CHAPTER IV
METHODS OF MARINE FISHING

4.0 INTRODUCTION

Fishing community is one of the most neglected communities. Majority of the fishing communities are economically and educationally far backward and struggling to strive even after more than half a century of independence (Ulman, 2009). Through many fishing villages in the coastal parts of India are near or almost every part of towns or cities is often somewhat isolated and normally sited around a harbor which provides safe heaven for a village fleet or fishing boats (CMFRI, Annual Report, 2010-11).

Marine fishing activity is conducted by the Mahadev Koli (Scheduled tribe), Koli (Other Backward Community) in the coastal villages of Maharashtra state (Wikipedia-the free encyclopedia). These communities are economically poor and socially backward, because of their low income, illiteracy and lack of their occupational skills, these are vulnerable communities totally dependent on the fish diversity and availability for their livelihood (Mohite S. and Samanat J., 2009).

4.1 FISHING SEASON

Except the period from 15th June to 15th August of the ever year, fishing in the sea runs almost continuously.

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>State</th>
<th>Ban period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gujarat</td>
<td>15th June to 15th August</td>
</tr>
<tr>
<td>2</td>
<td>Maharashtra</td>
<td>10th June to 15th August</td>
</tr>
<tr>
<td>3</td>
<td>Goa</td>
<td>10th June to 31st July</td>
</tr>
<tr>
<td>4</td>
<td>Karnataka</td>
<td>15th June to 31st July</td>
</tr>
<tr>
<td>5</td>
<td>Kerala</td>
<td>15th June to 31st July</td>
</tr>
<tr>
<td>6</td>
<td>Tamil Nadu</td>
<td>1st May to 15th June</td>
</tr>
<tr>
<td>7</td>
<td>Andhra Pradesh</td>
<td>15th April to 29th May</td>
</tr>
<tr>
<td>8</td>
<td>Orissa</td>
<td>15th April to 29th May</td>
</tr>
<tr>
<td>9</td>
<td>West Bengal</td>
<td>15th April to 29th May</td>
</tr>
</tbody>
</table>

Source: Based on Report of CMFRI, 2010-11
Particularly, the period, April to June is the peak fishing season in India. Table 4.1 shows the statewise monsoon fishing ban period in India. Due to the South-West monsoon period, fishing ban period has started from the months of June and ends in August in the states of west coast and April to May was the ban period for fishing in the east coastal states in India.

The fishing days in the Maharashtra for non-mechanized group are 233 days and for mechanized it has varied from 208 to 225 days. Quarterly fishing days for different categories numbered 64 to 70 in winter season, 50 to 59 in pre monsoon season, 18 to 40 in monsoon season and 66 to 70 in post monsoon period (Census of Marine Fishermen, Mumbai, 2003).

4.2 CASE STUDIES OF THE SAMPLE FISHING VILLAGES IN THE SOUTH KONKAN

To study the marine fishing activity, the researcher has selected nine fishing villages from the study region. For the selection of sample fishing villages, the researcher has selected random and purposive sampling method. One village is selected from every coastal tahsil and from each village twenty fishermen households are selected for the case study. Therefore, total sample fishing villages are nine and total sample fishermen households are 180. The detailed information is given in the Table 4.2.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Village</th>
<th>Name of Tahsil</th>
<th>Name of District</th>
<th>Total No. Sample Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bankot</td>
<td>Mandangad</td>
<td>Ratnagiri</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>Dapoli</td>
<td>Ratnagiri</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>Ghuhagar</td>
<td>Ratnagiri</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>Ratnagiri</td>
<td>Ratnagiri</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>Rajapur</td>
<td>Ratnagiri</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>Deogad</td>
<td>Sindhudurg</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>Malvan</td>
<td>Sindhudurg</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>Vengurla</td>
<td>Sindhudurg</td>
<td>20</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>Sawantwadi</td>
<td>Sindhudurg</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>180</strong></td>
</tr>
</tbody>
</table>
Table 4.2 shows that there are five coastal tahsils in Ratnagiri district and four coastal tahsils in Sindhudurg district. The detailed information about marine fishing occupation is collected by the personal interviews of the family heads of the fishermen families.

### 4.2.1 INFORMATION OF FISHERMEN FAMILIES

In the context of fishing the age, religion, caste and education of the head of household of the fishermen families are important because it bears on his capacity to work, his preparedness to take risk and to introduce new fishing practice. The view of this study is based on the primary data need to focused on these aspects.

Table 4.3 presents the details of information of the head of fishermen families. Out of total respondents 53.89 percent of family heads are from the age group of 35 to 59 years, followed by 31.67 percent from the age group of 18 to 34 years and only 14.44 percent respondents are in the age group of above 60 years. In the study region, there is large concentration of head of the household in the age group of 35 to 59 years. Religion in the Indian society plays a major role in the economic activities and determining the socio-economic condition. Table 4.3 shows that majority of the respondents belong to Hindu religion (46.67%), followed by Muslim (33.89%) and Christian (11.67%) religion. The present study reveals that traditionally the people who live on the coast and had fishing as their major occupation were identified as fishing community. However, all those caste groups come within the official community grouping, viz., Scheduled Caste (S.C.), Scheduled Tribe (S.T.), Other Backward Class (O.B.C.) and Open. Table 4.3 shows that the caste wise distribution of head of fishermen families based on their social class. The study reveals that majority of the respondents belong to Other Backward Class (O.B.C.) and it is 41.11 percent of the total number of respondents. The next dominant castes are S.C. (21.67 %) and S.T. (21.11%). Out of total respondents only 16.11 percent heads of fishermen families belong to the open class of
caste in the study region. Generally, in the study region fishermen are known as Koli in the local culture.

### Table 4.3
Profile of Head of Fishermen Family, 2013

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Parameters</th>
<th>Total No.</th>
<th>% to the Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Age Group (In Year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>18-34</td>
<td>57</td>
<td>31.67</td>
</tr>
<tr>
<td>2</td>
<td>35-59</td>
<td>97</td>
<td>53.89</td>
</tr>
<tr>
<td>3</td>
<td>Above 60</td>
<td>26</td>
<td>14.44</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>180</td>
<td>100.00</td>
</tr>
<tr>
<td>B</td>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Hindu</td>
<td>84</td>
<td>46.67</td>
</tr>
<tr>
<td>2</td>
<td>Muslim</td>
<td>61</td>
<td>33.89</td>
</tr>
<tr>
<td>3</td>
<td>Christian</td>
<td>21</td>
<td>11.67</td>
</tr>
<tr>
<td>4</td>
<td>Other</td>
<td>14</td>
<td>7.78</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>180</td>
<td>100.00</td>
</tr>
<tr>
<td>C</td>
<td>Caste</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>S.T</td>
<td>38</td>
<td>21.11</td>
</tr>
<tr>
<td>2</td>
<td>S.C</td>
<td>39</td>
<td>21.67</td>
</tr>
<tr>
<td>3</td>
<td>O.B.C.</td>
<td>74</td>
<td>41.11</td>
</tr>
<tr>
<td>4</td>
<td>Open</td>
<td>29</td>
<td>16.11</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>180</td>
<td>100.00</td>
</tr>
<tr>
<td>D</td>
<td>Educational Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Primary</td>
<td>67</td>
<td>37.22</td>
</tr>
<tr>
<td>2</td>
<td>Secondary</td>
<td>36</td>
<td>20.00</td>
</tr>
<tr>
<td>3</td>
<td>Higher Secondary</td>
<td>19</td>
<td>10.56</td>
</tr>
<tr>
<td>4</td>
<td>Graduates &amp; Others</td>
<td>11</td>
<td>6.11</td>
</tr>
<tr>
<td></td>
<td>Total literate</td>
<td>133</td>
<td>73.89</td>
</tr>
<tr>
<td></td>
<td>Total Illiterate</td>
<td>47</td>
<td>26.11</td>
</tr>
<tr>
<td></td>
<td>Grand Total</td>
<td>180</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Based on Field work, 2013

