Occupational Management of Forest Dwellers for their Livelihood in Eastern Vidarbha

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ABSTRACT

Present study was conducted in three districts of Eastern Vidarbha Zone viz. Chandrapur, Gondia and Gadchiroli. These districts were selected on the basis of percentage of forest area. An exploratory research design of social research was used for present study. 24 villages come under forest range were selected for the study. From each of the selected forest village 8 villagers were selected as respondent, thus constituted sample size of 192 respondents.

To study the educational status and occupational management of forest dwellers for their livelihood, set of independent variables viz age, education of family, family size, operational landholding, localiteness-cosmopoliteness, economic motivation, interest in forestry, knowledge of forestry and attitude towards forest resource conservation were studied, while occupational management was the dependent variable. It was observed from the findings that majority of respondents were found in the categories from primary school to higher secondary school. More than half of the respondents (52.08%) had no access of agriculture education while cent per cent respondents expressed that they have no access of forest education in the area. Half of the respondents (50%) didn't receive any training of livelihood management, more than half of the respondents (53.13%) low level of livelihood knowledge while 38.02 per cent and 15.10 per cent respondents had moderate and high favourable attitude towards management of livelihood activities. Agriculture is the major source of livelihood while forest is major subsidiary occupation in the study area. Most of the agriculture and allied occupation was organized by the forest dwellers by their own while forest department provided forest labour to 34.90 per cent respondents and 35.94 per cent respondents were engaged in collection of forest products with the permission of forest department. In the study area average 132 man-days employment comes from agriculture while average 65 man-days employment in a year comes from forest to the respondents. Regarding sustainability of occupation 37.50 per cent and 34.90 per cent respondents were strongly agree and agree that agriculture can provide sustainable livelihood to the forest dwellers while more than half of the respondents (57.29%) strongly agreed that forest is the best subsidiary occupation. Majority forest dwellers (63.02%) strongly agreed that forest department should provide more work in forest for better livelihood to the forest dwellers and forest should be equal major source of livelihood to the forest dwellers (51.04%). Regarding occupation management index, half of the respondents (50%) had moderate index. In the relational analysis education, livelihood knowledge and attitude towards management of livelihood activities were correlated highly significant with occupational management.

INTRODUCTION

Forest sector is the second largest land use after agriculture. In remote forest fringe villages about 300 million tribal and other local people depend on forest for their subsistence and livelihood and about 70% of India's rural population depends on fuelwood to meet its domestic energy needs. For about 100 million of them, forests are main source for livelihood and cash income from fuelwood, non-timber forest products (NTFP) or construction materials.

The traditional farm-forest integrated system is changing fast. A trend of production sub-systems getting more and more independent is apparent. This trend is often an outcome of the so called nation building/modernization programs and the changes in traditional value system. As people are unable to fulfill their demands from farming alone, they are turning to non-farm activities within or outside rural areas. In this new paradigm, peoples' needs are met from both farming and non-farming sectors. Sustainability of this new paradigm is also sought through community participation. However, since many activities in this paradigm are altogether new to local people, development interventions are frequently made in the name of community participation by

government and NGOs.

