

## Impact of Lac Cultivation on Economic Strengthening of Tribal Women of Ranchi District: A Review

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### ABSTRACT

Jharkhand is well known for its lac cultivation and is the leading producer of lac. Forests of Jharkhand have plenty of lac host plants, and are the source of sustenance of tribes residing in the state. Tribes of Jharkhand cultivated lac since long to support their livelihood. Lac cultivation provides a great scope for socio-economic upliftment of women and it is one of the thrust area in today's scenario. The present paper reviews the impact of lac cultivation on economic upliftment of tribal women in Ranchi district of Jharkhand.

**Keywords:** Lac, Cultivation, Economic Strengthening, Tribal, Women.

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### INTROCUCTION

Jharkhand is known for the rich forest area including Lac hosts. It is the leading producer of Lac. Thus, it is called 'Lac State of India' which alone contributes about 59% of the national production. The state provides ideal condition for rearing of Lac worms and development of the Lac industry. Lac cultivation is carried out by the tribal people in villages which support their livelihood. Agriculture is the primary source of income for the tribal communities in Jharkhand. But, there is seasonal unemployment, so they need to migrate out to the cities for daily wages. So, their economic condition and social development is very low.

In this situation Lac cultivation played a vital role in strengthening of the tribal women. Cultivation of Lac is exploited for its products of commerce that is resins, dyes and wax. It not only provides livelihood to millions of Lac growers and earn foreign exchange, but also provide great scope for socio-economic upliftment of women and it is one of the thrust area in today's scenario. The demand for Lac and it's by products is increasing in the local, national and international markets. The time and skill required for

Lac cultivation is much less as compared to the other agricultural occupations. This is very important as tribal women are not much educated and skilled. They are poor and generally look after their household. Keeping in view Government of Jharkhand is carrying out several schemes for socio-economic upliftment of tribal women with the help of Lac development schemes.

Jharkhand along contributed 42 percent of the nation's production. Lac production was a traditional practice in tribal families dependent on forests and agriculture and, due to its market importance, had potential for substantial incomes. In Jharkhand, about 500,000 families live in the forest regions and are engaged in lac cultivation may play a vital role for economic strengthening of the rural women. Cultivation of lac is exploited for its produces of commerce, viz. resin, dye and wax. It not only provides livelihood to millions of lac growers (Pal, 2009) and earns foreign exchange (Yogi, 2014), but also provide great scope socioeconomic upliftment of women.

Lac is an export oriented Non-timber Forest Produce (NTFP). It is produced mostly by tribals, sub-forest,

forest and rain fed area of Jharkhand, West Bengal, Chhattisgarh, Madhya Pradesh, Orissa, Maharashtra and part of Uttar Pradesh, Andhra Pradesh, Gujarat and NEH region (Sharma et al. 1997, Sequeira and Bezkorowajnyj, 1998, Ogle and Thomas, 2006, Abraham, 2010, Pal et al. 2010, Neetu et al. 2011, Jaiswal et al. 2012). About fifty percent of forest revenue and about 70 percent of forest export revenue in India comes from NTFPs, mostly from unprocessed and raw forms (Giridhar, 2011). Lac production is a livelihood option of both rain fed farmers and forest dependents, India the largest lac producer has a share of 62 per cent of the world production of 44,000 metric tons (Ogle and Thomas, 2006) The annual lac production in India varied from 18,000 ton (Prasad et al. 2004), 23,229 ton in 2006-07 (Pal et al. 2007) and 21,935 tons in 2007-08 (Pal et al. 2010). About 80 per cent of the country's total lac production is exported valued \$ 16-22 million earned in foreign exchange annually (Prasad et al. (2004), it earned a foreign exchange worth Rs. 15,262 lakhs (Ogle and Thomas, 2006). It is expected that the potential for lac production could increase with India's recent changes in forest policy which encourage the natural regeneration of degraded lands (Sequeira and Bezkorowajnyj. 1998). The state of Jharkhand covers 29 % of forest area Ranchi, Gumla, west Singhbhum, Simdega, Latehar, Palamau, Garhwa, Khunti and Hazaribagh are the main lac growing districts. Though three major lac host trees namely palas, ber and kusum are available in plenty but production is confined in these conventional areas. On an average, Jharkhand state contributes around 38.82 % of national lac production (ICAR-IINRG 2014). Out of seven main lac producing districts, Ranchi still producing highest followed by Simdega, Gumla, West Singhbhum, Palamau, Garhwa, Latchar and others. Recently, lac production activity was successfully introduced in Dhanbad, Jamtara and Dumka districts also. A perusal of production data indicate that during the last four years (2006-07 to 2009-10), there have been negative growth in lac production in Ranchi, Palamau, Garhwa, Latchar and a few other minor lac producing districts. The greatest setback recorded in Ranchi which witness 42.8 % negative growth and

