



A REVIEW OF EXTENSION AND DEVELOPMENT STRATEGIES IN RUBBER

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Need based Extension and Development strategies have contributed substantially to the overall growth registered in the Indian natural rubber production sector during the last five decades. In spite of having a wide ratio of extension officers to rubber growers, the decentralized and integrated extension and development delivery systems ensuring informed participation of the growers have resulted in higher degree of adoption of latest technologies, improvement in quality maintenance and primary processing and empowerment of the grower community. Beginning from financial assistance for replanting in 1957 the development schemes have undergone periodic changes. Emphasis on institutional development, facilitating creation of infrastructure for processing, marketing and technology transfer has yielded commendable results. The paper presents the impact of various schemes implemented by the Rubber Board qualitatively and quantitatively leading to higher productivity and higher income levels. An assessment of impact of Rubber Producers' Societies (RPS) in the small holding sector also has been made with relation to its role in acting as a conduit for transfer of technology. Though there are 2,100 RPS the level of performance among them vary significantly. When some perform exceptionally well others are relatively weak. A constraint analysis of the factors leading to the varying level of performance of the various RPS across the state also have been described. While 70 per cent of the growers who are members of good RPS achieved higher productivity only 26.3 per cent of poor RPS could maintain the same level of productivity. A factor analysis for the various indicators identified as contributing factors to the level of performance of the RPS have been described. The paper also describes the initiatives of the Board in involving farmer resource persons and implementing women and tribal development projects in the rubber sector. Experience in promoting consortium of RPS for processing and marketing also have been highlighted.

INTRODUCTION

Natural rubber (NR), regarded as nature's most versatile raw material is obtained from the latex of *Hevea brasiliensis*, a tree, native to the tropical rain forests of Amazon and introduced on a commercial scale to South and South East Asia during the last century. In India, cultivation of rubber on an estate scale was started in 1902 by European planters. This crop however came out of the bounds of the estate into the smallholding sector and at present 88% of both area and production are in

smallholdings, which have an average holding size of less than 0.5 ha. India was exporting almost the entire quantity of rubber produced in the country upto 1950. Thereafter, with the planned development of industrial sector, it not only consumed the entire rubber produced in the country but also achieved the status of a net importer, excepting for brief periods during industrial/economic recession. The importance of this strategic raw material, which finds use in about 35,000 products and is forming the basic raw material for an industry with a



turnover of more than Rs.15,000 crores, is that of import substitution. This is particularly important as the demand-supply gap is projected to widen in the coming years. The crop has a significant socio-economic relevance as about a million growers are involved in the production of this raw material in India, and it provides about 350,000 jobs in the plantation sector and an almost equal number in the industrial sector. The tree has all the attributes of a forest tree and is considered an excellent crop for eco-restoration. It also provides scope for ancillary activities such as apiculture, extraction of oil from seeds and utilization of timber. Rubber wood after processing is of matching quality with any other commercial wood. The fact that rubber has found good acceptance in the rehabilitation programmes for tribals, strengthens its socio economic relevance.

Institutional support

The Rubber Board, a statutory body formed under Rubber Act, 1947, functioning under the Ministry of Commerce, Govt. of India is the nodal agency for the development of rubber industry in the country. It has its headquarters at Kottayam in Kerala State. The Board has a very strong research, development and extension network in the country. Research on this tree crop is undertaken by the Rubber Research Institute of India (RRII) with its head quarters at Kottayam and Regional Research Stations in various rubber growing areas and in areas with potential for rubber cultivation in the country. The development and extension activities are implemented by the Rubber Production Department which has a fairly well spread network of Field Offices. It has four Zonal Offices, two each in north east India and in Kerala. The major extension link in the field is the Regional Office headed by a

Deputy Rubber Production Commissioner or a Development Officer. The Regional offices are supported by field stations headed by Field Officers. The Department has 39 Regional Offices and 170 Field Stations. The total strength of extension officers in the Board is about 450. To maintain the supply of high quality planting materials, the Board has a Central Nursery and Regional Nurseries, which together provides 15% of the requirement of planting materials in the sector, besides maintaining nucleus materials. Tappers' Training Schools providing training on tapping, District Development Centres, Nucleus Rubber Estate & Training Centres and Research and Training Centers in the non traditional areas acting as demonstration cum training centers are other extension centers established by the Board.

