

# Ethnobotanical study at Khandbari Municipality of Sankhuwasabha District, Nepal

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The present study explores the traditional uses of plants by the people living in and around Khandbari Municipality of Sankhuwasabha District. Of the 117 species reported to be used, 50 are edible, 47 fodder, 29 medicinal herb, 28 timber and 11 species were of other uses. Peoples' attitude towards growing *Elaeocarpus sphaericus* for income was found increasing.

**Keywords:** Ethnobotany, Khandbari, Sankhuwasabha, Nepal.

The rural population of Nepal depends on plant resources to sustain their life. They derive food, fodder, timber, building materials and medicines are derived from plants. The country comprises about 7000 plant species of which more than 800 species are reported to be of medicinal value, about 100 species for fodder, 70 for fiber and 450 species for food have been utilised by the rural population, (Manandhar 1995) and about 70-80% of rural population in the mountain region depend on traditional medicine for health care (Manandhar 1980).

Ethnobotanical studies have been carried out by different contributors at different places of Nepal; important among them are of Sacherer (1979), Manandhar (1980, 1995, 1996), Shrestha (1987), Bhattarai (1993), Bhatta (1999), etc. The present study aims to collect information on traditional uses of locally available plant resources at Khandbari Municipality of Sankhuwasabha District.

## Study area

Khandbari Municipality is situated between 457m to 1500m altitude of Sankhuwasabha District in east Nepal. The Municipality encompasses two types of forests. The lower belt (from 457 to 1200m) has sub-tropical evergreen forest dominated by *Shorea robusta* associated with *Adina cordifolia*, *Bombax ceiba*, *Acacia catechu*, *Duabanga grandiflora*, *Eugenia jambolana*, *Zizyphus recurva*, etc. The upper belt (above 1200m) is dominated by *Schima wallichii* and *Quercus lanceaefolia* associated with *Elaeocarpus sphaericus*, *Pinus roxburghii*, *Juglans regia*, *Ulmus nepalensis*, *Lyonia* sp., etc. The upper ridges is inhabited by different ethnic groups such as

Brahmin, Khatri, Newar, Tamang, Gurung, Rai, Magar, etc. The lower belt facing east and west has fertile cultivated lands.

## Methods

Plant specimen were collected from May 5 to July 10 at different sites of the study area. Standard herbarium were prepared from the collected plant specimens and identified with the help of Flora of Nepal (Hara *et al* 1978). The local name, their traditional uses and other information were gathered by Rapid Appraisal methods. The information thus collected were confirmed also through group discussions and interview with the local traditional healers. Plants with their respective uses have been listed in the table below.

## Results and discussion

Altogether 117 species of flowering plants were reported to be used for various purposes in Khandbari Municipality. Of the 47 fodder species, 26 tree species have been cultivated in the marginal upland.

Twenty-eight species of timber plants were recorded in the study area. Among them *Shorea robusta*, *Adina cordifolia*, *Acacia catechu*, *Eugenia jambolana* were found on the lower river belts. *Schima wallichii*, *Quercus lancefolia*, *Castanopsis indica*, *Michella champaca*, *Duabanga grandifolia*, *Alnus nepalensis* were preferred mostly by the people living at the upper belt of study area for constructing building and furniture. Altogether 50 species of edible plants were locally available. Among them *Zyzyphus jujuba*, *Rubus ellipticus*, *Morus alba*, *Myrica esculanta*, *Pyrus pashia*, *Mangifera indica*.

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*Castanopsis indica*, *Terminalia belerica*, *Emblica officinalis*, *Bassia butyracea*, *Tamarindus indica*, *Eugenia jambolana*, *Eugenia operculata*, *Phoenix humilis* are collected from the nearby forest and sold at the local market. The twenty-nine species locally available have been used traditionally to

cure some ailments. At the upper belt of study area *Elaeocarpus sphericus* was found scattered in the private farm. Almost all farmers were found cultivating it for its fruits. The latter having 2, 3, 4, 11, 13 ridges. have high market value.

