Commercial Exploitation of Rubber Honey: An Agenda For Policy Initiative

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Introduction

The initial attempts to exploit honey from rubber plantations can be traced back to the initiative of the European missionaries based in Kanyakumari district in Tamil Nadu and South Kerala during the early 1920s. Despite the recognition of the commercial importance of apiary honey by the Royal Commission on Agriculture as early as in 1928, co-ordinated efforts to promote beekeeping by the government began only after the mandate for the same was given to the Khadi and Village Industries Commission (KVIC) in 1953. However, the response to the promotional efforts of the institutional agencies had been lukewarm as evident from an estimated achievement of only 15 per cent compared to national production target of apiary honey, set out by the National Commission of Agriculture in 1976 for 2000 AD. From the very beginning, the importance of rubber plantations as a vital source of honey has been recognised and during the 1980s its share in total national production was estimated to be around 40 per cent. The production of rubber honey in the country reached its peak in 1990-91 and the reported production was 2750 MT. Since then, there has been a steady decline in the production mainly on account of the severe incidence of Thai Sac Brood Viral (TSBV) disease. The rubber honey production showed signs of recovery only from 1997-98 and the estimated production was only 1750 tonnes which is less than three per cent of the estimated production potential from rubber plantations.

Although the Rubber Board initiated a scheme to promote beekeeping in rubber plantations in 1987-88 in addition to the support provided by the KVIC and other voluntary agencies, it had suspended the scheme in 1991-92 in response to the dwindling enthusiasm by the farmers in the context of the outbreak of the TSBV disease. However, in 1997-98 the scheme was revised with the recovery observed in the rubber honey sector which was hitherto almost entirely dependent on *Apis cerena indica* (Indian bees) and the gradual popularisation of the TSBV resistant *Apis mellifera* (European bees). In order to exploit the maximum commercial potential of rubber honey and to ensure sustainability of natural rubber cultivation in the context

of the ongoing process of economic reforms and the resultant market integration, policy initiatives for co-ordinating the programmes of all concerned institutional agencies with apiary honey production and exports in the country, became more explicit than in the past. Accordingly, a meeting was convened in the headquarters of the Rubber Board at Kottayam on 7-2-2000, which was attended by officials of the promotional agencies, representatives of the industry, processing units and farmers and the concerned Rubber Board officials. One of the important decisions of the meeting was commissioning a study team to prepare a report on the current status of the rubber honey production and to identify the major issues confronting the production, procurement, processing and marketing. This approach paper is an outcome of the decision of the meeting based on extensive field visits in the main beekeeping and processing regions in the states of Kerala and Tamil Nadu. For the sake of clarity of discussion for the preparation of the final project report on policy initiative, the paper is divided in to four broad sections focussing on the critical issues in each segment.

Production Sector

The Indian natural rubber production sector has been undergoing through a period of uncertainty since early 1990s in the context of important policy changes posing serious questions on its economic viability mainly on account of a steady erosion in its profit margin and the hitherto protected status. Though the response of the farming community varied across regions and size-groups, the following points deserve attention for any meaningful programme to promote rubber honey as an ancillary source of income to sustain the viability.

- A steady growth in the relative share of part-time farmers in the dominant rubber smallholdings sector in Kerala giving inadequate direct attention to rubber farming operations and commercial exploitation of ancillary sources of income from intercropping, rubber honey, rubber seed and rubber wood.

- As revealed by a recent study by the Economics Division of Rubber Research Institute of India, there are inter-regional differences and the share of part-time farmers is the highest in South Kerala (78%) followed by Central Kerala (52%) and the lowest share was observed in North Kerala (24%).

- A corollary of this growing phenomenon is the growing dependence on hired labour for farming operations in South Kerala (94%), Central Kerala (87%) and North Kerala (44%).

