



Leadership and social intelligence of coconut farmer leaders and implications in extension services

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Abstract

Coconuts cultivated in small and marginal holdings pose social and economic challenges in extension outreach programmes. A study was undertaken during 2016-17 regarding the leadership and social intelligence of coconut farmer leaders, to assess their socio-personal variables and their relationships in two blocks of Alappuzha district. The results showed 46 per cent of producer societies were of five or more years of activities and 86.7 per cent of the leaders holding positions in multiple organizations. Regarding the knowledge levels, 66.61 per cent had a medium level and 94 per cent had more than 15 years of experience in coconut cultivation. Coconut producers' societies could establish only a few linkages and time spent by farmer leaders for societies were found to be very low. Whereas 58 per cent of farmer leaders had a medium level of leadership practices and occupational status, the social intelligence of the leaders was positively correlated with leadership abilities. Social intelligence of 56 per cent of them was in medium level and experience in coconut cultivation was the only variable positively and significantly correlated. This study highlights the importance of identification of training needs in leadership and social skills of farmer leaders, evolving realistic criteria for leader selection, inclusive policy for gender and youth representations in leadership positions and pathways to evolve pro-active power dynamics in grass root level farmer organizations. Doubling farmers' income and enhancing the productivity of small and marginal farmers require vibrant and responsible social support through farmer producers' organizations in the coconut sector.

Keywords: Coconut farmer, leadership, producer societies, social intelligence

Introduction

Coconut holds an unique position as the base crop of homesteads besides being an important commercial crop in Kerala, which holds the prime position in the area and production of coconuts in India. This sector contributes around 21 per cent of the total agriculture GDP of Kerala State. The crop is being cultivated in a contiguous manner in small and marginal holdings of the state. Fragmented land holdings pose a hindrance in the adoption of technologies, management of gardens, effective use of farm resources and reaching out to coconut farmers in purposeful manner as desired. One of the effective social interventions is the farmer producers' organizations which enable them to overcome these gaps through facilitating networking, socio-economic upliftment, pooling of resources, value

addition, marketing, and thereby empowering the coconut community.

Presently, coconut producers' organizations function in three strata viz., Coconut Producers Society (CPS), Coconut Producers Federation (CPF), and Coconut Producers Company (CPC). The grass-root level tier of CPS is formed by associating 40-100 coconut growers with 4000-6000 yielding palms in a contiguous area, with a common bye-law. Farmers with a minimum of 10 palms are eligible to be a part of this society. Once the society is formed, it is registered under the charitable societies act and also with the Coconut Development Board (CDB). In one panchayath there will be 20-30 CPS functioning at the grass-root level and 3-5 CPF federating these CPS. As per the CDB database, as on June 30th, 2018, in Kerala state 7220 societies (CPS), 464 federation (CPF) and 29 companies

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(CPC) were registered. They are functioning under the leadership of farmer leaders selected locally by the member farmers. Effective leadership development in the farming sector is needed for confronting and overcoming the future challenges of agriculture, spanning spatial and temporal dimensions, including climate change. Goleman *et al.* (2002) opined that leaders have to deal with changing situations as well as political, technological, and economic facets of the society in a problem-solving mode. There are several studies focusing on the role of leadership effectiveness and emotional intelligence (Goleman *et al.*, 2002; Higgs, 2002). The need of coping and adaptive mechanisms through farmers/community organizations are being evident for achieving sustainability. There are different theories on leadership, but in the context of coconut farmers, transactional theory and transformational theories of leadership were found to be more applicable. The transactional leadership was described wherein; the leader-follower associations were grounded upon a series of agreements between followers and leaders (House and Shamir, 1993). The transactional theory was based on reciprocity, where leaders have not only influenced followers, but are under their influence as well. The leaders could follow 'management by exception' attitude by avoiding errors, avoid responses and delay decisions or rewards like gratitude for a merit increase, bonuses and work achievement. These transactions can be categorized as passive or active transactions. In the active form, the leader continuously monitors performance and attempts to intervene proactively (Bass and Avolio, 1997). Transformational leadership entails the involvement of the followers in processes or activities related to personal factors towards the organization. The transformational leaders raise the motivation and morality of both the follower and leaders (House and Shamir, 1993).

