Participatory assessment of biodiversity conservation in community forestry in Nepal

K.P. Acharya[1], K.R. Goutam[2], B.K. Acharya[3] and G. Gautam[4]

The Community Forestry has been the most effective means of managing common forest resources in Nepal. Besides rehabilitating degraded hills, improving environment and contributing to the rural livelihoods, community forestry is claimed to be a major means of biodiversity conservation. It is also argued that the prevalent approach of community forest management threats to the conservation of biodiversity. This paper is based on the findings from two community forest user groups from Central Nepal and argues that the users' innovative practices of active forest management favor biodiversity conservation. The study has documented users' innovations to conserve biodiversity in community managed forests.

Key words: Nepal, community forestry, biodiversity conservation and livelihoods

Community forestry programme is regarded as one of the most successful programme in Nepal (Acharya 2003; NPC 2001; Springate-Baginski *et al.* 1998). However, at the same time many believe that community forest management is protection-oriented where the main forest management activities are limited to the removal of dead, dying trees and leaf litter. As a consequence the users are getting sub-optimal benefits (Gilmour and Fisher, 1991; NPC 2001; Shrestha, 2000). In Nepal, the Middle Hills protection area management system is not sufficient to represent the whole ecosystems (HMGN, 2002), and the management approach applied in community forestry should take a balance between biomass production and biodiversity conservation. It has been argued that change in stand composition is possible in community forestry through different management operations (Jackson and Ingles, 1994).

Department of Forest Research and Survey (DFRS) is working to investigate forest management options appropriate to addressing local specific variations related to biodiversity conservation. The conventional research approach is not always appropriate to find solutions of such problems. Realizing this, participatory research approach is increasingly being considered to investigate the problems and find out solutions. In this process, a study to investigate interface between forest and farm biodiversity was initiated in 2004. The aim was to link biophysical and socio-economic variations in biodiversity conservation issues through community forestry and private farm tree management. The first part of the research was conducted in the middle hills region in 2004. This report is the outcome of the second year research conducted in the two community forests in the foothills in the Terai.

The general objective of the research was to contribute for better understanding in biodiversity conservation in the community forestry. The specific objectives were to:

- Assess the existing forest management practices and their effects on plant diversity;
- Identify best practices adopted to conserve plant diversity and
- Investigate the role and capacity of users in promoting biodiversity conservation in community forests.

Biodiversity and community forestry

The word biodiversity was coined by Prof E.O. Wilson to express total variation of life as a contraction of biological diversity. The components of biodiversity are ecosystem, species and genetic variation. The community forestry is a social process in which user groups share mutually recognized claims to specify their use rights to the management, development and utilization of forest. The issue of

[1] Research Officer, Department of Forest Research and Survey, Email-kpacharya1@hotmail.com
[2] Asst. Research Officer, Department of Forest Research and Survey, Email-keshab_gtm@yahoo.com
[3] Ranger, Department of Forest Research and Survey
[4] Ranger, Department of Forest Research and Survey

biodiversity conservation constitutes of different variables in a community forest. Such variables could be forest management objectives, silvicultural practices, forest resource condition, species diversity, nature and kinds of species, forest products and watershed value, habitat conservation, user's confidences, learning behavior and frequent monitoring and evaluation activities.

Recent evidences indicate that Community Forest User Groups (CFUGs) are slowly moving towards active forest management (Neupane, 2000; Khanal, 2002; Malla, 2000; Wagle, 2002). The active forest management approach calls for the implementation of various silvicultural and harvesting activities in the forests (Acharya, 1997; Branney, 1996). Such active forest management by CFUG can lead to an increased supply resulting in increased benefits to users consequently improving the livelihoods of the rural people. The rural people with subsistence agriculture may not put equal value to all plant species growing in their forest and putting equal value to all species may not produce forest products benefits that can be maximized with few selected fast growing and highly demanding species (Acharya, 2003; Rai *et al.,* 2004). Recent study (Acharya, 2006) has shown that ecological indices such as Shannon-Weiner index (H') is higher in farm land compared to Community forests. In addition, the applications of various silvicultural and harvesting activities in the forests may affect forest structure and composition consequently losing biodiversity. On the other hand, CFUGs might have been adopting innovative practices (best practices) to address biodiversity conservation, which are unknown to other users or development workers. Hence, there is a gap in understanding users' choice on different forest management operations and their effects on biodiversity conservation.

