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Socio-economic and socio-cultural relationship of forest fringe people in Jhargram district of West Bengal with *Shorea robusta* Roth plant

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Abstract

Jhargram district is a part of West Bengal and this newly constructed district came in the list of state districts in 2017. The district is 22nd district of West Bengal. It consists of 8 community development blocks (CDB) under lateritic part of southwest Bengal. It has its lowest population density among the districts of West Bengal and most of the people live in rural areas. Cultivation is the main practice in the fallow land and forest related activities are the source of income. The district has its 2513 villages according to the census 2011. Forest is common everywhere but it is discontinuous patch intermingled with thorny bushes in waste land and demarcated by cultivated land and roads. Sal (*Shorea robusta*) is the main composition of forest and centre of attraction of tourists. Elephant, the endangered species of Asian kind is very common here in the forest. People depend on forest round the year for various activities and means for mufti-purpose use. In this communication author shows how people of Jhargram district are directly connected with *sal* forest for their socio economic development and cultural activities including beliefs and taboos.

Sal (*Shorea robusta* Roth) is ecologically and anthropogenically important species everywhere. *Shorea robusta* forest is unique due to its own characteristics. It is one of the most important timbers yielding plant. Many non-timber forest products are obtained from *sal* plants and its leaf litter creates opportunities to regenerate many micro and macro ground flora[2]. It is observed that *sal* forested area have 1.1 to 1.5 degree Celsius less temperature than just near the edge of *Sal* forests. Sal forest of North Bengal under West Bengal state is moist deciduous though in Hills of Kalimpong district it is of mixed kind. In Dooras of Alipurduar district and Jalpaiguri district huge trees of plain forest type have been recorded. The above mentioned species is rare in forest of Buxa Tiger Reserve (BTR) but in forest of Kalimpong it

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is co-dominat with other hill tree species. In south west Bengal, two types of *sal* vegetation have been recorded by Das[1]. In his research he showed a few patches of *sal* plants were examined from Chalti-Basantia area of Contai sub-Division under the Purba Medinipur district. Here, sandy coastal belt occupies enormous bamboo thickets admixed with mesophyte vegetation along with *sal* plant. Arjuna (*Terminalia arjuna*), Bahera (*T. bellirica*), Khiris (*Samanea saman*), Bel (*Aegle marmelos*), siris (*Albizzia lebbeck*), Amra (*Spondias dulcis*), Harituki (*T. chebula*) and Kadam (*Anthocephalus cadamba*) are the components along with small patches of *sal* species. On the contrary, in Jhargram district *sal* is dominant species along with many tree species like mahul (*Madhuica indica*), kend (*Diospyros melanoxylon*), kurchi (*Holarrhena antydysenterica*), galgali (*Cochlospermum religiosum*), vela (*Semecarpus anacardium*), raktarahara (*Soymida febrifusa*), nim (*Azadairachta indica*), piyal (*Buchanania lanzan*) and Bandar pitchla (*Sterculia foetida*). In Nayagram, and Gagnasuli of Kapgari Range, we recorded *sal* species along with *Eucalyptus* as plantation species. But in Jhargram under regional research station, BCKV, we have noted planted *sal* species under experimental condition. So, as a whole variation of *sal* stands have been recorded for many places in West Bengal under study. Sal plants are most important source of hardwood to produce good quality timber for constructing frames for house doors and windows. Dry leaves are used widely for the production of leaf plates and leaf bowls throughout India which is used to serve foods. Fresh young *Sal* leaves are used to serve "pan", "Chana" and "Golgappa". Uses of *Sal* leaves for these purposes are cost effective and eco friendly as they are bio degradable though their use is declining day by day. Leaves are very often used as fodder for goats and sold in the market. Dry fallen leaves, dry shoots and twigs are used for fuel wood and usually sold in the nearby markets of this district.

Sal resin in Bengali 'sal dhuna or guggul' is one of the major components which is needed for manufacturing agarbatti or incense sticks[4]. The present study forecast on the impact of *sal* on the socio-economic development of local people for their livelihood. By using different methods like box method, cup and lip method, rail method and bore hole methods *sal* resins can be collected and there may be a good opportunity of an employment for local forest dwellers[5]. Sal leaves, seeds, dry sal sticks, and green twigs have market values. Leaf litter of the forest ground is the abode of many wild edible mushrooms which is tastier and costlier than cultivated mushrooms. Remembering the theme in mind a detailed study on Jhargram district on *Sal* plant have been taken into consideration. Culturally this plant is rich as leaves, twigs, flowers, stumps and whole plant is associated with spiritual belief of "Tribal people" and "*Mahata*" cast peoples of the Jhargram district.

Area under study :

In this communication, Jhargram, Binpur-I, Binpur-II, Gopiballavpur-I and Naygarm Community Development Blocks under Jhargram district have been taken for study. Rivers like Subarnarekha, Kangsawati and Dulung are the main rivers of this area and act as water channel under a part of

Chhotanagpur Plateau. Several forests beats and range offices were taken for study those beats were under Jhargram district. It has 4 forest divisions *i.e.* Jhargram, Kharagpur, Midnapore and Rupnarayan as on 01.04.2021 as per the distinction of Forest Directorate of Govt. of W.B.