The leadership and social intelligence of both leaders and followers are important for the development of the sustainable farming sector. Human beings are social animals, mainly dependent on his/her society, for which one requires social intelligence in particular. Social intelligence was defined by Thorndike (1920) as the ability to understand and manage people and act wisely in human relationships, and was later redefined by Cantor and Kihlstrom (1987) as the fund of knowledge of the individuals about the

social world. Social intelligence is the ability of the peer group leaders to interact with fellow farmers effectively and understand them better in the natural and farming environment. The level of social intelligence differs among individuals.

Apparently, the review of the literature indicated the scarcity of studies on social intelligence and leadership of coconut community leaders. A preliminary study on this line among CPS was taken up to analyze the leadership, socio-economic and personal variables and social intelligence of CPS leaders, with the following objectives.

- To study the leadership practices (LP) and social intelligence (SI) of farmer leaders of Coconut Producers Societies (CPS)
- To assess the socio-personal variables of the farmer leaders of CPS
- To determine the relationship between social intelligence and socio-personal variables

Materials and Methods

The locale of study

The study was conducted in two blocks *viz.*, Bharanikavu and Muthukulam of Alappuzha District. Two panchayaths, Bharanikavu and Pathiyoor were selected for the study. The list of CPS as available in the Coconut Development Board website (www.cdb.kochi), from which CPS of both panchayaths were enlisted and 50 farmer leaders *i.e.*, 25 each from the panchayaths, were selected using random sampling method.

Variables Studied

The leadership qualities of the farmer leaders of the coconut sector are operationally defined as the required level of qualities to lead and sustain through managing and motivating oneself and the farmers. The instrument, Leadership Practices Inventory (LPI) used to identify leadership practices which were developed by Kouzes and Posner (1988 b) and refined by Spotanski (1990).

The LPI instrument consists of two surveys: Survey I is self-education for the leaders to identify his/her own leadership practices. Survey II is a questionnaire used by a peer, co-worker or subordinate to evaluate leadership practices. The LPI consisted of 30 leadership behavior items that

were used to determine scale scores for each of the five leadership practices. Kouzes and Posner (1988b) indicated that when leaders perform their best, they (1) challenge the process (2) inspire a shared vision (3) model the way (4) enable others to act and (5) encourage the heart. The instrument has high internal reliability as a result of extreme testing and retesting.

The other variables studied were age (in completed years), education level (scoring procedure), experience in coconut farming (number of years engaged in coconut farming or related enterprises), occupational status, period of CPS initiation (number of years), office bearing positions in CPS (number), duration of continuance in the same leadership positions (number of years), time spent for CPS activities (number of days/month), linkages developed (number of organizations), and trainings undergone. The Social Intelligence (SI) of farmer leaders was measured using the MESI methodology developed by Frankovsky and Birknerova (2014). It contains 10 items and its internal consistency (Cronbach's alpha) was 0.90. The MESI methodology measures manipulation, empathy and social irritability of the sample respondents.

The data were collected during 2017 using the pre-tested interview schedule.

Results and Discussion

The results and discussion are presented mainly under these categories:

- 1) Socio-personal characteristics of the farmer leaders of coconut sector
- 2) Factors related to functioning of Coconut Producers' Society (CPS)
- 3) Leadership practice and social intelligence of farmer leaders
- 4) Correlation among and between variables studied

Socio-personal characteristics of the farmer leaders of coconut sector.

