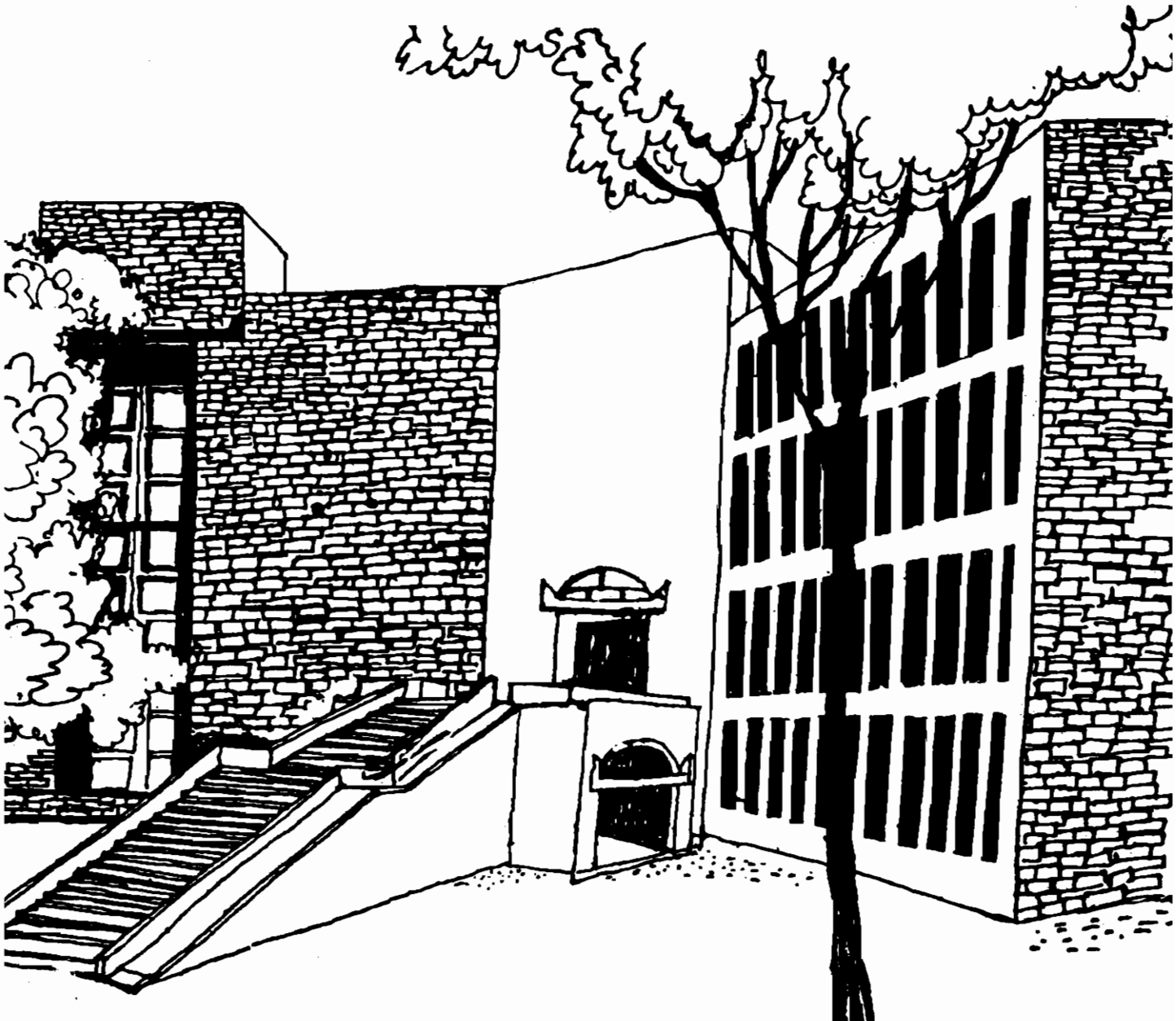




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**NONTIMBER FOREST PRODUCTS:
SOME POLICY ISSUES AND CONCERNS**

By

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Nontimber Forest Products: Some Policy Issues And Concerns