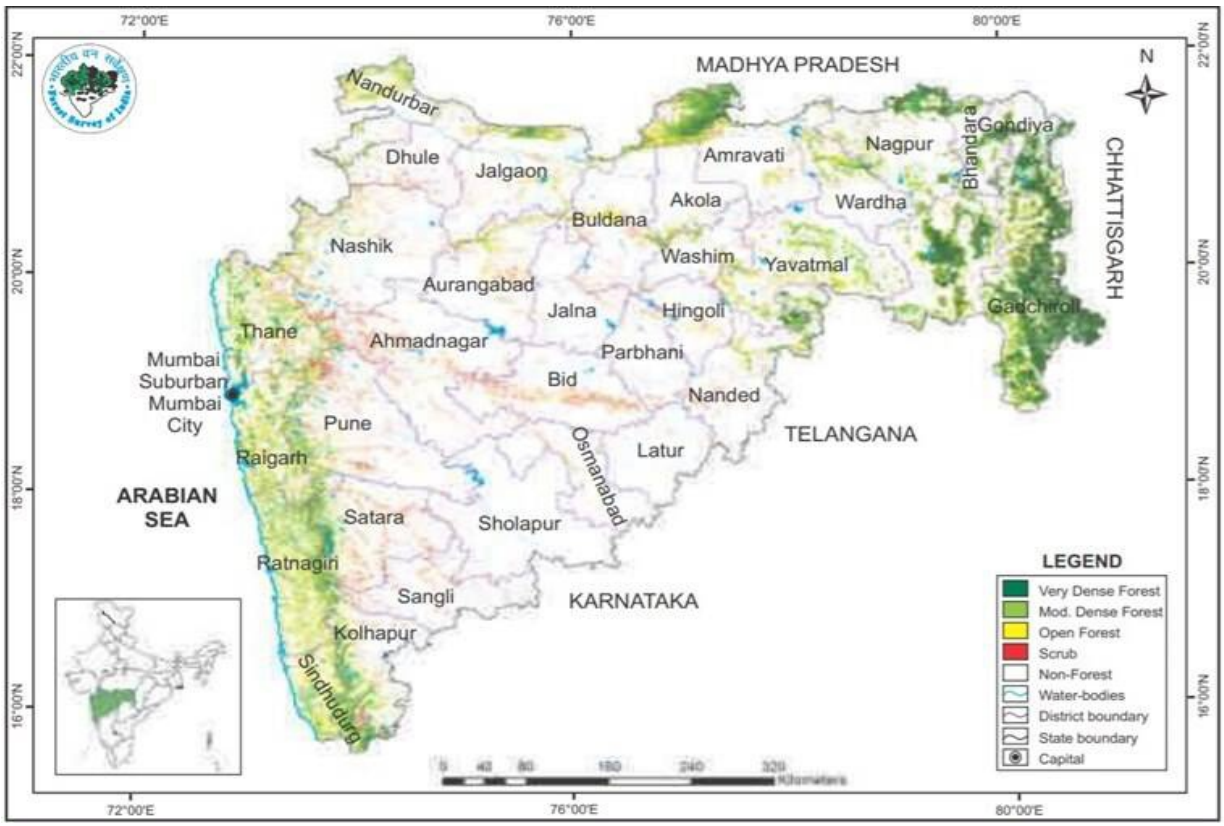
The aim of the study is to ensure that school children be familiar with the forest conservation and provide the information about the nature and the need for biodiversity action. The study emphasizes on the relationship between educational tourism and forest conservation. Implementation of educational tourism to the society can be successfully achieved by lifelong learning, where special target groups are school children. The result of the study reveals that teachers, local government and community, tour operators, local and international organizations and overall media can play significant role in this regard.

Familiar with forest conservation: Conservation education can be used as an effective means to develop knowledge, skills, and attitudes in a way that gives people extended direct experience (Hiromi Kobori, 2009). Educational tourism in the forest areas can familiar the children with forest conservation. They can able to achieve the actual knowledge regarding the forest by this way. Information about nature and biodiversity action: Through educational tourism activities, children have a chance to appreciate the value of biodiversity, which helps strengthen Familiar with forest conservation: Conservation education can be used as an effective means to develop knowledge, skills, and attitudes in a way that gives people extended direct experience (Hiromi Kobori, 2009). Educational tourism in the forest areas can familiar the children with forest conservation. They can able to achieve the actual knowledge regarding the forest by this way. Information about nature and biodiversity action: Through educational tourism activities, children have a chance to appreciate the value of biodiversity, which helps strengthen

METHODOLOGY

Locale of study

The research study was carried out in Chandrapur, Gondia and Gadchiroli districts where forest area is more. Agro ecologically this region is popularly known as Eastern Vidarbha Zone



District wise forest cover in 2007 (Area in Sq.km)

District	Geographical Area	Open Forest	Total Forest Area	% to geographical area
Bhandara	3588	215	891	24.83
Chandrapur	11443	1140	4074	35.60
Gadchiroli	14412	1966	10095	70.05
Gondia	5733	303	2011	35.08
Nagpur	9892	698	2023	20.45
Total	**45068**	**4322**	**19094**	**42.36**
% of G.A.	**100**	**9.59**	**42.37**	**--**

Source : India State Forest Report 2009. Forest Survey of India. 7.16 Maharashtra

For conducting the present study an exploratory research design of social research was used. From each of the selected district, eight forest villages were selected purposively on the basis of more forest area coverage, thus 24 villages from three districts were selected. From each of selected village, eight households were selected randomly, which comprises 192 households in total. One major family member from each of selected household was considered as respondent for the interview. The data for study were collected by personal interview of the respondents with the help of pre-tested structured interview schedule during the period from Oct. 2018 to Feb. 2020.