The educational level of the head of the household is important, since it leads to more knowledge about fishing practice, for adaptation new technologies in the marine fishing process and to lead life in a better way. The distribution of data relating to levels of literacy of head of the household reveals that 37.22 percent heads of the household had schooling up to primary education, 20.00 percent secondary education, 10.56 percent had education up to higher secondary and only 6.11 percent respondents had completed graduation and other courses. The literacy rate of the heads of the household is 73.89 percent; it indicates high literacy among the heads of household. But the percentage of respondents, which have completed education up to graduation
level, is very low. Illiterates are relatively very low (26.11 percent) in the study region.

### 4.2.2 TYPES OF FISHERMEN

From Table 4.4, the fishermen are classified into main four types according to their ownership of fishing boats in marine fishing occupation.

#### 4.2.2.1 Small Boat Owner Fishermen

Small boat owner fishermen have their own fishing boats and they themselves go out in the sea to catch the fish. They are scattered all over the coast and struggle a lot to make their ends meet. In the study region 50.40 percent fishermen are from this category. The highest percentage has been found in the tahsil of Purnagad and it is 64.52 percent.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Village</th>
<th>Small Boat Owners</th>
<th>Large Boat Owners</th>
<th>Owners of Fishing Trawlers</th>
<th>Boatless Fishermen</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bankot</td>
<td>62.15</td>
<td>19.24</td>
<td>7.54</td>
<td>11.07</td>
<td>100.00</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>36.24</td>
<td>23.59</td>
<td>19.58</td>
<td>20.59</td>
<td>100.00</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>49.54</td>
<td>19.17</td>
<td>5.14</td>
<td>26.15</td>
<td>100.00</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>64.52</td>
<td>29.22</td>
<td>2.11</td>
<td>4.15</td>
<td>100.00</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>39.98</td>
<td>34.57</td>
<td>4.21</td>
<td>21.24</td>
<td>100.00</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>43.29</td>
<td>37.25</td>
<td>0.25</td>
<td>19.21</td>
<td>100.00</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>59.34</td>
<td>19.85</td>
<td>1.19</td>
<td>19.62</td>
<td>100.00</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>46.55</td>
<td>28.10</td>
<td>1.14</td>
<td>24.21</td>
<td>100.00</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>52.02</td>
<td>24.58</td>
<td>2.21</td>
<td>21.19</td>
<td>100.00</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>50.40</td>
<td>26.17</td>
<td>4.82</td>
<td>18.60</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

#### 4.2.2.2 Large Boat Owner Fishermen

Large boats are owned by fishermen groups engaged in this activity and distribute the fish catch among them. The study reveals that 26.17 percent of the total fishermen are the large boat owners. The highest percentage of this category is found in the Vijaydurg (37.25%), followed by Sakharinate (34.57 %), Purnagad (29.22%) and Kelus (28.10%).
4.2.2.3 Fishermen having Own Fishing Trawlers

These are comparatively rich people who own the trawlers and employ the people who catch the fish for them (Source: Field work). The owners take care of the repair and maintenance, insurance, etc. of the trawlers. They practice deep sea trawling. It becomes clear from Table 4.4, the proportion of owners of the fishing trawlers have comparatively less. Only 4.82 percent of the total fishermen are having their fishing trawlers. The highest percentage this category of is found in the Village Harne (19.58%) as fishing is carried out on commercial basis in the village.

4.2.2.4 Fishermen without Boats

They are the people who work either for the large boat owners or the fishing trawlers. They are at the mercy of the owners and many a times do not receive full wages. 18.60 percent of the total fishermen in the study area do not have their boats. The highest percentage of this category is found in the Village Asgoli (26.15%). It is found that the proportion of the small boat owners in all sample villages is more than that of the large boat owners and trawlers.

4.2.3 AGE AND SEXWISE STRUCTURE OF FISHERMEN FAMILY

The development of marine fishing activity mainly depends on the age and sex composition of the family. Because in this activity there is need of male and female with a working capacity. It can be noted from the Table 4.5, out of the total respondents family members 29.30 percent of the members are in the age group of 35 to 59 years, followed by below 18 years (28.06%) and 19 to 34 years (22.73%). The percentage of the family members above 60 years of age is 19.91 percent. From the present study, it is evident that there is participation of family members in the age group of 35 to 59 is high. This concentration of family members in this productive age group helps the family in number of ways, viz., it supplies labour to actual fishing operation and enhance the earning capacity of the household too.
The age and sex wise structure of the family members of the fishermen shows that the number of female is relatively equal to the number of male. Out of the total family members, 51.19 percent members are females and 48.81 percent members are males.

### 4.2.4 LITERACY LEVEL OF FAMILY MEMBERS

Table 4.6 shows the details of the literacy levels of family members of the fishermen community. The number of females pursuing education beyond higher secondary is very less. Out of the total respondents, 27.90 percent of female members have completed primary education and it is the more than the male members (25.00%). Over all literacy rates of family members of fishermen community is 71.20 percent, this indicates that there is high literacy level among the fishermen community. But the percentage of family members pursuing education beyond secondary education has been very less.
Table 4.6
Literacy Level of Family Members of Fishermen Community, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Educational Level</th>
<th>Male Total No. (In %)</th>
<th>Female Total No. (In %)</th>
<th>Grand Total Total No. (In %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Primary</td>
<td>247 25.00</td>
<td>289 27.90</td>
<td>536 26.48</td>
</tr>
<tr>
<td>2</td>
<td>Secondary</td>
<td>206 20.85</td>
<td>197 19.02</td>
<td>403 19.91</td>
</tr>
<tr>
<td>3</td>
<td>High. Sec.</td>
<td>189 19.13</td>
<td>68 6.56</td>
<td>257 12.70</td>
</tr>
<tr>
<td>4</td>
<td>U. Graduate</td>
<td>67 6.78</td>
<td>31 2.99</td>
<td>98 4.84</td>
</tr>
<tr>
<td>5</td>
<td>Post Graduate</td>
<td>49 4.96</td>
<td>23 2.22</td>
<td>72 3.56</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>36 3.64</td>
<td>39 3.76</td>
<td>75 3.71</td>
</tr>
<tr>
<td>7</td>
<td>Total Literate</td>
<td>794 80.36</td>
<td>647 62.45</td>
<td>1441 71.20</td>
</tr>
<tr>
<td>8</td>
<td>Illiterate</td>
<td>194 19.64</td>
<td>389 37.55</td>
<td>583 28.80</td>
</tr>
<tr>
<td>9</td>
<td>Grand Total</td>
<td>988 100.00</td>
<td>1036 100.00</td>
<td>2024 100.00</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

Out of the total family members of fishermen community, 26.48 percent members have completed primary education, 19.91 percent have completed secondary education, 12.70 percent have completed higher secondary education and only 4.84 percent members have competed education up to degree. It is interesting to note that few members of the fishermen community have completed even degree and post graduation courses.