Devi D. Tewari

Historically forests have been seen as a source of timber alone by policymakers and more so by forest economists and foresters. This view however is fading away in recent times as forestry outputs other than timbers are being visualized as of greater significance.¹ Basically, forestry outputs can be classified into three categories as shown in Figure 1: (1) timber, (2) nontimber, and (3) environmental. All these outputs are jointly produced, hence an air-tight classification is difficult to develop. Timber outputs are long known and have been sought as major outputs of the forestry sector till recently; in general timber output is processed into lumber, veneer, plywood, furniture, etc. Nontimber outputs include other tangible outputs such as leaves, flowers, fruits, seeds, gums, resins, oils, fish, insects, etc.; these were previously known as "minor forest products".² The environmental outputs are basically intangible in nature and are required for maintaining local or global environmental equilibrium³; these include benefits or services like soil and water conservation, flood control, protection of wild life, and biodiversity, scenic or outdoor recreation benefits, etc.

[insert Figure 1 around here]

In the past, studies on timber have preoccupied the forestry literature, though with some emphasis on environmental values of

¹ For example, Hartman (1976) argued for non-cutting of trees or forest since their intangible environmental benefits exceeded or outweighed the timber benefits.

² According to Wickens (1991), the nontimber outputs include plants used for food, forage, fuel, medicine, fibres, biochemicals, etc; as well as animals, birds, reptiles, fish, insects, etc. for food, for, feathers, etc.

³ Some researchers such as Calish et al (1970) and Hartman (1976) have used the term "nontimber outputs" for "environmental impacts" of forestry.

forests and virtually negligible focus on study of nontimber forest products (NTFPs). There are two major reasons which can perhaps explain why NTFPs have been ignored by foresters, economists, and policymakers. One, NTFPs were considered as byproducts of timber production process and hence were not valued by foresters as much as they should have been. Two, since most of these byproducts did not enter into the market economy, they were also ignored by economists as well. It is only since 1988, when the International Timber Organization (ITO) called for the rigorous study of nontimber forest products (NTFPs), several studies have come up and have brought out various concerns for policy makers. For example, some studies have looked at the valuation issues (Peters et al 1989, de Beer and McDermot 1989, Schwartzman 1989, Padoch and de Jong 1989, Campbell 1990). Wickens (1991) has looked at the issues related to development of NTFPs. May (1991) has studied the role of institutions in the development of NTFP markets in Brazilian Amazon. Campbell (1990) has analyzed problems of value addition and organizational management in Southeast and Far East Asia. In addition, several piecemeal experiences in NTFP management in Southeast and Far East Asia are available, however, yet comprehensive understanding of policy issues related to NTFPs is lacking. The knowledge of policy issues and their comprehension is imperative for developing future guidelines for development of NTFP industry as such. In this paper an attempt is made to fill this vacuum by highlighting broader policy issues and concerns related to NTFPs exploitation and their management. For convenience of discussion, we have classified various issues and concerns in four broad categories: (i) valuation issues, (ii) value addition issues, (iii) beneficiary welfare and government intervention issues, and, (iv) sociocultural and extraction management issues. All of these issues are intricately interwoven and discussion of one is impossible without the other. But, for sake of discussion, we take up these issues one by one and finally suggest some guidelines for proper development and management of

NTFPs in general.

Valuation Issues

Valuation issues comprise primarily following types of question : (i) What is the economic value of NTFPs in the forest economy and why is it useful to assign economic value to them? (ii) How to tag economic values onto NTFPs and what sorts of problem arise in doing so?; and (iii) Is the concept of economic value sufficient to capture the potential usefulness of these products to the society?

The economic value of NTFPs has been realized very late perhaps due to a myth that they are "minor forest products". Interestingly enough, the myth explains more about the perceptions and attitudes of foresters and policymakers in the past towards NTFP than about the reality as such. Presumably the origin of such perceptions and attitudes can be explained in terms of the following factors. One, excessive preoccupation of foresters in the past with timber production management problems may have led them to ignore NTFP which were considered as byproducts resulting from timber production process. Foresters until now were primarily concerned with maximizing timber revenues and this has been used as a sole criterion or principle to manage forests. Two, a very large proportion of these by-products did not enter into market.⁴ This might have obscured the NTFPs from the eyes of economists and policymakers. Factual evidences however go against the popular myth. For example, the following facts about NTFPs' contribution to forestry sector in India reveal their significance (Gupta and Guleria 1982):

One, about 40% of revenues and 55% of employment in the Indian forestry sector is attributed to NTFP.

