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Assessment of socioeconomic status of agroforestry farmers in Giridih District, Jharkhand

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Abstract
Agroforestry is known to offer a wide range of livelihood benefits to farmers viz higher crop yields and incomes, greater food security and better resilience to climate change. The purpose and role of why agroforestry should be adopted are better explained by the farmers who adopt agroforestry as land management option. Hence this study was carried out with a purpose to know the socioeconomic status of farmers practicing agroforestry in Giridih, Jharkhand. A survey was done in the villages and 160 farmers were randomly selected households. Results revealed that 76.88 percent of the total sampled farmers had adopted agroforestry. About 42.49% of farmers doing horticulture on their farm considered farming their primary occupation and most of them (75.62%) considered agriculture as their major source of income. Maximum annual income of farmers 60,001-80,000 (48.12%) followed by 40,001-60,000 (18.75) and minimum 80,001-1, 00,000 (6.25 %). It was also found that in spite of having sufficient farming experience these farmers did not find themselves having enough knowledge of agroforestry. Despite of larger number of farmers having sufficient farming experience very few were sufficient in knowledge in agroforestry as they accepted themselves being not enough to understand it. The study concluded that the socioeconomic status of the farmers was satisfactory due to improvement brought out by adoption of agroforestry.

Keywords: Adoption, agroforestry, practice and socioeconomic status

Introduction

Agroforestry is an eco-friendly and sustainable modern farming land use practice that maintains overall farm productivity by combining herbaceous food crops with woody perennial trees and livestock on the same piece of land, either alternately or at the same time, using scientific management practices that improve the socioeconomic condition of people. It is the new name for an ancient land use practice and just a compromise between agriculture and forestry. It plays a major role in enhancement of overall farm productivity, soil enrichment through litterfall, maintaining environmental services such as climate change mitigation (carbon sequestration), phytoremediation, watershed protection and biodiversity conservation. It is an effective and alternative management system to meet the target of increasing forest cover to 33 % as given by the national forest policy.

Agroforestry practices offer practical ways of applying various specialized knowledge and skills to the development of sustainable rural production systems. Agro-forestry is recognized as a land use option in which trees provide both products and environmental services. In agroforestry systems, the trees grown on different farmlands in the same locality when aggregated can bring about improved wooded situation thereby enhancing environmental protection (Otegbeye, 2002) [9]. Agroforestry has both protective and social-economic benefit. Kang (1993) [7] reported that besides direct agricultural benefit, trees exhibit socio-economic values. The benefit of the tree components derived by farmers from agroforestry was evaluated from a social- economic and ecological perspective (Anderson and Sinclair, 1993) [1]. The social-economic benefits of agroforestry can be evaluated in terms of productivity, stability and sustainability. Socio-economic study of farmer and their relationship to agroforestry is highly important. This word helps as certain opportunities for development of agroforestry system in our country. Analyzing the household and farm characteristics can help the process of effective planning system farm forestry. Sinclair and Walker (1999) [11] indicated the lack of quantitative and predictive understanding about traditional agroforestry practices and its importance in making them more adoptable developing new strategies for encouraging farmer to grow tree and improvement in existing agroforestry system can be designed it characteristics of the farmers and farmer in relation to tree growing in existing agroforestry system studied (Nair and Dagar, 1991) [8].

The task force on greening India for livelihood security and sustainable development of Planning Commission (2001) has also recommended that for sustainable agriculture, agroforestry may be introduced over an area of 14 million ha out of 46 million ha irrigated area that is degrading due to soil erosion and water-logging. For integrated and holistic development of rainfed area, agroforestry is to be practiced over an area of 14 million ha out of 46 m ha. This all will, besides ensuring ecological and economic development provides livelihood support to about 350 million people. The practice of agroforestry can help in achieving these targets. Giridih district mainly depends on agriculture, forest produce and seasonal migration to different parts of the country. An understanding of socioeconomic status of agroforestry farmers and their relationship to the agroforestry is highly important. This would help to ascertain the opportunities for the development of the system (Irshad *et al.*, 2011) [6]. Hence this study was carried out with a purpose to know the socioeconomic status of farmers practicing agroforestry in the district.

Materials and methods

The study site is located in Jamua block of Giridih District, Jharkhand State, located at 24°22′13″N, 86°8′51″E. Jamua Block covers an area of 47,850 ha, out of which 6,875 ha is forest area. The study area was surveyed through household survey with the help of questionnaire using stratified random sampling technique. Household heads were treated as respondents engaged in agroforestry were selected as target group for the data collection. Different methods were adopted in this case study house hold interviews, focus group discussions and participatory rural appraisal and agroforestry surveys. For data collection on socio-economic status, household survey through well structured questionnaires, the information collected from them regarding their socio economic status, general awareness with respect to various agroforestry activities, participation in to various agroforestry activities and effectiveness of motivational factors responsible for people's participation in agroforestry programmes. Data collected on ecological characteristics, socio-economic characteristics, land use characteristics and resources/ supporting services. The selection criteria for study of villages were their geographical distribution under districts and presence of agroforestry in that area using random sampling. Thus 160 random households in the selected villages were surveyed to determine average land holding size, area under different land uses, crops, trees and shrubs used for various purposes and management practices.

