ABSTRACT

Tree species are the main component of the agro-forestry system because they provide farmers with direct benefits and play a vital role in mitigating climate change, stabilizing slopes, and ecological balance. The list of tree species used in different agro-forestry practices shows 110 tree species belonging to 42 families. Tree species belonging to the family Moraceae are widely used in agro-forestry practices, followed by Leguminosae, Rosaceae, Rubiaceae, and so on. There are approximately 44 species of trees suitable for single use, such as forage, fruit, fuelwood, and timber production. Similarly, tree species with two functions are better than tree species with only one function. Approximately 40 trees have two functions: food and fuelwood, fruit and fuelwood, and wood and fuelwood. Among the 110 species used in agro-forestry practices in Nepal, 21 species have more than two functions and are the most suitable species for agro-forestry practices. The use of tree species in different agro-forestry practices shows that the number of trees used in Silvo-pastoral systems is the highest (30%), followed by Horto-agri-silviculture (23%). Approximately 21% of tree species are used in more than two agro-forestry systems. The minimum number of tree species used for Agri-silvi-pastoral and home gardens is 3% and 4% respectively.

INTRODUCTION

Agro-forestry is a type of land use in which trees supply both products and services to the environment (Forestry et al., 2013). When trees grown on different farmlands in the same area are aggregated in agro-forestry systems, it might result in a better-wooded situation, hence improving environmental protection (Otegbeye, 2002). According to Kang (1993), trees have social and economic values in addition to direct agricultural benefits. From a social, economic, and ecological standpoint, the value of tree components derived by farmers from agro-forestry was assessed (Anderson and Sinclair, 1993). Agro-forestry’s social and economic benefits can be measured in terms of production, stability, and long-term viability. Rural Nepali farmers’ livelihoods, and thus food security, are largely dependent on their ability to access tree resources, whether from their own land or from community forests. (Cedamon et al., 2018). Nepali farmers have a long history of planting trees on their land (Nuepane et al. 2002) and these traditional agro-forestry systems have been well described by Amatya and Newman (1993) among others. Typical Nepali agro-forestry relies largely on fodder trees for livestock and the manure and forest litter produced, which are used as bedding materials to maintain soil fertility (Garforth et al. 1999; Palikhe and Fujimoto 2010). Agro-forestry trees are the primary source of fodder (Amatya 1990; Pandey et al. 2009), accounting for up to 70% of dry matter intake for much of the year (Degen et al. 2010). Farmers grow maize, wheat, millet, and vegetable crops on their terraced, tree-bounded farms. These agro-forestry systems supply subsistence products as well as environmental services like soil stabilization and improvement (Pandit and Thapa 2004; Pandit et al. 2014; Nuepane and Thapa 2001; Gilmour and Nurse 1991; Malla 2000; Regmi and Garforth 2010; Nuepane et al. 2002; Pandit and Thapa 2004; Nuepane and Thapa 2001) and conservation of biological diversity (Acharya 2006).

Modern agro-forestry integrates technological knowledge along with multipurpose tree species to provide maximum benefits to farmers. However, in Nepal, traditional agro-forestry practices are the most common. Rather than planting seedlings of multipurpose tree species, farmers protect seedlings and saplings of naturally regenerated species. Tree species are primarily employed for the production of fodder, fuelwood, fruit, and timber. Farmers are still unaware of the multiple roles that tree species perform in the agro-forestry system. The main aim of this study is to compile a list of tree species, their applicability, and their use in various agro-forestry systems, as well as to offer policymakers with pertinent advice for encouraging the planting of these species. On the other hand, it directly assists framers in the adoption of agro-forestry practices along with multipurpose tree species, as well as reaping the benefits of maximizing the value of a limited piece of land.

The objective of this report is to provide an overview of the tree species employed in Nepal’s agro-forestry systems.