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For example, some 60% of NTFP in India is consumed locally (Gupta and Guleria, 1982, p.123).

Two, growth of revenues from NTFP has been faster than from timber in the past. For example, compound growth rates in revenues from NTFP and timber during 1968/69 to 1976/77 period were respectively 15.1 and 10.8% -- the former being 40% higher than the latter one.

Three, export earnings from NTFP on the average account for about 60-70% of the total export earnings from forest products. In point of fact, proportion of NTFP in total export earnings from forestry products has been rising, along with rising exports of NTFPs in quantity terms.

Four, furthermore, current production of most NTFP is only about 60% of the potential production. In the case of non-edible and fibres and flowers, current production is only 7 and 12% of the potential production.⁵

The above facts alone tell us that NTFP when looked at aggregate level occupy as large a place as does timber in the Indian forest economy. The same is perhaps true about other countries. For example, in 1976, in the Republic of Korea the NTFPs comprised some 86% of both production and value of total forest produce. (Computed from FAO 1989, P.51). In Northwest Frontier Province of Pakistan, every year about 35 tons of black dried mushrooms, in addition to several other NTFPs such as honey, herbs, etc., are harvested and which alone brings income worth about 1 million US dollars (Anonymous, 1991). Olsson (1991) confirms the significant value of NTFPs in subsistence and sociocultural life of peoples in south pacific country of Vanuatu. Similarly Rattan exports from Indonesia are worth some US\$ 90 million per year (Cornelius 1984). Furthermore, the total exports of NTFPs from Indonesia have increased from US\$ 1

million in 1973 to US\$ 200 million in 1982--an increase of 614% (Gillis 1986). In Sudan, fuelwood is used by some 75% of population and accounts for 82% the total energy consumption in the country (Badi et. al 1980). A recent study by Medelsohn and Balick estimated the net income to be earned from harvesting medicinal plants in Belize. Their findings suggest that the medicinal use of forest yields the highest value to the society when compared with prime plantations (ISSE June 92). Several other studies have confirmed the large scale income and employment generating potential of NTFPs across different regions of the world (IDRC 1980, Weinstock 1983, Connelly 1985, Endicott 1980, FAO 1989, Lasschuit and Van Eerd 1983). In addition to subsistence and income, NTFPs also provide food security to large low-income populations (FAO 1989).

Although reality is different from the generally-held perceptions about the NTFPs by peoples, the perceptions and the myth that still continue to persist did have adverse impacts on scientific management of NTFPs. This is because the NTFPs were considered negligible, they were hence ignored altogether--there was very little research about them for improving their production and management, and lots of NTFPs were not identified and their economic potentials remain unexploited. The myth is now being allayed as more evidence on NTFP's contribution to the economy is being gathered worldwide; and, the need for valuation of NTFP is being felt so that policy analysts can assess alternative uses of forests (Godoy 1991). That is, depending upon the magnitudes of timber and nontimber forest products, foresters can decide what should be the primary use of forests--timber or nontimber.⁶ Also, appropriately valued NTFP can enable foresters to claim scarce public resources with

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In fact, valuation of environmental services from forests is equally useful for deciding alternative uses of forest; however, in this article, we are primarily concerned with nontimber products only.

justification.

However, economic valuation of NTFPs becomes difficult for two major reasons: one, a large proportion of NTFPs still does not enter into the market and is locally consumed by producers/collectors; two, knowledge about the NTFP extraction rates, which vary with time, species, and location, and socioeconomic conditions of producers, are very limited and scanty. In the past, inadequate attention has been given to the NTFP valuation work. Some serious work has just begun.