4.3.5 OCCUPATIONAL STRUCTURE OF FAMILY MEMBERS

Table 4.7 indicates the occupational structure of family members of fishermen community. Out of the total working population of fishermen community, 54.85 percent are engaged in the primary occupation and most of the members are engaged in the marine fishing and related works of fishing and agricultural activities.

Table 4.7
Occupational Structure of Family Members of Fishermen, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of Occupation</th>
<th>Male Total No.</th>
<th>% to the total</th>
<th>Female Total No.</th>
<th>% to the total</th>
<th>Total Total No.</th>
<th>% to the total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Primary</td>
<td>321 24.12</td>
<td></td>
<td>409 30.73</td>
<td></td>
<td>730 54.85</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Secondary</td>
<td>289 21.71</td>
<td></td>
<td>165 12.40</td>
<td></td>
<td>454 34.11</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Tertiary</td>
<td>124 9.32</td>
<td></td>
<td>23 1.73</td>
<td></td>
<td>147 11.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>734 55.15</td>
<td></td>
<td>597 44.85</td>
<td></td>
<td>1331 100.00</td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013
About the secondary occupation structure of the family members of fishermen community, out of total members of fishermen community, 34.11 percent are engaged in this category of occupation and mainly related to marketing of fish and supply of fishing materials. Only 11.04 percent members are engaged in the tertiary categories of occupation of respondent fishermen family.

4.2.6 REASON OF SELECTION AND EXPERIENCE OF FISHING OCCUPATION

Table 4.8 shows the details of reason of selection of fishing occupation by the fishermen. Out of the total respondents, 72.78 percent fishermen have selected this occupation due to be traditional occupation of his family. The fishermen have less chance to select other occupation and other source of income in the study region. 18.89 percent respondents selected this occupation because of the compulsion by the family head. And only 8.33 percent respondents give the reasons of selection of this occupation apart from these two reasons.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Village</th>
<th>Traditional Occupation</th>
<th>Compulsion</th>
<th>Other</th>
<th>Total</th>
<th>Average Experience of Fishing of Fishermen (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total No.</td>
<td>% to the total</td>
<td>Total No.</td>
<td>% to the total</td>
<td>Total No.</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>11</td>
<td>55.00</td>
<td>7</td>
<td>35.00</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>9</td>
<td>45.00</td>
<td>9</td>
<td>45.00</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>15</td>
<td>75.00</td>
<td>4</td>
<td>20.00</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>14</td>
<td>70.00</td>
<td>5</td>
<td>25.00</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>17</td>
<td>85.00</td>
<td>2</td>
<td>10.00</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>14</td>
<td>70.00</td>
<td>2</td>
<td>10.00</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>17</td>
<td>85.00</td>
<td>1</td>
<td>5.00</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>16</td>
<td>80.00</td>
<td>2</td>
<td>10.00</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>18</td>
<td>90.00</td>
<td>2</td>
<td>10.00</td>
<td>0</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>72.78</td>
<td>18.89</td>
<td>8.33</td>
<td></td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013
The study reveals that the fishermen have been engaged in the marine fishing for a certain period and it is clear from Table 4.8. It has been found that the average experience of fishermen of marine fishing in the study region has been 23 years. The respondents of Bankot, Purnagad, Sakharinate, Wayari, Kelus and Aronda have more than twenty years of experience of marine fishing in the study region.

4.2.7 NATURE OF FISHING WORK

There is a need of man power for various activities in the marine fishing. As per requirement, male and female both are involved in this occupation (Mohammed Omer Mohammed, 2012). Generally, the marine fishing occupation is divided into two broad categories; the first is the fishermen who are engaged in the actual fishing operation and the others who are engaged in fishing related activities other than actual fishing (Census of Marine Fishermen Population, Dept. of Fishery, Maharashtra, 2003).

Table 4.9
Functional Participation of Population in Fishing Activity, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Village</th>
<th>Actual fishing workers (In %)</th>
<th>Workers related to fishing activities (In %)</th>
<th>Grand Total (In %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>44.64</td>
<td>-</td>
<td>44.64</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>54.24</td>
<td>-</td>
<td>54.24</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>42.85</td>
<td>-</td>
<td>42.85</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>45.11</td>
<td>-</td>
<td>45.11</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>53.07</td>
<td>-</td>
<td>53.07</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>44.73</td>
<td>-</td>
<td>44.73</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>42.59</td>
<td>-</td>
<td>42.59</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>39.29</td>
<td>-</td>
<td>39.29</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>47.1</td>
<td>-</td>
<td>47.1</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>45.04</td>
<td>-</td>
<td>45.04</td>
<td>22.53</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

Table 4.9 shows that the work distribution of marine fishing occupation among the fishermen community in the South Konkan. The study reveals that
45.04 percent fishermen are engaged in actual fishing and 54.96 per cent in related to fishing activities.

4.2.7.1 Actual Fishing

Due to the risk of ocean condition, the actual fishing activity is mainly done by young male population (Basawraj, 2001). The study reveals that 45.04 percent fishermen are engaged in this activity. Village wise participation of population in the actual fishing is shown in Table 4.10. In village Harne, 54.24 percent population is engaged in actual fishing. In the actual fishing participation of fisherwomen is totally absent.

Table 4.10
Participation of Population in Actual Fishing Activity, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Village</th>
<th>Full Time Fishing (In %)</th>
<th>Part Time Fishing (In %)</th>
<th>Grand Total (In %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>32.14</td>
<td>-</td>
<td>32.14</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>31.03</td>
<td>-</td>
<td>31.03</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>35.71</td>
<td>-</td>
<td>35.71</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>37.25</td>
<td>-</td>
<td>37.25</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>38.78</td>
<td>-</td>
<td>38.78</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>36.84</td>
<td>-</td>
<td>36.84</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>33.33</td>
<td>-</td>
<td>33.33</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>30.36</td>
<td>-</td>
<td>30.36</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>31.37</td>
<td>-</td>
<td>31.37</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>33.68</td>
<td>-</td>
<td>33.68</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

Actual fishing operation is mainly divided into following two subcategories i.e. full time fishing and part time fishing activity. The full time fishing operation is carried out in all the days of fishing seasons and is mainly done by male population. In the study region out of the total working population 33.68 percent male population is engaged in the full time fishing operation. Only 11.36 percent fishermen population is doing the part time fishing in the study region. As per requirement they are doing fishing occasionally.
4.2.7.2 Other Related Activities of Fishing

This category is mainly related to marketing of fish, net making and repairing, processing of fish, supply of ice and fuel. The study reveals that out of working population of marine fishing occupation, 54.96 percent population is engaged other related activities of fishing. Out of this, 32.43 percent fisherwomen are engaged in this sector.

