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Abstract

This paper presents the plant diversity of Ampupara Village Common Forest (VCF), Bandarban Hill District, Bangladesh, which is managed by the Murang Community. A total of 148 plant species belonging to 128 genera under 61 families has been recorded from the VCF of about 20 ha. Habit diversity of plants from this reserve shows that out of 148 species, 82 are trees (55%), 28 shrubs (19%), 24 herbs (16%) and 14 species are climbers (10%). Among the taxa, Euphorbiaceae contains the highest number of species (10) followed by Rubiaceae (9), Verbenaceae (7), Moraceae (6), Anacardiaceae, Asteraceae, Arecaceae (5), Mimosaceae, Acanthaceae, Lamiaceae, Meliaceae and Fabaceae (4). The most common species is Kanok (*Schima wallichii*). Regarding habitat preferences, members of Araceae, Zingiberaceae and Pteridophytes are found to grow along the streams and lower slopes. In the paper, species are enumerated with scientific name(s), Murang names and diversity of habits and habitats. Dominant tree species of the three strata has been described. This VCF is conserved by community effort for conserving the biodiversity. Occurrence of 148 species over about 20 ha areas seems to have a good number of species diversity which is comparable with other government managed forest situations in the country.

সারসংক্ষেপ

বাংলাদেশের বান্দরবান পার্বত্য জেলার মুরং উপজাতীয় লোকের ব্যবস্থাপনাধীন এম্পুপাড়া রিজার্ভ বনের (VCF) উদ্ভিদ বৈচিত্র্য এই প্রবন্ধে উপস্থাপন করা হয়েছে। প্রায় ২০ হেক্টর আয়তনের রিজার্ভ বন থেকে ৬১টি পরিবার ও ১২৮ গণের অন্তর্গত ১৪৮টি প্রজাতির উদ্ভিদ রেকর্ড করা হয়েছে। উক্ত রিজার্ভ বনের উদ্ভিদের বৈচিত্র্য দেখা যায়, ১৪৮টির মধ্যে ৮২টি বৃক্ষ প্রজাতি (৫৫%), গুল্ম ২৪টি (১৬%), বীর্ক ২৪টি (১৬%) এবং ১৪টি (১০%) লতা-জাতীয় উদ্ভিদ প্রজাতি। ইউফরবিয়সি পরিবারে সবচেয়ে বেশি প্রজাতি (১০টি প্রজাতি) রয়েছে। একইভাবে রুবিয়েসি পরিবার (৯টি প্রজাতি), ভারবিনেসি (৭টি), মোরেসি (৬টি), এনাকারডিয়েসি, এস্টেরাসি, এরিকাসি (৫টি করে) এবং মাইমোসাসি, একানথেসি, লেমিয়াসি, মিলিয়েসি ও ফেবাসি পরিবার (৪টি করে প্রজাতি) ধারণ করে। সবচেয়ে বেশি পরিচিত প্রজাতি পাওয়া গেছে যার নাম কনক (*Schima wallichii*)। প্রকৃতিগত সম্পর্কের কারণে এরেসি, জিনকিব্যারেসি ও টেরিডোফাইট পরিবারের সদস্যরা পাহাড়ের নিচের দিকের ঢালুতে ও ঝিরির কাছে অধিক সংখ্যক জন্মাতে পছন্দ করে। এই প্রবন্ধে উদ্ভিদ প্রজাতিসমূহের স্বাভাবিক বাসস্থান, প্রকৃতি ও স্বভাবসহ বৈজ্ঞানিক নাম, মুরং নাম ইত্যাদি উপস্থাপন করা হয়েছে। তিন স্তরের প্রধান বৃক্ষ প্রজাতির তালিকাও দেয়া হয়েছে। এই রিজার্ভ বনের সংরক্ষণ পদ্ধতি জীববৈচিত্র্য সংরক্ষণের একটি গুরুত্বপূর্ণ স্থানীয় উজ্জ্বল দৃষ্টান্ত। প্রায় ২০ হেক্টর আয়তনের জায়গাতে ১৪৮টি প্রজাতির সমাহারকে খুব ভাল সংখ্যক প্রজাতির বৈচিত্র্যপূর্ণ বলে মনে হয় যা সরকারী ব্যবস্থাপনায় বনের বর্তমান অবস্থানের সাথে তুলনীয়।

