Evolving a sustainable coconut sector in Kerala: Prospects & Perspectives

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Introduction

Coconut sector plays a vital role in the agrarian economy of Kerala, besides its unique place in the socio-cultural fabric of the region. It was always considered as the symbol of rural prosperity and for many years Kerala ranked first in both area and production of coconut in the country. The coconut sector contributes around 15% of total agricultural GDP of Kerala, thus inextricably linked to the agricultural economy of the state. It is estimated that there are about 3.5 million holdings and at least 5 million people depend on this crop directly or indirectly for their employment and livelihood. However, Kerala, the 'land of coconut' is gradually loosing its supremacy in coconut production scenario of the country. In the year 1990, Kerala accounted for 57 per cent area and 47 per cent production of coconut in the country. However, Kerala's share in area as well as production of coconut has been declining over time. During 2016-17 Kerala accounted for only 37 per cent area and 31 per cent production in the country with 7448 million coconuts 770 thousand hectares. Though productivity of coconut in Kerala state has increased to 9664 nuts/ha in 2017 the state is still below the national average (11481 nuts/ha), which is a matter of concern. Better technology integration is essential for enhancing the efficiency of coconut sector. Systematic research in coconut in India, which celebrated 100 years of service to the coconut farming community during 2016, has resulted in substantial number of viable technologies for enhancing income from coconut farming. These include high yielding hybrids and improved varieties, coconut based multiple cropping and integrated farming system models, agrotechniques for higher productivity including nutrient management, irrigation and water management, integrated pest/disease management and value addition through product diversification. However, the field level adoption of improved coconut technologies is not at a satisfactory level owing to various techno-socio-economic reasons. Hence, redemption of the traditional coconut farming and reorientation towards profitable ventures is becoming a necessity. As indicated in the approach paper for 13th five year plan by the State Planning Board, Govt. of Kerala, it is essential that urgent steps are taken to substantially increase income from coconut farming so as to achieve income enhancement in agriculture sector.

Sectoral challenges in a nutshell

Constraints such as high level of market fluctuation/price crash in coconut, changes in the demographic characteristics of coconut growers with a shift towards absentee landlordism, predominance of senile and unproductive palms, predominance of small and marginal holdings, over populated stands of both coconut and other trees in the homesteads, low level of adoption of crop management practices resulting in low productivity, depletion of natural resources in coconut gardens and soil related constraints, inadequate irrigation facilities, lack of availability of quality planting materials, lack of skilled labour and high wage rate, crop loss due to incidence of various pests and diseases, low level of product diversification etc. adversely affects coconut farming in the state, and as such coconut has become a neglected crop. Hence, appropriate research, extension and policy interventions are to be formulated and implemented to enable coconut growers to alleviate these constraints and steer the sector towards achieving the goal of sustainability.

Strategies for sustainable development

Effective strategies and congenial policy environment are needed to improve efficiency of coconut sector in the state.

Rehabilitation in a phased manner

The foremost strategy for improving the coconut production in Kerala is the massive cutting and removal of senile and disease affected coconut

palms which are beyond recovery, removal of over aged palms; regulating the palm density and replanting with high yielding planting materials along with adoption of suitable agro-management practices in farmer participatory cluster mode. Replacing old palms will require enormous quantity of seedlings. Hence, urgent action should be initiated for replanting such seed gardens with parental lines of new and improved varieties recommended for the respective regions. Further, to increase the capacity for hybrid seedling production, a decentralized production mechanism is to be envisaged by maintaining a centralized pollen storage and supply mechanism. In Kerala, on an average 28-30 lakh coconut seedlings are required annually. But the public sector institutions including State Department of Agriculture, CDB, CPCRI and KAU put together could supply only about 10 lakh seedlings per year, revealing a huge gap between demand and supply. The major constraint in enhancing production under public sector is the limited number of mother palms available with them. Many seed gardens established are facing various problems that have resulted in further reduction in number of palms. Rejuvenation of these seed gardens by planting mother palms of newly released varieties requires immediate attention. Since most of the existing seed gardens in Kerala have been established more than 25 years back, the existing mother palms in such seed gardens are nearing senility. Hence, urgent action should be initiated for replanting such seed gardens with parental lines of new and improved varieties recommended for the respective regions. Further, to increase the capacity for hybrid seedling production, a farmer participatory decentralized production mechanism is to be envisaged by maintaining a centralized pollen storage and supply mechanism. The three tier Farmer Producer Organisation system of Coconut Producer Society-Coconut Producer Federation- Coconut Producer Company facilitated by CDB can play a significant role in the decentralised coconut seedling production programmes. ICAR-CPCRI is currently implementing two pilot projects funded by State Department of Agriculture viz., 'Technology support for coconut hybridization/ production of semi tall varieties' and 'Production and distribution of dwarf/semi tall varieties of quality planting materials' which focus on utilisation of elite mother palms available in farmers' gardens and decentralised participatory approach for production and distribution of coconut seedlings. It is also necessary to ensure quality control in the production and distribution of coconut seedlings to prevent unscrupulous elements exploiting coconut growers. Hence, it is important that an appropriate nursery accreditation mechanism is established and accreditation made mandatory for all coconut nurseries. The desired ratio of coconut palm population of tall/dwarf/hybrid varieties in farmers' gardens i.e about 75 per cent tall and remaining 25 per cent dwarf and hybrids put together needs to be emphasized and accordingly appropriate short term and long term strategies are to be formulated and implemented for production and distribution of coconut seedlings.