Infrastructure for extension

The Department is headed by the Rubber Production Commissioner, a statutory post created under the Rubber Act and who is also is an ex-officio member of the Board. Almost 65% of the budget of the Board is earmarked for extension and development. The grass roots level extension officer of the Board is the Field Officer who generally is a graduate in Agriculture or a postgraduate in Botany. The ratio of the Extension Officer to the rubber growers is nearly 1 : 3000, too large for effective extension work. The delivery of the extension and development functions is integrated and decentralised.

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 items of work are provided as reimbursement. As the disbursement of financial incentive is done only after completion of the work, ensured by a spot visit by the Extension



Officer, failure rate has been practically very low. A range of other schemes also is available for encouraging adoption of technology to increase productivity and to improve quality of the produce. Funds for this are generated out of the cess collected by the Board, which is remitted to the consolidated fund and ploughed back to the sector by the Government.

As the number of smallholdings started increasing the extension link particularly to the mature plantation has been weakening as the thrust has mainly been directed to immature plantations. Recent evaluation of extension activities has found that the more crucial yielding phase which spans for 2.5 decades needs far more support. Latex is a highly unstable product and the technology demand for its post harvest handling make the small growers vulnerable to exploitation. To overcome this situation, during 1960s itself, the Board started promoting group approach in processing and marketing through formation of co-operatives. However, the co-operatives soon became large, politicised and with more government controls it could not focus on the rubber growers' needs to the extent desired, leading to distancing of the growers from them.

Development schemes

Various development schemes are being implemented by the Rubber Board, the most prominent of which is the Rubber Plantation Development Scheme now under implementation for the last two decades. An overview of the schemes implemented by the Board since its inception will be beneficial in assessing their impact.

Replanting Subsidy Scheme

The first scheme introduced by the Rubber Board in 1957 was the Replanting Subsidy Scheme which was aimed at

Table 1. Assistance given under replanting subsidy scheme (1957)

Period	Scale of assistance* (Rs./ha)	Target beneficiary holding size (ha)
1957-60	1000	Unspecified
1960-74	2500	Unspecified
1974-78	7500	Up to 2
	5000	2 to 20
	3000	Above 20

* In addition to the above full cost of planting materials (budded stumps), half the cost of fertilizer and assistance for soil conservation work also were provided.

promotion of replanting of old unselected seedling plantations with high yielding cultivars. The scheme provided for financial assistance as per details given in Table 1.

Upto 1978 the thrust has been on replanting and from 1979 new planting also was encouraged. A scheme for promoting new planting was introduced in 1979, which provided for planting grant at the rate of Rs.7500 per hectare upto 2 ha. and Rs.5000 per hectare for holdings above 2 ha and upto 20 ha. In addition to this, assistance was also provided for meeting the full cost of planting materials, half the cost of fertilizer and of soil conservation works. The assistance could meet about 50% of the development cost.

Rubber Plantation Development Scheme

An integrated scheme for replanting as well as new planting was introduced in the year 1980 during the Sixth Five Year Plan period. The salient features of this scheme included providing entire cost of cultivation incurred during the immaturity period through the assistance from the Rubber Board and through a line of credit through National Bank for Agriculture and Rural Development (NABARD). The scheme also had provisions for free technical assistance. The planting grant under the scheme was released in annual instalments based on pre-



fixed performance indicators assessed by the extension officer of the Board. The scheme has been under implementation during the last two decades. The assistance provided under the first phase of the scheme (1980-84) is given in Table 2.

Separate scale of assistance was available for non-traditional regions. Achievement of Rubber Plantation Development Scheme is given in Table 3.

In addition to the above, a range of schemes have been implemented in the non-traditional region. One of the most successful schemes implemented in the North East India has been the rubber based rehabilitation projects for tribals. The same scheme has been implemented in Orissa, Andhra Pradesh and Kerala also. Under the World Bank assisted project a tribal development plan was implemented and its salient features were special emphasis on

income generation activities during the immature phase, empowerment of women by formation of women self help groups and thrift groups, implementing health and hygiene programmes, fuel wood plantations to meet fuel wood requirement, alternate line of credit to tribal shifting cultivators and convergence of services. An independent assessment by the World Bank have rated this project as one of the most successful schemes for indigenous people.

In addition to this, a women development programme was implemented in the traditional rubber growing region by involving non-governmental organizations (NGO) and Rubber Producers' Societies (RPS).