There are three major problems felt in valuation of NTFPs as pointed out by Godoy et al (1992). Firstly, based on the past reviews of studies, though mostly from Latin America, they found a large variation in terms of values of NTFPs ranging from zero to US\$ 4000/ha/annum. And, one of major cause for this variation is the difference in methodologies applied by researchers, in addition to several other biological and climate factors responsible for variation. This variation leads to noncomparability of results across studies. Secondly, NTFP valuation studies in the past have ignored the value of animals. However, the complete valuation of NTFP must consider both fauna and flora of the forest. Thirdly, very little is known about the sustainability of these values which requires sustainable extraction rates of NTFPs over time--a really difficult task.

Some guidelines for valuation of NTFPs are provided by Godoy et al (1992) so as to make economic values more meaningful and comparable. The net economic value of NTFP is estimated as equal to the total value of NTFP items (price times quantity) minus their total cost of extraction. This requires knowledge of NTFP prices and their quantities or extraction rates, and quantities and prices of inputs such as labour and capital used in the extraction. In case market prices of NTFPs are not available,

they have to be imputed using opportunity cost principle.⁷

We know that the notion of economic value basically comes from the neoclassical model of exchange in which price is determined by interaction of demand and supply; price just reflects scarcity in terms of what is available and what is wanted. Therefore, one major bottleneck in using economic value is that it cannot reflect the future potential uses of the NTFP items which can arise should patterns of consumption, tastes and preferences of consumers, and technology to harness these products change. For example, up until recently the useful value of NTFPs coming from Neem tree (*Azadirachta indica*) was not understood by Western multinational companies (Wahlberg 1990); as a result the Neem NTFPs prices were much lower and quantities harvested were locally consumed. But recent scientific experiments have revealed that Neem NTFPs can have several medicinal and other insecticidal uses which were unthought yet. This is likely to increase demand for and price of Neem-based NTFPs in the future. The same is true for many other plant species too.⁸ Hence an intensive study of plant species and their potential usefulness is required. The new knowledge about the NTFP uses would finally enhance demand for and prices of NTFPs. In brief, the current economic value may simply understate the potential usefulness of NTFPs.

Should current economic value alone be used for allocation of scarce resources is also a debatable question. One way out could be the social benefit-cost analysis (SBCA) applied to the NTFPs to arrive at some estimates of potential benefits to the society under different hypothetical scenarios of prices and

⁷ Several studies on valuation are already quoted in the beginning of the article.

⁸ For example, in the Amazon forest of Brazil, only 200 out of 30 thousand plant species have been assessed for their potential role in the industry (Mors and Rizzini 1966). For a review of potentials of some NTFPs, see Myers (1990).

extraction rates and input use patterns which might reflect upon the possible future changes in consumption patterns and technology to harness NTFPs and their derivatives. We should however know that although this economic value used in dynamic sense is a much better concept, compared to the current economic value to evaluate usefulness of NTFPs yet it is fraught with dangers of commoditization and intergenerational inequity. The ecological functions of NTFPs in maintenance of flora and fauna, wildlife, and other parts of ecosystem are to be also included. An alternative concept is hence required wherein the balance between economics and the ecology is struck and justful valuation of NTFPs is carried out.

Value Addition Issues

The NTFPs are collected by rural poors--mostly the indigenous tribal people who live in or near forests; NTFPs provide them both subsistence and incomes. The welfare of these people to a great extent depends upon what price they can receive for the NTFPs. It is generally argued that the well-being of these people can be enhanced by making value addition to locally produced/collected NTFPs for which forest-based small scale enterprises (FBSSE) are suited best. Large scale enterprises do not meet efficiency criteria for two major reasons (Campbell 1991(a)).

One, where resources are scattered and hard to reach, mass extraction cost can be very high; such mass extractions may have large environmental cost as well. Here, small-scale enterprises can be more efficient, and less destructive to environment. Furthermore, since FBSSEs are run by local indigenous people who gather or collect NTFPs, for their bread and butter objective of FBSSEs is hence to have steady income and subsistence over the long run--thus sustainability of NTFP is taken care of automatically. In contrast, large organizations are interested in short-run profit maximization hence have less or no regards for

sustainability of extraction of NTFPs. The other reason for large organizations for not being concerned for sustainability of NTFP extraction rates may be in their minimum scale of production which requires some minimum raw-material to be break-even. Their large mobility potential also in way goes against the sustainable production. As opposed to this, NTFP gatherers are less reluctant to move to other occupations for sheer lack of wide skills and human capital and can operate with small scale output to be break-even. That is why the FBSSEs run by local indigenous people extract NTFPs without destroying the long-run renewable capacity of forests. For example, indigenous rattan collectors in Indonesia have been collecting and processing raw rattan out of dense local rainforests for hundreds of years to feed growing non-timber industry in Indonesia (Campbell, 1991[a], p.88).

