



Gender participation and training need analysis in coconut cultivation

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Women and men play key roles in coconut cultivation and associated activities either directly involving or in terms of assistance or supervision. The training needs in coconut cultivation may be taken into account for organizing field level training programmes considering the gender perspectives. Hence coconut research and development needs to integrate social dimensions and gender participation in evolving policies and programme.

Coconut is mostly a homestead crop in Kerala State providing income, employment, nutrition, social needs and natural beauty. The homesteads are mostly traditional agro forestry systems with coconut as the base crop and majority of them are marginal land holdings. Hence the effective utilization of technologies in the small family farms for improving productivity requires emphasizing gender issues also. The National Agricultural Policy of India (2000) has highlighted the need for incorporating gender issues into the agricultural development agenda to provide recognition of women's roles as farmers and producers of crops and livestock, users of technology, active agents in marketing, processing and storage of food and as agricultural labourers.

Women constitutes 48.27 percent of Indian population ie. 496.7 million, amongst which 72.72 percent women live in rural areas. The farm and home are generally inseparable in India and the closest

associate of the farmer is his wife. The role of women in coconut was mostly presumed to be in harvest and post harvest operations. But women were found to possess knowledge regarding traditional practices and devote roles directly or indirectly to the promotion of coconut cultivation. Moreover they are treasure houses of traditional uses and culinary preparation from coconut. The women also contribute their role in promoting consumption of coconut and its products in households. Rural women also face the disadvantage of being poorly educated and inadequately informed of development as they occur. (Balakrishnan, 2001)

The yield of coconut was 8303 nuts/ha at national level and 7365 nuts/ha in Kerala state which shows the yield gap though the State occupies maximum area under coconut. (CDB, 2009). Hence a social intervention along with technology facilitation is required to bridge the present gap, involving human capital. Gender wise

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Basin management with cowpea - women friendly technique

participation and information need analysis will be an important step towards this goal.

From seedling management to harvest and post harvest operations of coconut, the participation of both men and women are very important and crucial. But often it could be seen that women were not been made an active participant in the main stream of coconut development like access to technologies, income and asset distribution, gender specific programmes and policies in coconut R&D.

Hence the study was taken up with the objective to analyze the gender wise training needs in coconut cultivation, to bring out the relationship of selected socio personal variables with training needs of farmers and to assess the involvement of women in various operations of coconut based homestead farming system. The results could be utilized for improving the participation of

women in technology utilization in coconut based homesteads, thus increasing the income and production.

Methodology

The data were collected from Mavelikkara block of Alleppey district in Kerala as part of the Department of Biotechnology (DBT) sponsored project "Livelihood improvement of rural women through bio resource management". Pre tested interview schedule were administered for personal interview during 2009 and 2010. In the block two panchayaths were selected randomly and 60 farmers randomly selected, each of both genders and they were personally interviewed. In the

present study the training need were measured in three point response category namely, greatly needed, somewhat needed and least needed with corresponding score of 3,2 and 1. The frequency of the responses from each area was tabulated and multiplied by concerned score values and ranked. The scoring pattern was adapted from Ravichandran *et. al.* (2000). The average training need score (ATNS) was calculated by dividing the sum of TNS of all items in an area with number of items included in the particular training area. The training need score (TNS) was calculated by dividing the TNS of all respondents with number of respondents. The demographic data of the respondents were also collected and subjected to analysis using frequency count, percentage and Pearson's correlation coefficient. The participation of women in coconut cultivation was quantified in terms of knowledge about the practices and whether they are doing by themselves or assisting or supervising the various operations



Farm level preparation of traditional coconut products-fit for neighborhood markets



Copra making using copra dryer –group activity for women

either singly or along with other family members.

Results and discussions

The average training need score of men and women farmers found to have different priorities indicating the need for gender based training programmes, for attaining the complimentary effects in the field. The priorities in case of male farmers were mechanization aspects in coconut cultivation especially for climbing and plant protection operations, integrated pest management, organic farming technologies, harvest and post harvest operations and integrated disease management technologies in the order of ranking. Whereas the women respondents put forward a different need profile with first priority to management of intercrops and animal husbandry components that can be integrated with coconut cultivation, Integrated Pest Management(IPM), mechanization

aspects in cultivation and processing and Integrated Disease Management (IDM). The time availability and suitability of the subject matter to

suit both genders without affecting their routine duties influence their felt need or choices.

