

Labour Market Conditions of Natural Rubber Plantations in Tripura: An Inquiry

Pradip Chouhan*
Indraneel Bhowmik

Abstract

Natural Rubber (NR) now occupies a significant place in employment generation and contribution to the state GDP of Tripura. Introduced as a mode of afforestation drive in the early 1960s, the NR based model of rehabilitation for tribal shifting cultivators has been a success story of governance for quite some time. The success of the sector can be attributed to the well-coordinated efforts of the various augmenting agencies like Rubber Board, Tripura Forest Development and Plantation Corporation Limited (TFDPC) and Tripura Rehabilitation Plantation Corporation Limited (TRPC) which have shown remarkable results in the socio-economic welfare of the targeted beneficiaries. NR being a labour dependent system, the sector is instrumental in employment generation in the state. This paper is an attempt to examine the labour market and employment conditions looking at the trend of wages for the rubber tappers working in both public as well as private rubber plantations for the period 2000-01 to 2013-14. Cuddy Della Vale index has been used for examining the stability of wages. The paper finds that the real wages of the tappers are lesser than that of the agricultural and unskilled labourers. Still, the rubber plantation sector attracts the labour force primarily because of the opportunity for long term engagement during a year. However, in recent years, approach of the rubber growers to cut down the costs of tapping has not only reduced the optimum absorption of the labour force also the quantity and quality of output.

I. Introduction

The government of Tripura considers natural rubber plantations as a successful model of rehabilitation for the landless tribal shifting cultivators (Bahuguna, 2006; GoT, 2015). In past 50 years the state has emerged as the second largest rubber growing region of

* Pradip Chouhan (pradipchouhan08@gmail.com) and Indraneel Bhowmik are with Department of Economics, Tripura University.

India. Initiated as a part of afforestation drive by the state forest department in 1963, this vital ingredient for the modern civilisation has been identified as one of the most potent force for Tripura's development. Scarcity of land in the traditional rubber zone of Kerala, the Rubber Board of India in the pursuit of new areas for expansion has adopted specialised schemes like Accelerated Rubber Development for the North East (Viswanathan and Bhowmik, 2016). The National Bureau of Soil Survey and Land Use Planning had identified that 650,000 ha of rubber plantations can be raised in the states of north-east region of India of which 100,000 ha in Tripura (Bhowmik, 2006). The outcome is that the state of Tripura has 70295.7 ha of rubber plantations, 37,345.8 ha of tappable area and 44,740.2 tonnes of production in 2014-15 (GoT, 2015). Natural rubber accounts for almost 3 to 3.5 percent of the GSDP of Tripura (Bhowmik and Viswanathan, 2015). Rubber plantations and its bearings on the social and economic front in the state of Tripura is a matter of enquiry because of the exemplary role of public sector initiatives particularly through extension services. The well-coordinated efforts of the various rubber augmenting agencies like Rubber Board, Tripura Forest Development and Plantation Corporation Limited (TFDPC) and Tripura Rehabilitation Plantation Corporation Limited (TRPC) have shown remarkable results in the socio-economic welfare of the targeted beneficiaries, particularly the scheduled tribes (Dey, 2009; Joseph, George and Dey, 2012). The economic viability of rubber plantations in Tripura has been attested by studies (Bhowmik, 2006; Ghoshal, 2014; Dey et al, 2014). Along with favourable agro-climatic conditions natural rubber requires an uninterrupted supply of skilled workers for economic viability and 70 per cent of the lifetime expenditure of rubber plantations are on labour (Burger.et.al, 1995; Remesh, 2010) and thus the sector is instrumental in employment generation, which is of utmost importance in the backward and less developed nations.

The rubber plantation sector of Tripura has developed at the behest of the state agencies as a rehabilitation model for shifting cultivators, where the beneficiaries (the smallholders¹) work as the owner-operator of the plantation unit and family labour is the traditional norm. More than 20,000 hectares of rubber plantations in the state have been developed as part of rehabilitation programmes (Viswanathan and Bhowmik, 2016). The government farms, which are owned and managed by the TFDPC, appoint hired labour for plantation activities. Market dynamics in later periods also led to the growth of rubber plantations under private ownership, which often depends on hired labour. Labourers in the rubber farms of Tripura have traditionally been wage labourers with no claim to the output (Bhowmik and Chouhan, 2013).

