



RESEARCH ARTICLE

Economic Upliftment of Ethnic and Rural Population Through Joint Forest Management (JFM) And Non-Timber Forest Products (NTFP's)

Gopal Dixit^{1*} and Mahesh Babu²

¹Department of Botany, Upadhi PG College (MJP Rohilkhand University), Pilibhit - 262001, India

²Department of Botany, Government PG College, Bisalpur, Pilibhit, India

*Corresponding Author: gopaldixit2k@yahoo.com

Manuscript Details

Manuscript Submitted : 12/02/2026
Manuscript Reviewed : 15/03/2026
Manuscript Accepted : 19/04/2026
Manuscript Published : 26/04/2026

Available On

<https://plantaescientia.com/ojs>

Cite This Article As

Gopal Dixit & Mahesh Babu (2026). Economic Upliftment of Ethnic and Rural Population Through Joint Forest Management (JFM) And Non-Timber Forest Products (NTFP's). *Pla. Sci.* 2026; Vol. 09 Iss. 02:17-22

DOI-

<https://doi.org/10.32439/ps.v9i2.17-22>

Copyright



© The Author(s). 2026. Open Access
This article is distributed under the terms
of the Creative Commons Attribution
4.0 International License

<http://creativecommons.org/licenses/by/4.0/>

ABSTRACT

Ethnic and rural communities inhabiting forest-fringe regions depend heavily on forest ecosystems for their subsistence and livelihood security. Due to disruption of traditional forest-based occupations, they lost their earnings from traditional jobs like that of fishing, hunting, animals trading, honey extraction, selling wild edible plants and man-made agricultural instruments etc. in nearby markets. The present study examines the role of Joint Forest Management (JFM) and sustainable utilization of Non-Timber Forest Products (NTFP's) in enhancing income, food security, and employment among forest-dependent populations. Based on field observations, socio-economic surveys and secondary data, the study highlights that regulated access to NTFP's under JFM significantly contributes to the forest products along with timber to sell in the markets as per their need. In this way sustainable natural and economic development has been established to fulfill the requirement of Man and Biospheres program.

Keywords: Economic upliftment, Ethnic people, JFM, NTFP.

INTRODUCTION

Tribal populations are generally accommodated in remote areas like hills & forests. These create their own world over there enjoying the nature, far away from modern civilization. But every object has two faces. Thus, the life of these tribals has both, advantages and disadvantages. While enjoying the nature they have to lead a tough life as without availing the basic requirements of life, they face a number of problems like, unapproachable habitations, problem of cultural contact, economic problems, problems related to health & education, social problem & political problems.

The tribal populations residing in remote and undeveloped areas generally face economic problems. Because of unapproachable habitations the opportunities of income generation are meager. They have very ancient agricultural practices. Their living conditions are very pitiable, as three basic requirements – clothing, food and shelter, are not fulfilled. Tribals are very industrious, honest and simple living. Basically, the land owners preferred agriculture and animal husbandry. But because of some or other reason, they lost their land and now they are forced to do labor, either at very low wages or even *beggar*. Thus, they are not even able to manage food. They have to borrow money from the financiers or *sahukars* to fulfill various other requirements, such as for festivals & marriages, etc. But even their coming generations are not able to return the amount so they work for these *sahukars* for years.

The tribals live in dense forests, and manage for their food by eating wild fruits, tubers and also hunting animals for their flesh. These forests are a source of timber, mineral deposits like coal, Manganese, etc. which contribute to our national income, but through these also, the tribals are not able to get enough return of their labour as the contract for extraction of minerals & timber is generally given to rich contractors, which employ these tribals for the work at very low wages. Many times, they don't even pay for their work in time.

To fulfill their feeding habits, Tharus generally depend upon agriculture, but they also collect edible wild plants from the forests and hunt animals. They are perfect cultivators of paddy. They are very good hunters and possess licensed/non licensed guns. After hunting they not only get flesh but also hides/skins, bones, horns, etc. which they sell in the adjoining markets of Nepal & India. The money they fetch is used in buying tobacco, salts, armaments, etc. Except hunting they also collect medicinal herbs/plants, which they utilize domestically as well as in marketing.