Taking into consideration the study objectives, two sets of variables were selected for the study i.e. independent variables and dependent variables were measured. Set 16 independent variables were studied while one dependent variable i.e. occupational management of forest dwellers was worked out.

RESULTS AND DISCUSSION

Independent Variables

A set of independent variables that may influence the occupational management of forest dwellers in the area, hence studied and the data is presented in following tables.

Table 1
Distribution of respondents according to education

Sl. No.	Education	Frequency (n=192)	%	Mean	SD	CV
1	Illiterate	10	5.21	6.55	0.71	25.46
2	Primary School	52	27.08			
3	Middle School	40	20.83			
4	Secondary School	47	24.48			
5	Higher Secondary School	38	19.79			
6	College & Above	5	2.60			

From Table 1 it is revealed that more than one fourth of the respondents (27.08%) were found to have primary school (1st to 4th std.) followed by one fourth of the respondents (24.48%) had secondary education i.e. from 8th to 10th std. Around one fifth of the respondents (20.83% and 19.79%) belonged to middle school (5th to 7th std.) and higher secondary school (11th and 12th std.) education. Least of respondents i.e. 5.21 per cent were found illiterate, while only 2.60 per cent respondents had college and above education. It is observed that literacy per cent in the forest villages was quite good, but distributed only from primary school to higher secondary school. No technical education of agriculture or forestry was taken by the forest dwellers.

Table 2
Distribution of respondents according to access to education

Sl. No.	Access to education	Frequency (n=192)		
		Traditional	Agriculture	Forestry
1	No access	00	100 (52.08)	192 (100)
2	Low access	18 (9.38)	63 (32.81)	00
3	Medium access	85 (44.27)	20 (10.42)	00
4	High access	89 (46.35)	09 (4.69)	00

Regarding access to education (Table 2) all forest dwellers were found to have access to traditional education. 46.35 per cent of them had found high access followed by 44.27 per cent had medium access and remaining 9.38 per cent had low access to traditional education. While in case of agriculture education more than half of the respondents (52.08%) had no access to agriculture education. Among those who have access to agriculture education, 32.81 per cent forest dwellers had low access followed by medium (10.42%) and high access (4.69%). No any level of forest education available in the study area or nearby accessible area, hence cent per cent of the respondents expressed no access to forest education.

Table 3
Distribution of respondents according to psychological characteristics

Sl. No.	Variable	Category	Frequency	%	Mean	SD	CV
1	Training received	Not received any training	96	50.00	1.64	0.65	13.45
		Low (Upto 2)	67	34.90			
		Medium (3-4)	20	10.41			
		High (5 & above)	09	4.69			
2	Decision making ability	Low	40	20.83	33.57	2.89	10.1
		Medium	132	68.75			
		High	20	10.42			
3	Interest in forestry	Low	95	49.48	23.38	3.85	17.25
		Medium	53	27.60			
		High	44	22.92			
4	Livelihood knowledge	Low	102	53.13	23.69	4.15	18.78
		Medium	87	45.31			
		High	03	1.56			
5	Attitude towards management of livelihood activities	Less favourable	90	46.88	44.00	5.10	10.89
		Moderate favourable	73	38.02			
		High favourable	29	15.10			

1. Training received

The data depicted in Table 3 shows that half of the respondents (50%) didn't received or attend any training for their livelihood development, while 34.90 per cent respondents attend low level of number of training i.e. up to two training, 10.41 per cent respondents received medium and 4.69 per cent respondents received high training. In an average less than two training were received by the respondents regarding livelihood activities. Major training were organised by the agriculture department and very few of them were conducted by the forest department.

