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Demographic and Psychological Characteristics of Tribal Farmers Towards Soil and Water Conservation Technologies–A Case Study of Nandurbar District of Maharashtra

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ABSTRACT

The majority of tribals in Nandurbar district of Maharashtra were poor farmers, illiterate, having small size of land holdings with annual income less than rupees five thousand. The tribal farmers were having big size of family with 6 to 10 or more family members and their staple food was Sorghum chapati with Urd *dal* (Black gram) or chatani (powder of dry red chilies with salt). The tribal farmers were migrating in nearby areas to earn their income by doing labour work in fields of other farmers. The majority of tribal farmers were having low socio-economic status i.e. lack of implements, equipments, irrigation facilities, mechanical power, animal power and material possession. The tribal farmers were very much dependent on forest for firewood for cooking food and timber wood for their Charpai and house making particularly in roof. They were also collecting Mahuda flowers from forest area for their domestic uses and Timbru leaves for *Bidi* making for their own smoking purpose. The tribal farmers in Nandurbar district of Maharashtra were having moderate to low level of knowledge and adoption of different soil and water conservation (SWC) technologies due to reason of their poor socio-economic status they were unable to adopt costly SWC technologies.

Tribal areas in Maharashtra state are in remote, hilly, rocky and having undulating topography of land and tribal farmers are illiterate with less awareness about latest improved agricultural technologies resulting in backwardness and very poor socio-economic status. The tribal farmers are surviving in meager conditions with very limited resources in their households. It seems that the development of India is not possible without sustainable development in terms of education and agriculture of poor tribals and rural backward population of the country. The study was framed to survey the actual socio-economic status and psychological traits of tribals towards soil and water conservation practices in Maharashtra state.

According to 2001 Census of India, the total tribal population in India was 8.432 crores, which is 8.20 per cent of total population. The maximum concentration of population of tribals was in northeast region of the country; Mizoram (94.46%), Nagaland (89.15%), Meghalaya (85.94%) and Arunachal Pradesh (64.22%). The total population of tribals in Maharashtra State was 85,77,000, which was only 8.85 per cent of total population of Maharashtra state.

METHODOLOGY

The research study on demographic and personal status of tribal farmers towards soil and water conservation was conducted in the two randomly selected watersheds in tribal dominated area of Nandurbar district of Maharashtra during 2008. The watershed selected were i) Akwani watershed situated in Roshmal khurd panchayat, taluka Dhadgaon and ii) Gaman watershed situated in Sindhuri panchayat, taluka Akalkunwa in

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Nandurbar district of Maharashtra. All the farmers residing in the selected watersheds were considered as respondents for the study. Thus, total 43 respondents were included in the study comprising 22 respondents from Akwani watershed and 21 respondents from Gaman watershed. The responses of the respondents were recorded in the developed structured schedules through personal interview method. Suitable statistical techniques were used to draw inferences from the data. The demographic traits of tribal farmers were measured with the help of the socio-economic status scale developed by Pareek and Trivedi (1963) with modifications. The scales developed by Bagdi (2005) were used for measuring knowledge level and adoption behaviour of tribal farmers regarding soil and water conservation technologies. Scoring for knowledge was done as score 1 for correct response and 0 for wrong response. Similarly in adoption of SWC technologies the scoring was done as score 1 for yes and 0 for no response. Total scores obtained by respondents were calculated and respondents were grouped into different categories on the basis total scores obtained by them.

RESULTS AND DISCUSSION

Demographic traits of tribals

The demographic profile of the tribal farmers (table 1) reveals that amongst the selected tribal farmers, 53.48 per cent were of young age, 37.20 per cent of middle age and only 9.30 per cent of old age. All the farmers belonged to scheduled tribe. More than half of the tribal farmers (55.81 %) were small farmers, 23.25 per cent marginal farmers and 20.93 per cent medium farmers. None of the farmer had large size of land holding in this area. Majority of the tribal farmers (93.02 %) were illiterate, couple of tribals can read and only single tribal farmer can read and write. None of farmers was having at least primary education standard. The major livelihoods of the tribal farmers were labour work and cultivation. The majority (93.02 %) of the tribal farmers were living in nuclear family and only few (6.97%) farmers in joint family. Majority (79.06%) of tribal farmers were having 6 to 10 family members in their family followed by 18.60 per cent having more than 10 members and only about couple of per cent farmers having family members five or less. It was also revealed from the data that majority (76.74 %) tribal farmers were earning their annual income up to Rs.5000, about one fifth of farmers earning Rs.5000 to Rs.10000 and only few (2.32%) farmers earning more than Rs.10000. The tribal farmers were earning their income by doing labour work in fields of other farmers and they use to meet their family food requirements by cultivating their own degraded fields.

Socio-Economic Status of tribals

As presented in table 2, little more than fifty per cent of tribal farmers were having low level of socio-economic status and only about one fourth & one fifth of tribal farmers were having moderate and high socio-economic status respectively. It was revealed that majority of tribal farmers in Nandurbar district of Maharashtra were having low socio-economic status. Similar findings were also reported by Patel and Sangle (1993) and Patel and Patel (1999-2000).