Role of system approach in sustainability

The strategy for revitalising coconut sector in Kerala needs to revolve around interventions for ensuring adequate care and management of coconut palms in the existing gardens to enhance productivity and income. CPCRI has developed many coconut based multiple cropping and integrated farming system models which are more efficient in utilising the basic natural resources and realise more income compared to monocropping of coconut. A coconut based mixed farming system comprising coconut, pepper, banana, crossbred cows, poultry birds, goat, and pisciculture has proved to generate returns up to three times higher than that of coconut monocrop. In addition to the economic benefits, the systems ensure food and nutritional security coupled with sustainability and environmental services. In Kerala, the average size of coconut holding is only 0.2 ha and income from such tiny holdings can't meet the diverse needs of farm families. Hence, systematic coconut based cropping/farming system as a strategy to make coconut farming economically viable in small holdings needs to be highlighted. Implementation of development schemes to popularise coconut based cropping/farming systems is highly relevant since coconut growers in Kerala are currently more exposed to economic risks and uncertainties owing to the high degree of price fluctuations.

Enhancing productivity and income through technology integration

Increasing productivity and reducing cost of cultivation through better utilisation of crop management technologies in the existing coconut gardens is another important strategy to be implemented for enhancing income from coconut farming. The study on fertility of soils of Kerala has revealed that soil related constraints viz., very

strong soil acidity, extensive deficiency of secondary nutrients calcium and magnesium and wide spread deficiency of micro-nutrient boron are among the important factors for low productivity of coconut in the state. Hence, it is important that interventions are implemented for improving soil health status in coconut gardens through soil test based nutrient management. The technology for vermicomposting of coconut leaves as part of on-farm organic matter recycling in coconut gardens is very relevant in the context of growing awareness about organic farming/ eco-friendly farming in Kerala. Coconut gardens of one hectare area can generate up to eight tonnes of leaf biomass residues every year which can be utilised for vermicompost production. The coconut leaf vermicompost can also meet 50% of the nitrogen requirement of coconut palms grown in one hectare area, saving expenditure on inorganic fertilizer. Basin management with green manure legumes is another approach for enhancing the availability of organic manure.

Drip irrigation is the ideal method of irrigation for coconut. Hence, schemes to promote adoption of drip irrigation in coconut gardens assumes much significance, especially 'more crop per drop' is the strategy accepted worldwide for sustainable crop production. It is also important to implement schemes to promote adoption of soil and water conservation and water harvesting in coconut gardens for enhancing coconut productivity. There was 19 per cent improvement in yield of coconut due to the implementation of various interventions related to soil and water conservation under the Farmer Participatory Action Research Programme (FPARP) implemented by CPCRI with the support of Ministry of Water Resources in selected localities of Kasaragod district.