Material and methodology

Study sites

The study was conducted in Nawalpur Saraswoti (Basamadi) Community Forest (CF) and Chakradevi Community Forest in Makawanpur district. These two forests were located in similar geographical and ecological conditions. It was assumed that, the only difference is in forest management practices which have implications on biodiversity conservation. Both of these forests are tropical Sal *(Shorea robusta)* forests in the foothills of the Terai region. The Nawalpur CF was known for active CF and Chakradevi CF was recognized as passive CF. However, both the forests were under community management since the past

Table 1 : Bio-physical and socio-economic characteristics of the study sites

Characteristics	Nawalpur Saraswoti CFUG	Chakradevi CFUG
Location of forest	Hetaunda munipilicity 11	Basamadi VDC 5
Aspect	Southern	Southern
Topographical region	Inner terai	Inner terai
Forest origin	Natural	Natural
Forest type	*Shorea robusta*	*Shorea robusta*
Forest area	200 ha	109 ha
Forest development stages	Pole	Pole
No of Households	568	152
Access to road	Easy	Easy
Distance from district head quarter	3.0 km	3.5 km
Duration of community management	10 years	9 years

Table: 2 : Major lists of activities in the study

Stages	Activities
Selecting CFUGs	Developing selection criteria, Preparing list of potential CFUGs, Discussion with district stakeholders and selection of CFUGs
Identifying research problem and designing research plan	Developing a list of issues and problems of selected CFUGs, discussing with DFO and other stakeholders, prioritizing issues and identifying research issues, defining roles and responsibilities.
Implementing research and collecting information	Conducting research, developing recording system
Results and Extension	Analyzing and interpreting results, deriving conclusions, organizing workshop and disseminating results.

9-10 years. The field work was conducted during June 2005. Some of the key features of two CFUGs are presented in Table 1.

Methodological approach

The following methodologies were used to gather information in the study.

Questionnaire Survey

Semi-structured questionnaire survey was conducted among the users of the forests. The questionnaire was about the forest management and silvicultural activities, species preference and selection criteria, importance of biodiversity and demand and supply situation of the forest products.

Social and Resource Mapping

Participatory social and resource maps were prepared to collect the information on the distribution and condition of forest resources. It was also useful to obtain the perception of nearby and distant users towards forest management issues.

Focus Group Discussion

Focus group discussion was conducted to obtain the information on forest management and silvicultural activities carried out in the forests, species selection criteria and preferences, varying perceptions towards management and biodiversity conservation issues. The discussions were concentrated mainly in the male, female and ethnic groups and groups of closest and distant users.

Key Informants Survey

A survey was conducted with the key informants like teachers and users' group committee executives to collect the information on the forest management and biodiversity conservation practices, species preference and nature and status of forest resources in the forests.

Species Ranking

Species preference ranking was carried out on the basis of different criteria made by the users. Likewise pair wise ranking of most preferred 15 species was done. Ranking was done in different interest groups of the users. The method was very useful to identify species selection criteria and most preferred species in the community forests.

Users' Mass Meeting

Detailed discussion was done in users' mass meeting to triangulate the information found from different sources. The additional information on the forest products, management and silvicultural activities and biodiversity conservation issues were obtained from this discussion.

Stakeholders' workshop

A workshop with participation of all the stakeholders was organized. Chairperson and other active members, men and women, of the two CFUGs, District Forest Offices staff, Biodiversity Sector Programme for the Terai and Siwaliks (BISEP-ST) staff and other stakeholders had participated in the workshop and shared their views on the forest management and biodiversity conservation in community forestry. The workshop was useful to identify roles and responsibilities of different stakeholders in biodiversity conservation in community forests.

Forest Resources Inventory

Forest resources inventory, as per the inventory guidelines, was carried out in both of the forests. The inventory was carried out with 0.5 % sampling intensity. The Diametre at Breast Height (DBH) of trees of and above pole stage was measured while the number counted for all others i.e. seedlings and saplings, herbs, shrubs, grasses and climbers.

Review of OP and constitution and other literatures

Operational plans and constitutions of the CFUGs and published and unpublished literatures related to the study were reviewed mainly from the District Forest Office (DFO), Makawanpur.