Table: List of species used locally at Khandbari Municipality

| S. No. | Species                         | Family        | Local Name    |
|--------|---------------------------------|---------------|---------------|
|        | Plants of fodder value          |               |               |
| 1.     | <i>Acacia catechu</i>           | Leguminosae   | Khayar        |
| 2.     | <i>Albizia chinensis</i>        | Leguminosae   | Rato siris    |
| 3.     | <i>Albizia procera</i>          | Leguminosae   | Seto sirish   |
| 4.     | <i>Artocarpus heterophyllum</i> | Moraceae      | Katahar       |
| 5.     | <i>Artocarpus lakoocha</i>      | Moraceae      | Badahar       |
| 6.     | <i>Avena sativa</i>             | Gramineae     | Jai           |
| 7.     | <i>Bassia butyracea</i>         | Sapotaceae    | Chiuri        |
| 8.     | <i>Bauhenia purpurea</i>        | Leguminosae   | Tanki         |
| 9.     | <i>Bauhenia vahlii</i>          | Leguminosae   | Bhorla        |
| 10.    | <i>Bauhenia variegata</i>       | Leguminosae   | Koeralo       |
| 11.    | <i>Bridelia retusa</i>          | Euphorbiaceae | Gayo          |
| 12.    | <i>Bombax ceiba</i>             | Bombacaceae   | Simal         |
| 13.    | <i>Butea minor</i>              | Leguminosae   | Bhuletro      |
| 14.    | <i>Caesalpinia decapetala</i>   | Leguminosae   | Areli         |
| 15.    | <i>Castanopsis indica</i>       | Fagaceae      | Dhalekatush   |
| 16.    | <i>Castanopsis tribuloides</i>  | Fagaceae      | Musure katush |
| 17.    | <i>Choerospondias axillaris</i> | -             | Lapsi         |
| 18.    | <i>Crataeva religiosa</i>       | Capparidaceae | Siplegan      |
| 19.    | <i>Emblica officinalis</i>      | Euphorbiaceae | Amala         |
| 20.    | <i>Erythrina suberosa</i>       | Leguminosae   | Faledo        |
| 21.    | <i>Eugenia jambolana</i>        | Myrtaceae     | Jamun         |
| 22.    | <i>Eugenia operculata</i>       | Myrtaceae     | Kyamuno       |
| 23.    | <i>Eurya acuminata</i>          | Theaceae      | Jhingane      |
| 24.    | <i>Ficus auriculata</i>         | Moraceae      | Nevaro        |
| 25.    | <i>Ficus bengalensis</i>        | Moraceae      | Bar           |
| 26.    | <i>Ficus benjamina</i>          | Moraceae      | Sami          |
| 27.    | <i>Ficus hispida</i>            | Moraceae      | Khasrato      |
| 28.    | <i>Ficus lacor</i>              | Moraceae      | Kavro         |
| 29.    | <i>Ficus religiosa</i>          | Moraceae      | Pipal         |
| 30.    | <i>Ficus glomerata</i>          | Moraceae      | Dumri         |
| 31.    | <i>Ficus semicordata</i>        | Moraceae      | Khanayo       |
| 32.    | <i>Garuga pinnata</i>           | Burseraceae   | Rangsingh     |
| 33.    | <i>Grewia oppositifolia</i>     | Tiliaceae     | Sayalfushre   |
| 34.    | <i>Litsea monopetala</i>        | Lauraceae     | Kutmero       |
| 35.    | <i>Mallotus philippinensis</i>  | Euphorbiaceae | Rohini        |
| 36.    | <i>Melia azadirach</i>          | Meliaceae     | Bakaino       |
| 37.    | <i>Moras serrata</i>            | Moraceae      | Kimbu         |
| 38.    | <i>Myrica esculenta</i>         | Myricaceae    | Kaphal        |
| 39.    | <i>Oroxylum indicum</i>         | Bignoniaceae  | Tatahalo      |
| 40.    | <i>Premna latifolia</i>         | Verbenaceae   | Guindari      |
| 41.    | <i>Quercus lanceaefolia</i>     | Fagaceae      | Patlekatush   |
| 42.    | <i>Schefflera venulosa</i>      | -             | Kutsimal      |
| 43.    | <i>Schleichera trijuba</i>      | Sapindaceae   | Kusum         |
| 44.    | <i>Spondias cytheria</i>        | Anacardiaceae | Amaro         |
| 45.    | <i>Terminalia bellerica</i>     | Combretaceae  | Barro         |
| 46.    | <i>T. chebula</i>               | Combretaceae  | Harro         |
| 47.    | <i>T. tomentosa</i>             | Combretaceae  | Saj           |