Keywords: Ampupara; Angiosperms; Habit diversity; Natural resources; Plant diversity

Introduction

Bandarban hill district is the second largest district of Chittagong Hill Tracts (CHTs) with an area of 4,502 sq. km. The landform of Bandarban

is mainly composed of high hills (20%), medium hills (22%), low hills (31%) and the rest is valley land. Among the land areas, 42% remains as fallow land, 38% forest land and the rest 20% is used as ,

agricultural land (Khan *et al.*, 2007). Thirteen ethnic tribal communities are living in Chittagong Hill Tracts for long (BBS, 2001; Khan *et al.*, 2007). Lives of communities living in the hills are centered on forests. The tribal communities of Bandarban hill district are used to manage community forests in the vicinity of their villages for environmental protection, supply of water and different commodities of daily lives including many food and medicinal plants. This community managed village common forests are termed as Village Common Forest (VCF), Community Reserve, Kuo Bam, Para Reserve or Mouza Reserve. This is a traditional community-based forest management prevailing in the tribal communities of the CHTs. Traditionally, the local community institutions manage these common forests and the local community leaders (Headmen or Karbaris) take care of the commons on behalf of the communities (Khisa, 2006). Bangladesh Government had plans to maintain 40 hectares of Reserve in the CHTs to meet up people's requirement other than timbers (Anonymous, 1965). Mouza is the traditional administrative unit which comprises a number of villages. This type of habitat conservation exists in different parts of the world for conserving different species (Horwich and Lyon, 1998) and are maintained under collective ownership by indigenous people group (Cox and Elmqvist, 1991; Cox 1997). Mohiuddin *et al.*, (2006) described Ampupara in brief the traditional management of community forests by the tribe of Ampupara, Bandarban hill district. In Ampupara, there is a natural primary forest patch of about 20 ha on both sides of a stream, which is the only source of water for the villagers.

This community forest is maintained for watershed and it protects the village from fire during burning Jhum (shifting cultivation). Conservation and management of natural resources as a common resource, is a tradition of many tribal communities in the CHTs. Population increase, land-use change and indiscriminate forest harvest

are causing depletion and shrinkage of these forests. In some areas, local tribal communities are still maintaining some community-managed reserve forests as their tradition. These reserves are still conserving some biodiversity through managing some natural habitats. The objective of the present study is to document diversities of plant and their habitat of the Murang community managed forest at Ampupara in Bandarban Hill District.

Materials and Methods

Ampupara, a Murang village was settled in 1890 in Bandarban district, by migration of people from Ruma. Flat hilltop with perennial water source, availability of community lands might be the major factors of settlement. The village is situated on the side of Chimbuk-Thanchi-road, 37 kilometers away from Bandarban district town. It is situated in the flat hilltop at about 650 m above the MSL and at 22° 58' North latitude and 92° 18' East longitude. The mean annual rainfall varies from 2400-3800 mm and 70-80% of the annual total rainfall occurs in the wet season and 18-24% in dry season. The mean annual temperature varies from 10° to 35°C. A mean minimum temperature of 26°C occurs in December to January and a maximum temperature of 34°C in March to May. The mean humidity is approximately 78% in Bandarban. The maximum humidity was found during July to August and the minimum in January to February (Khan *et al.*, 2007). The topography of the village common forest is mostly hilly terrain with very steep to steep-slopes at high elevation of Chimbuk hill range. However, size and shape of slopes, continuity on same slopes are variable. Gross physical features of soil vary from abundant to few shale fragments, dark greyish brown in colour and clayey in texture, and soil pH varies from 5.5 – 6.5.

We conducted a reconnaissance survey followed by field trips during July 2006 to December

2007 at Ampupara. During the trips, we collected botanical samples and recorded their habit, habitat, and local names. Botanical samples were preserved by following standard herbarium technique. Authors also documented indigenous management practices for conservation of these forests by Participatory Rural Appraisal (PRA) and focus group discussions following several authors (Gurung, 1994; Martin, 1995; Horowitz, 2000). Both male and female of the village were involved in the PRA exercises.

