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Factors Influencing Knowledge Level of Farmers about Social Forestry

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ABSTRACT A research study was conducted to investigate the knowledge level of participants and the factors influencing it about social forestry in Varanasi district of Uttar Pradesh. Descriptive and diagnostic research design was used for conducting the study. One most progressive and one least progressive community block viz., Sewapuri and Chiraigaon were selected under the social forestry division, Varanasi. Fifty per cent of all villages under the selected community blocks were selected by following proportionate random sampling procedure. Finally one hundred and five participant respondents were selected based on proportionate random sampling procedure. Data collection was done by conducting personal interview with the help of pre-tested structured schedule. The study revealed that the majority of participants had medium knowledge level about social forestry. The association of variables viz., age, education, size of land holding, annual income, social participation, economic motivation, sources of information utilized and innovation proneness was significant with the knowledge level of the respondents. The study concluded that the variables education, sources of information utilized, innovation proneness, size of land holding and social participation were important predictors in influencing the knowledge level of the participant respondents about social forestry practices. Recommendations included for taking proper steps by the enforcing agencies for ensured participation of the intended targeted beneficiaries, and encouraging people's participation at multiple levels taking into account the mass media utilization pattern and favourable attitude of the target groups.

INTRODUCTION

Population pressure on limited land resource and growing demand of people has posed a serious threat to the forest resource in India. The essence of increasing the forest cover assumes a paramount importance in context of mitigating the adverse consequences of climate change globally. The consequence of deforestation is massive as it results in erosion of fertile soil, salinity, alkalinity, desertification and adverse consequences on climate. The role of social forestry in reducing the pressure on forest cover is widely acknowledged. Increase in bio mass, people's participation, environment conservation and promotion of ecological stability are inherent expected outcomes of the social forestry practices.

The term 'Social Forestry' was used by the National Commission on Agriculture (1976) for the first time. Under social forestry scheme, the government has involved community participation, as part of a drive towards afforestation, and rehabilitating the degraded forest and common lands. Singh (1992) stated that 'social forestry' is the practice of forestry on lands outside the conventional forest area for the benefit of rural and urban communities. Social forestry also aims at raising plantations by the common man so as to meet the growing demand for timber, fuel wood, fodder, etc., thereby reducing the pressure on the traditional forest area. Social forestry scheme includes farm forestry, community forestry, extension forestry and agro-forestry. Suitable plants grown under social forestry practices can promote nitrogen fixation. *Laucaena leucocephala* (Soe babul) can be planted for food, fuel wood and forage. Hogberg (1982) recorded total nitrogen fixation of 110 ± 30 kg ha^{-1} yr^{-1} in a 4 years old *Laucaena leucocephala.* Other suitable plants for nitrogen fixation may be *Prosopis, Sesbania, Albizia* .

Visualising the importance of social forestry, a national seminar on social forestry was organized during 8-9 February 2011, in Gujarat by Forest Department, after a long period of 36 years. To sustain growth and development, for healthy environment and for survival of human race tree cover is essential. Social forestry can be identified as a tool for bringing about ecological and socio-economic improvements, and has the potential to alleviate poverty in rural areas.

The real success in attaining natural resource management and rural development, which are the two main principle components of the social forestry programme is banked upon the level of initiative and participation of rural community. Initiative and involvement of people is imperative and influenced by their level of knowledge and clarity of the objectives of the programme being implemented. Therefore, the present study was undertaken with following specific objectives:

1. To know the socio-economic, personal and psychological characteristics of the respondents.
2. To ascertain the knowledge level of the respondents about social forestry.
3. To analyse the factors influencing the knowledge level of the respondents about social forestry.

METHODOLOGY

The study was carried out in Varanasi district of Uttar Pradesh (U.P) using a descriptive and diagnostic research design. Multistage sampling was followed for drawing a representative sample. Out of the eight community development (CD) blocks under social forestry division, Varanasi; where substantial social forestry work was been carried out during the period of 1995-1998, one most progressive and one least progressive community development block viz., Sewapuri and Chiraigaon respectively were selected. Further, 50 per cent of all villages under the selected community blocks, that is, eight out of sixteen villages of Sewapuri CD block and six out of twelve villages of Chiraigaon CD block were selected by following proportionate random sampling procedure. Fifty- five participant respondents from eight villages of Sewapuri CD block and fifty participant respondents from six villages of Chiraigaon CD block were selected by proportionate random sampling procedure. Thus the final sample consisted of 105 respondents who were participating in social forestry practices

The dependent variable 'Knowledge' was empirically measured by developing a 'Knowledge Index' for this purpose. A set of 25 questions covering all aspects of social forestry, was developed in consultation with the subject matter specialist and the forest officials. An equal weightage of one (1) was given to the correct answer for the questions 1-20. For the correct answer of the remaining questions (21-25), an equal weightage of two (2) was given. Wrong answers were evaluated as zero. The following formula was used for calculating the 'Knowledge Index'.

