A	30	*Shorea robusta*		21.7	400	20	420
62	Hatilet	Laximiniya	7	B	30	*Shorea robusta*		22.1	200		
			7	B		*Terminalia alata*		36.1		20	
63	Hatilet	Laximiniya	7	C	30	*Shorea robusta*		21.7	450		
64	Hatilet	Laximiniya	7	D	30	*Shorea robusta*		18.9	350		
65	Hatilet	Laximiniya	8	B		Mis. (tatari, kalikath, harro)		17.1	250		
66	Hatilet	Laximiniya	8	C	22	*Shorea robusta*		17.9	300		
			8	C		*Terminalia alata*		17.2	100		
			8	C		Mis. (kalikath, harro, bajhi)		21.0	200		

S.N.	Division	Region	Block	Plot	Age (year)	Latin namee	Coppice plot and frequency	Mean DBH (cm)	No. of poles/ha	No. of trees/ha	No. of Poles & trees/ha
67	Hatilet	Laximiniya	9	A	4	*Eucalyptus* sp.	1	13.8	250		
68	Hatilet	Laximiniya	10	A	20	*Acacia catechu*		15.4	200		
	Hatilet		10	A							
69	Hatilet	Laximiniya	11	C	25	*Shorea robusta*		27.6	150	20	170
			11	C		*Bombax ceiba*		21.7	50		
			11	C		Mis. (khasriya)		38.0		20	
70	Hatilet	Laximiniya	13	A	8	*Eucalyptus* sp.		18.6	400		
71	Hatilet	Laximiniya	13	C	8	*Eucalyptus* sp.		21.0	450		
72	Hatilet	Laximiniya	13	D	8	*Eucalyptus* sp.		21.2	250		
73	Hatilet	Laximinya	14	C	4	*Acacia catechu*		12.1	200		
74	Hatilet	Laximiniya	15	A	20	*Tectona grandis*		23.5	400		
			15	A	22	*Shorea robusta*		12.3	100		
75	Hatilet	Laximiniya	16	A	20	*Tectona grandis*		21.0	300	20	320
			16	A	10	*Eucalyptus* sp.		40.2		10	
			16	A		*Shorea robusta*		32.5		100	
76	Hatilet	Laximinya	18	B	20	*Acacia catechu*		24.6	150	20	170
	Hatilet										
77	Hatilet	Hatilet	2	A	7	*Eucalyptus* sp.		21.3	200		
78	Hatilet	Hatilet	2	B	7	*Eucalyptus* sp.		13.2	150		
79	Hatilet	Hatilet	3	C	9	*Eucalyptus* sp.		26.7	200	10	210
80	Hatilet	Hatilet	3	D	9	*Eucalyptus* sp.		22.2	200		
81	Hatilet	Hatilet	4	A	31	*Eucalyptus* sp.		41.1		70	
82	Hatilet	Hatilet	4	B	6	*Eucalyptus* sp.	3	15.1	150		
83	Hatilet	Hatilet	4	C	6	*Eucalyptus* sp.	3	15.3	150		
84	Hatilet	Hatilet	4	D	6	*Dalbergia sissoo*		14.2	200		
85	Hatilet	Hatilet	5	B		*Eucalyptus* sp.		15.7	200		
86	Hatilet	Hatilet	5	D	4	*Tectona grandis*	2	12.4	400		

S.N.	Division	Region	Block	Plot	Age (year)	Latin namee	Coppice plot and frequency	Mean DBH (cm)	No. of poles/ha	No. of trees/ha	No. of Poles & trees/ha
			5	D	20	*Acacia catechu*		27.6	150	20	170
			5	D	8	*Eucalyptus* sp.		22.8	150		
87	Hatilet	Hatilet	6	C	10	*Eucalyptus* sp.		21.9	500		
88	Hatilet	Hatilet	7	C	4	*Eucalyptus* sp.		13.4	100		
89	Hatilet	Hatilet	7	D	7	*Eucalyptus* sp.		21.3	250		
90	Hatilet	Hatilet	8	A	30	*Shorea robusta*		32.4	200	70	270
91	Hatilet	Hatilet	8	B	25	*Shorea robusta*		25.4	350		
92	Hatilet	Hatilet	9	A	25	*Shorea robusta*		26.6	200	10	210
			9	A		*Acacia catechu*		21.5	50		
93	Hatilet	Hatilet	9	B	26	*Shorea robusta*		30.5	100	30	130
94	Hatilet	Hatilet	10	A	24	*Shorea robusta*	1	20.5	200		
	Hatilet	Hatilet	10	A	24	*Bombax ceiba*		22.3	100		
95	Hatilet	Hatilet	10	D	10	*Eucalyptus* sp.		22.0	200		
96	Hatilet	Hatilet	11	B	7	*Eucalyptus* sp.		22.4	150		
			11	B	7	*Tectona grandis*		11.6	300		
97	Hatilet	Hatilet	11	C	6	*Eucalyptus* sp.	3	17.4	500		
98	Hatilet	Hatilet	11	D	4	*Dalbergia sissoo*		15.8	300		
99	Hatilet	Hatilet	13	A		*Shorea robusta*		26.0	350		
	Hatilet	Hatilet	13	A		Mis. (siris)		52.4		20	
100	Hatilet	Hatilet	13	C	27	*Shorea robusta*		23.7	300		
			13	C	19	*Eucalyptus* sp.		36.6		10	
101	Hatilet	Hatilet	13	D	27	*Shorea robusta*		27.7	100	10	110
			13	D	9	*Eucalyptus* sp.		29.1	50	10	60
102	Hatilet	Hatilet	14	B	6	*Eucalyptus* sp.	1	17.0	400		
103	Hatilet	Hatilet	14	D	27	*Shorea robusta*		23.2	550	20	570
			14	D		Mis. (seto siris)		36.6		10	
			14	D		*Eucalyptus* sp.		22.9	50		

S.N.	Division	Region	Block	Plot	Age (year)	Latin namee	Coppice plot and frequency	Mean DBH (cm)	No. of poles/ha	No. of trees/ha	No. of Poles & trees/ha
104	Hatilet	Hatilet	15	A	10	*Eucalyptus* sp.	1	25.3	200	20	220
			15	A		*Acacia catechu*		39.8		10	
105	Hatilet	Hatilet	15	B	5	*Eucalyptus* sp.	2	16.0	300		
106	Hatilet	Hatilet	15	C	5	*Eucalyptus* sp.	2	17.5	350		
107	Hatilet	Hatilet	19	B	17	*Acacia catechu*		14.1	100		
108	Hatilet	Hatilet	20	A		Mis. (odal, sunpat)		10.6	150		
			20	A		*Acacia catechu*		10.2	100		
			20	A	30	*Shorea robusta*		32.0		20	
109	Hatilet	Hatilet	20	D	30	*Shorea robusta*		15.9	150		
			20	D		*Bombax ceiba*		49.0		10	
			20	D		*Eucalyptus* sp.		32.1		10	
110	Hatilet	Hatilet	21	A	31	*Shorea robusta*		26.4	50	10	60
		Hatilet	21	A	8	*Eucalyptus* sp.		20.1	100		
111	Hatilet	Hatilet	21	B	31	*Shorea robusta*		31.8		20	
112	Hatilet	Hatilet	21	C	28	*Shorea robusta*		17.8	200		
			21	C	23	*Acacia catechu*		37.2	50	50	100
113	Hatilet	Hatilet	21	D	23	*Shorea robusta*		34.4	50	50	100
114	Hatilet	Hatilet	21	D	25	*Eucalyptus* sp.		22.3	100		
			21	D	23	*Acacia catechu*		31.5		20	
115	Hatilet	Hatilet	22	A	9	*Eucalyptus* sp.	1	18.1	100		
			22	A	25	*Shorea robusta*		36.3		20	
116	Hatilet	Hatilet	22	D	25	*Shorea robusta*		25.0	200	20	220
117	Hatilet	Kusmari	9	C	25	*Acacia catechu*		12.6	250		
		Kusmari	10	A		*Shorea robusta*	1	19.1	50		
			10	A	20	*Eucalyptus* sp.		29.1	150	10	160
118	Hatilet	Kusmari	11	D	26	*Eucalyptus* sp.		31.6	200	60	260

S.N.	Division	Region	Block	Plot	Age (year)	Latin namee	Coppice plot and frequency	Mean DBH (cm)	No. of poles/ha	No. of trees/ha	No. of Poles & trees/ha
119	Hatilet	Kusmari	12	A	6	*Eucalyptus* sp.		12.6	200		
120	Hatilet	Kusmari	12	B	6	*Eucalyptus* sp.		15.5	150		
121	Hatilet	Kusmari	13	A	6	*Eucalyptus* sp.		12.7	200		
122	Hatilet	Kusmari	13	B	4	*Eucalyptus* sp.	2	10.8	100		
123	Hatilet	Kusmari	13	C	4	*Eucalyptus* sp.	2	10.7	200		
124	Hatilet	Kusmari	15	A	27	*Shorea robusta*		16.5	400		
125	Hatilet	Kusmari	15	B	27	*Shorea robusta*		14.8	400		
			15	B	27	*Terminalia alata*		35.0		10	
126	Hatilet	Kusmari	15	C	27	*Shorea robusta*		14.2	350		
127	Hatilet	Kusmari	15	D	30	*Shorea robusta*		21.4	300		
128	Hatilet	Kusmari	16	A	15	*Tectona grandis*		25.6	300		
129	Hatilet	Kusmari	18	A	25	*Acacia catechu*		24.1	300	10	310
130	Hatilet	Kusmari	19	A	25	*Shorea robusta*		26.4	300	30	330
131	Hatilet	Kusmari	19	B	25	*Shorea robusta*		22.2	300		
132	Hatilet	Kusmari	20	A	12	*Eucalyptus* sp.	1	13.6	250		
		Kusmari	20	A	26	*Shorea robusta*		22.3	300	10	310
133	Hatilet	Kusmari	20	B	28	*Shorea robusta*		32.2	100	30	130
		Kusmari	20	B		*Eucalyptus* sp.	1	18.5	50		
134	Hatilet	Kusmari	20	C	25	*Shorea robusta*		29.4	150	20	170
			20	C	20	Mis. (bijayasal)		15.9	200		
			20	C		*Eucalyptus* sp.		10.8	50		
135	Hatilet	Kusmari	20	D	25	*Shorea robusta*		18.1	250		
			20	D	20	*Eucalyptus* sp.	1	26.0	150		

ANNEX 23: Basal area (mean and per unit area) of pole and tree of different species in SFDP

SN	Division	Region	Block	Plot	Age (year)	Latin name	Mean BA (m^2), pole	Mean BA (m^2), tree	BA (m^2/ha), pole	BA (m^2/ha), tree	Total BA (m^2/ha), pole & tree
1	Sagarnath	Sagarnath	1	C	36	*Tectona grandis*	0.0491	0.1232	2.5	18.5	21.0
2	Sagarnath	Sagarnath	2	A	11	*Eucalyptus* sp.		0.0822		8.2	
3	Sagarnath	Sagarnath	3	A	20	*Eucalyptus* sp.	0.0489	0.0848	4.9	5.9	10.8
4	Sagarnath	Sagarnath	3	B	10	*Eucalyptus* sp.		0.0848		10.2	
5	Sagarnath	Sagarnath	3	D	14	*Eucalyptus* sp.	0.0366		14.6		
6	Sagarnath	Sagarnath	4	D	24	*Tectona grandis*	0.0092	0.0782	0.5	7.0	7.5
7	Sagarnath	Sagarnath	5	B	10	*Eucalyptus* sp.	0.0388		15.5		
8	Sagarnath	Sagarnath	5	C	11	*Eucalyptus* sp.	0.0231		10.4		
	Sagarnath	Sagarnath	5	C		*Shorea robusta*		0.0908		0.9	
9	Sagarnath	Sagarnath	6	C	4	*Tectona grandis*	0.0120		6.6		
10	Sagarnath	Sagarnath	7	A	34	*Eucalyptus* sp.	0.0594	0.0783	5.9	4.7	10.6
11	Sagarnath	Sagarnath	7	C	34	*Tectona grandis*	0.0518	0.1276	20.7	11.5	32.2
12	Sagarnath	Sagarnath	8	A	34	*Shorea robusta*	0.0451	0.1077	2.3	4.3	6.6
	Sagarnath	Sagarnath	8	A		Miscellaneous (bajhi, harro)		0.0765		1.5	
13	Sagarnath	Sagarnath	9	B	33	*Eucalyptus* sp.	0.0234		10.5		
14	Sagarnath	Sagarnath	10	B	33	*Shorea robusta*	0.0453	0.0941	20.4	5.6	26.0
15	Sagarnath	Sagarnath	11	A	33	*Shorea robusta*	0.0204	0.0781	2.0	8.6	10.6
	Sagarnath	Sagarnath	11	A		*Bombax ceiba*		0.1692		1.7	
16	Sagarnath	Sagarnath	14	A	32	*Tectona grandis*	0.0473	0.0864	18.9	6.9	25.8
17	Sagarnath	Sagarnath	17	A	32	*Shorea robusta*	0.0477	0.0904	26.2	4.5	30.7
18	Sagarnath	Sagarnath	17	D	32	*Shorea robusta*	0.0462	0.1162	32.3	3.5	35.8

19	Sagarnath	Sagarnath	18	A	32	*Shorea robusta*	0.0552	0.0925	38.6	3.7	42.3
20	Sagarnath	Sagarnath	18	B	32	*Shorea robusta*	0.0632	0.0864	12.6	6.9	19.5
21	Sagarnath	Sagarnath	21	A	32	*Shorea robusta*	0.0466	0.0884	21.0	5.3	26.3
22	Sagarnath	Sagarnath	21	C	32	*Acacia catechu*		0.1099		4.4	
23	Sagarnath	Sagarnath	22	B	31	*Shorea robusta*	0.0617	0.0932	12.3	5.6	17.9
24	Sagarnath	Sagarnath	22	C	31	*Shorea robusta*	0.0455	0.1587	13.6	9.5	23.2
25	Sagarnath	Sagarnath	23	A	31	*Shorea robusta*	0.0458	0.0907	20.6	6.4	27.0
26	Sagarnath	Sagarnath	23	B	31	*Shorea robusta*	0.0387	0.1048	13.5	9.4	23.0
27	Sagarnath	Sagarnath	23	C	31	*Shorea robusta*	0.0409	0.1565	14.3	12.5	26.8
28	Sagarnath	Sagarnath	23	D	31	*Shorea robusta*	0.0465	0.1123	23.2	9.0	32.2
29	Sagarnath	Bhaktipur	6	C	9	*Eucalyptus* sp.	0.0382		19.1		
30	Sagarnath	Bhaktipur	9	C	5	*Eucalyptus* sp.	0.0204		14.3		
31	Sagarnath	Bhaktipur	11	C	4	*Eucalyptus* sp.	0.0184		6.4		
32	Sagarnath	Bhaktipur	11	D	9	*Eucalyptus* sp.	0.0471	0.0707	9.4	0.7	10.1
33	Sagarnath	Bhaktipur	12	C	5	*Eucalyptus* sp.	0.0186		3.7		
34	Sagarnath	Bhaktipur	13	C	16	*Tectona grandis*	0.0296	0.0859	10.4	6.9	17.2
35	Sagarnath	Bhaktipur	14	A	8	*Eucalyptus* sp.	0.0440		24.2		
36	Sagarnath	Bhaktipur	14	C	6	*Eucalyptus* sp.	0.0333	0.0866	13.3	0.9	14.2
37	Sagarnath	Bhaktipur	14	D	7	*Eucalyptus* sp.	0.0253	0.0905	1.5	4.5	6.0
38	Sagarnath	Bhaktipur	15	A	7	*Eucalyptus* sp.	0.0231		13.9		
39	Sagarnath	Bhaktipur	15	B	7	*Eucalyptus* sp.	0.0256		17.9		
40	Sagarnath	Bhaktipur	15	C	5	*Eucalyptus* sp.	0.0289		4.3		
41	Sagarnath	Bhaktipur	15	D	6	*Eucalyptus* sp.	0.0148		5.9		
42	Sagarnath	Bhaktipur	17	C	5	*Eucalyptus* sp.	0.0281		23.9		
43	Sagarnath	Bhaktipur	18	A	6	*Eucalyptus* sp.	0.0275		15.1		
44	Sagarnath	Bhaktipur	18	C	7	*Eucalyptus* sp.	0.0132		5.3		
45	Sagarnath	Bhaktipur	18	D	16	*Tectona grandis*	0.0614	0.0741	24.6	0.7	25.3
46	Sagarnath	Bhaktipur	19	B	3	*Eucalyptus* sp.	0.0138		2.8		
47	Sagarnath	Bhaktipur	21	A	11	*Eucalyptus* sp.	0.0317		14.3		

48	Sagarnath	Bhaktipur	21	B	11	*Eucalyptus* sp.	0.0375		18.8		
49	Sagarnath	Bhaktipur	21	D	11	*Eucalyptus* sp.	0.0329		13.2		
50	Sagarnath	Bhaktipur	24	D	8	*Eucalyptus* sp.	0.0444		15.5		
	Sagarnath	Bhaktipur	24	D	18	*Tectona grandis*	0.0503	0.0765	2.5	0.8	3.3
51	Sagarnath	Sagarnath-Parwanipur	1	C		*Dalbergia sissoo*	0.0490	0.0832	19.6	6.7	26.2
52	Sagarnath	Sagarnath-Parwanipur	1	D		*Dalbergia sissoo*	0.0353	0.0861	23.0	6.9	29.9
53	Sagarnath	Sagarnath-Phuljor	2	C	29	*Eucalyptus* sp.	0.0442	0.0768	11.0	3.1	14.1
54	Sagarnath	Sagarnath-Phuljor	3	A	29	*Eucalyptus* sp.	0.0430	0.0781	8.6	2.3	10.9
55	Sagarnath	Phuljor	3	C		*Eucalyptus* sp.	0.0198		7.9		
56	Hatilet	Lakshminiya	1	C	3	*Eucalyptus* sp.	0.0090		3.6		
57	Hatilet	Lakshminiya	5	B	7	*Eucalyptus* sp.	0.0332		13.3		
	Hatilet	Lakshminiya	5	B		*Terminalia alata*		0.2480		7.4	
	Hatilet	Lakshminiya	5	B		Miscellaneous (Tatari, harro)		0.0751		1.5	
58	Hatilet	Lakshminiya	5	C	7	*Eucalyptus* sp.	0.0300		6.0		
59	Hatilet	Lakshminiya	6	B	30	*Shorea robusta*	0.0407	0.0731	16.3	0.7	17.0
60	Hatilet	Lakshminiya	6	D	7	*Eucalyptus* sp.	0.0338		11.8		
61	Hatilet	Lakshminiya	7	A	30	*Shorea robusta*	0.0303	0.0875	12.1	1.8	13.9
62	Hatilet	Lakshminiya	7	B	30	*Shorea robusta*	0.0391		7.8		
	Hatilet	Lakshminiya	7	B		*Terminalia alata*		0.1024		2.0	
63	Hatilet	Lakshminiya	7	C	30	*Shorea robusta*	0.0390		17.6		
64	Hatilet	Lakshminiya	7	D	30	*Shorea robusta*	0.0310		10.8		
65	Hatilet	Lakshminiya	8	B		Miscellaneous (tatari, kalikath,	0.0236		5.9		

						harro)					
66	Hatilet	Lakshminiya	8	C	22	*Shorea robusta*	0.0256		7.7		
	Hatilet	Lakshminiya	8	C		*Terminalia alata*	0.0245		2.5		
	Hatilet	Lakshminiya	8	C		Miscellaneous (kalikath, harro, bajhi)	0.0366		7.3		
67	Hatilet	Lakshminiya	9	A	4	*Eucalyptus* sp.	0.0153		3.8		
68	Hatilet	Lakshminiya	10	A	20	*Acacia catechu*	0.0206		4.1		
	Hatilet	Lakshminiya	10	A	27	*Shorea robusta*	0.0592		11.8		
69	Hatilet	Lakshminiya	11	C	25	*Shorea robusta*	0.0435	0.0947	6.5	1.9	8.4
	Hatilet	Lakshminiya	11	C		*Bombax ceiba*	0.0370		1.8		
	Hatilet	Lakshminiya	11	C		Miscellaneous (khasriya)		0.1158		2.3	
70	Hatilet	Lakshminiya	13	A	8	*Eucalyptus* sp.	0.0276		11.0		
71	Hatilet	Lakshminiya	13	C	8	*Eucalyptus* sp.	0.0361		16.2		
72	Hatilet	Lakshminiya	13	D	8	*Eucalyptus* sp.	0.0370		9.3		
73	Hatilet	Lakshminiya	14	C		*Acacia catechu*	0.0117		2.3		
74	Hatilet	Lakshminiya	15	A	20	*Tectona grandis*	0.0445		17.8		
	Hatilet	Lakshminiya	15	A	22	*Shorea robusta*	0.0119		1.2		
75	Hatilet	Lakshminiya	16	A	20	*Tectona grandis*	0.0257	0.0810	7.7	1.6	9.3
	Hatilet	Lakshminiya	16	A	10	*Eucalyptus* sp.		0.1270		1.3	
	Hatilet	Lakshminiya	16	A		*Shorea robusta*		0.0830		8.3	
76	Hatilet	Lakshminiya	18	B	20	*Acacia catechu*	0.0288	0.0911	4.3	1.1	5.4
77	Hatilet	Hatilet	2	A	7	*Eucalyptus* sp.	0.0359		7.2		
78	Hatilet	Hatilet	2	B	7	*Eucalyptus* sp.	0.0140		2.1		
79	Hatilet	Hatilet	3	C	9	*Eucalyptus* sp.	0.0516	0.0765	10.3	0.8	11.1
80	Hatilet	Hatilet	3	D	9	*Eucalyptus* sp.	0.0393		7.9		
81	Hatilet	Hatilet	4	A	31	*Eucalyptus* sp.		0.1339		9.4	
82	Hatilet	Hatilet	4	B	6	*Eucalyptus* sp.	0.0178		2.7		
83	Hatilet	Hatilet	4	C	6	*Eucalyptus* sp.	0.0185		2.8		

84	Hatilet	Hatilet	4	D		*Dalbergia sissoo*	0.0160		3.2		
85	Hatilet	Hatilet	5	B		*Eucalyptus* sp.	0.0196		3.9		
86	Hatilet	Hatilet	5	D	4	*Tectona grandis*	0.0123		4.9		
	Hatilet	Hatilet	5	D	20	*Acacia catechu*	0.0482	0.0607	7.2	1.2	8.4
	Hatilet	Hatilet	5	D	8	*Eucalyptus* sp.	0.0411		6.2		
87	Hatilet	Hatilet	6	C	10	*Eucalyptus* sp.	0.0399		20.0		
88	Hatilet	Hatilet	7	C	4	*Eucalyptus* sp.	0.0140		1.4		
89	Hatilet	Hatilet	7	D	7	*Eucalyptus* sp.	0.0362		9.1		
90	Hatilet	Hatilet	8	A	30	*Shorea robusta*	0.0541	0.1040	10.8	7.3	18.1
91	Hatilet	Hatilet	8	B	25	*Shorea robusta*	0.0517		18.1		
92	Hatilet	Hatilet	9	A	25	*Shorea robusta*	0.0511	0.0770	10.2	0.8	11.0
	Hatilet	Hatilet	9	A		*Acacia catechu*	0.0363		1.8		
93	Hatilet	Hatilet	9	B	26	*Shorea robusta*	0.0538	0.0882	5.4	2.6	8.0
94	Hatilet	Hatilet	10	A	24	*Shorea robusta*	0.0329		6.6		
	Hatilet	Hatilet	10	A	24	*Bombax ceiba*	0.0391		3.9		
95	Hatilet	Hatilet	10	D	10	*Eucalyptus* sp.	0.0387		7.7		
96	Hatilet	Hatilet	11	B	7	*Eucalyptus* sp.	0.0401		6.0		
	Hatilet	Hatilet	11	B	7	*Tectona grandis*	0.0108		3.2		
97	Hatilet	Hatilet	11	C	6	*Eucalyptus* sp.	0.0246		12.3		
98	Hatilet	Hatilet	11	D		*Dalbergia sissoo*	0.0202		6.1		
99	Hatilet	Hatilet	13	A		*Shorea robusta*	0.0536		18.8		
	Hatilet	Hatilet	13	A		Miscellaneous (siris)		0.2157		4.3	
100	Hatilet	Hatilet	13	C	27	*Shorea robusta*	0.0446		13.4		
	Hatilet	Hatilet	13	C	19	*Eucalyptus* sp.		0.1071		1.1	
101	Hatilet	Hatilet	13	D	27	*Shorea robusta*	0.0529	0.0765	5.3	0.8	6.1
	Hatilet	Hatilet	13	D	9	*Eucalyptus* sp.	0.0169	0.1495	0.8	1.5	2.3
102	Hatilet	Hatilet	14	B	6	*Eucalyptus* sp.	0.0236		9.5		
103	Hatilet	Hatilet	14	D	27	*Shorea robusta*	0.0405	0.0742	22.3	1.5	23.7