The botanical samples were identified consulting the pertinent literatures. All the collected specimens have been preserved in Bangladesh Forest Research Institute herbarium. In this paper, the plant families, genera and species under each family have been arranged alphabetically. Each species entry provides the scientific name(s), the Murang name(s), and diversity of habit and habitat.

Results and Discussion

Species diversity

During the survey, naturally-growing 148 angiospermic species were collected from the Ampupara VCF (Table 1). These species are classified under 128 genera and 61 families. The maximum number of species were found in Euphorbiaceae representing 10 species followed by Rubiaceae (9 species), Verbenaceae (7), Moraceae (6), Anacardiaceae, Arecaceae, Asteraceae, (5 each), Acanthaceae, Fabaceae, Lamiaceae, Meliaceae and Mimosaceae (4 each). All species in Araceae, Asteraceae and Zingiberaceae family are herbaceous in nature. On the other hand, most of the species of Anacardiaceae, Bignoniaceae, Burseraceae, Clusiaceae, Dipterocarpaceae, Sapindaceae, Meliaceae, Mimosaceae and Moraceae are trees. Most of the species of Convolvulaceae are climbers. Diversity of species from an area of about 20 ha VCFs at Ampupara seems to be rich in comparison to other natural

forests from the region. Comparison of the species diversity with the other findings has been shown in Table 2.

Habit diversity

The Floristic compositions of the Ampupara VCFs are classified as tree, shrub, herb and climber on the basis of habit. According to the habit diversity, trees occupy the highest position, comprising 82 species which constitutes 55% of taxa, followed by shrubs comprising 28 species (19%), herb comprises 24 species (16%) and 14 (10%) are climbers.

Occurrence of the species according to stratum

The present study revealed that three strata of the vegetation occur in the community reserve. The top canopy is dominated by trees. Shrubs grow mostly in the second stratum of this community forest. The species comprising of third stratum plants are mostly herbs and under-shrubs. These are moist-loving and specific to habitat. These species occurring along steep stream banks play an important role in perennial water supply in the stream. Conservation of these species is important as niche species. Dominant species occurring in different strata are shown in Table 3.

Schima wallichii, *Gmelina arborea*, *Vitex peduncularis*, *Sterospermum colais*, *Ficus semicordata*, *Syzygium* sp. and *Albizia procera* are tree species occurring in the comparatively drier areas and in denuded hills as secondary vegetation. Climbers, like *Cissus repens* members of Vitaceae occur in dry areas along the fringe of the primary forest. Some hill slopes are also covered with *Melocanna baccifera* as secondary vegetation. Some denuded and abandoned areas are covered with *Globba marantina*, *Staurogyne angustifolia*, *Ixora cuneifolia*, *Clerodendrum viscosum* and other unidentified species.

Table 1. List of the naturally grown plant species in the Ampupara Community Reserve.