Crop loss due to incidence of pests and diseases is one of the major constraints experienced by coconut growers in Kerala. CPCRI has developed a number of viable technologies on palm health management amalgamating integrated pest and disease management with nutritional care of the palm. However, due to various reasons the field level adoption of technologies recommended for the integrated pest management (IPM) and integrated disease management (IDM) of coconut is very low and as such crop loss due to incidence of pests and diseases continues to incur huge economic loss for the coconut growers. The technical feasibility and economic viability of IPM/IDM technologies were successfully demonstrated in farmers' field at different localities under various action research projects implemented by ICAR-CPCRI ensuring active involvement of coconut farmers and other stakeholders. Community/group approaches ensuring active participation of farmers are needed for the effective implementation of integrated pest/disease management in coconut. Hence, interventions are to be implemented to promote community approach and farmers' participation to enhance adoption of IPM/IDM in coconut. A project on technology support for plant protection campaign in coconut is being currently implemented by CPCRI with the financial support of State Department of Agriculture, Government of Kerala. It is important to ensure the participation of coconut palm climbers in the implementation of technology transfer programmes on IPM/IDM in coconut. Besides, involvement of Coconut Producer Societies, Agro Service Centres and rural youth trained under Friends of Coconut Trees (FoCT) programme of CDB is to be ensured for the effective implementation of schemes on plant protection in coconut under the decentralised planning programme by Local Self Governments.

Upgrading the value chain

Technological research has been successful in evolving appropriate processing technologies for the profitable utilization of products and by-products of the coconut palm including tender nut, coconut kernel, coconut water, coconut wood, shell and leaves. To cope with the market fluctuations, there is a need for product diversification and by-product utilization. Encouraging more entrepreneurs in coconut sector by establishing 'Coconut Parks' for organized processing for value addition will help coconut farmers to de-link the over dependence on coconut oil in determining coconut price. In the case of Kerala, there is tremendous potential for the development of coconut sector especially in view of the investment friendly ambience due to the organized coconut farmer groups. The synergy of these farmer producer organisations can be effectively channelized for harnessing the potential for production and marketing of coconut value added products. The formation of coconut parks will indubitably provide new impetus to the Kerala coconut industry by ensuring income enhancement of the farmers and other stakeholders.

Policy interventions in trade

Competitiveness of coconut oil compared to palm

oil in the domestic market gets adversely affected and the excessive import of palm oil had frequently triggered price crash in coconut. There is a need to re-calibrate the import duty structure and it is essential that within the framework of permissible limits the tariff rates for the import of palm oil, both crude and refined palm oil are enhanced to protect the interests of coconut growers. The copra procurement system should be in such a fashion that the Minimum Support Price (MSP) ensures an incentive for processing to the coconut farmers when compared with that of selling fresh coconut. More than half (about 58 per cent) of the total cost of production of coconut in Kerala goes to labour charges. This shows the higher per unit labour charges prevailing in Kerala, which can be attributed to higher labour demand and higher cost of labour in Kerala. In addition, lack of availability of sufficient skilled labourers for harvesting of coconut leading to higher cost of cultivation of coconut in Kerala. Currently, wage rate prevailing in Kerala is around Rs. 700 per day, which is one of the highest costs prevailing for agricultural labour in India. Cost of production of copra has been estimated as Rs. 84/kg, and adding 20 percent margin to this, the MSP should be at least Rs. 100/kg. On the other hand the MSP fixed for the current season (2017-18) is only Rs.75.00/kg of copra, which is certainly inadequate to support the coconut farmer. Other pertinent factors in this context of discussion are lack of effectiveness and efficiency in copra procurement by the agencies and inadequate infrastructural facilities for the storage of copra. In order to create an impact in the market and for the benefits of MSP to reach the genuine coconut farmers, adequate quantity of copra should be procured. The studies on pattern of distribution of annual yield of coconut indicates that the number of nuts harvested varied from harvest to harvest and 60 per cent of the production of a coconut palm is harvested during the peak production period (the first six months of the calendar year), and hence a stable price during these periods is of utmost importance for achieving profitability in coconut based farming system. Hence, the copra procurement scheme should be designed keeping view of this important aspect of coconut production in the country. In view of the ineffective procurement of copra and raw coconuts in the state, it is suggested to establish block level/panchayat level hubs with forward and backward integration along with unit level collection centres under the supervision of CPS networks. Such a mechanism would facilitate the coconut/copra procurement to a great extend. It is of paramount importance to provide the mechanism to reflect trade concerns of Kerala in the forthcoming Free Trade Agreements (FTAs) including Regional Comprehensive Economic Partnership (RPEC).