METHODOLOGY

Secondary sources are employed to acquire information on tree species used in Nepalese agro-forestry practices. Published articles, relevant books, and online databases are all included in this source. About 15 agro-forestry related articles from 1984 to 2021AD retrieved from Research Gate, and the tree species referenced by various authors were compiled in an excel spreadsheet. The tree species used for Agri-silvi-pastoral and home gardens is 3% and 4% respectively.
species are then classified according to their family, uses, and classification system. Excel was used to display the results in charts, tables, and a pie chart.

RESULT AND DISCUSSION

Tree species and their family
In Nepal, around 110 tree species from 42 different families are used in agro-forestry practices. The Moraceae family has the most tree species (16), followed by the Liguminosae family (8), Rosaceae and Rutaceae (6), and Anacardiaceae and Malvaceae (5) tree species in each family, respectively. Each of the three tree families, Lauraceae, Euphorbiaceae, and Fagaceae, has four tree species. Similarly, the Sapindaceae, Verbenaceae, Meliaceae, Myrtaceae, and Combretaceae families each include three tree species, whereas the Rubiaceae, Caesalpinaceae, Sapotaceae, Anonaceae, Lythraceae, Theaceae, Arecaceae, Apocynaceae, and Lamiaceae families each contain two tree species.

There are 19 different families within family others in the following chart, each with one tree species utilized for agro-forestry.

**Tree species having single use**
Out of the 110 tree species cultivated in agro-forestry in Nepal, 44 species are particularly good for single function. These 44 tree species are further divided into groups based on their intended usage. Only 22 species are used for fodder, 12 species for fruit, 6 species for fuel wood, and 4 species are used for timber.

**Status of species having multiple (2) functions**
18 species of trees are used for fodder and fuelwood, 13 species are used for fruit and fuelwood, and 9 species are used for timber and fuelwood products, out of the total species used for agro-forestry practices in Nepal.

**Multipurpose agro-forestry tree species**
Trees species having multiple applications are best for agro-forestry practices as they provide maximum benefits within same piece of land comparing the species having single application. 21 tree species which are best for agro-forestry practices in Nepal are listed in following table1.

**Table 1: Agro-forestry tree species having multiple uses**

| S.N | Local Name | Scientific Name     | Family    | Use                  |
|-----|------------|---------------------|-----------|----------------------|
| 1   | Badahar    | Artocarpus lakoocha | Moraceae  | Fodder, timber, Fruit, firewood |
| 2   | Dadbabe    | Garuga pinnata     | Bursearceae | Fodder, fuel (timber) |
| 3   | Bakaino    | Melia azedarach    | Meliaceae | Fodder, Timber, fruit |
| 4   | Sal        | Shorea robusta     | Dipterocarpaeceae | Fodder, Timber, Firewood |
| 5   | Sisoo      | Dalbergia sisoo    | Liguminosae | Fodder, Timber, firewood |
| 6   | Aanp       | Mangifera indica   | Anacardiaceae | Fruit, Fuel, Timber |
| 7   | kadam      | Anthocephalus chinesis | Rubiaceae | Timber, fuel, fodder |
| 8   | Gamari     | Gmelina arborea    | Verbenaceae | Timber, fuel, fodder |
| 9   | Seto siris | Albizia procera    | Liguminosae | Timber, fuel, fodder |
| 10  | Karma      | Adina cordifolia   | Rubiaceae | Fodder, fuel, timber |
| 11  | Amala      | Phyllanthus embica | Euphorbiaceae | Fuel, fruit, Medicine |
| 12  | Harro      | Terminalia chebula | Combretaceae | Fuel, fruit, Medicine |
| 13  | Baroo      | Terminalia bellerica | Combretaceae | Fuel, fruit, Medicine |
| 14  | Utris      | Alnus nepalensis   | Betulaceae | Timber, Fuelwood, Fodder |
| 15  | Musure Katus | castanopsis tribuloides | Fagaceae | Fuelwood, Fodder, Fruit |
| 16  | Chilaune   | Schima wallichii   | Theaceae  | Timber, Fuelwood, Fodder |
| 17  | Paiyu      | prunus cerasoides  | Rosaceae  | Timber, Fuelwood, Fodder |
| 18  | Mel        | Pyrus pashia       | Rosaceae  | Fuel, timber, live fence |
| 19  | Vakkimilo  | Rhus javanica      | Anacardiaceae | Fodder, fuel, Medicine, Fruit |
| 20  | Khari      | Celtis australis   | Cannabaceae | Fodder, fuel, timber |
| 21  | Chiuri     | Bassia butyracea   | Sapotaceae | Fodder, fruit, fuel |

