

## **Characterization of Livelihood Systems in Coral Ecosystem**

Anshida Beevi<sup>1</sup> and Monika Wason<sup>2</sup>

### **ABSTRACT**

A livelihood comprises the capabilities, assets and activities required for a means of living. The present study has undertaken to characterize the livelihood systems in coral islands of India. Out of 11 inhabiting islands of Lakshadweep, two islands “Kalpeni” and “Andrott” were selected for the study. From the islands selected, two wards and from each ward 30 individuals were selected by simple random sampling technique. A total of 120 respondents comprised the sample. The results showed that three livelihood groups in the study area include the farming alone (group 1), non-farm activities alone (group 2) and both farm and non- farm activities (group 3). Activity ranking exercise was done based on different activities carried out by the islanders for means of living. It shows that group 3 is engaged in more diversified activities as their livelihood source.

**Keywords:** Characterization, livelihood system

### **INTRODUCTION**

Rural livelihood is defined as the process by which households construct a diverse portfolio of activities and social support capabilities for survival and in order to improve their standard of living (Ellis, 1998). The livelihoods approach helps to organize the factors that constrain or enhance livelihood opportunities and shows how they relate to one another; it aims to build on strengths; and it is more than an analytical framework. Livelihoods differ in different social, ecological and institutional settings. In this context, understanding the exact contribution each rural activity to the local and household's economy and identifying their respective potential effects on local populations, poverty level and wealth differentiation appears as one key element for the design of appropriate rural development policies. A livelihood analysis essentially envisages characterization of major livelihood groups with respect to their ownership of and access to resources, their strategic choices to use their assets in income-earning (or cost-saving) activities and their susceptibility to vulnerabilities. The coastal livelihood analysis provides a better understanding of coastal livelihood conditions at present and in future. This understanding has been instrumental in preparing a meaningful coastal zone policy, and would guide the formulation of a pragmatic coastal development strategy and a feasible investment program for enhancement of livelihoods of the coastal people, particularly the disadvantaged groups.

### **METHODOLOGY**

The study was conducted in Kalpeni and Andrott islands of Lakshadweep. In each island two wards and from each ward thirty respondents were selected randomly. The Participatory Rural Appraisal (PRA) technique with semi-structured interview was used to collect information from islanders. The major element of the survey was an activity ranking exercise. The criteria used for the activity ranking was contribution of each activity to the households overall incomes.

### **RESULTS AND DISCUSSIONS**

#### **Share of agriculture in household income**

Based on the share of agriculture in household income, sample was divided into three groups. First group representing people who were engaged in farming only and the second group involves those who were engaged in non-farm based activities only.

Third group was involved in both farm and non-farm activities as their livelihood source. Table 1 shows that 45 per cent of people depended upon non-farm based alternatives as their livelihood, while 44.17 per cent depended on both farmed based and non-farm based activities. Only 10.83 per cent of the total respondents were engaged in farming.

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<sup>1</sup> PhD Scholar, <sup>2</sup> Principal Scientist, Division of Agricultural Extension, ICAR IARI, New Delhi-12

**Table 1: Distribution of respondents according to share of agriculture in household income**

Category	Frequency	n=120
		Per cent
From farming alone (Group 1)	13	10.83
Not at all from farming (Group 2)	54	45.00
Partially from farming (Group 3)	53	44.17

**Distribution of respondents based on their average annual income**

Distribution of respondents based on annual income showed that cent per cent of the first group were in very low income level (Table 2). In other two groups majority were coming under very high income level. In case of second group no one was below high level.

**Table 2: Distribution of respondents based on their average annual income**

Income class	n=120		
	Group 1 (n <sub>1</sub> =13)	Group 1 (n <sub>2</sub> =54)	Group 1 (n <sub>3</sub> =53)
	Frequency (Per cent)		
Very low	13 (100.00)	0 (0.00)	0 (0.00)
Low	0 (0.00)	0 (0.00)	0 (0.00)
Middle	0 (0.00)	0 (0.00)	2 (3.77)
High	0 (0.00)	19 (35.19)	17 (32.08)
Very high	0 (0.00)	35 (64.81)	34 (64.15)

**Comparison of average annual income between groups**

Single factor ANOVA for average annual household income showed that difference between mean income of group 2 and 3 was less than critical difference. So, annual income of these two groups was on par. But the difference between first group from second and third group was more than its critical difference. Hence, it is significantly different (Table 3).

**Table 3: Comparison of average annual income between groups**

Category	Difference between mean values	CD
Between group 1 and group 2	1.769	0.187
Between group 1 and group 3	1.748	0.187
Between group 2 and group 3	0.021	0.117

**Activity Ranking**

Activity ranking for the study area showed that in farming group all were engaged in either farming or fishing while in other two groups majority were involved in service followed by business (Table 4). It has been found that people were depending upon mainland for everything. So, they are transporting from other parts of country especially from Kerala. Hence, business is emerging as an alternate non-farm based livelihood.