The results of the socio-personal characteristics indicated that more than half of the respondents (58%) were middle aged. For the leadership position among farmers; experience in farming, social activities, ability to deal with various social

strata, and effective communication skills are required. Hence it could be inferred that a middle aged person could ably discharge responsibilities and duties of a farmer leader. About 40 per cent of the respondents are old and they could facilitate and guide others with practicality and maturity. It is very evident that youths are almost absent in the leadership strata of farmers' organizations indicating low level participation of youths in farming. In farming activities, strategies are needed for improving participation of youth and to evolve young leadership for social innovations. Anithakumari and Manoj (2004); Venkattakumar and Nanjaiyan (1999) have also reported that around 45 per cent of coconut growers were come under the middle age category.

The farming community of Kerala are mostly literate (Economic review, 2015), and this fact was reflected in the field survey, wherein majority of the sample respondents (38%) had completed 10th standard followed by plus two or diploma (37%). Among the farmer leaders, six per cent were graduates and 12 per cent were post graduates. Syamkumar (1999) in his study in Thiruvananthapuram district of Kerala also stated that none of the farmers are illiterate and 20 per cent were either graduates or post graduates. The educational status of the farmer leader could be modeled for better leadership and field level performances.

One of the interesting features of the coconut farmer leaders found in this study was that, 66 per cent of them were retired persons from government services, and remaining were engaged in private jobs. This had indicated that they could spend reasonable time in the leadership activities. Anithakumari and Manoj (2004) also reported that 81 per cent of coconut farmers studied was part-time farmers.

Factors related to functioning of Coconut Producers Societies (CPS).

The factors related to the functioning of the CPS studied were; duration of CPS, office bearing positions of farmer leaders, duration of present status of leadership, number of leadership positions occupied simultaneously, linkages developed, trainings undergone and knowledge on scientific coconut cultivation. The data are furnished in Table 1.

Table 1. Factors related to functioning of CPS leaders

Sl. No.	Item	Categorizations
1.	Duration of CPS functioning (Number of years)	2 (6%), 3 (36%), 4 (12%), 5 (46%)
2.	Office bearing position of CPS leaders	Executive members (48%), Treasurer (15%), Secretary (18%), Vice President (16%), President (3%)
3.	Duration of present status of leadership (Number of years)	1 (6%), 2 (6%), 3 (54%), 4 (12%), 5 (24%)
4.	Linkages developed for CPS	0 (64%), 1 (24%), 2 (12%)
5.	Number of leadership positions including CPS	1 (13.3%), 2 (20%), 3 (26.67%), 4 (13.33%)
6.	Training undergone	Leadership skills (32%), Training on coconut technologies (76%), others (28%)
7.	Knowledge on scientific coconut cultivation	Low (17.95%), Medium (66.62%), High (15.38%)
8.	Time spent for CPS activities (days/month)	0 (18%), 1 (54%), 2 (8%), 3 (6%), 4 (18%)
9.	Experience on coconut farming (in years)	0 (6%), 15 (30%), 20 (10%), 25 (6%), 40 (18%), 50 (30%)
10.	Time spent for coconut farming (days/month)	0 (6%), 1-3 (48%), 4-6 (18%), 7-9 (18%), 10 & more (12%)

Farmer Producer Organization (FPO) could act as a community level social resilience mechanism. Table 1 showed that majority of the CPS (46 per cent) were having five years of activities among coconut farmers. The data also indicated that the coconut farmers are getting organized and CPS being formed at grass root level facilitates the social process of amalgamation of common interests.

It could be seen that 48 per cent of the sample respondents were functioning as executive members and only three per cent of them as presidents, as per the hierarchical order.

It was found that around one fourth of the respondents have occupied the same position for almost five years on a continuous basis (Table 1), and 54 per cent occupied the same position for three years continuously. This may either be a positive indication of acceptability of the leaders among the farmer members or may be non-willingness of members to occupy leadership positions. The farmer leaders lamented that in the present structure of the CPS, the leadership positions do not confer any powers *per se*, but the work is voluntary and the motivation should emanate from the members. The data on time spent by leaders for CPS activities

showed that around 18 per cent of them do not spend any time for the activities and responsibilities of CPS, and 54 per cent spend one day per month and the remaining 28 per cent devote either two or three days per month. It was observed that the leaders were neither motivated nor rewarded and thereby signifies the organizational void existing in the power structure of farmer community clusters. Hence it is imperative that the strategies and management of CPS may be redefined and modified in order to incentivize creative and active leadership in the society.