**Tree species and appropriate agro forestry system**

Different tree species are the component of different agro-forestry systems. The choice of tree species depends upon objectives of farmers but in conventional agro-forestry practices, most of the farmers having lack of knowledge about species identification to suit specific practices. In this review, maximum numbers of tree species (30%) are used for silvo-pastoral system followed by the horto-agri-siliculture system i.e. 23% and Agri-silviculture i.e.19%. Similarly, 4% and 3% tree species are used for Home garden and Agri-silvi-pastoral system.

**Figure 4: Agro-forestry tree species having two uses**

**Tree species for agro-forestry practices**

There are about 110 tree species of 42 families are used for agro-forestry practices in Nepal.

**Table 2: Tree species used for agro-forestry practices, their family, uses, appropriate agro-forestry system and altitudinal range**

| SN | Local Name  | Scientific Name     | Family | Uses                  | Systems                        | Altitude(m) |
|----|-------------|---------------------|--------|-----------------------|--------------------------------|-------------|
| 1  | Badahar     | Artocarpus lakoocha | Moraceae | Fodder, timber, Fruit, firewood | Horti-agri-silicultur, Agri-silviculture, Silvo-pastoral, Home garden | 1300        |
|   | Species          | Family       | Uses                                       | Applications                               | Plant Type          | Height (ft) |
|---|-----------------|-------------|--------------------------------------------|--------------------------------------------|---------------------|-------------|
| 2 | Dabdabe         | Garuga pinnata | Burscaraceae  | Fodder, fuel (timber)                      | Silvo-pastoral     | 1300        |
| 3 | Ipil-Ipil       | Leucaena leucocephala | Leguminosae | Fodder, Fuel, Agri-silvi-pastoral, Silvo-pastoral | 1500               |
| 4 | Kabro           | Ficus lacor  | Moraceae | Fodder, Home garden                        |                     | 500         |
| 5 | Khnyau          | Ficus semicordata | Moraceae | Fodder, Fuel, Agri-silviculture, Home garden, Silvo-pastoral | 200-1700           |
| 6 | Kimbu           | Morus alba   | Moraceae | Fodder, Fruit, Horti-agri-silvicultural   |                     | 2400        |
| 7 | Koiralo         | Bauhinia variegata | Caesalpinaceae | Fodder, Fuel, Horti-agri-silvicultural |                     | 1900        |
| 8 | Kutmero         | Litsea monopetala | Lauraceae | Fodder, Fuel, Horti-agri-silvicultural, Agri-silvi pastoral | 1500               |
| 9 | Tanki           | Bauhineea purpurea | Caesalpinaceae | Fodder, Fuel, Horti-agri-silvicultural |                     | 1600        |
|10 | Bakaino         | Melia azedarach | Melliaceae | Fodder, Timber, fruit, Home garden, Agri-silviculture, Silvo-pastoral | 700-1300           |
|11 | Sal             | Shorea robusta | Dipterocarpaceae | Fodder, Timber, Horti-agri-silvicultural, Silvo-pastoral |                     | 1000        |
|12 | Sisoo           | Dalbergia sisoo | Leguminosae | Fodder, Timber, Horti-agri-silvicultural, Silvo-pastoral |                     | 1500        |
|13 | Amba            | Psidium guajava | Myrtaceae | Fruit, Horti-agri-silvicultural            |                     | 500         |