Dependence of tribal farmers on forest

The table 3 revealed that about fifty per cent of tribal farmers were using 11 to 15 kg firewood per day followed by 30.23 per cent up to 10 kg and about one fourth of tribal farmers were using more than 15 kg per day for their domestic use. The majority of (60.46%) tribals were bringing 26 to 50 kg timber wood per year, 23.25 per cent tribals using up to 25 kg and only 16.27 per cent using more than 50 kg of timber wood from forest for their domestic use. The farmers were also collecting Mahuda flowers from forest area and their fields. Maximum 30.23 per cent of tribals were collecting more than 100 kg Mahuda flowers per year and about one fourth of tribals collecting 51 to 100 kg and 27.90 per cent up to 50 kg per year. Tribal farmers also used Timbru leaves for Bidi making for their smoking. Majority (51.16 %) tribals were collecting up to 5 kg dried Timbru leaves from the forest area followed by 37.20 per cent collecting 6 to 10 kg per year only 11.62 per cent collecting more than 10 kg Timbru leaves per year for their own family smoking.

Knowledge regarding SWC technologies

Data Shows that 44.18 per cent of tribal farmers had moderate level of knowledge regarding soil and water conservation technologies, followed by 30.23 per cent of tribals having low level and about one fourth of tribals having high level of knowledge regarding soil and water conservation practices. Thus, it is revealed from the table 4 that the tribal farmers of Nandurbar district of Maharashtra were having moderate to low level of knowledge and understanding about different soil and water conservation technologies. The findings are also according to the findings reported by Desai and Thakkar (1995-96).

Adoption of SWC technologies

About 50 per cent of tribal farmers had moderate level of adoption of different soil and water conservation technologies followed by 34.88 per cent of tribals having low level of adoption and only 13.95 per cent were having high level of adoption of soil and water conservation technologies in their fields. Table 5 shows that majority of tribal farmers in the Nandurbar district of Maharashtra were having moderate to low level of adoption of soil and water conservation technologies in their fields to conserve moisture and control soil erosion. It might be due to reason that in adoption of SWC technologies require initially high cost.

Table 1: Socio-demographic profile of the tribal farmers of Nandurbar district in Maharashtra. (N=43)

Sl. No.	Particulars	Frequency	percent
1.	**Age**		
	Young (25 – 40)	23	53.48
	Middle (41 – 55)	16	37.20
	Old (56 – 70)	4	9.30
2.	**Land holding**		
	Marginal farmers	10	23.25
	Small farmers	24	55.81
	Medium farmers	9	20.93
	Large farmers	-	-
3.	**Education**		
	Illiterate	40	93.02
	Can read only	2	4.65
	Can read and write	1	2.32
	Primary	-	-
4.	**Occupation**		
	Labour	43	100
	Cultivation	43	100
	Business	-	-
	Service	-	-
5.	**Family type**		
	Nuclear	40	93.02
	Joint	3	6.97
6.	**Family size**		
	Upto 5 members	1	2.32
	6 to 10	34	79.06
	>10 members	8	18.60
7.	**Annual income**		
	Upto 5000	33	76.74
	5001 to 10000	9	20.93
	>10000	1	2.32

Table 2: Socio-Economic Status of tribal farmers of Nandurbar district in Maharashtra. N=43

Socio-Economic Status	Frequency	Percent
Low (Scores up to 27.66)	23	53.48
Moderate (27.67 to 45.32)	11	25.58
High (>62.98)	9	20.93

Minimum score = 10, Maximum score = 63

Table 3: Distribution of the tribal farmers according to their dependence on forest. (N=43)

Sl. No.	Particulars	Frequency	Per cent
1.	**Firewood use from forest**		
	Up to 10 Kg/day	13	30.23
	11 to 15 Kg/day	19	44.18
	More than 15 Kg/day	11	25.58
2.	**Timber wood from forest**		
	Up to 25 Kg/year	10	23.25
	26 to 50 Kg/year	26	60.46
	More than 50 Kg/year	7	16.27
3.	**Mahuda flower**		
	Nil	7	16.27
	Up to 50 Kg/year	12	27.90
	51 to 100 Kg/year	11	25.58
	More than 100 Kg/year	13	30.23
4.	**Timbru Leaves**		
	Up to 5 Kg/year	22	51.16
	6 to 10 Kg/year	16	37.20
	More than 10 Kg/year	5	11.62

Table 4: Distribution of the tribal farmers according to their knowledge level regarding soil and water conservation technologies. N=43

Knowledge levels	Frequency	Per cents
Low level (<7.33 scores)	13	30.23
Moderate level (7.34 to 9.66 scores)	19	44.18
High level (>9.66 scores)	11	25.58

Minimum score = 5, Maximum score = 12

Table 5: Distribution of the tribal farmers according to their adoption level of soil and water conservation technologies. N=43

Adoption levels	Frequency	Per cents
Low level (<4.66 scores)	15	34.88
Moderate level (4.67 to 6.32 scores)	22	51.16
High level (>6.33 scores)	6	13.95

Minimum score = 3, Maximum score = 8

CONCLUSION

It can be concluded from the study that the tribal farmers of Nandurbar district of Maharashtra were illiterate; having small land holdings; low income, big family size; lack of employment. Such conditions were responsible for making them very poor with low socio-economic status and consequently the poor tribal farmers were migrating into nearby areas for labour work in the fields of big farmers to earn their livelihood. The tribals were also very much dependent on nearby forest for firewood, timber wood, Mahuda flowers and Timru leaves for their own domestic consumption to survive in their remote areas. It was also concluded that the tribal farmers were facing lack of awareness about improved SWC technologies and low adoption level of SWC technologies.

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