A range of schemes have been implemented in the mature phase too, which include assistance for sheeting rollers, individual smoke houses, purchase of

Table 2. Assistance given under the Rubber Plantation Development Scheme (1980)

Phase (Year)	Assistance				
	Planting grant (Rs./ha)	Additional grant for planting materials/soil conservation/poly bag plants (Rs./ha)	Interest subsidy on loans (%)	Cost of cultivation (Rs./ha)	Extent of assistance (%)
Phase I (1980-84)	5000	2,500	3	19,600	54.70
Phase II (1985-89)	5000	2,700	3	27,400	44.50
Phase III(1990-92)	5000	2,700	3	46,000	33.19
Phase IV(1993-2000)	8000*	3,000	-	72,000	16.50

* Revised during 1997 to 18,000 and during 2000 to Rs. 12,000

Table 3. Performance of Rubber Plantation Development Scheme (1980)

Phase	Planting target (ha)			Achievement (ha)			Total financial assistance (Rs. millions)
	NP	RP	Total	NP	RP	Total	
I	30,000	30,000	60,000	53,244	19,496	72,740	401.17
II	30,000	10,000	40,000	53,078	24,069	77,147	457.80
III	26,000	10,000	36,000	29,977	15,581	45,558	294.20
IV	56,870	36,250	93,120	52,172	34,978	87,150	934.70
Total	142,870	86,250	229,120	188,471	94,124	282,595	2088.40



sprayers for individuals as well as RPS, bee keeping, bio gas plants, community processing for RPS, latex collection centers for RPS; on campus as well as off campus training on tapping and special scheme for non-traditional region which provided assistance for boundary protection, irrigation and setting up of group processing facilities for voluntary organizations.

Productivity Enhancement Scheme

A base line study carried out by National Institute of Rural Development indicated that about 25% of the smallholdings yield less than 750 kg per hectare. To raise the productivity of these holdings, a special scheme (for enhancing productivity of smallholdings) by arranging supply of inputs through RPS, field demonstrations and intensive extension activities (through devolution of extension functions) also have been implemented using World Bank assistance.

DEVELOPMENT IN NON TRADITIONAL AREAS

The Rubber Board has been promoting rubber cultivation in non-traditional regions in a bid to increase production of NR in the country. As suitable land for expansion in the traditional region has been almost exhausted, attempts were made to identify other agro-climatically suitable regions in the country. North eastern region comprising Assam, Meghalaya, Mizoram, Tripura and northern parts of West Bengal and parts of Goa, Maharashtra, Orissa, Andhra Pradesh and Karnataka have been found reasonably suitable for cultivation. Development of rubber plantations in these tracts have been taken with appropriate research and development back up. In addition to the Rubber Plantation Development Scheme with higher scale of assistance, a range of

other schemes for boundary protection, irrigation, processing, and marketing have been implemented in these regions. The prominent and most successful scheme has been the block plantation project, an integrated approach for economic rehabilitation of tribal shifting cultivators.

Women and tribal development

Under the World Bank assisted project which was concluded during September 2000, emphasis was given on women and tribal development. Women self-help groups were formed in Kerala as well as in Tripura and assistance were provided for income generation activities, hygiene, sanitation etc. These groups were linked to RPS. Women were supported for establishing handicrafts units, which generated additional income and bio-gas plants which generated energy for household use and ensured environment-friendly processing of rubber.

Rubber has been found to be a very successful crop in the rehabilitation of tribal shifting cultivators and for such programmes an integrated approach is adopted aiming at overall development with rubber as one of the major components. About ten thousand tribal families have been benefited mostly in the north eastern region and the success of this project is ensured through community participation and motivation of extension machinery. In 1992 the Board started implementation of a rehabilitation scheme for the tribal shifting cultivators in Tripura and the beneficiaries mostly had income level below poverty line. The scheme was taken up in tribal colonies where several other programmes implemented from 1950 onwards, were not successful. Such colonies were adopted and linkages were established with other agencies and resources to supplement the Board's resources and contributions of the beneficiaries. Liberal



funding from the State Government also supplemented the financial resources. The Board implemented the programme utilizing the services of the NGO on a need basis. About 2500 families were rehabilitated under the scheme in Tripura and an area of 2500 ha have been planted with rubber. The beneficiaries were provided subsistence wages for the work contributed during the immature phase of rubber. The plantings of 1992, 1993, and 1994 have already come under tapping. In a recent survey carried out in two such colonies it has been indicated that the family income has gone up from Rs. 500 to 4000 a month. The yield is further poised to increase with corresponding increase in the income of beneficiaries. The most striking results have been improvement in the level of education and quality of life registered in these most remote hamlets of Tripura where the scheme was implemented. Other social impacts of the project are being monitored.

