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Location And Distribution Of Forest Based Cottage Industries With Special Reference To Lac Industry Of Purulia District, W.B

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ABSTRACT

Forest is the dominant terrestrial ecosystem on the earth and a great source of livelihood of the dwellers of the region concerned. In fact, forest is a lifeline of a nation because the prosperity and well-being of the civilization directly associated with the healthy and required forest cover of a nation. Forest is a very useful property for a country like India because it provides raw materials and works as a base to the cottage industries. The study area i.e. the district of Purulia is located in the western most part of the state West Bengal. The latitudinal and longitudinal extents are from 22º42′35′′ to 23º42′0′′ north and from 85º49′25′′to 86º54′37′ east respectively. The industry which are won and run by individuals for a small group of people and which employ a tiny number of labors are called cottage industry. The major forest based cottage industries are Lac industry, Beedi industry, Basket making industry etc. As far as the cottage industry in Purulia district is concerned, the establishment of such industry is strongly related to the availability of raw materials, traditional skill, climatic condition and a number of cases the specialization in the organized factory sector. The lac culture is mainly practiced in the tribal belt of the Jhalda I, Jhalda II, Balarampur, Arsha, Baghmundi, Kashipur, Manbazar I, Manbazar II, Bandowan, Barabazar, Jaipur, Hura, Puncha, Raghunathpur I, Raghunathpur II, Purulia I, and Purulia II community development blocks of the Purulia district .The study area is highly blessed with the specific host trees viz., Palash (Butea Monsesperma), Kusum (Schleichera-Oleosa), Kul or Ber (Zizyphus Mouritiana) etc. Apart from that, deforestation,changing rainfall pattern,availability of synthetic resin and some other factors also plays pivotal role in the distribution of the concentration of the lac culture and industry in the area under study. But, most of the raw materials are imported from other states for the last few decades. The present paper aims to find out the reason of the concentration of lac industry in the study area,and reasons of unavailability of raw materials at present as well as the solution of the problems facing by the industry.

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Key Words – Forest, Traditional, lac, cottage industry.

INTRODUCTION:

The industry which is own and run by individuals or a small group of people and which employ a small number of labors and generally run by traditional skill and techniques with the locally available raw material is termed as cottage industry. The cottage industry comes under the small scale industrial (SSI) sector. This sector is a vital constituent of India's industrial sector. The SSI covers a wide spectrum of industries categorized under(a) small-scale industrial undertakings,(b)ancillary industrial undertakings(ANC),(c) export oriented units(EOUs),(d) tiny enterprises(TINY),(e) small scall service enterprises(SSSEs),(f) small scale service business(Industry Related) enterprises (SSBEs), (g) artisn,village and cottage industries, and (h) women entrepreneurs' enterprises. Although the SSI sector was effective upto the financial year 2005-2006 and after that it has been included under Micro Small and Medium Industries(MSME). It is estimated that MSME sector contributes about 8% of the GDP and 45% of the manufactured outputs. So, this sector plays a pivotal role in the Indian economy. (Puri.V.K & Misra.S.K (Late)(2013 Cottage industry can be divided into the following types on the basis of their nature and origin; viz, Forest-based cottage industries, Agro-based cottage industries, Soil-based cottage industries and Mineral-based or Metal-based cottage industries. The present paper is focused on lac industry which is a forest-based cottage industry. Forest-based cottage industries are those industries which depend upon the forest for the requirement of raw materials. The forest resources are important in the developmental programmes of a country. In fact, forests and rivers have nursed civilization in the early years and still continue to help its advancement.

There are a plentiful number of forest-based cottage industries found in the study area, viz., Beedi-rolling industry; Sal-leaf based industry, and basket-making and other handicraft from bamboo, Lac-industry etc. The lac-industry is one of the major industries on the industrial map of the study area; not only in the household industrial sector but also in the overall industrial set up of the district. According to the Manbhum District Gazetteer by H.Coupland, published in 1911, the most important industry in the district after coal was Lac. The export of the Lac from the district in the form of sticklac and manufactured forms was about 2, 00,311 maunds value at Rs.40.50 lakhs in the year 1909, as compared with Rs. 150 lakhs for coal and Rs. 3 lakhs for all kinds of food grains.