	Hatilet	Hatilet	14	D		Miscellaneous (seto siris)		0.1053		1.1	
	Hatilet	Hatilet	14	D		*Eucalyptus* sp.	0.0413		2.1		
104	Hatilet	Hatilet	15	A	10	*Eucalyptus* sp.	0.0385	0.0960	7.7	1.9	9.6
	Hatilet	Hatilet	15	A		*Acacia catechu*		0.1244		1.2	
105	Hatilet	Hatilet	15	B	5	*Eucalyptus* sp.	0.0209		6.3		
106	Hatilet	Hatilet	15	C	5	*Eucalyptus* sp.	0.0250		8.8		
107	Hatilet	Hatilet	19	B	17	*Acacia catechu*	0.0166		1.7		
108	Hatilet	Hatilet	20	A		Miscellaneous (odal, sunpat)	0.0088		1.3		
	Hatilet	Hatilet	20	A		*Acacia catechu*	0.0082		0.8		
	Hatilet	Hatilet	20	A	30	*Shorea robusta*		0.0805		1.6	
109	Hatilet	Hatilet	20	D	30	*Shorea robusta*	0.0207		3.1		
	Hatilet	Hatilet	20	D		*Bombax ceiba*		0.1887		1.9	
	Hatilet	Hatilet	20	D	7	*Eucalyptus* sp.		0.0810		0.8	
110	Hatilet	Hatilet	21	A	31	*Shorea robusta*	0.0224	0.1017	1.1	1.0	2.1
	Hatilet	Hatilet	21	A	8	*Eucalyptus* sp.	0.0316		3.2		
111	Hatilet	Hatilet	21	B	31	*Shorea robusta*		0.0796		1.6	
112	Hatilet	Hatilet	21	C	28	*Shorea robusta*	0.0251		5.0		
	Hatilet	Hatilet	21	C	23	*Acacia catechu*	0.0460	0.1276	2.3	6.4	8.7
113	Hatilet	Hatilet	21	D	23	*Shorea robusta*	0.0645	0.0998	3.2	5.0	8.2
	Hatilet	Hatilet	21	D	25	*Eucalyptus* sp.	0.0390		3.9		
	Hatilet	Hatilet	21	D	23	*Acacia catechu*		0.0781		1.6	
114	Hatilet	Hatilet	22	A	9	*Eucalyptus* sp.	0.0264		2.6		
	Hatilet	Hatilet	22	A	25	*Shorea robusta*		0.1036		2.1	
115	Hatilet	Hatilet	22	D	25	*Shorea robusta*	0.0305	0.1045	6.1	2.1	8.2
116	Hatilet	Kusmari	9	C	25	*Acacia catechu*	0.0126		3.2		
117	Hatilet	Kusmari	10	A	20	*Shorea robusta*	0.0287		1.4		
	Hatilet	Kusmari	10	A	20	*Eucalyptus* sp.	0.0524	0.1225	7.9	1.2	9.1

118	Hatilet	Kusmari	11	D	26	*Eucalyptus* sp.	0.0615	0.0923	12.3	5.5	17.8
119	Hatilet	Kusmari	12	A	6	*Eucalyptus* sp.	0.0124		2.5		
120	Hatilet	Kusmari	12	B	6	*Eucalyptus* sp.	0.0196		2.9		
121	Hatilet	Kusmari	13	A	6	*Eucalyptus* sp.	0.0131		2.6		
122	Hatilet	Kusmari	13	B	4	*Eucalyptus* sp.	0.0092		0.9		
123	Hatilet	Kusmari	13	C	4	*Eucalyptus* sp.	0.0089		1.8		
124	Hatilet	Kusmari	15	A	27	*Shorea robusta*	0.0220		8.8		
125	Hatilet	Kusmari	15	B	27	*Shorea robusta*	0.0265		7.1		
	Hatilet	Kusmari	15	B		*Terminalia alata*		0.0964		1.0	
126	Hatilet	Kusmari	15	C	27	*Shorea robusta*	0.0181		6.3		
127	Hatilet	Kusmari	15	D	30	*Shorea robusta*	0.0381		11.4		
128	Hatilet	Kusmari	16	A	15	*Tectona grandis*	0.0517		15.5		
129	Hatilet	Kusmari	18	A	25	*Acacia catechu*	0.0433	0.0719	13.0	0.7	13.7
130	Hatilet	Kusmari	19	A	25	*Shorea robusta*	0.0450	0.0797	13.5	2.4	15.9
131	Hatilet	Kusmari	19	B	25	*Shorea robusta*	0.0390		11.7		
132	Hatilet	Kusmari	20	A	12	*Eucalyptus* sp.	0.0149		3.7		
	Hatilet	Kusmari	20	A	26	*Shorea robusta*	0.0360	0.0866	10.8	0.9	11.7
133	Hatilet	Kusmari	20	B	28	*Shorea robusta*	0.0436	0.1135	4.4	3.4	7.8
	Hatilet	Kusmari	20	B		*Eucalyptus* sp.	0.0268		1.3		
134	Hatilet	Kusmari	20	C	25	*Shorea robusta*	0.0538	0.0950	8.1	1.9	10.0
	Hatilet	Kusmari	20	C		Miscellaneous (bijayasal)	0.0208		4.2		
	Hatilet	Kusmari	20	C		*Eucalyptus* sp.	0.0092		0.5		
135	Hatilet	Kusmari	20	D	25	*Shorea robusta*	0.0276		6.9		
	Hatilet	Kusmari	20	D	20	*Eucalyptus* sp.	0.0537		8.1		

Ub-underbark; Tree: DBH 30 cm or above; Pole: DBH from 10 to 29.9 cm

ANNEX 24: Volume (mean and per unit area) and mean annual increment of pole and tree of different species in SFDP

SN	Division	Region	Block	Plot	Age (year)	Latin name	Mean ub volume (m^3), pole	Mean ub volume (m3), tree	Ub stem volume (m^3/ha), pole	Ub stem volume (m^3/ha), tree	Ub stem volume (m^3/ha), pole &tree	MAI (m3/ha/year)
1	Sagarnath	Sagarnath	1	C	36	*Tectona grandis*	0.3346	0.9467	16.7	142	158.7	4.4
2	Sagarnath	Sagarnath	2	A	11	*Eucalyptus* sp.		0.6786		67.9		6.2
3	Sagarnath	Sagarnath	3	A	20	*Eucalyptus* sp.	0.3779	0.7025	37.8	49.2	87.0	4.3
4	Sagarnath	Sagarnath	3	B	10	*Eucalyptus* sp.		0.7020		84.2		8.4
5	Sagarnath	Sagarnath	3	D	14	*Eucalyptus* sp.	0.2668		106.7			7.6
6	Sagarnath	Sagarnath	4	D	24	*Tectona grandis*	0.0353	0.5708	1.8	51.4	53.1	2.2
7	Sagarnath	Sagarnath	5	B	10	*Eucalyptus* sp.	0.2864		114.5			11.5
8	Sagarnath	Sagarnath	5	C	11	*Eucalyptus* sp.	0.1450	0.1450	65.3			5.9
	Sagarnath	Sagarnath	5	C		*Shorea robusta*		0.7425		7.4		
9	Sagarnath	Sagarnath	6	C	4	*Tectona grandis*	0.0543		29.9			7.5
10	Sagarnath	Sagarnath	7	A	34	*Eucalyptus* sp.	0.4730	0.6438	47.3	38.6	85.9	2.5
11	Sagarnath	Sagarnath	7	C	34	*Tectona grandis*	0.3563	0.9825	142.5	88.4	230.9	6.8
12	Sagarnath	Sagarnath	8	A	34	*Shorea robusta*	0.6715	0.7508	33.6	30.0	63.6	1.9
	Sagarnath	Sagarnath	8	A		Miscellaneous (bajhi, harro)		0.8324		16.6		
13	Sagarnath	Sagarnath	9	B	33	*Eucalyptus* sp.	0.1474		66.3			2.0
14	Sagarnath	Sagarnath	10	B	33	*Shorea robusta*	0.6990	0.7437	314.5	44.6	359.2	10.9
15	Sagarnath	Sagarnath	11	A	33	*Shorea robusta*	0.6444	0.7337	64.4	80.7	145.1	4.4
	Sagarnath	Sagarnath	11	A		*Bombax ceiba*	0.7912	0.7912		7.9		
16	Sagarnath	Sagarnath	14	A	32	*Tectona grandis*	0.3207	0.6382	128.3	51.1	179.3	5.6

17	Sagarnath	Sagarnath	17	A	32	*Shorea robusta*	0.7017	0.7422	385.9	37.1	423.0	13.2
18	Sagarnath	Sagarnath	17	D	32	*Shorea robusta*	0.6973	0.7551	488.1	22.7	510.8	16.0
19	Sagarnath	Sagarnath	18	A	32	*Shorea robusta*	0.7128	0.7435	498.9	29.7	528.7	16.5
20	Sagarnath	Sagarnath	18	B	32	*Shorea robusta*	0.7213	0.7390	144.3	59.1	203.4	6.4
21	Sagarnath	Sagarnath	21	A	32	*Shorea robusta*	0.7016	0.7409	315.7	44.5	360.2	11.3
22	Sagarnath	Sagarnath	21	C	32	*Acacia catechu*		0.8258		33.0		1.0
23	Sagarnath	Sagarnath	22	B	31	*Shorea robusta*	0.7197	0.7437	143.9	44.6	188.6	6.1
24	Sagarnath	Sagarnath	22	C	31	*Shorea robusta*	0.6958	0.7682	208.7	46.1	254.8	8.2
25	Sagarnath	Sagarnath	23	A	31	*Shorea robusta*	0.6971	0.7422	313.7	52.0	365.7	11.8
26	Sagarnath	Sagarnath	23	B	31	*Shorea robusta*	0.6885	0.7491	241.0	67.4	308.4	9.9
27	Sagarnath	Sagarnath	23	C	31	*Shorea robusta*	0.6918	0.7705	242.1	61.6	303.8	9.8
28	Sagarnath	Sagarnath	23	D	31	*Shorea robusta*	0.6975	0.7529	348.8	60.2	409.0	13.2
29	Sagarnath	Bhaktipur	6	C	9	*Eucalyptus* sp.	0.2814		140.7			15.6
30	Sagarnath	Bhaktipur	9	C	5	*Eucalyptus* sp.	0.1201		84.0			16.8
31	Sagarnath	Bhaktipur	11	C	4	*Eucalyptus* sp.	0.1025		35.9			9.0
32	Sagarnath	Bhaktipur	11	D	9	*Eucalyptus* sp.	0.3620	0.5751	72.4	5.8	78.1	8.7
33	Sagarnath	Bhaktipur	12	C	5	*Eucalyptus* sp.	0.1042		20.8			4.2
34	Sagarnath	Bhaktipur	13	C	16	*Tectona grandis*	0.1854	0.6340	64.9	50.7	115.6	7.2
35	Sagarnath	Bhaktipur	14	A	8	*Eucalyptus* sp.	0.3339		183.6			23.0
36	Sagarnath	Bhaktipur	14	C	6	*Eucalyptus* sp.	0.2366	0.7187	94.6	7.2	101.8	17.0
37	Sagarnath	Bhaktipur	14	D	7	*Eucalyptus* sp.	0.1648	0.7543	9.9	37.7	47.6	6.8
38	Sagarnath	Bhaktipur	15	A	7	*Eucalyptus* sp.	0.1449		86.9			12.4
39	Sagarnath	Bhaktipur	15	B	7	*Eucalyptus* sp.	0.1676		117.3			16.8
40	Sagarnath	Bhaktipur	15	C	5	*Eucalyptus* sp.	0.1973		29.6			5.9
41	Sagarnath	Bhaktipur	15	D	6	*Eucalyptus* sp.	0.0699		28.0			4.7
42	Sagarnath	Bhaktipur	17	C	5	*Eucalyptus* sp.	0.1901		161.6			32.3
43	Sagarnath	Bhaktipur	18	A	6	*Eucalyptus* sp.	0.1843		101.4			16.9
44	Sagarnath	Bhaktipur	18	C	7	*Eucalyptus* sp.	0.0553		22.1			3.2
45	Sagarnath	Bhaktipur	18	D	16	*Tectona grandis*	0.4335	0.5364	173.4	5.4	178.8	11.2

46	Sagarnath	Bhaktipur	19	B	3	*Eucalyptus* sp.	0.0611		12.2			4.1
47	Sagarnath	Bhaktipur	21	A	11	*Eucalyptus* sp.	0.2227		100.2			9.1
48	Sagarnath	Bhaktipur	21	B	11	*Eucalyptus* sp.	0.2753		137.7			12.5
49	Sagarnath	Bhaktipur	21	D	11	*Eucalyptus* sp.	0.2333		93.3			8.5
50	Sagarnath	Bhaktipur	24	D	8	*Eucalyptus* sp.	0.3373		118.1			14.8
	Sagarnath	Bhaktipur	24	D	18	*Tectona grandis*	0.3441	0.5563	17.2	5.6	22.8	1.3
51	Sagarnath	Parwanipur	1	C		*Dalbergia sissoo*	0.7573	0.7839	302.9	62.7	365.6	
52	Sagarnath	Parwanipur	1	D		*Dalbergia sissoo*	0.7381	0.7856	479.8	62.8	542.6	
53	Sagarnath	Phuljor	2	C	29	*Eucalyptus* sp.	0.3351	0.6302	83.8	25.2	109.0	3.8
54	Sagarnath	Phuljor	3	A	29	*Eucalyptus* sp.	0.3249	0.6414	65.0	19.2	84.2	2.9
55	Sagarnath	Phuljor	3	C		*Eucalyptus* sp.	0.1148		45.9			
56	Hatilet	Lakshminiya	1	C	3	*Eucalyptus* sp.	0.0175		7.0			2.3
57	Hatilet	Lakshminiya	5	B	7	*Eucalyptus* sp.	0.2358		94.3			13.5
	Hatilet	Lakshminiya	5	B		*Terminalia alata*		0.7918		23.8		
	Hatilet	Lakshminiya	5	B		Miscellaneous (Tatari, harro)		0.8318		16.6		
58	Hatilet	Lakshminiya	5	C	7	*Eucalyptus* sp.	0.2070		41.4			5.9
59	Hatilet	Lakshminiya	6	B	30	*Shorea robusta*	0.6905	0.7301	276.2	7.3	283.5	9.4
60	Hatilet	Lakshminiya	6	D	7	*Eucalyptus* sp.	0.2412		84.4			12.1
61	Hatilet	Lakshminiya	7	A	30	*Shorea robusta*	0.6585	0.7400	263.4	14.8	278.2	9.3
62	Hatilet	Lakshminiya	7	B	30	*Shorea robusta*	0.6870		137.4			4.6
	Hatilet	Lakshminiya	7	B		*Terminalia alata*		0.7632		15.3		
63	Hatilet	Lakshminiya	7	C	30	*Shorea robusta*	0.6815		306.7			10.2
64	Hatilet	Lakshminiya	7	D	30	*Shorea robusta*	0.6565		229.8			7.7
65	Hatilet	Lakshminiya	8	B		Miscellaneous	0.7589		189.7			

						(tatari, kalikath, harro)						
66	Hatilet	Lakshminiya	8	C	22	*Shorea robusta*	0.6582		197.5			9.0
	Hatilet	Lakshminiya	8	C		*Terminalia alata*	0.6696		67.0			
	Hatilet	Lakshminiya	8	C		Miscellaneous (kalikath, harro, bajhi)	0.7829		156.6			
67	Hatilet	Lakshminiya	9	A	4	*Eucalyptus* sp.	0.0745		18.6			4.7
68	Hatilet	Lakshminiya	10	A	20	*Acacia catechu*	0.7151		143.0			7.2
	Hatilet	Lakshminiya	10	A	27	*Shorea robusta*	0.7174		143.5			5.3
69	Hatilet	Lakshminiya	11	C	25	*Shorea robusta*	0.6900	0.7436	103.5	14.9	118.4	4.7
	Hatilet	Lakshminiya	11	C		*Bombax ceiba*	0.6428		32.1			
	Hatilet	Lakshminiya	11	C		Miscellaneous (khasriya)		0.8500		17.0		
70	Hatilet	Lakshminiya	13	A	8	*Eucalyptus* sp.	0.1852		74.1			9.3
71	Hatilet	Lakshminiya	13	C	8	*Eucalyptus* sp.	0.2623		118.0			14.8
72	Hatilet	Lakshminiya	13	D	8	*Eucalyptus* sp.	0.2706		67.6			8.5
73	Hatilet	Lakshminiya	14	C		*Acacia catechu*	0.6924		138.5			
74	Hatilet	Lakshminiya	15	A	20	*Tectona grandis*	0.2993		119.7			6.0
	Hatilet	Lakshminiya	15	A	22	*Shorea robusta*	0.6011		60.1			2.7
75	Hatilet	Lakshminiya	16	A	20	*Tectona grandis*	0.1566	0.5931	47.0	11.9	58.9	2.9
	Hatilet	Lakshminiya	16	A	10	*Eucalyptus* sp.		1.0835		10.8		1.1
	Hatilet	Lakshminiya	16	A		*Shorea robusta*		0.7375		73.7		
76	Hatilet	Lakshminiya	18	B	20	*Acacia catechu*	0.7419	0.8176	111.3	16.2	127.5	6.4
77	Hatilet	Hatilet	2	A	7	*Eucalyptus* sp.	0.2603		52.1			7.4
78	Hatilet	Hatilet	2	B	7	*Eucalyptus* sp.	0.0629		9.4			1.3
79	Hatilet	Hatilet	3	C	9	*Eucalyptus* sp.	0.4028	0.6272	80.6	6.3	86.8	9.6
80	Hatilet	Hatilet	3	D	9	*Eucalyptus* sp.	0.2910		58.2			6.5
81	Hatilet	Hatilet	4	A	31	*Eucalyptus* sp.		1.1458		80.2		2.6
82	Hatilet	Hatilet	4	B	6	*Eucalyptus* sp.	0.0974		14.6			2.4

83	Hatilet	Hatilet	4	C	6	*Eucalyptus* sp.	0.1034		15.5			2.6
84	Hatilet	Hatilet	4	D		*Dalbergia sissoo*	0.6886		137.7			
85	Hatilet	Hatilet	5	B		*Eucalyptus* sp.	0.1128		22.6			
86	Hatilet	Hatilet	5	D	4	*Tectona grandis*	0.0565		22.6			5.7
	Hatilet	Hatilet	5	D	20	*Acacia catechu*	0.7858	0.8111	117.9	16.2	134.1	6.7
	Hatilet	Hatilet	5	D	8	*Eucalyptus* sp.	0.3071		46.1			5.8
87	Hatilet	Hatilet	6	C	10	*Eucalyptus* sp.	0.2969		148.4			14.8
88	Hatilet	Hatilet	7	C	4	*Eucalyptus* sp.	0.0630		6.3			1.6
89	Hatilet	Hatilet	7	D	7	*Eucalyptus* sp.	0.2636		65.9			9.4
90	Hatilet	Hatilet	8	A	30	*Shorea robusta*	0.7111	0.7472	142.2	52.3	194.5	6.5
91	Hatilet	Hatilet	8	B	25	*Shorea robusta*	0.7060		247.1			9.9
92	Hatilet	Hatilet	9	A	25	*Shorea robusta*	0.7069	0.7331	141.4	7.3	148.7	5.9
	Hatilet	Hatilet	9	A		*Acacia catechu*	0.7704		38.5			
93	Hatilet	Hatilet	9	B	26	*Shorea robusta*	0.7114	0.7406	71.1	22.2	93.4	3.6
94	Hatilet	Hatilet	10	A	24	*Shorea robusta*	0.6790	0.6790	135.8			5.7
	Hatilet	Hatilet	10	A	24	*Bombax ceiba*	0.6496		65.0			2.7
95	Hatilet	Hatilet	10	D	10	*Eucalyptus* sp.	0.2854		57.1			5.7
96	Hatilet	Hatilet	11	B	7	*Eucalyptus* sp.	0.2985		44.8			6.4
	Hatilet	Hatilet	11	B	7	*Tectona grandis*	0.0466		14.0			2.0
97	Hatilet	Hatilet	11	C	6	*Eucalyptus* sp.	0.1585		79.2			13.2
98	Hatilet	Hatilet	11	D		*Dalbergia sissoo*	0.7002		210.0			
99	Hatilet	Hatilet	13	A		*Shorea robusta*	0.7096		248.3			9.2
	Hatilet	Hatilet	13	A		Miscellaneous (siris)		0.8775		17.5		
100	Hatilet	Hatilet	13	C	27	*Shorea robusta*	0.6976		209.3			7.8
	Hatilet	Hatilet	13	C	19	*Eucalyptus* sp.		0.9040		9.0		0.5
101	Hatilet	Hatilet	13	D	27	*Shorea robusta*	0.7106	0.7328	71.1	7.3	78.4	2.9
	Hatilet	Hatilet	13	D	9	*Eucalyptus* sp.	0.0884	1.2868	4.4	12.9	17.3	1.9
102	Hatilet	Hatilet	14	B	6	*Eucalyptus* sp.	0.1497		59.9			10.0
103	Hatilet	Hatilet	14	D	27	*Shorea robusta*	0.6802	0.7310	374.1	14.6	388.7	14.4

	Hatilet	Hatilet	14	D		Miscellaneous (seto siris)		0.8482		8.5		
	Hatilet	Hatilet	14	D		*Eucalyptus* sp.	0.3092		15.5			
104	Hatilet	Hatilet	15	A	10	*Eucalyptus* sp.	0.2836	0.8033	56.7	16.1	72.8	7.3
	Hatilet	Hatilet	15	A		*Acacia catechu*		0.8321		8.3		
105	Hatilet	Hatilet	15	B	5	*Eucalyptus* sp.	0.1249		37.5			7.5
106	Hatilet	Hatilet	15	C	5	*Eucalyptus* sp.	0.1622		56.8			11.4
107	Hatilet	Hatilet	19	B	17	*Acacia catechu*	0.7076		70.8			4.2
108	Hatilet	Hatilet	20	A		Miscellaneous (odal, sunpat)	0.6863		103.0			
	Hatilet	Hatilet	20	A		*Acacia catechu*	0.6662		66.6			
	Hatilet	Hatilet	20	A	30	*Shorea robusta*		0.7357		14.7		0.5
109	Hatilet	Hatilet	20	D	30	*Shorea robusta*	0.6372		95.6			3.2
	Hatilet	Hatilet	20	D		*Bombax ceiba*		0.7995		8.0		
	Hatilet	Hatilet	20	D	7	*Eucalyptus* sp.		0.6677		6.7		1.0
110	Hatilet	Hatilet	21	A	31	*Shorea robusta*	0.6516	0.7490	32.6	7.5	40.1	1.3
	Hatilet	Hatilet	21	A	8	*Eucalyptus* sp.	0.2218			22.2		2.8
111	Hatilet	Hatilet	21	B	31	*Shorea robusta*		0.7352		14.7		0.5
112	Hatilet	Hatilet	21	C	28	*Shorea robusta*	0.6595		131.9			4.7
	Hatilet	Hatilet	21	C	23	*Acacia catechu*	0.7837	0.8305	39.2	41.5	80.7	3.5
113	Hatilet	Hatilet	21	D	23	*Shorea robusta*	0.7228	0.7470	36.1	37.4	73.5	3.2
	Hatilet	Hatilet	21	D	25	*Eucalyptus* sp.	0.2887		28.9			1.2
	Hatilet	Hatilet	21	D	23	*Acacia catechu*		0.8107		16.2		0.7
114	Hatilet	Hatilet	22	A	9	*Eucalyptus* sp.	0.1745		17.5			1.9
	Hatilet	Hatilet	22	A	25	*Shorea robusta*		0.7498		15.0		0.6
115	Hatilet	Hatilet	22	D	25	*Shorea robusta*	0.6692	0.7492	133.8	15.0	148.8	6.0
116	Hatilet	Kusmari	9	C	25	*Acacia catechu*	0.6987		174.7			7.0
117	Hatilet	Kusmari	10	A	20	*Shorea robusta*	0.6697		33.5			1.7
	Hatilet	Kusmari	10	A	20	*Eucalyptus* sp.	0.4098	1.0426	61.5	10.4	71.9	3.6
118	Hatilet	Kusmari	11	D	26	*Eucalyptus* sp.	0.4919	0.7699	98.4	46.2	144.6	5.6