| Plants of timber value |                                 |                  |               |
|------------------------|---------------------------------|------------------|---------------|
| 1.                     | <i>Acacia catechu</i>           | Leguminosae      | Khayar        |
| 2.                     | <i>Adina cordifolia</i>         | Rubiaceae        | Karma         |
| 3.                     | <i>Albezzia procera</i>         | Leguminosae      | Seto sirish   |
| 4.                     | <i>Alnus nepalensis</i>         | Betulaceae       | Uttish        |
| 5.                     | <i>Antiocephalus cadamba</i>    | Rubiaceae        | Kadam         |
| 6.                     | <i>Bassia latifolia</i>         | Sapotaceae       | Mauwa         |
| 7.                     | <i>Bombax ceiba</i>             | Bombacaceae      | Simal         |
| 8.                     | <i>Castanopsis indica</i>       | Fagaceae         | Dhale katush  |
| 9.                     | <i>Castanopsis tribuloides</i>  | Fagaceae         | Musure katush |
| 10.                    | <i>Dalbergia latifolia</i>      | Leguminosae      | Sati Sal      |
| 11.                    | <i>Dalbergia sissoo</i>         | Leguminosae      | Sisou         |
| 12.                    | <i>Duabanga grandiflora</i>     | Lythraceae       | Lampate       |
| 13.                    | <i>Eucalyptus citridora</i>     | Myrtaceae        | Masala        |
| 14.                    | <i>Eugenia jambolana</i>        | Myrtaceae        | Jamun         |
| 15.                    | <i>Eugenia operculata</i>       | Myrtaceae        | Kyamuno       |
| 16.                    | <i>Juglans regia</i>            | Juglandaceae     | Okhar         |
| 17.                    | <i>Lagerstroemia parviflora</i> | Lythraceae       | Butdhayaro    |
| 18.                    | <i>Michelia champaca</i>        | Magnoliaceae     | Champ         |
| 19.                    | <i>Ougeinia oojenensis</i>      | Leguminosae      | Sandan        |
| 20.                    | <i>Papulus glauca</i>           | Salicaceae       | Lahare Pipal  |
| 21.                    | <i>Pinus roxburghii</i>         | Pinaceae         | Rani salla    |
| 22.                    | <i>Prunus cerasoides</i>        | Rosaceae         | Paiyu         |
| 23.                    | <i>Quercus lanceaefolia</i>     | Fagaceae         | Patalekatush  |
| 24.                    | <i>Schima wallichii</i>         | Theaceae         | Chilaune      |
| 25.                    | <i>Shorea robusta</i>           | Dipterocarpaceae | Sal           |
| 26.                    | <i>Terminalia bellerica</i>     | Combretaceae     | Barro         |
| 27.                    | <i>Terminalia chebula</i>       | Combretaceae     | Harro         |
| 28.                    | <i>Terminalia tomentosa</i>     | Combretaceae     | Asna          |
| Plants of food value   |                                 |                  |               |
| 1.                     | <i>Aegle marmelos</i>           | Rutaceae         | Bel           |
| 2.                     | <i>Amaranthus spinosus</i>      | Amaranthaceae    | Lunde         |
| 3.                     | <i>Artocarpus heterophyllum</i> | Moraceae         | Katahar       |
| 4.                     | <i>Artocarpus lakoocha</i>      | Moraceae         | Badahar       |
| 5.                     | <i>Arundinaria falcata</i>      | Gramineae        | Nigalo        |
| 6.                     | <i>Asparagus racemosus</i>      | Liliaceae        | Kurilo        |
| 7.                     | <i>Bassia butyracea</i>         | Sapotaceae       | Chiuri        |
| 8.                     | <i>Bauhinia variegata</i>       | Leguminosae      | Koeralo       |
| 9.                     | <i>Castanopsis indica</i>       | Fagaceae         | Dhale katush  |
| 10.                    | <i>Castanopsis tribuloides</i>  | Fagaceae         | Musure katush |
| 11.                    | <i>Choerospondias axillaris</i> | -                | Lapsi         |
| 12.                    | <i>Citrus aurantifolia</i>      | Rutaceae         | Kagati        |
| 13.                    | <i>Citrus reticulata</i>        | Rutaceae         | Suntala       |
| 14.                    | <i>Crataeva religiosa</i>       | Capparidaceae    | Siplegan      |
| 15.                    | <i>Dendrocalamus hamiltonii</i> | Gramineae        | Tamabans      |
| 16.                    | <i>Dioscorea bulbifera</i>      | Dioscoreaceae    | Gittha        |
| 17.                    | <i>Emblica officinalis</i>      | Euphorbiaceae    | Amala         |
| 18.                    | <i>Eugenia jambolana</i>        | Myrtaceae        | Jamun         |
| 19.                    | <i>Eugenia operculata</i>       | Myrtaceae        | Kyamuno       |
| 20.                    | <i>Ficus auriculata</i>         | Moraceae         | Nevaro        |
| 21.                    | <i>Ficus lacor</i>              | Moraceae         | Kavro         |
| 22.                    | <i>Ficus semicordata</i>        | Moraceae         | Khanayo       |
| 23.                    | <i>Ficus glomerata</i>          | Moraceae         | Dumri         |
| 24.                    | <i>Grewia oppositifolia</i>     | Tiliaceae        | Sayalfushre   |
| 25.                    | <i>Juglans regia</i>            | Juglandaceae     | Okhar         |
| 26.                    | <i>Litchi chinensis</i>         | Sapindaceae      | Litchi        |
| 27.                    | <i>Lyonia ovalifolia</i>        | Ericaceae        | Angeri        |
| 28.                    | <i>Mangifera indica</i>         | Anacardiaceae    | Aanp          |
| 29.                    | <i>Melothria heterophylla</i>   | Cucurbitaceae    | Bankankro     |