- This emerging scenario has important policy implications for any systematic attempt to promote beekeeping in the dominant rubber smallholdings sector in Kerala which accounts for more than 86 per cent of the total area under rubber cultivation in India.

- The dominance of migratory beekeeping based on indica variety by people from the Kanyakumari district of Tamil Nadu in South and Central Kerala regions to a large extent is a logical extension of the trends observed in rubber production sector compared to the observed higher participation rates of farming community in beekeeping in the rubber plantations in North Kerala.

- Inspite of the conscious efforts by the institutional agencies to promote mellifera variety since early 1990s the observed preference for indica species is in tandem with its higher portability suiting migratory beekeeping in south and Central Kerala regions. However, in North Kerala the popularity of beekeeping with the mellifera is showing a steady increase in recent years.

- The observed preferences have to be analysed against the backdrop of the findings of a recent study undertaken by RRII. The study revealed that during the nine year period between 1990-98 the annual mean commercial yield /hive of indica honey species varied between 2 Kgs in 1993 to14 Kgs in 1990 whereas the respective annual mean commercial yield for mellifera for the five year period between 1994-98 varied between 8 Kgs/hive in 1994 to 39 Kgs/hive in 1998. The highest reported yield for indica was 17 Kgs/hive compared to 60 Kgs/hive for mellifera variety.

- Although the reported average annualised establishment cost of mellifera hives was 235 per cent higher than indica, the net income per hive per year during the period 1996-98 had been

Rs.224 for indica and Rs.871 for mellifera. However, the BCR for both species are comparable due to the higher initial investment and maintenance cost for mellifera.

- The relative colony strength of mellifera is in the range of 50,000 to 1,00,000 against 5,000 to 20,000 for indica leading to potential higher yield in the former. However, the relatively higher requirement of pollen for mellifera indicates its suitability for regions with diverse and multiple cropping pattern with the potential of honey flow from different sources. In rubber plantations, mellifera requires artificial feeding for 8-10 months leading to higher maintenance cost.

- Therefore, logically, the promotion of higher yielding mellifera colonies is suggested for regions of rubber plantations with potential of more organised and large scale beekeeping integrated with processing and storage facilities, diverse cropping pattern and critical component of family labour inputs. In this context, it is worth mentioning that the large rubber estates under the corporate sector and smallholdings in North Kerala are potential targets for the promotion of mellifera variety. Conversely, rubber smallholdings in South and Central Kerala with the growing dominance of part-time farmers dependent on hired labour are relatively more suitable for migratory farming with indica species.

- An appropriate agency has to be identified for the supply of beehives and accessories prior to the implementation of the promotional programme.

Raw Honey Procurement

- Informal arrangements evolved over time dominate procurement operations and price determination with a key role played by the KVIC in declaring a non-statutory price every year.

- More than 70 per cent of the honey is obtained from the indica species and 60 per cent of the total honey procured in the primary market is from migratory beekeepers based in Kanyakumari district of Tamil Nadu.

- An estimated share of around 90 per cent of procured honey belongs to the standard grade with a moisture content in the range of 22-24 per cent. The procurement operations are currently carried out by 42 beekeeper societies and 13 purchasing centres in Kerala and 22 societies in Kanyakumari district apart from private honey processing units.

- During the five year period between 1995-96 to 1999-2000 the procurement price varied between Rs.40/Kg to Rs.50/Kg. Though the procurement prices of the societies and private processing units are normally comparable, the highest reported price paid by the societies was Rs.45/Kg in 1997-98 in contrast to Rs.50/Kg paid by the private units in 1995-96. The current ruling price for both the groups is Rs.42/Kg.

Raw Honey Processing

- The field visits undertaken have clearly indicated a wide gap between the existing organisation of processing and technological capabilities developed by the R & D institutions in the country. To a large extent, the existing pattern and scale of processing reflect the inward market orientation and the protected policy framework insulating honey processing industry in India from the compulsions of large scale modern processing facilities to face the challenges posed by the economic reforms since 1991.

