Assessment of the Agroforestry System on Farmers Socioeconomic Status in Azamgarh District, Uttar Pradesh, India

ABSTRACT

The study investigated that the Socioeconomic status and use of an agroforestry system, 20 farmers from one district, four blocks, and four villages per block were randomly selected. The socioeconomic condition of the agroforestry system in the Azamgarh districts of Uttar Pradesh is based on preliminary study. According to the size of their holdings, the respondents were divided into Palhani, Bilariyaganj, Mehnagar, and Jahanaganj block farmers, and observations were made about their socioeconomic profiles. Farmers ranged in age from middle-aged to elderly; the majority had completed middle school, whereas large farmers were more likely to have completed high school; most of them were nuclear families with semi-cemented or cemented homes and had more than 10 years of expertise in agriculture and agroforestry. Their family sizes ranged from medium to big, or over 5 individuals. In the three categories of farmers, the risk orientation ranged from low to medium; the scientific orientation was of a medium degree. The large farmers were found to be more exposed to the media, and most farmers were found to attend group meetings. Smallholder farmers, especially in developing nations, contribute significantly to local, regional, and economies as a result of socioeconomic and environmental constraints. About 75% of the world's agricultural land is used by smallholders.

Keyword: Agroforestry; Farming System, Farmers, Socioeconomic status

INTRODUCTION

Agroforestry has the potential to alleviate land degradation, improve food security, and reduce poverty while also assisting in the provision of other ecosystem services **(Kuyah *et al.*, 2019).** Due to increasing demographic pressure, increased food, feed, and fodder requirements, declining natural resource availability, and climate change, Indian husbandry faces a variety of difficulties and limitations **(Dhyani *et al.*, 2013)**. These possibilities prompted the development of agroforestry as a sustainable land-use technique in vibrant places **(Hoang *et al.*, 2017)**. Agroforestry is a relatively new scientific field, although it is a very old practise in the humid tropics, where peasant husbandry combines seasonal crops, animal husbandry, tree care, and timber harvesting **(Nair *et al.*, 2022)**. Agroforestry increased family income and job opportunities, which lowered ranch expenses. Environmental education will be essential in persuading growers to use agroforestry. Growers must be aware of the advantages of agroforestry in order to participate in and support it **(Sanou *et al.*, 2019)**. Researchers have noticed the advantages of agroforestry approaches and several seasonal crops like mango, banana, pineapple, lemon, and jackfruit **(Akter *et al.*, 2020)**. Learning about the social and economic standing of an individual, group, community, or organization is done through socioeconomic evaluation. **(Abdrabo and Hassan 2003)**. Simply put, it entails cultivating a variety of tree species and agricultural crops on the same plot of land while operating in specific ecological relationships and maximising financial returns **(Young 2002)**. It is crucial to do socioeconomic study on the connection between agroforestry and farmer lands **(Irshad *et al.*, 2011)**. Smallholder farmers, especially in developing nations, contribute significantly to local, regional, and global food supply chains and economies as a result of socioeconomic and environmental constraints. About 75% of the world's agricultural land is used by smallholders or family farms, which produce the majority of the world's food, according to smallholder farmers **(Lowder *et al.*, 2016)**. According to reports, the tribesmen can benefit from a variety of economic activities, such as agricultural production (such as growing vegetables, fruits, and crops), animal production (such as raising poultry and cattle), non-farming (such as raising pigs and breeding pigs), and non-agricultural (such as manufacturing). Crafts, small and medium businesses, tailors, nurseries, and other similar businesses **(Mondol 2006)**. Due to variances in attitudes, cultures, aims, preferences, resource endowments, and socioeconomic backgrounds, smallholder farmers mix or alter various CSATs with other techniques and practices to solve

particular tactics and conditions **(Maguza 2017)**. Smallholder farmers, especially in developing nations, contribute significantly to local, regional, and global food supply chains and economies as a result of socioeconomic and environmental constraints. About 75% of the world's agricultural land is used by smallholders or family farms, which produce the majority of the world's food, according to smallholder farmers **(Lowder *et al.*, 2016)**.

METHODOLOGY

Sampling technique

Based on initial research, the socioeconomic state of the Agroforestry system in Uttar Pradesh's Azamgarh districts. One district, four blocks, and four villages per block were chosen at random, along with 20 farmers from each of these regions, depending on their socioeconomic level and use of an agroforestry system. This method is frequently employed as a preliminary step toward more quantitative analysis since it might provide helpful hints regarding which variables are worth evaluating quantitatively. This component of the instrument included the respondents' age, education, agricultural experience, family size, land ownership, annual income, and exposure to the media. This section of the schedules was used to gauge respondents' level of familiarity with the scientific cultivation of agroforestry systems.