Results and Discussion

Socioeconomic profile

The Socioeconomic study of the area is shown in Table 1.The table indicated that the maximum number of male population was 63.75% followed by female population was 36.25% in survey area. Most of the families were from OBC caste (38.13%) followed by general (29.37%); maximum respondents were nuclear family (94.37%) followed by joint family (5.62%); age profile of respondents were 20-30 (53.75%) followed by 31-40 (21.87%); higher literacy (28.75%) were Illiterate followed by Primary literacy (21.13%); Ethnic group & religion were Hindu (63.12%) followed by Christian (20.62%). The annual income of farmers 60,001-80,000 (48.12%) followed by 40,001-60,000 (18.75%) and minimum (6.25 %) was 80,001-1, 00,000. Similarly, Himshikha (2016) [5] studied the families, age of farmers, education and their family size. Most of the respondents had annual income from farm 60,001-80,000 (48.12%) followed by 40,001-60,000 (18.75%). Small landholding farmers worldwide and particularly in developing countries have increased their interests in adoption and promotion of agroforestry in recent years (Glover *et al.*, 2013, Himshikha, 2016) [3, 5].

Table 1: Socioeconomic profile

Gender	F	%
Male	102	63.75
Female	58	36.25
Caste		
GEN	47	29.37
OBC	61	38.13
ST	34	21.25
SC	18	11.25
Family		
Nuclear	151	94.37
Joint	9	5.62
Age profile		
20-30	86	53.75
31-40	35	21.87
41-50	20	12.50
51-60	11	6.87
>60	8	5.00
Literacy		
Illiterate	46	28.75
Primary	37	21.13
High school	33	20.63
Intermediate	26	16.25
College	18	11.25
Ethnic group & religion		
Hindu	101	63.12
Muslim	26	16.25
Christian	33	20.62
Annual Farm Income Rs		
1-20,000	29	18.12
20,001-40,000	24	15.00
40,001-60,000	30	18.75
60,001-80,000	77	48.12
80,001-1,00,000	10	6.25
Income from livestock (yearly)		
0-25,000	88	55.00
25,001-50,000	21	13.12
50,001-75,000	24	15.00
75,001-1,00,000	19	11.87
More than 1,00,000	08	5.00

Total land under agroforestry, horticulture and bamboo

In study area land use practices (ha) by respondents were 100 % farmers in agriculture and 76.88 % in agroforestry, whereas horticulture 42.49% and 22.50 % farmers grow bamboo on their land Table 3. Similar study by Himshikha (2016) [5] reported that the agriculture 99.45% of farmers do agriculture in Haridwar, Uttarakhand. In the study area bamboo based agroforestry practice was prevailing. Bamboo based agroforestry systems are also found very common in the state (Sinha, 2009) [12].

Table 2: Total land under agroforestry, horticulture and bamboo

Land use practices	**Land size (ha)**	**Total (N = 160)**	**Percentage**
Agriculture	0- 6	160	100.00
Agroforestry	0 – 1	134	76.88
Horticulture	0 -3	68	42.49
Bamboo	0 – 1	36	22.50

Duration of work opportunities

Perusal of data indicated that 13.12% male and 5.62% female for whole year, 51.87% male and 15.625% female 6-8 month and 8.75% male and 3.75% female respondents had worked opportunities 4-6 month and 1.25% male 3-4 month, respectively in the study area.

Table 3: Duration of work opportunities

Work opportunities		Total (N=160)	Percentage
Available for whole year	Male	21	13.12
	Female	9	5.62
Available for 6-8 months	Male	83	51.87
	Female	25	15.62
Available for 4-6 months	Male	14	8.75
	Female	6	3.75
Available for 3-4 months	Male	2	1.25
	Female	00	00.00

Labour employed in Jamua Block

The type of labour employed in the farm is shown in Table 4. Perusal of data indicated that maximum 78.75% respondents worked as family labour whereas 16.25% worked as hired labour and minimum 5% respondents worked as exchanged labour respectively in the study area. Similarly, Shah (1998) [10] made an analysis based on data collected from the village of Bhatsan, Gujarat. The existing pattern of land use from survey data of 403 families indicated 92 families in the landless laborers category and 61 families as marginal owing < 2 acre and 103 owned 2-10 acre. It is concluded that agroforestry is an ideal land-use for the rural people. Tree growing is a land use activity and therefore farm size and agricultural holdings are expected to have positive influence on growing trees on farms (Sood and Mitchell, 2009) [14]. As compared to agriculture, tree growing is less labour-intensive. Shortage of family labour for agricultural work could result in households opting for less labor intensive land use like tree growing Sood (2006) [13].

