



REVIEW

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Livelihood Relevance of Non-Timber Forest Products (NTFPs) in Poonch District of Jammu and Kashmir, India

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Abstract

Non-timber forest products (NTFPs) are the biological items obtained from plants and animals in forest ecosystems that are valuable to the populations that live nearby. The study was conducted in the Poonch district of Jammu and Kashmir, India, on a representative sample of 270 households. The purpose of the study was to evaluate the significance of NTFPs for sustainability and livelihood in the area. Focus group discussions, personal observation, and structured and semi-structured household interviews were conducted to collect the primary data. It has been found that the forests in the area have a wide range of NTFPs that meet the daily needs of many people who live in the vicinity of the forests, such as the Gujjars, Bakarwals, and Paharis. The study found that NTFPs serve as a source of fuel, fodder, wild edible vegetables and fruits, and traditional medicine, and, to a lesser extent, as a primary source of income. It has been found that NTFP-derived income in the area was comparatively low as compared to other sources of income. Therefore, policies and initiatives aimed at improving the well-being of the local community should take into account the role that NTFPs play in maintaining their standard of living.

Keywords: Forest; Non-Timber Forest Product; Poonch; Households; Livelihood

Introduction

Forests supply a variety of products that have been used for numerous domestic and industrial purposes (Appiah et al., 2009). These products are categorized into timber and non-timber forest products (NTFPs). Timber forest products are highly valued and are used globally, whereas non-timber forest products (NTFPs) play an important role in the growth and long-term development of people living near forests. NTFPs are biological products, other than lumber, derived from forests, other wooded areas, and trees beyond forests (FAO, 1999). These are products or resources that have been found in forests and used in homes, or that are marketed or have religious, cultural, or social importance (Marshall et al., 2003). Since time immemorial, human beings have been using non-timber forest products (NTFPs) to serve a multitude of purposes in promoting their welfare. This includes food, fiber, fodder, traditional medicine, agricultural resources, household materials, and construction supplies (Panayotou 1993; Sonowal 2007; Chopra 1993; Malik 2000). Non-Timber Forest Products are generally divided into two categories: plant-derived products (medicinal plants, spices and condiments, aromatic plants, fatty oil-yielding plants, bamboo, etc.) and animal-derived products (honey, lac, tussar, etc.). More than two billion people worldwide utilize biomass-based fuels, primarily fuel wood, for cooking and heating (FAO, 2020). Approximately 80% of people living in developing countries rely on plants and their products for food and traditional medical care (Dash, 2026). The world market for non-timber forest products, including pharmaceuticals, health supplements, and herbal beauty and toiletry products, is expanding at an annual rate of 7 percent (Nagpal and Karki, 2004). About 500 million Indians depend on NTFPs for additional income, and 17% of those without land rely on receiving NTFPs as daily wages. Around twenty-five percent of the Indian working population obtains 50% of their income from NTFPs (Rasul et al., 2008).



In Jammu and Kashmir, over 60% of people collect NTFPs to meet their basic needs of food, medicine, and money, especially the tribal groups that rely heavily on forest resources (Jammu & Kashmir Forest Department, 2021-22). With over 56% forest cover, Poonch district has an incredible diversity of NTFPs that directly or indirectly meet the social, economic, cultural, religious, ethical, traditional, spiritual, and ecological aspirations of multiple forest fringe communities such as the Gujjars, Bakarwals, and Paharis (Manzoor and Ali 2017; Manzoor and Jazib 2020). The dependency of local communities on the NTFPs varies from self-use in day-to-day life to forming a significant part of their annual income. Despite the significance they hold, NTFP production and marketing face significant obstacles that jeopardize the sustainability of these resources and the communities they support.

Moreover, the sustainable management of NTFPs in the area is also hampered by institutional barriers such as unclear land tenure rights and limited forest governance rules. Keeping this in view, the present study was conducted in the Poonch district of Jammu province of J&K, India, to ascertain the paramount importance of NTFPs in rural livelihood and sustainability.

Material and Methods

Background of Study area

Poonch is one of the districts of Jammu province in the UT of Jammu and Kashmir, India. It is located on the southerly foothills of the Pir Panjal Himalaya, between $33^{\circ} 25' - 34^{\circ} 02' N$ latitudes and $73^{\circ} 58' - 74^{\circ} 41' E$ longitudes at an altitude of 1,070 m above sea level. The total area of the district is 1,674 km², of which 951.37 km² (56.81%) is covered by delineated forests. Most of the population is living in isolated villages (Anonymous, 2012). The rich habitat diversity offers vast geographical and climatic conditions congenial for a correspondingly rich flora and fauna. Poonch district represents a transition zone between the subtropical Jammu and the temperate Kashmir provinces.