The training needs on subject matter areas under the major themes in the order of ranking by male farmers were IPM of red palm weevil, Integrated management of rat/rodents, mechanization aspects, IDM of root (wilt) disease, management of leaf rot disease and organic farming technologies. In the case of women farmers the preferences were coconut products other than coconut oil/copra, integrated farming with animal husbandry components, selection and management of intercrops in coconut gardens, leaf rot disease and rhinoceros beetle management and drudgery reduction tools / equipments for women in coconut. Devi and Vijayaraghavan (2010) also reported that 45 percent of rural

Table 1. Gender wise Training Needs in Coconut Cultivation (n=120)

Sl. No	Major Subject matter areas	Ranks and (Average training need score-ATNS)	
		Men	Women
1	Integrated Nutrient Management	VI (1.14)	VIII (1.01)
2	Integrated pest management	II (2.16)	II (1.76)
3	Integrated disease management	V (1.34)	IV (1.58)
4	Harvest and post harvest technologies	III (1.22)	V (1.46)
5	Management of intercrops/Animal husbandry components in coconut gardens	VI (1.14)	I (2.12)
6	Organic farming technologies	II I (1.93)	VI I (1.29)
7	Identification & management of nutrient deficiencies	IV (1.52)	VI (1.41)
8	Mechanization in coconut cultivation/processing	I (2.1)	III (1.63)

(Data source: field survey 2009-2010)



Managing coconut seedlings – an area for women participation

women prefer agribased options for their livelihood. Studies of Singh *et.al.* (2004), Mishra *et.al.* (2009) and Jethi (2008) indicated high level of training need in plant protection aspects of various crops. Thippeswamy (2007) in his study reported that only 28.75 percent of coconut farmers possessed high knowledge level in plant protection measures which indicated the high level of information need.

Identification of the right training needs was important in initiating any development schemes. This should be used in planning field level training programmes for better impact through complementary gender participation.

Relationship between selected variables and training needs of coconut

The table 2. indicates that the relationship of the socio personal variables of both men and women

farmers differ due to the socially determined attributes. Variables such as age of the farmer, land holding size and farming experience was found to be negatively correlated with training needs of men and women farmers. This may be due to the fact that aged and experienced farmers in a long duration crop like coconut mainly adopt the traditionally followed practices. Results reported by Mishra *et. al.* (2009) showed negative relationship of age and education with training need score of farmers. Income was negatively and significantly related with the training needs of women farmers. This

indicated that women of low income categories or marginal land holdings were more willing to attend trainings so that they can improve their livelihoods through better technology integration. Time spent for farming was found to be significantly and positively correlated with the training needs of farmers. This clearly indicated that awareness on practical problems and technology/information needs were more among practicing farmers rather than absentee farmers of coconut. Women who are engaged in other occupations other than farming or farming along with other small ventures recorded low level of training needs. This was indicated in the positive significant relationship between the variables as given in table.2.

Sinha *et.al.* (2002) in their study also reported negative correlation of age and training need of farmers and positive significant relationship of involvement in farming with training need. Involvement of farmers in the coconut based



Farm level Green muscardine fungus production – women's role for community facilitation for technology adoption



Table.2. Correlation of training needs of farmers with selected variables

Variables	Male farmers	Female farmers
Age	-0.106945741	-0.234719624
Education	0.059109103	-0.147790281
Experience in farming	-0.144217924	-0.091957573
Extent of land	-0.02439855	-0.047555348
Source of income	0.169991966	-0.298156863*
Family size	-0.051398124	0.133539751
Time spent on farming	0.34297973**	0.287284514*
Occupation	0.170321951	0.211065887*
Cropping intensity	0.199796267	0.112856041
Trainings undergone	0.188179487	0.210656113
Involvement in CBHFS	0.389348103**	0.279389815*

**Significant at 1% *Significant at 5%

homestead farming systems was found to be significantly and positively correlated with training need scores. Many women farmers of rural areas had virtually little time to spare due to their multiple roles at home and farm and were not fully convinced about the utility of the training programs in improving their life. This shows the need and scope for programmes for more involvement of both genders in coconut cultivation and value addition activities.

