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SOME FINANCIAL AND ECONOMIC ASPECTS OF TAPPING WAGE RATE

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INTRODUCTION

At present tapping labour scarcity become one of the major problems, specially at small and medium size rubber holders. The magnitude of the problem is considerable as large area has already been abandoned without tapping. Low wage rates paid for the tappers may be one of the main factors for tapping labour scarcity. Some of the surveys conducted by the agricultural economics unit indicate that the rate was around Rs.30 in 1993 and is around Rs.50 in 1996. In contrast the estate sector tapping wage rate is around Rs.80 per Kg. Also, incentives pay for over kilos been tapped in estate sector. Therefore, the present study was undertaken on some financial and economic aspects of tapping wage rate as a guidance to decide optimum tapping wage rates.

METHODOLOGY

The study focused on the current method of payments for the double tapping at the estate sector to develop mathematical relationships to establish financially viable wage rates for the rubber sector.

There are several factors to be considered to decide the double tapping wage rate, namely Net Sale Average (NSA), Cost of Manufacture (COM), general charges, mature area upkeep cost and the profit margin retained by the producer. Thus a financial analysis has been conducted encompassing all the above variables in the form of a sensitivity analysis matrix under different situations. The analysis is given below.

Situation - 1

Assumptions

1. current tapping wage rate (Rs./Kg) - 10
2. General charges and cost of mature area upkeep (Rs./Kg) - 25
3. Profit margin retain by the producer (out of the NSA) - 30%

Sensitivity analysis matrix - table 1

NSA (Rs/Kg)

COM (Rs/Kg)	100	90	80	75	70	65	60	55	50
3	32	25	18	14.5	11	7.5	4	0.5	-3
4	31	24	17	13.5	10	6.5	3	-0.5	-4
5	30	23	16	12.5	9	5.5	2	-1.5	-5
6	29	22	15	11.5	8	4.5	1	-2.5	-6
7	28	21	14	10.5	7	3.5	0	-3.5	-7
8	27	20	13	9.5	6	2.5	-1	-4.5	-8
10	25	18	11	7.5	4	0.5	-3	-6.5	-10
12	23	16	9	5.5	2	-1.5	-5	-8.5	-12

Each cage indicates the maximum amount of wage rate (Rs/Kg) that can be increased above the current wage rate of Rs.10 per Kg under different situations. For example if the NSA is Rs.100 per Kg and the COM is Rs.3 per Kg the wage rate could increase upto Rs.42 per Kg while retaining 30 percent of the NSA as a profit margin.

Also, if the NSA is Rs.60 per Kg and the COM is Rs.8 per Kg the current wage rate of Rs.10 per Kg is not desirable. If the producer is willing to maintain profit level of 30% of the NSA, wage rate should be Rs.9 per Kg.

Situation - 2

Assumptions

1. Current double tapping rate (Rs/Kg/tapper) - 10

2. General charges and cost of mature area upkeep - 25

3. Profit margin retain by the producer (out of the NSA) - 20%

Sensitivity analysis matrix - table 2

	NSA (Rs/Kg)								
COM (Rs/Kg)	100	90	80	75	70	65	60	55	50
3	42	34	26	22	18	14	10	6	2
4	41	33	25	21	17	13	9	5	1
5	40	32	24	20	16	12	8	4	0
6	39	31	23	19	15	11	7	3	-1
7	38	30	22	18	14	10	6	2	-2
8	37	29	21	17	13	9	5	1	-3
10	35	27	19	15	11	7	3	-1	-5
12	33	25	17	13	9	5	1	-3	-7

According to the results indicated in the table if the NSA is Rs.50 per Kg and the COM is Rs.5 per kg the present wage rate of Rs.10 per Kg is optimal and could not increase further, if producer is willing to maintain 30 percent of the NSA as profit margin.

The above studied relations suggest the following equation to determine the optimum wage rates under different situations.

$R = NSA (1- i) - C$

Where,

R = Wage rate

NSA = Net Sale Average

i = Rate of return

$C = GC + MAUC + COM$

GC = General Charges

MAUC = Mature Area Upkeep Cost

COM = Cost of Manufacture

eg: If NSA = Rs. 50/Kg

C = Rs. 30/Kg

i = 0.2 (rate of return of 20%)

then,

$R = NSA (1-i) - C$

$= 50 (1-0.2) -30$

$= 10$ (Rs/Kg)

Possible wage rates under different farm conditions

According to table 1 under the average condition (mature area upkeep cost Rs.25/Kg: cost of manufacture Rs.7/Kg : NSA Rs 60/Kg) it is possible to pay around Rs 10/Kg while maintaining profitability at the rate of 30%. At these rates we can estimate different wage rates depending on the performance of production unit as follows.

No of trees per hectare	Average yield gram per tree per day	total yield Kg per hectare per day	Financially viable wage rate per day per taper (assumed profitability of 30%)
300	10	03	30
300	20	06	60
300	30	09	90
300	35	10.5	105
400	10	04	40
400	20	08	80
400	30	12	120
400	35	14	140
500	10	05	50
500	20	10	100
500	30	15	150
500	35	17.5	175

The above table shows that the financial viability of the payments to the tappers is mainly depend on the general performances of the production units. Very poor management conditions may not allow high payments for the tappers. In contrast very good management conditions may allow wage rate like Rs.175 day compared to the very low levels prevail at present. This fact shows that the use of better planting materials, high yielding clones, proper fertilizer programs, use of rainguards is of immense importance for long term survival of the sector.

Considering the fact that most of the smallholder production units are less than 01 hectare, the main problem is whether these units are subject to better management conditions. The negative impact of the economy of scales is a obvious fact in these production units. Therefore, it is very important to establish some collective action of these units. The possibility of managing all the production units coming under particular RDO division as a unit should be given high priority. The necessary policies should be formulated so that the long term viability of the sector interm of production and employment generation, would be certified in future.

Economic aspects of wage rates

In economic terms, marginal value product criterion gives the maximum paying capacity while the poverty line criterion gives the minimum level of wage needed. To estimate marginal products of labour it is necessary to develop production functions at different levels namely estates, medium estates and smallholder levels.

The proposed production function to be developed is trascendental logarithmic with a single output and two inputs as indicated below.

$$\log y = \log a_0 + a_k \log k + a_l \log l + \tfrac{1}{2} a_{kk} (\log k)^2 + \tfrac{1}{2} a_{ll} (\log l)^2 + a_{kl} (\log l) (\log k) + e$$

where, y = production level
k = capital and other production costs
l = person days worked per hectare.

According to the preliminary studies conducted the following factors were observed.

(a) The share of the plantation sector in the gross domestic products has declined but the share of labour force depending on plantation sector maintained more or less constant.

(b) It appears possible that the tapping wage rate in the plantation sector is systematically below the marginal product of labour.

(c) The gap between the wage rate and productivity tends to widen whenever labour productivity goes up..

(d) The introduction of improved crop varieties and practices tends to drive the labour productivity far above wage rate.

CONCLUSION

1. At present tapping labour scarcity is one of the major problems face by the rubber sector. The problem is more severe in smallholder and medium estate sector.

2. Low level of tapping wage rates prevâil in the sector specially in smallholder and medium estates is one of the major reasons for this situation.

3. Study shows that the possibility of increase in wage rates in concurrence with the performance of the production units.

4. At good management conditions. setting high wage rates is financially viable.

6. Collective actions by the very small production units (generally less than 01 ha) at smallholder levels may be helpful to improve the management through better economies of scales, so that the productivity interms of output and employment could be improved with attractive payments to the tappers.