|     |                             |               |             |
|-----|-----------------------------|---------------|-------------|
| 30. | <i>Mentha spicata</i>       | Labiatae      | Pudina      |
| 31. | <i>Moras serrata</i>        | Moraceae      | Kimbu       |
| 32. | <i>Musa paradisiaca</i>     | Musaceae      | Kera        |
| 33. | <i>Myrica esculanta</i>     | Myricaceae    | Kafal       |
| 34. | <i>Oxalis corniculata</i>   | Oxalidaceae   | Chariamilo  |
| 35. | <i>Prunus domestica</i>     | Rosaceae      | Aalubakhada |
| 36. | <i>Phoenix humilis</i>      | Palmaceae     | Thakal      |
| 37. | <i>Prunus persica</i>       | Rosaceae      | Aaru        |
| 38. | <i>Psidum guajava</i>       | Myrtaceae     | Amba        |
| 39. | <i>Pyrus pashia</i>         | Rosaceae      | Mayal       |
| 40. | <i>Quercus lanceaefolia</i> | Fagaceae      | Patlekatush |
| 41. | <i>Randia uliginosa</i>     | Rubiaceae     | Maidal      |
| 42. | <i>Rhus javanica</i>        | Anacardiaceae | Bhaki Amilo |
| 43. | <i>Rubus calycinus</i>      | Rosaceae      | Bhui Aiselu |
| 44. | <i>Rubus ellipticus</i>     | Rosaceae      | Ainselu     |
| 45. | <i>Spondias cytheria</i>    | Anacardiaceae | Amaro       |
| 46. | <i>Tamarindus indica</i>    | Leguminosae   | Imili       |
| 47. | <i>Toddalia asiatica</i>    | Rutaceae      | Mainkatta   |
| 48. | <i>Urtica dioca</i>         | Urticaceae    | Sisno       |
| 49. | <i>Zanthoxylum armatum</i>  | Rutaceae      | Timur       |
| 50. | <i>Zizyphus jujuba</i>      | Rhamnaceae    | Bayar       |