2. Decision making ability

The Table 3 shows that neatly two-thirds of the respondents (68.75%) were found to possess medium level of decision making ability. While a little of 20.83 per cent and 10.42 per cent respondents were found in high and low levels of decision making ability, respectively. The table further shows that the mean score was found to be 33.57 per cent (SD=2.89) with the value of coefficient of variation (CV=10.1) suggests that the respondents were by and large, observed to be quite homogenous. among themselves with respect to their level of decision making ability. From this it can be mentioned that respondents on an average, had enough capability to justify their selection of means from among the available alternatives for their livelihood and well being.

3. Interest in forestry

As indicated in Table 3, nearly half of the respondents (49.48%) had shown low level of interest in forestry. This was followed by medium (27.60%) and high (22.90%) level of interest in forestry. This clearly indicates that majority of the respondents were not very much interested to undertake forestry as an occupation which can be attributed to the fact that people in the area often showed less favourable attitude towards management of livelihood activities although many of them aware its importance. Many people in forest village lacked knowledge about many important occupations including forestry which could be economically visible and practically feasible in the locality. Another reason was that people in general in forest villages were economically poor and they mainly depended on agriculture using traditional practices for their livelihood. Limitations of agriculture and traditional approach of forest villagers stuck the growth of agriculture in the area. This indicate the opportunity of forestry or social forestry development in the area which ultimately provides employment to the people. The mean score under this variable was 23.69 (SD=3.85) with value of co-efficient of variation (CV) as 17.25 per cent, which shows 1ess homogeneity among the respondents in relation to interest in forestry.

4. Livelihood knowledge

In case of livelihood knowledge, it is evident from Table 3 that more than half of the respondents (53.13%) were found in low level followed by medium (45.31%) and high (1.56%) level. The variable forestry knowledge was operationalised as the degree to which an individual was oriented in his behaviour towards the needs and application of knowledge for his success in forestry business enterprise. The Table further shows 23.69 and 4.15 mean score and SD, respectively. The coefficient of variation (CV) value of 18.78 per cent indicates that there was low extent of variability among the respondents with respect to this variable. Sandeepkumar (2013) found medium to low level of knowledge about JFPM in improving livelihood status of village forest committee members.

5. Attitude towards management of livelihood activities

From Table 3, it can be observed that large number of respondents (46.88%) had less favourable attitude towards forest resource conservation. While 53.12 per cent of the respondents were still having moderate favourable (38.02%) and high favourable (15.10%) attitude towards forest resource conservation. The table also shows that the mean score was 44 and standard deviation of the respondents was 5.10. The value of coefficient of variance (CV) with 10.89 per cent indicates that the respondents were more or less homogenous among themselves in relation to their attitude towards management of livelihood activities. This means that the people in the study area particularly the local youths were aware about the ill effects of agriculture and forest resources destruction from sustainability point of view. This calls for more concerted efforts to educate all the people in and around forest villages. Singha (2000) also observed less favourable attitude of respondents towards forest resource management.

Dependent Variable

Occupational management

Under occupational management

livelihood of forest dwellers in the study area was studied under three sections i.e. organization of livelihood sources, criteria of deciding occupation and sustainability of occupation.

i) Organization of occupation

Livelihood sources of forest dwellers like agriculture, forest, business and service were studied which available to serve them for their life. The sources were studied as organized by the forest dwellers by their own and organized by the other institutions which is presented in Table 4.

Table 4
Distribution of respondents according to organization of occupation according to available sources by the forest dwellers

Sl. No.	Occupational sources	Organised on their own	%	Organised by others (Govt/NGO/Private)	%
1	**Agriculture**				
	Farm Labour	19	9.90	50	26.04
	Farming (Crop cultivation)	125	65.10	26	13.54
	Agriculture + Allied Farming (Dairy/Fishery/Goatary/ Poultry/Apiculture/ Sericulture)	39	20.31	0	00
	Agro-business	9	4.69	20	10.42
	Total	**192**	**100.00**	**96**	**50.00**
2	**Forest**				
	Forest Labour	22	11.45	67	34.90
	Forestry (Forest Tree Plantation)	0	00	18	9.36
	Collection of forest products	54	28.13	69	35.94
	Forest Business (Tendu leaves/ Timber etc.)	0	00	26	13.54
	Service in forest	0	00	12	6.25
	Total	**76**	**39.58**	**192**	**100.00**
3	**Other Business**	5	2.60	0	00