| Family | Scientific name | Murong name | Habit | Habitat |
|---------------|--|--------------------|---------|---------|
| Acanthaceae | <i>Eranthemum strictum</i> Coleb. ex Roxb. | <i>Madu shak</i> | Shrub | US |
| | <i>Lepidagathis incurva</i> Buch-Ham. ex D. Don | <i>Kon-tooa</i> | Shrub | LS |
| | <i>Nelsonia canescens</i> (Lamk.) Spreng | <i>Kitro lat</i> | Herb | US |
| | <i>Staurogyne angustifolia</i> T. Anders. | <i>Sutho cha</i> | Herb | US |
| Amaranthaceae | <i>Achyranthes aspera</i> L. | <i>Apang</i> | Herb | MS |
| Anacardiaceae | <i>Bouea oppositifolia</i> (Roxb.) Meissner | <i>Wenow</i> | Tree | AS |
| | <i>Holigarna longifolia</i> Roxb. | <i>Preng</i> | Tree | MS |
| | <i>Lannea coromandelica</i> (Houtt.) Merr. | <i>Mam</i> | Tree | MS |
| | <i>Mangifera indica</i> L. | <i>Weprom</i> | Tree | MS |
| | <i>Mangifera sylvatica</i> Roxb. | <i>Wenow</i> | Tree | MS |
| Annonaceae | <i>Desmos chinensis</i> Lour. | <i>Kitro lat</i> | Climber | LS |
| | <i>Sageraea listeri</i> King | | Tree | MS |
| Apiaceae | <i>Oenanthe javanica</i> (Blume) DC. | <i>Jhum dainna</i> | Herb | US |
| Apocynaceae | <i>Alstonia scholaris</i> (L.) R. Br. ex | <i>Clet sing</i> | Tree | AS |
| | <i>Tabernaemontana divaricata</i> (L.) R. Br. ex Roem. & Schult. | <i>Thong</i> | Shrub | US |
| Araceae | <i>Aglaonema hookerianum</i> Schoot | <i>Lee-iya</i> | Herb | LS |
| | <i>Colocasia oesbia</i> A. Hay | <i>Ro-ram pata</i> | Herb | LS |
| Araliaceae | <i>Trevesia palmata</i> (Roxb.) Vis. | <i>Fao-sing</i> | Tree | MS |
| Arecaceae | <i>Calamus gracilis</i> Roxb. | <i>Shong</i> | Climber | MS |
| | <i>Calamus latifolius</i> Roxb. | <i>Shong</i> | Shrub | LS |
| | <i>Caryota urens</i> L. | <i>Lay-ing</i> | Tree | MS |
| | <i>Daemonorops jenkinsiana</i> (Griff.) Martius | <i>Shong</i> | Shrub | AS |
| | <i>Wallichia caryotoides</i> Roxb. | <i>Lay-ing</i> | Tree | AS |
| Asteraceae | <i>Ageratum conyzoides</i> L. | <i>Polai</i> | Herb | US |
| | <i>Chromolaena odorata</i> (L.) King & Robinson | <i>Oliya</i> | Herb | MS |
| | <i>Mikania cordata</i> (Burm. f.) Robinson | <i>Ka-tha lat</i> | Climber | MS |
| | <i>Spilanthes calva</i> DC. | <i>Ketua</i> | Herb | LS |
| | <i>Vernonia cinerea</i> (L.) Less. | <i>Chan kui</i> | Herb | LS |
| Bignoniaceae | <i>Pajanelia longifolia</i> (Willd.) K. Schum. | <i>Kling-mong</i> | Tree | US |
| | <i>Stereospermum colais</i> (Buch.-Ham. ex Dillw.) Mabblerley | <i>Ronka-sing</i> | Tree | MS |
| Bixaceae | <i>Bixa orellana</i> L. | <i>Prim so</i> | Tree | MS |
| Bombacaceae | <i>Bombax insigne</i> Wall. | <i>Pang-sing</i> | Tree | MS |
| Burseraceae | <i>Garuga pinnata</i> Roxb. | <i>Clau-o</i> | Tree | AS |