|14 | Aanp            | Mangifera indica | Anacardiaceae | Fruit, Fuel, Horti-agri-silvicultural    |                     | 1200        |
|15 | Anar            | Punica granatum | Punicaceae | Fruit, Fuel, Horti-agri-silvicultural     |                     | 700-2300    |
|16 | Aaru            | Prunus persica | Rosaceae | Fruit, Fuel, Horti-agri-silvicultural, 1500-2680 |                     | 1500-2680   |
|17 | Kagati          | Citrus aurantifolia | Rutaceae | Fruit, Fuel, Horti-agri-silvicultural     |                     | 800-1400    |
|18 | Litchi          | Litchi chinensis | Sapindaceae | Fruit, Fuel, Horti-agri-silvicultural    |                     | 800         |
|19 | Mewa            | Carica papaya | Caricaceae | Fruit, Fuel, Horti-agri-silvicultural, 1000 |                     | 1000        |
|20 | Naspati         | Pyrus serotina | Rosaceae | Fruit, Fuel, Horti-agri-silvicultural, 1800-2800 |                     | 1800-2800   |
|21 | Nibuwa          | Citrus limon  | Rutaceae | Fruit, Fuel, Horti-agri-silvicultural     |                     | 800-1400    |
|22 | Rukh kathar     | Atrocarpus heterophyllus | Moraceae | Fruit, Fuel, Horti-agri-silvicultural |                     | 160-1528    |
|23 | Sapeta          | Eucalyptus camaludensis | Myrtaceae | Timber, Horti-agri-silvicultural, Agri-silviculture |                     | 1500        |
|24 | Teak            | Tectona grandis | Verbenaceae | Timber, Agri-silviculture, Silvo-pastoral |                     | 700         |
|25 | Kadam           | Anthocephalus chinensis | Rubiaceae | Timber, fuel, Silvo-pastoral              |                     | 1000        |
|26 | Gamari          | Gmelina arborea | Verbenaceae | Timber, fuel, Silvo-pastoral              |                     | 1200        |
|27 | Kapok           | Ceiba pentandra | Malvaceae | Timber, fuel, Silvo-pastoral              |                     | 1000        |
|28 | Seto siris      | Albizia procera | Leguminosae | Timber, fuel, Silvo-pastoral, Agri-silviculture |                     | 1500        |
|29 | Neem            | Azadirachta indica | Melliaceae | Timber, fuel, Silvo-pastoral             |                     | 900         |
|   | Species                  | Family         | Use                        | Management          | Yield (kg/ha) |
|---|-------------------------|----------------|----------------------------|---------------------|---------------|
| 30| Ginderi Premna integrifolia | Verbenaceae    | Fodder, Fuel                | Silvo-pastoral      | 600-3500      |
| 31| Khaksi Syzygium jambos | Moraceae       | Fodder, Fuel                | Silvo-pastoral      | 500           |
| 32| Karma Adina cordifolia  | Rubiaceae      | Fodder, Fuel, Timber        | Silvo-pastoral      | 800           |
| 33| Jamun Syzygium cumini   | Myrtaceae      | Timber, Fuel                | Silvo-pastoral      | 1600          |
| 34| Mahuwa Madhuca indica   | Sapotaceae     | Timber, Fuel                | Silvo-pastoral      | 1200          |
| 35| Khyar Acacia catechu    | Leguminosae    | Timber, Fodder, Fuel        | Silvo-pastoral      | 1400          |
| 36| Gazuma Guazuma ulmifolia| Malvaceae      | Fodder, Fuelwood            | Silvo-pastoral      | 400-1200      |
| 37| Simal Bombax ceiba      | Malvaceae      | Timber, Fodder              | Agri-silviculture   | 1500          |
