

Empowering coconut stakeholders through extension

The important frontline transfer of technology activities in coconut implemented by institute include training programmes, frontline demonstrations, information communication through mass media like radio, television, newspapers and farm magazines, extension pamphlets, CD ROMs, video cassettes etc., arranging exhibitions, seminars, *Kisan Melas* and group meetings, providing consultancy through field visits and replying postal queries etc. Besides, a few innovative extension approaches have also been pilot tested through action research with farmers' participation by institute for improving technology utilisation by coconut farmers. On-campus/off-campus training programmes for farmers and extension personnel on specific topics related to agrotechniques, management of coconut diseases, integrated pest management, nursery management in coconut, organic farming technologies based cropping systems and post-harvest technology form an important component of TOT programmes to enhance their knowledge and skill for better technology utilisation. The study conducted among extension personnel who had participated in training programmes conducted indicates that efforts for organising the training programmes are highly successful in achieving the objectives as reflected by high Training Effectiveness Index (TEI) values.

LACK of availability of labour, especially skilled labour for coconut climbing, and high wage rate are important problems faced by growers in adopting timely crop management practices. To tackle this problem, the Coconut Development Board has initiated an innovative training programme, viz. 'Friends of Coconut Trees (FoCT)' to develop a professional group of youth for harvesting and plant protection operations in coconut. The training targeted the group of unemployed youth in developing technical skills, entrepreneurship capacity, leadership qualities and communication skills to address the needs of the coconut growers.

Community Based Organizations

The concept of organizing coconut farmers into Community Based Organisations (CBO) for sustainable income enhancement with the objective of efficient management of farmers' resources to reduce cost of

cultivation and to increase productivity through integration of technologies even in very small farm holdings have been demonstrated in selected localities under some projects. A close linkage was developed between the CBO and scientists for effective implementation of interventions. Arrangements for procuring planting material, inputs and organizing training programmes on CBO management

and relevant technologies are done through CBO with close collaboration with CPCRI and other agencies. Monitoring and evaluation of interventions implemented at farmers' fields are done through CBO. This innovative extension methodology is being adopted for implementation of other similar projects also.

Under the project on 'Cluster approach among coconut farming community for improving productivity and income from small and marginal coconut based homesteads' in the root (wilt) affected coconut area the farm family members of 25 ha area clustered together

CPCRI, Kasargod

The CPCRI, Kasargod has been organizing front line demonstrations at farmers' fields on different coconut cultivation technologies such as coconut based farming systems, management of root (wilt) affected coconut gardens etc. Such demonstration programmes have proved to be effective in convincing the farmers about the technical feasibility and economic viability of the technologies. The adoption of the integrated root (wilt) management practice was effective in improving the average yield of root (wilt) affected palms in farmers' fields. The average yield of the palms increased from 24.17 to 46.3 nuts/palm/year after three years, recording an improvement of 91.4%. Observations on yield of coconut revealed an increase in productivity of palms from a pre-demonstration yield of 95 nuts/palm/year under mono crop situation to 122 nuts/palm/year in coconut based High-Density Multi-species Cropping System.

for deciding the farm strategies; both individual and group ventures for improving productivity and income. The average yield of coconut was doubled after technology package implementation for three years.

The 'Value chain in coconut', implemented by institute a methodology was evolved for participatory group approach through Community Based Organisations (CBOs) for sustainable income enhancement in small and marginal coconut holdings. The methodology involves facilitating CBOs of farmers and women SHGs for effective integration of production and processing technologies in coconut holdings for higher income. Under the project, 10 CBOs comprising of 534 farmers in clusters of 25 ha each were formed. Technological interventions on soil and water conservation, soil health management, INM, inter/mixed cropping, IPM and IDM were implemented in farmers' gardens. Four women SHGs were facilitated to take up microenterprises on production and marketing of coconut value added products like coconut chips. The group approach in coconut farming for income enhancement in small holdings is being scaled up by other agencies like Coconut Development Board, State Department of Agriculture and Local Self Governments.

Farmer Field Schools (FFSs)

The innovative concept of farmer field schools (FFS) was implemented by CPCRI Regional Station, Kayamkulam for the IPM of rhinoceros beetle in coconut organized in 15 locations. It

Participatory Technology Transfer Approach

Under this approach farm families of manageable contiguous area (50-100 ha) will be the participating farmers and this approach suits well for first line technology assessment and transfer. Multidisciplinary team of scientists, extension officials, farmer representatives, local village representatives, women, youths, groups, etc form the stakeholders. Participatory rural appraisal tools were employed for pre implementation, appraisal at 6 monthly interval and also post-implementation of the project. The awareness, knowledge, adoption and attitude of farmers towards the technology package for the integrated root (wilt) disease management technologies were improved by 40-85% over the pre-implementation level. The monitoring, appraisal and evaluation of the technology implementation and impact were done with the stakeholder participation and documented in 'farmer - scientist-extension dialogue session' for further scaling up by other agencies.



was observed that the knowledge and awareness of farmers were improved by 100% over pre-FFS level.