- An important characteristic of rubber honey production is a very high seasonality which is normally restricted to three months from February to April coinciding with the flowering in the post-refoliation phase. This peculiar dimension of rubber honey production leads to specific processing problems of adequate storage capacity and working capital requirements. Therefore, any serious policy initiative to tap the estimated theoretical potential of rubber honey to the tune of 60,000 tonnes within three months in every year will have to create adequate storage capacity.

- Rubber honey has a high moisture content and the popular processing technique in Kerala and Tamil Nadu is water heating at 65^0 C using large metallic utensils and LPG/Kerosene stove. Rubber honey is reported to be stored without processing for three months and with semi-processing for six months.

- The reported moisture content required for export quality honey is less than 20 per cent. However, rubber honey processed in the country has a moisture content more than 20 per cent. The existing rubber honey processing units have serious reservations in accepting the technological feasibility of reducing the moisture content to less than 20 per cent.

- Conversely, the CBRTI, Pune, has claimed to have developed technological capabilities to reduce the moisture content to the desired levels. This claim has been reinforced by the claims of a Pune based private company which is also an authorised unit by the KVIC for the supply of modern honey processing plants with the options of moisture reduction management. The company has developed modern plants with installed capacities ranging from 100 Kg/shift to 500 Kg/shift. The cost of the plants with moisture reduction facility varies from Rs.4, 65,000 to Rs.11,60,000. Based in a two shift /day processing plant with a capacity of 500 kg/shift, the maximum installed capacity will be only 300 tonnes per annum.

- From a policy angle, it is essential to achieve the twin objectives of export capabilities and capacity to withstand cheaper imports of honey with desired levels of moisture content. However, systematic planning is an essential pre-requisite prior to the choice of modern plants as factors affecting the availability of raw honey, the price, organisation of procurement/primary marketing and market orientation are critical.

Marketing

- An important feature of rubber honey marketing is that more than 60 per cent of the honey is sold in raw form mainly to Ayurvedic and Unani manufacturers in Kerala, Tamil Nadu, Karnataka and Andhra Pradesh. The underlying factors contributing to this pattern of sale are inadequate storage capacity, working capital requirements and relative profitability. The average price realisation by the processing units in 1999-2000 was Rs.58/Kg.

- The processed honey is marketed through retail outlets in bottled form of various volumes ranging from 50 gms to 1 Kg. The average retail price for processed honey during 1999-2000 was Rs.100/Kg. The processed honey has been facing competition from honey from

other sources in the retail market. Normally, commission given to the retail outlets ranges between 15-30 per cent. However, in the absence of reliable data on cost of processing of rubber honey, it becomes difficult to assess the relative profitability of marketing raw honey vis-à-vis processed honey by the processing units.

- Another important feature of rubber honey market is the insignificant role of intermediaries in the conventional sense. Nevertheless, from the policy angle, two important questions which require considerable attention are:

  (a) Is it possible to sustain the prevailing marketing arrangements and prices of rubber honey in the context of policy changes leading to increasing imports of cheaper honey?, and

  (b) To what extent the reorganisation and modernisation of rubber honey production and processing sectors will enable this valuable untapped by-product of rubber plantations to achieve competitiveness in the domestic and export markets?.

- Finally, the two important points to be projected from the socio-economic angles are:

  (a) An estimated number of 12 million man days of employment per annum can be generated if all the mature rubber plantations in India introduce beekeeping, and

  (b) The incremental value of output would be more than Rs.2400 million.

- The major critical policy input which requires due consideration prior to the large scale promotion of rubber honey production is a thorough revamping of the existing informal arrangements in the procurement sector with its crucial appendages consisting of infrastructural facilities for storage, processing and market intelligence. This policy imperative assumes relevance in the context of the potential threats posed by the large scale imports of cheaper honey by the consuming industries in India and the need for achieving export competitiveness.