FACTORS ASSOCIATED WITH SUSTAINABLE LIVELIHOOD PARAMETERS IN DIFFERENT ENTERPRISE COMBINATIONS

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Sustainable livelihood can be ensured by combining different farm enterprises through generation of additional income and employment, food and nutritional security without endangering the natural resources. Several socio-personal and techno-economic variables influence the sustainable livelihood of farmers in different farming systems. Hence, a study was conducted to find the association of selected variables with sustainable livelihood parameters in different farming systems in coastal Tamil Nadu.

Materials and Methods

The study was conducted in two randomly selected coastal districts of Tiruvallur and Thanjavur in Tamil Nadu. From these two districts, four blocks and eight villages were selected applying proportionate random sampling technique. A sample of 150 farmers was drawn using the proportional allocation. The sample Integrated Farming System (IFS) farmers were post-stratified based on the combination of enterprises. Crop+Dairy (C+D), Crop+Dairy+Poultry (C+D+P), Crop+Dairy+Poultry+Fisheries (C+D+P+F), Crop+Dairy+Poultry+Sheep/Goat (C+D+P+S/G), Crop + Dairy + Poultry + Horticulture (C+D+P+H), Crop+ Dairy+Poultry+ Sheep goat + Horticulture (C+D+P+S/G+H) were the identified enterprise combinations or farming systems in coastal Tamil Nadu. Sustainable livelihood encompasses adoption of appropriate enterprise combinations resulting in generation of adequate income and employment, ensuring food and nutritional security for the family, conserving environment, effective input recycling and creation of durable farm asset which was ascertained by developing a sustainable livelihood index (SLI). Seven dimensions of sustainable livelihood were identified based on expert judgement and literature which include environmental conservation, permanent asset creation, food security, nutritional security, input recycling, employment generation and annual income from different enterprises. The values arrived from all the seven dimensions of sustainable livelihood were multiplied with weightages assigned for each dimension and then totalled. The arrived value was divided by 100 to obtain the sustainable livelihood index for each respondent. Chi-Square (X_2) test was applied to measure the extent of association existing between the levels of the sustainable livelihood index of selected variables.

Results and Discussion

In the table, it could be observed that

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Table : The extent of association of sustainable livelihood parameters with other variables on different farming systems

Variables	Enterprise combinations or farming systems						Total (N=150)
	C+D (n=35)	C+D+P (n=45)	C+D+P+F (n=12)	C+D+P+ S/G (n=20)	C+D+P+H (n=13)	C+D+P+S/ G+H (n=15)	
Family Size	13.293"	6.664	1.029	1.309	1.896	0.456	8.019
Age	1.496	3.473	0.343	6.238	4.179	4.821	2.351
Education	10.516	7.051	0.891	17.797	7.893	4.224	27.721"
Farming Experience	0.584	8.757	1.714	3.410	9.750*	7.619	8.111
Social Participation	3.620	11.201*	0.206	8.420	3.575	3.429	12.490"
Land holding	5.530	7.870	3.380	9.000	3.750	7.016	49.302"
Cropping intensity	12.102*	4.872	1.543	14.054"	5.200	4.286	12.780"
Livestock holding	4.831	3.943	5.182*	1.236	1.016	2.500	10.716*
Marketing behaviour	4.369	10.004*	1.185	10.824*	5.687	1.429	25.961"
Credit Utilisation	0.443	6.874*	0.686	2.802	1.477	4.800	3.625
Training	6.511	14.305"	3.634	5.730	1.381	0.857	17.782"
Decision Making Pattern	11.431*	9.716*	3.037	9.697*	3.575	2.449	44.454"
Perception	6.387	8.981	2.743	10.220*	2.844	6.786	27.993"
Communication behaviour	15.100"	23.524"	3.086	13.904"	5.891	9.286	45.062"

* Chi-Square is significant at 0.05 level   " Chi-square is significant at 0.01 level
C-Crop; D-Dairy; P-poultry; F-Fishery; S/G - Sheep / Goat and H-Horticulture

the family size and communication behaviour have highly significant association on sustainable livelihood in the C+D system. The cropping intensity and decision making pattern also had significant association on sustainable livelihood. The utilisation of different communication sources and consultation with informed sources will help the farmers to take right decision. The farmer cultivating multiple crops in the C+D system will have decisive influence as the major income has to be derived from cultivation of different crops to run the family and to give employment to family members. Other variables do not have any association with sustainable livelihood.

While looking at C+D+P system, it was observed that training and communication behaviour exhibited highly significant association and social participation, marketing behaviour, credit utilisation and decision making pattern showed significant association on sustainable livelihood parameters. The higher social participation is likely to associate with other variables such as credit utilisation, training, consultation with various communication sources and marketing behaviour. The C+D+P system mostly practised by small and marginal farmers needs to maintain proper linkages with different stake holders of the systems to get higher market returns for their farm produce. Similar findings were reported by Singh (1995) and Meert et al. (2005).

The livelihood holding in the C+D+P+F system is significantly associated with sustainable livelihood parameters which might be due to higher resource utilisation in the system contributed by livestock components mainly of dung, milk and fodder. An integrated

farming system with components of dairy and fisheries is more sustainable due to the recycling nature of this system. The integration of space and time dimensions in this system is very high. Hence the profitability is also significant.

In C+D+P+S/G system, highly significant association was made by cropping intensity and communication behaviour with sustainable livelihood and significant influence was made by marketing behaviour, perception and decision making pattern. The cropping intensity for poor farmers should be high and information empowerment through various communication sources is likely to have decisive influence in pursuing better farming. When the farmers had better market and consult right people, they tend to possess favourable attitude towards C+D+PS/H system though it is comparatively less rewarding.

While examining the C+D+P+H system, it was found that only farming experience had a significant association on sustainable livelihood parameters revealing that the experience of obtaining a meaningful profitability in this system through integration of horticultural component will help the farmers to proceed their farming activities. As far as C+D+P+S/G+H system is concerned, no variable was found to possess significant association with the sustainable livelihood of IFS farmers, It indicates that farmers of this system will continue to practise farming without much bothering about various techno-economic and socio-personal changes that are taking place both within and outside the system. Though this system is being followed by relatively smaller percentages of the respondents, in view of its gainful employment generation and earning of applicable income, this system is continuing without much hindrance. Moreover there is a possibility of marking adjustments in risk-prone situations and recycling of farm level resources and hence the system is not much influenced by external forces and internal disturbances.

In overall, IFS, except age, family size, farming experience and credit utilisation, all other variables as indicated in the table had highly significant association with sustainable livelihood parameters while livestock holding has a significant association.

Summary

The chi-square analysis of sustainable livelihood parameters with different socio-economic factors in coastal Tamil Nadu indicated that communication behaviour, pattern of decision making, marketing behaviour and cropping intensity showed a significant association with sustainable livelihood in different farming systems. Provisions of need based system oriented training to farmers through broad based extension strategy at block level involving various farm related governmental departments would provide impetus to practise profitable enterprise combinations which will enhance the sustainable livelihood level of farmers in rural areas.

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