Knowledge Index (KI) = $\left(\frac{n}{N}\right)$

Where, n = Total score obtained by respondent for correct answers.

N = Maximum obtainable score (30).

The knowledge test developed was standardized by analysing its content validity. After obtaining the Knowledge Index scores of all the respondents, mean (μ) and standard deviation (s.d) was calculated and the respondents were classified into three categories. The respondents having score in the range of (μ ± s.d) were categorised under medium knowledge level and those having score lower and greater than (μ ± s.d) were categorised under low and high knowledge level about social forestry respectively. The empirical measurement of the independent variables age, education, size of family, size of land holding, social participation, credit behaviour and sources of information utilized was done using standard procedure evolved for the purpose. The variable attitude was empirically measured with the help of attitude scale developed by Jha (2009). The respondents were also classified into three categories based on mean (μ) and standard deviation (s.d) values under the selected variables annual income, economic motivation, attitude, entrepreneurship, innovation proneness and mass communication sources.

Data were obtained from the selected respondents by conducting personal interview with the help of pre-tested structured schedule. Analysis of data was done using frequency, percentage, mean, standard deviation, correlation and regression analysis.

RESULTS AND DISCUSSION

Socio-economic, Personal and Psychological Characteristics of the Respondents

It was evident from Table 1 that most (63.81%) of the respondents belonged to the middle aged (36-55 years) category and majority (31.43 %) of them had education up to high school. Most of them (65.72%) had medium size of family consisting of 6 to 10 members. Majority (55.24

%) of them had medium size (2-4 ha) of land holding for farming practices; most (52.38 %) of them had medium level (Rs 26,000- Rs 36,200) of annual income, majority (64.76%) had high level of economic motivation and most (40.95%) of them utilized three sources of credit. Regarding social participation, majority (54.28%) of the respondents had the membership of more than one organization, most (60.95%) of them had favourable attitude towards social forestry and majority (64.76%) of them exhibited medium level of entrepreneurship characteristics. Most (43.81%) of the respondents had medium level of innovation proneness and majority (41.91%) of them had high level of utilization of mass communication sources for getting pertinent information.

Participation in social forestry practices plays a vital role in increasing the plant population on earth vis-à-vis reducing the level of atmospheric pollution, creating agro-ecological balance, reducing the adverse affects of climate change thereby promoting ecological stability and sustainable development of community and their available natural resources. The study revealed about the active participation of middle aged people who were educated up to high school. It might be due to their status of maturity and ability to sense the benefits of social forestry having background of high school education, unlike old people with pessimistic attitude and young people longing for other avenues of income and employment. Farmers having medium size of land holding and medium level of annual income were able to spare some part of their land for social forestry whereas small farmers were constrained by their limited size of land holdings. Economic motivation is instrumental for human being to undertake risk and adopt innovative practices. As majority of the participants had high economic motivation and high utilization of mass communication sources, therefore, they might have been prompted for increased level of participation in social forestry practices.

The participant farmers utilizing different credit sources and active in social participation, possessed favourable attitude towards social forestry practices , exhibited medium level of entrepreneurial characteristics having medium level of knowledge about social forestry practices. These factors motivated them for their active participation in social forestry practices.It emerged from the study that the middle aged farmers had maximum participation in social forestry.

Knowledge Level of the Respondents about Social Forestry

The distribution of respondents based on their knowledge level about social forestry has been shown in Table 1. It was evident that majority (61.91%) of the respondents had medium knowledge level about social forestry, followed by high knowledge level consisting of 20.95 per cent of them and remaining 17.14 per cent of the participant respondents exhibited low knowledge level about social forestry practices.

Rathore (1987) reported that majority of the farmers had medium knowledge followed by low and high knowledge respectively. Kala (1994) found that knowledge about the programme was one of the important factors stimulating people's participation. Ramamurthi et al. (1997) stated that majority of the respondents had medium level of knowledge followed by low and high level of knowledge about farm practices. Venkattakumar et al. (1998) reported that majority of the respondents had medium to high level of knowledge about recommended agricultural practices. Swathi and Annamalai (2010) found that 52.50 per cent of the farmers had a higher level of awareness towards social forestry programme, followed by 25 per cent and 22.50 per cent with low and medium level of awareness respectively. Devendrappa et al. (2011) in their study on the awareness level and perception of the farmers of Dharwad, North Karnataka, reported that majority of the respondents were young, studied up to high school had agriculture as their main occupation, had high social contacts, were aware of the extension programmes and were exposed to the mass media. Most of the respondents had high social participation, majority of the respondents (75.0%) regularly listened to radio, 76.8 per cent respondents had favourable attitude and agreed with the statement that social forestry adoption ensures many advantages. The farmers of Dharwad, Northern Karnataka, were well aware of the social forestry programme and they could get the benefits out of it. It could be due to their being well educated, better contacts with extension agencies, exposure to mass media and association with various social organizations.