It could also be noted that 30 per cent of farmer leaders were having 50 years and another 30 per cent hold 15 years of experience, six per cent had 25 years and another six per cent of them are new in coconut farming. The category among the leadership with low level of experience in coconut farming was mostly retired persons who had worked outside the state, and initiated coconut farming in their own ancestral properties once they had returned to their home land. Thus it was an adequate mix of persons with varying levels of experience, representing the changing farming practices with different needs in the leadership rungs. Seema (1999) had also found that 16 per

cent of coconut farmers had high level farming experience, while 34 per cent had medium and 50 per cent had low level of farming experience.

Since coconut is a perennial crop, and most of the respondents were part time farmers as indicated in Table 1, the time spent by farmer leaders also varied. Almost half of the respondents spent one to three days and 48 per cent spent four days and only 12 per cent spent more than 10 days per month. The number of palms and area varied widely among coconut farmers and this itself leverage the need for community based farmer organizations. Alcober (1981) reported that in Philippines half of the coconut farmers studied were part-time farmers. This may not be taken as a negative factor because coconut needs only seasonal management clouding around the two monsoons in rainfed conditions.

Developing linkages is one of the important strategies since farming is a multifarious activity involving decision making, risk management and climate resilience. Table 1 indicates that 64 per cent of the CPS did not develop any linkages, which may be due to the difference in duration of functioning. Linkages were developed mostly with ICAR-CPCRI, Krishibhavana, Krishi Vigyan Kendras and Non-Governmental Organization. The data clearly point towards the need for appropriate linkage development by CPS for taking in ideas, harnessing support and making their cause visible.

The number of leadership positions which the sample respondents hold showed that 26.6 per cent were holding leadership position in three, 20 per cent in two and 13 per cent in four other organizations. The perusal of the organizations indicated that they are either political or caste affiliated or farmer outfits of major political organizations. This could take the CPS activities in a stronger mode seeking political support, if utilized appropriately.

It could be noted that 76 per cent of respondents attended trainings on coconut technologies and 32 per cent undergone leadership training and 28 per cent attended other training programmes. The respondents participated in one or more training programme as indicated in Table 1. This indicates the need of training need analysis among the farmer leaders for making them responsible towards potentials and issues of community organizations in coconut development.

The farmer leaders were found to hold multiple leadership positions and most of them were retired persons, and it is therefore utmost important to attract youth and women in coconut farmers' organizations. Linkage development and mutual co-operation could benefit farmers' organization to integrate programmes and scheme of various organizations for coconut research and development.

Leadership practices of Coconut Producers Societies (CPS)

Table 2 showed that 80 per cent of CPS leaders fall in medium to high level of leadership practices. The leadership experiences, in multiple organizations could be the contributing reason for the leadership scores. The categorization is illustrated in Table 2.

Table 2. Categorization of farm leaders based on leadership practices (n=50)

Sl. No.	Categories	Percentage (%)
1.	Low	20
2.	Medium	58
3.	High	22
	Total	100

The average scores of the five leadership practices were taken into account for categorizing the farmer leaders. The need for improving leadership practices and leadership skill enhancement are important aspects to be addressed and accomplished.