Geographical territory and village survey was done as per random sampling method and 5% forest beats were taken including 5 villages in each site around the beats. Frequent visit to forests and survey on people those who collected materials from forest for their livelihood are taken in to consideration using questionnaire methods. Ecological studies on *sal* plants in some places of forests were done using standard quadrat and line transect methods. For quadrat 20m x 20m plot and for line transect 30m line were taken. As the particular site is plain area with less dense forest which showed 4 to 5 large trees in one line under line transect method hence line transect method has not been considered. Google form was created and survey on *sal* plants for the daily practice of local people using students of various colleges was done. Sacred groves in these districts were visited and weekly market survey was done for non-timber *sal* products available there round the year. In field (forest) and in market photographs and items based on *sal* plants were collected.

Table-1. Composition of *Shorea robusta* with other elements in forest (20m x 20m quadrat) at Gagnasuli under Kapgari forest, Jhargram.

Sr. No.	Name	GBH (in cm)
1	*Shorea robusta*	18, 12, 07, 35, 50, 63, 58, 24, 50, 10, 07, 48, 39, 42, 39, 34, 39, 46, 58, 31, 25, 18, 42, 56, 53, 37, 51, 46, 33, 62, 52, 38, 17=33 Nos.
2	*Buchanania lanzan*	07, 06=02 Nos.
3	*Cochlospermum religiosum*	01 Nos. (Cut stump)
4	*Diospyros melanoxylon*	10 Nos. (Shrubby)
5	*Madhuca indica*	08 Nos. (Shrubby)
6	*Holarrhena antidysenterica*	11 Nos. (shrubby)

Table-2. Price list as per market survey on few products from *sal* plant and the *sal* forest:

Sal leaf (green) one bundle	Rs10/	Sal leaf plate 100 number	Rs50/
Leaf Bowl 100 number.....	Rs30/	Kurkut 100 gm	Rs 25/
One cft Sal wood	Rs 1500/	Sal fuel wood per quintal	Rs 500/
Sal Resins 100 gm.....	Rs 25/	Sal seeds 1kg	Rs 200/
Sal datan per pc.....	Rs 1/	Mushroom 1Kg.....	Rs 200/ to Rs 500/

Photo plate 1 (Fig. 1-8)

Fig. 1 *Sal* resin (Beng.-Dhuna),

Fig. 2 Green *sal* leaves,

Fig. 3 Green *sal* plates

Fig.4"karang ud" mushroom

Fig.5"Muchi ud" Mushroom,

Fig.6 "Bali Ud" On herbaceous vegetation

Fig. 7 *Sal* mushroom (natural) in Jhargram market,

Fig. 8 Anthill in *sal* forest

Sal (*Shorea robusta*) is a dominant species in this forested areas the girth at breast height (GBH) varied from 07cm to 63 cm (Table-1). Other associated species like mahul, bahera, kend, rakta rahara, kurchi, ban chalta (*Dillenia pentagyna*), *Eucalyptus* and harituki are present in the forest. *Sal* plants give us *sal* resin (Beng.-Dhuna, Fig. 1), green *sal* leaves (Fig. 2), seeds, twigs, green *sal* plates (Fig. 3), dry *sal* plates, pole, bole, wood, and dry twigs and leaves for fuel wood. In local market all the items mentioned above people sale the items round the year as per the availability and are means of earning money for the forest fringe people (Table-2). *Sal* forest in this district is a ground to harbour many valuable mushrooms (Fig. 4, 5, 6) and the demand of these items is high in local markets (Fig. 7) (Table-2). The plant acts as host plant of many insects like red ants and tussar moths. Red ants are economically important and sold in the local market round the year as they believe it has its medicinal property against cold and cough. Dry leaves during winter season fall on the forest ground which is used by local people as fuel. Termites decompose these dry leaves to enrich the forest soil and enhance the growth of ecto and endo-mycorrhizae[3]. In cultural festivals, people mainly tribal group use *sal* twigs and saplings for their use in rituals. 'Maan more' – a ritual in which they place a *Shorea robusta* (sal) saplings after de-topping the sapling and grounded in front of the house and make a fence round the plant. '*Baha*' is another ritual in which sal is used. New leaves and flowers are used in their sacred groves called '*jaherthan* or *garamthan* during '*Baha*' festival. In *Karam* (Mahato people) and *Karaam* (santal) people use sal plant and worship it. '*Jam-sim'* –is another festival in which they planted sal branch in their rice field and worship as per their rituals. *Sal* leaves and mango leaves are used widely during marriage ceremony in *Santals*. In village boundary, sal plants is used as special place of goddess and some sacred groves the component is *sal* in all the '*jaher than'* or '*garam than*'. So, *Sal* plant has its immense cultural value. Cart building materials, cottage building materials and beam of buildings are constructed by *sal* wood. *Sal* twigs used as tooth brush and young *Sal* leaves's juice is used to treat dysentery.

Shorea robusta (*Sal*) is a deciduous forest tree element in Jhargram district of West Bengal. This species is highly economic as well as high ecological value. Due to tourist attractions, this plant should be conserved in forested areas and cultural sites should be protected. As urbanization going on in the district so illegal feeling of *Sal* trees is going on as routine practice. This should be stopped to safe local environment, microclimate as well as local culture.To makes the tourism, ecotourism, *Sal* forest should be conserved and indirect benefit should be taken. To protect soil erosion and maintain water level *sal* forest should be conserved. It maintains temperature and its own wildlife such as big animals to small micro-fauna and flora.

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