IMPACT OF RUBBER BOARD'S EXTENSION SYSTEM

The Board has a well established system of monitoring and evaluation of the extension activities. The grass roots level extension worker is the Field Officer, who runs a one man office at village level. Almost the entire extension work is delegated to the Officer. The nature of extension activities involves visit to holdings for providing support to the immature phase, visits to RPS for participation and guidance in executive committee meetings and conducting various promotional programmes. On an average about 175000 holdings are visited by about 300 field extension functionaries. In addition, about 120000 growers are covered under various campaigns and seminars for transfer of technology.

An impact assessment carried out by an

external agency has revealed that the difference in the level of adoption of various cultural practices among the participants in the scheme and non-participants are quite significant. The details of adoption of cultural practices among participants in the new planting/replanting scheme and productivity enhancement scheme are presented in Tables 4 and 5. The productivity increase for participants of the scheme has been recorded as 379 kg per hectare.

Table 4. Level of adoption of recommended cultural practices for immature plantation among growers

Activity	Level of adoption (%)	
	Scheme* participants	Non participants
Fertilizer application	85.94	15.56
Ground cover establishment	29.92	13.33
Soil/moisture conservation	96.22	73.30
Discriminatory fertilizer use	20.40	1.33
Attainment of prescribed growth standards	88.00	<50

* Participants in the new planting/replanting scheme

Table 5. Adoption of recommended cultural practices in mature phase among growers

Activity	Level of adoption (%)	
	Scheme* participants	Non participants
Fertilizer application	49.92	8
Spraying	46-56	12-17
Rainguarding	47	30
Stimulation	2.2	nil

* Participants in the productivity enhancement scheme

Impact assessment studies also have indicated some technology gaps in rubber processing and marketing by the smallholders. It was observed that only 19.27% of small growers own smoke houses. Most of the rubber sheets produced by small growers are sold as ungraded and only 37.8% of them sell rubber sheets after grading. The main marketing channel for sheet rubber



produced by small growers is through private dealers (91.27%). The RPS and co-operatives account for sale of only 4.68 and 3.87% of the sheet rubber produced by small growers. The main marketing channel for latex from smallholdings also is private dealers (55.26%) with RPS and co-operatives dealing in only 36.84 and 2.63 per cent respectively.

GROUP APPROACH

Earlier, the Board's extension delivery has mostly been on an inter personal basis. Periodical group meetings and seminars used to be conducted to spread the reach further. Though the co-operatives were also involved in the extension delivery system a significant change started with the formation of Rubber Producers' Societies in 1985.

The Plantation Enquiry Commission of 1960 recommended formation of co-operatives in the rubber sector. A survey conducted by the Rubber Board revealed that 52% of the members of the co-operative societies in Kerala were rubber growers and they held 80% of official positions in these societies. The Rubber Marketing Societies under the Co-operative Act were formed from 1960 for transfer of technology, community processing and marketing, distribution of agro inputs, spraying fungicides etc. However, though the marketing societies had contributed to the empowerment of smallholding sector to a certain extent it did not yield the desired results. Therefore, the Rubber Board promoted formation of RPS from 1985.

Rubber Producers' Societies

Rubber Producers Societies are voluntary self help associations of small growers, registered under the Charitable Societies Act. The RPS were envisaged to function as a non profit making institution

imparting technical and scientific knowhow to the members for the general improvement of their plantations and thereby achieving economic and social welfare.

An RPS can be registered by a group of at least seven small holders by contributing Rs. 50 each as entrance fee and Rs. 10 as annual subscription. The Board accords approval to the RPS after an inspection by the Board's Field Officer. Generally the Field Officer takes the initiative in identifying the promoters and also assisting in the 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 their holdings through the society. Funds of the Society are raised through admission fee, annual subscription, donation, loans and advance from members and non-members, subsidies and loans from other institutions including banks, co-operative societies, Rubber Board, Government etc. The ultimate authority of the Society vests in its general body. The general body meeting is held periodically in a rubber holding of one of the members. The management of the society vests in the executive committee or Board of Directors (BOD) comprising the President and six members elected from the general body. The Rubber Board has the right to nominate one of its officers to the Committee and generally the Field Officer of the Board is nominated. The executive committee elects a Vice President. The services of the President and Vice President are gratuitous. The society is not authorised to appoint any persons except a latex collection agent, who may be paid a commission.