Limitations

The study was limited to the plant diversity in the community forests. As baseline information was lacking, users recalling was used as one of the most important data source.

Results and discussions

Profiles of local stakeholders

The CFUGs are executive agencies for the management of community forests. The technical advice is being provided by the DFO located at the

district headquarter and territorial offices. In addition, the support staff were overloaded with increasing workload due to the expansion of the programme. Civil society organizations such as NGOs, federations of forest users groups were increasingly acting as service providers to the CFUGs. The DFRS was responsible to execute this research in collaboration with the stakeholders.

Participation in field research

The identification of objectives and the research issue was not participatory at users' level. However, the agenda were discussed with all the stakeholders and a set of process was followed at various levels. There were several interactions at the beginning in the district level, before finalizing the CFUGs to be studied. Table 2 illustrates how the process was followed and kinds of activities were performed.

There was an active participation from different stakeholders including women groups. The preliminary analysis and initial outcomes of the field were shared among the stakeholders.

Forest management operations

Forest scientists have defined forest management as the application of the knowledge, which has been acquired in all branches of forestry and the allied sciences to the management of forests in the interest of man (Jerram, 1983) where silviculture is a component. Silviculture includes a range of activities and operations to the forest. However, the CFUGs understand two silvicultural activities namely "*Godmel*" and "*Jhadi safai*" as substitute of forest management. The terms "*Godmel* and *Jhadi safai*" mean removal of shrubs, climbers and low quality timber species (*Kukath*) to create favorable environment for the desired species. It can be inferred that present forest management strategy is directed towards the production of medium term to long-term products, mainly wood products. The nature of understanding on forest management was found to be similar to earlier study by Acharya *et al.* 2004. However, users were also aware of the fact that every living being on the earth has rights to survive.

The CFUGs were predominantly applying selective felling, singling, thinning, pruning, lopping, and weeding/cleaning operations followed by plantations, soil conservation work and leaf litter collection. These forest management operations were carried out depending upon the nature, kind and conditions of the forests. The application of such activities may promote uniformity in species composition, spacing and canopy development.

The Nawalpur Forest was handed over as CF in 1996. The forest was divided into 5 blocks. Forest management activities like removal of dead and fallen trees, shrub and climber cutting (particularly thorny species and *Eupatorium*), thinning, pruning, singling and plantation were carried out each year.

The Chakradevi Forest was handed over in 1997. to the local communities. The whole forest was divided into five blocks. One block was designed to be treated each year applying forest management activities including shrub and climber cutting (*Jhadi safai*), pruning and singling and plantation as required. However, the main forest management practice adopted was the removal of dead and fallen trees which was recognized as passive forest management.

Number and nature of species

Both the community forests were dominated by Sal (*Shorea robusta*). A total of 160 plant species were recorded in the two CFs (Annex 1). A total of 55 tree species were found in the study area, out of which one half (28 species) were common to both of the CFUGs. However, the number of species of all plant life forms was higher in actively managed forest (47 trees and 67 others in Nawalpur Saraswoti compared to 36 trees and 65 other species in Chakradevi). However, unlike tree species, the number of common species of plants other than trees in both the CFs was less. Out of total 105 species, only 38 ($1/3^{rd}$) were common to both the CFs indicating great variation and sensitivity in their existence in two CFs, actively managed and poorly managed.

Species diversity, richness and dynamics

A total of 55 tree and 105 other species were recorded in the two community forests. Table 3a indicates that higher number of plant species was associated with the actively managed forest. The diversity indices of trees in two CFs are not varied significantly (Table 3a). However, the richness index of tree species is higher in Nawalpur CF than Chakrdevi CF. Higher richness index refers to the higher number of species and the higher number of individuals within the species regardless of evenness in distribution. The richness index was found higher in actively managed

forest in previous study which is the case in the present study also. The data presented in Table 3c are not supported by previous study (Acharya *et al.* 2004). The previous study resulted in higher relative density of the most dominant species in actively managed forests where as in this case it was observed in passively managed forests. This is also supported by Table 3b. However, Diversity Index (H') is dependent on the distribution of species and their evenness. It is higher in uniformly distributed forest than that with uneven distribution. The higher H' in Nawalpur indicates higher uniformity than in Chakradevi CF where fewer species have higher dominance over others resulting in lower H'. There is a need to relate with other several factors such as level of disturbances and response of the species which is not known. In addition, the lack of baseline data limits the conclusive remarks.