Table 1 Continued

| | | | | |
|------------------|---|---------------------|---------------|----|
| Burse raceae | <i>Garuga pinnata</i> Roxb. | <i>Clau -o</i> | Tree | AS |
| | <i>Protium serratum</i> (Wall. ex Coelbr.) Engl. | <i>Katur sing</i> | Tree | US |
| Caesalpinaceae | <i>Bauhinia purpurea</i> L. | <i>O-kao</i> | Tree | US |
| | <i>Cassia nodosa</i> Buch. -Ham. ex Roxb. | <i>Sing -clang</i> | Tree | US |
| Clusiaceae | <i>Garcinia xanthochymus</i> Hook.f. ex T. Anders. | <i>Tutj ja</i> | Tree | MS |
| | <i>Mesua ferrea</i> L. | <i>Noksa phul</i> | Tree | MS |
| Combretaceae | <i>Anogeissus acuminata</i> (Roxb. ex DC.) Guill. & Perr. | <i>Tarum</i> | Tree | US |
| | <i>Calycopteris floribunda</i> (Roxb.) Lamk. | <i>Chreng ta</i> | Climber | US |
| | <i>Terminalia bellirica</i> (Gaertn.) Roxb. | <i>Ma sing</i> | Tree | MS |
| Convolvulaceae | <i>Ipomoea hederifolia</i> L. | <i>Ranai lat</i> | Climber | MS |
| | <i>Ipomoea pes -tigridis</i> L. | <i>Languilat</i> | Climber | LS |
| | <i>Merremia umbellata</i> (L.) Hallier f. | <i>Hoop lat</i> | Climber | MS |
| Cucurbitaceae | <i>Hodgsonia macrocarpa</i> (Blume) Cogn. | | Woody climber | US |
| Dilleniaceae | <i>Dillenia pentagyna</i> Roxb. | <i>Khoi -sing</i> | Tree | AS |
| Dioscoreaceae | <i>Dioscorea bulbifera</i> L. var. <i>bulbifera</i> | <i>Moding</i> | Climber | US |
| Dipterocarpaceae | <i>Anisoptera scaphula</i> (Roxb.) Pierre | <i>Karcar sing</i> | Tree | MS |
| | <i>Dipterocarpus turbinatus</i> Gaertn. | <i>Rai -ma</i> | Tree | MS |
| Ebenaceae | <i>Diospyros montana</i> Roxb. | <i>Carpang</i> | Tree | AS |
| Elaeocarpaceae | <i>Elaeocarpus floribundus</i> Blume | <i>Kan -ron</i> | Tree | MS |
| Euphorbiaceae | <i>Antidesma bunius</i> (L.) Spreng. | <i>Ki-tang</i> | Tree | AS |
| | <i>Antidesma roxburghii</i> Wall. ex Tulasne | <i>Sukma</i> | Tree | LS |
| | <i>Aporosa dioica</i> (Roxb.) Muell. -Arg. | <i>Ba ta sing</i> | Shrub | MS |
| | <i>Bischofia javanica</i> Blume | <i>Jug -ma sing</i> | Tree | AS |
| | <i>Bridelia retusa</i> (L.) A. Juss. | <i>Kakmai</i> | Tree | LS |
| | <i>Mallotus philippensis</i> (Lamk.) Muell. -Arg. | <i>Hap -lou</i> | Tree | US |
| | <i>Mallotus tetracoccus</i> (Roxb.) Kurz | <i>Hap -lou</i> | Tree | US |
| | <i>Phyllanthus niruri</i> L. | <i>Kuddi</i> | Herb | LS |

Table 1 Continued

| | | | | |
|-----------------|---|------------------------|---------|----|
| | <i>Phyllanthus reticulatus</i> Poier. | <i>Nakangwi</i> | Shrub | US |
| | <i>Sapium baccatum</i> Roxb. | <i>Room thar</i> | Tree | US |
| Fabaceae | <i>Crotalaria pallida</i> Ait. | <i>Thrung cha</i> | Shrub | MS |
| | <i>Desmodium triflorum</i> (L.) DC. | <i>One dung sing</i> | Shrub | LS |
| | <i>Erythrina fusca</i> Lour. | <i>Craw-da</i> | Tree | AS |
| | <i>Vigna adenantha</i> (Meyer) Marechal | <i>Bon borbati</i> | Climber | LS |
| Fagaceae | <i>Castanopsis tribuloides</i> (Smith) A. DC. | <i>Kan klae-sing</i> | Tree | MS |
| | <i>Lithocarpus elegans</i> (Blume) Hatus. ex Soepad . | <i>Kan klae-sing</i> | Tree | MS |
| Haemodoraceae | <i>Peliosanthes teta</i> Andr. | <i>Tham habcha</i> | Herb | AS |
| Lamiaceae | <i>Anisomeles indica</i> (L.) O. Kuntze | <i>Ranlomia</i> | Herb | US |
| | <i>Ocimum americanum</i> L. | <i>Chonghir</i> | Shrub | MS |
| | <i>Ocimum basilicum</i> L. | <i>Chonghir</i> | Shrub | MS |
| Lauraceae | <i>Cinnamomum glaucescens</i> (Nees) Meiss. | <i>Tonma-nisa</i> | Tree | MS |
| | <i>Cryptocarya amygdalina</i> Nees | | Tree | MS |
| | <i>Litsea monopetala</i> (Roxb.) Pers. | <i>Klang-nap</i> | Tree | MS |
| | <i>Phoebe lanceolata</i> (Nees) Nees | <i>Nake-now ruk</i> | Tree | MS |
| Leeaceae | <i>Leea acuminata</i> Wall. | <i>Tahe</i> | Tree | MS |
| | <i>Leea aequata</i> L. | <i>Ta he-red</i> | Shrub | US |
| Liliaceae | <i>Molineria recurvata</i> (Dryand.) Herbert | <i>Than hab</i> | Herb | MS |
| Magnoliaceae | <i>Michelia champaca</i> L. | <i>Cham-sing</i> | Tree | MS |
| Malvaceae | <i>Gossypium barbadense</i> L. | <i>Cleo-ma sing</i> | Tree | LS |
| | <i>Hibiscus surattensis</i> L. | <i>Kong chur</i> | Shrub | MS |
| | <i>Urena lobata</i> L. | <i>Nepma</i> | Shrub | US |
| Melastomataceae | <i>Melastoma malabathricum</i> L. | <i>Kanlen Ram</i> | Shrub | MS |
| Meliaceae | <i>Aglaia spectabilis</i> (Miq.) Jain & Bennet (<i>Amoora wallichii</i> King) | <i>Ong sing</i> | Tree | MS |
| | <i>Aphanamixis polystachya</i> (Wall.) R.N. Parker | <i>Ong sing</i> | Tree | MS |
| | <i>Azadirachta indica</i> A.Juss. | <i>Clao-prong sing</i> | Tree | US |
| | <i>Toona ciliata</i> M. Roem. | <i>Shikro-du</i> | Tree | MS |