Activities of RPS

The RPS, numbering about 2100 at present, have made a significant impact in



the modernization process of the rubber holding sector. Besides undertaking community processing and marketing of rubber it also distributes about 30-40 plantations requisites to the small growers at reasonable prices. It also ensures adoption of recommended agricultural operations by the growers. RPS has taken up the role of a service provider by undertaking jobs such as prophylactic micron spraying for control of diseases on the members' holdings on contract basis, generation of high yielding planting materials and collection of statistical data.

Rubber processing and marketing involves high technology and investment. The RPS 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 for setting up processing factories and taking up trading of latex, sheet rubber, field coagulum and agro inputs. These companies with 98 % shares (49 share) contributed by RPS in the region and 2% shares (1 share), by the Rubber Board, form regional level apex bodies of RPS.

The RPS needs far more support. Due to the increase in their number, the RPS could not be supported by Rubber Board's extension officers to the extent expected. Moreover, motivation among the officers themselves for the need for forming and supporting such organisations has not been very high. More importantly, awareness among the growers about the need for this set up also was found to be low pointing to the necessity for motivation.

Performance of RPS

In a study conducted in 29 villages in a predominantly rubber growing tract in India (Krishnakumar and Nair, 1999) it was observed that 33.14% of the growers are

members of the RPS and on an average there are 3 RPS per village. It was reported by 27% of the growers that they have been getting technical information from the RPS. On an evaluation of the general performance of the RPS it was however noticed that only 30% of them were functioning satisfactorily. The extension strategy proposed by the Board is devolution of extension functions by involvement of the RPS in a phased manner. Therefore, it is imperative that this grass roots level institution works more effectively.

Another assessment of the performance of the RPS (Krishnakumar and Dhanakumar, 2000) analyzed the organisational structure and management procedure of RPS, constraints hampering their performance and impact of the RPS including analysis of the factors responsible for their success. The study revealed that the RPS need more technical back up and human resource development. For effective functioning, there was a need for increasing competence of the BOD. Though many of them possess technical skill to manage their own plantations, their skill in managerial and human resource dimensions were very limited.

Factors bearing on the performance of the BOD were identified as: personal capacity building (skill in public speaking, community issues, interagency co-ordination), participation and co-operation (ability to co-operate well with members), commitment for innovativeness and for grass root level community development process, attention and skill in politics, knowledge on technical and organisational aspects, level of education, professional contacts and skill in mobilising funds.

The study based on a detailed factor



analysis of the Board of Directors of RPS revealed the impact of efficient functioning of RPS on increasing production, improving the quality of life and disseminating information on issues related to rubber cultivation. In the good RPS 70% of members attained high production, 56.7% improved their quality of life and more than 80% paid attention to issues related to rubber whereas in the poorly performing RPS these values were 26.3, 10 and 15 per cent respectively. The major factors which prompted participation in RPS were access to technical information, need for group activity through RPS and direct financial benefits, the corresponding weightage being 46, 35 and 28 per cent respectively.

A member of the RPS performs the functions of collection agent, and attends to the day to day marketing operations and act as a vital link in the RPS. It was observed that 67% of the collection agents in good and 100% in poor RPS were not satisfied with the job. In poor RPS the collection agent had only a monthly income of Rs. 100 to 500, whereas in the good RPS, the income was more than Rs. 1,000/- per month.

The tappers from all the three types of RPS, namely, good, poor and average had a high level of school education. Majority of the tappers (58%) had an income range of Rs. 500 to 1,000 per month in poor RPS. In good RPS, 90% of the tappers had functional association with the RPS whereas this was only 33% in poor RPS.

An analysis of the data on the perception of Field Officers indicated that they needed more training in grass roots level 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 need for a change is felt.

A profile of non-members of the RPS from the service area of the RPS revealed that 47% of the non-members had income between Rs 5,000 and 10,000. The reasons given by the farmers for not becoming members in RPS included: lack of awareness about the functions and benefits of RPS, non availability of rubber sheet trading services in some RPS, delay in payment of price of rubber marketed through them and lack of effective functioning of the BOD. Advance payment by private dealers was another reason for trade through them. The non-members however expressed a desire to take membership in the RPS.

