

Development and Extension Strategies for Rubber with a Reference to Institutional Development

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Rubber development in India has been a success story as evidenced by the overall development registered in terms of expansion of area, production and productivity. While area increased by 7.5 times, production increased by 40 times and productivity by 5.5 times during the last 52 years.

The crop was brought under an organized and well structured development and extension programme during 1950s immediately after the formation of the Rubber Board in its present form. A proper blend of research, development and extension under the aegis of the Rubber Board have contributed significantly to achieving the overall development.

Natural rubber (NR) has been a raw material in short supply in the country and in spite of the spectacular growth rate, the country had the status of a net importer barring a few years in the 70's and later in the 90's. Though production of NR has exceeded consumption in certain years, the margin has

been very small. Under a closed regime with almost full protection for the domestic production sector and imports proving not only costly but resulting in the precious drain of foreign exchange, efforts for increasing production were pursued vigorously. It is a fact that the production of rubber has been cost effective too under the prevailing circumstances as evidenced by the performance of the sector.

The sector has undergone significant structural changes during the last five decades. From the status of a crop in the estate sector it transformed itself to a small grower's crop. While estate sector (more than 20 hectares) accounted for 55.28 percentage of the total area in the country in 1955-56 its share decreased to 12% during 2001-02.

In the present context of a QR freed regime (since 1st April 2001) a reorientation of the production strategies became imminent. Dependence on internal market will not sustain the rubber plantation industry and it is imperative to get established in the inter-

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national market for which one has to ensure a regular supply line of reasonable quantity of good quality rubber. Constant analysis of the global demand-supply situation and juxtaposing it with the Indian context needs to be done on a regular basis to evolve short term, medium term and long term strategies. On a broader assessment of the various factors it needs no mention to reiterate the fact that India needs to produce rubber cost effectively. It should also reaffirm its position as a regular supplier not only in the domestic market but also in the international market.

The three-pronged strategy viz. expansion of area, replanting of old and uneconomic rubber trees and productivity enhancement adopted hitherto still has been relevant. While expansion of area and replanting of old and uneconomic trees are long term strategies, productivity enhancement was adopted as a short/medium term strategy. While the three strategies will continue to receive thrust, the implementation modalities will have to undergo change. The primary processing component of the production chain will need to be given extra thrust. Considering the fact that the plantation sector is dominated by tiny small holdings (88% of production is from small holdings with an average size of 0.5 hectares) infrastructure development and skill development have to be given due importance which requires institutional development.

Development Strategies

The Board has been implementing a variety of schemes with a proper blend of technical and financial assistance and institutional

Table 1
Area, Production and Productivity of NR in India

Year	Area (ha)	Production (MT)	Productivity (kg/ha)
1902-03	200		
1910-11	11900	80	
1925-26	30886	6400	
1930-31	48000	6500	
1940-41	47200	16100	
1947-48	71336	15000	300
1950-51	74915	15800	284
1960-61	143905	25697	365
1970-71	217198	92171	653
1980-81	284166	153100	788
1985-86	382831	200465	898
1990-91	475083	329615	1076
1995-96	524075	506910	1422
1996-97	533246	549425	1503
1997-98	544534	583830	1549
1998-99	553041	605405	1563
1999-00	558584	622265	1576
2000-01	562670	630405	1576
2001-02	566558	631400	1576

development since 1957. A participatory approach and disbursement of financial assistance as reimbursement on the basis of achieving performance indicators with emphasis on institutional development at the grassroots level have helped in ensuring success. The most important scheme – The Rubber Plantation Development Scheme – (in the immature phase) has been able to bring in a certain amount of discipline in planting, which is critical for the success of a perennial tree crop like rubber and this ensured quality planting and higher productivity. In this context, it has to be mentioned that with relatively much lower scale of assistance vis-à-vis other producing countries the success achieved has been commendable. The finance sources has been mostly generated out of cess levied on the basis of production and the plough back to the sector undoubtedly have been rewarding.

The Board has been reorienting its schemes on a need based manner through the various Five Year Plans and Annual Plans.

