

## **APPENDICES**

## **APPENDIX-1**

### **DATA BASELINE TENTANG ZONA PRIORITAS**

## APPENDIX - 1. BASELINE DATA ON PRIORITY AREAS

### 1-1. Necessity of Baseline Data

The existing fishery statistics data on priority areas are compiled on sub-district (kecamatan) basis but not by model site. In addition, each data is not sufficient to make feasibility study.

- 1) No. of fishing boats are divided into inboard engine type, outboard engine type, and non-motorized boats (by sizes), but not divided by type of fishing gears. Data on numbers of fishing gears are available but it is not linked with the number of fishing boats. Some districts (kabupaten) have been doing fishing boat survey once every 5 years and made the list of fishing boats, but the formats are different by districts.
- 2) Some districts do not have fish production data by months (or by quarters). Even if there is monthly data, that is only the estimate principally by multiplying unit production and numbers of fishing boats, without considering the fishing patterns including seasonal movement of fishing boats.
- 3) Statistic data related to fish marketing and processing are extremely limited.

Due to these situations on the existing data, the baseline data survey was made at 12 major fish landing sites within the priority areas under this Study. The baseline survey was conducted through daily actual observations at each site and fishermen's self-recording for the continuous 1-month. The data obtained from these surveys were analyzed taking into account the site survey data and information collected by Team members. Based on the results of this analysis, the details of fishing boats operation patterns and fish landing volume are estimated.

### 1-2. Results of Baseline Survey at each model site

The results of baseline surveys made at 12 major fish landing places (model sites) in the 4 priority zones for 1 month during Feb. – Mar. 2002, are shown on the following separate tables.

- (1) No. of fishing boats entry by types of fishing boats (Table 1-1)
- (2) Fish landing volume by species by main sample fishing boats (Table 1-2)
- (3) Average sizes of main fish species (Table 1-3)
- (4) Records of fishermen's log-book (Table 1-4)
- (5) No. of fish buyers/retailers by scales at fish landing sites and retail markets

(Table 1-5)

- (6) Lists of fishing boats and fish buyers/retailers (Table 1-6)
- (7) Village baseline data (Table 1-7)
- (8) Beach prices of main fish species by seasons (based on the hearing from fishermen) (Table 1-8)
- (9) Composition of fish species by volume (statistic data) (Table 1-9)
- (10) Estimated No. of fishing boats and fish landing volume at each model site (Table 1-10)
- (11) Estimated monthly fish landing volume and its utilization at each model site (Table 1-11)
- (12) Fishing patterns by types of fishing boats (based on the hearing from fishermen) (Figure 1-1)
- (13) Monthly fish landing pattern (Figure 1-2)

### 1-3. Procedure and Methods of Estimation

#### 1-3-1. Estimate on Fishing Operation and Fish Landing

##### (1) No. of fishing boats

No. of fishing boats by types of fishing gears were estimated comprehensively from various sources of data and information such as hearing survey from fishermen at each site, lists of fishing boats prepared through the 1-month survey (Table 1-6), and the existing list of fishing boats prepared by district fisheries office (based on the survey of year 2000, if available). Non-motorized fishing boats are not accounted for estimation of fish landing volume, because of the following reasons (except Lamalera where the most of fishing boats are non-motorized).

- 1) It is difficult to confirm the actual numbers for fishing use as the statistics include for landing purpose only,
- 2) Daily fish catch is small in quantity and it is easy to unload fish by beaching.

No. of target fishing boats under the Project are set forth as shown on the table below:

	Bagan electric type	Bagan kerosin lamp	Purse seine	Gill net	Hand-line / trolling	Collect boats	Others
Waworada	22	18	44		14	25	-
Kempo	33	-	10		14	80	-
Hu'u	-	-	14	3	6	-	-
Larantuka	-	26	10		30	-	-

Lamahala Jaya	-	2	82	10		-	-
Sagu	-	2	6	10	11	-	-
Lewoleba	-	47	3	10	2	-	-
Balauring	-	-	2	7	14	-	-
Lamalera	-	-	-	11 (w/motor), 40 (w/o motor)		-	20 whalers (non-motor)
Maumere	-	-	54	24	47	19	-
Paga	-	-	21	9	2	-	-
Ende	-	-	33	9		-	12 lampara

(2) No. of fishing villages and fishing households

The data obtained from the respective sub-districts (kecamatan) and/or villages (desa) are directly used for estimation of numbers of fishing villages and fishing households (See Table 1-7).