In yet another impact assessment study by National Institute of Agricultural Extension Management (MANAGE), the role of RPS was observed to be significant in the development process. However, this study pointed out that participation of resource poor farmers in the various services provided by the RPS was very little. One of the reasons identified for the poor performance of a good number of RPS is the lack of regular income generating activities such as rubber processing or trading. Lack of motivation among office bearers, predominance of poor rubber growers, nearness to urban areas resulting in farmer's preference for sale of rubber to town level dealers directly etc. contributed to relatively unsatisfactory performance of the RPS.

On an average, only 20 to 25% of the small growers are members of the RPS. In yet another study conducted by the Centre for Management Development (CMD) Thiruvananthapuram, the reasons for the poor membership has been identified. Some farmers (50%) regarded membership in RPS



as not worthwhile while some others (21.5%) were not aware of its activities. Some farmers (16.25%) could not become members as no RPS is functioning nearby while a few (7.5%) was not pleased with the way in which the nearby RPS functions. Only 5% farmers indicated financial constraints as reasons for non-membership. The study also revealed 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 of RPS members studied 46.92% adopted discriminatory fertilizer recommendation whereas it was only 8% for non-members.

RPS as centre for technology transfer and training

To accelerate the process of empowering of RPS and ensuring devolution of extension functions to them a few selected RPS were supported for gearing themselves up for technology transfer and processing of quality sheets. They were provided assistance for engaging extension agents and tapping assistants to intensify extension activities. A few RPS were supported to initiate computerisation. Apart from this, the Board facilitated formation of private limited companies adopting the concept of agri-business consortium. There are 35 Model RPS now functioning as centres for transfer of technology. These RPS are proving to be very effective not only in processing high quality sheets but also in imparting training on various technical aspects as well as on group management and leadership to other RPS. Encouraged by the success of the Model RPS another 100 RPS have been supported to set up environment friendly

processing facilities which not only serves as community processing centers but also for training and assisting the Board in implementing various schemes. These RPS have contributed substantially towards export of NR during the last year.

As a result of removal of quantitative restrictions (QR) on natural rubber imports the sector has to compete in the international market. The private sector has been dominating the rubber trade in India. To avoid monopoly and for a better bargaining power, growers' organizations such as RPS should equip themselves not only to cater to the domestic rubber market but also to get established in the international market. The processing and marketing facilities being created in these organizations, therefore, are expected to help in achieving multiple objectives of processing (post harvest handling) and trade besides providing a platform for the growers to discuss various issues of relevance to the sector so as to garner support for collective bargaining and influencing policy decisions.

HUMAN RESOURCE DEVELOPMENT

For upgradation of the extension skills, the extension officers are trained on extension communication methodologies, farmer participatory extension management etc. at the Indian Agricultural Research Institute (IARI), MANAGE and Indian Institute of Plantation Management (IIPM). Of the 454 extension officers of the Board, so far 120 have been trained in IARI, 65 in IIPM and 5 in MANAGE, and 57 officers were sent on overseas study tour to major rubber producing countries during the last five years. Two officers have been deputed to Michigan State University for training in



participatory extension management. Workshops are conducted on a regular basis involving expert agencies under a collaborative programme on extension management. The one month campaign, launched every year during May-June addresses issues of immediate relevance. Before launching the campaign all extension officers are not only trained on the topic but also are given an overview of the sector and the challenges ahead. The officers are also provided with relevant literature including video films and slides. All the Regional Offices have been provided with TV, VCR and computers. To relieve the extension officers of the pressure on administrative work, computerization of all subsidy payments have been completed. The officers are also trained regularly in the training institute of the Board besides arranging regular interaction with the scientists of RRII.

Capacity building for growers is also being given thrust and grower leaders have been trained already in institutes such as IIPM besides being deputed overseas to major rubber producing countries. The RPS are being provided with computers not only for processing the daily transactions but also to gain access to information. The Rubber Board had launched a web portal to provide ready on line access to all relevant information on rubber cultivation processing and trade. It also provides information on all activities of the Rubber Board and is of interactive nature.