Table 3b shows the distribution of various development stages of various life forms in the community forests. The higher number of trees was observed in passively managed forest providing evidences of limited harvesting than in actively managed forests. Similarly, Table 3c indicates higher relative density of Sal species in passively managed forest. It indicated that harvesting operations may create room for various species others than the dominant species.

Selective approach and biodiversity conservation

The CFUGs have developed some criteria to determine the species to be retained or to be removed during the silvicultural operations. The main criteria to retain are the usefulness of the species to fulfill their forest product needs. The criteria to remove a species are shrub, thorny species, dead, dying and damaged individuals of all species, species and individuals competing with main crop and low quality timber species. It obviously leads to selective approach for the species. The users want to retain species that give direct benefits. Multipurpose tree species have higher chances for promotion. The main species preferences criteria in the two CFs (Priority wise) were:

1. Timber
2. Specific use (eg. *Sandan* has specific use for making plough)
3. Firewood
4. Medicinal use
5. Others (Fodder, Fruits etc.)

The preferences criteria has resulted in the species preferences list as in Table 4.

Users placed Sal (*Shorea robusta*) in the top indicating the most preferred species. The users do not prefer low quality timber, shrub and climber species and many of the grasses and herbs. Banmara (*Eupatorium adenophorum*), Titepati (*Artemesia vulgaris*), Unnue (*Gleichenia species*), Damaru (*Maclura cochinchinensis*) and Maidal (*Randia dumetorum*) are some of the species, which have no direct use values. In both the community forests, low quality timber and almost all shrubby species were regarded as unwanted species and the management activities were focused towards removing them in favor of Sal. It may lead to monoculture of Sal species. It will have negative

Table 3a: Diversity and richness indexes of two community forests

Forest	No. of species		Shannon-Weiner index(H')		Richness Index (RI)	
	Tree	Others*	Tree	Others*	Tree	Others*
Nawalpur Saraswoti CF	47	67	1.01	3.22	3.96	5.54
Chakradevi CF	36	65	1.28	3.41	3.04	5.26

*Others include shrubs, herbs and grasses

Table 3b: Density of various life forms in two community forests (No/ha)

Forest	Regeneration	Sapling	Poles	Trees	Total
Nawalpur Saraswoti CF	1,08,164	3,127	464	85	1,11,841
Chakradevi CF	95,655	3,393	571	100	99,719

Table 3c: Density of most dominant species in two community forests

Forest	Density (No/ha)				Relative Density %	
	Sal regn	Total regn	Sal, above regn.	Total, above regn	Sal regn	Sal, above regn
Nawalpur Saraswoti CF	89,693	1,08,164	2,097	3,676	82.9	57.0
Chakradevi CF	71,884	95,655	2,859	4,064	75.1	70.3

Table 4: Most preferred species in the study area

Preferred species (Priority wise)	Main uses
Sal (*Shorea robusta*)	Timber, firewood
Sandan (*Oogenia Oogenesis*)	Agricultural implement, Timber
Chanp (*Michelia champaca*)	Timber
Saj (*Terminalia tomentosa*) and Karma (*Adina cardifolia*)	Timber, firewood
Chilaune (*Schima wallichi*)	Firewood

implications for biodiversity conservation through community forestry.

The strategy to select species only to maximize wood production having no priority for biodiversity conservation contradicts with earlier studies of Ingles and Jackson (1994) and Dahal (1994). They claimed that CFUGs are more effective in forest management with higher number of species due to the opportunity to obtain wide variety of products. It would be more logical to point out that CFUGs are more effective to manage with higher number of "useful" species. Aus der Beek *et al* 1997 claimed that there are specific clauses included in Operational Plan (OP) of the CFUGs to conserve biodiversity and provided examples from 5 CFUGs from Dolkha, however all these conservation efforts are directed to conserve high value tree species such as *Quercus* spp.