Fig. 1. Map of study area

The Poonch forest division falls under the west forest circle of the Jammu region and is divided into three forest ranges: Haveli, Mendhar, and Surankote, with 17 forest blocks. The vegetation usually comprises the Chir pine (*Pinus roxburghii*) forests, broad-leaved deciduous forests, broad-leaved evergreen forests, and scrub forests, interspersed with frequent patches of grasslands and agricultural croplands. The forests in the area comprised the three distinct zones of vegetation, namely, the sub-tropical, temperate, and alpine zones.

The common tree species found in the forests of Poonch region are the *Pinus roxburghii*, *Quercus lecotrichophora*, *Quercus incana*, *Quercus dilatata*, *Quercus semecarpifolia*, *Pyrus pashia*, *Adhatoda vasica*, *Rubus ellipticus*, *Indigofera pulchella*, *Punica granatum*, *Flacortia romentchii*, *Ficus roxburghii*, *Ougeinia dalbergoides*, *Machilus spp*, *Nitragnyna parviflora*, *Rhododendron arboretum*, *Bauhinia variegata*, *Dalbergia sissoo*, *Olea cuspidata*, *Acacia modesta*, *Cassia fistula*, *Terminalia bellerica*, *Anogeissusw latifolia*, *Mallotus phillipinensis*, *Lannea cormandalica*, *Bombax ceiba*, *Syzygiym cumini*, *Lyonia ovalifolia*, *Juglans regia*, *Populus ciliata*, *Acer caesium*, *Celtis australis*, *Aesculus indica*, *Ulmus wallichiana*, *Taxus baccata*, *Machilus duthei*, *Buxus wallichiana*, *Prunus padus*, *Alnus nitida* etc.

Methodology

The study was based on both primary and secondary data. Through random sampling, 270 households from 18 villages of the district located in the vicinity of the forests were selected at random for the study. Primary data was collected from May 2024 to December 2025 from the sampled households through field surveys, questionnaires, personal interviews, and observation. Local indigenous community members, village heads, and the market functionaries were also interviewed about the NTFPs, their collection, and usage in the area. Secondary data were gathered from various published and unpublished sources, including the records of the J&K forest department.

Result and Discussion

The importance of NTFPs to local livelihoods

With more than 56% of the forest cover, Poonch district harbors an incredible diversity of NTFPs on which different forest fringe communities, such as the Gujjars, Bakarwals, and Paharis, depend for livelihood and sustainability. NTFPs, such as medicinal plants, continue to be a significant source of raw material for the area's traditional medical systems. In times of adversity, NTFPs additionally serve as an important source of income. The study found that NTFPs in the area are primarily used to meet the demands of fuel, fodder, wild edible vegetables and fruits, medicinal plants, and in manufacturing minor home appliances, and, to a lesser extent, as a source of income.

Household dependency on NTFPs

One of the several NTFPs that the local population gathers, uses, and sells for daily household needs is the firewood, which is gathered locally and serves as the main fuel source for cooking, heating water, and keeping homes warm in the winter. The wood obtained from a number of tree species like *Acacia nilotica* (L.) Willd., *Berberis lyceum*, *Buxus wallichiana* L., *Celtis australis* L., *Dalbergia sisso* Roxb. ex-DC, *Diospyros lotus* L., *Melia azedarach* L., *Pinus roxburghii* Roxb., *Prunus armeniaca* L., *Pyrus pashia* Buch-Ham., *Pyrus persica* Pers., *Salix alba* Boiss., *Ulmus wallichiana* Planch is used to meet the day-to-day fuel requirements in the area.

Grass and the foliage of a number of tree species like *Acacia nilotica* (L.) *Robinia pseudoacacia*, *Celtis australis* L., *Grewia optiva* J.R. Drumm., *Mallotus philippinensis* (Lamk.) Muell., *Melia azedarach* L., *Morus alba* L., *Olea cuspidata* Wall ex DC., *Platanus orientalis* L., *Ulmus wallichiana* Planch and *Ziziphus mauritiana* Lamk provide the year-round supply of forage for the cattle. The wood obtained from many miscellaneous tree species such as *Quercus lecotrichophora*, *Celtis australis* L., *Melia azedarach* L., and *Olea cuspidata* Wall ex DC. is used to make farm implements. Moreover, the locally accessible NTFPs are also used to make a variety of items, such as walking sticks, baskets; ropes, roof thatches, and even ornamental items.

NTFPs as Vegetable

Vegetables grown in forests constitute a significant source of food and nutritional security for the area. In addition to vegetables grown on agricultural land, forest-based vegetables are frequently available for sale in the market. The roots of *Codonopsis ovata* are large and are used for making vegetables. The bulbs of *Allium humile* are cooked and are used as vegetable. The leaves of *Diplazium frondosum*, *Ficus auriculata*, *Galium aparine*, *Origanum vulgare*, *Oxyria digyna*, *Plantago major*, *Pteridium aquilibrum*, *Rumex hastatus*, *Sonchus asper* and the shoots of *Chenopodium album*, *Euphorbia royleana*, *Lathyrus sativus* are cooked and consumed as vegetable. The fruit of *Morchella esculenta* is cooked and used as vegetable. The rhizomes of *Fragaria nubicola*, *Jurinea dolomiaea* and *Polygonum amplexicaulis* are used as a substitute for tea. The seeds of *Xanthoxylum alatum*, flowers of *Rhododendron arboretum* and *Oxalis corniculata* and the leaves of *Mentha longifolia* are used for making chutney and for flavoring the food.