119	Hatilet	Kusmari	12	A	6	*Eucalyptus* sp.	0.0485		9.7			1.6
120	Hatilet	Kusmari	12	B	6	*Eucalyptus* sp.	0.1131		17.0			2.8
121	Hatilet	Kusmari	13	A	6	*Eucalyptus* sp.	0.0548		11.0			1.8
122	Hatilet	Kusmari	13	B	4	*Eucalyptus* sp.	0.0193		1.9			0.5
123	Hatilet	Kusmari	13	C	4	*Eucalyptus* sp.	0.0169		3.4			0.8
124	Hatilet	Kusmari	15	A	27	*Shorea robusta*	0.6452		258.1			9.6
125	Hatilet	Kusmari	15	B	27	*Shorea robusta*	0.6406		251.0			9.3
	Hatilet	Kusmari	15	B		*Terminalia alata*		0.7460		7.5		
126	Hatilet	Kusmari	15	C	27	*Shorea robusta*	0.6132		214.6			7.9
127	Hatilet	Kusmari	15	D	30	*Shorea robusta*	0.6788		203.6			6.8
128	Hatilet	Kusmari	16	A	15	*Tectona grandis*	0.3558		106.8			7.1
129	Hatilet	Kusmari	18	A	25	*Acacia catechu*	0.7747	0.8067	232.4	8.1	240.5	9.6
130	Hatilet	Kusmari	19	A	25	*Shorea robusta*	0.6957	0.7352	208.7	22.1	230.8	9.2
131	Hatilet	Kusmari	19	B	25	*Shorea robusta*	0.6893		206.8			8.3
132	Hatilet	Kusmari	20	A	12	*Eucalyptus* sp.	0.0704		17.6			1.5
	Hatilet	Kusmari	20	A	26	*Shorea robusta*	0.6693	0.7399	200.8	7.4	208.2	8.0
133	Hatilet	Kusmari	20	B	28	*Shorea robusta*	0.6982	0.7547	69.8	22.6	92.5	3.3
	Hatilet	Kusmari	20	B		*Eucalyptus* sp.	0.1782		8.9			
134	Hatilet	Kusmari	20	C	25	*Shorea robusta*	0.7097	0.7434	106.5	14.9	121.3	4.9
	Hatilet	Kusmari	20	C		Miscellaneous (bijayasal)	0.7477		149.5			
	Hatilet	Kusmari	20	C		*Eucalyptus* sp.	0.0193		1.0			
135	Hatilet	Kusmari	20	D	25	*Shorea robusta*	0.6538		163.5			6.5
	Hatilet	Kusmari	20	D	20	*Eucalyptus* sp.	0.4214		63.2			3.2

Forest Management activities in different blocks and plots

ANNEX 25: Forest Management activities in different blocks and plots

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
2	Sagarnath	1	B	Eucalyptus, Teak	Euc.- 4 yrs, Teak-7 yrs	8	Th-Bamboo		Th-bamboo		Th-bamboo	Har-Euc.	Sing.-Euc.		TSI-Sal		
1	Sagarnath	1	A	Eucalyptus, Teak	Euc.-34, 14 yrs, Teak-9 yrs	24.3			Cln-Euc.				TSI-Sal		Cln-Euc.		
									Cln-Euc.						Cln-Euc.		
3	Sagarnath	1	C	Teak	38	30			Cln-Euc.					Cln-Euc.	TSI-Sal		
4	Sagarnath	1	D	Euc	8	12.52			Cln-Euc.					Cln-Euc.	TSI-Sal		
5	Sagarnath	2	A	Eucalyptus, Kadam	13	22.5					Har-Euc.	Sing.-Euc.			TSI-Sal		
6	Sagarnath	2	B	Eucalyptus, Kadam	13	24.3		Th-Teak		Cln-Teak & Euc.			Th-Teak			Cln-Teak & Euc.	
									TSI-Sal			Har-Euc.	Sing.-Euc.				
7	Sagarnath	2	C	Eucalyptus, Teak	Euc.-12 yrs Teak- 2 yrs	20.48			Th-Teak	Cln-Euc.				Th-Teak		Cln-Teak	
8	Sagarnath	2	D	Eucalyptus, Teak	Euc.-12 yrs, Teak-39 yrs	24.5			Cln-Euc.		TSI-Sal			Cln-Euc.			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
9	Sagarnath	3	A	Eucalyptus	12	24.3			Cln-Euc.					Cln-Euc.			
									Cln-Euc.					Cln-Euc.			
10	Sagarnath	3	B	Eucalyptus, (16 ha.), Kadam (4 ha), Salla	Euc. & Kadam: 12 yrs	23.56			Cln-Euc.					Cln-Euc.			
11	Sagarnath	3	C	Eucalyptus	16	15.3			Cln-Euc.					Cln-Euc.			
									Cln-Euc.					Cln-Euc.		TSI-Sal	
12	Sagarnath	3	D	Eucalyptus	16	24.3			Cln-Euc.					Cln-Euc.		TSI-Sal	
13	Sagarnath	4	A	Eucalyptus	3	19.36				TSI-Sal		Har-Euc.	Sing.-Euc.				
14	Sagarnath	4	D	Teak	26	25				TSI-Sal		Har-Euc.	Sing.-Euc.				
15	Sagarnath	5	A	Eucalyptus	12	23.63				TSI-Sal				Cln-Euc.		Har-Euc.	
16	Sagarnath	5	B	Eucalyptus, sal regeneration	12	24					TSI-Sal	Har-Euc.	Sing.-Euc.				
17	Sagarnath	5	C	Eucalyptus	13	23					TSI-Sal	Har-Euc.	Sing.-Euc.				
18	Sagarnath	5	D	Eucalyptus, Teak	Teak 36 yrs, Euc 14 yr	23.43					Har-Euc.	Sing.-Euc.		TSI-Sal			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
												Har-Euc.	Sing.-Euc.			TSI-Sal	
19	Sagarnath	6	A	Eucalyptus, Teak	Euc.-2 yrs, Teak-15 yrs	24.08						Har-Euc.	Sing.-Euc.	Har-Khair			
												Har-Euc.	Sing.-Euc.	TSI-Sal			
20	Sagarnath	6	B	Eucalyptus, Teak	Euc.-4 yrs, Teak-4 yrs	24.65						Har-Euc.	Sing.-Euc.	TSI-Sal			
21	Sagarnath	6	C	Eucalyptus, Teak	Both spp: 6 yrs	24.3						Har-Euc.	Sing.-Euc.			TSI-Sal	
22	Sagarnath	6	D	Eucalyptus, Siris, Sal	Euc.- 6 yrs Sal-34 yrs	25						Har-Euc.	Sing.-Euc.	TSI-Sal			
23	Sagarnath	7	A	Eucalyptus	12	24.3								Cln-Euc.			
24	Sagarnath	7	B	Teak	6	24.3											
25	Sagarnath	7	C	Teak	36	24.3											
26	Sagarnath	7	D	Eucalyptus, Sal	Euc.-12 yrs Sal- 35 yrs	24.3											Sparse distribution of Sal
27	Sagarnath	8	A	Sal	32	24.3											
28	Sagarnath	8	D	Sal	32	24.3								Cln-Euc.			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
29	Sagarnath	9	A	Eucalyptus, Sal	Euc.-14 yrs Sal 35 yrs	21.4											
30	Sagarnath	9	B	Eucalyptus, Khair	Euc.-14 yrs Khair-32 yrs	24.3											
31	Sagarnath	9	C	Eucalyptus, Sal, Bamboo	Euc.-14 yrs Bamhoo-17 yrs, Sal- 35 yrs	24.3											
32	Sagarnath	9	D	Eucalyptus, Sal	Sal- 35 yrs Euc.-14 yrs	24.3											
33	Sagarnath	10	A	Eucalyptus, Sal	Euc.-15 yrs	24.3											
34	Sagarnath	10	B	Eucalyptus, Sal	Euc.-15 yrs	23.56			Cln-Euc.		TSI-Sal			Cln-Euc.			
35	Sagarnath	10	C	Eucalyptus, Sal	Euc.-14 yrs	23.49								Cln-Euc.			
36	Sagarnath	10	D	Eucalyptus, Sal	Euc.-14 yrs (8 ha)	24.3			Th-Teak	Th-Sisso	Cln-all species			Th-Teak	Th-Sisso	Cln-all species	Eucalyptus few

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
														Cln-Euc.			
37	Sagarnath	11	A	Eucalyptus, Sal	Euc.-13 yrs	24.3								Cln-Euc.	TSI-Sal		
38	Sagarnath	11	B	Eucalyptus, Salla, Sal	Euc.-11 yrs Sal- 34 yrs Salla-36 yrs	24.3											
									Cln-Euc.					Cln-Euc.			
39	Sagarnath	11	C	Eucalyptus, Sal	Euc. & Sal 36 yrs	23.21			Cln-Euc.					Cln-Euc.			Sal management
40	Sagarnath	11	D	Eucalyptus, Sal	Euc & Sal.-35 yrs	23			Cln-Euc.					Cln-Euc.			Sal management
41	Sagarnath	13	A	Eucalyptus, Sal	Euc.-13 yrs, Sal - 35 yrs	24.3		Har-Large size old Euc.		Cln-Euc.							Eucalyptus few; Sal management
42	Sagarnath	13	B	Eucalyptus, Sal	Euc.-15 yrs, Sal - 35 yrs	24.3			Cln-Euc.						Cln-Euc.		Sal management

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
43	Sagarnath	13	C	Eucalyptus, Sal	Euc.-14 yrs Sal - 35 yrs	23.66					TSI-Sal						
44	Sagarnath	13	D	Eucalyptus, Sal	Euc.-14 yrs Sal - 35 yrs	24.3			Cln-Euc.					Cln-Euc.		TSI-Sal	
45	Sagarnath	14	A	Teak	34	24.3										Har-Euc	
46	Sagarnath	14	B	Eucalyptus, Teak, Sal	Euc.-11 yrs (10.25 ha) Teak-11 yrs (3.75 ha) Sal - 35 yrs	24										Har-Euc	
47	Sagarnath	14	C	Sal	35	24.3										Har-Euc	
48	Sagarnath	14	D	Eucalyptus, Sal	Euc.-14 yrs, Sal 35 yrs	24.3	Th- Khair						TSI-Sal	Cln-Euc., Khair			Sal management
49	Sagarnath	15	A	Sal	35	24.3			Cln-Euc.				TSI-Sal	Cln-Euc.			
50	Sagarnath	15	B	Sal	35	24.3	Pln-Euc. (open places)	Weed-Euc. (open places)	Weed-Euc. (open places)	Cln-Euc. (open places)	Cln-Euc. (open places)						In railway line
51	Sagarnath	15	C	Sal	35	24.3	Pln-Euc. (open places)	Weed-Euc. (open places)	Weed-Euc. (open places)	Cln-Euc. (open places)	Cln-Euc. (open places)						

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
52	Sagarnath	15	D	Sal	35	24				Cln-Euc. 4 yrs						Cln-Euc. 4 yrs	In railway line
53	Sagarnath	17	A	Eucalyptus, Sal	Euc-14 yrs, Sal-34 yrs	23	Th Teak				Th-Khair	Th-Teak		Cln-All species			
54	Sagarnath	17	B	Eucalyptus, Sal	Euc-14 yrs, Sal-34 yrs	20								Cln-Euc. 4 yrs			
55	Sagarnath	17	C	Eucalyptus, Sal	Euc-14 yrs, Sal-34 yrs	22.5		Pln & repl- Euc (11.55 ha)			Cln-Euc. New & old				Cln-Euc. New	Har-Euc 10 yrs	
56	Sagarnath	17	D	Eucalyptus, Sal	Euc-14 yrs, Sal-34 yrs	23									Cln-Euc. 4 yrs		
57	Sagarnath	18	A	Eucalyptus, Sal	Euc-14 yrs, Sal-34 yrs	23	Cln-Euc. 4 yrs									Cln-Euc. (both)	
58	Sagarnath	18	B	Sal	34	21											In railway line
59	Sagarnath	18	C	Sal	34	22			Cln-Euc.								In railway line
60	Sagarnath	18	D	Sal	34	22.5			Cln-Euc. 5 yrs	Weed-Teak							
61	Sagarnath	19	A	Sal	34	23	Cln-Euc. 3 yrs								Cln-Euc. (both)		In railway line

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
62	Sagarnath	19	B	Sal	34	23								Cln-Euc. 5 yrs			
63	Sagarnath	19	C	Sal	34	22.8	Th-Teak		Cln-Teak			Th-Teak			Cln-Teak		
64	Sagarnath	19	D	Sal, Asna, Bajhi	Sal-34 yrs	22	Th-Teak					Th-Teak		Cln-Teak			
65	Sagarnath	21	A	Euc, Siris, Sal,	Sal-32 yrs Euc. - 11 yrs	23	Th-Teak					Th-Teak					Sal management
66	Sagarnath	21	B	Sal	34	23		Th-Teak	Cln-Teak			Th-Teak			Cln-Teak		
							Weed-Euc.	Cln-Euc.				Th-Teak		Th-Euc.		Cln-Teak	
67	Sagarnath	21	C	Eucalyptus, Sal	Euc-14 yrs, Sal-34 yrs	22.7	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak		In railway line
68	Sagarnath	21	D	Eucalyptus, Sal	Euc-14 yrs, Sal-34 yrs	20.3	Pln &repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak		
							Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak		
69	Sagarnath	22	A	Sal, Euc	Sal-33 yrs Euc-14 yrs	23.5	Th-Teak 5 yrs.					Th-Teak 5 yrs.					In railway line, sparse distribution of Eucalyptus

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
70	Sagarnath	22	B	Sal, Euc	Sal-33 yrs Euc -14 yrs	23	Th-Teak, Euc.		Cln-Euc. & Teak			Th-Teak, Euc.			Cln-Euc. & Teak		In railway line, sparse distribution of Eucalyptus
71	Sagarnath	22	C	Sal, Euc	Sal-33 yrs Euc -14 yrs	22	Th-Teak										Sparse distribution of Eucalyptus
72	Sagarnath	22	D	Sal, Euc	Sal-33 yrs Euc -14 yrs	22.5			Th-Teak	Cln-Euc.				Th-Teak			In railway line
73	Sagarnath	23	A	Sal, Eucalyptus	Sal-33 yrs Euc -14 yrs	19				Cln-Euc.							
74	Sagarnath	23	B	Sal, Eucalyptus	Sal-33 yrs Euc -14 yrs	21			Cln-Euc.					Cln-Euc.			
75	Sagarnath	23	C	Sal, Khair	Sal-33 yrs	14			Cln-Euc.					Cln-Euc.			
76	Sagarnath	23	D	Sal, Eucalyptus, Khair	Sal-33 yrs Euc -14 yrs Khair-14 yrs	21			Cln-Euc.					Cln-Euc.			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
77	Sagarnath (Phuljor)	1	B	Eucalyptus, Teak	Euc- 9 yrs Teak - 7 yrs	14.43			Cln-Euc.					Cln-Euc.			
78	Sagarnath (Phuljor)	1	C	Teak, *Paulownia* sp,. *Cassia siamea*, Sal	3	24.67			Cln-Euc.					Cln-Euc.			Teak-1.17 ha
79	Sagarnath (Phuljor)	2	A1	Eucalyptus	5	20.91								Cln-Euc.			
80	Sagarnath (Phuljor)	2	A2	Eucalyptus	Euc.-17 yrs and 5 yrs	2.25			Cln-Euc.					Cln-Euc.			
									Cln-Euc.					Cln-Euc.			
81	Sagarnath (Phuljor)	2	B1	Teak	5	24.3											In railway line
82	Sagarnath (Phuljor)	2	B2	Eucalyptus	31	6.86			Cln-Euc.						Cln-Euc.		
									Cln-Euc.						Cln-Euc.		
83	Sagarnath (Phuljor)	2	C	Eucalyptus	12	24.3			Cln-Euc.								In railway line
84	Sagarnath (Phuljor)	2	D	Eucalyptus, Kadam	Both spp. 7 yrs	20.3			Cln-Euc.					Cln-Euc.			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
85	Sagarnath (Phuljor)	3	A1	Eucalyptus	16	22.25			Cln-Euc.								
86	Sagarnath (Phuljor)	3	A2	Eucalyptus	18	1.2			Cln-Euc.					Cln-Euc.			
87	Sagarnath (Phuljor)	3	B	Eucalyptus	16	4.2			Cln-Euc.					Cln-Euc.			
88	Sagarnath (Phuljor)	3	C	Eucalyptus	3	0.5				Cln-Euc. (both)		Har-Euc.	Sing.-Euc.			Cln-Euc. (both)	
89	Sagarnath (Phuljor)	3	D	Eucalyptus	3	17.70		Pln-Euc. in open places	Weed-Euc.	Weed-Euc.	Cln-Euc.	Cln-Euc.					
90	Sagarnath (Parwanipur)	1	A	Eucalyptus	5	16.00		Har- Euc	Sing.-Euc.								
91	Sagarnath (Parwanipur)	1	B	Eucalyptus	5	11.29		Har-Teak	Sing.-Teak							Cln-Teak	
92	Sagarnath (Parwanipur)	1	C1	Eucalyptus	5	22.67		Th-Euc.									

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
93	Sagarnath (Parwanipur)	1	C2	Eucalyptus	5	2.02							Har-Euc. , kadam	Sing. -Euc.			
94	Sagarnath (Parwanipur)	1	D	Eucalyptus	5	15.33			Har-Euc., kadam	Pln & repl-Teak	Weed -Teak	Weed-Teak	Cln-Teak				
95	Sagarnath (Parwanipur)	1	D2	Eucalyptus	7	2.06				Weed-Teak							
96	Sagarnath (Parwanipur)	2	A1	Eucalyptus	4	0.65	Cln-Teak					Cln-Teak		Har-Euc.	Sing.-Euc.		
97	Sagarnath (Parwanipur)	2	A2	Eucalyptus	3	15.00	Har-Teak	Sing.-Teak			Cln-Teak			Har-Euc.	Sing.-Euc.		
98	Sagarnath (Parwanipur)	2	B1	Eucalyptus	4	2.17								Har-Euc.	Pln & repl-Teak	Weed-Teak	
99	Sagarnath (Parwanipur)	2	B2	Eucalyptus	4	16.69									Weed -Teak		

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
100	Sagarnath (Parwanipur)	2	C1	Sissoo	26	9.00								Har-Euc. & Kadam	Sing.-Euc.		
										Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak		Th-Teak	
101	Sagarnath (Parwanipur)	2	C2	Sissoo	26	2.23					Weed-Teak						
							Sing.-Euc.										
102	Sagarnath (Parwanipur)	2	C3	Sissoo	26	2.23	Sing.-Euc.			Cln-Euc.					Cln-Euc.		
										Har-Teak	Sing.-Teak				Cln-Teak		
103	Sagarnath (Parwanipur)	2	D1	Sissoo	26	10.60								Har-Euc.	Sing.-Euc.		
											Cln-Euc.			Har-Euc.	Sing.-Euc.	TSI-Sal	
104	Sagarnath (Parwanipur)	2	D2	Sissoo	26	2.06							Har-Euc.	Sing.-Euc.			
							Har-Teak	Pln & repl-Teak	Weed-Teak new	Weed-Teak		Har-Euc.	Pln & repl -Teak	Weed-Teak	Weed-Teak new	Cln-Teak	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
										new				new			
105	Bhaktipur	1	B	Eucalyptus	7	9.06		Weed-Teak new					Weed-Teak new	Th-Teak			
106	Bhaktipur	1	C	Eucalyptus	4, 9	21.53	Cln-Euc. & Teak										
								Cln-Euc.					Cln-Euc.		TSI-Sal		
107	Bhaktipur	2	A	Eucalyptus	4	18.82								Har-Euc.	Sing.-Euc.		
108	Bhaktipur	2	B	Eucalyptus	4	16.65	Sing.-Teak	Cln-Teak									
109	Bhaktipur	2	C	Eucalyptus	11	23.1	Har-Teak.	Sing.-Teak			Cln-Teak					Cln-Teak	
110	Bhaktipur	2	D1	Eucalyptus	5	11.28							TSI-Sal	Har-Euc.	Sing.-Euc.		
															TSI-Sal		
111	Bhaktipur	2	D2	Eucalyptus	4	12								TSI-Sal			
													Th-bamboo		Th-bamboo		
112	Bhaktipur	3	A1	Eucalyptus, Sisooo, Khair	Euc.- 5 yrs	13.52						Har-Euc.	Pln-Teak	TSI-Sal			Sissoo & Khair are few
113	Bhaktipur	3	A2	Eucalyptus, Sisooo, Khair	Euc.-6 yrs	9.16							Weed-Teak	Weed-Teak	Weed-Teak		Sissoo & Khair are few

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
114	Bhaktipur	3	B1	Sissoo, Khair, Eucalyptus, Kadam	Sissoo and Khair-6 yrs	17.56							Har-Euc.	Sing.-Euc.		TSI-Sal	
115	Bhaktipur	3	B2	Teak	3	2.41	Har-Salla	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak		Th-Teak	TSI-Sal	Har-Euc.	Sing.-Euc.	Casualty replacement needed.
116	Bhaktipur	3	B3	Teak	3	1.45		Weed-Teak									Casualty replacement needed; it is in old plantation record but not shown in map
117	Bhaktipur	3	C	Eucalyptus	5	20.23	Har-Euc.				TSI-Sal						
118	Bhaktipur	3	C1	Eucalyptus	11	1	Har-Euc.						TSI-Sal				Harvesting -as suggested by SFDP
													Har-Euc.	TSI-Sal			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
119	Bhaktipur	3	D	Eucalyptus	5	23.99					Har-Euc.		TSI-Sal				Replacement as suggested by SFDP; Fire damage
												Har-Euc.			TSI-Sal		
120	Bhaktipur	4	B1	Eucalyptus	7	4.5		Har-Teak	Sing.-Teak							Cln-Teak	Good for log production
121	Bhaktipur	4	B2	Eucalyptus	6	4.54		Cln-Teak						TSI-Sal	Har-Euc.		Good for log production
122	Bhaktipur	5	A	Eucalyptus, Teak	Euc.-6 yrs, Teak-7 yrs	24.05			TSI-Sal								
123	Bhaktipur	5	B	Eucalyptus	8	22.78				TSI-Sal		Har-Euc.					Good growth of cooppice
124	Bhaktipur	5	C	Eucalyptus	7	17.44			TSI-Sal								
125	Bhaktipur	6	A	Eucalyptus	8	24.19		TSI-Sal									
126	Bhaktipur	6	B1	Eucalyptus	5	23.74				TSI-Sal							

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
127	Bhaktipur	6	B2	Eucalyptus	12	7.11		TSI-Sal									Harvesting as suggested by SFDP; Encroached area: 0.40 ha
											TSI-Sal						
128	Bhaktipur	6	C1	Eucalyptus	11	18.4					TSI-Sal						Good growth of coppice, managed for log Production
129	Bhaktipur	6	C2	Eucalyptus	11	2.61		TSI-Sal									Good growth of coppice, managed for log Production
130	Bhaktipur	6	D	Eucalyptus	7	23.21		TSI-Sal									

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
131	Bhaktipur	8	A			2.52						TSI-Sal					Encroached area; two ponds
												TSI-Sal					
132	Bhaktipur	8	B	Eucalyptus	9	18.8							TSI-Sal				Encroached cultivated land: 0.62 ha
133	Bhaktipur	8	C	Eucalyptus	3	22.59						TSI-Sal			Har-Euc.		
							Har-Sal	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak				
134	Bhaktipur	8	D1	Eucalyptus	8	17.25		Weed-Teak									Managed for log production
135	Bhaktipur	8	D2	Teak, Khair	Teak- 3 yrs	5.45	Sing.-Euc.				TSI-Sal						Casualty replacement needed
											TSI-Sal	Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	
136	Bhaktipur	9	A	Eucalyptus	12	21							Weed-Teak				

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
137	Bhaktipur	9	B1	Eucalyptus	12	12.01					TSI-Sal	Har-Euc.					Harvesting to be done - suggested by SFDP
138	Bhaktipur	9	B2	Eucalyptus	12	18.4					TSI-Sal	Har-Euc.					Harvesting to be done - suggested by SFDP
139	Bhaktipur	9	B3			2.1					TSI-Sal	Har-Euc.					Open land
											TSI-Sal	Har-Euc.					
140	Bhaktipur	9	C	Eucalyptus	7	17.1						Har-Euc.	TSI-Sal				
141	Bhaktipur	9	D	Eucalyptus	7	22.3					TSI-Sal	Har-Euc.					
142	Bhaktipur	10	A1	Eucalyptus, Teak	7	14.4					TSI-Sal						Weeding and cleaning: 7.5 ha; Teak coppice; casualty replacement

