

MARKET STATUS AND ECONOMICS OF LICHEN (JHULA) TRADE IN UTTARAKHAND

A. Kaur*, S. Maikhuri, K. Dobhal, S. Napalchyal, P. Joshi, B.P. Purohit and R. Dobhal

Centre of Excellence on Forest Based Livelihood, Uttarakhand State Council for Science and Technology (UCOST), Dehradun, Uttarakhand, India

*Correspondence: ajeet@ucost.in

INTRODUCTION

Uttarakhand, which lies in the central Himalaya, has its 47% geographical area under forest and tree cover (FSI, 2015). Forests are important natural resources available providing fuelwood, fodder, biomass and other major and minor forest products. Earlier during last century, only timber was considered an important contribution of the forests as it yielded sizable revenue to the states. Post 1970 the minor or non-timber forest products (NTFPs) were recognized to play great role in sustaining the forest dependent population. While the agriculture and allied activities constitute the primary occupation of people, it suffices to meet their household requirements only for about 100-150 days in a year. The forest based gathering for self-consumption and sale in the market provides substantial income to meet their requirements for another 150-200 days. Thus the forest based livelihood in this Himalayan region is of great economic and ecological significance for the people due to large variety of forest based products and services. Many NTFPs provide large livelihood opportunities which are used largely for trade and hence supplement their annual income. Lichen, the symbiotic association of fungi with green algae/ cyanobacteria is among those NTFPs which are collected profusely from the forests. In Uttarakhand, the various lichens are known by the common name 'Jhula'. Due to its use in condiments, medicines, perfumery and dyes making, its collection from forests offers a big livelihood opportunity for the natives. After fuelwood and fodder, Jhula is the biggest NTFP commodity in terms of quantity extractable from Uttarakhand's forests. This shows its great importance for the forest dependent communities and justifies the need to study its marketing and trade mechanism. The study of economics of this trade will help improve the rural economy of the gatherers.

METHODOLOGY

To study the collection and market status of Jhula in the state, information were collected from the published literature and Working Plans of different Forest Divisions of Uttarakhand. Uttarakhand Forest Development Corporation (UAFDC) kindly provided the past six years' data on Jhula auctioned at its three herbal mandis at Ramnagar, Rishikesh and Tanakpur. Information was also gathered by interviewing the buyers and sellers at mand are during the auction.

FINDINGS

Collection from Forests

State government has authorized five agencies viz. UAFDC, Bhesaj Sangh, Kumaun Mandal Vikas Nigam, Garhwal Mandal Vikas Nigam and Van Panchayat for the collection of lichen and other NTFPs from the forest area by the allotment of forest compartments. For the purpose of sustainable harvesting, Uttarakhand Forest Department opens only few ranges for the collection. A village collector may gather 3.5 – 5 Kg Jhula/ day as a subsidiary activity whereas a hired labour can collect 6.5-7.0 Kg Jhula after a full day activity. A local trader (middleman) registered with the authorised collecting agency may collect the produce from 15-20 primary collectors after paying ? 50-90/Kg to them depending on the quality of Jhula collected.

Marketing

Auctioning at one of the three UAFDC mandis (details in Table 1) is the only legal option for the local traders in Uttarakhand for selling the forest produce. The collection areas under jurisdiction of these three mandis are specified in the Forest Working Plans. Yet the middlemen are free to sell the forest produce in any of the three mandis.

Table 1. Herbal mandis of Uttarakhand Forest Development Corporation (UAFDC)

Mandi's name, contact information and monthly auction dates in brackets	Forest collection area
Bibiwala Depot, Rishikesh, District Dehradun Mobile (office)- 9557936162 (DSM Dehradun)-9568003215 Email:dmmdehradun@gmail.com (7 and 22 of each month)	Yamuna circle, all forest divisions of Bhagirathi and Shivalik circles, Karnaprayag forest division and Pauri and Paithani ranges of Pauri forest division of Garhwal circle, Kedarnath forest division of Nanda Devi biosphere reserve
Aamdanda Depot, Ramnagar, District Nainital Mobile (office)- 5947251233 (DSM Ramnagar)-9568003217 Email:dmm.ram_nagar@yahoo.com (6 and 20 of each month)	The remaining areas of Garhwal circle, South Kumaun circle, Almora forest division of North Kumaun circle, Bageshwar forest division, civil soyam forest division Almora and Ranikhet forest division, Tarai West, Tarai central and Ramnagar forest division of West circle
Tanakpur Depot, Maa Purnagiri Van Vikas Parishad, Tanakpur, District Champawat Mobile (office)- 9557936162 (DSM Tanakpur)-9568003219 Email:dmm.tanakpur@yahoo.com (10 and 26 of each month)	Haldwani and Tarai East forest divisions of West circle, Pithoragarh and Champawat forest divisions of North Kumaun circle

Past six years' auction data showed that maximum Jhula (10,731 Q) was auctioned in the year 2012-13 and minimum (4,962 Q) in the year 2014-15 at Rishikesh mandi. The auction amount was highest (1013 Lakh ₹) in the year 2015—16 and lowest (749 Lakh ₹) in the year 2010-11 in this mandi (Table 2). Quantity (11303 Q) and amount (1160 Lakh ₹) of Jhula at Ramnagar mandi were highest in the year 2012-13 (Table 3). At Tanakpur mandi maximum Jhula (1972.87 Q) was brought to mandi for auction in the year 2010-11 and minimum (453.4 Q) in 2015-16 (Table 4).