Institutional support

The Board has a very strong research, development and extension net work in the country. The research on this tree crop is undertaken by the Rubber Research Institute of India and the development and extension are carried out by the Rubber Production Department which has fairly a well spread network of Field Offices. The Board has 4 Zonal Offices, 2 in north east and 2 in Kerala. The major extension link in the field is the Regional Office headed by a Deputy Rubber Production Commissioner/ a Development Officer, a Senior Extension Officer and the Regional Offices are supported by Field Stations headed by Field Officers. The Department has 37 Regional Offices and 172 Field Stations. To maintain the supply of high quality planting materials, it has Regional Nurseries which provide 15% of the requirement of planting materials in the sector, Tappers' Training Schools, District Development Centres and Nucleus Rubber Estate & Training Centres.

Infrastructure for Extension

Almost 60% of the budget of the Board is earmarked for extension and development. The grassroots level extension officer of the Board is the Field Officer who generally is a Graduate in Agriculture or a Post Graduate in Botany. The ratio of the Extension Officer to the rubber growers is almost 1 : 3000 and the number is too large for any effective extension work in its conventional form. The delivery of extension and development functions is integrated and decentralised. Various schemes are being implemented, the prominent of which being the Rubber Plantation Development Scheme now under implementation for the last two decades. Till the 70's, the thrust has been on replanting and from 1979 new-planting also was encouraged. To ensure timely flow of information, availability of

inputs and to ensure a fair market system, several programmes are taken up. To encourage adoption of technology financial incentives for various activities have been provided as reimbursement. As the disbursement of financial incentive is done only after completion of works, ensured by a spot visit by Extension Officer, failure rate has been practically very less. A range of other schemes also is available for encouraging adoption of technology to increase productivity and to improve quality. As the number of small holdings started increasing the extension link particularly in the mature area has been weakening as the thrust has mainly been in the immature phase. Evaluation of extension activities has found that this is not adequate as the more crucial yielding phase which spans for 2½ decades needs far more support. Moreover, latex is a highly unstable product and the costly post-harvest handling makes the small growers vulnerable to exploitation. To overcome this situation during 1960s itself the Board started promoting group approach and formation of co-operatives. However, the co-operatives became large, politicised and with more government controls it could not focus on rubber growers to the extent desired, leading to distancing of the growers from the decision makers. Board's extension delivery has been mostly on an inter personal basis up to 1980's. However, as a result of periodical group meetings and seminars used to be conducted regularly, the reach could be spread further. Though the co-operatives were involved in the extension system, a significant change started with the formation of Rubber Producers Societies (RPS) in 1985.

Rubber Producers' Societies

RPSs are voluntary associations of small growers, self help groups of rubber growers, registered under the Charitable Societies Act. The RPSs were envisaged to function as a non profit making institution imparting technical and scientific know how to the members for the general improvement of the area and in

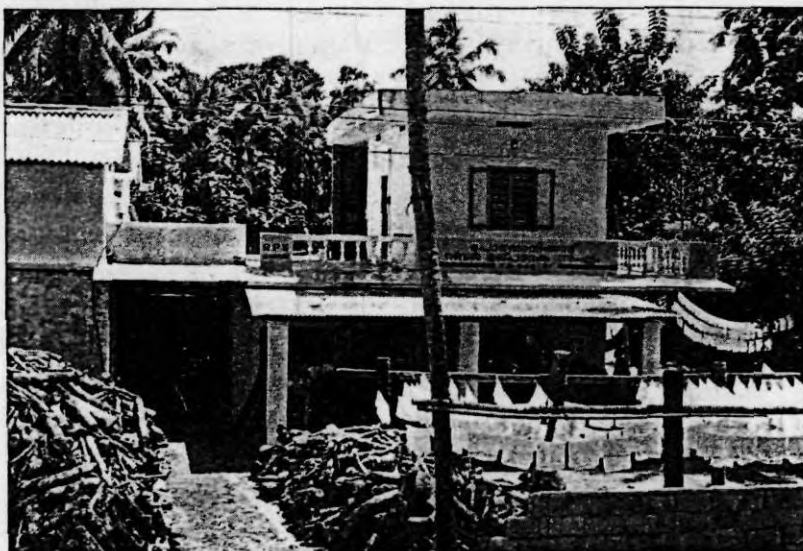
particular for the economic and social welfare of the small growers of rubber.