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
143	Bhaktipur	10	A2	Eucalyptus	3	2.96	Cln-Teak & other spp.	Th-Teak & other spp.			Cln-Teak & other spp.		Th-Teak & other spp.	TSI-Sal			
							Cln-Euc. 5 yrs		Har-Euc. 17 yrs	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak		Cln-Euc. 5 yrs		
							Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak				
144	Bhaktipur	10	B	Eucalyptus, Teak	Euc. coppice- 8 yrs, Teak- 3 yrs	23.75		Weed-Teak									
145	Bhaktipur	10	C	Eucalyptus	8	11.4								Har-Euc.	Sing.-Euc.		Bandevi temple
											Har-Kadam						
146	Bhaktipur	10	D1	Eucalyptus	Euc. first coppice-12 yrs, Euc. Plantation-8 yrs	21.74				Har-Euc.	Sing.-Euc.						Coppice-1.74 ha; Plantation-20 ha

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
147	Bhaktipur	10	D2	Eucalyptus	Euc. first coppice -8 yrs, Euc. Plantation-3 yrs	23.3		Har-Euc.	Sing.-Euc.								
148	Bhaktipur	11	A	Eucalyptus	11, 6	23.8				Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak	
											Weed-Teak						
149	Bhaktipur	11	B	Eucalyptus, Kadam	3, 6	23.9	Cln-Euc.			Cln-Euc.							
							Cln-Euc.				Cln-Euc.						
150	Bhaktipur	11	C	Eucalyptus	6	24.3						Cln-Euc.					
151	Bhaktipur	11	D	Eucalyptus	11, 6	21.59				Cln-Euc.					Cln-Euc.		
152	Bhaktipur	12	A	Eucalyptus	5	24.15		Har-Sissoo	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			
153	Bhaktipur	12	B	Eucalyptus	8	24.3			Weed-Teak								
154	Bhaktipur	12	C	Teak, Gamari	Both spp. 7 yrs	18.3			Har-Sissoo	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak		

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
155	Bhaktipur	12	D	Eucalyptus	5	24.3				Weed-Teak							
156	Bhaktipur	13	A1	Eucalyptus	8	20.2		Har-Sissoo	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			
157	Bhaktipur	13	A2	Eucalyptus	3, 9	9.94			Weed-Teak								4.28 ha plantation in 2072/73
							Har-Sissoo	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	
158	Bhaktipur	13	B	Eucalyptus, Satisal, Sissoo	Euc. - 6 yrs.	23		Weed-Teak									
159	Bhaktipur	13	C	Teak	18	20.64				Har-Sissoo	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak	
160	Bhaktipur	13	D1	Teak	9	0.79					Weed-Teak						
161	Bhaktipur	13	D2			0.14											Open land
															Har-Euc.	Sing.-Euc.	
162	Bhaktipur	14	A	Eucalyptus	10	18.94	Weed-Euc. (open places)										Good growth

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
163	Bhaktipur	14	B	Eucalyptus	Euc. coppice - 8 yrs, Euc. plantation- 4 yrs	23.62	Weed-Euc. (open places)										Good growth
164	Bhaktipur	14	C	Eucalyptus	8	22.77											
165	Bhaktipur	14	D	Eucalyptus	9	23.1				Th-Sisso & khair			Cln-all species		Th-Sisso		
166	Bhaktipur	15	A	Eucalyptus	9	22.93		Th-Teak		Cln-Teak			Th-Teak		Cln-Teak		Few Teak
167	Bhaktipur	15	B	Eucalyptus	9	23.93		Th-Teak		Cln-Teak			Th-Teak		Cln-Teak		Few Teak
168	Bhaktipur	15	C	Eucalyptus, Teak, Sal	Euc.- 7 yrs, Sal - 23 yrs	23.07		Har- Euc.	Pln & repl-Euc.	Weed-Euc. new	Weed-Euc. new	Cln-Euc. new	Cln-Euc. new	Th-Euc.			Few Teak
169	Bhaktipur	15	D	Eucalyptus, Sal	Euc. - 8 yrs, Sal - 31 yrs	22.56			Weed-Euc. new								
170	Bhaktipur	16	B	Eucalyptus	6	9.35		Pln-Euc. (replacement)	Weed-Euc. new	Weed-Euc. new	Cln-Euc. new	Cln-Euc. new		Cln-Euc. 5 yrs			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
171	Bhaktipur	16	C	Eucalyptus	Euc. - 8 yrs (4 ha), Euc.-4 yrs (1 ha)	5		Weed-Euc. New	Cln-Euc.								Good growth, managed for log production
172	Bhaktipur	17	A	Eucalyptus	5	23.18					Cln-Euc.						
173	Bhaktipur	17	B	Eucalyptus	5	22.55	Cln-Euc.						Cln-Euc.				
174	Bhaktipur	17	C	Eucalyptus	7	22.04			Th-Teak			Cln-Euc. & Teak		Th-Teak			
175	Bhaktipur	17	D	Eucalyptus	7	19.82											
176	Bhaktipur	18	A	Eucalyptus	8	24.23						Cln-Euc.					
177	Bhaktipur	18	B	Eucalyptus, Sal	Euc.- 4 yrs, Sal-23 yrs	24.18											Conservation (Sal)- 8 ha, Cleaning - 16.18
178	Bhaktipur	18	C	Eucalyptus, Sal	Euc. - 9 yrs, Sal-14 yrs	21.9	Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
179	Bhaktipur	18	D	Teak, Eucalyptus	Teak - 18 yrs, Euc. - 10 yrs (coppice)	19.06		Weed-Teak									
180	Bhaktipur	19	B	Eucalyptus	5	2.25									Har-Euc.	Sing.-Euc.	
181	Bhaktipur	20	A	Eucalyptus	5	18.52									Har-Euc.	Sing.-Euc.	Pond-1, Encrouchment- 0.3 ha
182	Bhaktipur	20	B	Eucalyptus	5	19.65			Th-Euc.			Cln-Euc.		Th-Euc.			Rajdevi temple
183	Bhaktipur	20	C	Eucalyptus	6	3.19	Weed-Teak										Poor condition and harvesting to be done as suggested by SFDP for fire wood

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
184	Bhaktipur	21	A	Eucalyptus	5, 13	22.65	Pln-Euc. (replacement)			Cln-Euc. New & old					Cln-Euc. New & old		Harvesting for poles- suggested by SFDP
185	Bhaktipur	21	B	Eucalyptus	13	21.95	Weed-Euc.	Weed-Euc.	Weed-Euc.								Harvesting for pole - suggested by SFDP
186	Bhaktipur	21	C	Eucalyptus	13	24.3				Cln-Euc.							Harvesting for pole - suggested by SFDP
187	Bhaktipur	21	D	Eucalyptus	13	21	Pln-Teak (replacement)	Th-Teak 3 yrs		Cln-Teak all	Th-Teak new		Th-Teak 3 yrs			Th-Teak new	Harvesting for pole - suggested by SFDP
188	Bhaktipur	24	A	Eucalyptus, Teak	Both spp. - 5 yrs	16.81	Weed-Teak	Weed-Teak	Weed-Teak								
							Sing.-Euc.										
189	Bhaktipur	24	B	Eucalyptus, Sal	Euc. - 11 yrs	24.31		Har-Euc.	Sing.-Euc.							Cln-Euc.	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
190	Bhaktipur	24	C	Eucalyptus, Sal	Euc. - 10 yrs	24.31		Har-Euc.	Sing. -Euc.							Cln-Euc.	
191	Bhaktipur	24	D	Eucalyptus, Teak	Both spp.- 20 yrs	16.9	Pln & repl-Teak	Weed-Teak	Weed -Teak	Cln-Teak	Cln-Teak					Th-Teak	Pond-1, Encroachment- 0.5 ha
192	Bhaktipur	27	A	Eucalyptus	10	21.61	Weed-Teak				Th-Teak						
193	Bhaktipur	27	B	Eucalyptus	10	23.95											
194	Bhaktipur	27	C	Eucalyptus	10	17.36											Pond-1
195	Bhaktipur	27	D	Eucalyptus	9, 4	15.86								Cln-Euc. & teak			
196	Bhaktipur	27	D1	Eucalyptus	Euc. -9 yrs (4.15 ha), Euc.- 4 yrs (4 ha)	8.15	Cln-Euc. 3 yrs								Cln-Euc. 3 yrs		Plot near to settlement area
197	Bhaktipur			Eucalyptus	9	8.5		Pln-Euc. (replacement)	Weed -Euc.	Weed-Euc.	Cln-Euc. new	Cln-Euc. new				Cln-Euc. New	Research plot
198	Bhaktipur			Teak, Eucalyptus	Teak - 30 yrs, Euc.- 25 yrs	4.0		Weed-Euc.									Research plot

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
199	Bhaktipur			Eucalyptus	7, 14	3.41		Th-Teak					Th-Teak				Research plot
200	Kusmari	1	A	Eucalyptus, Teak	Both spp. - 3 yrs	13.28	Pln-Euc. in open place	Weed-Euc.	Weed-Euc.	Cln-Euc. new	Cln-Euc. new			Cln-Euc. 8 yrs			
201	Kusmari	1	B	Eucalyptus, Sissoo	Euc. - 6 yrs	24.03	Weed-Euc.	Cln-Euc. 8 yrs									Chowki to be constructed
											Cln-Euc. 8 yrs			Har-Euc. coppice	Sing.-Euc.		
202	Kusmari	1	C	Eucalyptus, Sissoo	Euc. - 6 yrs	19	Cln-Euc. 3 yrs			Cln-Euc. 3 yrs							
														Cln-Euc. Both	Har-Euc 11 yrs	Sing.-Euc.	
203	Kusmari	1	D	Eucalyptus, Teak	Both spp. -3 yrs	11											Casualty replacement to be done
204	Kusmari	2	A	Eucalyptus	9	23	Cln-Euc. 3 & 6 yrs					Cln-Euc. 3 & 6 yrs					Harvesting -as suggested by SFDP

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
205	Kusmari	2	B	Eucalyptus	9	15.05							Cln-Euc.				In railway line
206	Kusmari	2	C	Eucalyptus	9	24						Cln-Euc. 6 yrs			Har-Euc 11 yrs	Sing.-Euc.	In railway line
207	Kusmari	2	D	Eucalyptus	4	22.05				Cln-Euc.							In railway line
208	Kusmari	3	A	Eucalyptus, Sal, Asna	Sal - 22 yrs	18	Cln-Teak & gamari		Th-Teak, gamari			Cln-Teak & gamari		Th-Gamari			Sal management; previously cultivated area
209	Kusmari	3	B	Eucalyptus, Sal, Asna, Khair	Sal - 23 yrs	20.05				Cln-Euc.							Sal management
210	Kusmari	3	C	Eucalyptus, Sal, Asna, Khair	Sal - 24 yrs	21						Har.-Sisso	Cln-Euc.				Sal management
211	Kusmari	3	D	Eucalyptus, Sal, Asna, Khair	Sal - 25 yrs	20		Th-Teak						Cln-Teak			Sal management

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
212	Kusmari	4	A	Eucalyptus, Sal, Khair	Khair and Sal - 27 yrs	21.07	Weed-Teak										Sal management
213	Kusmari	4	B	Eucalyptus, Sal, Khair	Khair and Sal - 28 yrs	22.15										Har. -Euc.	Sal management
214	Kusmari	4	C	Eucalyptus, Sal	Euc.-7 yrs	21.05											
215	Kusmari	4	D	Eucalyptus, Sal	Euc.- 7 yrs	20.04											
216	Kusmari	6	B	Eucalyptus	3	12					TSI-Sal	Cln-Euc.					Replacement needed
217	Kusmari	6	C	Eucalyptus	23	13				TSI-Sal							
								Cln-Euc.					Cln-Euc.				
218	Kusmari	6	D	Eucalyptus, Teak	Teak - 3 yrs	6.05						Cln-Euc.					
219	Kusmari	7	A	Eucalyptus	27	23.08						Cln-Euc.					Stick size Eucalyptus
										Cln-Euc.							
220	Kusmari	7	B	Eucalyptus	9	16									TSI-Sal		
221	Kusmari	7	C	Eucalyptus	9	23.06		Th-Teak									

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
222	Kusmari	7	D	Eucalyptus	27	23.75		Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Stick size Eucalyptus
									Weed-Teak								
223	Kusmari	8	A	Eucalyptus, Khair, Bakaino	Euc. - 12 yrs	19.65							Har-Euc.	Sing.-Euc.			In railway line
							Har-Euc.	Sing.-Euc.									
224	Kusmari	8	B	Eucalyptus, Khair	Khair-17 yrs, Euc. new plantation	22.45		Har-Euc.	Sing.-Euc.							Cln-Euc.	In railway line
225	Kusmari	8	C	Eucalyptus, Sal, Khair	Khair and Sal - 18 yrs, Euc. new plantation	20.25		Har-Euc.	Sing.-Euc.							Cln-Euc.	In railway line
226	Kusmari	8	D	Eucalyptus	11	22.4	Cln-Euc.					Cln-Euc.			Cln-Teak		In railway line
227	Kusmari	9	A	Eucalyptus	12	9.06									TSI-Sal		
228	Kusmari	9	B	Sal, Eucalyptus	Sal - 17 yrs	24.3								TSI-Sal		Har-Euc.	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
229	Kusmari	9	C	Sal, Khair	Sal - 27 yrs	20.65	Sing.-Euc. & Teak							Cln-Euc. & teak			Sal management; Khair harvested or not????
230	Kusmari	9	D	Sal, Eucalyptus, Khair	Sal - 27 yrs	20.05										Har-Euc.	Sal management
231	Kusmari	10	A	Eucalyptus, Sal	Euc. and Sal- 22 yrs	24.03										Har-Euc.	
232	Kusmari	10	B	Eucalyptus, Sal	Euc. and Sal- 22 yrs	23.05										Har-Euc.	
233	Kusmari	10	C	Eucalyptus, Sal, Khair	All spp.- 22 yrs	18.02		Har-Euc. & Teak	Sing.-Euc. & Teak							Cln-Teak & Euc.	Soil not suitable for teak plantation
234	Kusmari	10	D	Eucalyptus, Sal, Khair	All spp.- 22 yrs	15.02	Cln-Euc. & Teak					Cln-Euc. & Teak					Soil not suitable for teak plantation
235	Kusmari	11	A	Eucalyptus	5	10.02		Har-Sissoo	Pln & repl-Teak	Cln-Euc.		Cln-Teak	Cln-Teak	Th-Teak	Cln-Euc.		

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
236	Kusmari	11	B	Eucalyptus	12	15.05			Weed-Teak	Weed-Teak	Weed-Teak						
237	Kusmari	11	C	Eucalyptus	22	17.05		Har-Euc., Sissoo	Pln & repl-Teak	Cln-Euc.		Cln-Teak	Cln-Teak	Th-Teak	Cln-Euc.		
									Weed-Teak	Weed-Teak	Weed-Teak						
238	Kusmari	11	D1	Eucalyptus	28	5.05	Cln-Euc. & Teak	Th- Teak			Cln-Euc. & Teak		Th-Teak				25 ha cf, police camp associated
									Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak		
239	Kusmari	11	D2	Eucalyptus	28	4.05				Weed-Teak							25 ha cf, police camp associated
240	Kusmari	12	A	Eucalyptus	8	14							Cln-Euc.				
241	Kusmari	12	B	Eucalyptus	8	24.05	Cln-Euc.	Th- Euc.					Th-Euc.				
242	Kusmari	12	C	Eucalyptus, Khair	3	16.07		Har-Euc.				TSI-Sal					
243	Kusmari	12	D	Eucalyptus	22	19.05			TSI-Sal			Har-Euc., Khair					

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
										Har-Euc., Khair	TSI-Sal						
244	Kusmari	13	A	Eucalyptus	8	23					Har-Euc. & Khair		TSI-Sal				In railway line
245	Kusmari	13	B	Eucalyptus	6	23.06			Har-Euc.			TSI-Sal				Har-Khair	In railway line,soil not suitable for teak
246	Kusmari	13	C	Eucalyptus	6	24.03				Har-Euc	TSI-Sal					Har-Khair	In railway line, soil not suitable for teak
247	Kusmari	13	D	Eucalyptus, Sissoo, Khair	Euc. - 7 yrs	18.05			TSI-Sal								In railway line, No Sissoo & khair not ready for harvesting
248	Kusmari	14	A	Eucalyptus, Sal	Euc. - 4 yrs	12.03				TSI-Sal				Cln-Euc.			In railway line
249	Kusmari	14	B	Eucalyptus, Sal, Teak	Euc. - 4 yrs	17.08	Cln-Euc.				Cln-Euc.						

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
250	Kusmari	14	C	Eucalyptus, Sal, Teak	Euc. - 4 yrs	24	Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak				
251	Kusmari	14	D	Eucalyptus, Sal	Euc. - 4 yrs	21.04		Weed-Teak									Removal of Sal in cleaning; in railway line
252	Kusmari	15	A	Eucalyptus, Sal	Euc. - 7 yrs	19	Cln-Teak & Euc.	Th- Euc.			Cln-Teak & Euc.		Th Teak.				
253	Kusmari	15	B	Eucalyptus, Sal	Euc. - 5 yrs	22.06		Weed-Teak									
254	Kusmari	15	C	Eucalyptus, Sal	Euc. -7 yrs	22	Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	Poor (low) stocking of Eucalyptus
								Weed-Teak									
255	Kusmari	15	D	Eucalyptus, Sal	Euc. - 7 yrs	22.65		Har-Euc., Bakaino	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Poor (low) stocking of Eucalyptus
									Weed-Teak								
256	Kusmari	16	A	Eucalyptus, Teak	Teak - 17 yrs	24.3					Cln-Euc.						

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
257	Kusmari	16	A1	Eucalyptus, Teak		10.2	Cln-Euc.		Th-Khair					Cln-Euc.			
															Har-Euc.	Sing.-Euc.	
258	Kusmari	16	B	Eucalyptus	7	22.05								Har-Euc.	Sing.-Euc.		
259	Kusmari	16	C	Eucalyptus	9	7.95					Har-Euc.					TSI-Sal	
260	Kusmari	16	D	Eucalyptus	8	16.05									TSI-Sal		
261	Kusmari	17	A	Eucalyptus	8	21.05		Har-Euc.			TSI-Sal						Managed for log production
262	Kusmari	17	B	Eucalyptus, Sal, Khair	Euc.- 10 yrs, Khair and Sal - 27 yrs	21.05	Har-Euc. coppice	Sing.-Euc.								TSI-Sal	
263	Kusmari	17	C	Eucalyptus	27	12.75	Har-Euc. coppice	Sing.-Euc.								TSI-Sal	
							Har-Euc.	Sing.-Euc.							TSI-Sal	Har-Khair	
264	Kusmari	17	D	Eucalyptus	8	12.05	Har-Euc.	Sing.-Euc.						Cln-Euc.	TSI-Sal	Har-Khair	
265	Kusmari	18	A	Eucalyptus, Sal, Khair	Euc. - 27 yrs, Sal 68 yrs	21								Har-Euc.	Sing.-Euc.		In railway line

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
							Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	
266	Kusmari	18	B	Eucalyptus, Sal, Khair	Euc. - 22 yrs	17		Weed-Teak									In railway line
							Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	
267	Kusmari	18	C	Khair	27	11.05		Weed-Teak									In railway line
							Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	
268	Kusmari	18	D	Eucalyptus, Sal	Sal - 20 yrs	15		Weed-Teak									Highly degraded by climbers; in railway line
										Cln-Euc.							
269	Kusmari	19	A	Eucalyptus, Sal	Sal - 27 yrs	23.01				Cln-Euc.							
							Har-Khair			Cln-Euc.							
270	Kusmari	19	B	Eucalyptus, Sal	Sal - 17 yrs	23.01	Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak				Cln-Teak	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
								Weed-Teak									
271	Kusmari	19	C	Eucalyptus, Khair, Sal	Sal - 17 yrs	14				Cln-Euc.							Sal management
272	Kusmari	19	D	Eucalyptus, Sal, Khair	Sal - 21 yrs, Euc.- 10 yrs	12.01											Suggested by SFDP; Bush area
273	Kusmari	20	A	Eucalyptus, Sal	Sal - 14 yrs	21.01					Cln-all species					Cln-all species	
274	Kusmari	20	B	Eucalyptus, Sal	Sal - 17 yrs	23.08	Cln-Euc.			TSI-Sal		Cln-Euc.					
275	Kusmari	20	C	Eucalyptus, Sal, Bijayasal	Sal - 27 yrs	12.06	Cln-Euc.		TSI-Sal		Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak		Sal management
276	Kusmari	20	D	Eucalyptus	Euc. - 20 yrs	14						Weed-Teak					Soil not suitable for teak
							Cln-Euc.		TSI-Sal		Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak		

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
277	Hatilet	1	A	Teak	2	10.75						Weed-Teak					
278	Hatilet	1	B	Eucalyptus	9	25.16			Th-Teak			Cln-Euc.					
279	Hatilet	1	C	Eucalyptus	9	5.93					Har-Euc. Coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	
280	Hatilet	1	D	Teak	2	0.47						Weed-Teak					
281	Hatilet	2	A	Eucalyptus	9	20.74											
282	Hatilet	2	B	Eucalyptus	9	14.8											
283	Hatilet	2	C	Eucalyptus	9	17.78				Cln-Euc.							
284	Hatilet	2	D	Eucalyptus, Teak	Euc. - 9 yrs, Teak- 2 yrs	10.21											Teak plantation-4.5 ha; casualty replacement needed
285	Hatilet	3	A	Eucalyptus	10	17.92	Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
286	Hatilet	3	B	Eucalyptus	12	23.64		Weed-Teak									In railway line; check it , harvested or not??; if harvested, what is done??
287	Hatilet	3	C	Eucalyptus, Teak	Euc. - 11 yrs, Teak - 2 yrs	10.24											Teak plantation -1.47 ha; casualty replacement in teak; in railway line
288	Hatilet	3	D	Teak	2	17.07	Har-Euc. & Khair	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak		Cln-Teak		Teak plantation -10.85 ha; casulaty replacement needed

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
289	Hatilet	4	A	Eucalyptus	33	24.3		Weed-Teak		TSI-Sal							In railway line
								Har-Euc. & Khair	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			
290	Hatilet	4	B	Eucalyptus	8	24.3			Weed-Teak		TSI-Sal						Very poor condition
								Har-Khair	Pln & repl-Khair	Weed-Khair	Weed-Khair	Cln-Khair	Cln-Khair	Th-Khair			
291	Hatilet	4	C	Eucalyptus	8	23.85			Weed-Khair								Very poor condition
							Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak	TSI-Sal			
292	Hatilet	4	D	Sissoo	8	18.07		Weed-Teak									In railway line
								Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			
293	Hatilet	5	A	Eucalyptus	6	24			Weed-Teak		TSI-Sal						
								Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
294	Hatilet	5	A1 (B)	Eucalyptus	10	7.5			Weed-Teak				TSI-Sal				Very poor condition; 5B is stated in map instead of 5A1
									Har-Euc.					TSI-Sal			
295	Hatilet	5	D	Eucalyptus, Khair, Teak	Euc. - 6 yrs	24.3					Har-Euc	Pln & repl-Khair	Weed-Khair	Weed-Khair	Cln-Khair	Cln-Khair	What is done after Khair harvesting ? Check it; First coppice-teak
												Weed-Khair			TSI-Sal		
296	Hatilet	5	D1 or C	Eucalyptus	10	3.9					Har-Euc.	Sing.-Euc.	TSI-Sal				Poor performance; 5C in map
								Har-Euc.	Sing.-Euc.		Cln-Euc.				TSI-Sal		

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
297	Hatilet	5	D2	Eucalyptus	10	8.62			Har-Euc.	TSI-Sal							
								Har-Euc.	Pln & repl-Kadam	Weed-Kadam	Weed-Kadam	Cln-Kadam	Cln-Kadam	Th-Kadam			
298	Hatilet	6	A	Eucalyptus, Teak	Euc -8 yrs Teak - 3 yrs	5.44			Weed-Kadam								
299	Hatilet	6	B	Eucalyptus, Teak	3	12.9	Weed-Teak	Cln-Teak	Th-Teak				Cln-Teak	Th-Teak			
300	Hatilet	6	C	Eucalyptus	12	24.3											What is done after Eucalyptus harvesting ? Check it.
301	Hatilet	6	D	Eucalyptus, Teak	Euc. - 11 yrs, Teak - 2 yrs	12.12	Weed-Teak	Cln-Teak	Th-Teak				Cln-Teak	Th-Teak			Casualty replacement of Teak is needed; Euc.- 7.03 ha, Teak- 5.09 ha
302	Hatilet	7	A	Eucalyptus, Teak	Euc.- 6 yrs	17.5			Th-Teak					Th-Teak			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
303	Hatilet	7	B	Eucalyptus	6	23	Sing.-Euc.										
304	Hatilet	7	C	Eucalyptus	6	20	Cln-Teak		Th-Teak	Cln-Euc.	Th-Euc.		Cln-Teak	Th-Teak	Har-Euc.	Sing.-Euc.	
305	Hatilet	7	D	Eucalyptus	9	14	Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak		Th-Teak			Fire damage
306	Hatilet	8	A	Eucalyptus, Sal	Euc. - 5 yrs, Sal - 32 yrs	22.63	Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak		Th-Teak		Cln-Teak		Sal- 6 ha, Fire damage
307	Hatilet	8	B	Sal, Eucalyptus	Sal - 27 yrs	21.92		Weed-Teak									Eucalyptus failed; Sal management; in railway line
308	Hatilet	8	C	Eucalyptus, Sal (few)	Euc.- 5 yrs	23.13	Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	Few sal; in railway line
309	Hatilet	8	D	Eucalyptus	6	22.65		Weed-Teak									Casualty replacement is needed.

