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Commerce

CHIRONJI – A COMMERCIALY IMPORTANT AND POTENTIAL LIVELIHOOD PROVIDER MINOR FOREST PRODUCT OF TRIBAL LAND OF JHARKHAND.

KEY WORDS: Buchanania cochinchinensis, NTFP, Tribal, subsistence agriculture, indigenous

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ABSTRACT

Chironji (*Buchanania cochinchinensis*) is a minor fruit crop which is generally found as wild population in the forests of Indian subcontinent. It is an important livelihood support species for rural and tribal economy. The present study examines the role of Chironji in providing sustainable livelihood in the tribal areas of the state of Jharkhand.

INTRODUCTION

The *Buchanania cochinchinensis* or *Buchanania lenzan* was first described by Francis Hamilton in 1798, is a small size tree of family Anacardiaceae. This plant is commonly known as 'Almondette' tree in English and 'Char', 'Achar', 'Chironji' 'Piyar' in Hindi and tadop in santhali. *Buchanania cochinchinensis* is a non-wood forest species commonly found throughout the Burma, Nepal and India, (Hemavath et al., 1988) mostly in Northern, Western and Central India in the states of Jharkhand, Chhattisgarh, Madhya Pradesh, Uttar Pradesh, and endemic to the dry deciduous forests, up to an altitude of 1200m (Pandey, 1985). It is endemic to tropical dry deciduous forest of India (Siddiqui et al., 2014). The species *Buchanania cochinchinensis* is an during survey in Jharkhand important Non timber forest produce (NTFP) of deciduous forests throughout the greater part of India especially in Jharkhand. The greenish- white flowering of the tree occurs from January to March and yellowish-red drupe, one seeded, fruits ripen in the month of April-June and remain on the tree for quite a long time (Troup, 1986). The Chironji kernels contain about 52 percent oil (Anonymous, 1952) which is used as a substitute for olive and almond oils (Kirtikar and Basu, 1935), while the whole kernel is used in sweet-meats or as a substitute for almond kernels (Kumar et al., 2012). It is considered as one of the delicious wild fruits. It is a socio-economically important underutilized fruit tree and life supporting species for tribal populations of Jharkhand (Patsnaiket al., 2011; Khatoon et al., 2015). It avoids waterlogged areas and very useful for environmental conservation and in 'agroforestry system' (Sharma, 2012).

Traditional indigenous knowledge revealed immense importance of almost all parts of plant like roots, leaves, fruits, seeds and gum for various medicinal applications like cure for blood disorder, fever, ulcers, burning sensation of body, diarrhoea, dysentery, asthma, snakebite, etc. (Siddiqui et al., 2014). The kernel is pulverized and used into an ointment, for skin diseases specially for itching. It is used to apply on glandular swellings of the neck. It is believed to cure pimples and prickly heat. It is also employed by women to remove spots and blemishes from the face. It is also used as a tonic. The oil extracted from the kernels is used as a substitute for almond oil in native medicinal preparations and confectionery (Kirtikar and Basu., 2005; Warokaret al., 2010). The juice of the leaves is digestive, expectorant, aphrodisiac and purgative, however, the gum after mixing with goat milk is used as an analgesic (Shende and Rai. 2005). Fruits are laxative and used to relieve thirst, burning of the body and fever. Kernels of fruits are used as ointment in skin diseases Das and Agrawal, (1991). Its bark contains about 13.4% of tannin. Its gum is soluble in water that exudes from the wounds in the stem and it is used in textile business (Tewari, 1995).

Collection and processing of Chironji

According to Singh, Sanjay, Singh, A.K. and Apparao, V.V. (2006) in Chironji, flowers appear in the month of January-

February. It takes four to five months for the fruit to ripen . Deep purple colour appears on fruit surface of different genotypes during peak period of ripening. After completion of ripening, seeds are separated by rubbing in the water and dried. After that, kernels are taken out by breaking of the hard seed coat mechanically and packed either in glass jars or polythene bags.

Processing of Chironji

About 75% of the farmers sell their produce at the farm level to the village merchants, retailers, big producers or to the pre harvest contractors. They cannot afford to transport their produce to distant markets on account of the non-availability of transport facilities, expensive transport, mal practices in the market. Information regarding demand, supply, price, market outlook, knowledge of the consumer's preference, marketing channels are important for marketing of produce. The annual production of *B. cochinchinensis* in the state of Jharkhand is around 2000 MT per year. A study was conducted during 2009 by Centre for People's Forestry on NTFP-related livelihood dependency in selected locations of Gumla and Simdega districts of Jharkhand. Approximately 12,335 kg Chironji seed was collected during 26 days (on an average) of summer season which is 16 – 26 per cent of annual income of these two districts. Prices for Chironji in the national market vary from Rs.700-1200 per kg It is an income generating produce of forest dependent communities. On an average, 40–50 kg fresh fruits are produced per tree, which yields 8–10 kg on drying, resulting in 1–1.5 kg of finished produce per tree (Tewari, 1995). With the increasing demand to promote livelihoods from forest produce for the tribal population, research and evaluation studies for conservation of NTFP species, including Chironji must be strengthened.

Data Interpretation And Analysis

The state of Jharkhand is spread over an area of 7.97 million hectares. Around 29% of the Jharkhand's area is under forest covering and 3.4% of the forest cover of India ranks 10th among all states. Jharkhand is also known as the land of the forest. A vast majority of the tribal population live in or near the forest, trying to make both ends meet on a living based on Non- timber Forest products (NTFP) and subsistence agriculture. Since the early 1990s, the role of NTFPs for sustainable forest use and poverty alleviation has received increased attention.