The villagewise detail information is given in Table 4.11. The study indicates that 20.45 percent fisherwomen are engaged in marketing of fish. Most of the retailers and vendors in the fish market are prominently fisherwomen. It is found that only 5.79 percent fishermen participated in marketing of fish, as a role of wholesalers and agents.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Village</th>
<th>Marketing of fish</th>
<th>Net Making</th>
<th>Processing of fish</th>
<th>Others</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>3.57</td>
<td>23.21</td>
<td>26.79</td>
<td>12.50</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>8.05</td>
<td>19.54</td>
<td>27.29</td>
<td>10.34</td>
<td>0.00</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>2.38</td>
<td>21.43</td>
<td>23.81</td>
<td>7.14</td>
<td>2.38</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>5.88</td>
<td>21.57</td>
<td>27.45</td>
<td>5.88</td>
<td>3.92</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>4.08</td>
<td>14.29</td>
<td>18.37</td>
<td>4.08</td>
<td>0.00</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>7.89</td>
<td>23.68</td>
<td>31.58</td>
<td>5.26</td>
<td>0.00</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>7.41</td>
<td>24.07</td>
<td>31.48</td>
<td>3.70</td>
<td>1.85</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>5.36</td>
<td>19.64</td>
<td>25.00</td>
<td>12.50</td>
<td>1.79</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>5.88</td>
<td>17.65</td>
<td>23.53</td>
<td>9.80</td>
<td>0.00</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>5.79</td>
<td>20.45</td>
<td>26.54</td>
<td>8.06</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

Fishing net is the important equipment of fishermen for fishing. Its making, repair and maintenance are a household activity of fishermen community. In the study region, out of total working population of fishermen community, 9.09 percent population is engaged in this sector. Out of this, 8.06 percent fishermen are doing the net making activity of related work of fishing. Only 1.03 percent fisherwomen are engaged in this activity. Fish is a perishable
product, consequently it is to be sold at its earliest in market or it has to be processed by various methods, such as salting, drying of fish and refrigeration. In the study region 13.64 percent population is engaged in this process. Out of this, 8.47 percent are females and only 5.17 percent are males. Out of the above categories there are some other activities, such as supply of fuel and ice and transportation of fish and fish products. The study finds that only 5.94 percent fishermen community is engaged in this sector.

4.2.8 FISHING CRAFTS AND BOATS

Boats and crafts are the main assets of the marine fishing occupation. These are two types according to its nature i.e., mechanized and traditional or non-mechanized. Mechanized boats are totally modern and it is utilized in commercial fishing operation. Non-mechanized or traditional boats are basically used by the traditional fishermen. Table 4.12 gives the detail information about the villagewise using the fishing boats by the fishermen for the fishing purpose in the study region.

<table>
<thead>
<tr>
<th>Types of Mechanized boats</th>
<th>Trawlers</th>
<th>Gillnetters</th>
<th>Purse-seiners</th>
<th>Ring-seiners</th>
<th>Dol netters</th>
<th>Liners</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sr. No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crafts</td>
<td>T</td>
<td>H</td>
<td>A</td>
<td>P</td>
<td>S</td>
<td>V</td>
<td>W</td>
<td>K</td>
</tr>
<tr>
<td>Plank-built boats</td>
<td>9.38</td>
<td>9.08</td>
<td>11.02</td>
<td>9.54</td>
<td>12.65</td>
<td>15.55</td>
<td>12.64</td>
<td>10.57</td>
</tr>
<tr>
<td>Ring-seiners</td>
<td>17.21</td>
<td>11.56</td>
<td>9.26</td>
<td>7.07</td>
<td>16.23</td>
<td>12.89</td>
<td>17.24</td>
<td>8.23</td>
</tr>
<tr>
<td>Ferro-cement boats</td>
<td>11.04</td>
<td>11.94</td>
<td>12.02</td>
<td>19.84</td>
<td>17.2</td>
<td>14.10</td>
<td>19.25</td>
<td>18.26</td>
</tr>
<tr>
<td>Total</td>
<td>19.03</td>
<td>32.32</td>
<td>25.41</td>
<td>15.7</td>
<td>12.4</td>
<td>14.46</td>
<td>3.06</td>
<td>2.36</td>
</tr>
<tr>
<td>Grand Total</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013
There is 86.10 percent fishermen still use of the non-mechanized fishing boats and crafts and only 13.90 percent are using the mechanized boats. The highest percentage of fishermen using mechanized boats in Harne village and it has 32.32 percent, followed by Asgoli (25.41%), Bankot (19.03%) and Purnagad (15.7%). There is a less percentage of using the mechanized boats in the villages of the Sindhudurg district as compared with the villages of the Ratnagiri district. The highest percentage of fishermen using the traditional boats is found in Vijaydurg village (98.54%), followed by Kelus (97.64%) and Aronda (93.12%).

4.2.9 FISHING NETS

Fishing nets and crafts are used for fish catch from the water resources. The use of fishing nets depends on the types of fish and season of fishing. Table 4.13 shows that the details of use of the fishing nets by the fishermen in the sample villages. In the study region mainly seven types of fishing nets have been used by the fishermen to catch fish. Gill net type of net is mainly used in all villages and in all seasons for fishing and the percentage of fishermen using Gill net is 27.42 percent. It has the highest percentage of fishermen as compared with other types of net using. Gill net has mainly used for catching Pomphret, Tuna, Silver bar and Seer fish, on a large scale in the villages of Vijaydurg (35.74%), Aronda (33.24%), Bankot (32.02%) and Wayari (29.24%). After the Gill net, Drift net is another important net used by the fishermen in the study region. The study reveals that 16.41 percent fishermen using the Drift net for fishing. This net is used for catching the types of fish of Sharks, Skates and Ray. The highest percentage has found in the village of Aronda (27.29%), followed by Kelus (21.11%), Sakharinate and Purnagad (19.21%) and Wayari Village (14.24%). The Bag net is used by the traditional fishermen and used for catching the fish of Jew fish, Ribbon fish, Bombay duck and Prawns. The highest percentage of fishermen using the Bag net is found in Purnagad village (18.34%), followed by Bankot (14.29%), Kelus (14.21%) and Vijaydurg (9.56%).
### Table 4.13
Use of Fishing Nets by Fishermen, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of Fishing Nets</th>
<th>Bankot</th>
<th>Harne</th>
<th>Asgoli</th>
<th>Purnagad</th>
<th>Sakharinate</th>
<th>Vijay Durg</th>
<th>Wayari</th>
<th>Kelus</th>
<th>Aronda</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trawl Net</td>
<td>3.75</td>
<td>21.73</td>
<td>10.83</td>
<td>11.13</td>
<td>7.00</td>
<td>6.36</td>
<td>9.47</td>
<td>5.46</td>
<td>4.70</td>
<td>8.71</td>
</tr>
<tr>
<td>2</td>
<td>Gill Net</td>
<td>32.02</td>
<td>24.65</td>
<td>19.87</td>
<td>13.57</td>
<td>29.24</td>
<td>35.74</td>
<td>29.25</td>
<td>29.21</td>
<td>33.24</td>
<td>27.42</td>
</tr>
<tr>
<td>4</td>
<td>Bag Net</td>
<td>14.29</td>
<td>7.59</td>
<td>5.46</td>
<td>18.34</td>
<td>9.56</td>
<td>13.87</td>
<td>15.24</td>
<td>14.21</td>
<td>12.41</td>
<td>12.33</td>
</tr>
<tr>
<td>5</td>
<td>Drift Net</td>
<td>29.89</td>
<td>21.46</td>
<td>21.32</td>
<td>16.71</td>
<td>5.24</td>
<td>11.24</td>
<td>17.21</td>
<td>19.23</td>
<td>11.21</td>
<td>17.05</td>
</tr>
<tr>
<td>6</td>
<td>Bags and Lines</td>
<td>4.20</td>
<td>1.12</td>
<td>17.79</td>
<td>3.79</td>
<td>20.50</td>
<td>16.22</td>
<td>7.01</td>
<td>3.02</td>
<td>9.20</td>
<td>9.21</td>
</tr>
<tr>
<td>7</td>
<td>Other</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

