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Research Article

Soligas and NTFP collection in Bilgiri Rangaswamy Temple (BRT) wild life sanctuary

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Abstract : Non timber forest products (NTFPs) provides livelihood for millions of rural people who live in and around the forest. Many studies valued NTFP extractions against other economic uses of the forests, the usufruct rights allow soligas to continue gathering a wide variety of NTFPs from the state owned forest lands in the sanctuary. These products are extensively marketed through co-operatives such as Large Scale Adivasi Multipurpose Co-operative Society (LAMPS). Commercially important species of the forest make up to 70 per cent of the individuals indicating the high utility values of these forests. Bilgiri Rangaswamy Temple (BRT) Wild life sanctuary is rich with its biodiversity in all 6 forest types and there are mainly 5 families of soligas involved in collection of NTFPs in 57 podus with 100 per cent family involvement in NTFP collection by following sustainable harvesting. Commercially 8 species are extracted and marketed through LAMPs. In addition, several species are traded through other channels. The major NTFPs collected in BR hills are gooseberry, *Acacia sinuta*, *Sapindus laurifolia*, lichen, honey, fire wood etc. NTFP collection not only provides employment to soligas but also improves their socioeconomic status.

Key Words : NTFP, Soliga, LAMPS, Gooseberry

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INTRODUCTION

Non-timber forest products comprise all forest products other than timber and fuel wood. These products seem to be minor in comparison with timber and fuel wood but are essential from the point of there utility, economic and importance in local economy. Millions of people around the world rely on these NTFPs to meet there subsistence needs and for local cash economy (Mahapatra and Tiwari, 2005). In India almost all NTFPs are nationalized and can be sold only to government agencies. Prior to nationalization NTFP could be sold to anyone. In BRT Wild Life Sanctuary the Soligas use to sell forest products to forest contractors. However about 30 years ago, a Large Scale Adivasi Multipurpose Society (LAMPS) was set up. This is an state controlled co-operative body which market NTFP collected by the Soligas, which are partly controlled by the government. The lamps market the product without processing or value addition. The Soligas thus essentially receive wage labours for extraction of NTFPs (Siddappa Shetti, 2004).

BRT Wild Life Sanctuary located in Karnataka is a confluence of western and eastern ghats and is rich in biodiversity. The region is home to the indigenous soliga tribal community. nearly 7500 people live in the sanctuary earning a combined total of Rs 7 lakhs per year from non timber forest products (NTFPs) from the forest to meet a proportion of there subsistence-cash income. In BRT

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,harvesting of fruits from two phylanthus species alone contributes approximately 6-11 per cent of the total cash income in a soliga house hold and up to 50 per cent of the cash income in a soliga household may come from extraction of NTFPs (Hegde *et al*., 1996)

In India a significant percentage (over 50%) of the forest revenue of the forest department comes from NTFP exports and around 500 million people living in and around forests depend on NTFP extractions for there livelihood. In order to use the forests in a sustainable way, particularly NTFPs, it is important to note that we need data on level of production, extraction and regeneration (Umashankar *et al*., 1996). Keeping these points in view, the present investigation was carried out to evaluate the different NTFPs extracted commercially at BRT wild life sanctuary.

EXPERIMENTAL METHODS

The study was carried out during 2006-07 at Biligiri Rangaswamy Temple Wild Life Sanctuary (BRT), Chamarajanagar district, Karnataka. The information on NTFP extraction and collection by soliga tribal community was gathered by interview method. A survey was carried out in all 57 Soliga podus of Biligiri Rangaswamy Temple Wild Life Sanctuary (BRT) and the data were collected from sample house holds by interview method. The data included general information about household such as source of occupation *i.e.*, agriculture, NTFP collection and other source of employment *etc*. It also includes the information regarding different soliga families involved in NTFPs collection, season of collection, family involvement and type of forest area covered for NTFP collection etc.

EXPERIMENTAL RESULTS AND ANALYSIS

The results obtained from the present study have been presented under following heads :

Major NTFPs collecting in BRT:

In BRT wildlife sanctuary, 8 species of NTFP are extracted for commercial purpose and marketed through LAMPs. In addition, several species are traded through other channels. The number of species used by the soligas for subsistence or medicinal purpose is perhaps substantial (Table 1).