Study area

The present study is conducted taking both primary and secondary approaches. Primary data has been gathered through field monitoring carried out in four villages in two districts of Jharkhand. Interviews, FGDs, observation and visit to local markets were done and used as the tools to closely examine the activities involved in studying the commercial viability of Chironji in the State.

The primary data was conducted through structured

interview with purposive selection of the samples. 100 structured interviews were conducted in four villages namely Sarubera, Semra (Gumla district) and Jaldega and Lachragarh (Simdega district) of Jharkhand. Both men and women were interviewed.

Survey and data collection

Under the present study, data were collected through household surveys, trader surveys, focus group discussions, and collation of secondary information. Structured questionnaires were used to capture the primary information from forest village communities and small traders. The survey was conducted by visiting four villages. Interviews with a group of collectors (including men and women separately and together) were used for this purpose, along with other more participatory research methods. Besides, the household survey, small traders associated with concerned villages were also contacted for the survey. Market rates and market-chain was further cross-verified through visiting local traditional markets (locally called Haat) nearest to sample villages. Secondary information was gathered from various reports and consultation with expert organizations and local NGO. Further For the secondary source the information was available through various literatures like books, journals, periodicals, government data, reports, schemes and notification.

Field Observation of Chironji

The trees of Chironji are found in farmlands and scattered widely in the forests of Jharkhand.

The collection and processing of Chironji are done by villagers. The villagers go to the forest area and collect the ripe fruit. According to the villagers the collection of Chironji fruits is a tedious process. The hand plucking of ripen fruits are done by climbing the tree. When ripen fruits are plucked, the seeds are separated by rubbing in water and drying in sun.

The fruit of chironji matures in 4 to 5 months and are harvested manually in the month of April and May. The green coloured skin of harvested chironji fruits turn black on storage which has to be removed before shelling. In order to remove the skin, fruits are usually soaked overnight in water and rubbed with hands. The clean nuts are then dried in sunlight for 2 to 3 days then stored and sold in the local market to local traders.

Only few tribal and local traders go for further processing of chironji known as shelling. Shelling is the process of separating kernel from hull. For small scale at home level the dried nuts are shelled by traditional method, rubbing with stone slab on rough stone surface followed by manual separation of the kernels.

There is tremendous scope for preparing oil, sweets, beverages from the ripened fruits but the local tribal villagers are not involved in this process.

After collection of Chironji from tribal areas of Jharkhand, it is distributed to the other states.

Findings and Analysis of Chironji

During the visit to Local haat bazar in the four sample villeges in two districts, it was observed that the ripened chironji fruit was sold at Rs.10 per cup locally called dona. Further during FGD at Sarubera and Semra villages of Gumla district it was observed that villagers are not aware of the value addition of Chironji. The villagers were only aware of collection, sun-drying and selling of Chironji seed. In Gumla and Simdega districts of Jharkhand Chironji seed was collected during 26 days (on an average) of summer season and traded in local haat bazar for Rs 100 per Kg, whereas, price of Chironji nut (after shelling) in the national market vary from Rs. 1000-1200 per kg. It means that profit of the trade is not going to tribals,

therefore it needs government machinery to step in.

Problems And Constraints

The land of forest, Jharkhand were full of Buchanania cochinchinensis in the past, now they are facing mass destruction (Narayan et al., 2014). The trees are cut for either fuel or for wood products as they are tall. In most parts of central India, fruits of chironji are harvested before ripening. As a result because of small seed size and low seed quality, it fetches much lower price in the market. The tree is lopped frequently for the purpose of huge and rapid collection. The species is facing severe genetic erosion as a result of activities related to afforestation in tribal inhabited areas. Moreover, trees have suffered due to mortality caused by some biotic factors i.e. grazing, repeated fire, indiscriminate harvesting (lopping and cutting), disease and insect pests. No organized cultivation of Chironji is practiced and fruits are directly collected from the wild trees occurring in the forest and marginal lands by un-scientific manner, therefore, the species is facing a great threat. Occasionally the trees are cut partly or completely by the tribals to collect the fruits. Trees have been completely wiped off in the recent past due to developmental activities and the expansion of agricultural land. Such condition has led to the demolition of natural patches of the species.

At present processing of Chironji nut is done manually and some time by locally made machine. This traditional process involves soaking in the water for 24 hrs, skin removal by hand rubbing followed by drying. Dried nut is broken by rubbing between a pair of stone-slab or hammer followed by separation of the kernel from the hull. During the survey it was told that during the manual process of separation of the kernel, the kernel is sometimes destroyed or grinded.

Therefore, deskinning and dried Chironji are mostly sold in the local markets which fetch a very low price for the collectors who are involved in this process. Therefore, there is a need for providing decorticating Machine for shelling the dried chironji seed at a subsidized rates along with the know how technology by means of training.

CONCLUSIONS

This species has a significant socioeconomic importance in terms of providing a source of income for tribal people. It is important to impart proper knowledge, training and education to the tribal population in order to stop destructive harvesting and raise awareness about the collection of ripe fruits at the appropriate time. Technical support like proper decorticating machine and packaging machine should be provided to the tribal so that processing of the fruit can be done and this would provide good monetary benefit and livelihood option to the poor marginalised tribal people. A collaboration between Micro, Small & Medium Enterprises (MSME), Tribal Co-operative Marketing Federation (TRIFED) and Agricultural Produce Market Committee (APMC) is must to provide technical support, machinery on government subsidised rates and to promote marketing of the forest produce for socioeconomic wellbeing of the tribal communities.

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