The percentage of fishermen using the Trawl net (8.71%) and Purse-seine (8.88%) have less as compared with other types of fishing nets. Generally, Trawl nets and Purse-seine nets have used in the mechanized fishing boats. The percentage of using mechanized fishing boats has less in the study region. That is why there are a less percentage of fishermen using Trawl and Purse-seine net found in the study region.

### 4.2.10 FISHING LICENSE AND PERMITS

Due to license and permits of fishing, fishermen get some benefits from the government for the development of fishing occupation, such as government subsidies on purchasing the new fishing equipments, loan availability from the Nationalized Banks, training of fishing organized by the government etc. Table 4.14 shows that the percentage of license and permit holder fishermen in the sample villages. Out of the total respondents, only 38.89 percent fishermen are license and permit holders and 61.11 percent fishermen are doing the fishing without license and permit of fishing. The picture of villagewise condition of the fishing license and permit has a different condition. The highest percentage of license and permit holder fishermen are seen in the village of Harne (80.00%). Because the fishermen of Harne village are doing the fishing activity
has a commercial base. They require the license and permit for acquiring the schemes of the government and loan facilities by the nationalized banks. It is followed by Sakharinate (45.00%), Bankot (40.00%) and Purnagad (35.00%).

### Table 4.14
**Fishing License and Permit Holders Fishermen, 2013**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Village</th>
<th>Fishing license</th>
<th></th>
<th>Grand Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total No.</td>
<td>Total No.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>In %</td>
<td>In %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>8</td>
<td>12</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>16</td>
<td>4</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>9</td>
<td>11</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>7</td>
<td>13</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>9</td>
<td>11</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>3</td>
<td>17</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>6</td>
<td>14</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>5</td>
<td>15</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>7</td>
<td>13</td>
<td>20</td>
<td>100.00</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>70</td>
<td>110</td>
<td>180</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

The study reveals that only 15.00 percent fishermen have a license of fishing in the Vijaydurg. Because of the fishermen of Vijaydurg village doing the fishing activity has as a traditional activity. As compared between these two districts, the highest percentages of license holder fishermen are seen in the Ratnagiri district and lower in the Sindhudurg district.

### 4.2.11 FISHING DAYS IN THE SEA

The most of the members of fishermen family are directly and indirectly connected with fishing occupation. So it is essential to find out the number of fishing days spend in the sea by the fishermen. From the Table 4.15, 36.11 percent fishermen go to fishing every day. They go to fishing in early morning at 4.00 am and return at the same day at 11.00 am to 1.00 pm. The traditional fishermen of Bankot, Vijaydurg, Aronda and Sakharinate go into the sea at 4.00 am and return the same day. In the modern and mechanized fishing practice, the fishermen have spent more than two days in the sea for the fishing. But the percentage of these fishermen has less in the study region and it has
only 12.38 percent for four days, followed by the five days (8.83%) and six days (7.13%).

**Table 4.15**  
**Fishing Days in the Sea, 2013**  

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Village</th>
<th>Percentage of Fishermen Going to Fishing in to the Sea</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Daily</td>
<td>2 days</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>59.54</td>
<td>17.85</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>15.85</td>
<td>16.82</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>23.95</td>
<td>21.47</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>41.95</td>
<td>26.64</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>36.29</td>
<td>31.59</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>49.35</td>
<td>12.65</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>32.25</td>
<td>14.89</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>31.85</td>
<td>23.33</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>38.44</td>
<td>21.21</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>36.61</td>
<td>20.72</td>
<td>14.34</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

The study reveals that due to modern fishing practice, the highest percentage of fishermen of Harne village has spent to six days in to the sea for fishing and it has 12.45 percent.

**4.2.12 MODE OF TRANSPORTATION OF FISH CATCH**

Fishermen have various sources of mode of transport available for transportation of fish i.e., Van, Bullock Cart, Motor Cycle and Manual. Some of these are fast transportation modes and it is useful of fast transport of fish to the market area. But like Bullock Cart and Manual mode of transport are not useful for fish transportation as compared with others. It affects adversely on the fish commodity. Table 4.16 shows the mode of transport used by the fishermen for transportation of fish to market centre. The study reveals that 38.74 percent respondents transport the fish manually. Among them, the highest percentage is found in the Village Kelus (63.95%), because the village Kelus is located in the rugged area. That’s why there is less development of road facilities and other modes of transportation facilities. The bullock cart is the second most important mode of transportation used in the study region and it is used by 24.77 percent fishermen. Fish transportation is carried out with the
of bullock cart in the undulating area, because it is cheap and easily available source. The highest percentage of use of Bullock cart is in Asgoli village (34.52%), followed by Aronda (29.59%), Purnagad (29.58%) and Wayari (28.65%).

### Table 4.16
Mode of Transportation for Fish Catch, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Village</th>
<th>Percentage of Fishermen of Using the Mode of Transportation for Fish</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Manual</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>23.65</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>13.47</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>23.96</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>41.95</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>29.92</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>57.66</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>47.55</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>63.95</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>46.58</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>38.74</strong></td>
<td><strong>24.77</strong></td>
</tr>
</tbody>
</table>

Source: Based on field Work, 2013

Apart from these two transportation mode, some of the fast transportation mode are utilized by the fishermen i.e., motor cycle, van and van with refrigerator. This transportation mode is used by the young fishermen, but the percentage is less in the study region. The highest percentage of transportation by motor cycle is seen in the village of Bankot (23.51%), followed by Sakharinate (19.68%), Asgoli (14.21%) and Wayari (12.22%). Fish is a perishable commodity that is why there is a need of fast transportation. But in the study region there has less percentage of fishermen using the fast transportation mode for transportation of fish. Out of total respondents, only 10.55 percent and 6.50 percent fishermen use the van and van with refrigerated transportation facilities respectively. The highest percentage of use the van and refrigerated van has been seen in the village of Harne and it is 29.34 percent.
and 21.52 percent respectively. Because of in the village Harne, most of the fishermen have adopted the new technology for fishing.