| 38| Amala Phyllanthus emblica | Euphorbiaceae | Fuel, Fruit, Medicine       | Agri-silvi-pastoral | 150-1400      |
| 39| Harro Terminalia chebula| Combretaceae   | Fuel, Fruit, Medicine       | Agri-silvi-pastoral | 1100          |
| 40| Baroo Terminalia bellerica | Combretaceae | Fuel, Fruit, Medicine       | Agri-silvi-pastoral | 1100          |
| 41| Bhogate Citrus grandis  | Rutaceae       | Fruit, Fuel                 | Horti-agri-silvicultural | 1340        |
| 42| Sitaful Annona reticulata| Annonaceae     | Fruit, Fuel                 | Horti-agri-silvicultural | 1500        |
| 43| Sarifa Annona squamosa   | Annonaceae     | Fruit, Fuel                 | Horti-agri-silvicultural | 1500        |
| 44| Sajana Moringa oleifera | Moringaceae    | Fruit                       | Horti-agri-silvicultural | 600          |
| 45| Bel Aegle marmelos       | Rutaceae       | Fruit                       | Horti-agri-silvicultural | 150-1400     |
| 46| Suntola Citrus reticulata| Rutaceae       | Fruit                       | Home garden         | 900-1200      |
| 47| Mausami Citrus sinensis  | Rutaceae       | Fruit                       | Horti-agri-silvicultural | 900          |
| 48| Aanar Punica granatum    | Lythraceae     | Fruit                       | Horti-agri-silvicultural | 700-2300     |
| 49| Aarubakhada Prunus domestica | Rosaceae      | Fruit                       | Horti-agri-silvicultural | 1000-2000    |
| 50| Syau Malus pumila        | Rosaceae       | Fruit                       | Horti-agri-silvicultural | 1500-2700    |
| 51| Imili Tamarindus indica  | Leguminosae    | Fruit                       | Horti-agri-silvicultural | 1500         |
| 52| Bayer Ziziphus mauritiana| Rhamnaceae     | Fruit                       | Horti-agri-silvicultural | 1200         |
| 53| Uttis Alnus nepalensis   | Betulaceae     | Timber, Fuelwood, Fodder    | Agri-silviculture   | 500-2700      |
| 54| Musure Katus Castanopsis tribuloides | Fagaceae | Fuelwood, Fodder, Fruit | Home garden, Agri-silviculture, Silvo-pastoral | 450-2300 |
| 55| Bar Ficus bengalensis    | Moraceae       | Fodder                      | Home garden, Agri-silviculture | 600         |
| 56| Pakhuri Ficus glabrerrima| Moraceae       | Fodder                      | Home garden, Agri-silviculture | 750-1134    |
| 57| Dudhilo Ficus nimoralis  | Moraceae       | Fodder                      | Home garden, Agri-silviculture | 900-2200    |
| 58| Pipal Ficus religiosa    | Moraceae       | Fodder                      | Home garden, Agri-silviculture | 1520        |
| No. | Species         | Scientific Name                  | Family       | Category     | Use                                         | Range    |
|-----|----------------|----------------------------------|--------------|--------------|-------------------|----------|
| 59  | Kapas          | Gossypium herbaceum              | Malvaceae    | Fodder       | Home garden, Agri-silviculture               | 1500     |
| 60  | Botdhyaro      | Lagerstroemia parviflora         | Lythraceae   | Fodder       | Silvo-pastoral                             | 1200     |
| 61  | Kaulo          | Machilus odoratissima            | Lauraceae    | Fodder       | Agri-silviculture, Silvo-pastoral           | 1000-2000|
| 62  | Salla          | Pinus roxburghii                 | Pinaceae     | Timber, Fuelwood | Silvo-pastoral | 400-2000 |