Labour relations in the rubber smallholdings of Tripura are broadly classified under the framework of the *Principal-Agent* relationship which is often characterised by the personalisation of the contracts. The success of the growers (the principals) in the form of higher production, profit and income are dependent on the quantity and quality of

¹ Land size classifications of Rubber Plantations- less than 2 ha: small holdings; 2 to 4 hectares: semi-medium holdings; 4-10 hectares: medium holdings; 10-20 hectares: large holdings; above 20 hectares: estates; India has around 1.25 million small holdings, which account for 90 percent of the total area (Burger, et al, 1995; www.rubberboard.org.in)

the effort put in by the labourer/tapper (the agents). Poor standards of work will leave a lasting impact as the tree is injured from improper tapping and is likely to have lesser yield. Moreover, the smaller size of the holdings do not offer any economic viability to employ supervisors, while the odd or flexible work hours of the tappers often prevent personal supervision. Thus the dependence of the growers on the agents is immense. The principal attempts to get the best agent for himself and thus is expected to offer extra-contractual benefits to retain the efficient workers. On the other hand, the agents are aware of the benefits of being a rubber tapper which provides them work throughout the year along with some extra-contractual benefits. Therefore, both, the grower and the tapper devise or develop personal ties. Further, compliance of the contractual terms and conditions assist both the players in building their reputation and reduce transaction costs. Moreover, the spatial settings often keep both the actors within a common social framework, not going for any form of deceit (Remesh, 2010; Viswanathan, 2013; Bhowmik and Viswanathan, 2015).

This paper is an attempt to augment the understanding on labour market conditions in rubber plantations and stems with two objectives-

1. To examine the trend and nature of wages of the rubber tappers
2. To study the employment conditions of the workers involved

II. Data and Approach

The stated objectives has been addressed on the basis of a field survey conducted in the most prominent rubber growing region of the state, the erstwhile West Tripura and South Tripura districts, using a structured questionnaire. Interactions with the workers in private plantations were held Belbari and Fatikcherra areas of West Tripura; and Dhuptali and Khupilong areas of Gomati (curved out from South Tripura). Further, the character of the private sector workers have been compared with that of public sector workers obtained from two centres of plantations in Pathaliaghat, Sepahijala district(curved out from West Tripura) and Takmacherra (in South Tripura district). The field survey was conducted in the months of January and February, 2015. It may be noted that TFDPC, is the largest NR growing unit of the country with more than 11000 hectares of plantation (Bhowmik and Chouhan, 2013).

Data on wage of tappers are also collected for the period 2000-2013 from TFDPC offices and the record books of private rubber growers. In regard to wages of agricultural and rural unskilled labourer, secondary data from RBI is used for the given period.

To estimate the trends of wages of tappers (public and private), agricultural and rural unskilled labourers, exponential growth rate formula of $Y = ab^t$ (Chandy et. al, 2010) has been used. Further, to deal with inflation, the real values of the variables were calculated using GSDP deflator of the state. The study includes only the wages of rubber tappers. Cuddy Della Vale Index (CDI) has been used for estimating the stability of wages of the tappers, agricultural and rural unskilled labour. Since in the case of

time series variables, estimation of variability use of the usual coefficient of variation over estimates the result, CDI corrects this over estimation. The formula is given as, $CDI = CV * (1 - AdR^2)^{1/2}$, where, CDI = Instability index (per cent); CV = Coefficient of variation (per cent); and Ad-R² = Coefficient of determination from a time trend regression adjusted by the number of degrees of freedom (Chandy et. al, 2010, Chandy & George, 2012). Further, for the sake of simplicity, the value of CDI has been divided into three groups, which represent the different range of instability.

- o Low instability = between 0 to 15
- o Medium instability = greater than 15 and lower than 30
- o High instability = greater than 30 (Sihmar, 2014)

Insights drawn from literatures

Labour issues in rubber plantations have been an area of interest for scholars; however, the focus of the existing studies has mostly been on the traditional rubber growing zone of India. Study (Viswanathan et al. 2003) on rubber smallholdings of Kerala, indicates that tapping task in a unit gets reduced with diminishing size of operational holding and thus forces the tapper to attach himself with more than one grower. The earning of the workers in the rubber plantations are low earning compared to other comparable activities, which has led to withdrawal of skilled and experienced workers from the market. Moreover, volatility of natural rubber prices forces the growers to resort to several costs saving measures like- less use of fertilizers, curtailment in weeding practices and reduced use of hired labour. Study shows that farmers who use only hired labour did reduce tapping days by 8.6 percent; in contrast the farmers who use only family labour have raised annual average tapping days by 0.9 percent (Mohanakumar and Chandy, 2005). The decline in hired labour not just leads to withdrawal of master tappers from the labour market, rather leaves the tasks to be performed by the lesser skilled. Labour contracts are mostly informal and personalised in nature and generally for one year and without any legal bindings. Weekly advances are the most common means of wage payment and the amount of wages/ advances are often associated with tapping task, level of skill, experience, years of service, and reputation in the locality (Remesh, 2010). Rajasenan (2010) observes that implementation of poverty alleviation and employment guarantee programmes like MGNREGS have led to worker scarcity in plantations and low wages have made the sector unattractive for the younger generation. The growth rates in wages are much lower than that of farm income (Chandy et. al, 2010) and the share of tapping wage in total farm income has reduced in the post reform period among the rubber small holdings (Chandy and George, 2012). Further the issues in shortage of tapping labour have also aggravated due to limited policy options and limited funds that has made the welfare schemes of the Rubber Board less attractive to the labourers (George, 2012).