GOOSE BERRY (*Phyllanthus emblica* Linn. and *P. indofischery* Bennet):

The fruit goose berry is locally called gooseberry in Kannada. Belong to family *Euforbiaceae*. The fruits of gooseberry are collected from two species *Phyllanthus emblica* and *P. indofischery* in southern India. *P. emblica* found growing in dry deciduous forests as well as wood lands, savanna found in between shola forests (1300 to 2000 m elevation) of the Western Ghats and in BRT. *P. indofischery* grows in scrub forests and is mostly restricted to low elevations. Gooseberry is one of the most important medicinal plant species, the fruits are very rich in vitamin C and are largely used for making pickles, jams, preserves, jellies and medicines. Fruits are used extensively in the traditional Indian medicinal system known as ayurveda and are important ingredients in several medicinal preparations such as Triphala, Amalakyadi choorna, Chawanprash etc and also used for making dyes and hair shampoo. The bark is used in tanning and making hair-dye and ink material.

In *P. emblica* over all harvest intensity was relatively low compared to *P.indofischery*. This is because the trees are shorter and fruits are longer than *P. emblica*. The soligas harvest an average of 88 per cent of the fruit yield on the per tree basis. It was 92 per cent in the case of *P. indopheschry* (Siddappa Shetti, 2004).

SOAP BERRY: *Sapindus laurifolia* Vahl.:

The forest produce soapberry are locally called "Antuwala" (*Sapindus laurifolia* Vahl) belong to the family *Sapindaceae* is distributed in the wetter part of the forest in BRT such as on banks of the streams, semi-evergreen and shola forests. The roots and bark are also said to be saponaceous, the capsule of *S. laurifolia* has a detergent quality when bruised, forming suds if agitated in hot water. The indigenous women wash their linen with the fruit of this tree. The fleshy fruits are regurgitated and dispersed by gaur, sambar deer, barking deer, mouse deer, and spotted deer.

Antuwala (*Sapandus longifolia*) flowers blossomed during the month of November – December. Fruits mature during the month of Feb- March. The intensity of harvest at harvested tree level was 86 to 95 per cent (Siddappa Shetti, 2004). People harvested fruits from high yielding tree and sites which are proximate to their settlements.

SOAPNUT: *Acacia sinuta* Lour.:

Soap nut is locally known as sige in Kannada. In BRT it is found in the wetter part of the forest and also at the edges of the shola forest. It flowers during February-March. Fruits mature in January- February, this long fruiting period indicate that the lianas experience moisture stress, all flowering lianas subsequently fore fruits. In BRT the fruit extraction is about 90 per cent per tree (Siddappa Shetti, 2004).

Lichen:

Lichen (pashe) is an associated form between algae

Table 1 : NTFPs commonly extracted by the soliga's in the BRT sanctuary

Species	Habit	Plant part harvested	Marketing channel	Use
Acacia sinuta	Liana	Fruit	LAMPs and others	Soap nut powder
Aristida setacea	Herb	Culm	LAMPs	Broom stick
Bauhinia purpurea	Medium sized tree	Leaf	Others	Plate
Boswellia serrata	Small tree	Resin	Others	Aromatic powder
Butea monosperma	Medium sized tree	Leaf	Others	Plate
Cinnamomum zeylanicum	Large tree	Bark, leaf	Others	Spice, medicine
Curcuma domestica	Herb	Rhizome	Others	Spice, medicine
Canerium strictum	Tree	Resin	LAMPs and others	---
Diospyrus melanoxylon	Medium sized tree	Leaf	Others	Bidi wrapping
Dicalepis hamiltonii	Liana	Root	LAMPs	Medicine
Phyllanthus emblica	Small tree	Fruit	LAMPs	Pickling, medicine, tanning, dying
Feropnia elephentum	Medium, sized tree	Fruit	Others	Food
Ficus bengalensis	Large tree	Leaf	Others	Plate
Hedesmus indicus	Herb	Rhizome	LAMPs and others	Pickling, medicine
Piper spp	Climber	Seed	Others	Spice, medicine
Ricinus cummunis	Shrub	Seed	Others	Oil, medicine
Sapindus emerginatus	Medium sized tree	Fruit	LAMPs and others	Soap nut powder
Shorea toluma	Large tree	Resin	Others	Aromatic powder
Strychnos potatorum	Small tree	Fruit	LAMPs	Medicine
Tamarindus indica	Large tree	Fruit	LAMPs and others	Spice
Terminalia bellarica	Large tree	Seed	LAMPs	Medicine
Terminalia chebula	Medium tree	Seed	LAMPs	Medicine
Zingiber officinale	Herb	Rhizome	Others	Pickling, spice
Gum (mixed)			LAMPs	Paste
Honey			LAMPs and others	Medicine, food
Lichens			LAMPs	Paint, medicine

and fungus. The fungus and the algae are interdependent. On its own, the algal part of the lichen would dry up and dry soon. The fungal fibres help by saving it from drying up. Lichen is harvested in September after rains. Harvesters set off to the forest in groups, but only on days that promise to be clear. The lichen is sold to the paint and the warnish industry, through LAMPS.