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
310	Hatilet	9	A	Sal, Eucalyptus	Sal - 27 yrs	22.2	Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	Very poor performance of Eucalyptus coppice; in railway line
								Weed-Teak									
311	Hatilet	9	B	Sal, Eucalyptus	Sal - 28 yrs	23.88		Pln-Teak in open places	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak		Th-Sisso		Cln-Teak	Very poor performance of Eucalyptus coppice
								Weed-Teak	Th-Sisso								
312	Hatilet	9	C	Eucalyptus, Sal, Khair	Euc. - 5 yrs, Sal - 27 yrs and Khair - 10 yrs	22.7						Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
313	Hatilet	9	D	Eucalyptus, Teak, Khair	Euc. and Teak- 5 yrs, Khair - 13 yrs	22.7							Weed-Teak				In railway line
314	Hatilet	10	A	Sal, Eucalyptus	Sal - 26 yrs, Euc.- 10 yrs	23.85	Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	
315	Hatilet	10	B	Eucalyptus, Sal	Euc. - 10 yrs, Sal - 27 yrs	23.84		Weed-Teak									Harvesting -as suggested by SFDP
							Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak all	Cln-Teak new	Th-Teak				Cln-Teak all	
316	Hatilet	10	C	Sal, Eucalyptus	Sal - 26 yrs, Euc. - 5 yrs	11.97	Weed-Teak										
317	Hatilet	10	D	Eucalyptus, Sal	Euc.-12 yrs	23.1	Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Cln-Teak	Harvesting -as suggested by SFDP
								Weed-Teak									

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
318	Hatilet	11	A	Eucalyptus, Teak	Euc.-4 yrs, Teak- 3 yrs	5.49		Har-Euc. coppice	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			
319	Hatilet	11	B	Eucalyptus, Teak	7	20.5			Weed-Teak								Casualty replacement needed
320	Hatilet	11	C	Eucalyptus, Teak	Euc.-8 yrs, Teak-7 yrs	23.1		Th-Teak		Cln-Euc. & Teak			Th-Teak		Cln-Euc. & Teak		Harvesting -as suggested by SFDP
								Th- Teak		Cln-Euc. & Teak			Th-Teak		Cln-Euc. & Teak		
321	Hatilet	11	D	Eucalyptus, Teak, Sissoo	Euc. -4 yrs, Teak-2 yrs, Sissoo-6 yrs	7	Sing.-Euc.										
322	Hatilet	12	A	Eucalyptus	6	23.85	Weed-Teak	Cln-Teak	Th-Teak					Th-Teak	Har-Euc.	Sing.-Euc.	
323	Hatilet	12	B	Eucalyptus	5	24.15		Cln-Euc. & Teak					Cln-Euc. & Teak				Fire damage
324	Hatilet	12	C	Eucalyptus	9, 4	24.3			Cln-Euc.				Cln-Euc.				
325	Hatilet	12	D	Eucalyptus	6	24.3			Cln-Euc.				Cln-Euc.				

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
326	Hatilet	13	A	Sal, Eucalyptus, Khair	Sal - 29 yrs	18.66			Har-Euc.				TSI-Sal				Harvesting -as suggested by SFDP
							Cln-Euc.					Cln-Euc.					
327	Hatilet	13	B	Eucalyptus, Sal, Siris	Euc.-5 yrs, Sal- 29 yrs	19.87	Har-Euc.	Pln-& Repl-Khair	Weed-Khair	Weed-Khair	Cln-Khair	Cln-.Khair	Th-Khair			TSI-Sal	In railway line
328	Hatilet	13	C	Eucalyptus, Sal, Siris	Euc. -21 yrs, Sal-29 yrs	24.15		Weed-Khair									In railway line,Sal evenly distributed & good growth, so focus is for Sal management
329	Hatilet	13	D	Sal, Eucalyptus	Sal-29 yrs, Euc.-11 yrs	24.21		Har-Euc.	Pln-& Repl-Khair	Weed-Khair	Weed-Khair	Cln-Khair	Cln-.Khair	Th-Khair		TSI-Sal	Harvesting -as suggested by SFDP

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
									Weed - Khair								
330	Hatilet	14	A	Eucalyptus, Siris	Euc. - 5 yrs, Siris- 23 yrs	13.5	Cln-Euc. & Khair				TSI-Sal	Cln-Euc. & Khair					Poor performance of Eucalyptus; in railway line
												TSI-Sal				Har-Euc. coppice	
331	Hatilet	14	B	Eucalyptus, Khair, Siris	Euc. - 8 yrs	15.36		Har-Euc. coppice	Pln- & Repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			
332	Hatilet	14	C	Eucalyptus	8	20.8			Weed-Teak								
333	Hatilet	14	D	Sal, Eucalyptus, Siris	Sal - 29 yrs, Euc. - 8 yrs	23.39				TSI-Sal							In railway line
334	Hatilet	15	A	Eucalyptus, Khair	Euc. - 12 yrs	12.74			Har-Euc. coppice	Pln- & Repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak		
335	Hatilet	15	B	Eucalyptus, Sal, Khair	Euc. - 7 yrs	17.72				Weed-Teak			TSI-Sal				

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
336	Hatilet	15	C	Eucalyptus, Sal	Euc.- 7 yrs, Sal- 25 yrs	11.07		Cln-Teak & Euc.					Cln-Teak & Euc.	Th-Teak			
337	Hatilet	15	D	Sal, Eucalyptus	Both spp.- 32 yrs	21.34			Th teak- 7 yrs.	Har-Euc. coppice	Pln & repl-Teak new	Weed-Teak new	Weed-Teak new	Cln-Teak new	Cln-Teak new	Th - teak new	
											Weed-Teak new			Th - teak- 7 yrs.			
338	Hatilet	17	A	Eucalyptus	9	6.71							Cln-Euc.				Managed for log production
339	Hatilet	17	B	Eucalyptus	9	7.9						Cln-Euc.					Managed for log production
340	Hatilet	17	C	Eucalyptus	9	23.45		Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			Managed for log production
341	Hatilet	17	D	Eucalyptus	9	13.45			Weed-Teak				TSI-Sal				
							Har-Euc.		TSI-Sal		Har-Siris						
342	Hatilet	18	A			3.05			Har-Euc.	Pln & repl-Teak	TSI-Sal	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak		

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
										Weed-Teak	Weed-Teak						
343	Hatilet	18	B	Eucalyptus	9 and 5 yrs	20		Har-Euc. & Siris	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak			
344	Hatilet	18	C	Eucalyptus	9 and 5 yrs	25			Weed-Teak								Poor performance of Eucalyptus
							Har.-Siris										
345	Hatilet	18	D	Eucalyptus, Khair	Euc. -7 yrs, Khair-9 yrs	18											
346	Hatilet	19	A	Eucalyptus	5 yrs-coppice, 7 yrs-plantation	25			TSI-Sal		Cln-Euc.						7 years-coppice; 5 years-plantation
347	Hatilet	19	B	Teak, Eucalyptus	Euc. - 7 yrs, Teak - 5 yrs	24.13									Har-Euc. Coppice	Sing.-Euc.	
														TSI-Sal			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
348	Hatilet	19	C	Eucalyptus, Sal, Siris	Euc. - 10 yrs, Sal and Siris-27 yrs	15						TSI-Sal					In railway line
							Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak				
349	Hatilet	19	D	Eucalyptus	5	19		Weed-Teak	TSI-Sal								Poor performance of Eucalyptus; casualty replacement needed
350	Hatilet	20	A	Sal, Siris, Eucalyptus, Khair	Sal- 32 yrs	22.9											Harvesting-as suggested by SFDP; Sal management; In railway line

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
351	Hatilet	20	B	Sal, Siris, Eucalyptus, Khair	Euc. - 8 yrs	15		Weed-Euc.		Cln-Euc. 9 yrs							
352	Hatilet	20	C	Sal, Eucalyptus, Khair	Sal-32 yrs, Euc. and Khair-9 yrs	23.9	Pln & repl-Khair	Weed-Khair	Weed - Khair	Cln-Khair	Cln-Khair	Th-Khair				Cln-Khair	
353	Hatilet	20	D	Sal, Siris, Eucalyptus, Khair	Sal- 32 yrs, Khair and Euc.-9 yrs	21.3	Weed-Khair										Harvesting -as suggested by SFDP
							Har-Euc.	Pln & repl-Teak	Euc.-Teak	Euc.-Teak	Cln-Teak	Cln-Teak	Th-Teak				
354	Hatilet	21	A	Sal, Siris, Eucalyptus, Khair	Sal - 33 yrs, Euc. and Khair-10 yrs	19.25		Euc.-Teak									Harvesting -as suggested by SFDP
								Th-Khair									
355	Hatilet	21	B	Sal, Eucalyptus, Khair	Sal - 33 yrs	21.8	Cln-Euc. Coppice 5 yrs					Cln-Euc. (both)					Harvesting -as suggested by SFDP

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
														Cln-Teak			
356	Hatilet	21	C	Khair, Sal, Eucalyptus	Khair-25 yrs, Sal and Euc.-30 yrs	15.8			Har-Siris	Pln & repl-Euc	Weed-Euc.	Weed-Euc.				Har-Euc. coppice	
										Weed-Euc.	TSI-Sal						
357	Hatilet	21	D	Eucalyptus, Sal, Khair, Siris	Khair-25 yrs, Euc.-27 yrs	23.65		Cln-Euc.					Cln-Euc.				Harvesting -as suggested by SFDP
									Har-Euc., Siris, Khair	Pln & repl-Euc	Weed-Euc.	Weed-Euc.	Cln-Euc.	Cln-Euc.			
358	Hatilet	22	A	Eucalyptus, Sal	Euc.-11 yrs, Sal - 27 yrs	23.5				Weed-Euc.	TSI-Sal						
359	Hatilet	22	D	Eucalyptus, Sal	Euc.- 6 yrs, Sal- 27 yrs	21.6								TSI-Sal			
360	Lakshminiya	1	A	Teak	2	1.18			Har-Euc., Khair	Pln & repl-Siris	Weed-Siris	Weed-Siris	Cln-Siris	Cln-Siris	Th-Siris		Replacement needed
361	Lakshminiya	1	B	Eucalyptus	5	21.28				Weed-Siris			TSI-Sal				

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
362	Lakshminiya	1	B1	Eucalyptus	5	7		Har-Euc., Khair	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak	TSI-Sal		Information available in plantation record of 2042 but it is not shown in map
363	Lakshminiya	1	C	Eucalyptus	5	7			Weed-Teak								
364	Lakshminiya	1	D	Eucalyptus	5	23.19			Har-Euc.	Pln & repl-Khair	Weed-Khair	Weed-Khair	Cln-Khair	Cln-Khair	Th-Khair		Very low stocking of Eucalyptus; Replacement needed.
365	Lakshminiya	2	A	Sal, Eucalyptus	Euc. - 12 yrs, Sal - 28 yrs	24.3				Weed-Khair	TSI-Sal						
							Har-Euc. & Khair	Pln & repl-Khair	Weed-Khair	Weed-Khair	Cln-Khair	Cln-Khair	Th-Khair	TSI-Sal		Cln-Khair	
366	Lakshminiya	2	B	Sal, Eucalyptus	Euc. - 12 yrs	20.29		Weed-Khair									

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
								Har-Euc., Siris, Khair	Pln & repl-Khair	Weed-Khair	Weed-Khair	Cln-Khair	Cln-Khair	Th-Khair	TSI-Sal		
367	Lakshminiya	2	C	Eucalyptus, Sal	Euc. - 4 yrs, Sal-22 yrs	23.06			Weed-Khair								In railway line
368	Lakshminiya	2	D	Eucalyptus	6	24.3									TSI-Sal	Har-Euc. coppice	
369	Lakshminiya	3	C	Sal, Eucalyptus	Euc. - 17 yrs, Sal - 27 yrs	24.33					TSI-Sal						
							Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak		Th-Teak			
370	Lakshminiya	3	D	Sal, Eucalyptus	Euc. - 17 yrs, Sal - 27 yrs	24.05		Cln-Euc.				Cln-Euc.					In railway line
													TSI-Sal	Har-Euc.	Pln & repl-Teak	Weed-Euc.	
371	Lakshminiya	4	C	Sal, Eucalyptus	Euc. - 17 yrs, Sal - 27 yrs	23.32									Weed-Euc.		
													TSI-Sal	Har-Euc.	Pln & repl-Teak	Weed-Euc.	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
372	Lakshminiya	4	D	Sal, Eucalyptus	Euc. - 17 yrs, Sal - 27 yrs	24.05									Weed-Euc.		
							Cln-Euc.				Cln-Euc.						
373	Lakshminiya	5	A	Eucalyptus, Teak	6	9.45			Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak		
										Weed-Teak		TSI-Sal					
374	Lakshminiya	5	B	Eucalyptus	9	24.4			Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak		
375	Lakshminiya	5	C	Eucalyptus	9	23.3				Weed-Teak			TSI-Sal				
376	Lakshminiya	5	D	Eucalyptus, Teak	Euc. - 13 yrs, Teak- 2 yrs	9.96		TSI-Sal		Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak	
											Weed-Teak						
377	Lakshminiya	6	A	Eucalyptus	4	24.22	TSI-Sal			Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak	
378	Lakshminiya	6	B	Sal	32	24.3					Weed-Teak						In railway line

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
379	Lakshminiya	6	C	Sal	32	22.58	Har-Large size Euc.	Pln & repl-Teak	Weed-Teak new	Weed-Teak new	Cln-Teak new	Cln-Teak new	Th-Teak new		Cln-Euc. & Teak		In railway line
380	Lakshminiya	6	D	Eucalyptus, Sal	Euc. - 9 yrs, Sal - 32 yrs	23.8	Cln-Euc. & Teak	Weed-Teak new				Cln-Euc. & Teak					In railway line, poor growth of sal
381	Lakshminiya	7	A	Sal, Eucalyptus	Sal - 32 yrs	23.83	Cln-Euc.	Har-Large size Euc.			Cln-Euc.						Sal management; Damage due to fire
382	Lakshminiya	7	B	Sal, Eucalyptus	Sal - 32 yrs	24	Weed-Teak 2 yrs	Th-Euc.	Th-Teak 2 yrs				Har-Euc.	Sing.-Euc.			Sal management; Damage due to fire
383	Lakshminiya	7	C	Sal, Eucalyptus	Sal - 32 yrs	24.2		Cln-Teak 2 yrs						Th-Teak 2 yrs			Sal management; Damage due to fire
384	Lakshminiya	7	D	Sal, Eucalyptus	Sal - 32 yrs	23.67	TSI-Sal									TSI-Sal	Sal management; Damage due to fire

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
385	Lakshminiya	8	A	Sal, Eucalyptus	Sal - 24 yrs	24						TSI-Sal					Sal management; Damage due to fire
386	Lakshminiya	8	B	Sal, Asna	Sal - 24 yrs	23.6	Har-Euc.				TSI-Sal						Damage due to fire; in railway line
									Har-Euc.	TSI-Sal							
387	Lakshminiya	8	C	Sal, Asna	Sal - 24 yrs	24.1		Har-Euc.				TSI-Sal					Damage due to fire
									Har-Euc.		TSI-Sal						
388	Lakshminiya	8	D	Sal	Sal - 24 yrs	24.3				Har-Euc.				TSI-Sal			Damage due to fire
389	Lakshminiya	9	A	Eucalyptus	6	15.8			Har-all spcs other than sal.	Pln & repl-Kadam	Weed-Kadam	Weed-Kadam	Cln-Kadam	Cln-Kadam	Th-Kadam	TSI-Sal	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
390	Lakshminiya	9	B	Eucalyptus	6	19.12				Weed-Kadam							In railway line, to be managed log production
391	Lakshminiya	9	C	Eucalyptus	7	24.3			Har-all spcs other than sal.	Pln & repl-Kadam	Weed-Kadam	Weed-Kadam	Cln-Kadam	Cln-Kadam	Th-Kadam		In railway line, to be managed for log production
392	Lakshminiya	9	D	Eucalyptus	7	24.04				Weed-Kadam				TSI-Sal			Conservation, teak trial plot
393	Lakshminiya	10	A	Eucalyptus, Sal	Euc. - 4 yrs, Sal - 29 yrs	21.39					TSI-Sal						In railway line, sparse distribution of sal, conservation of sal
394	Lakshminiya	10	B	Eucalyptus, Sal	Euc.-3 yrs	23.75							Cln-Euc.				

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
395	Lakshminiya	10	C	Sal, Eucalyptus	Sal - 27 yrs	23.92	Cln-Euc.				Cln-Euc.				Cln-Euc.		Sal management
396	Lakshminiya	10	D	Eucalyptus, Sal	Euc. - 7 yrs, Sal - 27 yrs	20.45	Cln-Euc.					Cln-Euc.					
397	Lakshminiya	11	A	Sal, Eucalyptus	Sal- 27 yrs	24.27	Cln-Euc.					Cln-Euc.					
398	Lakshminiya	11	B	Sal, Eucalyptus	Sal- 27 yrs	23.6				Cln-Euc. coppice						Cln-Euc. coppice	
399	Lakshminiya	11	C	Sal, Eucalyptus	Sal- 27 yrs	23.9			Har-Euc.		TSI-Sal						
400	Lakshminiya	11	D	Sal, Eucalyptus	Sal- 27 yrs	24.03						TSI-Sal				Cln-Euc.	
401	Lakshminiya	12	A	Eucalyptus, Sal	Sal- 27 yrs	23.44				Har-Euc. coppice	Sing.-Euc.	TSI-Sal					
402	Lakshminiya	12	B	Eucalyptus, Sal	Sal- 27 yrs	23.26				Har-Euc. coppice	Sing.-Euc.		TSI-Sal				
403	Lakshminiya	12	C	Sal, Sissoo	Sal - 27 yrs, Sissoo- 12 yrs	23.22				Har-Euc. coppice	Sing.-Euc.		TSI-Sal				

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
404	Lakshminiya	12	D	Sal, Sissoo	Sal- 27 yrs, Sissoo-22 yrs	24.3	TSI-Sal			Har-Euc. coppice	Sing.-Euc.						
									Har-Euc.	Sing.-Euc.	TSI-Sal						
405	Lakshminiya	13	A1	Teak	2	2			Har-Euc.	Sing.-Euc.	TSI-Sal						
406	Lakshminiya	13	A	Eucalyptus	10	23.8			Th-Sissoo			TSI-Sal		Th-Sissoo		Cln-Sissoo	
407	Lakshminiya	13	B	Eucalyptus	10	24.1			Har-Sissoo	Pln & repl-Teak	TSI-Sal		Cln-Teak		Th-Teak		In railway line
408	Lakshminiya	13	C	Eucalyptus	10	23.1				Weed-Teak	Weed-Teak	Weed-Teak					Eucalyptus plantation in 11.55 ha (half area); plantation to be done in 11.55 ha; in railway line
							Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak		Th-Teak		Cln-Teak	

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
409	Lakshminiya	13	D	Eucalyptus	10	22.32		Weed-Euc.	Weed-Euc.	Weed-Euc.							
410	Lakshminiya	13	D1	Teak	2	5.12	Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak		Th-Teak		Cln-Teak	
411	Lakshminiya	14	A	Eucalyptus	8	24.28		Th-Euc.		Cln-Euc.							To be managed for log production
412	Lakshminiya	14	B	Eucalyptus, Sal	Euc. - 8 yrs, Sal - 24 yrs	20.77		Th-Euc.		Cln-Euc.				TSI-Sal			
413	Lakshminiya	14	C	Khair	6	22.94		Har-Khair	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak	Harvesting -as suggested by SFDP
									Weed-Teak								
414	Lakshminiya	14	D	Khair	8	24		Har-Khair	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak	In railway line
									Weed-Teak								

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
415	Lakshminiya	15	A	Sal, Teak	Sal -24 yrs	24.3		Cln-Teak				Cln-Teak			Har-Teak	Sing.-Teak	Sparse distribution of Sal; trial plot
416	Lakshminiya	15	B	Sal, Eucalyptus	Sal - 24 yrs	24.13			Har-Euc.	Sing.-Euc.				TSI-Sal			Trial plot
417	Lakshminiya	15	C	Eucalyptus, Sal	Euc. - 12 yrs	22.84							TSI-Sal	Har-Euc. coppice	Sing.-Euc.	Cln-Euc.	
418	Lakshminiya	15	D	Khair, Eucalyptus	12	21.28		Har-Euc.	Pln & repl-Kadam	Weed-Kadam	Weed-Kadam	Cln-Kadam	Cln-Kadam	Th-Kadam			
									Weed-Kadam								
419	Lakshminiya	16	A	Eucalyptus, Teak, Sal	Teak and Euc.-22 yrs	23.78	Har-Euc.	Pln & repl-Teak	Weed-Teak new1	Weed-Teak new1	Cln-Teak new & old	Cln-Teak new	Th-Teak new	Har-Teak 22 yrs	Pln & repl-Teak	Weed-Teak new2	
								Weed-Teak new1							Weed-Teak new2		
420	Lakshminiya	16	D	Eucalyptus, Sal	Euc. - 12 yrs, Sal - 22 yrs	23.92				Har.-Euc. coppice	Sing.-Euc.					TSI-Sal	Harvesting -as suggested by SFDP

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
421	Lakshminiya	17	A	Eucalyptus	9	24.4			Har-Euc. coppice	Pln & repl-Kadam	Weed-Kadam	Weed-Kadam	Cln-Kadam	Cln-Kadam	Th-Kadam		Eucalyptus very few
										Weed-Kadam							
422	Lakshminiya	17	A1	Teak	2	5.58	Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak		Th-Teak			
423	Lakshminiya	17	B	Sal, Khair	22	23.3	Har-Sal	Pln & repl-teak	Weed-Teak	Weed-Teak	Cln-Teak	Cln-Teak	Th-Teak				Sal few
								Weed-Teak									
424	Lakshminiya	18	A	Sal, Eucalyptus	Sal - 24 yrs	23.66		Har-Euc.	Sing.-Euc.					TSI-Sal			
425	Lakshminiya	18	B	Sal, Khair, Eucalyptus	Sal - 24 yrs	22.8	Har-Euc.	Pln & repl-Khair (15.4ha including open)	Weed-Khair	Weed-Khair	Cln-Khair	Cln-Khair	TSI-Sal				Plantation to be done in half area (11.4 ha)
								Weed-Khair					Th-Khair				
426	Lakshminiya	19	A	Sal, Khair, Eucalyptus	Sal - 32 yrs	24.3		Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak & Khair	Cln-Teak	TSI-Sal			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
									Weed-Teak					Th-Teak			
427	Lakshminiya	19	B	Sal, Khair, Eucalyptus	Sal - 32 yrs	22	TSI-Sal	Har-Euc.	Pln & repl-Teak	Weed-Teak	Weed-Teak	Cln-Teak & Khair	Cln-Teak	Th-Teak			
									Weed-Teak								
428	Lakshminiya	19	C	Sal, Eucalyptus	Sal - 32 yrs	22.66		TSI-Sal	Har-Euc.	Sing.-Euc.		Cln-Euc.					
429	Lakshminiya	19	D	Sal, Eucalyptus	Sal - 32 yrs	24.3		TSI-Sal			Har-Euc.	Sing.-Euc.				TSI-Sal	
430	Lakshminiya	20	A	Sal, Eucalyptus	Sal - 32 yrs	21.92				TSI-Sal	Har-Euc.	Sing.-Euc.					
431	Lakshminiya	20	D	Sal, Eucalyptus	Sal - 32 yrs	23.6			Har-Euc.	Sing.-Euc.			TSI-Sal				
432	Ghurkauli	1	A	Eucalyptus	2	6	Weed-Euc.	Cln-Euc.				Cln-Euc.					
433	Ghurkauli	1	C	Teak, Eucalyptus	Teak-30 yrs, Euc.-2 yrs	5.6	Har-Teak.	Cln-Euc.				Cln-Euc.					Low stocking of Teak in 1.6 ha; medium stocking of Eucalyptus in 4 ha