Industrial development is today considered as prerequisite for modern economic development. That is why all countries of the world, whether big or small, rich or poor and develop or developing, are channelizing their resources to rapid industrialization. Before the

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rising of the modern industrial system India had a flourishing state of cottage and household industries and Indian manufacturer had a world-wide market. Indian muslin, cotton and silk fabrics, calicoes, artistic wares etc. were in great demand throughout the world. The impact of British connection and industrial revolution led to the decay of traditional handicrafts. The foundation of these traditional industries were shocked due to the British policy of encouraging the import of manufacturer and export of raw materials from India, beside the handicrafts failed to match the machine-made goods in quality and quantity (R.C.Tiwari,2007).Gandhiji was so clear about the crucial importance of village that he declared, "if the village perish,India will perish too" The Gandhian movement of rural reconstruction consisted of eighteen items such as use of khadi,promotion of village industries,basic and adult education,rural sanitation,uplift of backward classes,welfare of women,education in public health and hygiene and prohibition(Reddy,K.V,2001).

OBJECTIVES:

The main objective of this paper is to assess the role of lac industry, a forest-based cottage industry on the rural development in the district of Purulia, West Bengal.

(a) To identify and mark out the actual locational factors responsible for the development of the lac industry & it's characteristics.

(b) To make an overview on the distribution of lac-host trees and their present status in the study area.

(c) To find out the role of lac-culture on the socio-economic life of the farmers.

(d) To identify the reason of fluctuating trend of lac-production over the years.

(e) To make the farmers aware about the sustainable lac culture and make them aware about the scientific method.

(f) To review and measure the consequences of the recent initiative taken by the Paschimanchal Unnayan Parshad (PUP) of West Bengal Government in this regard.

(g) To find out the reason of the seasonal migration of the farmers in spite of the once well-blossomed lac industry in the study area since ancient times.

STUDY AREA:

Purulia is the westernmost district of West Bengal. The geographical location of the district is between 22º42´35´´to 23º42´0´´north latitude and from 85º49´25´´to 86º54´37´´east longitude. It is grilled by the tropic of cancer. The physiographic location of the district is comes in between the young alluvial plains of the West Bengal and the ancient plateau of south-east Jharkhand

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(erstwhile Bihar). It has a long history of socio-cultural revolution. In different ancient Indian literatures this land was referred as *Bajrabhumi, Shumbho Bhumi, Shikhar Bhum, Radha,* Manbhumi etc (Mukhopadhaya, 2003).Purulia has its boundaries on the east with Jhargram (western part of erstwhile Medinipur district) and Bankura district of West Bengal; on the north with the Burdwan district of West Bengal and Dhanbad district of Jharkhand; on the north with-west west and south-west with Hazaribagh, Ranchi and East Singhbhum district of Jharkhand.