a. Available occupational sources

It is observed from Table 4 that agriculture was the major occupation for the people living in the study area. In the agriculture, 65.10 per cent respondents manage to organise on their own and engaged in crop cultivation i.e. farming for their livelihood while 20.31 per cent respondents were engaged in agriculture as well as allied activities like dairy, fisheries, goatary, poultry, apiculture, sericulture etc. Nearly ten per cent (9.90%) were found to work as farm labour. More than one fourth of the respondents (26.04%) of the respondents found to get work of farm labour organised by the other institution. Under forest work 28.13 per cent respondents collecting forest products on their own while 38.54 per cent respondents got license from forest department to collet forest products from forest. Forest department has also provided labour work in the forest to 37.5 per cent respondents while 13.54 per cent respondents had permitted to do forest business like collection of tendu leaves for bidi industries as well as timber work etc. Nearly ten per cent (9.36%) respondents were identified for forest tree plantation work. It is indicated from the findings that cent per cent respondents were engaged in agriculture on their won, while half of the respondents got work in agriculture from agriculture and allied departments. In case of forest work hundred per cent respondents got different work of forest from forest department while 39.58 per cent forest dwellers in study area manage forest work on their own. Sudhendra (2003) reported that

majority of respondents agriculture labourer as occupation, while Painkra (2014) observed that more than one third respondents were engaged in collection non timber forest products.

It is observed that hundred per cent respondents covered under forest work were organized by the forest department hence livelihood status provided by forest department was studied and data presented in Table 5.

Table 5
Distribution of respondents according to their livelihood status provided by forest department

Sl. No.	Livelihood status	Respondents (n=192)	
		Yes	No
A.	**Income or Benefits derived from forest**		
1.	**Way of getting any benefits from forest**		
a.	Share income from collection and final disposal of forest products under JFM	145 (75.52)	47 (24.48)
b.	Salary or wages for work done	99 (51.56)	93 (48.44)
c.	Income generating	131 (68.23)	61 (31.77)
2.	**Collection of minor forest products**		
a.	Fuel wood for own consumption	121 (63.02)	71 (36.98)
b.	Small timber for own consumption	88 (45.83)	104 (54.17)
c.	Fodder	158 (82.29)	34 (17.71)
d.	Leaves and Gums	85 (44.27)	107 (55.73)
B.	**Information obtained by forest dwellers through forest department**		
1.	**Getting required information about forest conservation, forest planning and development from forest department officials**	122 (63.54)	70 (36.46)
2.	**Forest department and JFM committee will provide all necessary information on following aspects**		
a.	Environmental benefits of forest	130 (67.71)	62 (32.29)
b.	Social benefits of forest	119 (61.98)	73 (38.02)
c.	Economic benefits of forest	130 (71.87)	54 (28.13)

(Figure in parentheses indicates percentage)

b. Forest as occupation

Income or Benefits derived from forest : From Table 5 it is revealed that majority of the respondents (79.16%) had their benefits from forest in terms of share income from collection and final disposal of forest products followed by 65.84 per cent respondents generate income through income generating activities like digging of pits, raising of nurseries, plantations and providing protection and fencing. While 51.56 per cent respondents had their income from salary or wages for forest work done.

In case of collection of minor forest products, respondents derived benefits from forest by way of fodder and collection of firewood. Fodder was the major benefit (82.29%) derived by the respondents, followed by fuel wood for own

consumption (63.02%), small timber for own consumption (45.83%) and leaves and gums collection (44.27%). The mechanism of benefit sharing is that the beneficiaries of the JFM would be entitled to firewood, grasses and leaves free of cost from the forest area.

Information obtained by forest dwellers through forest department : The data presented in Table 5 shows that majority of the respondents (63.54%) get required information about forest conservation, forest planning and development from forest department and VFC which helps them to participate in the various development programmes and raised their livelihood status.

It is revealed that majority of the respondents (71.87%) get required information about the economic benefits of forest like they had easy access to firewood, fodder and leaves etc. It was followed by 67.71 per cent respondents environmental aspects namely they are getting pure air in their locality after the forest development through implementation of different programmes and there is increase in water table level in their locality due to forest development, protection and conservation. The reason might be that due to virtue becoming forest dwellers they get information from Forest Department, followed by the social benefits of forest (61.98%). Phiri *et al.* (2012) also found similar findings in this regard in Damba forest reserved in Livingstone Zambia.

