Relationship between Profile and Awareness about Agrobiodiversity and Constraints of Homestead Farmers in Thrissur District of Kerala

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ABSTRACT

Homegardens are the area where a wide range of variety crops are grown for both production as well as home consumption Homestead based agrobiodiversity is a very important component of Kerala. There should be every possible of conserving them because traditional varieties are to be conserved in order to meet the demands of growing population even though high yielding varieties existed. So if it should be conserved we have to know the awareness level of the farmers regarding agrobiodiversity and its importance. In this regard the study was undertaken in Thrissur district of kerala. The results of the study revealed that awareness about agrobiodiversity was medium and the correlation coefficient revealed that out of 9 independent variables, three variables namely education, information source utilization and innovativeness were positively and significantly related with awareness about agro biodiversity. Further, study revealed that major constraints faced by homegarden farmers of kerala for conserving agrobiodiversity was unavailability of water (100%) followed by unavailability of labour and high cost of labour (95.56%). To be concluded it is an important area for effectively implementing programmes geared towards biodiversity conservation, food security and sustainable development.

Key words : Agrobiodiversity, Correlation, Constraints, Homegardens.

Home gardens are an integral part of the livelihood systems, and could contribute to the family food, income and the conservation of biodiversity (Shrestha *et al*., 2004). There are the living gene banks and reservoirs of plant genetic resources that preserve landraces, obsolete cultivars, rare species and endangered species and species neglected in larger ecosystems (Eyzaguirre and Linares, 2001). Home garden is one of the components of agro biodiversity. The home garden agro ecosystem is an important system for the maintenance of agro biodiversity beyond its primary function in crop production, household food security and nutrition. The reason that agro biodiversity is so important is that it is essential to life, by providing the raw material for evolution and the base of ecological stability and also without it, crop improvement is impossible. Relying on biodiversity may not increase the short-term economic benefits generated from agriculture. However, biodiversity will improve the stability of the system, improve the quality and diversity of commodities available for home consumption, improve the ability of the farmer to make resilient dwelling unit, and reduce fluctuations in cash income. With modernization and urbanization picking up on a large scale, agriculture is being pushed to the back stage and as a reflection of this, the homesteads are also declining. In this context, the study was undertaken inorder to know about awareness of agrobiodversity and also the constraints faced by the homestead farmers in conserving agro biodiversity.

MATERIAL AND METHODS

This study follows ex post-facto research design and Thrissur district of Kerala was purposively selected for the study. Respondents were taken from three panchayats of Thrissur district namely Thrikkur panchayat of Kodakara block representing high elevation lands, Pananchery panchayat of Ollukkara block representing medium elevation lands and Adat panchayat of Puzhakkal block representing low elevation lands. From among the three selected Panchayats fifteen farmers per panchayat were selected as respondents, making a total sample size of 45. The statements were prepared based on an exhaustive review of literature on various dimensions of agro biodiversity

conservation that is relevant to homesteads, discussion with experts and researcher's own insight. The list of statements was subsequently given to 40 selected judges for relevancy rating .The judges were requested to rate each statement based on the degree of relevancy attached to them with regard to its ability to express the concerned domains. They gave ratings for each statement on a highly relevant – least relevant five point continuum. Statements which were having highest score were included in the final interview schedule. Three positive and three negative were included and scoring was assigned. Then the scores were summed up to get the total score for each respondent. Based on the total score obtained for each respondent they were classified into high, medium and low category of awareness by using mean and standard deviation. Based on discussion with farmer respondents, extension agents, agricultural experts, scientists from other disciplines in KAU and also through review of literature, some of the constraints faced by homestead farmers in agro biodiversity conservation were identified. A list containing ten such constraints was included in the final interview schedule. Each constraint was marked by each respondent. Their responses were collected, ranked and interpreted. The constraints were ranked according to the percentage obtained.

It is evident from Table 1 that more than 55 per cent of the respondents fall under medium category of awareness about agro biodiversity.

Region wise analysis also showed that 60 per cent of the high elevation land and medium elevation land respondents fall under medium category of awareness followed by more than 45 per cent of low elevation land respondents.

From table I, it is evident that awareness about agro biodiversity of homestead farmers fall under medium category i.e. more than 55 per cent because awareness means individual comes to know of something which is related to one's own need or arouses the need (Ray, 1991). The relationship between age of the household head and the level of awareness revealed that a one year increase in the age of the household head significantly decreased the odds of the household attaining a higher level of awareness by 0.9615 times. These results indicate that aged farmers lack receptivity towards newly introduced technologies and thus they are more traditional.

