

ROLE OF NTFPs IN FOREST CONSERVATION: A CASE STUDY OF BANSWARA DIVISION IN SOUTHERN RAJASTHAN

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ABSTRACT

Problem Statement: Non-Timber Forest Products (NTFPs) are very important for the conservation of surrounding forest because it functions as a very focal source of food, herbal medicine, construction materials, and income. NTFPs are collected from a wide range of ecosystems such as forests, home gardens, and farmland. The present study aims to determine the role of NTFPs in forest conservation in Banswara and Ghatol ranges of the Banswara forest division in southern Rajasthan. Banswara is an ethnic district of Southern Rajasthan (India). This paper is essentially based on field study, site observation, interviews and views of villagers and forest department members. A total of 210 NTFPs were recorded in these study areas used for various purposes by tribal communities. Out of which 138 species are of medicinal use, 55 species are of edible vegetables and fruits, 10 species of fodder grasses, 2 species of bamboo and 1 species of tendu patta except these resin, honey, donda, and baje are also important NTFPs of this area. Present methods of harvesting and processing NTFPs are not much better; therefore, it is needed to introduce some new harvesting techniques and utilization of NTFPs. Create public awareness about forest conservation forest and sustainable management of NTFPs Provision of forest conservation education in nearby area education centers.

Keywords: NTFPs, Forest conservation, Herbal medicine.

I. INTRODUCTION

NTFPs played a crucial role in forest conservation and constituted the highest share of incomes for the households per capita in rural areas because Adhoc trade in NTFPs is a standard safety net for tribal inhabitants. Although the NTFP trade's cash incomes are small,

they provide an essential contribution that complements the diverse livelihood strategies within a household for the tribal society. Community dependence on forest resources for diverse needs has high implications for the long-term management of forests. Sustainable extraction of NTFPs is considered the best feasible forest conservation strategy in biodiversity-rich areas [1]. The dominant narrative about NTFPs swung from optimism to pessimism about their potential to alleviate poverty and encourage forest conservation [2]. About 35% of the income of tribal households in India comes from the collection of unprocessed NTFPs. Many of them based on NTFPs provide up to 50% of income for 20 to 30% of India's rural labor force [3]. A dry deciduous forest in India is a typical case where forest valuation is yet to integrate the NTFP stock [4]. NTFPs act as incentives for more sustainable use of forest and woodland resources [5]. Non-timber Forest Products contribute to poverty alleviation and sustainable forest management [6]. Processing non-timber forest products and establishing trade partnerships between forest communities and companies enhance NTFP commercialization outcomes, whether product processing and associations were associated with several outcomes related to forest inhabitants' well-being and forest conservation [7]. Non-timber forest products originate in hinterlands and link to final consumers through value chains [8]. Value chain analysis has emerged on the new research agenda for NTFPs. Increasingly it is acknowledged that dependency and links to forests go beyond village boundaries. NTFPs contribute significantly to rural residents' livelihood [9], [10] and [11]. NTFPs provide multiple livelihood benefits to local communities and regional and national economies. However, this knowledge is rarely drawn upon in debates around and design of poverty alleviation and land use policies, strategies, and projects [12].

II. MEANS AND MATERIALS

Banswara is a tribal belt of the southernmost of the Rajasthan state. It lies between 23.1° N to 23.56° N latitudes and 73.58° E to 74.49° E longitudes. It is the eastern part occupied by the hills of Deccan trap. Present work is centralized at Banswara and Ghatol forest ranges of Banswara forest division, which lies in Aravali hills. For data and information collection,

primary as well as secondary sources were used. Collections of observational data through systematic fieldwork. During these field visits, group discussions and questionnaire surveys were arranged for inhabitants, Forest Department staff, and herbal healers. For fieldwork of the study area, a random sampling technique was used. In this study, census data, land-cover, and land-use maps were referred to delve into the NTFPs collection activities of forest people and their



relationship with forest resources. Previous research reports, journal articles, reports of the forest department, newspaper, and books were referred for secondary sources.

Fig.1 – Map of the study area.

III. RESULT AND DISCUSSION

This paper examines the heterogeneity of NTFPs use by tribal communities in this area of southern Rajasthan. From the eye of environmental point of view, harvesting of NTFPs is an essential strategy of forest conservation and sustainable forest management because extraction of NTFPs (except fuelwood) does not significantly compromise the forest's integrity than timber. In the study area, the main NTFPs are grass, bamboo, tendu patta, temru (fruit of tendu), herbal medicines, vegetables, cattha, Mahua flower and fruit, Jamun, sitafal, ber, amla, and honey, etc. The dependency of tribal people on forest resources is about 78% for firewood and house construction material.

Tendu patta, bamboo, and grass also generated substantial revenue to the State government. Tendu Patta is one of the essential sources of the state economy. 11229.100 numbers of Standard Bags were collected during the last three years (2011, 2012, and 2013) worth of these standard bags are rupees **7323345** lacs. It also supports the livelihood of the tribal community's particular women population, where local inhabitants' key occupations are agriculture, livestock rearing, wage labor, and tendu patta with other minor forest products. A large part of this area is covered by Amla (*Emblica officinalis*), Tendu (*Diospyros melanoxylon*), Khair (*Acacia catechu*), and Palash (*Butea monosperma*). May to June is critical and full of economic crisis because most tribal families do not have sufficient work in their fields. Therefore, in this short (25-30 days) period, tendu patta collection is a livelihood opportunity for most families.