Employment generation and income

The employment generation through agriculture and forest as major source in the area were studied and presented in Table 6.

Table 6
Employment generation through agriculture and forest in the study area

Sl. No.	Employment (Man-days)	Agriculture		Forest	
		Yes	No	Yes	No
1	Up to 60	07 (3.65)	185 (96.35)	115 (59.90)	77 (40.10)
2	61 to 120	92 (47.92)	136 (70.83)	54 (28.13)	138 (71.87)
3	121 to 240	76 (39.58)	80 (41.67)	18 (09.98)	174 (90.62)
4	240 to 365 man days	17 (8.85)	175 (91.15)	05 (02.60)	187 (97.40)
	Mean	**132**		**65**	
	Income (Rs.)	**38400**		**7091**	

It is revealed from Table 6 that nearly half of respondents (47.92%) in the study area managed to engage about 121 to 240 man days in agriculture activities followed by 39.58 per cent respondents got 61 to 120 man days work in agriculture, 8.85 per cent worked for 240 to 365 man days. While in forest more than half of the respondents (59.90%) get employment in forest that was up to 60 man days, followed by 28.13 per cent, 09.98 per cent and 02.60 per cent respondents getting employment of 61 to 120, 121 to 240 and 241 to 365 man days, respectively. On an average forest dweller in the study area were engaged for 132 man days in agriculture which includes work organized by their own as well as work organized by other institutes. The average income generated from agriculture was Rs. 38400/-. It indicates that agriculture was poor source of income generation in the area.

Employment opportunities in agriculture was dependent on season. Kharif season was most important where sole lowland paddy was the major crop. Other seasons had very limited opportunities in the area. As agriculture was the major occupation most of the family members were engaged in farm operations of their own field, labour work on others

field and employment provided by government in agriculture through MGNREGA. People organized to manage work of agriculture labour for sowing or transplanting and harvesting of paddy crop. Agriculture department is taking efforts to develop agriculture and allied occupation in the area, but due to low land *bandis* farmers found difficulty to grow other traditional crops as well as horticulture crops. On an average forest has provided 65 man days work in a year and income generated was Rs. 7091/- in a year. It indicates the scope to increase work in forestry with the help of department.

The opportunities that exist for the forest dwellers of the study area includes easy access to firewood, fodder and leaves etc., forest department may enable the people to engage themselves for a greater number of days in collection of firewood and fodder etc. Further, there may have opportunity to employ forest dwellers on wages for digging of pits, raising of nurseries, planting the seedlings, providing protection and fencing. For the forest resource management department may educate the people living in forest village and provide the greater employment opportunities to bound them morally with the forest department.

ii) Criteria of deciding occupation

Table 7
Distribution of respondents according to criteria of deciding occupation

Sl. No.	Criteria	Yes	No
1	Formal Education	22 (11.46)	170 (88.54)
2	Non Formal Education (Training)	27 (14.06)	165 (85.94)
3	Traditional Occupation	98 (51.04)	94 (48.96)
4	Self interest	45 (23.44)	147 (76.56)
	Total	**192**	**100.00**

The data presented in Table 7 indicated that more than half of the respondents (51.73%) selecting their livelihood occupation traditionally that means they were continuing their occupation as successor of their fathers and family members. About 23.44 per cent respondents were doing work of their interest for income generation. More than ten per cent respondents have selected their occupation on the basis of their non formal education i.e. training (14.06%) received from agriculture and forest department and formal education (11.46%). It clearly indicated that forest dwellers in the study area adopting occupation on the basis of their traditional occupations.

iii) Sustainability of occupation

Major occupations adopted by the respondents in the study area were agriculture and forest. Hence, sustainability of these occupations was studied and data presented in Table 8.