this district alone contributed around 285 % Gumla, West Singhbhum and Simdega districts known for kusmi belt recorded positive growth ranging 6.3 to 29 % and these three districts together contributed around 56 % of the state total lac production. The analysis of data pertaining to period 2006-07 to 2008-09 showed that magnitude of negative growth rate witness during these three years came down appreciably during four years for only Ranchi district. Similar comparison between three and four years indicated that two districts namely West Singhbhum and Simdega which recorded negative growth during three years (2006-07 to 2008-09) recorded positive growth during four years (2006-07 to 2009-10) indicating substantial improvement for lac production during last year in these two districts. The districts of Latehar, Palamau and Garhwa which were most suffered during 2006-07 to 2008-09 further suffered during 2009-10 and magnitude of negative growth increased substantially. On estimates, around 110 million lac hosts are being exploited in the state. More than 4 lakhs families in the state are involved in lac cultivation activity resulting of 35-40 millions man-days per year. Forest department, Jharkhand have 16 broodlac farm of kusum and palas tree in Ranchi, Gumla, Saraikela, Hazaribagh Palamau, Dhanbad, Bokaro, Godda and Chatra districts but in view of disturbances, these farmers are more or less abundant. Limited availability of broodlac, scattered lac host, poor inter-institution linkages, climate change and involvement of villagers in certain undesirable activities are the main concerned which limits growth of lac production in these state. We in the state suffered a lot especially for rangeeni lac cultivation due to frequent mortality of rangeeni lac insect sometimes during February, March and due to high temperature in April and May. There is need to address these problems, so that farmer's confidence is returned and again lac cultivation is taken up in big way.

Singh *et al.*, (2015) concluded that lac cultivation requires much less man power than other agricultural crops, generates more earnings which helps in economic strengthening of women and social upliftment through lac cultivation for women was also evident. In lac growing areas of the country,

the scientific lac cultivation may play a key role in economic strengthening of rural women hence, adoption of this should be promoted among women in SHG model in rural to maintain and enhance the flow of economic benefits towards women which may also help for social equality of women.

Sequeira and Bezkorowajnyj (1998) reported that lac, a natural resin produced by the lac insect *Kerriallacca*, is an important income-generating non-wood forest product in India, although production and export has declined over the last 50 years, partly due to large fluctuations in prices and supply and partly due to increasing competition with Thailand. It is expected that the potential for lac production could increase with India's recent changes in forest policy which encourage the natural regeneration of degraded lands. A review is presented of improved management systems for lac production on *B. monosperma*, which is the most important lac host in India, and is prevalent in degraded areas of the sub-Himalayan plains. The review briefly describes traditional management systems, and gives an account of the 3 operational stages of the improved system pruning of host plants, inoculation with broodlac, and harvesting and storage of sticklac at crop maturity.

Sharma *et al.* (2006) reported that 87 species falling under nine genera recorded from the world 19 species belonging to two genera, namely *Kerria* and *Paratachardina* are found in India. Lac culture plays a vital role in the protection of our bioresources, Growing lac hosts for timber and fuel yields revenue in cycles of long years, whereas cultivation of lac on these trees gives a return almost every year Thus, lac growers give more importance to regular income from cultivation of lac over the years to one-time income from timber or fuel Average net profit from one tree is Rs 109 for palas, Rs 202 to 1060 for ber and Rs 1320 for kusum per crop cycle Thereby, lac-culture plays a vital role in protection of our bioresources. Lac also provides sustained high economic returns, generates employment opportunities and has potential to pave a strong foundation for lac based rural cottage industries. About one million man-days are generated in the existing lac-processing factories.