On the other hand, the studies on the rubber plantations in Tripura are more centred on general economic underpinnings like production, productivity and profitability (Bhowmik, 2006; Bhowmik, 2009; Sharma et al, 2011; Ghoshal, 2014; Dey et al, 2014). However, there are reports of labour shortage in certain plantations due to the opportunities offered under MGNREGS (Sharma, et.al, 2011). The increasing area under

rubber plantations in Tripura calls for more labour engagement. The Public sector rubber farm, TFDPC employs more than 6000 labourers across the state but the labour market is characterised by informality of contracts. Incomes of the workers are low though employment opportunities are often for larger part of the year (Bhowmik and Chouhan, 2013). In recent years, a new type of labour relations is emerging in some parts of the state with the labourer, instead of being paid wages is being remunerated with a share of the output. This phenomenon is akin to the system of share cropping in traditional agriculture. As per this, rubber tappers and the owners generally share the output, be it latex or sheets (Bhowmik and Viswanathan, 2015). However, with newer areas of plantations being mostly under private occupation, the labour market is undergoing a transition and this paper tries to examine the differences among the workers of the public and the private sector.

III: Labour Market Conditions: As Revealed by Data

This section has two parts. The first part deals with the issue of wages, while the second part focuses on the employment conditions. From Table 1, we find that the average daily wages of the agricultural labourer have been the highest for seven of the thirteen years under consideration, of which six years, i.e. 2002-03 to 2007-08 were in succession. The wages of the unskilled labourer have been higher for five years, while the wages of rubber tappers have been higher only in 2010-11 and 2011-12. Among the rubber tappers also, it is seen that the public sector wage had been traditionally higher, however, the trend reversed since 2011-12 and continued for the last three years under consideration. Significant increase in the real wages of the private rubber tappers in 2011-12 can be considered as a fall out of the huge increase in NR prices².

Table 1: Trend in real wages of rubber tappers in public and private sector, agricultural labour and unskilled labour in Tripura (Rs. per day)

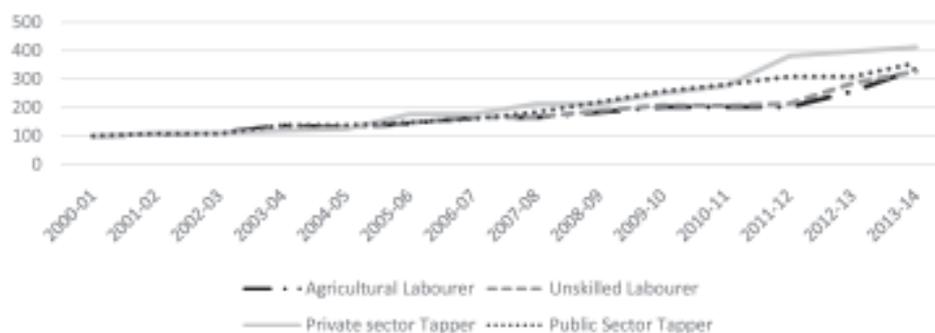
Year	Private sector	Public sector	Agricultural labourer	Unskilled labourer
2000-01	23.41	25.88	33.37	33.38
2001-02	25.91	27.76	35.92	35.94
2002-03	25.54	27.37	36.66	36.49
2003-04	26.21	33.78	43.33	39.18
2004-05	47.00	58.00	70.45	70.39
2005-06	65.11	60.25	76.13	76.67
2006-07	61.94	61.94	82.43	82.78
2007-08	71.86	68.31	79.84	79.85
2008-09	69.3	78.71	85.31	87.37
2009-10	76.01	86.41	87.87	90.09
2010-11	78.35	88.05	81.8	83.46
2011-12	101.3	90.82	76.59	80.74
2012-13	98.34	84.67	90.64	100.53
2013-14	109.7	104.81	127.06	123.96

Source: Computed from information collected at TFDPC Centres, Private Rubber Growers & RBI

² The average annual price (nominal) of Ribbed Smoked sheets, the most common form of Natural Rubber, increased from Rs. 66.99/kg to Rs. 208.05/kg in 2011-12. In subsequent years, price declined and in 2014-15, it was Rs. 132.57/kg (<http://rubberboard.org.in/YearlyPricesPage.asp>; accessed on 31/3/2017)

Figure 1 illustrates the index of wages of the four categories of labourers under consideration. The real wage of the rubber tappers have increased by more than four-fold during the period. The increase has been the most for the private sector tapper, while the increase has been least among the unskilled labourers.