Research design

To learn more about the existing state of the phenomenon and to define "what exists" in terms of variables or conditions in a situation, the descriptive research design was used in this study. This method is frequently employed as a preliminary step toward more quantitative analysis since it might provide helpful hints regarding which variables are worth evaluating quantitatively.

Data analysis

statistical analysis and both descriptive were used to analyses the survey. The software was used to process the observed data, and MS Excel was used for analysis. The following

statistical tools were working for this analysis: frequency (f), percentage (%), mean together with standard error (x), and standard deviation (Snedecor and Cochran).

Fig: 1 Location of study area Azamgarh District in Uttar Pradesh (India)

RESULTS AND DISCUSSION

The respondents were categorized into Palhani, Bilariyaganj, Mehnagar and Jahanaganj block farmers as per the size of the landholding and the observations were made on their socio-economic profile.

1. Age

It is observed that old age 42.50 per cent, middle age 36.25 per cent, and young age 21.25 per cent of respondents were from age groups in the Mehnagar block. Middle age 47.50 per cent, young age 31.25 percent, old age 17.50 per cent of respondents were from groups in the Palhani block, followed by middle age 47.50 per cent, old age 21.25 per cent, and young age 17.50 per cent, that age groupings in the Jahanaganj block made up 45.00% of respondents in the medium age range, 32.50% of respondents in the young age range, and 22.50% of respondents in the elderly age range.

2. Education

High school 32.50 per cent, Intermediate 17.50 per cent, Graduate 15.00 per cent, Primary school 13.75 per cent, Middle school 12.50 per cent and Illiterate 8.75 per cent of the responded were from and education groups in the Palhani block, followed by Primary school 32.50 per cent, Middle school 25.00 per cent, High school 16.25per cent, Illiterate 12.50 per cent, Intermediate 10.00 per cent, Graduate 3.00 per cent of the responded were from education groups in the Bilariyaganj block, that 25.00 per cent of the farmers belonged to High school level education, 22.50 respondents had up to Primary school, 21.25 per cent of the farmers belonged to Illiterate level education, 15.00 per cent of the farmers belonged to Middle school level education, 10.00 per cent of the farmers belonged to intermediate level education, 6.25 per cent of the farmers belonged to Graduate level education, groups in the Mehnagar block. The data presented that farmers of highest education level majority exactly 27.50 per cent of the farmers belonged to High school level education followed by 20.00 per cent respondents had up to Intermediate level education, 17.50 per cent respondents had up to Illiterate level education, 15.00 per cent respondents had up to Primary school level education, 11.25 per cent respondents had up to Middle school level education, 8.75 per cent respondents had up to Graduate level education in Jahanaganj block. The existence of reputable institutions and universities in the area as well as the accessibility of reliable transportation options may have inspired the young to pursue an education. The same results were reported by **(Chauhan, 2017).**

3. Land holding

Palhani block, the majority of farmers with the largest land-holding levels were medium farmers, who made up exactly 50.00 %. Small farmers made up 40.00 %, and large farmers made up 10.00 %. According to the data, in the Bilariyaganj block, the majority of farmers with the highest land holding levels, or 47.50 %, belonged to small farms with land holding sizes, followed by 33.75 % with up to medium farmer levels and 18.75 % with up to large farmer levels. According to the data, in the Mehnagar block, the majority of farmers had substantial farmland holdings, accounting for 42.50 %. Small farmers accounted for 32.50 %, while medium farmers accounted for 25.00 %. The data showed that, in the Jahanaganj block, the majority of farmers had small farms with a land holding size of up to 53.75 %, followed by medium farms with a land holding size of up to 35.00 %, and large farms with a land holding

size of up to 11.25 %. Due to the study area's more fragmented land, it is usual for families to divide their holdings into small and medium-sized parcels, which helps to further the land's fragmentation (**Kumar, 2004**).