He found that the major lac-producing states are Jharkhand (57 % of the country's production), Chhattisgarh (23%), and West Bengal (12%). Pal *et al* (2007) reported that on average 37.5 per cent lac growers have marginal land holding of average size 0.73 ha 48.0 per cent have marginal land holding with average size 1.51 ha. And 14.5 have large land holding with average size 2.82 ha, the families having up to 5 members and more than 5 members were 64 per cent and 36 per cent respectively, with the average family size of 5.3. On an average age of 59 per cent family heads was more than 50 years and 41 per cent family heads were less than 50 years. Irrigated land was very less in the study area and it was only 6.1 per cent of the total agriculture land.

Patidar, (2011) conducted in a study on the Lac growers in Anuppur district of MP and reported that majority (65.25%) belonged to young aged group. Patidar N. reported that (51.56%) lac growers had low attending training programme, followed by (35.94%) with medium, only (12.05%) lac growers attend highest training programme. Patidar N. also reported that majority (53.97%) of lac growers' had high extension participation, while only 14.06 per cent had lower extension participation. He found that majority (70.31%) of lac growers had high motivation, followed by medium motivation (18.75%) and low (10.94%) economic motivation.

Lakra, (2013) Reported that Lac cultivation serves as both a complementary and supplementary source of income to the existing livelihood options for the farmers. It is also an assured source of income during lean period of agricultural activities. With low cost inputs it gives high returns which make it highly favourable with the farmers. Keeping all these in view, CGMFP Co-op Fed Lid Raipur has taken an initiative for cultivation of lac, involving members of primary MFP co-op societies and JFMC members as well. With the adoption of scientific method in lac cultivation, beneficiaries are getting an income of Rs 1000, (3460, 76000), 8240 per annum from each best trees of Palas, Ber (Rangeeni, Kusumi) and Kusum respectively. An annual income of Rs 13.37 lakh per hectare from lac cultivation in the plantation of *Flemingiasemialata* host plant is also estimated. And

as the lac farming communities live in and around the forests, spp. like Mahua, Peepal. Kusum and many other fruit bearing trees, shrubs and herbs on which they are dependent for their livelihood is highly revered and is generally protected by them since ages. Presently area to the tune of 55.52 % of total forest area is being protected and conserved on participatory principles by 7887 no of JFMCs in the state.

Mandal *et al.*, (2014) Most of all farms retained a portion of their previous crop for use as brood for the next crop. Since brood is not purchased and crops are successful it would be possible to make large profit even at the prevailing lower price of sticklac. As previous four years 2007-08, 2008-09, 2009-10 and 2010-11 had been very adverse; the purchase of brood is very much expensive in the year under study, and may even be unobtainable for the small and marginal farmers. The necessity of purchasing brood for the group of farmers at high rate swallowed any profits they might have made.

Jaisawalet *al.*, (2014) lac production data in India during XI Plan (2007-2008 to 2011-2012) indicated average production by the country to the tune of 16.246 thousand tonnes. The Jharkhand state registered highest average annual production (6.306 thousand tonnes), sharing 38.82 per cent of total lac produced in the country. This is followed by Chhattisgarh (30.21 %). Madhya Pradesh ( 13.66 % ), West Bengal ( 6.97 % ), Maharashtra ( 4.96 % ), Odisha (2.27 % ), Uttar Pradesh ( 1.94 % ), Assam ( 0.52 % ), Andhra Pradesh and Gujarat (0.30 % each ) and Meghalaya (0.06%). In respect of state wise growth rate in lac production, the country registered negative growth rate to the tune of 8.38 per cent per annum. Amongst the major lac producing states, Jharkhand and West Bengal recorded positive growth of 12.19 and 9.94 per cent per annum respectively, during this period. Amongst the declining trend state, Madhya Pradesh recorded highest negative growth (-32.41%) followed by Uttar Pradesh (-29.37 %), Chhattisgarh (26.16%), Maharashtra (-10.62 %) and Odisha (-9.92 %). The other minor lac producing states namely Assam, Gujarat, Meghalaya also registered declining trend during the period Strain

wise analysis of production data for various states was also carried out in an attempt to identify which type of lac suffered most during this period.