### 4.2.13 MEMBERSHIP OF FISHERY COOPERATIVE SOCIETIES

Fishery cooperative societies are the organization of fishermen formed with a specific purpose of improving their economic conditions (Chandy, 2009). Table 4.17 indicates the percentage of fishermen who have become members of societies from the sample villages.

**Table 4.17**
Membership of Fishery Cooperative Societies, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Village</th>
<th>Member of Cooperative Societies</th>
<th>Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes: Total No.</td>
<td>In %</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>9</td>
<td>45.00</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>17</td>
<td>85.00</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>15</td>
<td>75.00</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>13</td>
<td>65.00</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>14</td>
<td>70.00</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>11</td>
<td>55.00</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>10</td>
<td>50.00</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>14</td>
<td>70.00</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>12</td>
<td>60.00</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>115</strong></td>
<td><strong>63.89</strong></td>
<td><strong>65</strong></td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

The study reveals that out of the total respondents, 63.89 percent fishermen are members of the societies and 36.11 percent fishermen are not members of cooperative societies in the study region. The highest percentage of fishermen is seen in the village Harne (85.00%), followed by Asgoli (75.00%), Sakharinate and Kelus (70.00%) and Purnagad (65.00%). This shows that most of these fishermen of the sample villages have become the members of the cooperative societies and it is nearly above 50.00 percent.

Table 4.18 shows the reasons and purpose of becoming members of societies in the sample villages. The study reveals that out of total given reasons by the fishermen, the first priority is given to the reason of easily available loan and credit by the societies (27.40%). The second most important
reason given by the fishermen is that the societies provide cheaper input materials for the marine fishing.

### Table 4.18

Need of Membership of Fishery Cooperative Societies, 2013

(Figures in percentage)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Village</th>
<th>To acquire better price in market</th>
<th>To provide cheaper inputs</th>
<th>For loan facility</th>
<th>Education and training</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bankot</td>
<td>27.91</td>
<td>27.91</td>
<td>32.56</td>
<td>6.98</td>
<td>4.65</td>
<td>100.00</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>28.07</td>
<td>26.32</td>
<td>29.82</td>
<td>10.53</td>
<td>5.26</td>
<td>100.00</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>20.45</td>
<td>27.27</td>
<td>25.00</td>
<td>20.45</td>
<td>6.82</td>
<td>100.00</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>22.22</td>
<td>17.46</td>
<td>25.40</td>
<td>22.22</td>
<td>12.70</td>
<td>100.00</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>22.45</td>
<td>26.53</td>
<td>28.57</td>
<td>18.37</td>
<td>4.08</td>
<td>100.00</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>27.27</td>
<td>38.64</td>
<td>25.00</td>
<td>6.82</td>
<td>2.27</td>
<td>100.00</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>24.14</td>
<td>37.93</td>
<td>13.79</td>
<td>17.24</td>
<td>6.90</td>
<td>100.00</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>29.31</td>
<td>20.69</td>
<td>27.59</td>
<td>15.52</td>
<td>6.90</td>
<td>100.00</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>20.00</td>
<td>27.50</td>
<td>35.00</td>
<td>12.50</td>
<td>5.00</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>24.82</strong></td>
<td><strong>26.70</strong></td>
<td><strong>27.40</strong></td>
<td><strong>14.75</strong></td>
<td><strong>6.32</strong></td>
<td><strong>100.00</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

Out of the total reasons of the fishermen, 26.70 percent give priority for this purpose by the fishermen in the sample villages. 24.82 percent fishermen are of the opinion after becoming members of the societies; the societies help fishermen for marketing of fish on a better price. Only 14.75 percent purposes of fishermen join the societies due to it gives a training of fishing and which has useful for better fishing.

### 4.2.14 AVAILABILITY OF CREDIT AND LOAN FOR FISHING

Fishermen have taken credit and loans for various purposes from various loan sources. Table 4.19 and Table 4.20 show the detail information about the availability of credit and loan of fishermen in the sample villages. The study reveals that out of the total respondents, 75.56 percent fishermen have taken credit. Table 4.19 shows that the highest percentage of fishermen have taken a loan and credit found in the villages of Sakharinate (90.00%), Harne and Aronda (85.00%) and Vijaydurg and Bankot (80.00%). The present study
indicates that about 60 percent respondents are taken a loan in all the sample villages.

Table 4.19
Percentage of Fishermen Availed Financial Loan, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Village</th>
<th>No. and Percentage of Fishermen</th>
<th>Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total No.</td>
<td>In %</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>16</td>
<td>80.00</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>17</td>
<td>85.00</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>14</td>
<td>70.00</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>13</td>
<td>65.00</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>18</td>
<td>90.00</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>16</td>
<td>80.00</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>13</td>
<td>65.00</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>12</td>
<td>60.00</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>17</td>
<td>85.00</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td>136</td>
<td>75.56</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

Table 4.20 shows the utilization of credit or loan by the fishermen. 35.83 percent fishermen have utilized loan for purchasing new fishing equipments and 27.22 percent for repairing the old fishing equipments. These are the two main reasons of utilization of loan by the fishermen.

Table 4.20
Utilization of Loan by Fishermen, 2013 (Figures in Percentages)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Village</th>
<th>For purchasing fishing new equipments</th>
<th>For maintenance and repairing of old fishing equipments</th>
<th>House construction</th>
<th>Education and health</th>
<th>For other purpose</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bankot</td>
<td>37.21</td>
<td>25.58</td>
<td>20.93</td>
<td>11.63</td>
<td>4.65</td>
<td>100.00</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>37.50</td>
<td>35.42</td>
<td>12.50</td>
<td>8.33</td>
<td>6.25</td>
<td>100.00</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>34.88</td>
<td>27.91</td>
<td>20.93</td>
<td>13.95</td>
<td>2.33</td>
<td>100.00</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>36.00</td>
<td>28.00</td>
<td>20.00</td>
<td>8.00</td>
<td>8.00</td>
<td>100.00</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>31.43</td>
<td>25.71</td>
<td>20.00</td>
<td>14.29</td>
<td>8.57</td>
<td>100.00</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>34.21</td>
<td>26.32</td>
<td>15.79</td>
<td>18.42</td>
<td>5.26</td>
<td>100.00</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>30.43</td>
<td>26.09</td>
<td>23.91</td>
<td>17.39</td>
<td>2.17</td>
<td>100.00</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>42.11</td>
<td>23.68</td>
<td>18.42</td>
<td>10.53</td>
<td>5.26</td>
<td>100.00</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>38.64</td>
<td>25.00</td>
<td>20.45</td>
<td>9.09</td>
<td>6.82</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td>35.83</td>
<td>27.22</td>
<td>19.17</td>
<td>12.50</td>
<td>5.28</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013
Most of the fishermen live in the Kachcha or Semi Pakka houses and 19.17 percent of fishermen have utilized a credit for construction of house. Education and health are also important needs of the fishermen. For the fulfillment of these needs fishermen utilize credit and percentage is 12.50.