Tharu ladies are indulged in fishing, poultry, making ropes and baskets, collecting wild fruits & flowers and medicinal plants from the forests and sell them in the market. Tharu men and women independently earn money and spend according to their needs. Tharus have cows, bulls, buffaloes, hens, etc. and have bullock cart as vehicle.

Van Gujjars are mostly nomads, continuing their livelihood roaming from one place to other. They were Hindus and Muslims as well, living in remote forest areas, keeping cattle and sustaining their livelihood by selling their dairy products. They generally depend upon forests for keeping these cattle, as they graze in these forest areas and also the Van Gujjars harvest the fodder from the forest areas.

Now a days the government, in a drive to save and reserve forests, is driving off these Gujjars outside the forests and giving them lands, although in a lesser area. The Gujjars are literally uneducated as due to their nomadic behavior they are unable to give their permanent address in the formal educational system.

Kanjars are also a nomadic tribe and follow a traditional pattern of living. They make baskets, mats, ropes, cords and cordages, agricultural instruments, etc. They also earn their livelihood by breaking honeycombs and selling the honey. They are illiterate, ill-mannered and hostile. They are rude and cruel when hunting hares. They are also known to remove dead animals from public places and cutting trees.

METHODS OF ECONOMIC UPLIFTMENT

The Himalayan Terai region of Pilibhit district selected for the research bears several archeological monuments reflecting a seat of highly developed culture from Epic era to a Buddhist period and a sizable number of Tribals including Tharus (the most), Gujjars, Kanjars, etc. Most of the tribes of the region are of Indo Aryan race (Janaki Ammal, 1978). There is sufficient evidence for tracing back their cultural heritage and dependence of man on plants. The Tharus live inside or in the vicinity of the forests and are completely exposed to nature and have unique knowledge about use of enormous range of wild plants for their various purposes including medicine since time immemorial.

Nature has gifted forests with a unique set of biodiversity. By virtue of this a single fully grown tree is a valuable source of timber and Non-Timber Forest Products (NTFP's) consisting of wild fruits, medicinal parts, leaves, tubers gums exudates, etc. It is believed that its sustainable exploitation could provide timely food and some income to the forest dwelling populations on sustainable basis. Evidently, NTFP's contribute not only in providing food security, but also precious medicinal plants. These serve as

a great source of nutrition and medicines at time of distress. Forest usufructs obtained from forests contribute in a big way to supplement not only food production, but also a variety of products such as spices & condiments, medicinal & aromatic plants, gums, etc. for health and nutrition.

Of late, a renewed emphasis has now emerged to manage forests to directly benefit the forest dwelling communities and the tribal poor in particular on sustainable basis, though its success lies with the kind of policy intervention and strategies, cost effectiveness, community participation, etc.

Joint Forest Management (JFM) in Tribal Upliftment

Local people who live in and around forests depend on forests for their sustenance, the class differentiation among the locals seem to have resulted in a struggle to yield differential benefits from such precious natural resources. The Forest Departments are ill equipped to withstand the onslaught of human and livestock populations in order to deny or regulate access to rural community. The need for new approach to forest management emerged in the name of Joint Forest Management (JFM) which is genuinely designed to improve the access to and control over the forest resources by local communities. For the first time, a government document (New Forest Policy, 1988) specified the rights of local communities to forest lands giving them the usufructs for grasses and other NTFPs as well as a portion of the proceeds from the sale of trees. JFM could not only provide livelihood sustenance, but also offer immense opportunities for empowering the forest dependent and marginalized women and men to gain increased access to and control over the use and management of common pool forest resources. They consist of diverse groups differentiated by caste, class & religion/ ethnicity, within and in between each group by gender and age. It is normally the poorest and the most marginalized who actually depend more on forest resources for survival. The indigenous people and the poor women in particular are the major and often the most disempowered forest resource users.