S.No.	Name of Tendu Patta Range unit	Mean value of No. of Standard Bags	Mean value of Cost of Standard Bags (in Lacs)
1	Ghatol	2001.300	2097788
2	Khmera(Ghatol)	2535.900	2248788
3	Jugpura(Ghatol)	1632.200	520025
4	Banswara	3701.500	1863360
5	Danpur(Banswara)	917.600	356692
6	Servan(Banswara)	440.600	236692
Total		11229.100	7323345

Table-1. Tendu patta collection and its details.

Source – Forest division of Banswara

The initiatives (cultural operation & ring pit) and forest department efforts regarding enhancement production of tendu in Banswara and Ghatol ranges are very appreciating because timeline and details of tendu patta collection revenue show a positive and promising impact of conservation and profitable production of tendu patta in these ranges. About 10 species of grasses are widespread in this area, which is commonly used for fodder purposes. In the last ten years, Ghatol range grass production (2003-2013) is 1992 quintal worth of rupees 3.984 lacs while in Banswara range grass production in the last ten years is 11914 quintal worth of rupees 23.83 lacs.

In this area, women are engaged in the cultivation of cash crops (Capsicum, Brinjal, Tomato, Peas, etc.), fruit trees (Mahua, Ber, Amla, Jamun, Amli, Sitaphal, Temru, Karonda, Lime, etc.), fuel trees (Chakundi, Subabul, etc.), timber trees (Sagvan, Sal, etc.), crops (Maize, Soyabean, Kapas, Mung, Udad, Arhar, etc.), vegetables (brinjal, tomato, pumpkin, bitter gourd, chilli, french beans, long bean, ridge gourd, bottle gourd, kachari, snap melon, spine gourd, bitter melon, and hill colocynth Gabaev, etc.). Bamboo (*Dendrocalamus strictus*), Khair (*Acacia catechu*), Neem (*Azadirachta indica*), Churel (*Holoptelea integrifolia*), Amla (*Emblica officinalis*), Ber (*Zizyphus spp.*), Sevan (*Gmelina arborea*), Shisham (*Dalbergia sisso*), and Siras (*Albizia spp.*) are commonly planted species in this area. Seed sowing is another important activity for artificial regeneration.

Some medicinal plants face various degrees of threats to their survival in the natural condition due to loss of their natural habitat. 138 main medicinal plants are observed in the study area. Some of them are Adusa (*Adhatodavatica*), Akarkara (*Anacyclus pyrethrum*), Amaltas (*Cassia fistula*), Ankol (*Alangium lamarckii*), Ashwagandha (*Withania somnifera*), Brahmi (*Bacopa monnieri*), Chitrak (*Plumbago zeylanica*), KoliKanda (*Urginea indica*), Kalihari (*Gloriosa superba*), Jatashankari (*Leea macrophylla Roxb.*), etc.

In this area, the tribal community dependent on NTFPs for firewood, house construction material, wild edible plants, and other daily use products. The major wild food products were vegetables, root tubers, fruits, honey, etc. Besides these, they also collect a large variety of plants, resin, and animal products. Some people are busy with donda and baje (Dona & pattal) from leaves of khakhra and sell them in local markets. Firewood was the primary source of fuel energy in rural areas where people collect it from nearby forests. Consumption of firewood for domestic needs was higher in winter than in summer. The study revealed as many as 210 NTFPs species being used for various purposes, which signifies the rich traditional knowledge about these NTFPs and forest conservation. These findings concur with those of [13], [14], and [1], who reported that maximum species were used for medicinal purposes followed by fruits, wild vegetables, fodder, dye yielding, mushroom, firewood, house construction, and agricultural tools.

NTFPs have been highlighted as natural, traditional, and cultural resources, and they also have potential opportunities for forest conservation and income generation tools of poor inhabitants. Although NTFPs do not play a key role in the market economy. Similarly, [15], [16] and [17] reported that most farming communities in southwest Ethiopia were forest dependent. The forest was the primary source of livelihoods and subsistence through the provision of a variety of NTFPs. To protect NTFPs, forests, and forest culture. This will help forest people maintain their indigenous culture by harvesting NTFPs without destroying the resource base. The traditional knowledge about NTFPs should be documented and secure their intellectual property rights to forest conservation. This supports [18], [19], [20], and [21], who reported that the lack of inventory and research on key species is considered as probably the most important requirement for stimulating sustainable development initiatives through NTFPs use and even in countries with enabling NTFP policies, such as Nepal.

IV. CONCLUSION

The role of NTFPs in forest conservation is convened to provide an opportunity to bring together researchers, practitioners, and entrepreneurs' initiatives. Therefore, it is necessary to identify and promote the regeneration of those plants which deliver different types of NTFPs.

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