Figure-1: Index of real wages of rubber tappers in public and private sector, agricultural labour and unskilled labour in Tripura



Source: computed from Table-1

Table 2: Real wage growth rate of rubber tappers in public and private sector, agricultural labour and unskilled labour in Tripura

Category	AGR	R Square	Adjusted R Square	F	Significance F
Private sector Tapper	13.48	0.90	0.89	108.48	0.00
Public sector Tapper	11.82	0.89	0.88	93.92	0.00
Agricultural labourer	9.20	0.80	0.78	47.23	0.00
Unskilled labourer	9.77	0.82	0.80	54.55	0.00

Source: computed from table-1

Table 2 shows the trend of growth rate of real wages for the two categories of tappers, agricultural and unskilled labourers in Tripura. It can be seen that wages for private sector tapper has recorded the highest growth rate followed by that in public sector. The growth rates have been the least for the agricultural labourers. The C-D Valle instability index (Table 3) shows that of the four categories of workers, the degree of instability has been low for all, except that of agriculture labourer. The index value is least for the public sector tappers. It may be noted that the nominal wage rate of the TFDPC farms are revised occasionally and are part of an administrative effort, which are generally slow and steady, unlike that of private farms, where market forces have greater intensity. Wage rates in the private sector are more influenced by the local market conditions and immediate demand and supply conditions of the labour market. On the other hand, engagement with TFDPC is comparatively long term and is on the basis of the institutional dynamics, where the process of attachment is more structured.

Table-3 C-D Valle instability index

Variables	C-D Index	Degree
Private sector Tapper	11.49	Low
Public sector Tapper	10.14	Low
Agricultural labourer	16.73	Medium
Unskilled labourer	14.91	Low

Source: computed from table-1

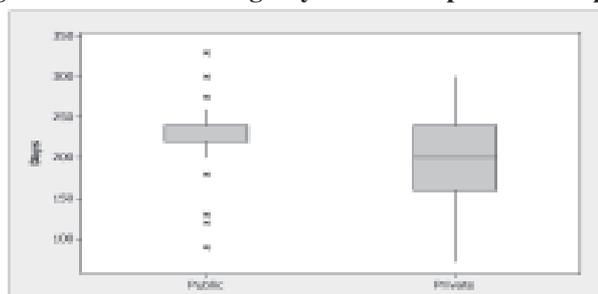
The rubber plantation workers generally have employment for the entire year except for the annual resting period, which is generally February-March, when rubber tree alike other deciduous trees shed their leaves and are considered to be unfit for tapping. Some days are also lost due to rain. Table 4 shows that majority of the workers (55.4 per cent) get an annual engagement between 181 to 240 days in rubber plantations. The engagement is higher in public sector units as only 10 per cent of the workers have received less than 180 days of employment against more than 37 per cent of their private sector compatriots as the nature of employment is mostly seasonal for the later as part of cost reduction mechanism. The average number of days employed annually varied between the two categories significantly ($T=2.56^{**}$). Figure 2 showing the spread of the annual working days of the two types of plantations suggest that the existence of both upper and lower outliers for the public sector farms.

Table 4: Annual employment in rubber plantations

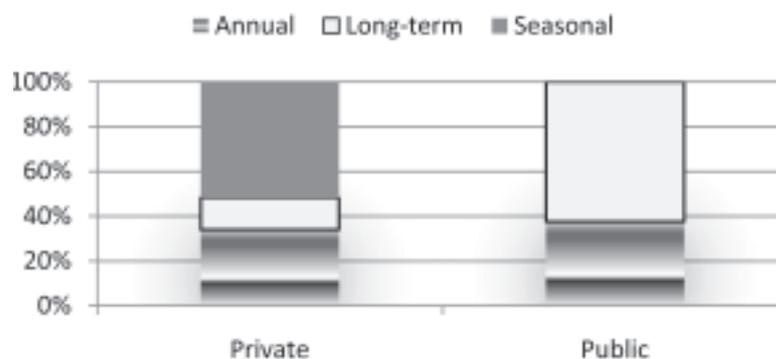
Working days	Private sector	Public sector	Aggregate
≤120	3(6.98)	2(7.5)	5(6.02)
121-180	13(30.23)	2(2.5)	15(18.07)
181-240	19(44.18)	27(67.5)	46(55.42)
241-300	8(18.60)	8(17.5)	16(19.28)
≥301		1(2.5)	1(1.20)
Total	43(100)	40(100)	83(100)
Mean	202.81	228.95	215.41
Max	300	330	330
Min	72	90	72

Notes: Information Not available from 13 respondents; Figures in parentheses indicate percentage
 Source: Field Survey, 2015

Figure 2: Annual working days of the respondents in plantations



Source: Computed from data derived from Field Survey, 2015

Figure 3: Duration of contracts

Source: Field Survey, 2015

From Figure 3 we observe that there are three types of contract as opined by the respondents- long-term, annual and seasonal. Long-term contract means that the worker will do his assigned duty- be it only tapping or tapping and associated processing in the farm until further order from the employer. Annual contract, as the name suggests is subject to renewal every year and the workers are often assigned to perform the maintenance job at times of tapping break. The workers belonging to the first category are also assigned activities related to maintenance of the plantation. On the other hand, seasonal employment refers only for the tapping period with breaks during the lean period. Seasonal contracts are in vogue only in the private plantations and such workers generally do not perform other maintenance activities like fertiliser application. As the data indicate the private plantations go for a more flexible mode of seasonal labour recruitment.