| S.No.                     | Species                          | Family         | Local Name  | Uses   |
|---------------------------|----------------------------------|----------------|-------------|--|
| Plants of medicinal value |                                  |                |             |  |
| 1.                        | <i>Acacia catechu</i>            | Leguminosae    | Khayar      | extraction of boiled wood is used to cure body pain and skin diseases                                |
| 2.                        | <i>Acorus calamus</i>            | Araceae        | Bojho       | root is chewed to cure cough   |
| 3.                        | <i>Adhatoda vasica</i>           | Acanthaceae    | Asuro       | dried leaves used to cure asthma   |
| 4.                        | <i>Aegle marmelos</i>            | Rutaceae       | Bel         | leaf is used to cure diabetes and fruit for curing diarrhoea, constipation and abdominal disorders   |
| 5.                        | <i>Artemisia indica</i>          | Compositae     | Titepati    | leaf powder is used to preserve seed from insects, leaf juice is used to cure fever and skin disease |
| 6.                        | <i>Calotropis gigantea</i>       | Asclepiadaceae | Ank         | latex is applied in place of sprain  |
| 7.                        | <i>Cassia fistula</i>            | Leguminosae    | Rajbrikshya | leaf juice is used to cure skin disease, appetizer, fruit is used for asthma                         |
| 8.                        | <i>Cassia tora</i>               | Leguminosae    | Tapre       | leaf is used in skin disease, seed is used to treat insomnia, stomach pain and itches                |
| 9.                        | <i>Centella asiatica</i>         | Umbeliferae    | Ghodtapre   | leaf is appetiser and used to cure fever and headache  |
| 10.                       | <i>Colobrookea oppositifolia</i> | Labiatae       | Dhurselo    | leaf juice is used in fever and headache and applied for blood clotting                              |
| 11.                       | <i>Dalbergia sissoo</i>          | Leguminosae    | Sisou       | decoction of leaf is applied for gonorrhoea, fruit and seed is used to cure dysentery                |
| 12.                       | <i>Datura metel</i>              | Solanaceae     | Dhaturo     | fruit is stimulant, fruit powder is used to cure rheumatic fever, asthma                             |
| 13.                       | <i>Emilia sonchifolia</i>        | Compositae     | Bantori     | leaf powder is used to cure stomach disorder and to prepare marcha                                   |
| 14.                       | <i>Eugenia jambolana</i>         | Myrtaceae      | Jamuno      | decoction of fruit and seed powder is used to cure diabetes  |
| 15.                       | <i>Eugenia operculata</i>        | Myrtaceae      | Kyamuno     | petiole is chewed to cure cough and stomach disorders  |
| 16.                       | <i>Euphorbia royleana</i>        | Euphorbiaceae  | Siundi      | latex is applied in cut to stop bleeding, ear aches, cough   |