Table 3. Relationship of leadership practices and socio-personal variables (n=50)

Sl. No.	Variables	Correlation coefficient @
1.	Age of the respondents	0.096
2.	Education level	-0.033
3.	Occupational status	0.274**
4.	Position as office bearers	0.001
5.	Duration of continuity of leadership positions	0.030
6.	Experience in coconut farming	0.030
7.	Knowledge on scientific coconut cultivation	0.054
8.	Social intelligence	0.356**

**Significant at p=0.01 level

The relationship of variables with leadership practices indicated that occupation status and social intelligence were statistically significant and positively correlated. Most of the CPS leaders were retired persons and experiences as government officials had contributed towards sharpening their leadership skills. Similarly social intelligence and leadership practices were highly correlated, and this was reported in several studies. Spotanski (1990) reported no significant relationship between member title, number of years in leadership position and number of years of activity of the organizations with any of the leadership practices. Masso and Man (2016) reported that farm leaders categorized with 38 per cent high, 57 per cent medium and 5 per cent low knowledge levels. Bryan (2005) reported strong and positive relationship of social intelligence with the leadership practices. Deliece (1999) found that agricultural extension competencies were found to be supported by each other and comparable also. Ofuoku and Agbamu (2013) reported in their study that the leadership performance and performance of the members were ineffective and poor. The assessment of farmer group leadership by group members had positive relationships with performance of the members. This had positive influence on group cohesion of coconut farmers groups.

Ofuoku (2012) found that members of farmers' groups consider socio-economic characteristics, technical skills, professional traits, personality and ethical traits while selecting their leaders. Khan and Khan (2016) stated that the transformational leaders focus their energies on vision and long-term goals.

Ofuoku (2012) discovered that one of the challenges of farmers' groups is leadership incompetence. Achievement of group goals rest heavily on the leaders and understanding of social issues. Educational level and literacy is another variable helping a leader in rational thinking, interpretation of research from research agent and effective communication among the group members. (Van Winkle *et al.*, 2002). Technical skills used in the selection of potential leader include agricultural knowledge communication skill, mobilization skill and innovativeness. Zamani and Karami (2006) also reported similar findings.

Social Intelligence of coconut farmer leaders

The interest of individuals may not always identical with the interest of the society.

Table 4. Categorization of farm leaders based on social intelligence factors (n=50)

Sl. No.	Social intelligence factors	Average scores
1.	F1 – Manipulation	5.65
2.	F2 – Empathy	16.76
3.	F3 – Social irritability	7.71
Average score		30.11

The average social intelligence score of the sample respondents, under study was 30.11 which fall in the medium category. The highest score (16.76) was obtained for F2- Empathy among the three social intelligence factors. Being empathetic to the needs of the coconut farmers is a supportive factor for a farm leader. Individuals with high scores in this factor are able to recognize the intentions, feelings, and weaknesses of other people. They can adapt to new people, guess their wishes as well as fulfill them. Hence the farm leaders could be considered empathetic personalities who could support, facilitate and lead the farming community.

The lowest average score recorded was for the SI factor F1-Manipulation (5.65). People who have higher scores in this category can use others for their own benefit and persuade them to take their side which may not be a desirable character for a farm leader. The low scores may be considered as an indication of the voluntary mindset of the CPS leaders and their willingness to work for the farming community without expecting any personal advantage. On the other hand, farmer leaders could manipulate personality traits or orientation towards positive thinking and beneficial actions to the betterment of the coconut communities, if they have clarity of vision

For the social intelligence factor F3 *i.e.*, social irritability, the average score of the respondents (7.71) was low. This indicates that the farmer leaders are favorable and at ease with society. Persons with high scores in this factor are nervous in social mingling. Feelings of others baffle them, and adapting to situations of other people is a problem for them. They become nervous around

people who are willing to do anything for them. Hence the social intelligence factors of the farmer leaders indicated that they are having appropriate and desirable social intelligence factors for being the leaders of farming communities.