Das *et al.*, (2014) reported that the Lac are scale insects (LacciferLacca) which live on trees called lac host trees where they secrete the lac resin which is scraped off and manufactured into shellac. To produce just 1 kilogram of lac resin around 300,000 insects lose their tiny lives. A scale insect is a common name for any of about 2000 insect species found all over the world that attaches themselves in great numbers to plants and trees. Scale insects range from an almost microscopic size to more than 2.5 cm. he found that the belt of Khunti Sub Division is the major producer of Lac in India along with other non-wood forest products (NWFP). According to rough estimates about 6000 tons of Lac is procured by traders in the weekly and local hats of this Sub Division mainly by middleman.

Shah *et al.*, (2015) reported that Lac- a natural resin of wide industrial applications, is a secretion of Lac insect Kerriallacca Kerr belonging to the family Tachardiidae (Kerriidac) and order Hemiptera. Lac consists of resin, wax and dye, thus has a wide range of applications in food pharmaceuticals, cosmetics, perfumes, varnishes, paints, polishes, adhesives, jewellery and textile dyes, since ancient times. This is the largest producer of Lac in the world with a production of 20,000 tons and 75 per cent of it is exported. Lac sector has a socio-economic importance as it employs 3-4 million people mostly forest dependent and tribals. Lac production promotes biodiversity and conserves host plants. Lac crop being vulnerable to both biotic and abiotic factors results in lowering of the yield. The present review of the work is to help understand earlier work done to generate information to increase the production.

### **Women's involvement**

It may be noted that women can do a majority of the operations in Lac cultivation and post-harvest operations Thus' women in addition to the head of the household would be trained and their skills and competencies around various operation related to

lac production will be enhanced. Annual household income of Lac growers varied from a minimum of Rs 28000 to a maximum Rs 65000. On this basis they could be categorized into three income groups- Low Income Group from Rs 28000 to 40000, Middle Income Group from Rs 40001 to Rs 53000 and High Income Group above 53001. The annual income of almost all the Lac growers has increased after adopting Lac production, it the increase in annual

household income varied from Rs. 75500 to Rs 123000. The percentage increase varied from 47.15% to 63.15% and contribution of lac production in the annual household income varied from 65.51 % to 82.41 %. Comparatively, the activities in Lac cultivation are physically inhibiting women to handle the tree hosts and their involvement mostly limits to the pre and post-harvest work of Lac production.

**Table 1.** The crops and their growing seasons are shown in table given below:

Strains of Lac	Crop	Weather	Lac Host Plant	Seed Inoculation (dhVlapkk.k)	Crop Harvesting	Time (In month)
Rangeeni	Katki	Rainy Season	Palas	June-July	Oct.-Nov.	4
	Baisakhi	Summer	Palas	Oct.-Nov.	June-July	8
		Summer	Ber	Oct.-Nov.	May-June	6
Kusumi	Aghani	Winter	Ber	June-July	Jan.—Feb.	6
	Jethwi	Summer	Kusum	Jan.-Feb.	June-July	6

Sl. No.	Lac Host Plant	Lac Crops	Crop Season
1	Palas	Rangeeni	Summer & Rainy Season
2	Kusum	Kusumi	Summer & Rainy Season
3	Ber	Rangeeni	Summer
4	Ber	Rangeeni	Winter Season

In relation to marketing, the knowledge, mobility and transportation problems restrict women from accessing downstream market players directly, which would have given them a margin advantage. In addition, lack of awareness of market imperfections and ways of negotiations hamper fair returns to them even when such access has been possible. By and large, the scale of involvement and strategic value for women's participation, skills and incomes is more at the back end of the value chain.