Honey:

It is one of the major NTFP that bring in cash income to the soligas. Honey is used as food and medicine. Honey is harvested during the months of Apr, May, June and Nov.

Fire wood :

India meets most of its domestic energy requirements from non-commercial fuel sources. The rural sector is estimated to share 85 per cent of the fuel wood consumption and the balance (15 per cent) is consumed by the urban sector.

Fire wood is the most important source of energy in the homes of people living in BRT hills. These include both soligas and non-soligas. Thousands of people depend on these 540 sq km sanctuary for fuel wood. About 86 per cent of the collection takes place on the edges of the sanctuary where human population is more and people from the surrounding villages come in. About 14 per cent of fuel wood is collecting from the forest core or forest interior. The demand of fuel wood is over 50 tons per year (Umashankar *et al.,* 1997). In BRT a family consumes fuel wood typically for cooking, water heating and space heating. Traditionally a family cooks two major meals a day, one in early morning and the other is in early evening. The cooking of the mid day meal is a rare practice because the people in this area are accustomed to working in the forest or agricultural fields from morning to evening by carrying lunch to work place. Some house holds consume fire wood during typhoons.

There are mainly 6 types of forests and grasslands in BRT sanctuary. There are also plantations of teak and silver

Table 2 : The NTFPs collecting in different forest types of BRT wildlife sanctuary

Forest type	NTFPs available
Scrub forest	Gooseberry, *Dicalepis* root
Dry deciduous forest	Gooseberry, lichen, Antlers, gum
Moist deciduous forest	Gooseberry, soap berry, lichen, Jamoon, Antlers, *Dicalepis* root, *Terminalia bellarica, T chebula*
Semi evergreen forest	Gooseberry, soap berry, lichen, Jamoon, Antlers, *Dicalepis* root, *Terminalia bellarica, T chebula,* mango, broom stick
Evergreen forest	Gooseberry, soap berry, lichen, Jamoon, Antlers, *Dicalepis* root, *Terminalia bellarica, T chebula,* Mango, broom stick, Dhoop
Shola forest	Gooseberry, soap berry, lichen, Jamoon, Antlers, *Dicalepis* root, *Terminalia bellarica, T. chebula,* mango, broom stick, *Acacia concinna*

Seasonal harvesting of NTFPs in BRT

Honey - Apr, May, June, Nov	Myrobalan - Jan, Feb, Mar
Gooseberry - Jan, Nov, Dec	Deer antler – Throughout the year
Lichen - Jun, Jul, Aug, Sept, Oct, Nov, Dec	Broomstick grass - Jan, Feb
Soapberry - Feb, Mar	Dicalepis root - Mar , Apr
Soap nut - Feb, Mar	

Table 3 : The soliga families involved in NTFPs extraction

Family name	Family involvement (%)	Involvement as soligas whole (%)
Elukulada soliga	100	30
Taragu soliga	100	10
Betta soliga	100	20
Bunde soliga	100	10
Eidu kulada soliga	100	30

oak, and coffee in the sanctuary. Among the forest types gooseberry is available in almost all the forest types, where as other NTFPs restricted to only some forest types (Table 2).

The quantity collected per day and the number of days spent in collection of the various NTFPs are significantly different for some products (Myrobalan, soap berry, Soap nut) but not for others (Gooseberry, *Dicalepis* root, Honey, Lichens). The data on harvesting of NTFPs in different seasons reveals that among major NTFPs, deer antlers are available throughout the year followed by lichen which available for a period of seven months (from July to December). Where as most of the NTFPs are available only for a period of two to three months *i.e;* season specific. The major cash income providing NTFP such as Gooseberry is available to collect only for a period of three months.

There are mainly 5 families of soligas who are involved in collection of NTFPs in 57 podus of BRT wild life sanctuary. In all the families every member of the family are involved in NTFP collection in or other way with cent per cent family involvement. Among the five families highest NTFP collection is by two families mainly elukulada soliga and eidu kulada soliga where 30 per cent of these families are involved in NTFP collection followed by betta soliga (20 per cent) and others (Table 3). Each group of soligas covering an area of approximately 15-20 sq km. The involvement of people in each house hold is on an average 5-12 members including both male and female equally. Females mainly collect the fallen fruits and other NTFPs which are available on the ground floor, some times she also climbs tree if necessary.

Some of the reasons for drop in participation in NTFP collection are, increase in percentage of educated members in the family, reduction in family size influences the collection of NTFPs positively and income from other vocation has a negative influence on the extraction of NTFPs. Only for few NTFPs have marketing channel through LAMPs but for most of the NTFPs they don't have proper marketing channel.

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