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The coconut palm (*Cocos nucifera* L.) is referred to as 'Kalpavrisksha' because of its manifold uses and it is an integral part of India's culture. Coconut productivity in Kerala, which accounts for 36.5% of production in India, is low (7778 nuts/ha) - (2nd estimate 2019-20, *Department of Agriculture, Co-operation and Farmers Welfare, Government of India*) compared to other major coconut producing states. Predominance of senile and unproductive palms is one of the reasons attributed for the low productivity of coconut in Kerala. Large scale removal of unproductive palms and replanting with quality seedlings is the ideal strategy suggested for making coconut farming profitable.

A number of improved coconut varieties with high yield potential have been released by ICAR-CPCRI and Kerala Agricultural University. However, lack of availability of quality seedlings of released varieties is the major constraint experienced by farmers to adopt improved coconut varieties. There is a huge gap between demand and supply of coconut seedlings in Kerala. It is estimated that governmental agencies are able to supply only 30-35% of the requirement of coconut seedlings. This huge gap allows many 'profit minded' coconut nurseries to exploit the situation by selling inferior quality seedlings, which would adversely affect productivity of coconut.

Establishment of decentralized coconut nurseries utilizing superior coconut genotypes available in farmers' gardens is the solution to enhance production of quality coconut seedlings. Decentralized coconut nurseries established and managed by Farmer Producer Organizations can produce and supply quality coconut seedlings of locally adapted coconut varieties.

To combat the shortage of quality seedlings especially of dwarf varieties of coconut, Department of Agriculture (Govt. of Kerala) joined hands with the ICAR-CPCRI to execute a project titled 'Technology Support for production of quality planting materials of dwarf and semi-tall varieties of coconut' during 2018-20 in 12 districts of Kerala.

Decentralized coconut seedling production programme

Identification of superior mother palms of dwarf varieties with farmer participation was the focal point of this project. The impact of the project included empowering the local farming community for mother palm selection, cross pollination for hybrid (D X T) production and community management of coconut nursery.

As part of the project, 35 community coconut nurseries have been established throughout Kerala

to produce quality planting materials of dwarf varieties from locally selected dwarf parental palms. The support extended by the ICAR-CPCRI to raise the community nursery included identification of mother palms and geo-tagging, seed nut collection from the selected parental palms, financial assistance for meeting transportation charges and labour charges for nursery bed preparation and sowing of seed nuts. The coconut seedlings produced were labeled after inspection by the ICAR-CPCRI officials to check the quality before distribution to the farmers at a nominal rate.

Thus, this project aimed at ensuring that coconut farmers get easy access to quality seedlings of dwarf varieties of coconut through community nurseries. This could be achieved by providing financial assistance and technical support to enthusiastic FPOs which needed necessary motivation and support to establish coconut nursery. Such decentralized coconut nurseries are expected to provide steady supply of quality planting materials of coconut for that locality. The profit obtained after the sale of coconut seedlings will be utilized as seed money in the subsequent years for the purchase of seed nuts and related cost involved in coconut nursery establishment.

Unique initiatives of Kallara Federation

Nalikera Ulpadaka Federation, Kallara in Kottayam district, Kerala started their initiatives during 2016. Eight coconut producer societies, with a total of 870 members, have registered under the Federation which is operational throughout Vaikom Taluk. Of the 870 members of the Federation, about 160 members

are currently active under Kallara Coconut Producers Society. The objective of Kallara Federation was (1) to rehabilitate senile and unproductive coconut palms in Kallara Panchayat (2) to provide quality planting materials of coconut to farmers in and around Vaikom Taluk (3) to provide necessary inputs to coconut farmers at subsidised rate using the financial assistance from Coconut Development Board (CDB) (4) and insuring the skilled coconut climbers under 'Kera Suraksha Insurance Scheme' of CDB

During the initial phase, the Federation came up with a proposal for training the farmers for Neera Production. But the need for huge initial investment in establishing neera units forced them to drop the idea. They then started the concept of 'Coconut Point' where the Federation members could purchase value added products of coconut produced by Kottayam Coconut Producers Company. This enterprise also could not fetch the expected profit for the Federation as the villagers preferred low cost alternatives.