(3) Operating Efficiency and Average No. of fishing boats entry per day

As a first step, operating efficiency of fishing boats was calculated from actual data on fishing boat entry per day (Table 1-1) and total numbers of fishing boats. Then, based on the seasonal fishing pattern (Fig. 1-1), fishing operating efficiency and daily numbers of fishing boat entry by seasons were estimated (See Table 1-10).

(4) Unit Fish Production (Catch per boat per trip)

Unit production (catch per boat per trip) in Feb.-Mar. was estimated from the results of actual survey at landing sites (Table 1-2) and fishermen's self-keeping log-books (Table 1-4). The estimate was made in coordinating to reasonable figures considering fishing capacity and fish landing volume obtained from the hearing survey. Then, the unit production by seasons (Table 1-10) was estimated based on the seasonal fishing pattern (Fig. 1-1).

(5) No. of Fishing Operatable Days

No. of fishing operatable days by seasons and types of fishing boats (Table 1-10) was estimated based on the hearing survey and the records of fishermen's log-books (Table 1-4).

(6) Fish Landing Volume by Seasons

From the results of the above 3), 4) and 5), the monthly fish landing volume at site was calculated (See Table 1-11). In addition, to confirm the seasonal pattern of fish landing volume, the monthly estimated data was converted into the graph

(approximate curve by plural method) and the peak fishing season at each site was set up (See Fig. 1-2).

(7) Comparison and Verification with the Statistic Data

To verify the annual fish landing volume calculated in accordance with the above procedure and method, the estimated volume at each model site was compared with the statistics data on sub-district (kecamatan) base. As a result, each estimated volume can be deemed as reasonable as shown on the table below.

Model Site	Estimated Landing Volume	Statistics Data on Kecamatan	Verification and Consideration
Waworada	4,846	7,244 (2001)	About 1/3 of total fish catch by fishing boats of Waworada seems to be unloaded at places other than model site considering the following facts. 1) About a half of purse seiners (22 boats) change their fishing bases to Sape and Sumbawa during Jan.-Mar. (3 months). 2) About 1/6 of Bagan catch is brought back to their own villages. 3) Small fishing boats unload fish at their own village facing to Tl. Waworada.
Kempo	3,483	3,018 (2001)	Although he estimated volume is about 10% larger than the statistic data, the unit production and operating efficiency of each boat are not excessively set up. It is considered as the reasonable error.
Hu'u	1,310	2,123 (2001)	The most of purse seiners which accounts more than 95% in this site move the operating bases to Sape and Sumbawa during Dec.-Feb. (3 months).
Larantuka	2,593	2,886 (1999)	About 25 purse seiners of Lamahala Jaya operate fishing based on Larantuka during Mar.-Oct. (8 months), so that the actual fish landing volume is higher than the statistic data. On the other hand, the statistic data includes the catch by skipjack pole-and-line fishing boats (1,500-2,000 tons/year), but it is not accounted for in the estimated volume.
Lamahala Jaya	2,164	2,331 (1999)	Both sites are located in the same kecamatan (Adonara Timur) and the sum of estimated volume is exceeded from the statistic data. The landing volume estimate was made considering the movement of purse seiners during Mar.-Oct. and the direct sales of catch on sea, so that it is not over estimated. Furthermore, the unit production and operating efficiency of each boat are not excessively set up. Thus, the statistic data seems to be under estimated.
Sagu	551		
Lewoleba	1,767	243 (1999)	The statistic data of Lembata is prepared based on the survey of twice a year only, so as to be not realistic. In fact, the statistic data (1998) before the independence of Lembata from Flores Timur shows about 3,000 tons.
Balauring	361	171 (1999)	
Lamalera	498 (whale300)	76 (1999)	
Maumere	3,251	4,542 (2001)	The estimated volume is lower than the statistic data, because the estimated volume shows fish landing only at model site (Kalimati) not including volume directly