**Correlation of independent variables and awareness about agro biodiversity conservation**

The results of the simple correlation revealed that only three independent variables showed positive and significant relationship out of 9 independent variables. Education, information sources utilization and innovativeness were three independent variables which had direct influence on the awareness about agro biodiversity.

From table II it is connoted that education was found to be positively and significantly correlated with awareness about agro biodiversity of homestead farmers. Higher the level of education higher will be the degree of awareness. The relationship between level of awareness and education level reveals that a one year increase in years of schooling of the head of the household significantly increased the odds of the household attaining a higher level of awareness by 1.7744 times. These results are consistent with the expectation since education provides farmers with more information knowledge about avenues.

Information source utilization was another variable which was positively and significantly

Table I. Distribution of respondents based on awareness about agro biodiversity.

n=45

Category	Highlands		Midlands		Lowlands		TOTAL	
	No.	%	No.	%	No.	%	No.	%
High	4	26.67	3	20	5	33.33	12	26.66
Medium	9	60	9	60	7	46.67	25	56.56
Low	2	13.33	3	20	3	20	8	17.78
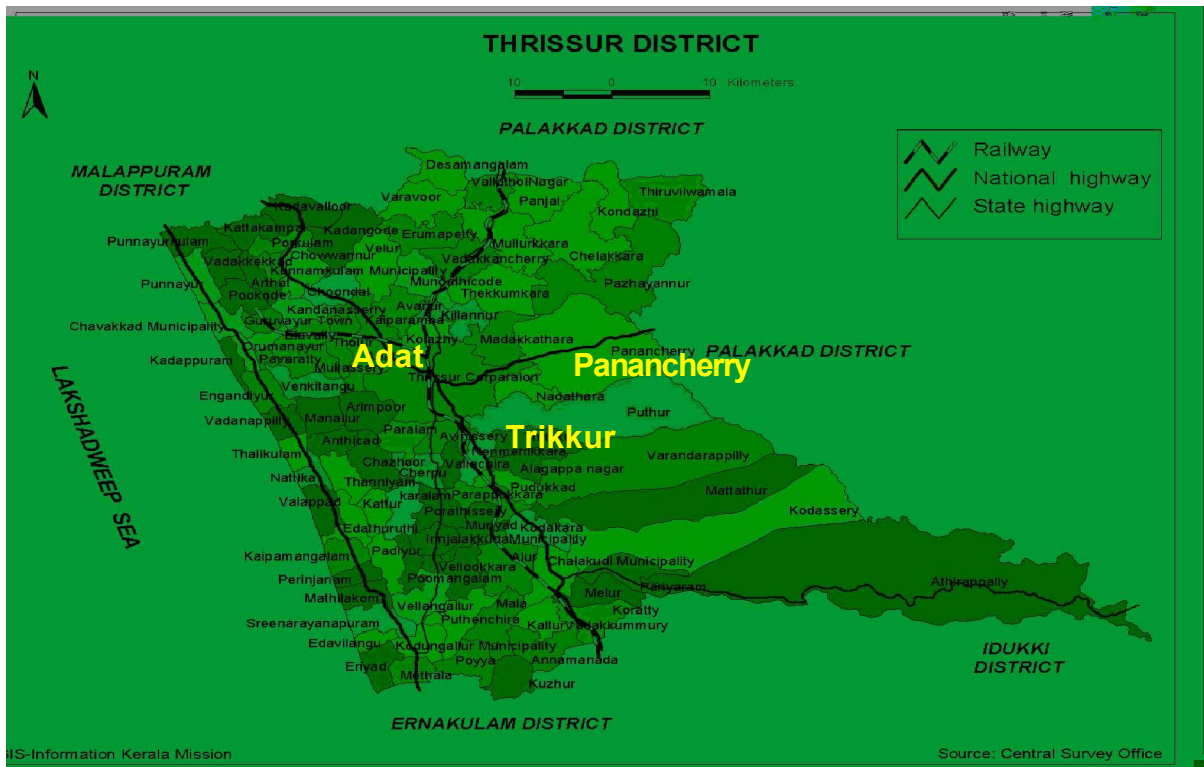
related with awareness about agro biodiversity. Mass media play a great role in creating awareness. The information conveyed through mass media can motivate farmers. It can also help to disseminate knowledge and raise awareness. Hence, mass media exposure would be having a positive influence on farmer awareness. Good extension contact for getting information play a great role in raising awareness. The increased awareness would enhance farmers' innovativeness.