Table 1 Continued

| | | | | |
|----------------|--|-----------------------|---------|----|
| Menispermaceae | <i>Stephania japonica</i> (Thunb.) Miers | <i>Muichanlat</i> | Climber | Ms |
| Mimosaceae | <i>Albizia chinensis</i> (Osb.) Merr. | <i>Kang shok-sing</i> | Tree | MS |
| | <i>Albizia lebbeck</i> (L.) Benth. & Hook. | <i>Sing sua</i> | Tree | MS |
| | <i>Albizia procera</i> (Roxb.) Benth. | <i>Sing sua</i> | Tree | MS |
| | <i>Samanea saman</i> (Jacq.) Merr. | <i>Khani shok</i> | Tree | US |
| Moraceae | <i>Artocarpus chama</i> Buch. -Ham. ex Wall. | <i>Wi kog</i> | Tree | LS |
| | <i>Ficus benghalensis</i> L. | <i>Pong-sing</i> | Tree | US |
| | <i>Ficus benjamina</i> L. | <i>Pong-sing</i> | Tree | MS |
| | <i>Ficus racemosa</i> L. | <i>Ganua sing</i> | Tree | AS |
| | <i>Ficus semicordata</i> Buch. -Ham. ex Smith | <i>Widuth</i> | Tree | AS |
| | <i>Ficus tinctoria</i> G. Forst. | <i>Widuth</i> | Tree | AS |
| Myristicaceae | <i>Myristica linifolia</i> Roxb. | <i>Lao berella</i> | Tree | MS |
| Myrsinaceae | <i>Maesa indica</i> (Roxb.) A. DC. | <i>Jugran plang</i> | Tree | MS |
| | <i>Maesa ramentacea</i> (Roxb.) A. DC. | <i>Jugran plang</i> | Tree | LS |
| Myrtaceae | <i>Syzygium cumini</i> (L.) Skeels | <i>Klang ui</i> | Tree | LS |
| | <i>Syzygium fruticosum</i> DC. | <i>Klang ui</i> | Tree | US |
| Oleaceae | <i>Jasminum scandens</i> Vahl | <i>Sugandi phul</i> | Climber | MS |
| Piperaceae | <i>Piper attenuatum</i> Buch. - Ham. ex Wall. | <i>Ram-jarong</i> | Herb | LS |
| Poaceae | <i>Bambusa vulgaris</i> Schrad. ex Wendl. | <i>Kho ma</i> | Tree | AS |
| | <i>Cymbopogon citratus</i> (DC.) Stapf | <i>Cle song</i> | Herb | US |
| | <i>Melocanna baccifera</i> (Roxb.) Kurz | <i>Kho ma</i> | Tree | MS |
| | <i>Setaria palmifolia</i> (Koen.) Stapf | <i>Jhum corng</i> | Herb | US |
| Polygonaceae | <i>Ampelgynon chinense</i> (L.) Lindley | <i>Young-frong</i> | Herb | AS |
| | <i>Persicaria dichotoma</i> (Blume) Masamune | <i>Jong crome</i> | Herb | AS |
| Ranunculaceae | <i>Delphinium ajacis</i> L. | <i>Nockh-palinka</i> | Herb | MS |
| Rhamnaceae | <i>Ziziphus oenoplia</i> (L.) Mill. | <i>Sit-cha ui</i> | Shrub | MS |
| Rubiaceae | <i>Gardenia coronaria</i> Buch. - Ham. | <i>Purchan sing</i> | Tree | US |
| | <i>Ixora cuneifolia</i> Roxb. | <i>Canke rang</i> | Shrub | MS |
| | <i>Metadina trichotoma</i> (Zoll. & Mor.) Bakh. f. | <i>My peow</i> | Shrub | LS |
| | <i>Mitragyna rotundifolia</i> (Roxb.) O. Kuntze | <i>Dakkum ui</i> | Tree | MS |