In this context, it may be noted that the contracts are extremely informal and are mostly oral in nature. None of the workers in the private sector plantations have any written appointment, while the workers with more than 240 days of employment in TFDPC plantations are, given a Leave Card which enables them to enjoy casual leave, maternity leave and paid holidays (if a worker worked on the immediate day before and after the national holidays) along with Sick Leave. Sick leave wages are two-thirds of the approved daily wage rate and can be availed to a maximum of 14 days per annum on submission of medical certificates. The workers are however free to work with multiple growers if there are opportunities. However, some of the private sector workers admitted that they abstain from work occasionally to avail opportunities to work as helper in construction activities which would yield them better return at the end of the day. This is certainly reflective of the distress faced by the rubber plantation workers.

Field survey found that in public sector plantations all the workers are engaged on piece-rate³ basis. In private plantations time-rate⁴ occupies the dominant share (54 per cent), followed by piece rate and product-share⁵ systems. In other words, time Based wage is more common among private plantations, while piece rate wage payment is the norm in the public farms. The tappers in the TFDPC plantations, across the state, are paid Rs. 167 / day for a tapping block of 300 trees, which comes to around Rs. 0.55 per tree. The current daily wage rate in rubber plantations of private sector varies between Rs. 157 / day to Rs 200 / day across various plantation pockets. Most of the workers in Fatikcherra receive Rs 157/ day for a tapping task of 270 trees. On the other hand, workers of Belbari and Khupilong receive Rs. 160/day and Rs. 200/ day for their combined work of tapping and processing. The tapping task for both the region is 250 trees, though there are few variations in the exact number of trees tapped among the sample workers of a particular region also. Monthly wage payment is the most common form in the private plantations, while fortnightly payments are more common in TFDPC plantations. However, there are a few cases of weekly payment of wages in the private plantations along with a single instance of the worker being paid daily.

It may be noted that there are no wage differentials owing to age, gender, and experience. Moreover, there are no differences in wages between a trained and untrained tapper⁶. However, with new plantations maturing every year, better tappers do not find it tough to get work under a different employer. It is interesting to note here that most of the plantations set up after the boom in NR sector in 2006-07 have started maturing, but with depressed prices, many growers have reduced tapping days as cost saving response. Thus, the skilled worker even though could have better bargaining power, is yet to realise it. The rising wages is certainly a reflection of the increased prices from 2009 to 2012. We find that, 50 per cent of the private plantation workers opine that the wage rate is fixed by the employers, while 19 per cent told that Rubber Board officials & Rubber Producer Societies⁷ members take the lead in wage fixation (figure 4). About 10 per cent workers report their wages being fixed as per their demand based on the prevailing rates in the nearby places. On the other hand, 21 per cent of the private workers and all the sample workers in public sector credit the trade union for fixing the rates. In this context, it should be noted that the workers in the public sector farms are members of the Tripura Rubber Sramik Union affiliated to Centre of Indian Trade Unions (CITU). These workers stated that it is not just the wage determination, getting a contractual appointment is possible only through the intervention of the Trade Union. The Trade Unions are vocal and active mostly at the state level because wage rates in

³ Piece rate is based on a stipulated task for deriving the wage

⁴ Time rate means a worker gets a fixed amount of money for providing his labour for a specific duration

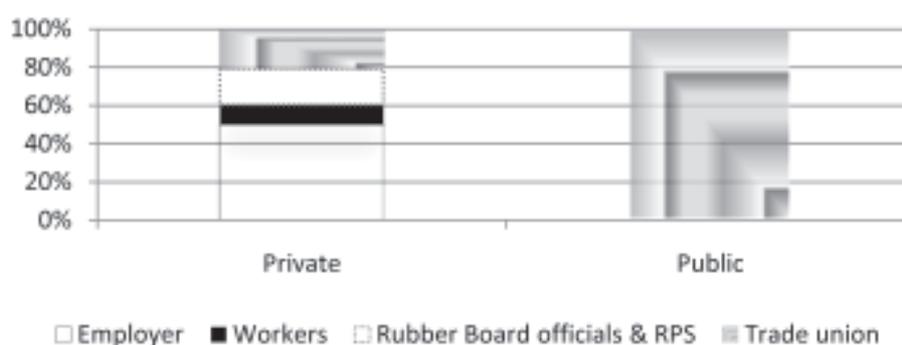
⁵ Similar to share cropping, seen in Belbari region

⁶ Distinction between trained and untrained tapper is made on the basis of formal training received from Rubber Board or any other Rubber promoting agencies. It is generally seen that trained tappers finish their task quickly, however, that is not true always. Untrained tapper often finishes of their task in haste and injures the trees.