Two, small-scale enterprises are found to be more efficient in serving local markets, in particular when certain market infrastructures such as roads and other fast communicating channels are absent. Under these circumstances, small-scale enterprises are found to be doing well as they have cheaper means of accessing to market information and can quickly respond to the demand signals received from the immediate larger processing or manufacturing units. For example, small-scale splint and veneer producing enterprises in southern India provide a reliable supply of intermediate goods to thousands of small match making enterprises scattered within the region. Similarly, wood carvers and rattan craftspersons in Central Java are able to claim a large market share which large mechanized furniture factories could not fill (Campbell, 1991a], p.88).

This, however, does not mean that FBSSEs have competitive advantage over large scale enterprises all the time and everywhere. For example, the traditional umbrella making industry in Indonesia has been becoming incompetent and less viable against cheaper, factory-produced plastic substitutes from

Taiwan over the several decades.

Case studies from India, Indonesia and Latin American and African Countries on FBSSEs reveal that they have some common characteristics such as simple and accessible to-all type technology, seasonal nature of employment and undiversified production, labour intensive, low capital requirement, providing direct benefits to the local economy (Fisseha 1987). Striking to note, they face similar constraints as well. Knowledge of these constraints is necessary in order to improve the functioning of these FBSSEs so as to make value addition more amenable to welfare of local rural people. Broadly speaking, these constraints can be classified into five categories (Campbell, 1991[a]): i) diminishing supplies of or NTFPs; ii) uneasy access to institutional finance; iii) highly risky market environments; iv) income-sharing problems; v) lack of institutional support.

As the demand for forest-based product is rapidly rising, the pressure on forests in terms of extraction of NTFPs is also rising, despite the large potential of NTFP production untapped as yet--thus raising the question of sustaining the resource base. The NTFP resource base is shrinking because of increasing extraction rates to meet employment and market demand objectives and destruction caused by large scale timber extraction. For example, the Indian match industry is increasingly finding it difficult to meet raw-material demand as pressure for meeting fuelwood needs is also severe. Similarly, rattan collectors in Indonesia find them in the state of helplessness in fighting against large timber extracting companies which destroy NTFP resource base. Hence, the long-run survival of FBSSEs is at stake.

The other problem faced by FBSSEs is the uneasy access to institutional finance and lack of tax incentives. Although investment requirement of these enterprises is small, yet rural

poors have very little assets to keep as collateral--a prerequisite for getting loan from any institutional source of finance. Tax incentives are also an important policy instrument to promote small-scale enterprises. Wherever easy access to finance has been made available and tax incentives are given results have been successful. For example, the small scale sector of match industry in India has been very successful on account of government's tax incentive policies.

Markets faced by small-scale enterprises are not large and uncertain. Since most FBSSEs are not diversified, the swings in market demand can destroy their existence as they have very little risk-bearing capacity. Despite instability in demand, they face competition from international market and manufacturing sector in terms of innovating and producing substitutes. Adaptability to new market situations and diversification of activities is hence must for improving the risk-taking capacity of these enterprises. For example, due to its adaptability the carved wooden furniture industry in Indonesia has been able to recognize new demands and new designs and hence could survive. On the other hand, the traditional umbrella and clog industries in Indonesia are waning as plastic substitutes from Taiwan have flooded both the domestic and international markets. Most FBSSEs depend upon government for institutional support and perhaps survival to a great extent. For example, Indian match industry has benefitted a lot from the government support, whereas Indonesian furniture handicrafts from rattan and wood have gained from easy access to loans and worker training facilities.