Implications of active forest management on biodiversity

In the early phase, while the major objective of the CF was forest protection, CF undoubtedly contributed for biodiversity conservation. But now, the users are implementing active forest management strategy in the forests towards producing good quality timber. The two silvicultural activities namely *"Godmel"* and *"Jhadi safai"* are understood as substitute of forest management. The users have adopted silvicultural activities, as an opportunity to remove all unwanted species from the forest, which of course could be essential to enhance preferred wood productivity. The main targeted plants are shrubs and low quality timber species (*Kukath*). The *"Godmel"* may cause altered diversity of tree species and modified forest structure and composition. The *"Jhadi katne"* may lead to the conversion of shrub land forests to high forest. However, the active management can be utilized as an opportunity to conserve biodiversity where there is possibility of establishing new species other than the dominant resulting in higher diversity. Sustainable biodiversity utilization will promote biodiversity conservation in CF.

Best practices and constraints to biodiversity conservation

The study revealed that CFUGs are increasingly adopting measures for biodiversity conservation in the CF. Few major initiatives observed particularly in Nawalpur CF were:

- Allocation of biodiversity conservation area
- Shifting tree selection criteria during thinning from species to tree condition.
- Initiatives to maintain all the plant species during management operations based on the condition of individual plant.
- Species conservation

The biodiversity conservation was constrained by few basic problems. The research has identified following points that can be considered as constraints for biodiversity conservation.

- Inconsistent understanding of biodiversity conservation
- Poor know-how on biodiversity conservation and its importance
- Problem in identification of medicinal herbs and other NTFPs
- Basic needs priority over conservation

Roles of different stakeholders

The CFUGs, service providers and the government's roles to implement biodiversity conservation initiatives in CF is presented in the Table 5.

Conclusions

Active management practices have influences on structure and composition of forests. Density of Sal is gradually increasing in the expense of low timber and shrub species. This may lead to single species dominated forest and loss of diversity of many plant and animal species. Human induced and rapid conversion of forest structure through species preference and silvicultural operations harms natural environment, ecological processes and biological

Table 5: Roles and responsibilities of CFUGs and the government to support biodiversity conservation in CF.

CFUGs	Government
Bio-friendly utilization of the forest	Develop clear policy and guidelines related to biodiversity conservation in CF
Awareness creating in the CFUGs	Implementation of appropriate extension media to make aware all the users
Implementing knowledge acquired through different training/workshops	Frequent interaction and training to users about the recent developments/approaches
Adoption of appropriate forest management activities such as controlled grazing and appropriate harvesting	Dissemination of knowledge to users on the importance and value of several unknown species
Fire control	adopting reward and punishment system
Effective M&E system	Effective M&E system

diversity. Such situation will lead to the creation of modified forest types and ecosystems ultimately effecting ecological functions and services of forests. There are at least three different types of changes taking places in terms of forest structure and composition. Firstly, the forest types are slowly converting from mixed (Sal Mixed) to monoculture (Sal). Secondly, the shrub and tree diversity may gradually decrease. Lastly, the most critical threat is for the shrub species such as climber and thorny species. It suggests that shrub land areas are gradually converting to high forest and shrub land species are gradually disappearing.

The active management does not always lead to species reduction; it depends on the kinds of activities undertaken and specific procedures adopted. The CFUGs have demonstrated innovative approaches to address biodiversity conservation. These are indications that users are able to address these concerns through proper attention by the service providers. However, there is a need to scale up these activities through awareness and by creating favorable environment. In the past, the conservation of biodiversity has been mostly understood in terms of the management of protected areas and natural forests, ignoring the possible role of community managed forests. This traditional view is especially inadequate for the community forestry.

The adoption of approach maintaining species other than Sal during thinning operations, maintaining undergrowth in a forest with sapling and above development stages and retaining of undisturbed area along river side, stream slopes will help conserve biodiversity in CF.

Placing proper attention in the community forestry management process and practices can minimize the conservation threats to biodiversity outside protected areas particularly for shrubs and tree species. The activities related to the awareness creation about the importance of biodiversity at user group level, updating baseline information on biodiversity issues addressing current status, trends and threats, identification of threatened species and their distribution study and biodiversity recording and registration at local level are some of the key areas where immediate action is necessary. Few initiatives adopted by the CFUGs to address the biodiversity issues are to be scaled up. Sustainable utilization of biodiversity through the development of biodiversity based enterprises can be supposed to be beneficial for participatory biodiversity conservation.

