CONTRIBUTION OF AGROFORESTRY ON LIVELIHOOD OF CHANDRA AAKAR AND JABUNE COMMUNITY FOREST USER GROUPS IN RAINADEVI CHHAHARA RURAL MUNICIPALITY-7, PALPA DISTRICT OF NEPAL

INTRODUCTION

Agroforestry practices of Churia hills of Palpa district of Nepal have contributed to biodiversity conservation and production of diverse products to maintain the livelihood of the many households. This has also contributed in improving the economic status of the two community forest user group (CUFUG) members. The current study was conducted using Participatory Rural Appraisal (PRA) tools such as household survey (107 households), one in each CUFUG-Focus Group\ Discussion (FGD) and three Key Informant Interview (KII) in both CUFUGs, direct observation and review of reports and publications. Based on these methodological approach the major findings and conclusions of the study are as: different types of agroforestry systems likeAgri-silviculture, Silvopasture, Home Garden, Horti-silviculture, Silvi-fishery or Aqua-silviculture, Apiculture and woodlots etc. are being practiced in the study area (Amatya et. al. 2018).

Among them, the Agri-silviculture system was the most important practice in which respondents had planted various species of fruit trees, fodder, fuel-wood and timber trees, vegetables, and spices.

Recoarded species

In these agroforestry practices, 39 species were recorded, Of all the species recorded, 15 were fodder species viz Kimbu (Morus alba), Kabhro (Ficus lacor), Tote (*Ficus hispida*), Khanayo (*Ficus semicordata*), Kutmero (*Litsea polyantha*), Gayo (*Bridella retusa*), Koiralo (*Bauhinia variegate*), Tanki (*Bauhinia purpurea*), Ipil-Ipil (*Leucaena leucocephala*), Dabdabe (*Garuga pinnata*), Bedulo (*Ficus sarmentosa*), Sandan (*Desmodium oojenense*), Bhatmase (*Flemingia congesta*), Ginderi (*Premna integrifolia*), and Dumri (*Ficus racemosa*). 9 were fruit trees like Lichi (*Litchi chinensis*), Papaya (*Caricapapaya*), Mango (*Mangifera indica*), Jackfruit (*Artocarpusintegrifolia*), Pineapple (*Smallanthus sonchifolius*), Banana (*Musa paradisiac*), Nibuwa (*Citrus hystrix*), Guava (*Psidium guajava*) and Kagati (*Citrus aurantifolia*), 9 species were timber and fuel wood species viz Sal (*Shorea robusta*), Asna (*Terminalia tomentosa*), Piyari (*Bachanania latifolia*), Jamun (*Syzygium cumini*), Kusum (*Schleicheraoleosa*), Chilaune (*Schima wallichi*), Bakino (*Melia azadirach*), Masala (*Eucalyptus camaldulensis*), and Buddhagaro (*Lagerstroemiaparviflora*), multi-purpose species were 5 in numbers as Chiuri (*Aesandrabutyraceae*), Bans (*3 Bambusa spp.*), and Amala (*Phyllanthusemblica*) and income-generating forage species was Amriso (*Thysanolaenamaxima*). Similar findings were reported by FRTC, 2019. Agroforestry Systemand Practices in Terai and Mid-hills of Nepal, Forest

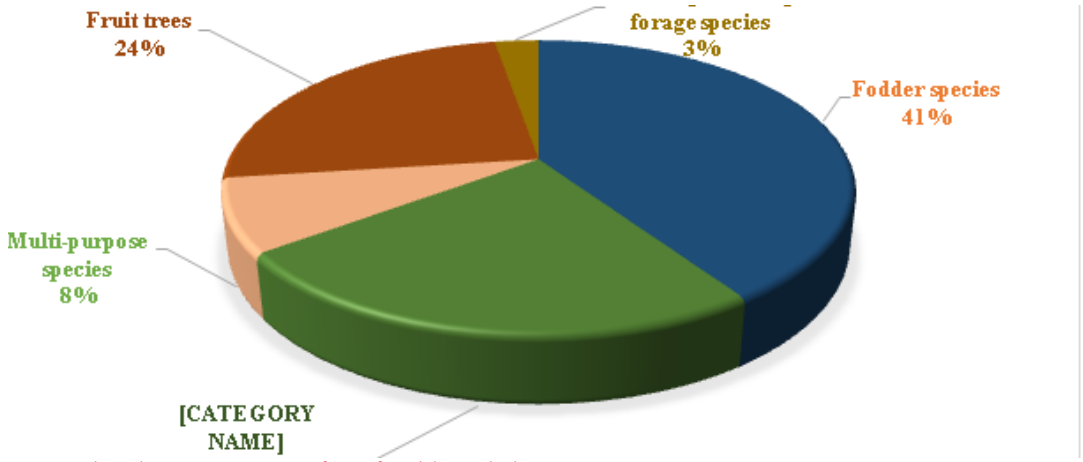

Figure1. Pi-chart showing various types of trees found the studied CFUGs

Outcome

Our study has found that the livelihood of the respondent (107 households) has improved due to the adoption of agroforestry practices. The fodder from the on-farm trees worked as the green feed for animals and consequently increases the livestock income of the farmers. The overall income of the respondent household was NRs. 11,295/year/household in Chandra Aakar CFUG and NRs. 33,139/year/household in Jabune CFUG. This income was used to maintain or improve living conditions especially to purchase household materials, foods, crop seed, health and sanitation, and for educating children. The majority of the households perceived agroforestry practices positively because it provides fodder and fuel wood, gives fruits, protects water sources, improves greenery in village and local environment, increasing farm income, and biodiversity in farmlands.

However, respondents have reported some constraint for practicing agroforestry in study areas, which was a lack of awareness on the misconception about the shading effect of trees on crop yield. But there are huge opportunities to improve the livelihood of farmers through agroforestry practices in study community forest user groups for which Saving and Credit Cooperative need to be formed and mobilized, construct better market facilities, transport and road infrastructure accessibility, provision of irrigation facilities, and conduct capacity building training to increase farmer's capacity in agroforestry practices.

The following are the major recommendations for the application of improvised agroforestry practices in these two forest user groups: There should be a distribution of farmers' preferred seeds and seedlings such as Tote *(Ficus hispida)*, Khanayo *(Ficus semicordata)*, Kutmero *(Litsea polyantha)*, Gayo (*Bridella retusa),n* anki *(Bauhinia purpurea)*, Ipil-Ipil *(Leucaena leucocephala)*, Dabdabe *(Garuga pinnata)*, Sadan *(Ougeinia oojeinense)* to encourage households towards adopting agroforestry practices. Priority should be given to vegetable and fruit cultivation practices as it proves to be a good source of income generation. Awareness program and extension education as well as agroforestry training should be provided to respondents and other farmers regularly to promote agroforestry practices in these forest user group areas for commercial agroforestry to generate more income and employment opportunities. Community forest user group members should be more focused on livelihood improvement and new technologies and techniques as they can help uplift their livelihood to a better level. The proper market facility should be created in inaccessible places to sell the products obtained from agroforestry farms. By adopting these in one or the other will for sure contribute more to elevate the current state of their livelihoods.

Fig2. Adoption of Agroforestry in the CUFUGs

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