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
							Weed-Euc.										
434	Ghurkauli	1	D	Teak	2	21.18	Weed-Teak	Cln-Teak	Th-Teak			Cln-Teak		Th-Teak			
435	Ghurkauli	2	A	Eucalyptus	2	23.15	Weed-Euc.	Cln-Euc.				Cln-Euc.					
436	Ghurkauli	2	B	Eucalyptus	2	8.5	Weed-Euc.	Cln-Euc.				Cln-Euc.					
437	Ghurkauli	2	D	Eucalyptus	2	11.5	Weed-Euc.	Cln-Euc.				Cln-Euc.					
438	Ghurkauli	3	A	Eucalyptus	2	23.7	Weed-Euc.	Cln-Euc.				Cln-Euc.					
439	Ghurkauli	3	A2	Eucalyptus	2	4.33	Weed-Euc.	Cln-Euc.				Cln-Euc.					
440	Ghurkauli	3	B	Eucalyptus	2	21.7	Weed-Euc.	Cln-Euc.				Cln-Euc.					
441	Ghurkauli	3	C	Eucalyptus	2	22.9	Weed-Euc.	Cln-Euc.				Cln-Euc.					
442	Ghurkauli	3	D	Eucalyptus	2	22.09	Weed-Euc.	Cln-Euc.				Cln-Euc.					
443	Ghurkauli	4	A	Eucalyptus	2	23.38	Weed-Euc.	Cln-Euc.				Cln-Euc.					
444	Ghurkauli	4	B	Khair, Eucalyptus	2	23.85	Weed-Euc. & Khair	Cln-Euc. & Khair	Th-Khair			Cln-Euc. & Khair		Th-Khair			
445	Ghurkauli	4	C	Eucalyptus	2	18.97	Weed-Euc.	Cln-Euc.				Cln-Euc.					
446	Ghurkauli	4	D	Eucalyptus	2	17.25	Weed-Euc.	Cln-Euc.				Cln-Euc.					
447	Ghurkauli	5	A	Khair, Eucalyptus	2	16.26	Weed-Euc. & Khair	Cln-Euc. & Khair	Th-Khair			Cln-Euc. & Khair		Th-Khair			

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
448	Ghurkauli	5	A1	Eucalyptus, Teak	2	3.7	Weed-Euc. & Teak	Cln-Euc. & Teak	Th-Teak			Cln-Euc. & Teak		Th-Teak			
449	Ghurkauli	5	B	Eucalyptus	2	22.74	Weed-Euc.	Cln-Euc.				Cln-Euc.					
450	Ghurkauli	5	B1	Eucalyptus, Sal	2	7.28	Weed-Euc.	Cln-Euc.				Cln-Euc.	TSI-Sal				
451	Ghurkauli	5	C	Eucalyptus	2	23.68	Weed-Euc.	Cln-Euc.				Cln-Euc.					
452	Ghurkauli	5	D	Eucalyptus, Satisal	2	17.67	Weed-Euc.	Cln-Euc.				Cln-Euc.					
453	Ghurkauli	6	A	Eucalyptus	2	17.53	Weed-Euc.	Cln-Euc.				Cln-Euc.					
454	Ghurkauli	6	B	Eucalyptus	2	23.03	Weed-Euc.	Cln-Euc.				Cln-Euc.					
455	Ghurkauli	6	C	Sal	27	16.79			TSI-Sal								
456	Ghurkauli	6	D	Acacia mangium	2	10.12	Weed-Acacia	Cln-Acacia	Th-Acacia			Cln-Acacia		Th-Acacia			
457	Ghurkauli	7	A	Eucalyptus	27	19.12											Very few trees; cultivated by encroaching

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
458	Ghurkauli	7	B	Eucalyptus	27	8.76											Very few trees; cultivated by encroaching
459	Ghurkauli	7	C1	Eucalyptus	27	24.4											Very few trees; cultivated by encroaching
460	Ghurkauli	7	C2	Eucalyptus	27	14.78											Very few trees; cultivated by encroaching
461	Ghurkauli	7	D	Eucalyptus	27	22.18											Very few trees; cultivated by encroaching

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
462	Ghurkauli	8	A	Eucalyptus	27	23.19											Very few trees; cultivated by encroaching
463	Ghurkauli	8	B1	Eucalyptus	27	18.81											Very few trees; cultivated by encroaching
464	Ghurkauli	8	B2	Eucalyptus	27	8.52											Very few trees; cultivated by encroaching
465	Ghurkauli	8	C			16.87											Open land; Encroached land
466	Ghurkauli	8	D			23.48											Open land; Encroached land

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
467	Ghurkauli	9	A			21.93											Open land; Encroached land
468	Ghurkauli	9	B	Teak	26	9.98											
469	Ghurkauli	9	C	Eucalyptus	26	7.98											Open land; Encroached land
470	Ghurkauli	9	D	Eucalyptus	26	24.24											Open land; Encroached land
471	Ghurkauli	10	A	Eucalyptus	26	22.84											Open land; Encroached land
472	Ghurkauli	10	B	Eucalyptus	26	5.85											Open land; Encroached land
473	Ghurkauli	10	C	Eucalyptus	26	5.11											Very few trees; cultivated by encroaching

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
474	Ghurkauli	10	D	Eucalyptus	26	25											Very few trees; cultivated by encroaching
475	Ghurkauli	11	A	Eucalyptus	26	21.17											Very few trees; cultivated by encroaching
476	Ghurkauli	11	B	Eucalyptus	26	2.12											Very few trees; cultivated by encroaching
477	Ghurkauli	11	C	Eucalyptus	26	0.63											Very few trees; cultivated by encroaching

S. N.	Region	Block	Plot	Species	Age (year)	Area (ha)	Activities										Remarks
							1	2	3	4	5	6	7	8	9	10	
478	Ghurkauli	11	D	Eucalyptus	26	0.95											Very few trees; cultivated by encroaching

ANNEX 26: Area of harvesting of some major species in eight regions of SFDP for 10-years

Year	Area (ha)																	
	***Eucalyptus* spp.**						***T. grandis***				***A. catechu***				***D. sissoo***			
	Sagarnath Division			**Hatilet Division**			**Sagarnath Division**		**Hatilet division**	**Murtiya Division**	**Sagarnath Division**	**Hatilet Division**			**Sagarnath Division**		**Hatilet Division**	
	Sagarnath	**Phuljor**	**Bhaktipur**	**Kusmari**	**Hatilet**	**Lakshminiya**	**Sagarnath**	**Bhaktipur**	**Lakshminiya**	**Ghurkauli**	**Sagarnath**	**Kusmari**	**Hatilet**	**Lakshminiya**	**Parwanipur**	**Bhaktipur**	**Kusmari**	**Lakshminiya**
1	22.5	6.9	29.1	169.3	148.1	24.8	48			1.6		11	3		10.6			
2	12.15	1.2	81.9	95.8	65.4	52.6	54.3	2				14.05	7.5	46.9	11.23		21	
3	19.4	1		42.1	57.2	132							7.5		2.23			10
4	15.3	26.5		16.5	11.1	93.2	25					5			2.06			
5	37.2			62.7		22						4						
6	254.5		2	9	24							2				5		
7	65.6		11		4.96													
8	135	24.3	1.74	24.11		33.8			8		9.3							
9	32.6		67.1	22.4	23.5													
10			94.2	8	29.4	81.8						17.2						
Total	**594**	**60**	**287**	**450**	**364**	**441**	**127**	**2**	**8**	**2**	**9**	**53**	**18**	**47**	**26**	**5**	**21**	**10**
Total area: 2554 ha																		

ANNEX 27: Year wise information on blocks and plots for harvesting in SFDP for 10-years

Year									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Location, block/plot									
Sa 2 (D)	Sa 1 (A)	Sa 2 (B)	Sa 3 (C)	Sa 10 (A)	Sa 5 (D)	Sa 2 (A)	Sa 2 (C)	Sa 11 (B)	Bh 14 (A)
Sa 5 (D)	Sa 1 (C)	Ph 2 (A2)	Sa 4 (D)	Sa 10 (B)	Sa 9 (A)	Sa 5 (C)	Sa 2 (D)	Sa 14 (B)	Bh 24 (C)
Sa 7 (C)	Sa 14 (A)	Pa 2 (C2)	Ph 3 (A1)	Sa 13 (B)	Sa 9 (B)	Sa 11 (A)	Sa 3 (A)	Sa 21 (A)	Bh 27 (A)
Sa 11 (B)	Ph 3 (A2)	Ku 4 (A)	Ph 3 (B)	Ph 2 (D)	Sa 9 (C)	Sa 13 (A)	Sa 3 (B)	Bh 2 (C)	Bh 27 (B)
Sa 11 (C)	Pa 2 (C1)	Ku 19 (C)	Pa 2 (D2)	Ku 3 (D)	Sa 9 (D)	Bh 21 (A)	Sa 5 (A)	Bh 6 (C1)	Bh 27 (C)
Sa 11 (D)	Pa 2 (C3)	Ku 20 (C)	Ku 3 (C)	Ku 9 (B)	Sa 10 (C)	La 5 (D)	Sa 5 (B)	Bh 6 (C2)	Ku 4 (A)
Sa 21 (B)	Bh 3 (C1)	Ha 8 (B)	Ku 4 (B)	Ku 15 (C)	Sa 10 (D)	La 15 (C)	Sa 7 (A)	Bh 11 (A)	Ku 4 (B)
Ph 2 (B2)	Bh 9 (B1)	Ha 10 (D)	Ha 11 (C)	Ku 15 (D)	Sa 13 (C)		Sa 7 (D)	Bh 11 (D)	Ku 10 (C)
Pa 2 (D1)	Bh 9 (B2)	Ha 13 (D)	La 4 (C)	Ku 16 (A1)	Sa 13 (D)		Sa 9 (B)	Ku 8 (D)	Ku 10 (D)
Bh 6 (B2)	Bh 20 (C)	Ha 19 (C)	La 4 (D)	Ku 19 (D)	Sa 14 (D)		Ph 2 (C)	Ha 3 (C)	Ku 17 (B)
Bh 21 (B)	Bh 21 (C)	Ha 20 (A)	La 8 (A)	Ku 20 (A)	Sa 17 (A)		Bh 10 (D1)	Ha 6 (D)	Ha 10 (A)
Ku 6 (C)	Bh 21 (D)	Ha 20 (D)	La 11 (A)	La 19 (D)	Sa 17 (B)		Ku 9 (A)	Ha 15 (A)	Ha 19 (C)
Ku 7 (A)	Bh	Ha 21 (B)	La 11 (B)	La 20 (A)	Sa 17 (C)		Ku 11 (B)	La 15 (A)	Ha 22 (A)
Ku 7 (D)	Ku 1 (B)	La 3 (C)	La 11 (C)		Sa 17 (D)		La 2 (A)		La 13 (A)
Ku 10 (A)	Ku 1 (C)	La 3 (D)	La 11 (D)		Sa 18 (A)		La 2 (B)		La 13 (B)
Ku 10 (B)	Ku 3 (A)	La 7 (B)	La 16 (D)		Sa 21 (D)		La 16 (A)		La 13 (C)

Year									
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Location, block/plot									
Ku 10 (C)	Ku 8 (A)	La 7 (D)			Sa 22 (A)				La 13 (D)
Ku 10 (D)	Ku 9 (D)	La 8 (B)			Sa 22 (B)				
Ku 11 (C)	Ku 18 (B)	La 8 (C)			Sa 22 (C)				
Ku 11 (D1)	Ku 18 (C)	La 10 (C)			Sa 22 (D)				
Ku 11 (D2)	Ku 19 (A)	La 12 (A)			Sa 23 (A)				
Ku 12 (C)	Ku 19 (B)	La 12 (B)			Sa 23 (B)				
Ku 12 (D)	Ku 20 (B)	La 12 (D)			Sa 23 (D)				
Ku 17 (C)	Ku 20 (D)	La 15 (B)			Bh 13 (B)				
Ku 18 (A)	Ha 5 (D2)	La 17 (A)			Bh				
Ku 18 (D)	Ha 9 (B)	La 19 (C)			Ku 3 (B)				
Ha 4 (A)	Ha 10 (B)				Ha 5 (A)				
Ha 4 (B)	Ha 13 (A)								
Ha 4 (C)	Ha 14 (A)								
Ha 5 (A1)	Ha 21 (A)								
Ha 5 (D1)	Ha 21 (D)								
Ha 9 (A)	La 5 (B)								
Ha 14 (B)	La 5 (C)								
Ha 15 (D)	La 7 (C)								
Ha 21 (C)	La 14 (C)								
La 5 (A)	La 14 (D)								
La 7 (A)	La 15 (D)								
La 16 (A)	La 18 (A)								
La 17 (B)	La 19 (A)								
La 18 (B)	La 19 (B)								
Gh 1 (C)									
Sa-Sagarnath, Ph-Phuljor, Pa-Parwanipur, Bh-Bhaktipur, Ku-Kusmari, La-Lakshminiya, Ha-Hatilet, Gh-Ghurkauli									

ANNEX 28: Area of planting of different species in nine regions of SFDP for 10-years

Year	Area (ha)																			
	***Eucalyptus* spp.**						***T. grandis***								***A. catechu***			***Albizia* sp.**	***N. cadamba***	
	Sag Div.		**Hat Div.**		**Mur Div.***		**Sag Div.**				**Hat Div.**			**Mur Div.**		**Hat Div.**			**Hat Div.**		
	Sag	**Bha**	**Hat**	**Lak**	**Ghu**	**Mur+**	**Sag**	**Phu**	**Par**	**Bha**	**Kus**	**Hat**	**Lak**	**Ghu**	**Mur+**	**Kus**	**Hat**	**Lak**	**Hat**	**Kus**	**Lak**
1		6			16	96.5				5.76		8		16	96.5		3.05				
2	1	0.5		11.6	16	96.5	36.4	6.86	10.6	7.11	138.3	124	14.3	16	96.5		20.8	15.4			
3		1			16	96.5			11.23	3.19	70.67	51.4	61.24	16	96.5	11.1	28.5			14	11.28
4			18.9		16	96.5	24.3	1	2.23		23	24.1	34.05	16	96.5		8		10.8		39
5					16	96.5	15.3	4.2	2.06			11.1	23.32	16	96.5	4.5					
6					16	96.5					27.85			16	96.5						
7					16	96.5	30.3					24		16	96.5						
8					16	96.5								16	96.5						
9					16	96.5	24.3						30	16	96.5						
10					16	96.5								16	96.5						
Total	1	**8**	**19**	**12**	**160**	**965**	**131**	**12**	**26**	**16**	**260**	**243**	**163**	**160**	**965**	**16**	**60**	**15**	**11**	**14**	**50**

Total area: 3306 ha; *proposed plantation for encroached area; +includes Judebela and Dudhihawa also;Tree species (*A. catechu*, *A. mangium*, *Albizia* spp., *N. cadamba*, *Moringa* sp.) can be selected for plantation in encroached area.
Sag-Sagarnath, Bha-Bhaktipur, Hat-Hatilet, Phu-Phuljor, Par-Parwaniur, Lak-Lakshminiya, Kus-Kusmari, Ghu-Ghurkauli, Mur-Murtiya

ANNEX 29: Area of weeding of different species in different regions of SFDP for 10-years

Year	Area (ha)																			
	***Eucalyptus* spp.**					***T. grandis***								***A. catechu***				***N. cadamba***		***Albizia* sp.**	***A. mangium***
	Sag Div.		**Hat Div.**		**Mur Div.**	**Sag Div.**				**Hat Div.**			**Mur Div.**	**Hat Div.**			**Mur Div.**	**Hat Div.**		**Hat Div.**	**Mur div.**
	Sag	**Bha**	**Hat**	**Lak**	**Ghu**	**Sag**	**Phu**	**Par**	**Bha**	**Kus**	**Hat**	**Lak**	**Ghu**	**Kus**	**Hat**	**Lak**	**Ghu**	**Kus**	**Lak**	**Hat**	**Mur**
1	24.2	30.2			666.2				5.8		72.8	37.8	46.1		3.1		20.0	14.0	11.3		10.1
2		15.0	2.0	11.6		36.0	6.9	10.6	18.6	138.3	136.2	14.3			26.9	15.4					
3		15.0	2.0	23.1		72.9	13.7	34.7	28.9	357.7	311.8	89.8		11.1	107.0						
4		5.0	22.9	23.1		97.2	18.0	45.9	20.6	441.9	371.2	185.1		22.1	106.7	30.8		28.0	61.6	10.8	
5		2.0	37.8			63.9	6.2	29.0	6.4	188.3	162.0	213.9		22.1	73.1			28.0	11.6	21.6	
6			37.8			79.2	10.4	8.6		73.9	70.4	114.7		4.5	16.0				78.0	21.6	
7						60.9	8.4	4.1		55.7	46.2	46.6		9.0							
8						60.6				55.7	48.0			9.0							
9						84.9					48.0	30.0									
10						48.6						60.0									
Total	**24**	**67**	**103**	**58**	**666**	**604**	**64**	**133**	**80**	**1312**	**1267**	**792**	**46**	**78**	**333**	**46**	**20**	**70**	**162**	**54**	**10**
Total area: 5988 ha; Sag-Sagarnath, Bha-Bhaktipur, Hat-Hatilet, Phu-Phuljor, Par-Parwaniur, Lak-Lakshminiya, Kus-Kusmari, Ghu-Ghurkauli, Mur-Murtiya																					

ANNEX 30: Year wise information on blocka and plots for plantation and weeding in SFDP for 10-years

Year / Activities	1	2	3	4	5	6	7	8	9	10
Weeding	**Location, Block /Sub block)**									
	Sa 6 (A)	Sa 5 (D)	Sa 5 (D)	Sa 2 (B)	Sa 2 (B)	Sa 2 (B)	Sa 3 (C)	Sa 5 (D)	Sa 3 (A)	Sa 3 (A)
	Bh 2 (D1)	Sa 11 (B)	Sa 11 (B)	Sa 5 (D)	Sa 3 (C)	Sa 3 (C)	Sa 5 (D)	Sa 21 (D)	Sa 5 (D)	La 2 (A)
	Bh 2 (D2)	Sa 21 (B)	Sa 21 (B)	Sa 11 (B)	Ph 2 (A2)	Ph 2 (A2)	Sa 21 (D)	Ku 15 (C)	Sa 21 (D)	La 2 (B)
	Bh 8 (A)	Ph 2 (B2)	Ph 2 (B2)	Sa 21 (B)	Ph 3 (B)	Ph 3 (B)	Ph 3 (B)	Ku 15 (D)	Ha 5 (A)	La 16 (A)
	Bh 8 (C)	Pa 2(C3)	Pa 2 (C1)	Ph 2 (A2)	Pa 2 (C1)	Pa 2 (C2)	Pa 2 (D2)	Ku 16 (A1)	La 2 (A)	
	Bh 8 (D2)	Pa 2 (D1)	Pa 2 (D1)	Ph 2 (B2)	Pa 2 (C2)	Pa 2 (D2)	Ku 15 (C)	Ku 19 (D)	La 2 (B)	
	Bh 9 (B3)	Bh 2 (D1)	Bh 2 (D1)	Pa 2 (C1)	Pa 2 (C3)	Ku 2 (A)	Ku 15 (D)	Ha 5 (A)	La 16 (A)	
	Bh 10 (C)	Bh 2 (D2)	Bh 2 (D2)	Pa 2 (c2)	Pa 2 (D2)	Ku 15 (C)	Ku 16 (A1)			
	Bh 13 (D2)	Bh 3 (D)	Bh 3 (C1)	Pa 2 (C3)	Bh 3 (C1)	Ku 15 (D)	Ku 19 (D)			
	Ha 1 (A)	Bh 6 (B2)	Bh 3 (D)	Pa 2 (D1)	Bh 20 (C)	Ku 16 (A1)	Ha 5 (A)			
	Ha 1 (D)	BH 8 (A)	Bh 6 (B2)	Bh 3 (C1)	Ku 1 (C)	Ku 19 (D)	Ha 11 (C)			
	Ha 3 (D)	Bh 8 (C)	Bh 8 (A)	Bh 3 (D)	Ku 2 (A)	Ha 10 (D)	La 4 (C)			
	Ha 5 (D)	Bh 8 (D2)	Bh 8 (C)	Bh 6 (B2)	Ku 8 (A)	Ha 11 (C)	La 4 (D)			
	Ha 6 (D)	Bh 9 (B3)	Bh 8 (D2)	Bh 10 (A2)	Ku 18 (B)	Ha 13 (D)				
	Ha 11 (D)	Bh 10 (A2)	Bh 9 (B3)	Bh 20 (C)	Ku 18 (C)	Ha 19 (C)				
	Ha 18 (A)	Bh 10 (C)	Bh 10 (A2)	Ku 1 (B)	Ku 19 (A)	Ha 20 (A)				
	La 1 (A)	BH 13 (D2)	Bh 10 (C)	Ku 1 (C)	Ku 19 (B)	Ha 20 (D)				
	La 5 (D)	Ku 6 (C)	BH 13 (D2)	Ku 2 (A)	Ku 20 (D)	Ha 21 (B)				
	La 13 (A1)	Ku 7 (A)	Bh 20 (C)	Ku 6 (C)	Ha 5 (D2)	La 3 (C)				

	La 13 (D1)	Ku 7 (D)	Ku 1 (B)	Ku 7 (A)	Ha 9 (B)	La 3 (D)				
	La 17 (A1)	Ku 11 (C)	Ku 1 (C)	Ku 7 (D)	Ha 10 (B)	La 4 (C)				
	Gh 1 (A)	Ku 11 (D1)	Ku 6 (C)	Ku 8 (A)	Ha 10 (D)	La 4 (D)				
	Gh 1 (C)	Ku 11 (D2)	Ku 7 (A)	Ku 11 (C)	Ha 11 (C)	La 8 (B)				
	Gh 1 (D)	Ku 12 (D)	Ku 7 (D)	Ku 11 (D1)	Ha 13 (A)	La 8 (C)				
	Gh 2 (A)	Ku 17 (C)	Ku 8 (A)	Ku 11 (D2)	Ha 13 (D)	La 12 (D)				
	Gh 2 (B)	Ku 18 (A)	KU 11 (C)	Ku 12 (D)	Ha 14 (A)	La 17 (A)				
	Gh 2 (D)	Ku 18 (D)	Ku 11 (D1)	Ku 17 (C)	Ha 19 (C)					
	Gh 3 (A)	Ha 4 (A)	Ku 11 (D2)	Ku 18 (A)	Ha 20 (A)					
	Gh 3(A2)	Ha 4 (B)	Ku 12 (D)	Ku 18 (B)	Ha 20 (D)					
	Gh 3 (B)	Ha 4 (C)	Ku 17 (C)	Ku 18 (C)	Ha 21 (A)					
	Gh 3(C)	Ha 4 (D)	Ku 18 (A)	Ku 18 (D)	Ha 21 (B)					
	Gh 3 (D)	Ha 5 (A1)	Ku 18 (B)	Ku 19 (A)	Ha 21 (D)					
	Gh 4 (A)	Ha 5 (D)	Ku 18 (C)	Ku 19 (B)	La 3 (C)					
	Gh 4 (B)	Ha 5 (D1)	Ku 18 (D)	Ku 20 (D)	La 3 (D)					
	Gh 4 (C)	Ha 9 (A)	Ku 19 (A)	Ha 4 (A)	La 4 (C)					
	Gh 4 (D)	Ha 15 (D)	KU 19 (B)	Ha 4 (B)	La 4 (D)					
	Gh 5 (A)	Ha 17 (D)	Ku 20 (D)	Ha 4 (C)	La 8 (B)					
	Gh 5 (A1)	Ha 18 (A)	Ha 4 (A)	Ha 4 (D)	La 8 (C)					
	Gh 5 (B)	Ha 18 (C)	Ha 4 (B)	Ha 5 (A1)	La 12 (D)					
	Gh 5 (B1)	Ha 21 (C)	Ha 4 (C)	Ha 5 (D1)	La 14 (C)					
	Gh 5 (C)	La 5 (A)	Ha 4 (D)	Ha 5 (D2)	La 14 (D)					
	Gh 5 (D)	La 10 (B)	Ha 5 (A1)	Ha 9 (A)	La 15 (D)					
	Gh 6 (A)	La 13 (C)	Ha 5 (D)	Ha 9 (B)	La 17 (A)					
	Gh 6 (B)	La 16 (A)	Ha 5 (D1)	Ha 10 (B)	La 19 (A)					
	Gh 6 (C)	La 17 (B)	Ha 5 (D2)	Ha 10 (D)	La 19 (B)					
	Gh 6 (D)	La 18 (B)	Ha 9 (A)	Ha 13 (A)						