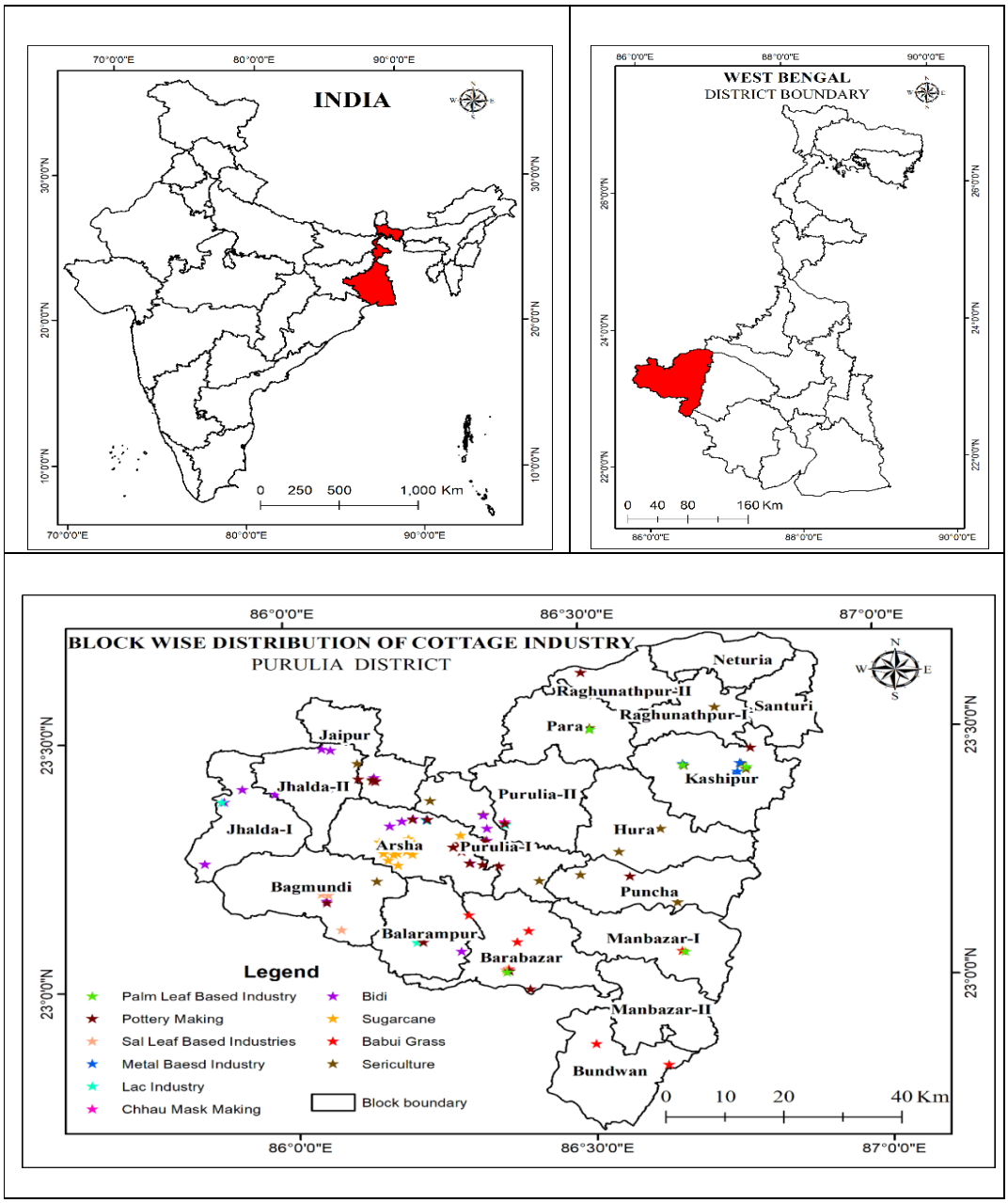

Fig: 1

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RESEARCH METHODOLOGY & DATABASE:

The present study is based on data collected from primary as well as secondary sources. For the collection of primary data extensive field survey have been conducted in the lac growing areas of the district of Purulia and in a few lac processing units- in Balarampur, Jhalda and Tulin. The location of lac industrial units have been collected from Extrex GPS.The C.D.Block and boundary map of the district have been prepared with the help of Survey of India(SOI) toposheet no.73I02,73I03,73I04,73I06,73I07,73I08,73I10,73I11,73I12,73I14,73I15,73I16,73J01,73J05,73J06,73J09,73J10,73E10&73E16 with the scale of 1:50000.All the maps have been prepared on GIS platform. The land use and land cover maps have been prepared with the scale of 1:200000 published by NATMO. This maps clearly shows the forest cover of the study area i.e. the district of Purulia.