Table 1: Distribution of respondents based on their socio - economic and psychological characteristics (N=105)

Characteristics	*Category*	*No. of respondents*	*Percentage*
Age	Young (≤ 35 Yrs)	30	28.5
	Middle aged (36-55 Yrs)	67	63.81
	Old (≥56 Yrs)	08	07.62
Education	Illiterate	19	18.09
	Can read only	04	03.81
	Can read and write	06	05.71
	Up to primary school	14	13.34
	Up to middle school	19	18.09
	Up to high school	33	31.43
	Up to graduate level	07	06.67
	Above graduate level	03	2.86
Size of Family	Small (1-5 members)	26	24.76
	Medium (6-10 members	69	65.72
	Big (> 10 members)	10	9.52
Land Holding Category	Marginal (< 1 ha)	04	3.81
	Small (1-2 ha)	25	23.81
	Medium (2-4 ha)	58	55.24
	Big (> 4 ha)	18	17.14
Annual Income	Low (< Rs 26,800)	34	32.38
	Medium (Rs 26,000- Rs 36,200)	55	52.38
	High (>36200)	16	15.24
Economic Motivation	Low	05	4.76
	Medium	32	30.48
	High	68	64.76
No of Credit Sources Utilized	None	08	7.62
	One	12	11.43
	Two	32	30.48
	Three	43	40.95
	Four	10	59.52
Social Participation	Member of one organisation	38	36.19
	Member of more than one organisation	57	54.28
	Office bearers	05	4.76
Knowledge Level	Low	18	17.14
	Medium	65	61.91
	High	22	20.95
Attitude	Less favourable	07	6.67
	Favourable	64	60.95
	Most favourable	34	32.38
Entrepreneurship	Low	24	22.86
	Medium	68	64.76
	High	13	12.38
Innovation Proneness	Low	21	20.00
	Medium	46	43.81
	High	8	36.19
Mass Communication Sources Utilized	Low	31	29.5
	Medium	30	28.57
	High	44	41.91

Factors Influencing the Knowledge Level of the Respondents about Social Forestry

Table 2 envisaged that the variables education, social participation, sources of information utilized and innovation proneness had positive and highly significant association with the variable knowledge level of the respondents about social forestry at 0.01 α, having r=+0.8196, r=+0.7426, r=+0.7888 and r=+0.8078 respectively. The variable size of land holding had positive and significant association with the variable knowledge level of the respondents at 0.05 α having r=+0.2290 but the variable age had negative and highly significant association at 0.01 α having r = - 0.3688 with the knowledge level of the respondents about social forestry. The variables size of family and credit behaviour was found to be non-significant.

Table 2: Association of selected variables with knowledge level of the participant respondents

Variables	*Coefficient of correlation (r)*
Age	-0.3688**
Education	+0.8196**
Size of family	-0.1514NS
Size of land holding	0.2290*
Annual income	+0.2242*
Social participation	+0.7426**
Economic motivation	+0.6566**
Credit behaviour	- 0.1096NS
Sources of information utilized	+0.7888**
Innovation proneness	+0.8078**

** Significant at 0.01 α. *Significant at 0.05 α.
NS – Non significant.

Based on correlation analysis it may be inferred that respondents having higher level of education, social participation, sources of information utilized and innovation proneness as well as size of land holding possessed more knowledge about social forestry practices. With the gain in educational level, people become more conscious to gain adequate knowledge about any subject / technology and thereby their learning competencies are enhanced. Dixit et al. (1990) reported that there was a significant association between knowledge of social forestry and adoption of farm forestry practices. Participation of respondents might have been quite helpful in exposing them to know about technical know-how, role and importance and benefits of the programme thereby gaining knowledge about social forestry. Greater access to mass media information sources, medium degree of innovation proneness and medium size of land holding might have been instrumental factors in creating awareness and gaining adequate knowledge about social forestry practices.

The age of the respondents having negative and highly significant association with the knowledge level of the respondents, meant that lower was the age of the participants higher was their chances to involve in social forestry practices and gain more useful information, thereby gaining adequate knowledge about social forestry practices.