⁷ Rubber Producer Societies are mostly groups of small rubber growers who often club together for the processing and marketing of Natural Rubber. Rubber Board encourages formation of RPS as part of their extension activities

TFDPC are uniform across the state. However, the role of the trade union is limited in private plantations. The respondent workers were open in saying that they seek membership of the trade unions not just for their wages but for a greater gain. The lure of various government schemes motivate them to be members of the trade unions affiliated to the ruling party.

Figure 4: Mechanism for wage fixation



Source: Field Survey, 2013; 2015

Table 5 shows the extent of additional benefits enjoyed by the tappers. It should be noted that, there are provisions of incentives, rainy day allowance, and bonus in the public farms, as per the regulations of the PLA, 1951, some of which are also offered by the private employers. The public sector plantation workers certainly enjoy more benefits as compared to the private plantation workers. It was found that 80 per cent of the workers in the TFDPC farms receive bonus and incentives. Sick leave, rainy day allowance and paid holidays are also availed by large sector of workers compared to private sectors along with the other non-pecuniary benefits (Table 7).

Table 5: Extra-contractual benefits received from employers (in Percentage)

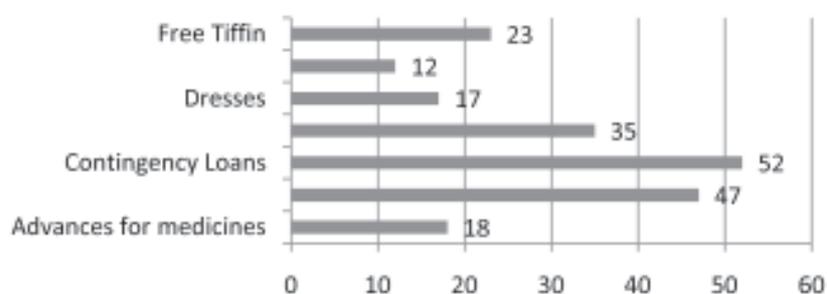
Benefits	Private sector	Public sector
Bonus	35.71	80
Incentives	3.57	80
Sick Leave	7.14	52.5
Rainy day Allowance	30.36	70
Paid Holiday	23.21	62.5
Sweater/Jumper	5.36	82.5
Hunting Shoes	5.36	82.5
Chupis ⁸		82.5
Latex Carrying Extra Wage		15

Source: Field Survey, 2013; 2015

⁸ A type of local hat

Overall, as anticipated material benefits in private plantations are negligible. Nevertheless, it was found that most of the workers of the private farms get supplementary benefits from their employers in the form of contingency loans, consumption loans, medical advances, grants and alike, which often keeps them tied to their respective employers. A system of indebtedness of the agent to the principal has been an observed phenomenon in the plantations of Kerala (Remesh, 2010). The situation in Tripura is no different. This system is often synonymous with the process of labour retention to extract work.

Fig 5: Supplementary benefits for private sector workers (in percentage)



Source: Field Survey, 2014-15

The average annual income for a worker from rubber plantations in Tripura is estimated at Rs. 40,200/-. Table 6 shows distribution of workers by income category. There is no significant differences of average income of the workers in the private and public sector plantations (T Stat- 1.65, $p > 0.1$) mainly because of the higher wage for the time-bound workers in the private plantations as compared to the TFDPC farms receiving regulatory supports.

Table 6: Annual income of workers (in %) in rubber plantations

Rs/Annum	Private sector	Public sector	Aggregate
<24001	7.1	7.5	7.3
24001-30000	5.4		3.1
30001-36000	16.1	15	15.6
36001-42000	28.6	67.4	44.8
42001-48000	16.1	5	11.5
48001-54000	17.9	2.5	11.5
>54000	8.9	2.5	6.3
N	56	40	96
Mean	41598.2	38234.7	40200
Minimum	13500	15030	13500
Maximum	70000	55110	70000

Source: Field Survey, 2014-15; figures are in percentage

The paltry⁹ income earned therefore reflects the miserable living conditions of the workers, which often force them to look for additional sources of income. All the households reported availing MGNREGS works whenever available. Moreover, the working conditions in the plantations appear to be very unimpressive. Only 53 per cent of the workers had opined favourably regarding the availability of drinking water in the plantations while accesses to sanitation facilities were reported by only 41 per cent of the workers. In this context, an attempt was made to examine the extent of coverage of the various labour welfare schemes of the Rubber Board among the respondents. The response has not been very encouraging. Only 3 workers from the private sector reported of getting housing subsidy from Rubber Board, while there was none to avail the educational stipend, merit award, medical attendance and sanitary subsidy. Workers reported being included in the recently promoted Life Insurance Policy by Rubber Board for labourers in collaboration with Life Insurance Corporation of India. On inquiry, it was found that one of the reasons for the low coverage was the numerous illegal plantations that has come up which are not accounted in the Rubber Board as a result, the workers of such plantations are bereft of availing the schemes for their welfare offered by the Rubber Board.