Imposition of uniform access and control on all existing users with diverse levels and types of dependence on forests inherently implies differential distribution of opportunity cost and benefits among them. Thus, inclusion and exclusion in decision making and articulation of priorities will tend to determine who gains within and in between the communities as well as households.

JFM is commonly perceived to be a means for restoring not only the health of country's forests, but also self-respect and dignity of impoverished forest dwellers which could

improve their economic well-being and livelihood (Vedeld *et. al.* 2007).

Multiple Use and Management of Forest Products (Timber and NTFP)

Forest Products, including timber and NTFP meet the daily sustenance needs of the people as well as indigenous communities and therefore assume importance in context of JFM. NTFP collection is undertaken by the poorest section of the villagers which is labor intensive and the returns are very low. The dependence of poor people on NTFP is on increase despite massive deforestation and stringent forest rules, laws and regulations.

However, with the understanding of the needs of the people considerable attention is being paid to NTFPs. But the peculiarities associated with NTFPs indeed require special management practices for their sustainable availability to ensure accessibility to sustenance needs. Admittedly NTFPs are heterogeneous and often dispersed. They vary considerably in their concentration and seasonal products. Their problems are varied and complex. Therefore, their management needs a mix of different skills, technology and knowledge base. The other peculiarities are (a) these require a value when these are collected and brought to collection center for sale; (b) their uses and access often take place within the context of multiple and overlapping rights; (c) these are linked to particular communities and culture; and (d) these make information gathering as well as exchange difficult. Despite this, there is increasing recognition to the role of NTFPs in providing important community needs for improved rural livelihoods. More importantly, these contribute immensely to household food security and nutrition, generate additional employment and income, offer opportunities for processing enterprises contribute to foreign exchange earnings and support biodiversity conservation and other environmental objectives (FAO,1995).

Evidently, women play a prominent role (due to gender, division of labor) in the harvest of NTFP who make them ideal for smothering the flow of food, fodder, fuel and other products for the direct consumption and supplementing the household income of large number of forest dependent people. They also play a decisive role in the household food security. However, research studies show that when women are given opportunities and resources, they have proved to be the active partners in the development. They are indeed more efficient and dynamic and open to innovations. But when they are confronted with crisis, they have potential to come up with coping survival strategies and therefore adjust to every changing environment to meet

the challenges at household level. But all that is crucial and significant in the context of their livelihood is to ensure sustainable production of NTFPs through scientific management of precious forest resources where benefits must exceed cost both in tangible and intangible forms (Dixit & Vakshasya, 2010, 2013 a, b).

STATISTICAL RESULTS

Results of joint forest management practices and by which the production of non-timber forest products as main along with timber, showed very promising findings. Most of these findings are supporting JFM for the economic upliftment of various ethnic communities (Sinha *et al.*, 2020).

Contribution of NTFPs in Indigenous Communities

Research studies conducted in various Indian Provinces such as Orissa, Uttar Pradesh, Madhya Pradesh, Bihar, etc indicate that over 80% of the forest dwellers and especially indigenous community exclusively depend upon NTFP for their daily subsistence and livelihood. Recent studies (DeBeer & McDermott, 1989) provide evidence for the contribution of NTFP to local economy, where 60% of the collection is consumed locally (Gupta & Guleria, 1982). During drought as well as other natural calamities, NTFPs are vital livelihood source for the poor and underprivileged tribal people. Therefore, while as much as 17% landless depend on it to secure daily wage work, 39% are involved in NTFP collection as subsidiary occupation. Besides employment multiplies in some downstream processing and trade is considerable. Forest based small scale enterprises also provide adequate employment and additional income opportunities to the rural labor force in collection, sale and downstream processing activities. Some estimates suggest that NTFPs provide 60% of their food & medicinal needs and so also around 60% of income to forest dwelling households (Vakshasya, 2009, Shackleton *et al.* 2018; Pandey *et al.*, 2019).