Table 1 Continued

| | | | | |
|----------------|--|------------------------|---------|----|
| Rubiaceae | <i>Morinda citrifolia</i> L. | <i>Ban rech</i> | Shrub | MS |
| | <i>Mussaenda roxburghii</i> Hook.f. | <i>Mi pew</i> | Shrub | MS |
| | <i>Mycetia longifolia</i> (Wall.) O. Kuntze | <i>Threng sa</i> | Shrub | LS |
| | <i>Pavetta indica</i> L. | <i>Kan - a - sing</i> | Shrub | MS |
| | <i>Spermacoce articularis</i> L.f. [<i>Borreria hispida</i> (L.) Schum.] | <i>Daru kray</i> | Herb | US |
| Rutaceae | <i>Clausena suffruticosa</i> (Roxb.) Wight & Arn | <i>Wama-kure</i> | Shrub | US |
| Sapindaceae | <i>Allophylus cobbe</i> (L.) Roxb. | <i>Tum paosing</i> | Tree | LS |
| | <i>Lepisanthes rubiginosa</i> (Roxb.) Leenh. | <i>Like a sing</i> | Tree | US |
| | <i>Lepisanthes senegalensis</i> (Poir.) Leenh. <i>Aphania danura</i> (Roxb.) Radlk. | <i>You kak-sing</i> | Tree | AS |
| Solanaceae | <i>Solanum torvum</i> Swartz | <i>Kumplu-ui</i> | Shrub | MS |
| | <i>Solanum violaceum</i> Ortega | <i>Kumplu</i> | Shrub | US |
| Sonneratiaceae | <i>Duabanga grandiflora</i> (Roxb. ex DC.) Walp. | <i>Ruiong-sing</i> | Tree | AS |
| Sterculiaceae | <i>Byttneria pilosa</i> Roxb. | <i>King kay</i> | Climber | LS |
| | <i>Pterospermum acerifolium</i> (L.) Willd. | <i>Hab ka</i> | Tree | MS |
| | <i>Pterospermum semisagittatum</i> Buch.-Ham. ex Roxb. | <i>Hab ka</i> | Tree | US |
| | <i>Sterculia foetida</i> L. | <i>Janglibadam</i> | Tree | MS |
| Theaceae | <i>Schima wallichii</i> (DC.) Korth. | <i>Purchan-sing</i> | Tree | MS |
| Tiliaceae | <i>Grewia nervosa</i> (Lour.) Panigr. | <i>Urea shok</i> | Tree | MS |
| Ulmaceae | <i>Trema orientalis</i> (L.) Blume | <i>Simutta sing</i> | Tree | US |
| Urticaceae | <i>Boehmeria glomerulifera</i> Miq. | <i>Kan lang</i> | Shrub | MS |
| Verbenaceae | <i>Callicarpa arborea</i> Roxb. | <i>Ram nang</i> | Tree | LS |
| | <i>Clerodendrum viscosum</i> Vent. | <i>Tera-pa</i> | Shrub | US |
| | <i>Gmelina arborea</i> Roxb. | <i>Kam-sing</i> | Tree | US |
| | <i>Premna esculenta</i> Roxb. | <i>Daru sing</i> | Shrub | LS |
| | <i>Tectona grandis</i> L.f. | <i>Palm kreng sing</i> | Tree | US |
| | <i>Vitex peduncularis</i> Wall. ex Schauer | <i>Wama kear</i> | Tree | MS |
| | <i>Vitex pinnata</i> L. | <i>Wama kear</i> | Tree | MS |
| Vitaceae | <i>Cissus repens</i> Lamk. | <i>Preyo ma</i> | Climber | MS |
| Zingiberaceae | <i>Alpinia nigra</i> (Gaertn.) Burt. | <i>Kapu tuja</i> | Herb | LS |
| | <i>Globba marantina</i> L. | <i>Kapu tuja</i> | Herb | LS |
| | <i>Globba multiflora</i> Wall. ex Baker | <i>Kapu tuja</i> | Herb | LS |