4. Agriculture farming experience

Exactly 57.50 and 30.00% of respondents in the Palhani block had the agricultural experience of more than 21 years and 11 to 20 years, respectively. By contrast, exactly 12.50% of respondents had fewer than 10 years of farming experience. Calculations show that the majority of respondents had high, medium, and low levels of farming experience. In the Bilariyagaj block, exactly 50.00 and 32.50 percent of respondents, respectively, had been farmers for more than 21 years and 11 to 20 years, while exactly 17.50 percent of respondents had been farmers for less than 10 years. The majority of responders had high, medium, and low levels of farming expertise, according to the calculations. Exactly 40.00 and 35.00% of respondents in the Mehnagar block had farming experience spanning more than 11 to 20 and 21 years, respectively. By contrast, exactly 25.00% of respondents had fewer than 10 years of farming experience. The majority of responders had high, medium, and low levels of farming expertise, according to the calculations. Exactly 45.00 and 35.00% of respondents in the Jahanaganj block had farming experience of more than 21 and 10 years, respectively. By contrast, exactly 20.00% of the respondents had farming experience of less than 11 to 20 years, farmers with more experience in improved cultivation practices are employed for crop cultivation. The outcome is consistent with the conclusions of the **(Binkadakatti, 2008).**

5. Family size

Majority of respondents from the Palhani block (68.75%) lived in medium-sized families (5-7 members), while 18.75 and 12.50%, respectively, lived in small families (up to 4 members) and large families (> 7 members). 50.00% of respondents in the Bilariyaganj block lived in small families (up to 4 members), 35.00% in medium families (5-7 members), and 15.00% in large families (> 7 members), respectively. In the Mehnagar block, the majority of respondents (37.5%) lived in large families (> 7 members), while 33.75 and 28.75% did so in medium families (5-7 members) and small families (2 members), respectively (up to 4 members). In the Jahanaganj block, the majority of respondents (62.5%) lived in small families (up to 4 people),

followed by 27.50% and 10.00% in medium families (5-7 members) and large families (> 7 members). It can be said that the bulk of respondents in the Azamgarh district came from large families**.** Palhani block respondents (65.00%) and joint family respondents (35.00%) were nuclear families, respectively.

6. Family type

Palhani block respondents (65.00%) and joint family respondents (35.00%) were nuclear families, respectively. The majority of respondents in the Bilariyaganj block were family-type respondents, with 58.75 percent of them living in nuclear families and 41.25 % in joint families. 52.50 % in the Mehnagar block were living in nuclear families, while 47.50 % were in joint families, according to the family type of the respondents. The majority of respondents in the Jahanaganj block were from nuclear families, making up 67.50 per cent of the total, while joint families made up 32.50 per cent of the total. We might infer that most responders in the Azamgarh district are from nuclear families. **(Chauhan, 2017).**

7. House type

Palhani block lived in Kutchcha houses, which accounted for 52.50 %, while 35.0% of respondents lived in semi-cemented homes, and 12.50% of respondents lived in cemented homes. The majority of respondents in the Bilariyaganj block's Kutchcha house type made up 65.00 % of respondents, while the semi-cemented and cemented house types made up 27.50 % and 7.50 % of respondents, respectively. The majority of Mehnagar block respondents lived in semi-cemented homes, making up 43.75 % of the total, compared to cemented homes, which further made up 40.00 % and 16.25 % of the total. The majority of respondents in the Jahanaganj block lived in Kutchcha houses, while 32.50 % and 10 %, respectively, resided in semi-cemented and cemented houses. It can be deduced that the bulk of respondents resides in Azamgarh district homes of the Kutchcha type.

8. Annual income

Palhani block respondents had annual incomes that fell into the low annual income (up to Rs. 30000) category, followed by the medium annual income (Rs. 31000 - Rs. 60000) and high annual income (above Rs. 61000) categories, with 68.75 percent of respondents falling into each.

In the annual income of the Bilariyaganj block respondents, the majority (50.00%) of respondents were from the low annual income category (up to Rs. 30000), followed by the medium annual income category (35.00%), the high annual income category (15.00%), and the high annual income category (above Rs. 61000). According to the Mehnagar block respondents' annual income, the plurality (45.00%) of respondents had an annual income between Rs. 30000 and Rs. 30000, followed by Rs. 31000 to Rs. 60000 for low annual income and Rs. 61000 or more for high annual income. According to the Jahanaganj block respondents' annual income, the majority (65.00%) of respondents had an annual income below Rs. 30000, followed by 28.75% of respondents with a medium annual income between Rs. 31000 and Rs. 60000 and 6.25% of respondents with a high annual income exceeding Rs. 61000. **(Nayak, 2007).**

9. Inventory status

Palhani block respondents had bicycles, radios, televisions, scooters, motorbikes, cars, tractors, and improved agricultural machinery, with 35.0% having bicycles, 25.0% having radios, TVs, and televisions, 17.50% having scooters, and 15.00% having cars. 52.50 % to the inventory status of the Bilariyaganj block reported owning a bicycle, 27.50 % a radio or TV, 12.50 % a scooter or motorbike, 5.00 % a car or tractor, and 2.50 % an improved agricultural machine, respectively. According to the Mehnagar block respondents' inventory status, the majority (43.75%) have radio or television, followed by 21.25% who own bicycles, 18.75% who own scooters or motorbikes, 11.25 % who own cars or tractors, and 5.00 % who own improved agricultural equipment. In the Jahanaganj block inventory, the majority of respondents (40.00%) own a bicycle, followed by 35.00% who own a radio or TV, 15.00% who own a scooter or motorbike, 6.25% who own a car or tractor, and 3.75% who own improved agricultural equipment. The respondents' ability to get greater revenue and so enhance the inventory status may have been influenced favorably by their ownership of land holdings, cropping practices, and subsidiary occupations, among other things. The outcome was consistent with that of **(Chakrborty, 2015)**.