**Table 4: Activity ranking of different groups**

Group	Contribution to income
Group 1	Farming > Fishing
Group 2	Service >> Business
Group 3	Service> Business> Caste occupation> Wage earner = Farming > Fishing

(>> Ranks much higher than, > Ranks higher than, = Similar to)

**Age**

The data collected from respondents were analyzed and revealed that most of the respondents (84.62 %) in group 1 (Table 5) belonged to old age group and 15.38 per cent of them belonged to middle age group. In case of other two groups, majority were in middle age group with 70.37 per cent and 52.83 per cent in group 2 and group 3, respectively. In group 2, 16.67 per cent were young and 12.96 per cent were old while in group 3, 7.55 per cent were young and 39.62 per cent were old.

**Table 5: Distribution of respondents based on their age**

Category	n=120		
	Group 1 (n <sub>1</sub> =13)	Group 1 (n <sub>2</sub> =54)	Group 1 (n <sub>3</sub> =53)
	Frequency (Per cent)		
Young (Below 35)	0 (0.00)	9 (16.67)	4 (7.55)
Middle aged (35-59)	2 (15.38)	38 (70.37)	28 (52.83)
Old (Above 59)	11 (84.62)	7 (12.96)	21 (39.62)

**Education**

In first group all the respondents were below high school level. Majority of this group (46.15 per cent) were illiterate. About 30.77 per cent of this group can read only and 15.38 per cent can read and write. Only 7.69 per cent of this group is educated up to primary level. Majority of the members in second group (81.48 per cent) are graduate and above and none of the member fall below primary level. In this, 16.67 per cent are educated up to high school level and only 1.85 per cent is educated up to primary level. In third group most of the members (39.19 per cent) are high school educated. 30.19 per cent of this group are graduate and above. 5.66 per cent are illiterate and 9.43 per cent can read only.

**Table 6: Distribution of respondents based on their education**

Category	n=120		
	Group 1 (n <sub>1</sub> =13)	Group 1 (n <sub>2</sub> =54)	Group 1 (n <sub>3</sub> =53)
	Frequency (Per cent)		
Illiterate	6 (46.15)	0 (0.00)	3 (5.66)
Can read only	4 (30.77)	0 (0.00)	5 (9.43)
Can read and write	2 (15.38)	0 (0.00)	1 (1.89)
Primary school	1 (7.69)	1 (1.85)	7 (13.21)
High school	0 (0.00)	9 (16.67)	21 (39.62)
Graduate and above	0 (0.00)	44 (81.48)	16 (30.19)

## Occupation

It is very clear from the Table 7 that members in the first group are engaged only in fishing and farming with 38.46 per cent and 61.54 per cent respectively. Majority of the members in second and third group (94.44 per cent and 52.83 per cent respectively) are involved in service sector job followed by business (5.56 per cent and 20.75 per cent respectively). In group 3, 3.77 per cent are involved in fishing and 11.32 per cent in caste occupation. People engaged in farming and wage occupation is 5.66 per cent each.

**Table 7: Distribution of respondents based on their occupation  
n=120**

Category	Group 1 (n <sub>1</sub> =13)	Group 1 (n <sub>2</sub> =54)	Group 1 (n <sub>3</sub> =53)
	Frequency (Per cent)		
Wage earner	0 (0.00)	0 (0.00)	3 (5.66)
Caste occupation	0 (0.00)	0 (0.00)	6 (11.32)
Farming	8 (61.54)	0 (0.00)	3 (5.66)
Business	0 (0.00)	3 (5.56)	11 (20.75)
Service	0 (0.00)	51 (94.44)	28 (52.83)
Fishing	5 (38.46)	0 (0.00)	2 (3.77)

## Family type

Families were categorized based on the number of family members. It was observed that majority of the respondents in group 1 (76.92%) and group 3 (69.81%) belonged to joint family. About 23 per cent in group 1 and 30.19 per cent in group 3 belong to nuclear family. In case of group 2, majority of the respondents (77.78%) were belonging to nuclear family.

**Table 8: Distribution of respondents based on type of family  
n=120**

Category	Group 1 (n <sub>1</sub> =13)	Group 1 (n <sub>2</sub> =54)	Group 1 (n <sub>3</sub> =53)
	Frequency (Per cent)		
Nuclear family	3 (23.08)	42 (77.78)	16 (30.19)
Joint family	10 (76.92)	12 (22.22)	37 (69.81)

## CONCLUSION

Characterization of livelihood system in Lakshadweep islands shows that a majority of people were involved in non-farm activities. A small proportion was involved in farming as their only source of livelihood and they belonged to old age category. Middle age people were mainly engaged in non-farm activities. Members in farming sector were educated maximum up to primary level only while in non-farm sector; no one was below primary level. Service sector was the emerging non-farm based livelihood alternative in islands followed by business. It indicated the deviation of education people

from primary sector (Agriculture/ fishery to service sector. Type of family was not significantly different among the samples.

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