Remote Plantation Management (RPM) of Karimplavelil Rubber Plantations, Punalur, Kerala: A Case Study

*Usha Rani.S., **Biju C. Oommen ***J. Thomas

*Development Officer, Rubber Board, Kottayam
**Associate Director, C DAC, Thiruvananthapuram
***Rubber Production Commissioner, Rubber Board, Kottayam

• Introduction
• Objectives of the study
• Profile of Karimplavelil Estate
• DVR system installed in the estate
• Functioning of DVR system in Karimplavelil estate - explanation and Video
• Investment at a glance
• Impact of RPM
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Introduction
Absentee ownership as a limiting factor in scientific NR cultivation

- One of the major limiting factors related to the scientific cultivation of Natural Rubber in South Kerala is absenteeism of owners
- The inability for having proper labour management leading to escalating cost of cultivation, low productivity, low quality etc resulting in low price realization.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Full time growers</th>
<th>Part-time growers</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>84</td>
<td>16</td>
<td>3.82</td>
</tr>
<tr>
<td>Central</td>
<td>64</td>
<td>36</td>
<td>(Significant at P&lt;0.01)</td>
</tr>
<tr>
<td>South</td>
<td>38</td>
<td>62</td>
<td></td>
</tr>
</tbody>
</table>

*Profile of small growers related to occupation *

*Resources and Sustainability of Small holdings: K.Venugopal, S.Usha Rani, Ramesh B.Nair, 2009.*
Absenteeism of owners:
The negative influence on productivity

- Lack of Supervision
- Lack of timely Agro management
- Lack of labour management
- Lack of proper harvesting
- Lack of adherence to quality

Escalating cost of cultivation
Low productivity
Low quality
Low income

Remote Plantation Management (RPM) of Karimplavelil Rubber Plantations, Punalur, Kerala

A novel Remote Plantation Management (RPM) model for remote supervision utilizing ICT facilities was introduced in Karimplavelil estate, Punalur, in Kollam District of Kerala State, South India, in 2007, by Sri. Biju C. Oommen who stays in Trivandrum, 80 km away from his plantation.
Objectives of the study

- (i) familiarize a Digital Video Recording System implemented for effective Remote Plantation Management (RPM)
- (ii) qualitative impact of RPM
- (iii) invite suggestions for further improvement of RPM.

Profile of Karimplavelil Estate

- Karimplavelil estate is situated in Pathanapuram Taluk of Kollam dist., in the state of Kerala, South India, covers a total extent of 15ha. The plantation was owned by Dr. Oommen Thomas since 1964.
- Replanting was done in 1994 with RRII 105 and the trees were opened for tapping in 2001.
- At present above 7000 trees are harvested on B panel.
- the estate is maintained scientifically according to the recommended package of cultivation practices of Rubber Board.
- Planting density below 500/Ha. Mucuna established as covercrop, DFA adopted.
Profile of Karimplavelil Estate-Contd..

- 1/2Sd/3 system of tapping
- Average of 95 tapping days per year; B panel is being exploited for the 5th year.
- Productivity: >2500kg in the range of 2500 to 3000 kg per hectare per annum.
- 8 tappers engaged in the estate for tapping.
- Infrastructure for processing and smoking
- Innovative /less laborious techniques such as trough with vertical partition for coagulation, installation of sheeting battery (Lohasilpi brand) for sheeting etc.
- More than 90% of the sheets are sold as RSS4, thus maintaining quality of the produce.

DVR system installed...

- Major Components of a DVR system for Remote Viewing designed for remote management in Karimplavelil estate is a very simple system which include
  - (i) Cameras
  - (ii) Digital Video Recorder (DVR)
  - (iii) Broadband Connection (Modem)
  - (iv) Client PC with remote view software and broadband connection.
How do the system of DVR for RPM works?

- DVR designed for remote management in Karimplavelil estate includes four cameras fixed at 4 different locations.
- Owner gets a view of the collection and processing centre along with the work yard in front, where the workers enter the estate, go for tapping with their knives, come in with their collection buckets after tapping, weigh the produce and processing is carried out.
- The PC with the requisite software for the programme (Digital Video Recorder) for the camera is installed inside the estate house.
• VIDEO

Owner gets a view of the collection and processing centre along with the work yard in front, where the workers enter the estate, go for tapping with their knives, come in with their collection buckets after tapping, weigh the produce and processing is carried out.

How the system of DVR for RPM works?

• The owner sitting at home gets a view of all the cameras at a glance to view the processes done in the estate in his PC/laptop/Mobile phone.
• The system becomes interactive, when managed with the help of mobile phone.
• Doubts are clarified by interacting through the mobile, if necessary, showing the things in front of the camera from the estate by the workers, so that the owner gets a view.
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Total expenditure of the investment for Remote Supervision DVR system came to around Rs.45000/- during 2007.
- Expense of camera Rs.5000x 4= Rs.20000
- DVR, Modem accessories etc. Rs.25000
- Total Rs.45000

**Investment at a glance**
Impact of RPM

• Labour management became effective and easy.
• All the events and procedures in the estate are video-recorded and viewed by the owner. (time of arrival of the labourers, their working hours, the procedures they adopt in harvesting, etc)
• Constant surveillance at the owners’ had a positive impact on the quantity and quality of work in the plantation.
• For the last five years the owner had no major labour problem and the labourers had cooperated with the owner for maintaining a harmony in all the activities of the estate.
• The better output of work was rewarded in terms of wages and incentives.
• The camera is fixed in such a way that the weighing of the produce could be done in front of the camera and could be recorded, if necessary. Thus there is realization of actual quantity of crop and no dispute for production incentive etc.
• Maintaining quality of the produce and high price realization
• High satisfaction index of the owner.

VIDEO

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(time of arrival of the labourers, their working hours, the procedures they adopt in harvesting, etc)
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The camera is fixed in such a way that the weighing of the produce could be done in front of the camera and could be recorded, if necessary. Thus there is realization of actual quantity of crop and no dispute for production incentive etc.

• VIDEO

Maintaining quality of the produce and high price realization
BETTER SUPERVISION, MANAGEMENT

Maintains a harmony in all the activities of the estate.

Quantitative impact of RPM

• the less investment of man power for supervision for around 250 weeks is one of the major gains the owner has realized.
• The travel cost saved for 250 weeks -minimum of Rs.3 lakhs, which is another gain.
• The higher price realization due to quality and quantity is not exactly accounted, however it may be amounting to a minimum of 20% increase from what the owner could have realized otherwise.
Suggestions and Conclusions

• The case study has opened up new possibilities of implanting Remote Plantation Management (RPM), utilizing advanced ICT devices.
• Clusterization of smallholdings with Remote Plantation Management could be practiced through Rubber Producers’ Societies, for absentee owners with surveillance devices in their plantations so that the service through RPS get modernized.

Suggestions and Conclusions

• Disease control measures could also be more effectively practiced through RPM.
• Better outreach by Board to provide need based service to all smallholders, through extension service in Remote Plantation Management, once they have established connectivity in their plantations utilizing ICT based surveillance systems.