The forest dependent communities and tribals utilize the nearby forest area for food, fuel-wood, fodder, timber and other housing materials. In any conservative estimate, the value of such forest product items consumed by a forest dwelling family may not be less than 50-60% of the total income (Bajpayee & Dixit, 1996; Dixit & Vakshasya, 2010, 2018).

The employment potential in forest activities is huge, even if production of NTFPs is seasonal and subject to variations due to adverse weather conditions. Also, around 3/4 (57.6 %) of total man days employment to a forest dwelling household are available in varieties of forest activities.

Despite availability of varieties of NTFPs in remote forests and difficult terrains, a study indicates that only 27-34% of NTFP species are collected by the primary gatherers partly owing to weak marketing channels and mostly due to enumerative prices offered to the products of hierarchical stages of disposal (Mallik, 1998; Wiersum *et al.*, 2014).

Table 1: Contribution of Forest Resources to Tribal Livelihood

Parameter	Observed Contribution (%)	Reference(s)
Household income from NTFPs	50–60%	Dixit & Vakshasya (2010, 2018)
Employment from forest-based activities	57%	Vakshasya (2009)
Food and medicinal needs met by forests	60%	FAO (1995); De Beer & McDermott (1989)
Households dependent on NTFPs	~80%	Mallik (1998); Gupta & Guleria (1982)

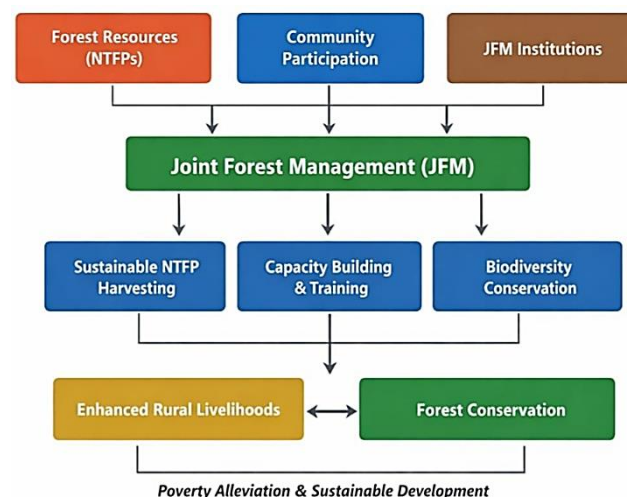


Figure.1: Conceptual framework showing role of Joint Forest Management (JFM) in Livelihood upliftment.

DISCUSSION AND CONCLUSION

The basic strategy of JFM as to strengthen the management of degraded forests with the principal objective (a) to enlarge participation of indigenous/tribal community and (b) to make the management mechanism more sensitive and meaningful in all matters concerning production, protection, collection, processing and ultimately marketing of forest products. The basic objective was to follow a wise judicious and efficient management of degraded forests and

utilization of the precious resources so as to benefit all, particularly the forest dwellers, the tribals and rural poor. It was contended that a rapid and sustainable forestry development could possibly be the surest way of improving the standards of the forest dependent tribals and enhance the socioeconomic capabilities of such people for securing their minimum requirements. Though JFM was introduced for sharing benefits, responsibilities and to win control over community forest resource base besides participating in the decision-making process. A cursory review of literature & some research findings suggest that a number of issues relating to JFM have still remained unresolved. JFM has been prevented in a variety of ways to functions on its own as an independent autonomous and vibrant institution at the grass root level-thus it has succeeded neither in empowering forest dwellers and raising their socioeconomic capabilities nor in conserving biodiversity. This is weak and controversial because of following reasons:

1. The existing old rights and privileges of the people in most degraded forest do not match with corresponding responsibility and often more than one village have rights on same forest.
2. The new settlers in the village who are deprived of such traditional rights resort to illegal practices.
3. People remaining far away from forests are keen in enjoying traditional rights but not in participating in the management.