Involvement of women in coconut cultivation

The involvement of farmers in the various aspects of cultivation will pave the way for motivation, seeking problem solving technologies, realizing benefits of technology utilization, dynamics of marketing, diversification needs etc. The Table.3 indicates that women are involved in various aspects of

coconut cultivation either individually or jointly. The maximum involvement was indicated in management and plant protection of coconut seedlings, marketing, copra or oil making

which is a traditional activity and inter/mixed/cropping and animal husbandry components in the CBHFS. Very low level of knowledge or any form of involvement were recorded in pests and disease management of adult palms. Identification of nutritional deficiency in coconut and recommended fertilizer application was indicated as not having any role for women farmers. The data shows that women do participate in the various aspects of coconut cultivation and they have to be considered as stakeholders in the research and development scenario as well. Similar trends in involvement of women in agricultural operations were also reported by Singh *et al.* (2004). Suman (2002) found that actual doing and supervision of women was more (88.6%) in case of animal care and management. Also it is a strong indication to the extension agencies that in the areas where



Monitoring traps for coconut pests in field – women friendly



Table.3. Involvement of women in different operations of Coconut Based Homestead

SI No.	Operations in coconut cultivation	Awareness	Self doing	Assisting	Supervising	Nothing
1	Mother palm selection	4	4	0	0	96
2	Seedling management	61	18	37	37	10
3	Plant protection of seedling	14	4	20	55	20
5	Nursery management	6	0	6	0	94
6	Red palm weevil management Rhinoceros beetle management					
7	Root (wilt) disease management Stem bleeding disease management					
8	Harvesting of nuts	0	0	42	48	0
9	Sale/marketing of nuts	100	10	90	0	0
10	Copra/oil making	100	61	39	0	0
11	Other products(VCO, Vinegar etc)	24	0	0	0	0
12	Selection/planting of inter crops	73	16	49	27	8
13	Management of mixed crops	8	6	49	26	10
14	Organic farming practices	83	26	21	30	23
15	Animal husbandry components	78	42	19	11	28

*Values in percentage

Farming System* (n=60)

awareness is more the involvement is also more. Hence care should be taken to provide trainings and improve information access of women farmers in the coconut development programmes through appropriate strategies, so that it leads to the overall improvement in coconut productivity, income generation and value addition for rural employment creation.

Conclusion

The study indicated that women and men play key roles in coconut cultivation and associated activities either directly involving or in terms of assistance or supervision. The training needs in coconut cultivation may be taken into account for

organizing field level training programmes considering the gender perspectives. Hence coconut research and development needs to

integrate social dimensions and gender participation in evolving policies and programme. This may lead to improving human resources



Age no bar for women in poultry rearing in coconut based homesteads



efficiency towards the prosperity of this livelihood crop.

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Coconut water makes breakthrough in the world market

Coconut water has made a remarkable breakthrough in the US and the European market. As Ross Currie of the UK-based Freedom Brands Ltd has said: "Coconut water is becoming one of the most popular natural alternatives to traditional energy drinks with strong support and celebrity following in the USA. The global market has grown from 0 to US \$450 with the largest markets in the USA and Brazil where the product originally originated." Coconut water product launching has been made in various exhibitions, the latest of which was at the National and Organic Products Exhibition Europe at London's Olympia.

Indeed, packaged coconut water or coconut water from fresh young tender coconut fruits have been exported by the growing countries like Brazil, Thailand, Indonesia, India, Philippines and many others. Packaged coconut water brands like O.N.E., Vita Coco, Zico, Del Coco, Go Coco 100% Natural Coconut Water, Agua de Coco and others have made inroads in the export market. Local brands like Lipa Buko in the Philippines, Tender Coconut Juice in India, Fatigon in Indonesia and others are becoming popular in the domestic market.

The Philippine Coconut Authority (PCA) and the United Coconut Associations of the Philippines (UCAP) have reported that the volume of coconut water exports from the Philippines in 2010 was valued at US \$1.842 million. Sales volume at 1.808 million liters leaped to more than three fold of year-ago total at 483,772 liters. The market leaders were the USA and Brazil. There were 22 other importing countries which collectively accounted for 20% of the total volume.

In December 2010 alone, coconut water ranked number five among the non-traditional exports of the Philippines with proceeds of US \$401,247. Shipment during the month was 68 times more than in the previous year. The impressive growth in quantity and value lately helped propel the product to the top eight export list. Smaller volumes went to Saudi Arabia, Trinidad, Tobago, Australia and Canada.

Source: The Cocommunity