Table 8
Sustainability of occupations expressed by the respondents

Sl. No.	Sustainability of occupations	SA	A	UD	DA	SDA	Index
1	Forest dwellers in the area are satisfied with their earnings from different sources	08 (4.16)	21 (10.94)	16 (8.33)	133 (69.27)	14 (14.58)	72.92
2	Only agriculture can provide sustainable livelihood	72 (37.50)	67 (34.90)	00 (00)	41 (21.35)	12 (6.25)	44.79
3	Forestry is the best subsidiary occupation	110 (57.29)	46 (23.96)	00 (00)	36 (18.75)	00 (00)	83.96
4	Forestry should be the equally major source of livelihood for forest dwellers	98 (51.04)	62 (32.29)	26 (13.54)	06 (3.13)	00 (00)	86.25

5	Formal education is necessary for the management of livelihood sources	55 (28.65)	79 (41.15)	00 (00)	36 (18.75)	22 (11.45)	71.35
6	Agriculture has limitations to grow in the area	78 (40.63)	78 (40.63)	11 (5.73)	20 (10.42)	05 (2.60)	88.96
7	Traditional sources of livelihood are only the best occupation	25 (13.02)	33 (17.19)	05 (2.60)	47 (24.48)	82 (42.71)	72.50
8	Forest dept. should provide more work in forest for better livelihood	121 (63.02)	52 (27.08)	00 (00)	19 (9.90)	00 (00)	88.65
9	Training is the best way to sustain in forest work for better performance and better output	56 (29.17)	85 (44.27)	23 (11.98)	20 (10.42)	08 (4.17)	75.94
10	Education will help to develop allied occupations in the area	66 (34.38)	90 (46.88)	07 (3.65)	16 (8.33)	13 (6.77)	78.75
11	Labour work helps to provide money in hand, hence need to increase labour work in the area	143 (74.48)	44 (22.92)	00 (00)	05 (2.60)	00 (00)	93.85
12	Technical knowledge of any field will not help to convert in to earnings for livelihood	16 (8.33)	52 (27.08)	22 (11.46)	24 (12.50)	78 (40.63)	70.00
13	Participation in planning and organizing forest resources can help to open the way of earnings	74 (38.54)	94 (48.96)	04 (2.08)	20 (10.42)	00 (00)	83.13
14	Establishment of enterprises based on agriculture and forest in the area will help to generate employment	102 (53.13)	55 (28.65)	10 (5.21)	14 (7.29)	11 (5.73)	83.23
	Overall index						**78.13**

It is indicated from Table 8 that majority of respondents found strongly agree (37.50%) and agree (34.90%) to express that only agriculture can provide sustainable livelihood, while 69.27 per cent respondents were disagree that they were satisfied with their earnings from different sources. In such situation great majority of respondents strongly agree and agree (57.29% and 23.96%) that forestry is the best subsidiary occupation which need to promote in the area at the same time similar majority of respondents were strongly agree and agree (51.04% and 32.29%) that the forestry should be the equally major source of livelihood as agriculture for forest dwellers because equal proportion of respondents (40.63%) strongly agreed and agreed that agriculture has limitations in the area. Quite good proportion of respondents (41.15%) agreed that formal education is necessary for management of livelihood sources followed by 28.65 per cent respondents expressed their strong agreement towards necessity of formal education. In connection of traditional livelihood sources 42.71 per cent respondents strongly disagree that traditional source of livelihood is only the best occupation followed by 24.48 per cent respondents disagreed. Strong proportion of respondents (63.02% and 27.0%) found strongly agree and agree that forest department should provide more work in the forest for better livelihood. Further 44.27 per cent respondents agreed to the statement that training is the best way to sustain in forest work for better performance and better output it was followed by 29.17 per cent respondents who were strongly agreed to this statement. More than three fourth of the respondents (46.88% and 34.38%) were in favour of providing education to the forest dwellers, hence agreed and strongly agreed to the statement that education will help to develop allied occupation in the area. Nearly three forth respondents (74.48%) were strongly agreed and nearly one fourth of respondents (22.92%) agreed that labour work helps to provide money in hand, hence need to increase labour work in the area. More proportion of the respondents (40.63%) found strongly disagree towards negative statement that technical knowledge of any field will not help to convert in the earnings for livelihood, while more than one fourth of respondents (27.08%) agree with this statement.

Again, greater proportion of respondents were strongly agreed (48.96%) and agreed (38.54%) that participation of forest dwellers in planning and organizing forest resources can help to open the way of earnings. Establishment of enterprises based on agriculture and forest in the area will help to generate employment that was strongly agreed by 53.13 per cent respondents and agreed by 28.65 per cent respondents. Tiwari (2015) advocates strong community participation, bottom up planning and sustainable use of forest resources.