Many private traders as well as money lenders act as sub agents at the grass root level to collect forest products. This is indeed a contradiction, because in reality a major part of collection of forest products is performed by these unauthorized agents. Primary collections (so also tribals) never seem to secure administered prices for the products declared by the government owing to different kinds of their socio-economic incapability. Thus, the forest dependent communities and tribals in particular are deprived of their genuine benefits and therefore continue to live in abject poverty. The tribals are prevented to secure a legitimate price to their products due to some reason or the other. There are also restrictions with respect to procurement, storage, transportation, marketing and processing. It appears that the restriction on permits, registration, etc is the essential part of the forest laws & policies. The gaps in policy strategies have direct bearing on economic sustenance of the tribal poor.

The missing links in the existing policy, provisions, forest acts and rules have caused a great deal of hindrances to the livelihood interest and food security of the forest dwellers. The primary economic interest of the forest dwellers has

been further affected very adversely by nationalizing major products, such as kendu leaves, bamboo and sal seeds. Forest acts instead of protecting the interest of forest dwellers against exploitation, the restriction related to accessing, procuring, processing and selling regulated in terms of forests laws and regulation have in reality accentuated misery sufferings of tribals and forest dwellers. In fact, the forest dwellers have not been recognized as primary producers till today despite of intermediary value addition work at the household level with their indigenous knowledge skills and enterprising ability.

The livelihood sustenance of the tribals is greatly affected by the following reasons:

1. Primary collectors sell the produce to third parties at dismal prices in absence of timely appointments. These parties later supply the same to the government at the support price, incurring some profits.
2. Low returns to the gatherers have generally been attributed to policy distortion leading to public and private monopolies and to trader controlling the poor and ignorant forest dwellers, especially tribals.
3. Generally, the sale of bulk of NTFPs by tribals is done without any processing or value addition. Therefore, the producers' access to consumer is limited to the sale made in local villages as well as weekly markets.
4. The level of living of forest dependent poor tribals is further affected by the marketing mechanism which has a number of agents, viz., middlemen, businessmen, traders and government agencies. While non-traditional NTFPs such as barks, lac, medicinal plants, resins, oilseeds are exchanged for other products of tribal's utility the NTFPs of greater exchange value for various other luxury goods. Oilseeds, barks, resins, gums, leaves, fibers, cane and other similar products are sold in bulk to generate cash income to tribal households. The nationalized and commercially significant NTFPs, bamboo, kendu leaves and sal seeds have restricted trade.
5. In the marketing network, the hindrances are many and varied. These include:
 - a. Absence of cooperative organizations.
 - b. Non availability of market price information for quick disposal.
 - c. Lack of access to credit institutions to meet operational credit needs.
 - a. Local collector act at the mercy of the intermediaries, very often due to credit linked trade.
6. Much of the miseries of the tribals and other forest dependent communities are primarily due to lack of

access to forests to collect NTFPs. Even if collection is permitted from the protected forests, the rights to sell the products have not been granted.

A re-examination of the policy perceptions, Forest laws, rules, etc. no doubt should be in order. Apart from technological improvements, the emerging order calls for new arrangement of access, ownership, control and management. A clear understanding of the role of local people, management agencies, industries and government also need to be addressed, so that JFM could decisively focus its attention on the safe livelihood on sustainable basis. It is also necessary to develop new products and new uses for known products with a clear market orientation in order to strengthen the socio-economic capabilities of tribals. The challenge is to plan and implement innovative management strategies as redressal measure to alleviate the poverty of forest dwellers and also save them from perpetual socio-economic deprivations.