The members of RPS are also trained on other ancillary income generation activities such as apiculture and mushroom cultivation on rubber wood waste. The tenth Five Year Plan proposals provide for activities to enhance net farm income and the economic viability of the plantations by

tapping ancillary sources of income. In a bid to encourage and recognise the RPS and small growers, the Rubber Board has instituted two awards given away biennially with a prize money of Rs. 2,00,000 and Rs. 1,00,000 respectively.

Farmer resource persons

The Board also has been promoting a farmer participatory extension system and has already started using farmer resource persons in the campaigns and training programmes. These farmer resource persons are selected from among experienced farmers and are trained before their services are utilised for the training programmes of the Board. During the last year about 200 farmer resource persons have been selected and their services utilized for campaigns on quality upgradation of rubber as well as on apiculture in the rubber plantation sector. The same approach is being continued during this year also. The Board pays an honorarium to the resource persons for their service. In future a pool of such resource persons will be maintained by RPS so that their services can be utilized for the regular training programmes.

Linkage with other institutions

Board's extension machinery has been utilizing the services of NGO wherever possible. The tribal development programme in Tripura was implemented through NGO under the overall supervision of the Board and the Govt. of Tripura. In women development programme in Kerala, NGO as well as RPS were involved. In addition to the above, under the People's Planning Programme local bodies are also being involved through the RPS 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.

Challenges for the extension machinery

As a result of the liberalization and consequent removal of QR under the World Trade Organization (WTO) mandated regime several changes have occurred in the sector. In a sector like rubber, dominated by small and marginal farmers, appropriate policy intervention is required to equip it to meet the challenges ahead. Production has to be cost competitive and of internationally acceptable quality. Gaining access to international market is important and growers have to be empowered to insulate themselves from exploitation. Though information technology enabled services can help to transfer technology, this alone will not take care of the need for bringing about changes and building up of grass roots level institutions. The processed form of NR, which at present is largely ribbed smoked sheets, has to be changed to the internationally preferred form of technically specified rubber. This would require a totally different raw material supply chain to be put in place for which not only appropriate institutional development is required but also infrastructure and investment. All these can be achieved only through a professional extension machinery for which training is of paramount importance. The training has to be not only on production/processing technology but also on the socio economic and cultural issues, which will help the extension machinery to be transformed as a knowledge manager.

The extension machinery's relevance in the changing scenario is becoming exceedingly important. The technology gap particularly in tapping and processing, two

activities which contribute substantially to the cost competitiveness, is quite wide which needs bridging. For this, participatory extension management has to be nurtured to create infrastructure and to assist in transfer of technology. The Board's present extension support generally reaches only about 30-40% of growers. The resource poor farmers need to be supported selectively. Economic viability of plantations have to be enhanced to broaden the income base of the smallholdings.

The Board has already embarked on programmes for achieving the goal and satisfactory results have been achieved. It has already brought in policy changes. While subsidies have been scaled down substantially in stabilized areas such as plantation development, additional incentives are provided to encourage infrastructure building with the active participation of growers. The assistance has to continue to equip our farmers to compete effectively with producers in other countries.

SUMMARY

The extension system of the Rubber Board has already started shifting its focus from individuals to groups. The change has been quite remarkable during the short span since its implementation. A real participatory approach commenced with the World Bank Project where some changes had to be brought in to meet the project guidelines. 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 expected high 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 the latest tools in extension management have to be used. Significant policy changes and changes in extension approach are required for ensuring success. Groups have to be made accountable for which a close monitoring is required until the system is stabilized. This cannot be achieved overnight. For an effective participatory extension management, the role of a practicing extension specialist is critical.

The Board though has adopted a group approach in its extension programme about 35 years ago, a real participatory extension approach has been initiated only during the last 5 years. For the rubber sector to survive the changes, considerable strengthening of the smallholding sector is required. Participatory extension with a focus on institution building at grass roots level can be the best means to achieve it at a faster rate. This is particularly relevant in the context that Government sponsored

institutional development cannot be expected to grow leap and bounds in tune with the requirements. The degree of success so far registered is quite encouraging. The Board's priority is to develop participating extension systems so that the existing extension machinery transforms itself to trainers and facilitators.

The rubber sector is expected to undergo several changes during the post WTO regime. The protected market enjoyed hitherto is not expected to be available and the smallholders will have to compete in the international market. This would require ensuring high quality of 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 adopting a nonconventional and flexible approach. Participation of all stake holders including the 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. Appropriate policy changes are required including changes in the curricula in the universities for enabling extension officers to meet the challenges.

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