			landed at fishing villages (Wuring, Nagngafure, etc.), while the statistic data shows the total catch of Kec. Alok.
Paga	1,164	581 (2001)	The statistic data seems to be under estimated, since the major fishing boats in the model site are purse seiners that unit production and operating efficiency are not excessively set up.
Ende	3,144	2,358 (2000)	Both estimated volume and statistic data are of the existing fish landing site (Mbongawani) only, and the creditability of statistic data is high based on the daily survey data. However, the estimated volume includes the fish collected and transported from Flores Timur by Sinjai boats (approx. 720 tons), thus the estimated landing volume is higher than the statistic data.

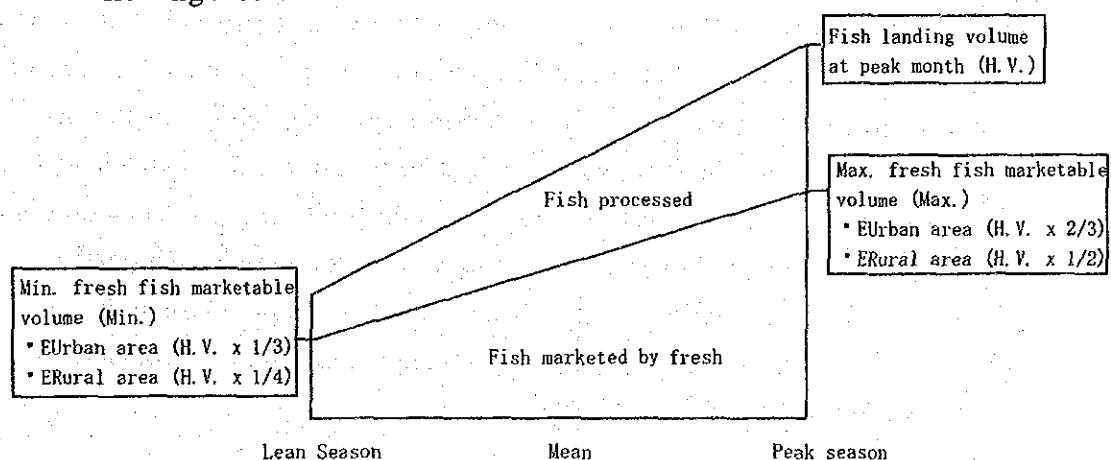
### 1-3-2. Estimate of Data Related to Fish Treatment and Marketing

#### (1) Volume by Types of Treatments

##### Analysis of Present Situation

1) It can be assumed based on the results of site survey that about 1/2 of fishes during peak fishing season are marketed as fresh in rural area while about 2/3 in the urban area. From this matter, out of the fish landing volume in the peak month as estimated in the above 1-3-1 (6), 1/2 in rural area and 2/3 in urban area were deemed to be monthly marketable by fresh fish (MAX). On the other hand, the price of fresh fish in lean season is about twice of that in peak fishing season. As fish price generally fluctuates in inverse proportion to fish landing volume, it was assumed that at least 1/2 of MAX can be dealt in fresh fish in the lean fishing months (MIN).

2) Fish landing volume is related to fresh fish marketable volume as shown on the following model.



From the above model, fresh fish marketable volume at each month (X) can be

theoretically calculated using the following formula,

$$X = \text{MIN} \left\{ (A - \text{MIN}) \div (\text{MAX} - \text{MIN}) (\text{H.V.} - \text{MIN}) \right\}$$

A : Fish landing volume at each month

MIN : Min. fresh fish marketable volume per month

MAX : Max. fresh fish marketable volume per month

H.V. : Fish landing volume at peak month

In case that fish landing volume in lean fishing months becomes lower than the MIN, all fish are to be marketed in fresh.

- 3) On the other hand, daily fish landing volume is largely influenced by catches from Bagan and purse seine. According to the results of 1-month self-recording of log-books by Bagan and purse seine fishermen at each site, the sum of volumes exceeding the average daily catch volume was about 20% of total catch, although the daily fluctuation of catch differs by each boat and site. From this result, it is estimated that 20% of fresh fish marketable volume at each month (X) cannot be sold in fresh at present, resulting in economic loss by selling in discount, processing into salted/dried, and/or abolition.