			Ha 9 (B)	Ha 13 (D)						
			Ha 10 (B)	Ha 14 (A)						
			Ha 13 (A)	Ha 15 (D)						
			Ha 14 (A)	Ha 17 (D)						
			Ha 15 (D)	Ha 18 (C)						
			Ha 17 (D)	Ha 19 (C)						
			Ha 18 (A)	Ha 20 (A)						
			Ha 18 (C)	Ha 20 (D)						
			Ha 21 (A)	Ha 21 (A)						
			Ha 21 (C)	Ha 21 (B)						
			Ha 21 (D)	Ha 21 (C)						
			La 5 (A)	Ha 21 (D)						
			La 10 (B)	La 3 (C)						
			La 13 (C)	La 3 (D)						
			La 14 (C)	La 5 (A)						
			La 14 (D)	La 8 (B)						
			La 15 (D)	La 10 (B)						
			La 16 (A)	La 12 (D)						
			La 17 (B)	La 13 (C)						
			La 18 (B)	La 14 (C)						
			La 19 (A)	La 14 (D)						
			La 19 (B)	La 15 (D)						
				La 16 (A)						
				La 17 (A)						
				La 17 (B)						
				La 18 (B)						
				La 19 (A)						
				La 19 (B)						

Plantation and Replacement										
	Bh 2 (D1)	Sa 5 (D)	Pa 2 (C1)	Ph 2 (A2)	Sa 3 (C)	Ku 15 (C)	Sa 5 (D)		Sa 3 (A)	
	Bh 2 (D2)	Sa 11 (B)	Pa 2 (D1)	Pa 2 (C3)	Ph 3 (B)	Ku 15 (D)	Sa 10 (D)		La 2 (A)	
	Bh 8 (A)	Sa 21 (B)	Bh 3 (C1)	Ku 2 (A)	Pa 2 (C2)	Ku 16 (A1)	Sa 21 (D)		La 2 (B)	
	Bh 8 (C)	Ph 2 (B2)	Bh 20 (C)	Ha 10 (D)	Pa 2 (D2)	Ku 19 (D)	Ha 5 (A)		La 16 (A)	
	Bh 8 (D2)	Bh 3 (D)	Ku 1 (B)	Ha 13 (D)	Ha 11 (C)					
	Bh 9 (B3)	Bh 6 (B2)	Ku 1 (C)	Ha 19 (C)	La 4 (C)					
	Bh 10 (C)	Bh 10 (A2)	Ku 8 (A)	Ha 20 (A)	La 4 (D)					
	Bh 13 (D2)	Ku 6 (C)	Ku 18 (B)	Ha 20 (D)						
	Ha 5 (D)	Ku 7 (A)	Ku 18 (C)	Ha 21 (B)						
	Ha 18 (A)	Ku 7 (D)	Ku 19 (A)	La 3 (C)						
		Ku 11 (C)	KU 19 (B)	La 3 (D)						
		Ku 11 (D1)	Ku 20 (D)	La 8 (B)						
		Ku 11 (D2)	Ha 5 (D2)	La 8 (C)						
		Ku 12 (D)	Ha 9 (B)	La 12 (D)						
		Ku 17 (C)	Ha 10 (B)	La 17 (A)						
		Ku 18 (A)	Ha 13 (A)							
		Ku 18 (D)	Ha 14 (A)							
		Ha 4 (A)	Ha 21 (A)							
		Ha 4 (B)	Ha 21 (D)							
		Ha 4 (C)	La 14 (C)							
		Ha 4 (D)	La 14 (D)							
		Ha 5 (A1)	La 15 (D)							
		Ha 5 (D1)	La 19 (A)							
		Ha 9 (A)	La 19 (B)							

		Ha 15 (D)								
		Ha 17 (D)								
		Ha 18 (C)								
		Ha 21 (C)								
		La 5 (A)								
		La 10 (B)								
		La 13 (C)								
		La 16 (A)								
		La 17 (B)								
		La 18 (B)								

Sa-Sagarnath, Ph-Phuljor, Pa-Parwanipur, Bh-Bhaktipur, Ku-Kusmari, La-Lakshminiya, Ha-Hatilet, Gh-Ghurkauli

ANNEX 31: Area of cleaning of different species in eight regions of SFDP for 10-years

Year	Area (ha)																Total area (ha)
	Eucalyptus spp.							*T. grandis*									
	Sagarnath Division				Hatilet Division			Mur Div.	Sagarnath Division				Hatilet Division			Mur Div.	
	Sag	Phu	Par	Bha	Kus	Hat	Lak	Ghu	Sag	Phu	Par	Bha	Kus	Hat	Lak	Ghu	
1	12.3	19.5		60.5	91.8	43.9	120.2		22.2	1.2		12.3	14.5	1.5	4.5		**404**
2	24.1			19.8		39.0	23.2	336.1	28.1					51.4	31.2	23.0	**576**
3	12.4	1.3	86.2	266.7	42.2	59.6	70.4		24.5	24.3							**587**
4	23.4	28.8	15.0	139.6	109.2	25.9	70.8					14.1		13.2			**440**
5	12.0	17.7		31.0	51.1	13.9	90.9		61.6	8.0	10.6	11.9	146.8	130.7	30.1		**616**
6			2.1	142.4	16.8	82.7	75.5	336.1	33.2	6.9	21.8	34.6	192.4	166.3	103.6	23.0	**1237**
7	12.0			63.8	24.0	121.8	15.8		24.3	1.0	13.5	3.2	94.2	106.2	48.4		**528**
8			86.8	230.3	73.5	125.3	57.7		15.3	4.2	4.3	36.6	23.0	56.1	47.4		**760**
9	31.7	1.3	15.0	94.0	33.1	2.7	54.9		49.5	28.5	2.1	14.5	63.9	38.1	27.8		**457**
10				114.8	8.1	5.5	34.3		128.3		10.6	9.1	86.9	108.8	54.1		**560**
Total	**128**	**68**	**205**	**1163**	**450**	**520**	**614**	**672**	**387**	**74**	**63**	**136**	**622**	**672**	**347**	**46**	**6167**

Year	*A. catechu*					*G. arborea*	*Albizia* sp.	*D. sissoo*				*N. cadamba*			Other spp.*	Total area (ha)
	Sag Div.	Hatilet Division			Mur Div.	Sag Div.	Hat Div.	Sag Div.	Hatilet Division			Sag Div.	Hat Div.		Sag Div.	
	Bha	Kus	Hat	Lak	Ghu	Bha	Hat	Bha	Kus	Hat	Lak	Bha	Kus	Lak	Phu	
1			6.0			6.0									8.5	**21**
2					20.0											**20**
3																
4			3.1													**3**
5		4.0	23.9	15.4					6.0	2.0					8.5	**60**
6		11.1	55.3	23.4	20.0	6.0		3.0					11.3			**130**
7	3	11.1	36.5				10.8					2.0	14.0	43.3		**121**
8			19.0				10.8							39.0		**69**

9		4.5													**5**
10		8.5	12.9						6.0	2.0	11.0				**40**
Total	**3**	**39**	**157**	**39**	**40**	**12**	**22**	**3**	**12**	**4**	**11**	**2**	**25**	**82**	**17**	**468**
Total area: 6167 + 468 = 6635 ha; **Paulownia* sp. and *Cassia siamea*; Sag-Sagarnath, Bha-Bhaktipur, Hat-Hatilet, Phu-Phuljor, Par-Parwaniur, Lak-Lakshminiya, Kus-Kusmari, Ghu-Ghurkauli, Mur-Murtiya															

ANNEX 32: Year wise information on blocks and plots for cleaning in SFDP 10- years

S.No	Year / Activities	1	2	3	4	5	6	7	8	9	10
		Location, Block/ Sub-block									
1	**Cleaning**	Sa 2 (C)	Sa 2 (A)	Sa 3 (B)	Sa 1(B)	Sa 2 (D)	Sa 1(A)	Sa 2 (B)	Sa 3 (C)	Sa 1(A)	Sa 1(A)
		Sa 3 (A)	Sa 6 (A)	Sa 6 (A)	Sa 1(D)	Sa 5 (B)	Sa 1 (C)	Sa 6 (D)	Ph 3 (B)	Sa 1 (D)	Sa 1(B)
		Sa 5 (A)	Sa 6 (D)	Sa 6 (B)	Sa 3 (D)	Sa 5 (D)	Sa 2(C)	Sa 7 (B)	Pa 1 (A)	Sa 4 (A)	Sa 1 (C)
		Sa 6 (C)	Sa 7 (A)	Sa 9 (A)	Sa 4 (A)	Sa 7 (C)	Sa 3 (A)	Sa 14 (B)	Pa 1 (B)	Sa 4 (D)	Sa 3 (D)
		Sa 7 (D)	Sa 7 (B)	Sa 9 (B)	Sa 5 (C)	Sa 11 (A)	Sa 6 (C)	Ph 2 (A2)	Pa 1 (C1)	Sa 6 (B)	SA 5 (D)
		Ph 1 (C)	Sa 10 (D)	Sa 10 (A)	Sa 9 (D)	Sa 11(B)	Sa 11(B)	Ph 3 (A2)	Pa 1 (C2)	Ph 2 (A2)	Sa 6 (A)
		Ph 2 (A2)	Sa 14 (B)	Sa 10 (B)	Sa 10 (C)	Sa 21 (B)	Sa 14 (A)	Pa 2 (C2)	Pa 1 (D)	Ph 2 (B1)	Sa 7 (C)
		Ph 2 (D)	Sa 21 (D)	Sa 13 (D)	Sa 17 (D)	Ph 1 (C)	Sa 21 (B)	Pa 2 (C3)	Pa 2 (A1)	Ph 3 (A1)	Sa 14 (A)
		Ph 3 (A1)	Sa 22 (A)	Sa 17 (A)	Sa 21 (A)	Ph 2 (B2)	Ph 2(B2)	Bh 2 (C)	Pa 2 (B1)	Ph 3 (B)	Sa 17 (B)
		Ph 3 (C)	Sa 22 (B)	Sa 17 (C)	Sa 21 (C)	Ph 3 (D)	Pa 1 (D2)	Bh 3 (A1)	Pa 2 (B2)	Pa 2 (A2)	Sa 21 (C)
		Ph 3 (D)	Sa 22 (C)	Sa 18 (A)	Ph 1 (B)	Pa 2 (D1)	Pa 2 (C1)	Bh 3 (B1)	Pa 2 (C3)	Pa 2 (D2)	Sa 21 (D)
		Pa 1 (D2)	Sa 22 (D)	Sa 23 (D)	Ph 2 (A1)	Bh 2 (D1)	Pa 2 (D1)	Bh 3 (C1)	Pa 2 (D2)	Bh 2 (A)	Sa 23 (D)
		Bh 1 (B)	Sa 23 (A)	Ph 2 (A2)	Ph 3 (C)	Bh 2 (D2)	Bh 1 (B)	Bh 4 (B2)	Bh 2 (D1)	Bh 2 (B)	Ph 1 (B)
		Bh 1 (C)	Sa 23 (B)	Ph 2 (B1)	Pa 2 (A2)	Bh 3 (D)	Bh 3 (A2)	Bh 5 (B)	Bh 2 (D2)	Bh 3 (B2)	Ph 2 (A1)
		Bh 3 (A2)	Bh 2 (C)	Pa 1 (A)	Bh 2 (D1)	Bh 4 (B1)	Bh 3 (C1)	Bh 9 (C)	Bh 3 (C)	Bh 3 (B3)	Ph 2 (D)
		Bh 4 (B2)	Bh 3 (A1)	Pa 1 (B)	Bh 2 (D2)	Bh 6 (A)	Bh 3 (D)	Bh 9 (D)	Bh 3 (D)	Bh 6 (B1)	Ph 3 (C)
		Bh 5 (A)	Bh 3 (B1)	Pa 1 (C1)	Bh 3 (B2)	Bh 6 (B2)	Bh 5 (A)	Bh 10 (C)	Bh 10 (A1)	Bh 8 (A)	Ph 3 (D)
		Bh 5 (C)	Bh 5 (B)	Pa 1 (C2)	Bh 3 (B3)	Bh 8 (A)	Bh 5 (C)	Bh 11 (C)	Bh 10 (C)	Bh 8 (B)	Pa 2 (D1)
		Bh 6 (A)	Bh 9 (C)	Pa 1 (D)	Bh 8 (A)	Bh 9 (B2)	Bh 6 (B2)	Bh 13 (B)	Bh 12 (A)	Bh 8 (C)	Bh 1 (C)
		Bh 6 (C1)	Bh 9 (D)	Pa 2 (A1)	Bh 8 (B)	Bh 9 (B3)	Bh 6 (C1)	Bh 14 (A)	Bh 12 (D)	Bh 9 (A)	Bh 4 (B1)
		Bh 6 (C2)	Bh 10 (C)	Pa 2 (B1)	Bh 8 (C)	Bh 10 (A2)	Bh 6 (C2)	Bh 14 ©	Bh 13 (C)	Bh 10 (A2)	Bh 6 (A)
		Bh 6 (CD)	Bh 14 (A)	Pa 2 (B2)	Bh 8 (D1)	Bh 10 (C)	Bh 6 (CD)	Bh 16 (B)	Bh 13 (D1)	Bh 10 (B)	Bh 6 (B2)

		Bh 8 (B)	Bh 14 (B)	Bh 2 (A)	Bh 8 (D2)	Bh 10 (D1)	Bh 10 (A2)	Bh 18 (C)	Bh 14 (B)	Bh 10 (D2)	Bh 8 (D1)
		Bh 10 (A2)	Bh 14 (C)	Bh 2 (B)	Bh 9 (B3)	Bh 13 (D2)	Bh 10 (B)	Bh 20 (C)	Bh 17 (A)	Bh 13 (A2)	Bh 9 (B1)
		Bh 10 (B)	Bh 16 (B)	Bh 2 (D1)	Bh 10 (B)	Bh 21 (C)	Bh 11 (B)	Bh 24 (C)	Bh 18 (B)	Bh 13 (D2)	Bh 10 (A2)
		Bh 10 (D2)	Bh 18 (C)	BH 2 (D2)	Bh 10 (C)	Bh 21 (D)	Bh 11 (D)	Bh 27 (D)	Bh 19 (B)	Bh 15 (A)	Bh 12 (B)
		Bh 11 (B)	Bh 24 (C)	Bh 3 (C)	Bh 10 (D2)	Ku 1 (B)	Bh 12 (C)	BH 27 (D1)	Bh 20 (A)	Bh 15 (B)	Bh 13 (A1)
		Bh 11 (C)	Bh 27 (D)	Bh 3 (D)	Bh 12 (B)	Ku 1 (D)	Bh 14 (D)	Ku 1 (C)	Bh 20 (B)	Bh 15 (D)	Bh 14 (B)
		Bh 11 (D)	Bh 27 (D1)	Bh 6 (B1)	Bh 13 (A1)	Ku 6 (B)	Bh 15 (C)	Ku 2 (A)	Ku 2 (A)	Bh 16 (C)	Bh 18 (A)
		Bh 12 (C)	Ku 2 (C)	Bh 10 (A1)	Bh 13 (C)	Ku 6 (C)	Bh 17 (C)	Ku 2 (C)	Ku 4 (D)	Bh 21 (A)	Bh 21 (C)
		Bh 13 (A2)	Ku 4 (D)	Bh 12 (A)	Bh 13 (D2)	Ku 6 (D)	Bh 17 (D)	Ku 4 (C)	Ku 7 (B)	Bh 21 (B)	Bh 21 (D)
		Bh 13 (B)	Ku 9 (A)	Bh 12 (D)	Bh 14 (B)	Ku 7 (A)	Bh 18 (D)	Ku 8 (A)	Ku 7 (C)	Bh 24 (A)	Bh----
		Bh 14 (D)	Ha 1 (A)	Bh 13 (D1)	Bh 18 (A)	Ku 7 (D)	Bh 20 (C)	Ku 8 (D)	Ku 8 (C)	Ku 1 (B)	Bh----
		Bh 15 (C)	Ha 1 (D)	Bh 15 (A)	Bh 21 (B)	Ku 8 (B)	Bh 21 (A)	Ku 9 (A)	Ku 10 (A)	Ku 1 (C)	Ku 7 (D)
		Bh 17 (C)	Ha 3 (D)	Bh 15 (B)	Bh----	Ku 11 (C)	Bh 24 (A)	Ku 18(B)	Ku 10 (B)	Ku 7 (A)	Ku 8 (B)
		Bh 17 (D)	Ha 5 (A)	Bh 15 (D)	Ku 1(B)	Ku 11 (D1)	Bh 24 (B)	Ku 18 (C)	Ku 10 (C)	Ku 13 (A)	Ku 11 (C)
		Bh 18 (D)	Ha 6 (D)	Bh 16 (C)	Ku 1 (C)	Ku 11 (D2)	Bh 27 (A)	Ku 19 (A)	Ku 10 (D)	Ku 15 (B)	Ku 11 (D1)
		Bh 21 (A)	Ha 7 (A)	Bh 17 (A)	Ku 10 (A)	Ku 12 (D)	Bh 27 (B)	Ku 19 (B)	Ku 11 (A)	Ku 15 (C)	Ku 11 (D2)
		Bh 24 (A)	Ha 7 (B)	Bh 17 (B)	Ku 10 (B)	Ku 13 (D)	BH 27 (C)	Ku 20 (D)	Ku 14 (A)	Ku 15 (D)	Ku 12 (A)
		Bh 24 (B)	Ha 7 (C)	Bh 18 (B)	Ku 10 (C)	Ku 17 (C)	Bh ----	Ha 1 (A)	Ku 14 (B)	Ku 16 (A1)	Ku 12 (B)
		Bh 27 (A)	Ha 10 (A)	Bh 19 (B)	Ku 10 (D)	Ku 18 (A)	Ku 1 (A)	Ha 1 (D)	Ku 14 (C)	Ku 16 (D)	Ku 12 (C)
		Bh 27 (B)	Ha 10 (C)	Bh 20 (A)	Ku 12 (A)	Ku 18 (D)	Ku 1 (B)	Ha 3 (B)	Ku 14 (D)	Ku 18 (A)	Ku 12 (D)
		Bh 27 (C)	Ha 11 (B)	Bh 20 (B)	Ku 12 (B)	Ku 20 (B)	Ku 1 (C)	Ha 3 (C)	Ku 16 (A)	Ku 19 (D)	Ku 13 (D)
		Ku 1 (A)	Ha 14 (B)	Bh 24 (A)	Ku 12 (C)	Ha 4 (A)	Ku 2 (B)	Ha 5 (D2)	Ku 17 (B)	Ha 1 (B)	Ku 16 (A1)
		Ku 1 (D)	Ha 14 (C)	Ku 7 (B)	Ku 13 (A)	Ha 4 (B)	Ku 6 (C)	Ha 6 (C)	Ha 2 (A)	Ha 4 (A)	Ku 17 (C)
		Ku 2 (B)	Ha 15 (A)	Ku 7 (C)	Ku 16 (D)	Ha 4 (C)	Ku 7 (D)	Ha 7 (A)	Ha 2 (B)	Ha 6 (A)	Ku 19 (D)
		Ku 2 (D)	Ha 15 (B)	Ku 11 (A)	Ha 3 (C)	Ha 4 (D)	Ku 8 (A)	Ha 7 (B)	Ha 2 (C)	Ha 6 (B)	Ku 20 (A)
		Ku 4 (C)	Ha 15 (C)	Ku 14 (A)	Ha 5 (D)	Ha 5 (A1)	Ku 11 (C)	Ha 7 (C)	Ha 3 (A)	Ha 11 (C)	Ku 20 (B)
		Ku 6 (B)	Ha 19 (C)	Ku 14 (B)	Ha 6 (A)	Ha 5 (D)	Ku 11 (D1)	Ha 9 (B)	Ha 7 (D)	Ha 17 (D)	Ha 4 (B)
		Ku 6 (D)	Ha 19 (D)	Ku 14 (C)	Ha 6(B)	Ha 9 (A)	Ku 11 (D2)	Ha 10 (B)	Ha 8 (A)	La 2 (D)	Ha 4 (C)
		Ku 8 (B)	Ha 20 (B)	Ku 14 (D)	Ha 11 (A)	Ha 11 (D)	Ku 12 (D)	Ha 10 (C)	Ha 8 (C)	La 4 (C)	Ha 4 (D)

		Ku 8 (C)	La 1 (A)	Ku 15 (B)	Ha 18 (A)	Ha 14 (D)	Ku 13 (B)	Ha 10 (D)	Ha 9 (D)	La 4 (D)	Ha 5 (A)
		Ku 8 (D)	La 1 (D)	Ku 17 (B)	La 5 (A)	Ha 15 (D)	Ku 13 (C)	Ha 11 (B)	Ha 10 (A)	La 5 (A)	Ha 5 (A1)
		Ku 11 (B)	La 2 (A)	Ha 1 (B)	La 5 (B)	Ha 17 (D)	Ku 15 (A)	Ha 12 (A)	Ha 10 (D)	La 5 (B)	Ha 5 (D)
		Ku 13 (B)	La 2 (B)	Ha 2 (A)	La 5 (C)	Ha 18 (A)	Ku 16 (A)	Ha 13 (A)	Ha 11 (C)	La 5 (C)	Ha 5 (D1)
		Ku 13 (C)	La 5 (D)	Ha 2 (B)	La 9 (B)	Ha 18 (C)	Ku 16 (B)	Ha 13 (D)	Ha 12 (B)	La 6 (A)	Ha 11 (A)
		Ku 15 (A)	La 13 (A1)	Ha 2 (C)	La 14 (A)	Ha 18 (D)	Ku 16 (C)	Ha 14 (A)	Ha 12 (C)	La 9 (B)	Ha 11 (D)
		Ku 15 (C)	La 13 (D1)	Ha 3 (A)	La 14 (B)	Ha 21 (C)	Ku 17 (A)	Ha 14 (B)	Ha 13 (B)	La 14 (A)	Ha 14 (D)
		Ku 15 (D)	La 15 (A)	Ha 3 (B)		La 2 (B)	Ku 17 (C)	Ha 14 (C)	Ha 13 (D)	La 14 (B)	Ha 18 (D)
		Ku 16 (A)	La 15 (C)	Ha 6 (C)		La 2 (D)	Ku 17 (D)	Ha 15 (A)	Ha 17 (C)		Ha 19 (A)
		Ku 16(B)	La 17 (A1)	Ha 7 (D)		La 5 (A)	Ku 18 (A)	Ha 15 (B)	Ha 18 (A)		La 10 (B)
		Ku 16 (C)	Gh 1 (A)	Ha 8 (A)		La 10 (B)	Ku 18 (B)	Ha 15 (C)	Ha 18 (B)		La 10 (D)
		Ku 17 (A)	GH 1 (C)	Ha 8 (C)		La 13 (A1)	Ku 18 (C)	Ha 19 (C)	Ha 19 (B)		La 12 (C)
		Ku 17 (D)	Gh 1(D)	Ha 9 (D)		La 13 (C)	Ku 18 (D)	Ha 19 (D)	Ha 20 (A)		La 13 (A1)
		Ha 1 (C)	Gh 2 (A)	Ha 12 (B)		La 16 (A)	Ku 19 (A)	Ha 20 (A)	Ha 20 (C)		La 13 (D1)
		Ha 2 (D)	Gh 2 (B)	Ha 12 (C)		La 17 (B)	Ku 19 (B)	Ha 20 (B)	Ha 20 (D)		La 14 (C)
		Ha 3 (C)	Gh 2 (D)	Ha 13 (B)		La 18 (B)	Ku 20 (D)	Ha 20 (D)	Ha 21 (B)		La 14 (D)
		Ha 8 (D)	Gh 3 (A)	Ha 17 (C)			Ha 1 (C)	Ha 21 (A)	La 1 (B)		La 15 (C)
		Ha 9 (C)	Gh 3 (A2)	Ha 18 (B)			Ha 2 (D)	Ha 21 (B)	La 1 (B1)		
		Ha 12 (A)	Gh 3 (B)	Ha 19 (B)			Ha 3 (D)	Ha 21 (D)	La 1 (C)		
		Ha 12 (D)	Gh 3 (C)	Ha 20 (C)			Ha 4 (B)	La 3 (C)	La 2 (C)		
		Ha 17 (A)	Gh 3 (D)	La 1 (B)			Ha 4 (C)	La 3 (D)	La 3 (C)		
		Ha 17 (B)	Gh 4 (A)	La 1 (B1)			Ha 4 (D)	La 8 (B)	La 3 (D)		
		Ha 19 (A)	Gh 4 (B)	La 1 (C)			Ha 5 (A1)	La 8 (C)	La 4 (C)		
		Ha 19 (B)	Gh 4 (C)	La 2 (C)			Ha 5 (D1)	La 9 (A)	La 4 (D)		
		Ha 22 (A)	Gh 4 (D)	La 6 (A)			Ha 5 (D2)	La 12 (D)	La 6 (D)		
		Ha 22 (D)	GH 5(A)	La 6 (D)			Ha 8 (D)	La 15 (D)	La 8 (B)		
		La 2 (D)	Gh 5 (A1)	La 10 (A)			Ha 9 (A)	La 17 (A)	La 8 (C)		
		La 5 (A)	Gh 5 (B)	La 13 (A)			Ha 9 (B)	La 19 (A)	La 10 (A)		
		La 5 (B)	Gh 5 (B1)	La 13 (C)			Ha 9 (C)	La 19 (B)	La 13 (A)		