Table 2. Auction data of Jhula at UAFDC herbal mandi, Rishikesh (Bibiwala)

Year	Quantity (Q)	Amount (Lakh ₹)	Average rate (₹/Q)
2010-11	7925	749	9449
2011-12	6339	827	13049
2012-13	10731	897	8356
2013-14	7268	903	12433
2014-15	4962	751	15133
2015-16	5667	1013	17880

It is clear from the data that the Tanakpur mandi has a small share in trading of Jhula. On the other hand, auction rates and hence the amount at Rishikesh mandi are quite high which encourage more of middlemen, even from the jurisdiction areas of other mandis, to bring their material to this mandi as was observed during our visits here.

Table 3. Auction data of Jhula at UAFDC herbal mandi, Ramnagar (Aamdanda)

Year	Quantity (Q)	Amount (Lakh ₹)	Average rate (₹/Q)
2010-11	2790	245	8777
2011-12	6809	629	9243
2012-13	11303	1160	10262
2013-14	8485	755	8897
2014-15	6454	647	10025
2015-16	7022	845	12032

Table 4. Auction data of Jhula at UAFDC herbal mandi, Tanakpur

Year	Quantity (Q)	Amount (Lakh ₹)	Average rate (₹/Q)
2010-11	1973	148	7524
2011-12	707	64	9029
2012-13	1505	1103	7328
2013-14	620	52	8403
2014-15	840	101	12068
2015-16	453	80	17666

Economics of Lichen Trade

Collection and other overhead expenses for low grade Jhula at different levels are shown in Table 5. A royalty of the State Forest Department is charged before issuing transit pass locally called 'Ravanna' to the local trader which varies from ₹ 160- 210 per quintal (Q) for different areas, 1% of the total selling price is paid to UAFDC as handling charges and 4-5% of total selling price is paid to the collecting agency (4%

Table 5. Economics of trading of one truck of low grade lichen

Capacity of one truck (Q)	=40	
Purchase cost= Collection price (₹) of one truck lichen as paid by the local trader @ ₹ 7000/Q	=7,000 × 40= 2,80,000	
Selling price (₹) at the mandi @ ₹ 15000/Q	=15,000 × 40= 6,00,000	
Overhead expenses (₹)	(a) Royalty (Forest Department) @ ₹ 210/Q	= 210 × 40 = 8400
	(b) GST(5% of Royalty)	= 0.05× 8400=420
	(c) Handling charges of UAFDC	= 1% of 6,00,000= 6,000
	(d) Royalty (Collecting agency)	= 5% of 6,00,000= 30,000
	(e) Transportation cost	= 15,000
	Total overhead expenses (a+b+c+d+e)	= 59,820
Total expenses (₹)	= 2,80,000+ 59,820= 3,39,820	
Net profit (₹)= Selling cost-Total expenses	= 6,00,000– 3,39,820= 2,60,180	
% Profit to the local trader (2,60,180/3,39,820)× 100	= 76.6%	
% Share of collection price in total expenses (2,80,000/3,39,820)× 100	= 82%	

for UAFDC and 5% for others) as royalty. The transportation cost of one truck is taken as ₹ 15,000. The net profit earned by the trader as calculated here is estimated to be ₹ 2, 60,180 for one truck of lichen. Collection price has 82% share in total expenses. On the other hand, a trader earns about 77% profit by selling high grade Jhula in the mandi.

It is important to mention here that the economics of Jhula trade is highly fluctual and is basically driven by auction price. The auction price again is determined by demand and supply and usually varies between 1200-3500 ₹ /Q. Therefore the local trader's profit lie anything between 20-120%. Similarly the collectors may also get their share between 60-85% of the total expenses.

The collectors are ignorant of the market price and due to lack of knowledge and resources, are not able to participate in the auction and hence don't get their due share of profit earned through sale. Drying is the only post-harvest processing and no grading is done at collector's level. If grading could be done at village level, it would earn them more income. The process of rotational harvesting is a big obstruction for the growth of Jhula sector as big livelihood

opportunity. This is a hurdle for the industry to develop which won't like to run for a year and then remain closed for next 4-5 years in a particular area. It is suggested that the harvesting in controlled quantity should be allowed on regular basis in the lichen abundant areas. This will help to evolve sustainable livelihood and value addition opportunities for the villagers.

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REFERENCES

Forest Survey of India (FSI) (2015). India State of Forest Report. *Ministry of Environment, Forest and Climate Change*, Dehradun, 1(1): 200-290.