Table 1. Socio-economic status of respondents of Azamgarh district as per block-wise classification

Variable	Class	Respondents							
		Palhani		Bilariyaganj		Mehnagar		Jahanaganj	
		F	P	F	P	F	P	F	P
Age	Young (<29 yrs.	14	17.50	25	31.25	17	21.25	26	32.50
	Middle (30-50 yrs.)	38	47.50	38	47.50	29	36.25	36	45.00
	Old (>50 yrs.)	28	35.00	17	21.25	34	42.50	18	22.50
Education	Illiterate	7	8.75	10	12.50	17	21.25	14	17.50
	Primary school	11	13.75	26	32.50	18	22.50	12	15.00
	Middle school	10	12.50	20	25.00	12	15.00	9	11.25
	High school	26	32.50	13	16.25	20	25.00	22	27.50
	Intermediate	14	17.50	8	10.00	8	10.00	16	20.00
	Graduate	12	15.00	3	3.75	5	6.25	7	8.75
Land holding	Small farmers	32	40.00	38	47.50	26	32.50	43	53.75
	Medium farmers	40	50.00	27	33.75	20	25.00	28	35.00
	Large farmers	8	10.00	15	18.75	34	42.50	9	11.25
Agriculture farming	Low (up to10 years)	10	12.50	14	17.50	20	25.00	28	35.00
	Medium (11 to 20 years)	24	30.00	26	32.50	32	40.00	16	20.00
	High (>21 years)	46	57.50	40	50.00	28	35.00	36	45.00
Family size	Small (up to 4 members)	15	18.75	40	50.00	23	28.75	50	62.50
	Medium (5-7 members)	55	68.75	28	35.00	27	33.75	22	27.50
	Large (> 7 members)	10	12.50	12	15.00	30	37.50	8	10.00
Family Type	Nuclear	52	65.00	47	58.75	42	52.50	54	67.50

	Joint	28	35.00	33	41.25	38	47.50	26	32.50
House type	Kutchcha	42	52.50	52	65.00	32	40.00	46	57.50
	Semi cemented	28	35.00	22	27.50	35	43.75	26	32.50
	Cemented	10	12.50	6	7.50	13	16.25	8	10.00
Annual income	Low (up to Rs. 30,000)	55	68.75	40	50.00	24	30.00	52	65.00
	Medium (Rs. 31,000-Rs. 60,000)	16	20.00	28	35.00	36	45.00	23	28.75
	High (Above Rs. 61,000)	9	11.25	12	15.00	20	25.00	5	6.25
Inventory status	Radio/TV	20	25.00	22	27.50	35	43.75	28	35.00
	Cycle	28	35.00	42	52.50	17	21.25	32	40.00
	Scooter/Motor bike	14	17.50	10	12.50	15	18.75	12	15.00
	Car/Tractor	12	15.00	4	5.00	9	11.25	5	6.25
	Improved agriculture machineries	6	7.50	2	2.50	4	5.00	3	3.75

CONCLUSION

The study indicated that the surveyed the agroforestry systems in Azamgarh District in addition to providing the farm family with the necessary wood, trees contributions to farming systems increased the multiplicity element by providing revenue and employment. In order to be sustainable, both types of agroforestry have unique roles to play in the development of economies and livelihoods. In the research locations, planting fruit trees and woody trees along the margins of agricultural fields was frequent practice. Additionally, by meeting a number of socioeconomic and ecological requirements, this method helps disadvantaged farmers have greater resources and contributes to their sustainability and improved quality of life. In the current study, household incomes of agroforestry adopters who employ fruit trees and timber for their livelihoods. When trees have a high canopy exposure, farmers also grow shade-tolerant crops like ginger, turmeric, and aroid. Trees are typically planted with crops like jute, oilseed, sugarcane, rice, wheat, pulses, vegetables, and others on the edges of the field or at irregular intervals. As a result, agroforestry was primarily developed with sustainability concerns in mind, including resilience, variety, and avoiding unfavorable side effects.

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