Table 5. Categorization of farmer leaders based on their social intelligence (n=50)

Sl. No.	Categorization based on social intelligence (SI)	Percentage (%)
1.	Low (Mean – SD)	24
2.	Medium (Mean + SD)	56
3.	High (Mean + SD)	20
	Total	100

The respondents were categorized based on their social intelligence scores. They were categorized as low, medium and high based on the average score of SI (30.11) and standard deviation (SD) of 7.01. It was found that the majority of the respondents (56 per cent) were having a medium level of social intelligence scores, whereas 20 per cent were at the high level and 24 per cent in the low level category. The results indicated the necessity of efforts and strategies for improving the social intelligence levels of farmer leadership through appropriate training as well as the selection of leaders based on their social intelligence level.

Table 6. Relationship between social intelligence and socio-personal variables of the respondents (n=50)

Sl. No.	Variables	Correlation coefficient (r)
1.	Age of the respondents	-0.080
2.	Education level	-0.020
3.	Occupational status	-0.160
4.	Position as office bearers	0.094
5.	Duration of continuity of leadership positions	0.017
6.	Experience in coconut farming	0.276*
7.	Knowledge on scientific coconut cultivation	0.107

*Significant at p=0.05 level

The personal variables like age, education level, and occupation status were found to be negatively and non-significantly correlated as shown in Table 6. This can be attributed to the factors stated by Silvera *et al.* (2001) that social intelligence

consists of components such as, perceptiveness of the internal states and moods of other people, general ability to deal with other people, knowledge of the social norms, ability to orient oneself within social situations, use of social techniques to manipulate others, taking over the perspectives of others and social adaptations. Hence it is explicit that the life experiences, personal perceptions, and logical analysis contribute much to the social intelligence of the CPS office bearers. Experience in coconut cultivation was statistically and significantly correlated in this study. Social Intelligence of CPS office bearers paves way for the upliftment and sustainable development of the small and marginal holders engaged in coconut cultivation.

The important professional traits considered while selecting leaders include experience in leadership, creativity, and problem-solving skills, interest in leadership, empathy and mobilization skill. Experience in leadership is ranked second to bring about effectiveness in handling leadership issues. Interest in leadership is an important criterion for the selection of potential leaders. Zamani and Karami (2006) reported that among farmers and extension agents, there are many potential farmers, who are potential leaders, but due to lack of interest their abilities were never highlighted. However, it is a reinforced fact that for the sustenance of livelihood and income from coconut farming, rural leaders could play a pivotal role through community-based planning and interventions.

Conclusion

In agricultural extension, the nature of the crops, the socio-economic-political situations, and access to resources and leadership could link rural society with extension agencies and with other farmers. The resource use efficiency, as well as maintenance of ecological balance, require knowledge and innovation empowerment and leadership capabilities in the agrarian class. Extension management requires insight into these socio-psychological factors for facing the future challenges of various levels from field to market. The implications in coconut extension interventions, policies, and programmes of various agencies could reach out with purpose when the farmer organizations and their leadership are oriented and equipped for handling small and

marginal coconut farmers for larger contributions to their own livelihood and for growth of coconut sector as a whole. Hence this study underscores the need for identifying training areas of farmer leaders, looking critically and evolving pathways for exercising power dynamics in grass root level farmer organizations, and interventions and policies to encourage gender and youth representations in leadership positions of farmer organizations. Taking the social process forward in a sustainable fashion in the coconut sector is a challenge in view of the fragmentation of holding sizes and socio-economic hurdles.