Table 4: Labour employed in Jamua Block

Farm Labour	Total	Percentage
Family labour	126	78.75
Hired labour	26	16.25
Exchanged labour	8	5.00

Fuel wood consumption from agroforestry

Fuel wood consumption from agroforestry is shown in Table 5. Perusal of data indicated that maximum 83.75% respondents had use fuel wood consumption from agroforestry. Similarly, Dwivedi *et al*., (2007) [2] the majority of farmers (50.6%) farm tree where a prime source of fuel wood in Western Uttar Pradesh and in the Bastar region of Chhattisgarh fulfilling the all basic requirement from agroforestry practices like food, fodder and fuel etc. and also getting extra benefit or income (Hemrom and Nema, 2015) [4].

Table 5: Fuel wood consumption from agroforestry

Fuel wood consumption	Total (N=160)	Percentage
Less fuel wood harvested	11	6.87
Moderate fuel wood harvested	15	9.37
More than sufficient wood harvested	134	83.75

Conclusion

From the study it is found that majority of respondent/farmers and surveyed households were male-headed; majority of farmers' families fell under OBC and general categories; the majority of farmers were young age having middle or Illiterate. The farmers were largely dependent on agriculture, agroforestry and horticulture for income generation for their livelihood. Farmers were also reported with higher income status i.e. above Rs 60,001-80,000 per annum. Most of the farmers were from nuclear size families. Approximately more than one third of the total agroforestry farmers considered farming as their primary occupation and most of them considered agriculture as their major source of income. Results also show that to some extent the agroforestry farmers practiced agroforestry on whole of the land because of the returns as compared to conventional agroforestry because they wanted to extract as much as possible in terms of agroforestry output. Despite of large number of farmers having sufficient farming experience very less people were sufficient in agroforestry knowledge as they accepted themselves not enough to understand agroforestry. Finally the study concluded that the socioeconomic status of the farmers in the study area was satisfactory as adoption of agroforestry had improved it.

References

1. Anderson IS, Sinclair FL. Ecological Interactions in Agroforestry Systems. Agroforestry Systems, 1993; 6(2):58-61.
2. Dwivedi PR, Karemulla K, Singh R, Rizvi RH, Chauhan J. Socio-Economic Analysis of Agroforestry Systems in Western Uttar Pradesh. Indian Res. J. Ext. Edu. 2007; 7(2-3).
3. Glover EK, Ahmed HB, Glover MK. Analysis of socioeconomic conditions influencing adoption of agroforestry ractices. International Journal of Agriculture and Forestry. 2013; 3(4):178-184.
4. Hemrom A, Nema S. A study on traditional agroforestry practices existing at Bastar region of Chhattisgarh. International Journal of Multidisciplinary Research and Development. 2015; 2(3):56-64.
5. Himshikha. Assessment of socioeconomic status of agroforestry farmers in Haridwar, Uttarakhand International Journal of Farm Sciences. 2016; 6(4):87-94, 2016
6. Irshad M, Khan A, Inoue M, Ashraf M, Sher H. Identifying factors affecting agroforestry systems in Swat, Pakistan. African Journal of Agricultural Research. 2011; 6(11):2586-2593.
7. Kang BT. Soil tillage in Africa: need and challenges. FAO soil Bulletin, 1993, 69.
8. Nair PKR, Dagar JC. An approach to developing methodologies for evaluating agroforestry systems in India. Agroforestry Systems, 1991; 16:55-81. doi:10.1007/BF00053197
9. Otegbeye GO. Report on Agroforestry and Land Management Practices, Diagnostics Survey of Katsina State of Nigeria. May 2000, Katsina State Agricultural and Rural Development Authority. Katsina. 2002, 89.
10. Shah P. Potential of agroforestry as land use technology for rural people. Awareness in Forestry Research in India, 1998; 1:27-100.
11. Sinclair FL, Walker DH. A utilitarian approach to the incorporation of local knowledge in agroforestry research and extension. In: Buck, L.K., Lassoie, J.P., Fernand, 1999.
12. Sinha A. Production potential of some winter vegetables under edible bamboo. Dendrocalamus as per. J. Bamboo

& Rattan, 2009; 8(1-2):91-94.
13. Sood KK. The influence of household economics and farming aspects on adoption of traditional agroforestry in Western Himalaya. Mountain Research and Development, 2006; 26(2):124-130.
14. Sood KK, Mitchell CP. Household level domestic fuel consumption and forest resource in relation to agroforestry adoption: Evidence against need-based approach. Biomass and Bioenergy, 2009; 35:337-347.