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Annex 1 : List of species found in the study area

1. Nawalpur Sarswoti CF

Tree species			Herbs/shrubs/climbers/grass		
SN		**Species**	**SN**		**Species**
1	Amala	*Emblica officinalis*	1	Amiloghans	*Embelia nagushia*
2	Amaro	*Antidesma diandrum*	2	Archal	
3	Amba	*Psidium guajava*	3	Arerikanda	*Caesalpinia decapetela*
4	Ankhatarua	*Trichilia connaroides*	4	Ausadhi	
5	Archal		5	Balujhar	
6	Asarekaingyo		6	Banbesar	
7	Badkaule		7	Banmara	*Eupatorium odoratum*
8	Bahunikath	*Hydrangea anomala*	8	Bansimilahara	*Ceropegia pubescens*
9	Barro	*Terminalia chebula*	9	Batulpatelahara	*Stephania elegans, Cissampelo pareira*
10	Bhalayo	*Rhus succedanea*	10	Betlauri	
11	Bhille		11	Bhakauli	
12	Botdhangero	*Lagerstroemia parviflora*	12	Bhati	*Clerondendron infortunatun*
13	Chilaune	*Schima wallichi*	13	Bhatmaseghans	
14	Chiuri	*Madhuca butyracea*	14	Bhatteghans	
15	Dadukuchche		15	Bhorla	*Bauhinia vahlii*
16	Gidarikanda	*Premna integrifolia*	16	Bhyakurlahara	*Dioscorea deltoidea*
17	Harro	*Terminalia bellarica*	17	Bokejamuno	
18	Jalme		18	Chitrebanso	*Arthraxon lancifolius*
19	Jamuno	*Syzygium cumini*	19	Chultheghans	
20	Kaijal	*Bischofia javanica*	20	Datiwan	*Achyranthes bidentata*
21	Kaingyo	*Grevillea robusta*	21	Dhairo	*Woodfordia fruticosa*
22	Kalikath	*Myrsine semiserrata*	22	Dhotipateghans	
23	Karma	*Adina cordifolia*	23	Dhupi-jhar	
24	Khirro	*Sapium insigne*	24	Dubo	*Cynodon dactylon*
25	Kumbhi	*Cochliospermum religiosa*	25	Gaikhure	
26	Kutmiro	*Litsea monopetala*	26	Gaitihareghans	*Inula cappa*
27	Kyamuno	*Syzygium cerasoides*	27	Galeni	*Leea robusta*
28	Latikath	*Cornus oblonga*	28	Ghantelahara	
29	Masala	*Eucalyptus spp*	29	Ghodedubo	
30	Mauwa	*Engelhardtia spicata*	30	Ghodeghans	
31	Paderi	*Stereospermum spp*	31	Githalahara	*Dioscorea bulbifera*
32	Phalamekath		32	Gobrelahara	
33	Pharim		33	Hatkatuwaghans	
34	Phirphire	*Acer oblongum*	34	Kagchuchelahara	
35	Piyari		35	Kali Niuro	
36	Putalikath		36	Kalilahara	
37	Rajbrikshya	*Cassia fistula*	37	Kalisinke	
38	Rato kaidal		38	Kanchirno	
39	Ritha	*Sapindus mukorossi*	39	Kapaseghans	
40	Rudilo	*Pogostemon glaber*	40	Kukurdainolahara	*Smilax menispermoides*
41	Sadan	*Ougeinia dalbergiodes*	41	Kurilo	*Asparagus racemosus*
42	Saj	*Terminalia tomentosa*	42	Kuroghans	*Cyathula capitata*
43	Sal	*Shorea robusta*	43	Kuthurke Niuro	
44	Setosiris	*Albizia procera*	44	Lajjawati	*Mimosa pudica*
45	Sindure	*Mallotus philippenenis*	45	Madanelahara	
46	Tantari	*Dillenia pentagyna*	46	Maidalkanda	*Randia dumetorum*
47	Unknown 1		47	Musekharu	
			48	Nagbeli	*Lycopodium clavatum*
			49	Niuro	
			50	Panilahara	*Vitis repanda*
			51	Panisaro	*Nephrolepis cordifolia*