Section IV: Summary and Conclusion

Importance of the rubber plantation sector of Tripura on labour absorption and contribution to the state GDP is bound to rise with newer areas of plantations, mostly in private initiatives turning mature for tapping. It may be noted that the labourers find work in rubber sector as a long-term survival strategy since most of them do not have alternative sustainable avenues for livelihood. Many of the workers engaged in smallholding plantations are available for additional work, which are extremely necessary for augmenting the nominal¹⁰ income generated from the sector (Bhowmik and Viswanathan, 2015).

As indicated earlier, average real wage of agricultural workers is higher in Tripura and even the wage received by the unskilled workers have been higher than the wages received by the rubber tappers. Yet there is no dearth of people willing to get engaged in rubber tapping because of the fact that rubber plantations provide job opportunities almost throughout the year and jobs in other sectors being seasonal. It should be remembered that the average employment in rubber plantations is much higher than any other alternative cropping system of the state. Moreover, with limited and near absence of any manufacturing or service sector employment opportunities in the rural areas, rubber plantations are the most attractive form of livelihood to most of the rural landless people. An interesting observation is that the wages of the rubber tappers in both private as well as public plantations have increased at a higher rate compared to the other two segments of workers in the present century. A major cause for such

⁹ Per capita income of Tripura in 2014-14: Rs. 71666 (Current Prices) [<http://ecostat.tripura.gov.in/At-A-Glance-2015-16.pdf>]

¹⁰ Per capita income of Tripura at Constant prices for 2014-15: Rs. 59810.00 [<http://ecostat.tripura.gov.in/At-A-Glance-2015-16.pdf>]

development is the slump in the sector during the early 2000s and the subsequent boom of the natural rubber sector since 2006-07, which often is an outcome of the vagaries of the international rubber market (Bhowmik, 2008). The wages of the tappers reached a historic low in 2000-01. The boom in price of natural rubber had generated a renewed interest in the sector, leading to some outcomes in the labour market as is evident in the movement of wages, though rate of growth of wages have been lower than that in farm income (Chouhan and Bhowmik, 2017). It is also interesting to note that the growth rate of wages of public sector plantations has been lower than that of the private plantations. One of the reasons for such a scenario is the additional facilities received by the TFDPC tappers under the ambit of Plantation Labour Act, 1951, which can be considered as wages in kind. Despite all the uncertainties, rubber plantations have emerged as a major avenue of livelihood in rural Tripura attracting the unemployed as there is lack of opportunities in the industrial sector.

A visible characteristic in the rubber smallholdings is that there is no wage differential for skilled tapper. However, this should not be confused with the generalised fact that to get the stipulated wage as per the assigned task a unskilled worker need to work for longer hours. The unskilled workers may not necessarily work for longer works for getting the stipulated wage; rather, he might work for the same time length, but his productive efficiency is less and his efforts are often injurious to the plantations. Lack of alternative often binds the tappers to the farms as well as of possibility of availing certain supplementary benefits of contingencies and consumption loans. Data also indicate that global trade of natural rubber influences the domestic market and thus influence the wages of tappers (Bhowmik, 2008). Field interaction revealed that the growers often take recourse of alternate day tapping to reduce operational cost. The end result of such approach is reduction in annual employment in the rubber plantations, which create more distress for the workers.

Wish of the private sector tappers is to get included under the regulatory frame of PLA, 1951. On the other hand, workers of TFDPC farms expect that in the long-run their status will be raised as full time employees of the corporation. Inadequate tapping task and dependence on multiple growers is a major area of concerns in the rubber plantations labour market of the country in general, however, in Tripura, such a situation is yet to emerge substantially. It is a challenging task on the front of the state to ensure an environment for optimum labour requirement and supply of efficient labour force. It is also important for the state to have an assessment on the labour requirement as more and more rubber plantations of Tripura are reaching the stage for tapping, which requires sustained flow of rubber tappers or else the potential of the sector can never be realised and this perceived engine of growth will slow down.