Income sharing within the FBSSEs depends upon who owns them. For example, ownership of medium match factories in India is concentrated in the hands of 18 families who hire women and underaged children at wage levels well below those given to adult males (Campbell 1991[a]); and, lack of institutional support from

government simply forces this exploitation to continue. Generally, the NTFP gatherers' share in the consumer's rupee is very small; large shares go to the first or, second stage processors. Under these circumstances it becomes questionable whether FBSEs are the appropriate organizations to increase the well-being of rural poor. Ownership alone is not sufficient to explain the lopsided income-sharing; rather large number of intermediaries who change large market margins reduces the share of NTFP-gatherers in the consumer's rupee. The share of NTFP-gatherers in the total market value of NTFP can be increased by checking the exploitation by intermediaries and by increasing extraction management efficiency through improved harvesting, storage, transport, processing, and manufacturing of NTFPs (Wickens 1991).

In brief, value addition through FBSEs may or may not meet the objective of increasing social welfare of tribal people. Formulation of FBSEs should not be done blindly, rather their merits in terms of increasing the welfare of local people should be thoroughly examined.

Beneficiary Welfare and Institutional Issues

As said before, large indigenous tribal population is dependent upon NTFP collection and trade, and there is an ample scope to benefit them by exploiting untapped potential of production and employment. However, in real-world life the welfare to a great extent depends upon the type of institutions created to tap this untapped potential. A wrong choice can play havoc. A very good example is the government intervention in the Indian NTFP industry.

In order to fully tap the production and employment of forestry sector in India, the Government of India (GOI) set up the Forest Development Corporation (FDCs) in 1976, on the recommendation of National Commission on Agriculture (NCA). One

of the major objective of the FDCs was to help tribal NTFP collectors by eliminating large profit margins pocketed by local middlemen and pass these benefits to tribal people in terms of better wage and working conditions. Invariably, in each state one such FDC was set up. In addition, several government supported co-operatives were also established. But the functioning of these was detrimental to the interest of tribals and these organizations were not at all cost effective. As a result, tribals received as little as 10 to 40% of the sale price in the nearest NTFP market (Chambers et al, 1990, p.152). And, on top of it, some states went ahead with nationalization of while others acquired monopoly rights to NTFPs.⁹ For example, Madhya Pradesh nationalized timber, bamboo, khair, sal seeds, harra, gums, tendu leaves, etc. The nationalization simply made tribals to sell their produce to none but Forest Department or their agent contractors appointed formally and informally by them. The people those employed in the FDCs and Forest Department had perhaps no concerns for tribal welfare.¹⁰ Tribals identified the government intervention as a threat to their survival and cultural identity; this accentuated tribal feelings of conflict against Forest Department, leading to perhaps covert noncooperation and sometimes overt aggression against officials of Forest Department.¹¹

⁹ About 70% of NTFP collection takes place in the central tribal belt in five states of Maharashtra, Madhya Pradesh, Bihar, Orissa, and Andhra Pradesh where lives 65% of tribal population of the country (Guha 1988, Kaur, 1991, p.43).

¹⁰ One such incident showing lack of empathy towards tribals is quoted in Chambers et al (1990, p.180). The incident was narrated by a tribal lady before a government commission. The tribal lady in MP who walked a long distance to sell her produce to the FDC found the FDC office often closed or was told to come next day. This forced tribals to undersell their produce to traders at only 20% of the price fixed by the government. More details see Bhatt (1988, p.25.).

¹¹ For example, in 1978 tribals in Santhal Parganas resolved to direct group action against Forest Department Officials with their bows and arrows. This called for police intervention leading to Simdega firing. See for details Gupta, Banerji, and Guleria (1982).

The overall effect of government intervention was not conducive to tribal as well as to the society at large except to the government which did experience increased revenues. Production levels of some NTFPs before and after nationalization are given in Table 1. Interesting to note, large declines occurred in most NTFP production levels, ranging from 2 to 70% of the pre-nationalized production level, as evident from Table 1. In some cases, production simply stagnated.

(Insert Table 1 around here)

Chambers et. al (1990) argue that nationalisation, among other factors, was primary reason for such decline in the production of NTFPs in India. That is nationalization produced sufficient disincentives to NTFP gatherers/collectors as summarized below (Chambers et. al., 1990, p.149):

"Nationalization reduces the number of legal buyers, chokes the free flow of goods, and delays payments to gatherers, as government agencies find it difficult to make prompt payment. This results in contractors entering from the back door, but they must now operate with higher margins required to cover uncertain and delayed payments by government agencies, as well as to make the police and other authorities ignore their illegal activities. This all reduces tribals' collection and incomes".