Table 9

Distribution of respondents according to their occupation management level

Sl. No.	Occupation management index	Frequency (n=192)	Percentage
1	Poor (Upto 33.33)	42	21.88
2	Moderate (33.34 to 66.66)	96	50.00
3	Good (66.67 & above)	54	28.13
	Mean = 68.75		

Occupation management

The overall occupation management behaviour of forest dwellers is depicted in Table 9 which reveals that half of the respondents (50%) were found in moderate category of occupation management followed by good (28.13%) and poor (21.88%) category of occupation management. Mean occupation management of forest dwellers was found to be 68.75 per cent. It clearly indicated that there is an opportunity to increase the employment in the forest by educating the forest villagers and increase their participation in forest activities in coordination with forest department not only in the labour activities but also in technical and skilled work activities.

Relational analysis

In order to study the relationship between independent variable and dependent variables the data were subjected to simple correlation occupation management and the data shown in Table 10.

Table 10

Correlation coefficients of characteristics of the respondents with livelihood status of JFM members

Sl. No.	Variable	Occupation management
1	Age	-0.1172
2	Family type	0.1649*
3	Family size	0.1873*
4	Annual income	0.1115
5	Social participation	0.0761
6	Operation land holding	0.1648*
7	Education	0.2714**
8	Access to education	-0.0639
9	Training received	0.1.852*
10	Localiteness-Cosmopoliteness	0.1961*
11	Economic motivation	0.1620*
12	Decision making ability	0.1709*
13	Scientific orientation	0.0937
14	Interest in forestry	0.1616*
15	Livelihood knowledge	0.2151**
16	Attitude towards management of livelihood activities	0.2438**

** =Significant at 0.05 level of probability ** =Significant at 0.01 level of probability*

The result of correlation analysis presented in Table 10 reveal that the variables viz. family type (r=0.1649), family size (r=0.1873), operational land holding (r=0.1648), training received (r=0.1852), localiteness-cosmopoliteness (r=0.1961), economic motivation (r=0.1620), decision making ability (r=1709) and interest in forestry (r=0.1616) were positively and significantly correlated with their occupation management at 0.05 level of probability. It implies that these variables had significant impacts on the occupation management. While variables like education (r=0.2714), livelihood knowledge (r=0.2151) and attitude towards management of livelihood activities (r=0.2438) had positive and significant relationship with occupation management at 0.01 level of probability. Increase in level of those variables help the forest dwellers to manage their occupation for their better livelihood.

Training received by forest dwellers regarding livelihood activities has yielded positive significant relationship with occupation management which clearly indicated that the knowledge and skills received by the respondents from the training programmes help them to manage the income generating activities, technical support provided through training programme helped them to organize the different sources for maximization of income. Education had highly significant correlation with occupation management, this helped the forest dwellers to acquire more knowledge and understanding on occupational activities and probably selection of management of different income generating activities for their better livelihood. Livelihood knowledge is the psycho-social dimension which generally predisposed to education to acquire more information and skills of different livelihood activities which ultimately reflected in better management of occupations. Relationship of attitude towards management of livelihood activities of respondents was found to be highly significant with occupation management which could be attributed to the fact that most of the people who were relatively young in age had favourable attitude towards management of different alternative occupations. They may have high education level, more expose to society and more aware about the management of income generating activities.

CONCLUSION

It is concluded from the findings that agriculture has established educational access in the form of degree and diploma programmes. However, forest education has no access in the area. Agriculture was the major source of occupation for forest dwellers in the study area. But average income generated from agriculture per year was very low (Rs. 38400).Forest was found to be a major subsidiary occupation having nearly 40 per cent of forest covered over the geographical area.

Half of the respondents didn't receive any training of livelihood management in their area. Major training provided were about agriculture occupation which is mandatory set up of agriculture department. But, forest department has provided very negligible training to the forest dwellers. Nearly half of the respondents (49.58%) had low interest in forestry, while 53.13 per cent had low level of livelihood knowledge. Attitude of forest dwellers was favourable towards forestry as sustainable source of subsidiary income. But overall attitude was less towards management of livelihood activities.

Educational and behavioural variables like education, training received, decision making ability, interest in forestry, livelihood knowledge and attitude has established positive and significant relationship with occupation management.

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