| 63  | Kharsu         | Quercus semicarpifolia           | Fagaceae     | Fodder       | Silvo-pastoral                             | 1700-3800|
| 64  | Rittha         | Sapindus mukorossi               | Sapindaceae  | Fodder       | Silvo-pastoral                             | 1000     |
| 65  | Chilaune       | Schima wallichii                 | Theaceae     | Timber, Fuelwood, Fodder |               | 900-2000 |
| 66  | Bedula         | Ficus subincisa                  | Moraceae     | Fodder       | Agri-silviculture                           | 300-1800 |
| 67  | Paiyu          | Prunus cerasoides                | Rosaceae     | Timber, Fuelwood, Fodder, Agri-silviculture |       | 1200-2400|
| 68  | Lapsi          | Choerospondias axillaris         | Anacardiaceae| Fruit       | Horti-agri-silvicultural                     | 850-1900 |
| 69  | Vimsenpati     | Buddleia asiatica               | Serophulatriaceae | Fuelwood, Fodder | Agri-silviculture | 350-2000 |
| 70  | Timilo         | Ficus auriculata                | Moraceae     | Fuelwood, Fodder | Agri-silviculture | 250-1700 |
| 71  | Thome\ Khasreto| Ficus hispida                   | Moraceae     | Fuelwood, Fodder | Agri-silviculture | 450-1100 |
| 72  | Asna           | Terminalia tomentosa            | Combretaceae | Fuelwood, Timber | Agri-silviculture | 1400     |
| 73  | Sindur         | Bixa orellana                   | Bixaceae     | Fodder, Fuelwood | Agri-silviculture | 2000     |
| 74  | Rato Tanki     | Bauhinia longifolia             | Fagaceae     | Fodder, firewood | Horti-agri-silvicultural | 1000     |
| 75  | supari         | Areca catechu                   | Areaceae     | Fruit       | Horti-agri-silvicultural                     | 1000     |
| 76  | Chuletro       | Brassiopsis hainla              | Areaceae     | Fodder       | Agri-silviculture                           | 800-1800 |
| 77  | Chhatiwan      | Alstoria scholaris              | Apocynaceae  | Timber      | Silvo-pastoral                             | 1000     |
| 78  | Bhalayo        | Semicarpus anacardium           | Anacardiaceae| Fuel        | Silvo-pastoral                             | 1000     |
| 79  | Sindure        | Mallotus philippinessis         | Euphorbiaceae| Fodder      | Silvo-pastoral                             | 1500     |
| 80  | Gedilo         | Ficus clavata                   | Moraceae     | Fodder       | Agri-silviculture                           | 750-1134 |
| 81  | Vimal          | Grewia optiva                   | Malvaceae    | Fodder, fuel | Agri-silviculture                           | 1800-2000|
| 82  | Bilauni        | Maesa chisia                    | Primulaceae  | Fodder, fuel | Silvo-pastoral                             | 2130     |
| 83  | Mel            | Pyrus pashia                    | Rosaceae     | Fuel, timber, live fence | Silvo-pastoral | 1158-2000|
| 84  | Vakkimilo      | Rhus javanica                   | Anacardiaceae| Fodder, fuel, Medicine, Fruit | Silvo-pastoral | 500     |
| 85  | Kathe kaulo    | Machilus gamblei                | Lauraceae    | Fodder, fuel | Silvo-pastoral, Agri-silviculture           | 700-2400 |
| 86  | Guren          | Callicarpa arbores              | Lamiaceae    | Fodder, fuel | Silvo-pastoral                             | 1300-1700|