Structure of the RPS

Initially 7 small holders only are required to register an RPS and an entrance fee of Rs.50 and an annual subscription fee of Rs.10 has to be paid by the grower. The Board would

will have the right to nominate one of its officers to the Committee and generally the Field Officer of the Rubber Board is nominated. The executive committee elects a Vice President and the services of the President and Vice President are gratuitous and the society is not authorised to appoint any person except a Latex Collection Agent, who

can be given a commission.



Processing centre and office building of an RPS

accord approval to the RPS after an on the spot inspection by the Board's Field Officer. Generally, Field Officer of the Board takes the initiatives in identifying the promoters and also assisting in formation of the RPS. Membership is open to rubber small growers owning less than 5 ha of rubber plantation and who agree to market the rubber latex and scrap produced in holdings situated in the area through the society. Funds of the Society shall be raised through admission fee, annual subscription, donation, loans and advance from members and non-members, subsidies and loans from other financial institutions including banks, co-operative societies, Rubber Board, Government etc. The ultimate authority of the Society vests in a general body. General body is expected to be held in a rubber holding of one of the members. The management of the society vests in the executive committee constituted of the President and 6 persons elected from the general body from its members and the Rubber Board

Review of RPS activities

These RPSs numbering about 2100 now have made a significant impact in the modernisation process of the rubber holding sector. Besides community processing and marketing, it also distributes about 30-40 plantations requisites to the small growers at reason-

able prices and also ensure adoption of critical agricultural operations not only by growers themselves but also RPSs undertaking operations such as prophylactic spraying and micron spraying for control of diseases. A beginning has been made where RPSs have taken up the role of a service provider also besides involvement of RPSs in the generation of high yielding planting materials and helping in collection of statistics.

Rubber Processing and marketing involve high technology and investment. The RPSs by themselves could not ensure such infrastructure development. To overcome this, Private Limited Companies as joint ventures of Rubber Producers' Societies and Rubber Board were formed during the late 80s and early 90s aimed at setting up processing factories and taking up trading of latex, sheet rubber, field coagulum and agro inputs. The company with 98 % shares (49 share) contrib-

uted by RPSs and 2% shares (1 share) by the Board form regional level apex bodies of Rubber Producers Societies.

Assessment of the performance of the RPSs

In a study conducted in 29 villages in a pre-dominant rubber growing tract in India it was observed that 33.14% of the growers are members of the RPSs and on an average there are 3 RPSs per village. 27% of the growers in the study reported that they have been getting technical information from the RPS. On an evaluation of the general performance of the RPSs it was however noticed that only 30% of them are functioning satisfactorily. In another study conducted by IIPM with a view to identifying constraints hampering the performance of the RPSs, it was revealed that the RPSs need more technical back up and human resource development.

For effective functioning, the study pointed out the need for increasing competence of the Board of Directors. Though many of them possess technical skill to manage their own plantations, the skill on managerial and human resource dimension was very limited. Factors bearing on the performance of the Board of Directors were identified as follows:

- Personal capacity building (skill in public speaking, community issues, inter-agency co-ordination).
- Popular participation and co-operation (ability co-operate well with members).
- Commitment for innovativeness, skill related to fund raising, grass roots development process.
- Attention and skill in politics, selected issues and fund mobilisation.

- Knowledge on technical and organisational aspects.
- Level of education.
- Professional contacts in mobilising funds.

With regard to smallholders becoming members of RPS's, 47.8 percent of the members took membership with a view to gaining knowledge on production, whereas 36.7 percent became members for ready access to details of subsidies, schemes of Rubber Board etc. It has also been revealed that members of the RPSs established better rapport with the extension officers of the Rubber Board in the field. Eighty percent of the respondents in good RPSs contacted Field Officers for technical information, whereas only 60 percent of the respondents of the poor RPSs reached extension officers. Further 50% of the members of the poor RPSs relied on



Training in Controlled Upward Tapping

private merchants for marketing, whereas only 18 percent of the members of good RPSs approached private merchants for marketing their produce.

One of the striking results of the study by IIPM, Bangalore has been with regard to the impact of RPS contribution to increase in production, improve quality of life and attention to general issues related to rubber sub sector. 70 percent of the members of good RPSs achieved high production, whereas only

26.3 percent of the members in poor RPSs could gain high productivity. About 56.7 percent of the members of the good RPSs felt that the quality of life improved after becoming a member of the RPS, whereas only 10 percent of the members in poor RPSs felt that their quality of life has improved. More than 80 percent of the members in the good RPSs felt that the attention they paid to rubber related issues at village level had increased substantially, whereas this was only 15 percent for the poor RPS. Three factors were observed to be influencing members readiness in participation in RPS activities. The major factor was the ability of RPS in providing technical information on rubber production. A second factor was the felt need of the members to support RPS so that they exist and the third was for getting direct benefit; the weightage for the above three features were 46%, 35% and 28% respectively.