LS= Lower slope, MS= Middle slope, US= Upper slope and AS= Along the streams

Table 2. Comparison of species diversity among different reserve areas

| VCF Name | Area (ha.) | Species Number | References |
|--|------------|--|------------------------------|
| Ampupara VCF, Bandarban | 20 | 148 species under 128 genera and 61 families | Present study |
| Dud -Pukuria -Dopachari Wildlife Sanctuary, Chittagong (South) Forest Division | 831.4 | 77 species under 57 genera and 32 families | Delwar <i>et al.</i> 2012 |
| Bamu Reserve Forest, Cox's Bazar Forest Division | 603 | 85 tree species | Hossain <i>et al.</i> 1997 |
| Sitapahar Reserve Forest, Kaptai, Rangamati | 316 | 85 tree species | Nath <i>et al.</i> 1998 |
| Baraitali Forest, Chittagong Forest Division (South) | 1000 | 77 tree species | Rahman, 2002 |
| Fulchari Reserve Forest, Cox's Bazar | 2200 | 73 tree species | Arif, 2003 |
| Satchari Reserve Forest, Hobigonj, Sylhet | 242.91 | 102 species | Chowdhury <i>et al.</i> 2004 |
| Satchari Reserve Forest, Hobigonj, Sylhet | 242.91 | 73 tree species | Arefin <i>et al.</i> 2011 |
| Village Common Forest, Chittagong Hill Tract | 57 | 163 plant species | Jashimuddin and Inoue, 2012 |

Table 3. Dominant plant species at different strata of Ampupara VCF

| | |
|---|---|
| Top canopy: First stratum (Dominant tree) | <i>Albizia lebbek</i> , <i>Anisoptera scaphula</i> , <i>Anogeissus acuminata</i> , <i>Aphanamixis polystachya</i> , <i>Bombax insigne</i> , <i>Castanopsis tribuloides</i> , <i>Dillenia pentagyna</i> , <i>Garuga pinnata</i> , <i>Holigarna longifolia</i> , <i>Mangifera sylvatica</i> , <i>Pajanelia longifolia</i> , <i>Pterospermum acerifolium</i> , <i>Schima wallichii</i> , <i>Stereospermum colais</i> , <i>Terminalia bellirica</i> and <i>Vitex peduncularis</i> . |
| Second stratum | <i>Bischofia javanica</i> , <i>Cinnamomum cecicodaphne</i> , <i>Clausena suffruticosa</i> , <i>Ficus semicordata</i> , <i>Grewia nervosa</i> , <i>Leea aequata</i> , <i>Lithocarpus elegans</i> , <i>Litsea monopetala</i> , <i>Mallotus philippensis</i> , <i>Phobe lanceolata</i> , and <i>Sapium baccatum</i> . |

Conclusion

The community reserves or VCFs where exist are still some remnants of natural primary forests of the Chittagong Hill Tracts. A good number of native trees are naturally growing in this community-managed forests and local people are conserving this species for their interest. This

type of community reserve is now in tremendous pressure of extinction due to road development, population pressure, and loss of social norms. So, more efforts from both the government and community are needed to conserve such VCFs and that will help to conserve biodiversity at local level.

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