Promoting Women's SHGs

It is generally assessed that there is immense scope for introducing interventions related to the promotion of women's self help groups for processing of diversified coconut products at the farm household and community level.

Hence, Entrepreneurship Development Programme can be organised for women to train them on the various opportunities for value addition in coconut. Topics such as concept and practices of Entrepreneurship Development, group approach for micro level interventions on product diversification in coconut, production of quality copra using copra dryers, coconut kernel based food products, preparation of coconut candies, production of Snow Ball Tender Nut, production of coconut chips, Oyster mushroom cultivation on coconut wastes and production of vermicompost using coconut leaves etc can be included in the Entrepreneurship Development Programme.

Farmers' Participation in Coconut Research

Ensuring farmer participation in research and extension invariably enhances the extent of technology utilization at farm level. There is scope for participatory technology assessment and refinement in coconut for achieving higher productivity. The institute is one of the selected centres to implement the project. IVLP is a novel frontline extension programme, the implementation of which



begins with the selection of a suitable village, that is followed by a detailed agro-ecosystem analysis of the selected village, diagnosing the problems of each production system and prioritising these problems; identification of technological interventions based on problem-cause relationship; the development of action plans and their implementation; and detailed socio-economic evaluation including farmers' reactions and perceptions about the interventions. This was carried out using various PRA tools and techniques. In all these stages, the active participation of farmers was ensured. The TAR-IVLP project was implemented by CPCRI in three villages, viz., Pady, Edneer and Nekraje of Kasaragod, Kerala with coconut as one of the important crops in the production system of the villages. Implementation of the project revealed the

effectiveness of participatory approach in the performance assessment of various technologies related to high yielding varieties, intercropping, nutrient management and crop protection in coconut.

Strengthening Research-Extension-Farmer Linkage

The results of impact analysis indicate effectiveness of the interface programmes in enhancing the awareness and knowledge about the technologies for improving coconut productivity and income of farmers. The impact study also revealed that there is vast scope for planning decentralised schemes based on improved coconut production technologies dealt in the interface programme for implementation under decentralised planning programme. The experiences gained during the district level interface programme and the results of analysis of the impact of interface programmes, revealed that the concept of research-extension-farmer interface is to enhance the adoption of technologies ultimately leading to coconut growers' own benefit. Interface programmes in coconut have been initiated in all the major coconut producing states such as Kerala, Andhra Pradesh, Karnataka and Tamil Nadu to serve as a catalyst in the promotion of coconut technologies.

Area-wide Community Extension Approach (AWCA)

Adoption of plant protection technologies in coconut was reported to be very low (below 5%). Alternative extension mechanisms for managing pest/disease problems of coconut needs special emphasis because coconut, a perennial plantation crop, is cultivated in contiguous area in small and marginal land holdings (average holding size of 0.2 ha) provides congenial conditions for pest and disease incidences throughout the year and it is a challenge for technology

delivery among farming community with varied resource base, socio personal and psychological variables. Hence,





extension approaches/ mechanisms needs paradigm shift from individual farmers to area wide or groups/community based for improving efficiency.

Research-Extension-Farmer Interface

Cyber Extension include effective use of information and communication technology (ICT), national and international information networks, internet expert systems, multimedia learning systems and computer based training systems to improve information access to the farmers, extension workers, research scientists and extension managers. CPCRI has been implementing various cyber extension activities as part of strengthening the technology transfer programmes of the Institute in mandate crops viz. coconut, arecanut and cocoa.



As part of the cyber extension activities, a group video conferencing system through ISDN was installed at the ATIC, CPCRI, Kasaragod to facilitate interaction between various stakeholders for enhancing technology utilization in coconut. During 2010, video conferencing facility for organizing interface programmes was strengthened by procuring a mobile CODEC.

SUMMARY

Coconut plays a vital role in the agrarian economy of many regions in the world. Though large number of technologies has been generated for the improvement of coconut at various research institutes, and various agencies are involved in the transfer of technologies in coconut by implementing various extension activities and development programmes, the extent of utilization of the available technologies at farmers' level is not at a satisfactory level. The present scenario of technology adoption in coconut calls for the technology generation and dissemination programmes based on a viable extension strategy with the active participation of stakeholders. Further, effective linkage is to be established among different research, and extension agencies and coconut farming community

through well co-ordinated participatory research/extension programmes for ensuring a meaningful technology generation and transfer in coconut.

For further interaction, please write to:
Drs C Thamban, P Anitha Kumari and D Jaganathan (Scientists), CPCRI, Kasaragod 671 124.

Gardening provides you . . .

- Feeling of peace and tranquility, reduces stress, and offers a sense of self-esteem and mastery of environment
- Horticultural therapy, which is utilized in psychiatric hospitals, general hospitals, physical rehabilitation centres, homes for elderly, prisons and schools
- This therapy helps the individual to overcome the diagnosed problems or cope with the problem much better while developing relationship with plants and landscaping.
- The patients can achieve higher level of personal development and satisfaction.