A member of the RPS is made the Collection Agent, and assigned with the job of attending to the day to day marketing operations and he/she provides a vital link in the RPS. Analysing the views of the Collection Agents, the study revealed that even in the good RPS selected, 67% of the Collection Agents were not satisfied with the job and the figure was 100% for the poorly managed RPS. The Collection Agents felt that better infrastructure for processing and marketing, if provided can sustain the RPS. In poor RPS the Collection Agent had only a monthly income of Rs. 100 to 500, whereas in the good RPSs, the income level was more than Rs. 1,000/- per month.

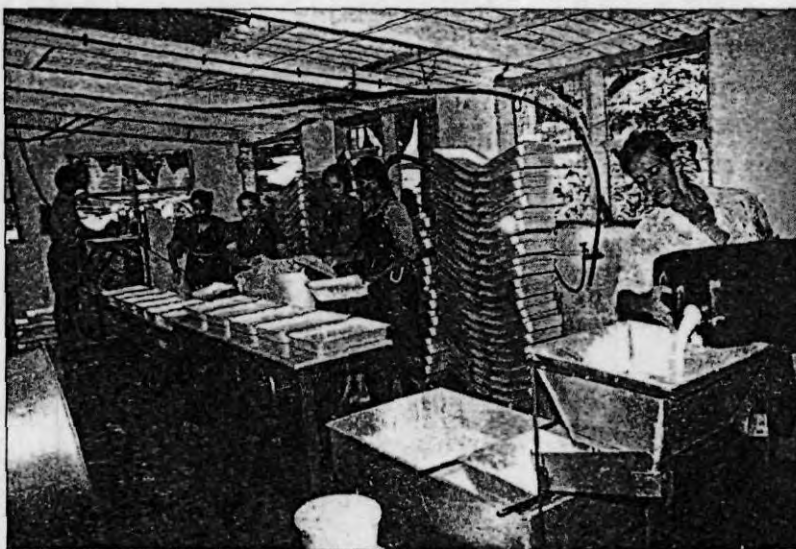
An analysis of the data on the perception of Field Officers indicated that they needed more training in the managerial aspects of

grassroots institutional building and management, conflict management, morale and self confidence building and community development. Hitherto the thrust has been merely on the technical aspects of rubber production and a change is felt needed.

A profile of non-members of the RPSs from the service area of the RPS also was collected. 47% of the non-members selected at random had income between Rs 5,000 and 10,000. The reasons given for the farmers not taking membership in the RPSs include:

- Lack of awareness about the functions and benefits of RPS.
- RPS not involved in rubber sheet trading.
- Advance payment is available from private dealers, whereas RPSs cannot provide advance payment.
- Delayed payment through RPS.
- Ineffectiveness of the board of directors.

The non-members however desire to take membership in the RPS. In yet another impact assessment study conducted by the MANAGE, Hyderabad, role of RPS was observed to be significant in the development process.



Group processing in an RPS

However, the study pointed out that participation of resource poor farmers in the various services provided by the RPSs was very little. One of the reasons identified by them contributing to poor performance of a good

number of RPSs is lack of regular activities generating income such as processing or trading of latex. Lack of motivation among office bearers, predominance of poor rubber growers, nearness to urban areas resulting in farmer's preference in sale of rubber to dealers directly etc. contributed to relatively unsatisfactory performance of the RPS.

On an average, only 20% to 30% of the small growers are members of the RPSs. In yet another study conducted by the CMD (Centre for Management Development), Thiruvananthapuram the reasons for poor membership has been summarised as follows:

- 50% of the sample responded that it is not worthwhile to take membership in the RPSs.
- 21.25% mentioned that they are not aware of the RPS.
- 16.25% did not take membership as no RPS is functioning in their vicinity.
- 7.5% responded that existing RPSs are not functioning effectively.
- Lack of fund was projected by 5% of the members.