Innovativeness had positive and significant relationship because innovativeness means knowing about and having an interest in new practices or ideas. Education enhances the capacity of individuals to obtain, and utilize information disseminated by different sources. This in turn strengthens their innovativeness. Based on this premise, most studies indicate that innovators are better educated (Reij and Waters-Bayer, 2001).

The data presented in the table 3 shows that the most important constraint perceived farmers was the unavailability of water having the 100 per cent. The next important constraint was the unavailability and high cost of labour which had the 95.56 per cent. Lack of time in managing the homestead farm 88.89 per cent came in the 3rd

position. The problem of depending more on high yielding varieties 77.78 per cent came in the 4th position. Preferential selection of seedlings by farmers and smaller size of land holding came in the 5th position with 66.67 per cent, followed by smaller size of land holding 44.44 percent ranked 6th, Deep rooting habits of certain trees which affects the yield of agricultural crops 33.33 per cent ranked 7th, Lack of knowledge about agro biodiversity programme 22.22 per cent ranked 8th, Depletion of soil nutrients by growing of certain trees, 8.89 per cent ranked 9th

From table III it can be inferred that the most important constraint faced by homestead farmers is the unavailability of water because water plays an important role in the welfare of societies through its widespread linkages. Water needs are complexly linked with daily life and can be an obstacle to economic growth. Even though the household consumption constitutes only eight per cent of the total water usage, the value of water for household purposes is reckoned much higher than its value for industrial use and farming. As per studies conducted by Central Ground Water Board, only 48 per cent of the ground water sources in Kerala has been exploited (KSPB, 2003).

Table II Relationship between profile and awareness about agro biodiversity by the homestead farmers.

Sl. No.	Independent variable	Correlation coefficient (r)
1	Age	-0.183
2	Education	0.514**
3	Occupation	-0.008
4	Farm size	0.239
5	Monthly income	0.165
6	Farming experience	0.086
7	Information sources utilization	0.463**
8	Innovativeness	0.456**
9	Family size	0.019

** - significant at 1 per cent level; *- Significant at 5 per cent level

Table III constraints faced by the homegarden famers in conserving agro biodiversity.

Sl. No.	Constraints	Frequency	Percentage	Rank
1	Unavailability of water	45	100.00	1
2	Unavailability of labour	43	95.56	2
3	High cost of labour	43	95.56	2
4	Unavailability of desired planting material	25	55.56	6
5	Depending more on high yielding varieties	35	77.78	4
6	Preferential selection of seedlings by farmers	30	66.67	5
7	Lack of knowledge about agro biodiversity programme	10	22.22	8
8	Low level of awareness on agro biodiversity	31	66.67	5
9	Deep rooting habits of certain trees which affects the yield of agricultural crops	15	33.33	7
10	Smaller size of land holding	20	44.44	6
11	Lack of time in managing the homestead farming	40	88.89	3
12	Depletion of soil nutrients by growing of certain trees	4	8.89	9

The second most important constraint faced by homestead farmers (95.56%) is unavailability and high cost of labour. Most of the labourers are engaged in other works in which they can earn more money compared to the farming activity such as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) etc and this might be the reason for their low interest in strenuous agricultural work.

The third most important constraint was lack of time in managing the homestead farm. This study showed that most of the farmers were job holders because of which they did not have enough time to manage their home gardens.

The fourth most important constraint was more dependency on high yielding varieties. Traditional varieties require more management practices and their cost effectiveness is not very good so farmers opt for HYV's. Most of the departments that are supplying seeds provide exotic varieties as the farmers are not getting the desired planting materials. Thus, they ultimately depend on the high yielding varieties. From the results, it is clear that farmers are not getting preferred selection

of seedlings and also desired planting material. With the advent of the high-yielding variety (HYV) programme in Kerala, most of the paddy lands (81% coverage according to the Kerala State Planning Board, 2003) were also dedicated to modern varieties; consequently, cultivation of a vast majority of the distinctive landraces have vanished (Kumar, 2005).Other constraints shown in the table III are minor as the constraint index of such constraints is very low.

CONCLUSIONS

Based on the above discussion, it can be concluded that more than 55.00 per cent of the respondents were having medium level of awareness. Positive correlation between farmer's awareness on agro biodiversity was observed for three variables namely education, information source utilization and innovativeness. Increasing urbanization which causes encroachment of the rural areas for urban creeds, ''modern'' varieties which replace local landraces in large scale and changes in land use patterns due to change in life style were the major constraints in homestead based agro biodiversity conservation. It is an important area for effectively implementing programmes geared towards biodiversity conservation, food security and sustainable development.

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