#### Improvement Plan

- 1) Under the improvement plan, the max. fresh fish marketable volume (MAX) was set forth as same as present situation, while the min. fresh fish marketable volume (MIN) was assumed to be 2/3 of MAX (Difference between MAX and MIN: 1.5 times) since the stable supply of fresh fish to local people would be achieved with the Project.
- 2) Using same formula given in the above, the fresh fish marketable volume at each month (X) was calculated. In the peak months, however, 20% of fresh fish marketable volume (that deemed as not able to be sold in fresh at present) might be the volume exceeding local consumption capacity. In this aspect, 80% of the fresh fish marketable volume at peak months that calculated from the above formula (X) was assumed as maximum limit for regional market, and accordingly the fresh fish marketable volume at each month were adjusted.
- 3) The balance after deducting fresh fish marketable volume for regional market from the fresh fish marketable volume calculated from the formula (X) at each month would be utilized as follows.

#### A) Bima and Dompu Zones

The fishing season in Bima and Dompu regions is almost same. During this season, the westward consumption markets (Sumbawa Besar, Mataram,



Denpasar) also have abundant fresh fish. Thus, it is planned that the surplus of fresh fish in these zones would be used for new fishery products for the outside markets.

B) Eastern and Central Flores Zones

Since the fishing seasons differ by areas and the fish supply is in shortage in the western part of Flores at present, it is planned that the surplus of fresh fish would be marketed in fresh to the outside markets.

- 4) After deducting the fresh fish marketable volume (both for regional and outside markets) and fish to be processed for outside markets fish from the landing volume at each month, the balance was assumed as to be processed for regional market.

The results of analysis using the above methods are as shown on Table 1-11.

(2) No. of Fish Buyers & Retailers and Their Dealing Capacity

The proportion of numbers of fish buyers/retailers by dealing capacity was obtained through the actual 1-month survey (Feb.-Mar., the lean season), while the daily fresh fish dealing volume in the peak season was obtained from the results of analysis in the above 1-3-2 (1). Provided that the capacity of each fish buyer/retailer would not be changed, the numbers of fish buyers/retailers would be increased in proportion to the daily dealing volume. Assuming by this way the maximum numbers of fish buyers/retailers by dealing capacity at each site were estimated (See Table 1-5).

As a result, total numbers of fish buyers/retailers were more than the numbers in the lists collected during same 1-month. The reasons are as follows.

- 1) The actually working fish buyers/retailers are small in number because the survey period was not in the fishing season.
- 2) Due to the limited time (1-month) for listing, whole numbers could not be listed up.
- 3) In some sites the fish buyers/retailers were not cooperative. (Similar surveys have been conducted many times but no output came out as of today, so that they are reluctant to answer to questions.)

Table 1-1. Numbers of Fishing Boats Entry at Each Model Site (Data from actual fish landing site survey in Feb.-Mar. 2002)