References

- Bahuguna V K (2006) Action Plan for Expansion of Rubber in Tripura, in V.K. Bahuguna (ed), *Natural Rubber In Tripura: Baseline Data and Future Planning*, Tripura Rubber Mission, Government of Tripura
- Bhowmik I, P K Viswanathan (2015) *Emerging Labour Relations in The Small Rubber Plantations of Tripura*, Discussion Paper No 47, National Research Programme for Plantation Development, Centre for Development Studies http://cde.edu/wp-content/uploads/2015/07/47_Indraneel.pdf, assessed on 01/05/16
- Bhowmik I, P Chouhan (2013) An Inquiry into the Employment Status, Income and Assets of Rubber Tappers working in the large estates of Tripura, *Labour and Development*, Vol. 20, No.2, pp.104-129
- Bhowmik I (2009) An Insight to the Rubber Economy of Tripura, in K N Jena, et. al. (ed), *Development Paradigms and Bottom up Approaches*, Abhijit Publication, New Delhi
- Bhowmik I (2006) A Status Report on Rubber Plantations in Tripura in V.K. Bahuguna (ed) *Natural Rubber In Tripura: Baseline Data and Future Planning*, Tripura Rubber Mission, Government of Tripura
- Burger K et al (1995) *The Indian Rubber Economy-History, Analysis and Policy Perspectives*, Manohar Publication, New Delhi
- Chandy B, K T George K (2012) Trends in Wage share in the context of Labour Shortage: The Case of Tapping Wage share in Rubber Smallholdings Sector in Kerala, *Natural Rubber Research*, Vol.25, No.1, pp.91-99
- Chandy B, K T George, S Raj (2010) *Trends in Farm Income and Wages in the Era of Market Uncertainty: An Exploratory Analysis of Natural Rubber Sector in Kerala*, Discussion Paper No 5, National Research Programme for Plantation Development, Centre for Development Studies <http://www.cde.edu/wp-content/uploads/2012/11/NRPPD5.pdf>, assessed on 12/10/2012
- Chouhan P, I Bhowmik (2017) Exploring the Growth and Stability of Price, Farm Income and Labour wages in Rubber Plantations of Tripura, *Indian Journal of Regional Science*, Volume XLIX , No. 1
- Dey S R et al (2014) Economics of Rubber Plantations in Tripura, *Karnataka Journal Agriculture Science*, Vol. 27, No 2, pp. 160-164
- Dey S K (2009) Rubber Plantation for Development of Tripura, in K N Jena, et al. (Ed.) *Development and Paradigm and Bottom up Approaches*, Abhijit Publication: New Delhi, pp.52-62.
- George K T (2012) *Tapping Labour Shortage and Dilemmas in Policy Options: The Case of Rubber Smallholder Sector in Kerala*, <http://dx.doi.org/10.2139/ssrn.2410142>, assessed on 12/10/2014
- Ghoshal P K (2014) Economic Feasibility Study of Natural Rubber Plantation in Tripura, *Tripura Journal of Social Science*, Vol. 1, No.2
- Government of Tripura (2015) *Economic Review of Tripura 2014-15*, Directorate of Economics & Statistics Planning
- Joseph J, K T George, S K Dey (2012) *Natural Rubber Cultivation under Block Planting Scheme in Tripura: Its Income Impacts on the Beneficiaries*, <http://www.cde.edu/wp-content/uploads/2012/09/Joby-Joseph-Paper.pdf> assessed on 01/10/2011

Joseph K J (2016) *The Crisis: its manifestations and the way forward*, http://cds.edu/wp-content/uploads/2016/02/Report_Crisis_Feb6.pdf assessed on 10/09/2016

Mohanakumar S, Binni Chandy (2009) Farm Price Volatility and Its Impact on Rural Labour Market under Neo-Liberal Regime: A Study of Rubber Tapping Labourers in Kerala, *Journal of Rural Development*, Vol.28, No.2, pp.169- 183

Mohanakumar S, Binni Chandy (2005) Investment and Employment in Rubber Smallholdings-Impact of Market Uncertainty in the Reforms Phase, *Economic and Political Weekly*, Vol. 40, No.46, pp. 4850-4856

Rajasenani D (2010) *Livelihood and Employment of Workers in Rubber and Spice Plantations*, Discussion Paper No 6, National Research Programme for Plantation Development, Centre for Development Studies, <http://www.cds.edu/wp-content/uploads/2012/11/NRPPD6.pdf>, assessed on 12/10/2011

Remesh Babu P (2010) *Dynamics of Rural Labour- A Study of Small Holding Rubber Tappers in Kerala*, Concept Publishing Company, New Delhi

Sharma G, J Joseph, K T George, S K Dey (2011) Impact of Mahatma Gandhi National Rural Employment Guarantee Act on Rubber Block Plantation Scheme in Tripura, *Agricultural Economic Research Review*, Vol.24, pp.525-530

Sihmar R (2014) Growth and Instability in Agricultural Production in Haryana: A District level Analysis, *International Journal of Scientific and Research Publications*, Vol. 4, No.7, <http://www.ijsrp.org/research-paper-0714/ijsrp-p3151.pdf>, assessed on 01/12/2014.

Viswanathan P K (2013) *Regional Dimensions of Emerging Labour Shortage in Rubber Plantation Sector in Kerala: An Exploratory Analysis*, Discussion Paper No 27, National Research Programme for Plantation Development, Centre for Development Studies, <http://cds.edu/wp-content/uploads/2014/07/NRPPD27.pdf>, assessed on 01/01/15

Viswanathan PK, I Bhowmik (2016) 'Compatibility of Policy and Institutional Regimes for Rubber Monoculture Plantation Development in Diverse Social and Agro-ecological Environments: A Study in the Indian Context', in *Monoculture Farming Global Practices, Ecological Impact and Benefits/Drawbacks* (ed Nath, Tapan Kumar and Patrick O'Reilly), Nova Science Publishers Inc. NY,

Viswanathan P K, K T George, T Joseph (2003) Informal Labour Market and Structural Devolution, *Economic and Political Weekly*, Vol. 38, No. 31, pp.3277-3281