|     |                                |               |            |   |
|-----|--------------------------------|---------------|------------|---|
| 17. | <i>Jatropha curcas</i>         | Euphorbiaceae | Sajivan    | twig is used as toothbrush, toothaches, leaf juice applied in scabies and ringworm.                     |
| 18. | <i>Mallotus philippinensis</i> | Euphorbiaceae | Rohini     | powdery fruit is used for anthelmintic  |
| 19. | <i>Mentha spicata</i>          | Labiatae      | Pudina     | leaf is appetiser, stomache disorder  |
| 20. | <i>Oroxylum indicum</i>        | Bignoniaceae  | Tatahalo   | keep away evil eye, seed powder is used to cure chest and body pain                                     |
| 21. | <i>Rhus javanica</i>           | Anacardiaceae | Bhalayo    | fruit is used to cure dysentery   |
| 22. | <i>Ricinus communis</i>        | Euphorbiaceae |            | fruit is used to cure skin disease and dysentery  |
| 23. | <i>Semecarpus anacardium</i>   | Anacardiaceae | Bhalayo    | fruit and seed powder is used in piles and skin disease, digestive, aphrodisiac, may cause skin allergy |
| 24. | <i>Solanum xanthocarpum</i>    | Solanaceae    | Kanthakari | fruit is used to cure headache, body pain, root decoction is used in abdominal pain                     |
| 25. | <i>Terminalia chebula</i>      | Combretaceae  | Harro      | digestive, Carnimate, Asthma, eye and heart diseases  |
| 26. | <i>Terminalia bellerica</i>    | Combretaceae  | Barro      | fruit powder is digestive, tonic and is used to cure bronchitis and asthma                              |
| 27. | <i>Vitex negundo</i>           | Verbenaceae   | Simali     | leaf is used to keep away ectoparasites of chicken; smoked leaf is used for headache                    |
| 28. | <i>Woodfordia fruticosa</i>    | Lythraceae    | Dhayaro    | flower decoction is used to cure fever  |
| 29. | <i>Zanthoxylum armatum</i>     | Rutaceae      | Timur      | paste of immature fruit is used to applied in wound, digestive, round worm                              |

## Plants for miscellaneous uses

|     |                                  |                |              |                             |
|-----|----------------------------------|----------------|--------------|-----------------------------|
| 1.  | <i>Agave americana</i>           | Amaryllidaceae | Ketuke       | Fibre                       |
| 2.  | <i>Cannabis sativa</i>           | Cannabaceae    | Bhang        | Narcotic                    |
| 3.  | <i>Chenopodium album</i>         | Chenopodiaceae | Bethe        | Vegetable                   |
| 4.  | <i>Dendrocalamus hamiltonii</i>  | Gramineae      | Dhumre bans  | Building material           |
| 5.  | <i>Duranta repens</i>            | Verbenaceae    | Nilkanda     | Live fence                  |
| 6.  | <i>Elaeocarpus sphaericus</i>    | Elaeocarpaceae | Rudraksha    | Commercial value            |
| 7.  | <i>Euphorbia pulcherrima</i>     | Euphorbiaceae  | Lalupate     | Gardenflower                |
| 8.  | <i>Ficus religiosa</i>           | Moraceae       | Pipal        | Religious value             |
| 9.  | <i>Lagerstroemia flosreginae</i> | Lythraceae     | Ashrephul    | Garden flower               |
| 10. | <i>Mimosa pudica</i>             | Leguminosae    | Lajjawaijhar | Fodder                      |
| 11. | <i>Sapindus mukorossi</i>        | Sapindaceae    | Rittha       | Hair tonic, washing clothes |

## References

- Bhatta, L. R. 1999. Ethnobotanical study in a village at Rukum District, Nepal. *Bana ko Janakari* 9(2): 40-43
- Bhattarai, N. K. 1993. Folk herbal medicines of Dolkha District, Nepal. *Fitoterapia*, 64(5) : 387-395.
- Hara, H. Stearn, W. T. and Williams, L. H. J. 1978. *An Enumeration of the Flowering Plants of Nepal* vol. 1. British (Natural History) Museum, London.
- Manandhar, N. P. 1980. Some lesser-known medicinal plant of Rasuwa District (Nepal) *Int.J.crude Drug Res.* 18(3) : 147-151.
- Manandhar, N. P. 1995. Ethnobotanical Notes on unexploited wild food Plant of Nepal *Ethnobotany* 7(1-7) : 95-101.
- Manandhar, N. P. 1996 Ethnobotanical studies in Nepal: conservation of economically important plants by rural People In, Jain, S. K. (ed) *Ethanobiology in Human Welfare* Deep Publication India, DP. 30-34.
- Shrestha, K. 1987. Report on edible wild plant from Pokhara and its northern refion. *J. Nat Hist. Mus*, 11 (1-4) : 85-98.
- Sacherer, J. 1979. The high altitude ethnobotany of the Rolwaling sherpas. *Contribution to Nepalese Studies*, 4(2) : 45-64.