The study observes that fishermen have taken a credit basically from the fish merchants and cooperative societies because from these two sources the fishermen get loan easily as compared to other sources (Source: Field work, 2012-13). Table 4.21 shows that the sources utilized by the fishermen for acquiring loan and credit.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of Village</th>
<th>Sources of Loan and Credit to Fishermen (In %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fish Merchants</td>
<td>Fishery Cooperative societies</td>
</tr>
<tr>
<td>1</td>
<td>Bankot</td>
<td>19.64</td>
</tr>
<tr>
<td>2</td>
<td>Harne</td>
<td>26.23</td>
</tr>
<tr>
<td>3</td>
<td>Asgoli</td>
<td>28.81</td>
</tr>
<tr>
<td>4</td>
<td>Purnagad</td>
<td>33.33</td>
</tr>
<tr>
<td>5</td>
<td>Sakharinate</td>
<td>30.00</td>
</tr>
<tr>
<td>6</td>
<td>Vijay Durg</td>
<td>50.00</td>
</tr>
<tr>
<td>7</td>
<td>Wayari</td>
<td>31.71</td>
</tr>
<tr>
<td>8</td>
<td>Kelus</td>
<td>20.93</td>
</tr>
<tr>
<td>9</td>
<td>Aronda</td>
<td>31.82</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>29.09</td>
</tr>
</tbody>
</table>

Source: Based on field work-2013

The study reveals that 29.09 percent and 28.85 percent fishermen have availed the source of loan from fish merchants and cooperative societies respectively. These two sources provide fast and easy loan facility to the fishermen. But the interest rate of these two sources is high as compared to the other sources (Source: The Fishermen interviews). Apart from these two sources, fishermen take a credit from Cooperative Banks (9.86%), Nationalized Banks (9.62%), and Commercial Banks (8.17%). The percentage of fishermen in these sources is comparatively very low. The interest rate of this loan is low
but it is not easily sanctioned by the banks as compared to the above two sources. There is a need of various types of documents and witnesses and process of banks which are lengthy, due to these reasons fishermen take loan from the fish merchants and cooperative societies. The study observes that there is one more important source of loan i.e. friends and relatives. But there is no guaranty of availability of credit at the time of emergency. Out of the total respondents, 9.62 percent have taken a credit from these sources.

4.2.15 ANNUAL FISHING EXPENDITURE

Detail of annual fishing expenditure is given in the Table 4.22. In the study region, crew wages is a major share in the fishing expenditure. In mechanized fishing, percentage of share of the crew wages has 47.11 percent and 64.64 percent in non-mechanized or traditional fishing practice. Fuel is second most fishing expenditure for mechanized fishing. Fuel share in mechanized fishing is 28.41 percent and 09.20 percent in non-mechanized or traditional fishing operation. It has been seen that fuel expenditure share is more in mechanized fishing operation.

Table 4.22
Annual Expenditure on Fishing, 2013

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Elements of Expenses</th>
<th>Mechanized Fishing</th>
<th>Non-mechanized &amp; Traditional Fishing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boat and engine repair</td>
<td>5.11</td>
<td>4.41</td>
</tr>
<tr>
<td>2</td>
<td>Net repair</td>
<td>3.64</td>
<td>2.15</td>
</tr>
<tr>
<td>3</td>
<td>Transportation of fish</td>
<td>6.15</td>
<td>5.64</td>
</tr>
<tr>
<td>4</td>
<td>Cold storage for fish</td>
<td>3.84</td>
<td>4.23</td>
</tr>
<tr>
<td>5</td>
<td>Fuel and oil</td>
<td>28.41</td>
<td>9.20</td>
</tr>
<tr>
<td>6</td>
<td>Crew Wages</td>
<td>47.11</td>
<td>64.64</td>
</tr>
<tr>
<td>7</td>
<td>Food &amp; Bata</td>
<td>3.45</td>
<td>2.46</td>
</tr>
<tr>
<td>8</td>
<td>Annual dues and licenses</td>
<td>1.20</td>
<td>2.23</td>
</tr>
<tr>
<td>9</td>
<td>Insurance</td>
<td>3.51</td>
<td>4.91</td>
</tr>
<tr>
<td>10</td>
<td>Others</td>
<td>2.69</td>
<td>4.54</td>
</tr>
<tr>
<td></td>
<td><strong>Annual Total Expenses</strong></td>
<td><strong>100.00</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

Boats and engine repairs account for 5.11 percent in mechanized fishing practice and 4.41 percent in non-mechanized or traditional fishing operation
respectively. Net repair share is more in mechanized fishing (3.64%), 2.15 percent share of net repair in non-mechanized and traditional fishing. For mechanized fishing, percentage of share of the transport of fish is 6.15 percent and 5.64 percent for non-mechanized and traditional fishing. Expenditure on cold storage for fish is 3.84 percent and 4.23 percent in mechanized and non-mechanized fishing method respectively. The share of food expenditure is 3.45 percent in mechanized fishing and 2.46 percent in non-mechanized fishing operation. Annual expenditure on insurance of fishing occupation is 3.51 percent in mechanized fishing and 4.91 percent in non-mechanized and traditional fishing. This is a comparative discussion about the annual expenditure of fishing in both fishing type in the study region.

4.2.16 FISHING EXPENDITURE PER TRIP

There is no significant difference in the percentage between annual and per trip fishing expenditure of the fishermen. Table 4.23 shows the share of various elements of per trip fishing expenditure of the fishermen in the study region.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item of Expenditure</th>
<th>Mechanized Fishing</th>
<th>Non-mechanized &amp; Traditional Fishing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boats and engine repair</td>
<td>8.04</td>
<td>5.02</td>
</tr>
<tr>
<td>2</td>
<td>Fishing net repair</td>
<td>3.14</td>
<td>2.35</td>
</tr>
<tr>
<td>3</td>
<td>Fuel and Oil</td>
<td>23.59</td>
<td>11.69</td>
</tr>
<tr>
<td>4</td>
<td>Crew wages</td>
<td>59.64</td>
<td>78.41</td>
</tr>
<tr>
<td>5</td>
<td>Transporting of fish</td>
<td>2.02</td>
<td>1.34</td>
</tr>
<tr>
<td>6</td>
<td>Marketing of fish</td>
<td>0.59</td>
<td>0.31</td>
</tr>
<tr>
<td>7</td>
<td>Processing</td>
<td>0.26</td>
<td>0.29</td>
</tr>
<tr>
<td>8</td>
<td>Expensive on ice</td>
<td>1.59</td>
<td>0.16</td>
</tr>
<tr>
<td>9</td>
<td>Other</td>
<td>1.13</td>
<td>0.43</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Based on field work, 2013

The study reveals that the highest share of fishing expenditure is on crew wages (59.64%) in mechanized fishing and 78.41 percent in non-mechanized or traditional fishing. Expenditure on fuel and oil has the second
largest share in the mechanized fishing (23.59%). The share of boats and engine repairs is 8.04 percent in mechanized fishing and 5.02 percent in non-mechanized and traditional fishing. For mechanized fishing share of net repairing is 3.14 percent and 2.35 percent in non-mechanized and traditional fishing. The expenditure on the transportation of fish is 2.02 percent in mechanized fishing and 1.34 percent in non-mechanized and traditional fishing. The study reveals that the expenditure on ice is more in mechanized fishing due to the large quantity of production as compared with non-mechanized and traditional fishing and it is 1.59 percent for mechanized fishing and 0.16 percent for non-mechanized and traditional fishing respectively.