Promoting group approach

In Kerala, coconut is predominantly cultivated in small and marginal holdings. The income generated from coconut farming in small and marginal holdings does not provide enough for meeting the requirements of farm families. Technology options for enhancing income from coconut farming in such poor rural communities do exist, but not fully realised in field situation. The fragmented holdings do not render themselves viable for the optimum utilization of resources and the adoption of improved technologies by the cultivators. To augment the productivity and income of such small and marginal holdings it is suggested to have group management of resources, which helps to overcome the inherent weaknesses of the fragmented holdings. Various agencies, including Coconut Development Board and State Department of Agriculture, have thus facilitated farmer producer organisations to promote group approaches for implementing coconut development interventions. Kerala has about 7220 Coconut Producers' Societies (CPS), 464 Coconut Producer Federations (CPFs) and 29 coconut producer companies (CPCs) already registered with CDB, besides the FPOs of coconut growers facilitated by State Department of Agriculture as part of implementing 'Keragramam' project. The FPOs in coconut sector are to be supported and strengthened to enable them to mobilise group action for implementing various interventions to improve coconut sector. Many a times it is observed that the FPOs are unable to organise any meaningful activities with group approach, instead act as intermediaries facilitating distribution of incentives under schemes implemented by governmental agencies. The biggest challenge in Kerala context is to enhance productivity through adoption of crop management technologies in a substantial number of coconut orchards (which are almost neglected) owned by 'absentee landlords' whose primary source of income is not coconut farming. Policies and programmes to facilitate revival of such coconut holdings needs community action at grass root level with the support of governmental agencies. The FPOs can play a role in linking trained skilled palm climbers and coconut farmers by promoting labour

Coconut Development Board awarded Rajbhasha Kirti Puraskar

Dr.Raju Narayana Swamy IAS, Chairman, Coconut Development Board receiving the Rajbhasha Kirti Puraskar from Honourable Vice President of India Shri.Venkaiah Naidu. Shri.Rajnath Singh, Minister of Home Affairs, Shri.Kiran Rijiju and Shri. Hansraj Ahir, Ministers of State for Home Affairs are also seen.

Coconut Development Board has been awarded Rajbhasha Kirti Puraskar 2017-18 (3rd position) for the excellent implementation of Official Language Policy amongst the offices in the Non Hindi speaking areas. Dr.Raju Narayana Swamy IAS, Chairman, Coconut Development Board received the Puraskar from Shri. Venkaiah Naidu, Honourable Vice President of India at a function held on 14th September 2018 at Vigyan Bhawan, New Delhi. Shri.Rajnath Singh, Minister of Home Affairs presided over the function. Shri. Kiran Rijiju and Shri. Hansraj Ahir, Ministers of State for Home Affairs and other dignitaries were present on the occasion.

Coconut Development Board obsereved Hindi Fortnight 2018

Coconut Development Board observed Hindi Fortnight from 14th to 28th September 2018. Shri. Saradindu Das, Chief Coconut Development Officer, CDB inaugurated the Hindi Fortnight Celebration on 14th September 2018 at the Head Quartes of the Board at Kochi. Officers and staff of the Board attended the programme. Various competitions were conducted for the employees of the Board as part of the programme.

bank concept under decentralized people's planning by LSGs to address the problem of shortage of labour and high wage rate.

Coordination

Many research, development and extension agencies are functioning in the state for the betterment of coconut sector, apart from the vast network of FPOs facilitated by governmental agencies. However, lack of coordination between these agencies adversely affects the effectiveness of implementation of coconut development initiatives in the state. Hence, it would be ideal if a mechanism is established to coordinate the functioning of these agencies for synergising the efforts for enhancing the efficiency of coconut sector. Coconut Mission chaired by the state Agriculture Minister, envisaged to be constituted to integrate and coordinate various coconut development bodies, research institutions and FPOs in coconut sector in the state is a welcome move in this direction.

Conclusion

Coconut sector in Kerala state is confronted by many challenges. But there are opportunities to combat and conquer the obstacles and steer the sector to a profitable, vibrant and sustainable road map. Concerted efforts by various research, development and extension agencies, active participation of coconut growers along with a congenial policy environment are needed for the effective implementation of interventions for the sustainable development of coconut sector in the state. ■

(This article is prepared based on the paper presented in the Coconut Farmers' Meet held at Kozhikode on 25th July 2018)