Perhaps, there is a need for less and less government intervention in the NTFP business and trade as well, like every other sectors. Government's role should be hence limited to providing only infrastructural support and law and order services.

Sociocultural and Extraction Management Issues

As we know, the NTFP gatherers are primarily tribal populations who have a distinct culture different from the mainstream. Forests have been integral part of these people's lifestyles. In olden days when forests were in abundance and operational restrictions were less and markets for NTFPs were non-existent, the NTFPs were primarily harvested for subsistence and barter trade only. However, with new uses of NTFP discovered, the pressure on forests for extraction has been increasing and rapid monetization is taking place. With this new changing scenario tribal populations have to learn to respond to new market forces to which they have not been accustomed so far. The lack of these skills creates room for their exploitation through middlemen, contractors, police, bureaucrats, etc. Sociocultural factors have been found to play an important influence in organizing tribals and the way they respond to new economic situations/opportunities. For example, ethnicity has been found to play an important role in deciding the role of tribal person in NTFP trade in Indonesia (Campbell, 1991, p.91); for example, in East Kalimantan in Indonesia, Dayaks and Kenyah tribal people collect rattan--a NTFP--while Buges and Muslims are small-scale businessman who sell rattan to Chinese exporters/processors. Like ethnicity, gender also plays important role in collection of NTFPs; for example tribal women form the major proportion of NTFP collecting labour force in India (Kaur 1990, Khare 1990) and because of prevalent gender bias in the society they are not entrusted with managerial responsibilities in FBSSSEs, despite having adequate skills. Women along with children hence bear the brunt of mismanagement as they are poorest participants in this business.

Also, sociocultural aspects of forest-dwelling or NTFP-gathering community has to be borne in mind while designing an NTFP research policy for any country. This is because the use, nature and significance of NTFP is highly dependent upon the

local economic, ecological and sociocultural traditions (Wickens 1991). Case studies are considered to be good to bring out such location specific details. Furthermore, in some quarters, it is also proposed that joint management of NTFP and timber can ensure sustainable extraction rates of both timber and nontimber products (Caldecott 1988); hypothesis of this sort need to be examined and tested.

Conclusions and Guidelines

The major issues, their policy implications, and future guidelines can be summarized below:

- * Nontimber forest products constitute a significant proportion of revenues from forestry sector and provide incomes and subsistence to large indigenous tribal population in the tropical countries. The economic significance of NTFPs hence deserves more attention of policymakers, economists, and foresters, etc. Neglect of nontimber forest products must stop; and, NTFPs should be given appropriate place in developmental framework of community or nation.

- * In order to study the economic significance of NTFPs, their economic value has to be determined. Several problems arise in doing so since a very large of NTFPs is bartered in many economies and very little is known about their extraction rates. Sustainability of the economic value of NTFPs is another area to be examined. Besides illustrating economic significance, putting economic value to NTFPs will help policymakers to decide the alternative uses of forests. However, economic value of NTFP alone is not sufficient to indicate the potential usefulness of NTFPs and ecological functions performed by them. The new concept of value is to be contrived so as to strike out a balance between economic and ecological significance of NTFPs.

In the past, several studies have indicated a large income earning potential through value addition to NTFPs. Since most NTFPs are collected by indigenous tribal people whose economic standard of living is very low, one way out to increase welfare of these people would be to set up village level forest-based processing and manufacturing enterprises so that benefits of NTFPs stay with the people in the region. If past studies are a guideline, then forest-based small-scale enterprises (FBSSEs) are suited best in most situations. However, there can be exceptions in particular where there are well-developed infrastructures such as transport and communication, the large scale enterprises have also flourished well. The FBSSE face several similar kinds of constraint across different countries such as dwindling supplies of raw materials, uneasy access to institutional finance, problems of income-sharing among peoples within the organizations, and lack of desired government support for whatever reasons.