The secondary sources are-Annual Report of Shellac Export Promotion Council, Kolkata; Annual report of the Institute of Forest Productivity, Annual reports of Indian Lac Research Institute. The collected data have been analyzed by using appropriate statistical tool. The present paper is based on the primary survey data based on extensive field survey with the help of a well equipped questionnaire and supplemented by secondary data. The secondary data have been collected from books, District statistical handbook, District Census handbook, and journals, District Industries Centre (DIC), Purulia and Micro, Small & Medium Enterprises (MSME) Facilitation Centre (MFC) etc.

HYPOTHESIS:

I. To find out why the development of lac culture is basically limited to certain C.D. Blocks of the study area viz. Balarampur, Baghmundi, Jhalda–I, Jhalda–II, Joypur & Arsha while it can be spread in other parts of the district as the vegetative cover is almost similar throughout the district.

II. To identify the problems of the lac industry.

III. The production of lac in the study area has a fluctuating trend for the last few decades. Most of the raw materials are imported now-a-days from other stataes of of the country.

IV. Deforestation or shrinking of lac- host trees is one of the fundamental reasons of the fluctuating trend of lac production over the years.

V. The lack of knowledge about lac culture and illiteracy is the important reason of the decrease in the production rate sometime.

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HISTORY OF LAC CULTIVATION:

The cultivation of lac and lac-based industry is an old-age industry as the present study area is blessed by a number of lac host trees. Lac is the juicy resins secreted from the body of tiny insects known as 'Karria Lacca' and it is being cultivated in India since the Vedic period. Carcia de Orto was the first person recorded to observe the use of Lac-resin in 1563.But, the export of lac was started in 17th century during the period of East India Company.

IMPORTANCE OF LAC INDUSTRY ON THE RURAL ECONOMY& ITS USES :

There is a great importance of lac industries in the study area. Because, the district of Purulia is drought prone area and agriculturally not sufficient enough in terms of production of kharif and rabi crops. Due to the most of the inhabitant of this area can not earn their livelihood throughout the year and tend to migrate outward or seasonal migration as a labour construction sites or work as a labour brick-klin industry. Thus there is need to strength this industry by taking initiatives from government agencies, help from NABARD and provide enough amount of brood lac to every farmers interested in Lac farming which will definitely be helpful for the rural development of the study area. However, Paschimanchal Unnayan Parshad (PUP) of the Govermentment of West Bengal has been given the responsibility for the development of lac industries just a few years ago. But, it has not been properly functioning so far for the supply of shellac and other problems of the industry. However, it will be quite early to come to a conclusion about this organization at present.

Uses of lac products:

1. The final products of lac are used in the manufacturing of gramophone records.
2. It is used in the electrical insulating industry for manufacturing of micanite.
3. In printing inks, it is used for protective and decorative finishes particularly for wooden and household furniture (for polishing purposes).
4. It is used as a stiffener for felt hats, as a toning agent for leather finished and as base for scaling waxes and gasket cement.
5. There are a number of products such as Bangles, Earrings, pen, pen-pots, flower-vase, etc are being prepared for the last few years in the study area. But most of the product are exported (nearly 85%) to foreign countries.

LAC INDUSTRY: IT'S PHYSICAL & LOCATIONAL FACTORS

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According to the Manbhum district Gazetteers by H.Coupland, published in 1911 the most important industry in the district after coal was Lac. Lac is cultivated in all the 20 C.D.Blocks throughout the district but mainly concentrated in Balarampur, Jhalda-I, Jhalda-II, Barabazar and Manbazar-II, Bandowan-II, Purulia-I & Purulia II. More than 80,000 cultivators are engaged in lac cultivation of which 60% belongs to S.T, SC and economically backward community of the district.