Table 3 exhibited the 't' values of the regression coefficients in view of predictor variables explaining the knowledge level of the participant respondents about social forestry practices. The regression equation which included predictor variables age, education, size of family, size of land holding , annual income, social participation, economic motivation , credit behaviour, sources of information utilized and innovation proneness, explained to the extent of 75.39 per cent of the variations in the knowledge level of the participant respondents about social forestry practices. 'F' value (26.20) was found to be highly significant at 0.01 α. The regression coefficient of the predictor variables age, size of family and credit behaviour was found to be negative, showing an inverse relationship with the response variable. The regression coefficient of other predictor variables viz., education, size of land holding , annual income, social participation, economic motivation , sources of information utilized and innovation proneness, was positive, showing a direct relationship with response variable knowledge about social forestry.

It was also evident from Table 3 that the regression coefficient of the predictor variables education, sources of information utilized and innovation proneness was found to be highly significant at 0.01 α, whereas the regression coefficient of the predictor variable size of land holding and social participation was found to be significant at 0.05 α.

Table 3: Multiple regression analysis of the predictor variables and the response variable – knowledge of the participant respondents

Predictor variables	*b*	*SE(b)*	*'t' values*
Age	-.029	.170	0.171NS
Education	.836	.136	6.147**
Size of family	-.060	.183	0.327 NS
Size of land holding	.708	.340	2.082 *
Annual income	.278	.228	1.219 NS
Social participation	.350	.151	2.317*
Economic motivation	.046	.122	0.377NS
Credit behaviour	-.038	.134	0.284NS
Sources of information utilized	.347	.087	3.988**
Innovation proneness	.497	.106	4.688**

R^2 = 0.7539F = 26.20** at 10, 94 d.f
** Significant at 0.01 α.
*Significant at 0.05 α. NS – Non significant.

Regression analysis revealed that the predictor variables viz., education , size of land holding, social participation, sources of information utilized and innovation proneness having significant 't' values were important in

explaining the variation in knowledge level of the respondents about social forestry practices.

CONCLUSION

The study revealed that most of the respondents had education up to high school, utilized three sources of credit, and had the membership of more than one organization. They had favourable attitude towards social forestry. It was also revealed that majority of them were middle aged, having medium size of family, land holding, annual income, knowledge level, entrepreneurship characteristics and innovation proneness. The variables education, sources of information utilized, innovation proneness, size of land holding and social participation were found as important factors influencing the knowledge level of the participant respondents about social forestry practices. Therefore, these factors may be taken into consideration for creating more awareness and greater degree of participation of the rural people.

RECOMMENDATIONS

Based on the findings of the study following recommendations are being given below:

- Department of Forest should take proper steps to motivate the target beneficiaries and ensure their maximum participation in social forestry practices.
- People's participation should be encouraged at multiple levels. Awareness campaign may also be organised to motivate the people for increased level of participation.
- Favourable attitude and adequate utilization of the mass communication sources by majority of the respondents is a good gesture, which can be potentially utilised for promoting higher level of peoples' participation in social forestry practices.
- Marginal and small farmers should be provided with more awareness and knowledge about social forestry practices so as to increase their level of participation thereby up lifting their socio-economic level and contributing towards environmental conservation and ecological stability.

REFERENCES

Hogberg V 1982. Suitability of plant species for social forestry. *Forestry Chronicle*, 55(4): 408 - 412.

Devendrappa S, Sadaqath S, Patil S 2011. Awareness and perception of farmers about social forestry programme implemented by the government. *International Journal of Farm Sciences*, 1(2): 138-143.

Dixit S, Veerbhadraiah V, Sreenath D 1990. A study on knowledge and adoption of social forestry practices. *My Forest*, 26(4): 363-368.

Jha KK 2009. Scale for measuring attitude of farmers towards social forestry. *Indian Research Journal of Extension Education*, 9(3): 75 - 77.

Kala JC 1994. People's participation in public wasteland development in India- An analysis. *The Indian Forester*, 120(7): 555 - 558.

Ramamurthi K, Santha G, Vasantha KJ 1997. Knowledge level of farm women in turmeric production and processing. *Journal of Extension Education*, 8(4): 1832-1835.

Rathore SS 1987. *Factors Affecting the Adoption of Improved Agricultural Practices of Mustard Cultivation in Panchayat Samiti, Bhinmal*. M.Sc (Ag) Thesis, Unpublished. S.K.N college of Agriculture, Jobner.

Singh B 1992. *Social Forestry for Rural Development: A Socio- economic Perspective*. New Delhi:Anmol Publisher.

Swathi Lekshmi PS, Annamalai R 2010. Awareness of farmers about social forestry programme- An analysis. *Indian Research Journal of Extension Education*, 10(2): 85 - 88.

Venkattakumar R, Nanjayan K, Chandrakandan K, Venkata P 1998. Knowledge and extent of adoption of recommended coconut cultivation practices. *Journal of Extension Education*, 9(3): 2097 – 2100.