Since 2016, the Federation used to procure coconut seedlings from the DSP Farm, CDB, Neriamangalam (Ernakulam District) and distributed the same among farmers. But the entire process was hectic and laborious. However, they could facilitate implementing 'Coconut Palm Insurance Scheme' among farmers who bought atleast ten seedlings. Some farmers who had joined the insurance scheme got even upto Rs. 14,000 towards settlement of claims. Federation also distributed Indian Nalikera Journal at subsidised rate to members and also technical leaflets and pamphlets among farmers. They also conducted seminars on topics like 'Cultivation of intercroops in coconut' and 'Integrated Pest and Disease Management in coconut gardens'. Skill development for the members for coconut palm climbing and tractor training were also conducted at Kallara as well as at Krishi Vigyan Kendra, Kumarakom. Agriculture Officers of Vaikom Taluk and the Technical personnel from Coconut Development Board supported and encouraged activities of the Federation.

Implementation of Technology Support project at Kallara

ICAR-CPCRI's Technology Support project was launched in Kallara Village during 2018 and was whole heartedly received by members of the Federation. A tripartite MoU was signed by Kallara Nalikera Ulpadaka Federation, ICAR-CPCRI and Department of Agriculture (Government of Kerala). Healthy and



Mr.Sugunan, Secretary, CPS & workers engaged in sowing



Inauguration of seedling distribution by Soumya Anoop, Kallara Panchayat President

high yielding typical dwarf mother palms, identified from Kudamaloor, Kummanam, Kumarakom, Velloor areas, were selected by the project team. Seed nuts were harvested from the selected mother palms and subsequently transported to Federation's nursery located at Kallara. Though there was provision to utilize project funds for establishing coconut nursery, the Federation utilized the unskilled daily wage workers under the MGNREGS of Local Self Government Department for preparation and maintenance of coconut nursery. The MGNREGS members were identified and selected based on their previous experience in raising nursery seedlings of fruit plants under LSGD scheme. Necessary training on 'Coconut nursery establishment' was provided to the selected MGNREGS members. Mr. Joseph Refin Jefri, Agricultural Officer took the initiative for linking Technology Support project of ICAR-CPCRI with MGNREGS of LSGD.

Technology Support project implemented by ICAR-CPCRI had provision for financial assistance for coconut nursery related activities. This is where Kallara stood ahead of other 34 decentralized coconut nurseries. They arranged labourers for 30-40 man days by effectively using MGNREGS for nursery activities and saved the financial assistance provided under Technology Support project. Manual irrigation of coconut nursery during summer months was laborious for the women labourers engaged under MGNREGS. They managed to install an irrigation pump through the government schemes with the help of Kallara Krishi Bhavan. Federation could purchase an electric pump availing 50% subsidy offered by Department of Agriculture. The cost involved in maintenance of coconut nursery could be saved by convergence of MGNREGS with the Technology Support project implemented by ICAR-CPCRI. This savings on labour charges is very relevant as labour cost is very high in a state like



MNREGS group and Kallara Nalikerla Ulpadaka Federation members

Kerala. Similar convergence of various governmental schemes can be carried out in other decentralised coconut nurseries.

During June 2020, Kallara Federation could produce and distribute more than 1000 coconut seedlings to farmers. Kallara Krishi Bhavan also played a pivotal role in helping the Federation by registering the farmers who needed coconut seedlings. The seedlings raised at the Kallara decentralized coconut nursery were constantly monitored by the project team from ICAR-CPCRI. Besides, there was regular coordination between the project team, officials of Kallara Krishi Bhavan and Kallara Nalikerla Ulpadaka Federation which ensured the quality of the coconut seedlings.

Way forward

Though COVID-19 slowed down the activities of Federation, rising demands for seedlings of tall coconut varieties among farmers in Kaduthuruty and Vaikom areas are encouraging the Federation to procure seed nuts of West Coast Tall variety from selected mother palms. The Federation is planning to produce about 10,000 seedlings (6000 Talls, 3500 Dwarfs and 500 Hybrids) during next year by availing financial assistance from Coconut Development Board and Department of Agriculture. For continuing the activities initiated and for sustaining the coconut seedling production after expiry of the project, flow of funds needs to be ensured. Towards this, integrating sustainability aspects like developing partnerships and linkages with relevant key stakeholders can be an effective approach. Also, searching for alternate funding sources by involving local self government (LSGD), R&D organizations and line departments will ensure improved access to government initiatives. Such diversifications especially for funding will help in sustaining the project activities in the long run. ■