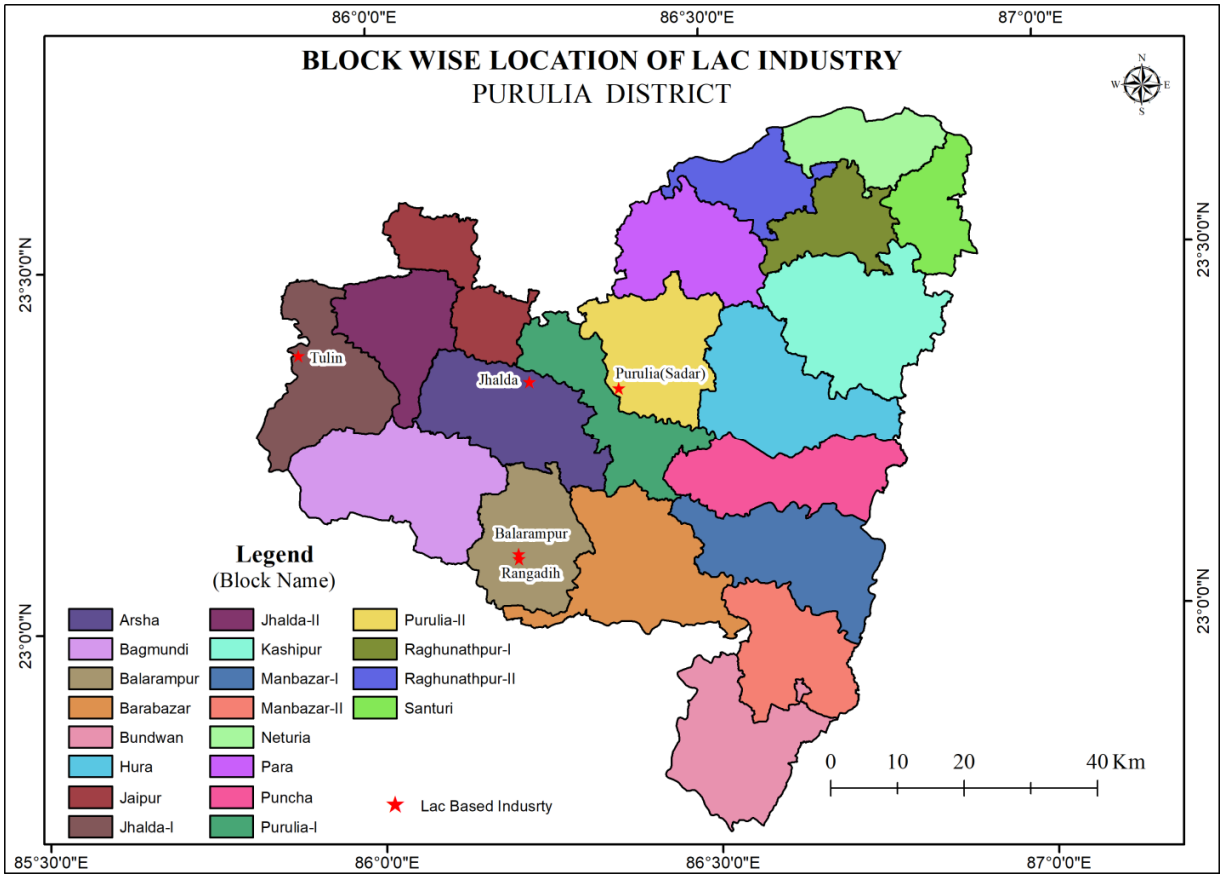

Fig: 2

There are 215 approx working lac factories of which 70-75 are registered processing units located in different event area of the district where as in the year 1909 there were 118 regular lac factories in Manbhum district. There could be more factories in the study area; but the shrinking of host trees and forest cover is being decreased up to 759.571 square kilometers, accounting only 12.13%(as per the lulc, based on the land use and land cover map of the Purulia district prepared on GIS platform) of the gross forest area of the district, while it was 889 sq.kms, about 14% of the total land area of the district (Gazetteer of India, West Bengal, Puruliya),Above 13,500 MT stick Lac, i.e., 60% of the total stick lac of the country was currently

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processed in Purulia district during the year 2014-2015(AT a glance-Achieve under MSME sector, 2015).