4.3 PROBLEMS RELATED TO MARINE FISHING ACTIVITY

The marine fishing is an important occupation and economic source of the people of the coastal area of the South Konkan, as it provides a large number of employment opportunities for the people of various regions of the study region. But the fishermen of the study region have been struggling from the various problems in the marine fishing occupation.

1. Moody Climate

Fishing is a challenging activity as men at sea have to fight a lot with both the waves and the winds especially during the high tides as the sea is rough. Cyclones and winds at the sea prevent trawler owners as well traditional fishermen using motor boats for venturing into the sea. Due to bad weather conditions the fishermen have not to take risk and venture into the sea till sea condition stabilizes.

2. Disturbance during Fish Breeding Season

Fishing breeding season is usually in the months of June to July. The fish must not to be disturbed during the fish breeding season. But it has been observed that despite the ban period few boats and trawlers are venturing into the sea and this affect adversely on the spawning activities.
3. Excess use of Small Mesh Size Fishing Net

The government has imposed certain restriction on the size of nets of a minimum mesh size of 35 mm to prevent catching of baby fish. Despite such restrictions it has been observed that some boats even use nets of mesh size of 15 mm, due to which the baby fish is trapped and hence the whole life cycle of the fish is adversely affected.

4. Problem of Waste Material

Fishing boats and crafts requires adequate harboring, landing and other shore facilities. Harne, Deogad, Vengurla and other landing center have been facing the problems of polluted waters and solid waste material. In addition plastic pieces, waste diesel, dirty oil, bilge water and other material directly dumped into the sea. Due to industrial developments, tourist places, urban waste material, energy projects and other reasons sea waters get a polluted in the study region. The polluted water directly hampers the growth and causes death of fish. As a result many varieties of fish are almost destroyed due to reduced reproductive system.

5. Scarcity of Servicing and Repairing Centers

Mechanised and motorized boats have required the service and repairing centers. But in the study region, there have no adequate servicing and repairing centers for repairing of boats and crafts. Repairing of boats and nets is done by the fisherman, who has no adequate knowledge about it.

6. Shortage of Cold Storage Facilities

Fish is perishable food items, so it requires an ice and cold storage facilities for preservation. But in the study region no efforts made have been for cold storage plant establishment for handling fish production. So many villages are bringing the ice from the ice seller at a higher cost.
7. Lack of Awareness about Modern Technology

In the study region, many fishermen use the traditional method of catching fish because they are not aware of new methods of catching fish. Some of them are fully aware about the modern technology. But they cannot afford to switch over to the mechanized system. Due to the traditional practice of fishing, they get minimum fish as compared with mechanized practice of fishing.

8. Lack of Sufficient Capital

Marine fishing activities require a large capital investments for the purchasing of boats, nets and other assets related to fishing activity. But lack of sufficient economic resources, this occupation consider as a primary activity in the study region. Fishermen totally depend upon the fish merchants for the loan and credit, because they give loan to the fishermen at any time and very easily. But the interest rate of the fish merchants is very high as compared with other sources of loan. The nationalized banks, cooperative banks and other banks require various types of documents and the process of sanction of loan is lengthy. So fishermen take the lone from the fish merchants. But they exploit the fishermen in terms of interest rate and fish selling.

9. Extortion by Middlemen

Middleman and agents play an important role in the marketing of fish. The agents and middleman are the cheap links between the fishermen and fish traders. They get the commission from both the fishermen and the wholesalers. Middleman and agents have always favoured the fish traders, which is harmful to the fishermen community.

10. Lack of Fast Transportation Mode

As we know that the fish is perishable food item. So it requires a fast transportation mode. But study observes that there is a lack of fast transportation facilities. Generally fishermen utilize a traditional and old transportation means, such as bulk cart and motor cycles.
11. Awareness about Fish Price

The price of fish mainly depends upon the seasons and varieties of fish. There is flexibility in the fish price as per every region and season to season. Due to the fluctuating price of fish, fishermen do not get sufficient share of marketing of fish. The maximum benefits are captured by fish traders and fish merchants.

12. Shortage of Diesel at Landing Centers

Mechanized and motorized boats have required diesel as a fuel. Day by day there is an increase in price of fuel and that is why the expenses on the diesel have increased. Also there is a shortage of diesel at the landing centers. That is why they bring the diesel from outside at a higher price.

13. Ignorance about Government Schemes

Due to illiteracy, most of the fishermen are not aware about the government schemes and other subsides for the fishing occupation. There is a need of propaganda of government schemes by the media for the fishermen community.

14. Non-cooperation of Fishery Cooperative Societies

Fishermen need the fishing license for fishing in the sea. This license has been provided by the cooperatives societies. But the cooperative societies make the fishermen pay the high charges of fishing license from the fishermen. Fishery cooperatives societies do not support to the fishermen in term of access to loan and credit facilities, providing fishing equipments at a cheaper rate, marketing of fish on a better price and training of modern fishing.

4.4 CONCLUSION

The present chapter discusses the methods of marine fishing in the study region. Mahadev Koli community is doing a practicing fishing in the South Konkan. Out of the total respondents 41.11 percent of the fishermen are related to Other Backward Class in the study region. Male and females play equal role
in the marine fishing. The 45.04 percent male population is mainly engaged in the active fishing. In other related activities of fishing male as well as female population are engaged. Out of total respondents 20.45 percent females are engaged in marketing of fish and processing of fish. The study reveals that there are more small boat owner fishermen as compared with other fishermen. The literacy rate of the fishermen community is high (71.20%) but a few number of fishermen have completed degree and post graduation course (8.40%). Total working population of fishermen community mainly engaged in the primary economic activities (54.85%) and basically in the marine fishing and its related activities. Marine fishing is the traditional occupation of the community, so they have no choice in the selection of other occupation for economic source.

Fishermen utilize modern as well traditional methods for fishing. The percentage of using mechanized crafts and boats has less (13.90%) than non-mechanizes and traditional crafts and boats (86.10%). Gill nets (27.42%), Bag nets (12.33%) and Hook and long lines nets (17.05%) are the main nets used by the fishermen the study region. Fishing license is must for the fishing to the fishermen, but in the study region the percentage of license holder fishermen is very low (38.89%). Traditional fishermen are going on fishing every day in the early morning and came back in the afternoon on the same day. Modern fishermen are doing fishing in the sea and spend two to six days. Fishermen mainly use the bullock carts for the fish transport in the hilly region. Also they use the van and refrigerated van for fish transportation in the study region. The fishermen become members of cooperatives societies for the purpose of easy availability of loan (27.40%) and societies provide cheaper inputs to the fishermen (26.70%). Poverty of fishermen community is the main obstacles in the marine fishing occupation, so they take loan facility from various sources. They give first priority to fish merchants and cooperative societies for loan. There are no variations in the annual and per trip expenditure in the mechanized and non-mechanized fishing in the study region.
REFERENCES