NTFPs as Fruit

Various fruit trees like *Carissa opaca*, *Coriaria nepalensis*, *Carissa caranta*, *Ficus auriculata*, *Fragaria indica*, *Morus nigra*, *Podophyllum hexandrum*, *Punica granatum*, *Solanum nigrum*, *Viburnum grandiflorum*, *Diospyros lotus*, *Ficus palmate*, *Pyrus communis*, *Juglans regia*, *Pyrus pashia* and *Pyrus persica* are found in the forest of Poonch, fruits of which are collected and consumed. The seeds of *Pinus roxburghii* are also eaten by the locals during the scarcity of food.

The rich biodiversity of the area provides an ideal environment for birds to disperse fruit tree seeds to other wooded areas. The local population is also given access to nursery fruit plants through the Joint Forest Management Committee so that they can plant economically valuable fruit trees. The wild fruits are also consumed by birds and mammals throughout the bearing season, which helps to preserve the forest ecology.

NTFPs of Medicinal and Aromatic Value

Poonch district has the richest biodiversity, including a high concentration of aromatic and medicinal plants. Several herbs, shrubs, climbers, and trees that have grown in the region provide immense products of ethnomedicinal usage. The common medicinal plants found in the forests of Poonch are *Acacia nilotica*, *Adhatoda vasica*, *Aesculus indica*, *Amaranthus spiriosus*, *Arisaema tortulosum*, *Atropa belladonna*, *Berberis lyceum*, *Bergenia ciliate*, *Butea monosperma*, *Calotropis procera*, *Carissa caranata*, *Cissampelos pareira*, *Cryptolepis dubia*, *Cassia fistula*, *Emblica officinalis*, *Debregeasia salicifolia*, *Desmodim triflorum*, *Dioscorea bulbifera*, *Dodonea viscosa*, *Elaeagnus parvifolia*, *Euphorbia royaleana*, *Justica adhatoda*, *Mentha longifolia*, *Pistacia chinensis*, *Plantago major*, *Quercus oblongata*, *Rhododendron arborium*, *Ricinus communis*, *Rubus fruticosus*, *Rumex nepalensis*, *Salix alba*, *Solanaum surattensr*, *Solanum viarum*, *Viburnum grandiflorum*, *Thymus serphyllum*, *Viola adorata* and *Zizyphus mauritiana* etc. The leaves, roots, bark, and fruits of these plants are used for curing various ailments. Some aromatic crops are also grown luxuriously in the interspace of forests, which are traded by local people for economic benefits.

NTFPs as Miscellaneous Forest Products

In addition to this, the collection and selling of NTFPs and their products also generate income for the local communities of the area. The dried pods of *Pistacia chinensis*, seeds of *Punica granatum*, fruits of *Zanthoxylum armatum*, stem of *Indigofera tinctoria*, fruits of *Juglans regia*, roots of *Galium aparine*, fruits of *Mallotus philippensis* and seeds of *Pinus roxburghi* are collected and traded. Various products are made from a number of plants grown in the area and are sold in the market. Wood of *Buxus wallichiana* is used for making a number of products like spoons, combs, utensils, tooth picks, decoration pieces, etc. which are sold. Gum is obtained from *Acacia catechu*, *Acacia modesta*, *Anogeisous latifolia*, *Bauhinia racemosa* and *Lannea coromandelica*. Rasount is obtained from *Berberis axistate* and *Berberis lycium*. Various dyes are obtained from the plants found in the area such as *Emblia officinalis*, *Acacia modesta* and *Cassia fistula*. Fibre is obtained from *Cannabis sativa*, *Ficus religiosa* and *Ficus bengalensis*. *Bombax ceiba* is used in the making flosses. These NTFPs play a key role in the upliftment of rural flocks. Moreover, various NTFPs in the region are also recognized as a component of culture, identity, mythologies, and spiritual essence.

Conclusion

NTFPs were found to contribute mainly in the form of fuelwood, fodder, wild edible fruits and vegetables, and traditional medicinal resources as the area possesses rich floral diversity with economically and ecologically important species such as *Pinus roxburghii*, *Quercus species*, *Rhododendron arboretum*, *Juglans regia*, *Taxus baccata*, *Dalbergia sissoo* and many others. Several forest fringe communities rely on forest and forest-based resources, either directly or indirectly, for their livelihood and sustainability; however, households' reliance on NTFPs in the area was found to be minimal in terms of primary occupation and contribution to net annual income. Therefore, for improving rural livelihoods and maintaining ecological balance in the region sustainable management and conservation of forest resources is essential.

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