Table:1
Number of Factories, Production of Lac and Persons employed in Lac Industry in the district of Purulia

Year	No. of Factories	Average No. of Workers employed per day	Production of Lac from Raw Materials('000 tonnes)
(1)	(2)	(3)	(4)
2009-10	182	2675	3.549
2010-11	183	2648	3.562
2011-12	258	2898	4.548
2012-13	258	2849	4.501
2013-14	184	4029	3.570

Sources : 1) District Industrial Officer, Purulia
2) Lac Development Officer, Purulia

DISCUSSION: The above mentioned table clearly depicts the dependency of the workers in lac industrial units and the impact of lac industry on the socio-economic life of the farmers in the study area. Apart from that many others works are there which are done in the household by other family members, particularly by women who cultivate the lac in the forest areas. Although, the no. of lac host trees are diminishing day by day. According to the district industries centre (DIC, MSME) report of 2014-2015 only there are 50% lac host trees are there in the forest.

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Table: 2

Shows the Land use & land cover (Based on GIS Platform) in the district of Purulia

LULC class	AREA in Sq Km	%
Water bodies	205.493	3.283160
Rice	4481.907	71.607397
Forest	759.571	12.135660
Scrubs	113.739	1.817207
Rural Settlement	239.427	3.825323
Stony Waste	296.867	4.743042
Rice Wheat Pulses	5.774	0.092251
Urban Settlement	61.701	0.985796
Rice Pulses Vegetable	10.144	0.162070
Rice Pulses Sugarcane	4.73	0.075571
Rice Pulses maize	13.6	0.217287
Rice Wheat	11.504	0.183799
Rice Pulses	19.368	0.309442
Rice Oil seeds vegetables	5.226	0.083495
Rice Sugarcane	9.499	0.151765
Rice Oil seeds Maize	3.581	0.057213
Orchards & Plantation	10.954	0.175011
Rice Oil Seeds	2.907	0.046445
Rice Vegetable	3.038	0.048538
Total	6126.573	100