#### REFERENCES:

Ajaz-ul-Islam, M., Quli, S., M, Rai, R. and Sofi, P., A. 2013. Livelihood Contributions of Forest Resources to the Tribal Communities of

Jharkhand. *Indian Journal of Fundamental and Applied Life Sciences*. <http://www.cibtech.org/jls.htm>. 3(2): 131- 144.

Bradshaw, S. 2013. Women's role in economic development: Overcoming the constraints. Sustainable Development Solutions Network, UN.

European Commission. 2004. Joint Report on Social Inclusion Reports 7101/04. Brussels: European Commission". [http://ce.europa.eu/employment\\_social/socprot/socincl/joint\\_rep\\_en.htm](http://ce.europa.eu/employment_social/socprot/socincl/joint_rep_en.htm).

Gharai, A., Chakrabarti, S. 2009. A Study on NTFP-related livelihood dependency and people's

- perception of the commercialization potential of selected NTFPs in selected locations of Gumla, Hazaribagh & Simdega districts of Jharkhand. Centre for People's Forestry, Secunderabad, India.
- Goud, V. V. 2015, Mid-Term Review of Udyogini's Lac based Socially Excluded Communities Livelihood Enhancement Project in Gumla District, Jharkhand supported by PACS, New Delhi. An unpublished report made for PACS, New Delhi.
- Horo, A. 2013. Jharkhand Movement, International Journal of Humanities and Social Science Invention. www.ijhssi.org. 2.
- Jackson, C. 1999. Social Exclusion and Gender: Does One Size Fit All. *The European Journal of Development Research*. 11(1): 125-146.
- Jharkhand: Addressing the Challenges of Inclusive Development, World Bank Report no. 36437-IN, 2007
- Kabeer, N. 2000. Social Exclusion, Poverty and Discrimination: Towards an Analytical Framework. *IDS bulletin*. 31(4).
- Kujur, R. 2005. Red Terror over Jharkhand. Institute of Peace and Conflict Studies, New Delhi.
- Moyna. 2010. Great Depression of Lac. *Down to Earth*. November 2010 issue.
- Rawal, N. 2008. Social Inclusion and Exclusion: A Review. *Dhaulagiri Journal of Sociology and Anthropology*. 2: 161-180.
- Sengupta, N., Akoury, P. and Gautam, R. S. 2010. Report of the Study on Lac Sub Sector, Chhattisgarh State Institute of Rural Development, Department of Panchayat & Rural Development, Govt. of Chhattisgarh, Nimora, Raipur (C.G.)- 492015 (the draft)
- Sharma and Kumar. 2006. Role of Lac Culture in Biodiversity Conservation: Issues at Stake and Conservation Strategy. *Current science*. 91 (7): 27.
- Sonowal, C. J. 2008. Indian Tribes and Issue of Social Inclusion and Exclusion, Centre for Studies of Social Exclusion & Inclusive Policies", Tata Institute of Social Sciences Sion-Trombay Road, Deonar, Mumbai 400088, Maharashtra, India.
- Stewart, A. 2000. Social Inclusion: An Introduction. In *Social Inclusion: Possibilities and Tensions*, ed. P. Askonas and A. Stewart, 1-16. London: Macmillan.
- Thakur, S. 2012. Issue of Social Inclusion and Exclusion of Indian Tribes, International Journal on Arts, Management and Humanities 1(1): 14-19 (2012). Department of Sociology, Himachal Pradesh University, Shimla, (HP).
- World Bank Report: Jharkhand- Addressing the Challenges of Inclusive Development. Report no. 36437-IN, 2007.
- World Bank. 2011. Social Safety Nets in Nepal. Draft report, World Bank, Washington, DC
- World Bank. 2013. Inclusion Matters: The Foundation for Shared Prosperity. (Advance Edition). Washington, DC: World Bank
- Xaxa, V. 2004. Women and Gender in the Study of Tribes in India. *Indian journal of Gender Studies*, Sage Publications, New Delhi.
- Yogi, R, Bhattacharya, A, Jaiswal, A, K, and Kumar, A. 2014. Lac, Plant Resins and Gums Statistics 2014: At a Glance. ICAR- Indian Institute of Natural Resins and Gums, Namkum, Ranchi, Jharkhand.