The same study reveals that 4.86% of the total rubber produced only was channelised through RPS and 3.85% through cooperatives. However, the RPS had a profound influence in ensuring adoption of technology. Of the samples studied by them, 46.92% adopted discriminatory fertilizer recommendation whereas the level was only 8% for non-members.

RPS as centre for technology transfer and training

To accelerate the process of empowering of RPS and ensuring of devolution of extension functions to RPS a selected few RPS were supported for gearing themselves up for technology transfer and processing of quality sheets. They were also supported to engage extension agents and tapping assistants to

intensify extension activities. Of late a few RPS were supported to initiate computerisation. 35 Model RPSs functioning as centres for transfer of technology are proving to be very effective not only in processing highest quality sheets but also in imparting training on various technical topics as well as on group management and leadership to other RPS.

Farmer resource persons

In addition to the above efforts directed towards a farmer participatory extension system, the Board has already started using farmer resource persons in the campaigns and training programmes. These farmer resource persons are selected from among experienced farmers and they are first trained and later their services are utilised for training programmes of the Board. About 200 farmer resource persons have been selected and their services are utilized regularly. In future a pool of such resource persons are to be maintained by RPS who would utilize their services for the regular training programmes.

Women and tribal development

In a bid to empower the small holders, particularly the resource poor and weaker groups, women self-help groups were formed and assistance were provided for income generation activities, hygiene and sanitation etc. and these groups were linked to RPSs. Women were supported for establishing handicrafts units and bio-gas plants which ensures environment-friendly processing of rubber, in Kerala as well as in Tripura.

Rubber has been found to be a very successful crop in the rehabilitation of tribal shifting cultivators and for such programmes a holistic integrated approach is adopted aiming at overall development with rubber as one of the major component. About 10000 such families have been benefited mostly in the NE region and the success of this project is ensured through community participation and motivation of extension machinery.

Human Resource Development

As a part of upgradation of the extension skills, the extension officers are trained on extension communication methodologies, farmer participatory extension management etc. in IARI, MANAGE, and Indian Institute of Plantation Management. Of the 454 extension officers of the Board so far, 120 have been trained in IARI, 20 in IIPM, 5 in MANAGE, and 56 officers were sent on overseas study tour cum training to major rubber producing countries during the last five years. Collaboration with Michigan State University also has been made for Participatory Extension Management in a most effective manner.

Linkage with other institutions

Board's extension machinery has been utilizing the services of NGOs wherever possible. The tribal development programme in Tripura was implemented through NGOs under the overall supervision of the Board and the Govt. of Tripura. In women development programme in Kerala, NGOs as well as RPSs were involved. In addition to the above under the People's Planning Programme local panchayats are also being involved through the RPSs for creating infrastructure for processing and marketing in the small holding sector in Kerala. Similarly, Govt. of Tripura, Orissa, Andhra Pradesh and Karnataka also are supporting rubber based rural development programmes.

The extension system prevailing in the Board has already started shifting its focus from individuals to groups. The change has been quite remarkable during the short span. A real participatory approach commenced with the World Bank Project where some changes had to be brought in to meet the project conditionalities. These efforts now have started yielding results. However, for a proper implementation of the concept, enormous

amount of investment for human resource development is required. The level of awareness among growers on the need for forming and sustaining the groups is low even in a state like Kerala with high literacy. Their commitment also has not been of the highest order. Considerable field work is required to improve the level of awareness and also for imparting skills on the group dynamics and group management. The Extension Officers also have to be oriented to change from a 'tree centered' to 'people centered' development which is not very easy. Skill upgradation in participatory extension management also is highly critical as they have to be got trained on the latest tools in extension management. Significant policy changes and changes to approach to extension is required for ensuring high degree of success. Groups have to be made accountable and close monitoring system have to be evolved until the system is stabilised and this cannot be achieved overnight. For an effective participatory extension management, the role of a practising extension specialist is critical.

The sector is expected to undergo several changes during the post WTO regime. The protection enjoyed earlier to is not expected to be available and the small holders will have to compete in the international market. This would require ensuring quality produce and access to information which necessitates development of infrastructure. Community participation only can lead to a sustainable development under such a situation which requires enormous extension efforts, however adopting a nonconventional flexible approach. Participation of all stake holders including private sector is the need of the hour. This calls for skill development and capacity building not only among farmers and farmer leaders but also among the extension officers. ◀