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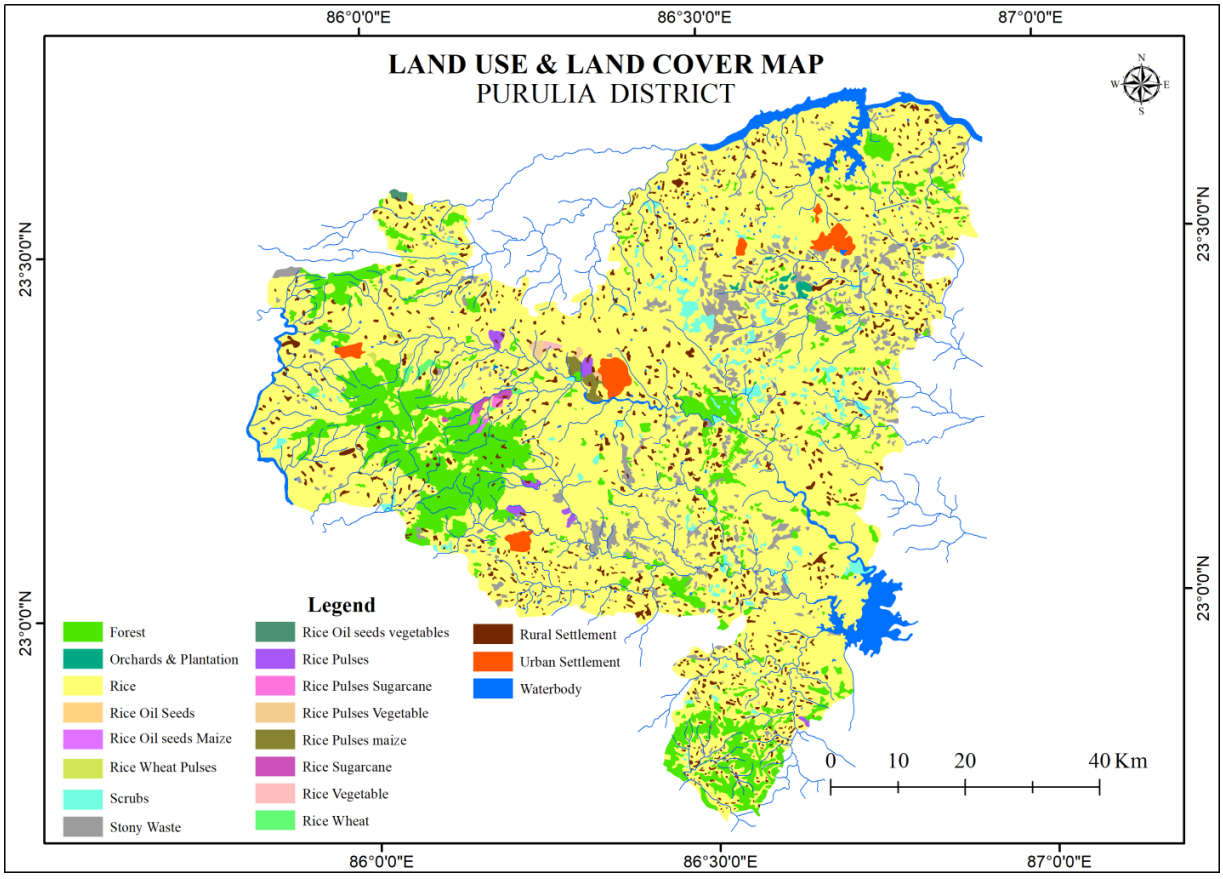

Fig: 3

Lac is a natural resin excretion of secreted by a species of insect called kerria lacca (kerr.) generally knows as lac insects. This insect kerria Lacca or Laccifer lacca proliferate in places at an altitude of 300 m above sea level having warm climate(12oC)with rainfall less than 150cm(Siddhartha.K&Mukherjee.S(2002 Revised).With the help of above mentioned discussion, it is very simple to stay that, Lac is the most considerable profit making crop in the tribal areas of the district of Purulia as well as it prolongs to be one of the local industries in the district. The Lac is a cash-crop and its farming has been conventionally curried out on the branches of naturally occurring specific host trees viz (Zizyphus Mauritiana), kusum (schlechera-aleasa) etc.

These insects initiates life as a diminutive red color red larva just over half-a-millimeter in length which is natural resin excretion of secreted by a species of insect called kerria lacca (kerr.) generally known as lac insects emerged in immense number from the bodies of the nature female insects and grows on twigs of certain host trees and the settlement occurs upto 150-200 larvae per linear inch. It consumes the soup or juice as its food and fabricates a fluid that envelops its body as a protective cover. This fluid when hardened becomes the resin that is

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known as lac and the settlement occurs up to 150-200 larvae per linear inch (Gazetteer of India, West Bengal, Puruliya).

The life cycle of Lac insects occur twice in twelve months but actually four crops are grown. The four Lac crops are named after Hindi months in which they are cut from trees. The life cycle is stated below:

Host Trees	Pruning	Harvesting Broadlac & Infection	Commercial Crop Reaped	Harvesting Broadlac & Infection	Name of the commercial crop
Rangini or Non-Kusumi	Feb-Mar	June-July	Oct-Nov	Oct-Nov	Katki
Kusumi	April	Oct-Nov	April-May	June-July	Baisakhi
Crops	Jan-Feb	June-July	Dec-Jan	Jan-Feb	Aghani
	June-July	Jan-Feb	Mar-Apr	June-July	Jethwi

The Lac from which swarming is about to occur is termed as broodlac. Lac larva materialize from the brood within a weak or ten days from the time of first appearance and to get exceptional result inoculation should not be deferred beyond two-three days of noting larval emergence from the broodlac. The larva are projected to the host trees on which it is proposed to host a lac crop by time a number of sticks of broodlac to it; this is termed as inoculation or infection. After a few weeks of larva settlement the male insects from their small cells come out fertilize the female and dies. The females not at all depart their cells but continue and maintain to secrete lac; within their ovaries the eggs which will produce the next young generation for development.