References

- Alcober, D. L. 1981. Innovative performance of coconut farmers in Leyte and Southern Leyte, Philippines. *Annals of Tropical Research* **3**(2): 150-160.
- Anithakumari, P. and Manoj, S. 2004. Technology transfer of integrated root (wilt) management practices - Experiences from the participatory programmes on coconut. *Journal of Plantation Crops* **32** (Suppl.): 474-479.
- Bass, B. M. and Avolio, B. J. 1997. *Full range leadership development Manual for the multifactor leadership questionnaire*. Palo Alto, CA: Mind Garden. 170p.
- Bryan, J.C. 2005. The relationship between emotional and social intelligence and leadership practices among college student leaders. Ph. D. Dissertation Graduate College of Bowling Green State University, Ohio.
- Cantor, N., and Kihlstrom, J. F. 1987. *Personality and social intelligence*. Englewood Cliffs, New Jersey: Prentice Hall. 290p.
- Deliece, A. and Barbers, S. 1999. Extension organizations of the future: Linking emotional intelligence and core competencies. *Journal of Extension* **37**(6):61-64.
- Economic Review. 2015. State Planning Board, Government of Kerala, Thiruvananthapuram, Kerala.
- Frankovsky, M. and Birknerova, Z. 2014. Measuring Social Intelligence-The MESI Methodology. *Asian Social Science* **10**(6): 90-97.
- Goleman, D., Boyatzis, R. and McKee, A. 2002. *Primal leadership: Realizing the power of emotional intelligence*. Boston, MA: Harvard Business School Press. 305p.
- Higgs, M. 2002. Do leaders need emotional intelligence: A study of the relationship between emotional intelligence and leadership change? *International Journal of Organizational Behavior* **5**(6): 195-212.
- House, R.J and Shamir, B. 1993. Towards the integration of transformational, charismatic, and visionary theories. In: *Leadership theory and research: perspectives and direction*. (Eds.) Chemers, M. M. and Ayman, R. , Academic Press, San Diego, CA. pp.81-107.
- Khan, Z. A., Nawas, A. and Khan, I. 2016. Leadership Theories and styles: A literature Review. *Journal of Resources Development and Management* **16**: 1-7.
- Kouzes, J. M and Posner, B. Z. 1988. Leadership practices inventory: A self assessment and analysis. Available from University Associates Inc., 8517 Production Avenue, San Diego, CA.
- Masso, W. Y. A. and Man, N. 2016. Identify the knowledge level of rural leaders towards paddy farming technologies in Muda Agriculture Development Authority (MADA-MALAYSIA). *Indian Journal of Science and Technology* **9**(15): 1-7.
- Ofuoku, A.U. 2012. Criteria for selection of leaders among farmers' groups for sustainable agricultural development in Delta State, Nigeria. *Spanish Journal of Rural Development* **3** (2): 41.
- Ofuoku A.U. and Agbamu, J.U. 2013. Leadership effectiveness among farmer's self help groups in Central Agricultural Zone of Delta State, Nigeria and its implications for improved agricultural extension service. *Asian Journal of Agricultural Extension, Economics and Sociology* **2**(1): 41-53.
- Seema, B. 1999. Marketing behavior of coconut growers in Andaman and Nicobar Islands. Unpublished M.Sc. Ag. Thesis. Tamil Nadu Agricultural University, Madurai.
- Silvera, D. H., Martinussen, M., and Dahl, T. 2001. The Tromso Social Intelligence Scale, A self-report measure of social intelligence. *Scandinavian Journal of Psychology* **42**: 313-319.
- Spotanski, R.D. 1990. An assessment of the leadership practices used by Agricultural Education Department Executive Officers. Retrospective thesis and dissertation. Paper 9467, Iowa State University.
- Syamkumar, B.Y. 1999. Extension intervention for sustaining rice production, Andaman and Nicobar Islands. Unpublished M.Sc. Ag. Thesis, Kerala Agricultural University, College of Agriculture, Vellayani.
- Thorndike, E.L. 1920. Intelligence and its uses. *Harper's Magazine* **140**: 227-235.
- Van Winkle, R., Busler, S., Bowman, S.R., and Manoogian, M. 2002. Adult volunteer development: Addressing the effectiveness of training new 4-H leaders. *Journal of Extension* **40**: 1-9.
- Venkattakumar, R. and Nanjaiyan. 1999. Profile characteristics of commercial coconut growers. *Journal of Extension Education* **10**(3): 2528-2531.
- Zamani, G.H. and Karami, E. 2006. Rural leadership and sustainable agriculture. *Journal of Food, Agriculture and Environment* **4**(3 to 4): 96-102.