		La 9 (A)	Gh 5 (C)	La 13 (D)			Ha 10 (B)		La 13 (C)		
		La 9 (B)	Gh 5 (D)				Ha 12 (D)		La 13 (D)		
		La 9 (C)	Gh 6 (A)				Ha 13 (A)		La 17 (A)		
		La 9 (D)	Gh 6 (B)				Ha 14 (A)		La 19 (D)		
		La 10 (B)	Gh 6 (C)				Ha 15 (D)		La 20 (A)		
		La 10 (D)	Gh 6 (D)				Ha 17 (A)		La 20 (D)		
		La 12 (C)					Ha 17 (B)				
		La 19 (A)					Ha 17 (D)				
							Ha 18 (C)				
							Ha 19 (A)				
							Ha 19 (B)				
							Ha 21 (A)				
							Ha 21 (C)				
							Ha 21 (D)				
							Ha 22 (A)				
							Ha 22 (D)				
							La 1 (A)				
							La 1 (D)				
							La 2 (A)				
							La 5 (A)				
							La 9 (C)				
							La 9 (D)				
							La 10 (B)				
							La 13 (D1)				
							La 14 (C)				
							La 14 (D)				
							La 15 (A)				
							La 15 (D)				
							La 16 (A)				
							La 17 (A1)				

							La 17 (B)				
							La 18 (B)				
							La 19 (A)				
							La 19 (B)				
							La 19 (C)				
							Gh 1 (A)				
							Gh 1 (C)				
							Gh 1(D)				
							Gh 2 (A)				
							Gh 2 (B)				
							Gh 2 (D)				
							Gh 3 (A)				
							Gh 3 (A2)				
							Gh 3 (B)				
							Gh 3 (C)				
							Gh 3 (D)				
							Gh 4 (A)				
							Gh 4 (B)				
							Gh 4 (C)				
							Gh 4 (D)				
							GH 5(A)				
							Gh 5 (A1)				
							Gh 5 (B)				
							Gh 5 (B1)				
							Gh 5 (C)				
							Gh 5 (D)				
							Gh 6 (A)				
							Gh 6 (B)				
							Gh 6 (C)				
							Gh 6 (D)				
Sa-Sagarnath, Ph-Phuljor, Pa-Parwanipur, Bh-Bhaktipur, Ku-Kusmari, La-Lakshminiya, Ha-Hatilet, Gh-Ghurkauli											

ANNEX 33: Area of thinning of different species in seven regions of SFDP for 10-years

Year	*Acacia catechu*					*Dalbergia sissoo*				Other sp.	*G. arborea*	*N. cadamba*		*Abizia* sp.	*A. mangium*	Bamboo	
	Sagarnath Division	Hatilet Division			Murtiya Division	Sagarnath Division	Hatilet Division			Sagarnath Division	Sagarnath Division	Hatilet Division		Hatilet Division	Murtiya Division	Sagarnath Division	Total area (ha)
	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Ghurkauli	Bhaktipur	Kusmari	Hatilet	Lakshminiya	Phuljor	Bhaktipur	Kusmari	Lakshminiya	Hatilet	Ghurkauli	Sagarnath	
1			5													2.3	**7**
2			7							8.5							**16**
3		4			19.98			16.07	11		6				10.12	2.3	**69**
4	3					3		2									**8**
5			6													2.3	**8**
6			3.05														**3**
7			20.8	2.4						8.5						2.3	**34**
8		11.05	28.5		19.38			16.07	11		6	14	11.28		10.12		**127**
9			8				3	2					39	10.8		2.3	**65**
10																	
Total	**3**	**15**	**78**	**2**	**39**	**3**	**3**	**36**	**22**	**17**	**12**	**14**	**50**	**11**	**20**	**12**	**338**

ANNEX 34: Year wise information on blocks and plots for thinning in SFDP for 10-years

Year / Activities	1	2	3	4	5	6	7	8	9	10
Thinning	**Location, Block /Sub block)**									
	Sa 6 (A)	Sa 1 (A)	Sa 1 (B)	Ha 5 (D)	Sa 9 (C)	Sa 6 (A)	Ph 2 (B2)	Sa 1 (B)	Sa 9 (C)	Sa 3 (C)
	Sa 6 (B)	Ph 1 (C)	Ku 8 (C)	Ha 6 (D)	Bh 8 (D2)	Sa 6 (B)	Sa 9 (C)	Sa 2 (B)	Pa 2 (C2)	Ph 3 (B)
	Sa 10 (C)	Bh 8 (D2)	Bh 12 (C)	Ha 7 (C)	Bh 9 (B3)	Ph 1 (B)	Sa 11 (B)	Sa 5 (D)	Bh 3 (B1)	Pa 2 (D2)
	Ph 2 (B1)	Bh 10 (B)	Sa 9 (C)	Ha 8 (D)	Ha 9 (D)	Ph 2 (A2)	Sa 21 (B)	Pa 2 (C1)	Bh 5 (A)	Bh 8 (D2)
	Bh 13 (D1)	Bh 18 (D)	Ph 1 (B)			Ph 2 (B1)	Ph 1 (C)	Pa 2 (C3)	Bh 11 (B)	Bh 9 (B3)
	Bh 14 (B)	Ku 1 (A)	La 12 (C)			Bh 8 (A)	Pa 2 (D1)	Bh 12 (C)	Bh 13 (A2)	Ku 1 (C)
	Bh 24 (A)	Ku 1 (D)	La 13 (A1)			Bh 13 (D1)	Bh 3 (B2)	Bh 17 (D)	Ha 13 (D)	Ha 11 (C)
	Ha 9 (D)	Ku 6 (D)	La 13 (D1)			Bh 13 (D2)	Bh 3 (B3)	Bh 20 (C)	Ha 20 (D)	La 4 (C)
	Ha 19 (B)	Ha 4 (D)	La 17 (A1)			Ha 18 (A)	Bh 3 (D)	Bh	Ha 21 (B)	La 4 (D)
	Ha 20 (C)	Ha 6 (A)	Gh 1 (C)			Ha 18 (B)	Bh 6 (B2)	Ku 1 (B)	La 3 (C)	
	Ha 20 (C)	Ha 6 (B)	Gh 1 (D)			Ha 20 (C)	Bh 8 (D2)	Ku 1 (C)	La 3 (D)	
		Ha 11 (A)	Gh 6 (C)			La 2 (C)	Bh 10 (A2)	Ku 8 (A)	La 8 (B)	
			Gh 6 (D)			Bh 24 (A)	Bh 10 (B)	Ku 18 (B)	La 8 (C)	
		Ha 18 (D)	Gh 2 (D)			Bh	Bh 10 (D1)	Ku 19 (A)	La 12 (D)	
			Gh 4 (A)			Ku 7 (A)	Bh 10 (D2)	Ku 19 (B)	La 17 (A)	
			Gh 4 (B)				Bh 11 (B)	Ku 20 (D)		
			Gh 4 (C)				Bh 12 (B)	Ha 1 (A)		
			Gh 4 (D)				Bh 13 (A1)	Ha 1 (D)		
			Gh 5 (A)				Bh 15 (D)	Ha 2 (D)		

Year / Activities	1	2	3	4	5	6	7	8	9	10
Thinning	**Location, Block /Sub block)**									
			Gh 5 (A1)				Ku 1 (A)	Ha 3 (C)		
			Ku 16 (A)				Ku 1 (D)	Ha 3 (D)		
			Ha 1 (A)				Ku 6 (C)	Ha 4 (D)		
			Ha 1 (D)				Ku 6 (D)	Ha 5 (D2)		
			Ha 2 (D)				Ku 7 (D)	Ha 6 (D)		
			Ha 3 (C)				Ku 8 (C)	Ha 9 (B)		
			Ha 3 (D)				Ku 11 (C)	Ha 10 (B)		
			Ha 6 (D)				Ku 11 (D1)	Ha 11 (B)		
			Ha 11 (B)				Ku 12 (D)	Ha 11 (C)		
			Ha 11 (C)				Ku 17 (C)	Ha 11 (D)		
			Ha 11 (D)				Ku 18 (A)	Ha 13 (A)		
			La 1 (A)				Ku 18 (D)	Ha 14 (A)		
			La 5 (D)				Ha 4 (A)	Ha 18 (D)		
							Ha 4 (B)	Ha 21 (A)		
							Ha 4 (C)	Ha 21 (D)		
							Ha 5 (A1)	La 1 (A)		
							Ha 5 (D1)	La 5 (D)		
							Ha 6 (A)	La 12 (C)		
							Ha 6 (B)	La 13 (A1)		
							Ha 9 (A)	La 13 (D1)		
							Ha 11 (A)	La 15 (D)		
							Ha 15 (D)	La 17 (A1)		
							Ha 18 (C)	La 19 (A)		
							Ha 21 (C)	La 19 (B)		
							La 5 (A)	Gh 1 (C)		

Year / Activities	1	2	3	4	5	6	7	8	9	10
Thinning	**Location, Block /Sub block)**									
							La 10 (B)	Gh 1 (D)		
							La 13 (C)	Gh 4 (B)		
							La 14 (C)	Gh 5 (A)		
							La 14 (D)	Gh 5 (A1)		
							La 16 (A)	Gh 5 (B1)		
							La 17 (B)	Gh 5 (C)		
							La 18 (B)			
Sa-Sagarnath, Ph-Phuljor, Pa-Parwanipur, Bh-Bhaktipur, Ku-Kusmari, La-Lakshminiya, Ha-Hatilet, Gh-Ghurkauli										

ANNEX 35: Area of singling of *Eucalyptus* spp. and *T. grandis* in six regions of SFDP for 10-years

Year	Area (ha)									Total area (ha)
	***Eucalyptus* spp.**						***T. grandis***			
	Sagarnath Division			**Hatilet Division**			**Sagarnath Division**		**Hatilet Division**	
	Sagarnath	**Phuljor**	**Bhaktipur**	**Kusmari**	**Hatilet**	**Lakshminiya**	**Sagarnath**	**Bhaktipur**	**Lakshminiya**	
1	55.36		29.9		47.94		24.3	8		**166**
2			21.95	36.03			36.55			**95**
3	12.15	1.2	77.71	11.08		11	54.3	2		**169**
4						49				**49**
5		22.25				57.92	25			**105**
6	24.86			10.01		22				**57**
7	139.19		1.41							**141**
8	53.3		11			4.96				**69**
9	110.72	24.3	1.74	24.11		11.84				**173**
10	12.3	47.75	67.11	22.4	23.54				12.3	**185**
Total	**408**	**95.5**	**211**	**104**	**71**	**157**	**140**	**10**	**12**	**1208**

ANNEX 36: Year wise information on blocks and plots for singling and timber stand improvement in SFDP for 10-years

Year / Activities	1	2	3	4	5	6	7	8	9	10
Singling	**Location, Block /Sub block)**									
	Sa 3 (D)	Sa 2 (D)	Sa 1 (A)	La 12 (A)	Sa 4 (D)	Sa 10 (A)	Sa 9 (A)	Sa 2 (A)	Sa 2 (C)	Sa 11 (B)
	Sa 4 (A)	Sa 7 (C)	Sa 1 (C)	La 12 (B)	Ph 3 (A1)	Sa 10 (B)	Sa 9 (B)	Sa 5 (C)	Sa 2 (D)	Bh 2 (C)
	Sa 7 (B)	Bh 21 (B)	Sa 14 (A)	La 15 (B)	La 11 (A)	Ku 20 (A)	Sa 9 (C)	Sa 11 (A)	Sa 3 (B)	Bh 6 (C1)
	Sa 21 (C)	Ku 10 (A)	Ph 3 (A2)	La 19 (C)	La 11 (B)	La 19 (D)	Sa 9 (D)	Bh 21 (A)	Sa 5 (A)	Bh 6 (C2)
	Bh 9 (A)	Ku 10 (B)	Bh 9 (B1)	La 20 (D)	La 11 (C)	La 20 (A)	Sa 10 (C)	La 5 (D)	Sa 5 (B)	Bh 11 (A)
	Bh 24 (D)	Ku 10 (C)	Bh 9 (B2)		La 11 (D)		Sa 13 (D)		Sa 7 (A)	Bh 11 (D)
	Ha 3 (B)	Ku 10 (D)	Bh 21 (C)		La 16 (D)		Sa 17 (A)		Sa 7 (D)	Ku 8 (D)
	Ha 6 (C)		Bh 21 (D)				Sa 17 (B)		Ph 2 (C)	Ha 3 (C)
			Bh				Sa 17 (C)		Bh 10 (D1)	Ha 6 (D)
			Ku 20 (B)				Sa 17 (D)		Ku 9 (A)	Ha 15 (A)
			La 18 (A)				Sa 18 (A)		Ku 11 (B)	La 15 (A)
							Sa 23 (D)		La 15 (C)	
							Ph 1 (B)			
							Bh			
Total Stand Improvement (TSI)										
	La 19 (B)	Sa 15 (B)	Sa 14 (C)	Sa 14 (D)	Sa 11 (C)	Sa 19 (B)	Sa 7 (D)	Sa 8 (D)	Sa 6 (D)	Sa 5 (B)
		Sa 15 (D)	Sa 15 (A)	Sa 15 (C)	Sa 17 (A)	Sa 19 (C)	Sa 11 (D)	Sa 9 (D)	Sa 8 (A)	Sa 9 (A)
		Sa 18 (D)	Sa 17 (D)	Sa 17 (B)	Sa 17 (C)	Sa 21 (A)	Sa 13 (B)	Sa 10 (A)	Sa 9 (C)	Sa 11 (A)
		Sa 19 (A)	Ku 3 (B)	Sa 23 (D)	Sa 18 (B)	Ku 4 (A)	Sa 19 (D)	Sa 10 (C)	Sa 10 (B)	Sa 13 (D)

		La 19 (C)	Ku 4 (C)	Bh 15 (D)	Sa 18 (C)	Ha 10 (A)	Sa 23 (A)	Sa 10 (D)	Sa 13 (C)	Ku 3 (A)
		La 19 (D)	Ku 15 (C)	Ku 3 (A)	Sa 21 (C)	Ha 15 (C)	Ku 3 (D)	Sa 11 (B)	Bh 18 (C)	Ku 9 (B)
			Ku 15 (D)	Ku 4 (D)	Sa 21 (D)	La 3 (C)	Ku 15 (B)	Sa 13 (A)	Bh 24 (B)	Ku 10 (A)
			Ha 13 (C)	Ku 18 (A)	Sa 22 (A)	La 6 (C)	Ku 19 (B)	Sa 14 (B)	Ku 9 (C)	Ku 10 (B)
			Ha 14 (D)	Ku 20 (C)	Sa 22 (B)	La 7 (C)	Ku 20 (A)	Sa 18 (A)	Ku 10 (C)	Ku 14 (B)
			Ha 15 (D)	Ha 10 (C)	Sa 22 (C)	La 10 (D)	Ha 8 (B)	Ph 1 (C)	Ku 10 (D)	Ku 14 (C)
			La 6 (B)	La 7 (B)	Sa 22 (D)	La 11 (A)	Ha 10 (D)	Bh 24 (C)	Ku 14 (A)	Ha 9 (A)
			Gh 6 (C)	La 20 (A)	Sa 23 (B)	La 12 (C)	Ha 13 (A)	Ku 18 (D)	Ku 14 (D)	Ha 9 (B)
					Sa 23 (C)		Ha 20 (C)	Ku 19 (C)	Ku 19 (D)	La 6 (B)
					Bh 15 (C)		Ha 20 (D)	Ha 15 (B)	Ku 20 (B)	La 8 (B)
					Bh 18 (B)		La 2 (A)	Ha 20 (B)	Ha 13 (B)	La 10 (A)
					Ku 3 (C)		La 2 (B)	Ha 21 (C)	Ha 21 (A)	La 16 (D)
					Ku 4 (B)		La 2 (C)	La 8 (A)	Ha 21 (D)	
					Ku 9 (D)		La 3 (D)	La 8 (C)	Ha 22 (A)	
					Ku 18 (B)		La 11 (B)	La 11 (D)		
					Ku 19 (A)		La 11 (C)	La 14 (B)		
					Ha 8(A)		La 15 (C)	La 15 (B)		
					Ha 9 (C)		La 18 (B)	La 18 (A)		
					Ha 13 (D)		Gh 5 (B1)	La 19 (A)		
					Ha 19 (C)					
					Ha 20 (A)					
					Ha 21 (B)					
					Ha 22 (D)					
					La 6 (D)					
					La 7(A)					

					La 7 (D)					
					La 8 (D)					
					La 10 (C)					
					La 12 (A)					
					La 12 (B)					
					La 12 (D)					
Sa-Sagarnath, Ph-Phuljor, Pa-Parwanipur, Bh-Bhaktipur, Ku-Kusmari, La-Lakshminiya, Ha-Hatilet, Gh-Ghurkauli										

ANNEX 37: Encroached Area in SFDP

SN	Division	Region	Encroached area (ha)
1	Murtiya	Murtiya	1720.5
2	Murtiya	Murtiya (Judibela)	10.0
3	Murtiya	Murtiya (Dudhihawa)	198.1
4	Murtiya	Ghurkauli	317.9
5	Sagarnath	Bhaktipur	1.8
		Total	**2248.4**

Source:SFDP , 2016

ANNEX 38: Blocks and plots in Railway line

Range Unit	Plot no
Sagarnath	Phuljor-2B1, 2C
	4 Green Belt, 8 Green Belt, 8D, 11 Green Belt, 11C, 15B, 15C, 15D, 18B, 18C, 19A, 21D, 21 Green Belt, 22A, 22B, 22D
Lakshminiya	2C, 3D, 3Green Belt, 6B, 6C, 6D, 9B, 9C, 10A, 10D, 13B, 13C, 17B, 17Green Belt,
Kusmari	2 Green Belt, 2B, 2C, 8A, 8B, 8C, 8D, 13A, 13B, 13C, 13D, 18A, 18B, 18C, 18D
Hattilet	3B, 3C, 4A, 4D, 8B, 8C, 9A, 9D, 13B, 13C, 14A, 14D, 19B, 19C, 20A, 20B
Total	**63 blocks**

ANNEX 39: Other activities in SFDP (amount of rupees in '000)

	Amount in NRs. '000 (thousands)			Year																			
				1		2		3		4		5		6		7		8		9		10	
	Other Activities	Unit	Unit Cost	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B
1	**Nursery Management**																						
1.1	Seedling Production (including replacement /compensatory plantation)	No.	0.01	500.00	5.00	500.00	5.00	500.00	5.00	500.00	5.00	500.00	5.00	500.00	5.00	500.00	5.00	500.00	5.00	500.00	5.00	500.00	5.00
1.2	Maintenance of Nursery	Times	200.00	1.00	200.00		-		-		-	1.00	200.00		-		-	1.00	200.00		-		-
1.3	Upgrading nursery (to hi-tech nursery and making multipurpose nursery)	Times	500.00	2.00	1,000.00		-		-		-	1.00	500.00		-		-		-		-		-
					-		-		-		-		-		-		-		-		-		-
2	**Illegal Felling Control**		100.00	1.00	100.00		-		-		-		-		-		-		-		-		-

	Amount in NRs. '000 (thousands)			Year																			
				1		2		3		4		5		6		7		8		9		10	
	Other Activities	Unit	Unit Cost	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B
3	HR Training	Times	300.00		-		-	1.00	300.00		-		-		-	1.00	300.00		-		-		-
4	Logistic Arrangement (Firefighting equipment, laptops, fire brigade)	Times	50,000.00	1.00	50,000.00		-		-		-	1.00	50,000.00		-		-		-		-		-
5	**Biodiversity Conservation**																						
5.1	Green Belt	Ha.	250.00		-	1.00	250.00		-		-	1.00	250.00		-		-		-		-		-
5.2	Wetland Management	Times	1,000.00		-		-	1.00	1,000.00		-		-	1.00	1,000.00		-		-		-		-
5.3	Documentation of Biodiversity (Flora, Fauna, NTFPs and Other Species)	Times	200.00	1.00	200.00		-		-		-		-		-		-		-		-		-

	Amount in NRs. '000 (thousands)			Year																			
				1		2		3		4		5		6		7		8		9		10	
	Other Activities	Unit	Unit Cost	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B
6	**Information management and communication system and Database**																						
6.1	DB system	Times	500.00	1.00	500.00		-		-		-		-		-		-		-		-		-
6.2	Updates	Times	100.00	1.00	100.00		-		-		-		-		-		-		-		-		-
7	Upgrading Saw mills, distillation plants, seasoning plants etc.	LS	2,000.00	1.00	2,000.00		-		-		-		-	1.00	2,000.00		-		-		-		-
8	**Sand/gravel collection**	No.			-		-		-		-		-		-		-		-		-		-
9	**Research**				-		-		-		-		-		-		-		-		-		-
9.1	Short term research	No.	30.00	10.00	300.00	10.00	300.00	10.00	300.00	10.00	300.00	10.00	300.00	10.00	300.00	10.00	300.00	10.00	300.00	10.00	300.00	10.00	300.00
9.2	Long term research	No.	500.00	2.00	1,000.00		-		-		-	2.00	1,000.00		-		-		-		-		-

	Amount in NRs. '000 (thousands)			**Year**																			
				1		**2**		**3**		**4**		**5**		**6**		**7**		**8**		**9**		**10**	
	Other Activities	**Unit**	**Unit Cost**	**Q**	**B**	**Q**	**B**	**Q**	**B**	**Q**	**B**	**Q**	**B**	**Q**	**B**	**Q**	**B**	**Q**	**B**	**Q**	**B**	**Q**	**B**
10	Enterprise Development	No.	1,000.00	1.00	1,000.00		-		-	1.00	1,000.00		-		-	1.00	1,000.00		-		-		-
11	NTFPs promotions				-		-		-		-		-		-		-		-		-		-
12	**Infrastructure Development and Maintenance**																						
12.1	Office Building maintenance and repair	LS	2,000.00	1.00	2,000.00		-	1.00	2,000.00		-	1.00	2,000.00		-		-		-		-		-
12.2	Watch Tower	No.	500.00	1.00	500.00		-		-		-		-	1.00	500.00		-		-		-		-
12.3	Vehiclesm Repairs	No.	100.00	1.00	100.00		-		-	1.00	100.00		-		-		-		-		-		-
12.4	Road Network Maintenance	KM	45.00	10.00	450.00		-		-		-		-		-	10.00	450.00		-		-		-
12.5	Firebreaks	KM	10.00	50.00	500.00		-		-		-		-		-		-		-		-		-
12.6	Fencing (Wire, and Labour cost)	KM	10.00	10.00	100.00		-		-		-		-		-		-		-		-		-
13	Administrative cost	LS	55,000.00	1.00	55,000.00	1.00	55,000.00	1.00	55,000.00	1.00	55,000.00	1.00	55,000.00	1.00	55,000.00	1.00	55,000.00	1.00	55,000.00	1.00	55,000.00	1.00	55,000.00

	Amount in NRs. '000 (thousands)			Year																			
				1		2		3		4		5		6		7		8		9		10	
	Other Activities	Unit	Unit Cost	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B	Q	B
14	Control Burning Practice	LS	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00
15	EIA Implementation	LS	990.00	1.00	990.00	1.00	990.00	1.00	990.00	1.00	990.00	1.00	990.00	1.00	990.00	1.00	990.00	1.00	990.00	1.00	990.00	2.00	1,980.00
16	Monitoring and Evaluation	LS	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00	1.00	50.00
17	Compliance Monitoring	LS	200.00		-		-	1.00	200.00	1.00			-		-	1.00	200.00		-		-	1.00	200.00