			52	Parewa-andre lahara	
			53	Phalamekanda	
			54	Puranelahara	
			55	Rudilo	*Pogostemon glaber*
			56	Sakhino	*Indigofera cylindrica*
			57	Sarpako Makai	*Arisaema erubescens*
			58	Sikarilahara	
			59	Simghans	*Neanotis gracilis*
			60	Sirughans	*Imperata spp*
			61	Syakhuleghans	
			62	Taprejhar	
			63	Tarullahara	
			64	Thakal	*Phoenix humilis*
			65	Thakauli	
			66	Tinpatelahara	
			67	Unyu	*Dicranopteris glauca*

2. Chakradevi CF

Tree species			**Herbs/shrubs/climbers/grass**		
SN		**Species**	**SN**		**Species**
1	Amala	*Emblica officinalis*	1	Achirnoghans	
2	Amaro	*Antidesma diandrum*	2	Akhleghans	*Chirita urticaefolia*
3	Archal		3	Amppate	
4	Asare	*Lagerstroemia parviflora*	4	Ararighans	
5	Badkaule		5	Arerikanda	*Caesalpinia decapetela*
6	Bahunikath	*Hydrangea anomala*	6	Balujhar	
7	Barro	*Terminalia chebula*	7	Banbesar	
8	Bel	*Angele marmelos*	8	Bankapas	*Thespesia lampus*
9	Bhalayo	*Rhus succedanea*	9	Bankarkalo	
10	Botdhangero	*Lagestroemia parviflora*	10	Banmara	*Eupatorium odoratum*
11	Chilaune	*Schima walichii*	11	Bansimilahara	*Ceropegia pubescens*
12	Dadukuche		12	Batulpatelahara	
13	Damaiphalrukh		13	Bhati	*Clerondendron infortunatun*
14	Gindari	*Premna longofolia*	14	Bhatteghans	
15	Harchur	*Viscum articulatum*	15	Bhorla	*Bauhinia vahlii*
16	Harro	*Terminalia bellarica*	16	Bhyagutokolahara	
17	Jalme		17	Bhyakurlahara	*Dioscorea deltoidea*
18	Jamuno	*Syzigium cumini*	18	Bokejamuno	
19	Jogikath		19	Charcharelahara	
20	Kaingyo	*Grevillea robusta*	20	Chitrebanso	*Arthraxon lancifolius*
21	Kandejamuno		21	Chultheghans	
22	Karma	*Adina cordifolia*	22	Dhairo	*Woodfordia fruticosa*
23	Kumbhi	*Cochliospermum religiosa*	23	Dhotipateghans	
24	Kutmiro	*Litsea monopetala*	24	Dubo	*Cynodon dactylon*
25	Kyamuno	*Syzygium cerasoides*	25	Dudheghans	
26	Latikath	*Cornus oblonga*	26	Dudhelahara	*Trachelospermum lucidum*
27	Odal	*Sterculia villosa*	27	Gahatelahara	
28	Pandari	*Stereospermum spp*	28	Galeni	
29	Piyari		29	Gaujo	
30	Putalikath		30	Ghatejhar	
31	Rajbrikshya	*Cassia fistula*	31	Githalahara	
32	Sadan	*Ougeinia dalbergiodes*	32	Gobrelahara	
33	Saj	*Terminalia tomentosa*	33	Golkakri	
34	Sal	*Shorea robusta*	34	Hatkatuwahans	
35	Seto Siris	*Albizia procera*	35	Jhumjhumlahara	

36	Sindure	*Mallotus philippenenis*	36	Jibresag	
			37	Kalijhar	
			38	Kapase	
			39	Kathekharu	
			40	Kharubanso	
			41	Kukurdainolahara	
			42	Kurilo	
			43	Madanelahara	
			44	Maidalkanda	*Randia dumetorum*
			45	Musekharu	
			46	Nundhiki	
			47	panilahara	
			48	Panisaro	
			49	Parebaandrelahara	
			50	Phyakseghans	
			51	Purenilahara	
			52	Pyajemula	
			53	Ranisinka	
			54	Rudilo	*Pogostemon glaber*
			55	Sakhino	*Indigofera cylindrica*
			56	Sarpakomakai	*Arisaema erubescens*
			57	Simalighans	*Neanotis gracilis*
			58	Sirughans	*Imperata spp*
			59	Sunakhari(orchid)	
			60	Syakhulehans	
			61	Thakal	*Phoenix humilis*
			62	Thakauli	
			63	Thangnejhar	
			64	Tinpate-lahara	
			65	Unyu	*Dicranopteris glauca*