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| No. | Species        | Common Name       | Family         | Type                      | Benefits                          | Latitude  |
|-----|----------------|-------------------|----------------|---------------------------|-----------------------------------|-----------|
| 87  | Tejpat          | Cinnamon tamala   | Lauraceae      | Spice, fuel                | Silvo-pastoral                    | 450-2200  |
| 88  | Gayo            | Bridelia retusa   | Euphorbiaceae  | Fuel, fodder               | Silvo-pastoral                    | 1000-1400 |
| 89  | Lakuri          | Fraxinus floribunda| Oleaceae       | Fuel, timber               | Silvo-pastoral                    | 1500-2700 |
| 90  | Kabirei         | Nerium odoratum   | Apocynaceae    | Fuel, sacrificial value    | Silvo-pastoral                    | 1900      |
| 91  | Khari           | Celtis australis  | Cannabaceae    | Fodder, fuel, timber       | Agri-silviculture                 | 500-2500  |
| 92  | Mandar          | Erythrina variegata| Fagaceae       | Fodder, fuel               | Agri-silviculture                 | 1500      |
| 93  | Chiuri          | Bassia butyracea  | Sapotaceae     | Fodder, fruit, fuel        | Agri-silviculture, Horto-agri-silviculture | 1000-2500 |
| 94  | Kafal           | Myrica esculenta  | Myricaceae     | Fruit, fuel                | Silvo-pastoral                    | 900-1500  |
| 95  | Maleto          | Macaranga pustulata| Euphorbiaceae  | Fuel                      | Agri-silviculture                 | 900-1800  |
| 96  | Anyaar          | Lyonia ovalifolia | Eriaceae       | Fodder                    | Silvo-pastoral                    | 1500-2200 |
| 97  | Githhi          | Boehmeria rugulosa| Urticaceae     | Fodder                    | Agri-silviculture                 | 1000-2000 |
| 98  | Jhingane        | Eurya acuminata   | Theaceae       | Fuel                      | Silvo-pastoral                    | 1500-2400 |
| 99  | Bhusure         | Leucopecestrum canum | Lamiaceae | Fuel, Fruit | Agri-silviculture, Horto-agri-silviculture | 1000-2800 |
| 100 | Cassod          | Cassia siamea     | Leguminosae    | Fuel                      | Silvo-pastoral                    | 1400      |
| 101 | Champ           | Michelia champaca | Magnoliaceae   | Timber                    | Agri-silviculture                 | 600-1500  |
| 102 | Gogan           | Saurauia napaulensis | Actinidiaceae | Fodder                    | Agri-silviculture                 | 750-2100  |
| 103 | Ban timila      | Ficus sarmentosa  | Moraceae       | Fodder                    | Agri-silviculture                 | 1400-2500 |
| 104 | Sandan          | Desmodium oojenense | Leguminosae | Fodder                    | Agri-silviculture                 | 600-1220  |
| 105 | Dumri           | Ficus racemosa    | Moraceae       | Fodder                    | Agri-silviculture                 | 300       |
| 106 | Piyari          | Bachanania latifolia | Anacardiaceae | Timber, Firewood         | Silvo-pastoral                    | 150-2000  |
| 107 | Kusum           | Schleichera oleosa | Sapindaceae   | Timber, Firewood          | Silvo-pastoral                    | 900       |
| 108 | Rato siris      | Albizia julibrissin | Leguminosae   | Fodder                    | Agri-silviculture, Silvo-pastoral | 1500      |
| 109 | Akhataruwa      | Trichilia connaroides | Meliaceae  | Fuel                      | Agri-silviculture, Silvo-pastoral | 1000      |
| 110 | Asare           | Viburnum cordifolium | Adoxaceae    | Fuel                      | Agri-silviculture, Silvo-pastoral | 2700-3000 |

Sources: [(Kerkhoff, 2003), (Dhakal et al., 2012), (Magar et al., 2020), (Tamang et al., 2020), (Pandit et al., 2014), (Fonzen & Oberholzer, 1984), (Paudel et al., 2019), (Luang, 2006)(R. Sharma et al., 2007), (Cedermann et al., 2018), (Khadka et al., 2021), (S. Sharma, 2021), (Brook et al., 2012), (Chander 2015. Pdf, n.d.)]

**CONCLUSION**

Agro-forestry relies heavily on trees since they bring various benefits to farmers. The tree species chosen in an agro-forestry system significantly impact the ultimate product. Farmers gain many benefits from planting multipurpose trees with agricultural crops, such as fuelwood, lumber, fruit, fodder, and so on. In addition to direct benefits, these trees provide various indirect benefits. Agro-forestry practices use 110 tree species from 42 distinct families, however only 21 species provide more than two benefits and are the best for agro-forestry operations.

Trees have their own altitude ranges in which to grow. Farmers can use any of these species for various goods depending on the altitudinal content of the site.
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