As custodian of rights of NTFP collectors Governments in the past have intervened; and, here choice of institution has played important role. In the case of India, results of government intervention have been just the opposite of expectations, due to wrong institutional choices. Moreover, NTFP-gatherers have also not liked it because government intervention has choked the free flow of NTFPs and put local people at the mercy of government officers. It is suggested that government's role should be limited just enough to provide infrastructure, and law and order services. The freedom of economic choice making should be kept with the people, not with the government.

Sociocultural norms and traits play an important role in ascertaining success of through FBSSEs. Factor like ethnicity and social mores have played important roles in

making some organizations ,more successful , than others. Sociocultural values require more location specific research on NTFPs. Only then sound management policies towards NTFP development can be developed. Policymakers should be cognizant of these limitations.

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Table 1 : Impacts of Government Interventions on Production of NTFPs, India.			
Particulars	Before Nationalization	After Nationalization	Percentage decrease from the previous time period
Tendu leaves production in Madhya Pradesh	5.1 million bags in 1981-82	3.9 million bags in 1985-86	23.5
Annual average tendu leaves production in Orissa	36000 tonnes during 1967/68-1972-73	35200 tonnes during 1979/80-1984-85	2.2
Collection of sal seeds in India	200,000 tonnes in 1977	60,000 tonnes in 1987	70.0
Average annual production of lac in India	32,000 tonnes during 1961-70 period	16,000 tonnes during 1981-86 period	60.0
Source : Constructed from data obtained from Chambers et al (1990, p.149).			

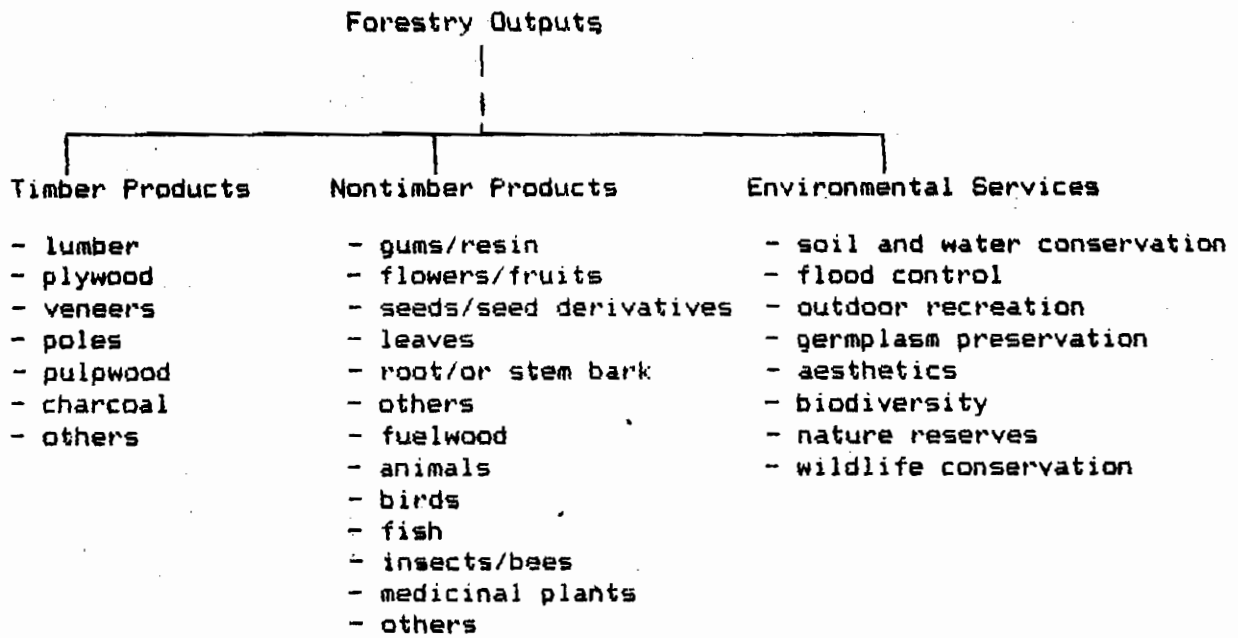


Figure 1: A Simplified Classification of Forestry Outputs.