REFERENCES

- Bajpayee K. K. & Dixit, Gopal (1996). Ethnobotanical Studies on Food-stuffs of tribals of Tarai region, Uttar Pradesh. *J. Econ. Taxon. Bot.* 12 (Addl. Ser.):128-132.
- De Beer & McDermott (1989). Economic value of Non-Timber Forest Products in South West Asia, Council for the International Union of the Conservation of Nature, The Netherlands.
- Dixit, Gopal & Dixit, Shilpa V (2008a). Significance of Biodiversity Conservation for Environment and Food Security to Tribal Livelihood in Sub Himalayan Terai Region of Rohilkhand Division. *Proc. All India Seminar on Environment, Agriculture and Poverty*. pp: 131.
- Dixit, Gopal & Dixit, Shilpa V. (2008b). Some Wild Plants Gathered as Food Stuffs by The Tribals of Indo Nepal Sub Himalayan Terai Region of Pilibhit, Uttar Pradesh. *MFP News XVIII* (1): 18-20.
- Dixit, Gopal & Vakshasya, Shilpa (2009). Survey of plants used in basket, mats and cordage industry by different ethnic groups of Terai Region of Pilibhit District of Uttar Pradesh. *MFP News XIX* (3): 27-2.
- Dixit, Gopal & Vakshasya, Shilpa (2010). Conservation of natural resources and Socio-economic upliftment through agroforestry practices in sub- Himalayan terai region of Uttar Pradesh. *Int. J. Usuf. Mngt.* 11(1):33-36.
- Dixit, Gopal & Vakshasya, Shilpa (2013a). Socio Economic Upliftment Through Agroforestry Practices in Indo Nepal Sub Himalayan Terai region of Uttar Pradesh, In: *Agri Business and Rural Management* (Ed. Rais Ahmad) Mittal Publication, New Delhi. pp. 359 - 364.
- Dixit, Gopal & Vakshasya, Shilpa (2013b). Prospects of Forest Products and Cottage Industries in Tribal Economic upliftment of Sub Himalayan Terai Region of Pilibhit District, India. In: *Agri Business and Rural Management* (Ed. Rais Ahmad) Mittal Publication, New Delhi. pp. 507-516.
- Dixit, Gopal & Vakshasya, Shilpa (2018). A Survey of plants used in basket and cordage industry by the tribals and indigenous people of Indo-Nepal sub-Himalayan region of Uttar Pradesh, India. *Plantae Scientia*: 1(4): 1-4.
- FAO (1995). Report of the International Expert Consultation on NWFP, Rome.
- Gupta, T. & Guleria, A. (1982). Non-Wood Forest Products in India, Oxford & IBH Publishing Co. Pvt. Ltd, New Delhi.
- Janaki Ammal, F. K. (1978). Ethnobotany: Past and Present. *J. Ind. Bot. Soc.* 57 (Sub) I Botanical Conference.
- Mallik, R. M. (1998). Study of domestic and commercial use including marketing of NTFP, Research Report submitted to SCC, SANDIANCONSULT NATURA, Sweden.
- Vakshasya, Shilpa (2009). Ethnobotanical studies on the Tribals of Pilibhit district, Uttar Pradesh with special reference to their socio-economic upliftment. PhD Thesis. MJP Rohilkhand University, UP, India.
- Pandey, A.K, Tripathi, Y.C. and Kumar, A. (2019). Non-Timber Forest products as livelihood option in forest fringe villages of Central Himalaya, India. *Journal of Sustainable Forestry*, 38(6): 555-570.
- Shackleton, C.M., Ticktin, T., Cunningham, A.B., et.al. (2018). Sustainable use and management of non-timber forest products. *Forest Ecology and Management*, 417, 1-3.
- Sinha, B., Bawa, K.S., and Rai, N.D. (2020). Forest policies, institutions and livelihoods: Lessons from Joint Forest Management in India. *Land Use and Policy*, 97: 104737.
- Vedeld, P, Angelsen, A., Bojo, J., Sjaastad, E., and Kobugabe Berg, G. (2007). Forest environmental incomes and the rural poor. *Forest Policy and Economics*, 9 (7):869-876.
- Wiersum, K.F., Ingram, V.J. and Ros-Tonen, M.A.F. (2014). Governing access to resources and markets in non-timber forest product chains. *Forest Trees and Livelihoods*, 23 (1-2): 6-18.