After the infection of the trees with broodlac minute or no attention is needed for the crop. When the lac crop matured in the form of broodlac is reaped by the shoots around 8-10cm above the ground. All sticks with or without lac coat is cut so that new tillers of uniform age and size are acquired and plant can be reutilized six months after harvesting again. The encrustation on lac sticks when separated of is called stick lac and it passes through several intermediaries to reach the manufacture. In the manufacturing units, the sticklac is crushed in machines and sieved and winnowed to free it from the wooden pieces and this is then washed in cement pots.(4) After that, the washed lac is dried on cemented floor and is again winnowed

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to tree it from dust and impurities and reported into different granular sizes. Due to the granular shape it is called seedlac and is locally known as chowrie. The seedlac is poured in a long cloth bag, one end of which fixed to a wheel and rotated by labourers. The other end of the bag is containing seedlac lies in the hand of the kariyar sitting in front of an oval-shaped charcoal oven. The cloth bag is twisted in front of fire and the molten lac is taken out by spatula and spread over the glazed porcelain cylinder which is filled up by hot water. The molten lac on the cylinder is made into small sheet with the help of palm leaf called near. After that, it is stretched into thin sheets with the help of hands, feet and mouth by the labour called bhilwaya. The lac flakes are called shellac or chapra. When the molten lac is made in the form of button by being spread over galvanized iron sheets, it is called button lac. The inferior varieties of molamma, kiri and passewa are obtained in different stages of the processing of lac in the factories.

PRODUCTION OF STICKLAC (IN QUINTALS):

YEAR	PURULIA	WEST BENGAL	INDIAN UNION
1963-64	36018	39750	287206
1964-65	19072	20845	176597
1965-66	20342	24098	234763
1966-67	23329	27808	296724
1967-68	34525	39004	387791
2014-2015	135000		225000

All the process like pruning, Inoculation, hoisting, Reaping stick lac, washing, drying up a winnowing and removing of impurities etc. are uphold in homely environment of in the rural villages of Purulia district. In the past the crushing was usually done in sil-nora, which system was prevailed in Tulin and Manbazar. At Jhalda, Balarampur and Purulia almost all factories have roll-crushers. But, presently one electric crusher machine have been set up in Balarampur and 2 machines in Jhalda. The industrial units of lac are mostly confined in the villages of Rangadih and Balarampur town area of Balarampur C.D.Block in Purulia district. Apart from that, some units are found in Jhalda town and Tulin region of the Jhalda-II C.D.Block of the study area.

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CONCLUSION:

As per the study it is clear that, this industry is facing a number of problems such as non-availability of raw materials as well as dependency on the imported raw material due to sharp shrinking of lac-host trees, particularly kusum and kul or ber trees in the study area; insufficient supply of stick lac among the interested farmers, lack of loan facilities to farmers at reduced rate,illiteracy, traditional machines in most of the units and competition with synthetic resins in the national and international market has severely affected this age-old household industry. According to the district report of 2014-2015 50% of total lac host trees are being exploited for lac cultivation. Although there was a sharp increase of lac factories registered up to 4548000 tonnes in 2011-12 & 4501000 tonnes 2012-2013;but it has once again declined up to 3570000 tonnes in 2013-2014.If this trend continues, the lac industry will soon become a sick industry in the study area. There is need to set up a lac development board or co-operative society which may take up the above mentioned issues to minimize the seasonal migration of labour and ensure the sustainable rural development in the study area.

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