1. RIMA & DOMPI															
Location	WAWORADA (01/02/2002 - 25/02/2002, 25 days)					KEMPO (01/02/2002 - 28/02/2002, 28 days)					HU'U (02/02/2002 - 28/02/2002, 27 days)				
Type of Boats	Survey time	Bagan	Purse-Seine	Gill Net	Hand-line	Survey time	Bagan	Purse-Seine	Gill Net	Hand-line	Collect boat	Survey time	Purse-Seine	Gill Net	Hand-line
No. of days of boats entry	06:00-08:00	21	-	17	-	04:00-07:00	15	16	25	26	19	Pagi/Siang	19	9	26
	17:00-19:00	-	16	9	-	-	-	-	-	-	-	-	-	-	-
Total No. of boats entry	06:00-08:00	38	-	105	-	04:00-07:00	302	113	268	517	657	Pagi/Siang	65	20	207
	17:00-19:00	-	119	35	-	-	-	-	-	-	-	-	-	-	-
No. of boats entry per day (avg)	06:00-08:00	1.9	-	6.2	-	04:00-07:00	20.1	7.1	10.7	19.9	34.6	Pagi/Siang	3.4	2.2	8.0
	17:00-19:00	-	7.4	3.9	-	-	-	-	-	-	-	-	-	-	-
	06:00-08:00	3.0	-	9.0	-	04:00-07:00	29.0	9.0	20.0	46.0	72.0	Pagi/Siang	6.0	5.0	16.0
	17:00-19:00	-	10.0	6.0	-	-	-	-	-	-	-	-	-	-	-
No. of operable days per month		25		25			16	17	27	28	20		21	10	29
Remarks: Gill net fishing boats include hand-line.															
2. FLORES TIMUR															
Location	LARANTUKA (Pelabuhan Umum, 11/02/2002 - 12/03/2002, 30 days)					SAGU (10/02/2002 - 07/03/2002, 26 days)					LAMAHALA JAYA (11/02/2002 - 14/03/2002, 32 days)				
Type of Boats	Survey time	Purse-Seine	Gill Net	Hand-line	Others	Survey time	Bagan	Purse-Seine	Gill Net	Hand-line	Survey time	Bagan	Purse-Seine	Gill Net	Hand-line
No. of days of boats entry	06:00-09:00	26	4	4	3	08:00-11:00	22	-	25	25	06:00-09:00	26	29	20	30
Total No. of boats entry	06:00-09:00	105	4	7	3	08:00-11:00	97	-	252	943	06:00-09:00	27	915	70	105
No. of boats entry per day (avg)	06:00-09:00	4.0	1.0	1.8	1.0	08:00-11:00	4.4	-	10.1	37.9	06:00-09:00	1.0	31.6	3.5	3.5
	06:00-09:00	11.0	2.0	2.0	1.0	08:00-11:00	9.0	-	15.0	50.0	06:00-09:00	2.0	50.0	6.0	6.0
No. of operable days per month		26	4	4	3		25		29	29		24	27	19	28
3. LEMBATA															
Location	LEWOLEHA (12/02/2002 - 15/03/2002, 32 days)					BALAURING (10/02/2002 - 07/03/2002, 26 days)									
Type of Boats	Survey time	Bagan	Purse-Seine	Gill Net	B. Long-line	Survey time	Purse-Seine	Gill Net	Hand-line	Collect boat					
No. of days of boats entry	06:00-07:00	26	32	31	5	06:00-16:00	26	26	26	26					
Total No. of boats entry	06:00-07:00	1,204	104	339	13	06:00-16:00	61	624	212	27					
No. of boats entry per day (avg)	06:00-07:00	46.3	3.3	10.9	2.6	06:00-16:00	2.3	24.0	8.2	1.0					
	06:00-07:00	47.0	4.0	12.0	4.0	06:00-16:00	3.0	28.0	19.0	1.0					
No. of operable days per month		24	30	29	5		30	30	30	30					
4. SIKKA & ENDE															
Location	MAMERE (Kaimati, 16/02/2002 - 17/03/2002, 30 days)					PAGA & HAWLOO (18/02/2002 - 19/03/2002, 29 days)					ENDE (Whonawani, 19/02/2002 - 18/03/2002, 28 days)				
Type of Boats	Survey time	Purse-Seine	Gill Net	Hand-line	Collect boat	Survey time	Purse-Seine	Gill Net	Hand-line	Survey time	Purse-Seine	Lampala	Gill Net	Hand-line	Payang
No. of days of boats entry	05:00-09:00	29	19	23	29	06:00-09:00	-	29	-	06:00-09:00	16	17	21	26	27
		-	-	-	-	15:00-18:00	20	-	-	-	-	-	-	-	-
Total No. of boats entry	05:00-09:00	838	58	63	242	06:00-09:00	-	406	-	06:00-09:00	37	33	113	345	272
		-	-	-	-	15:00-18:00	144	-	-	-	-	-	-	-	-
No. of boats entry per day (avg)	06:00-09:00	28.9	3.1	2.7	8.3	06:00-09:00	-	14.0	-	06:00-09:00	2.3	1.9	5.4	13.3	10.1
		-	-	-	-	15:00-18:00	7.2	-	-	-	-	-	-	-	-
	05:00-09:00	48.0	6.0	6.0	19.0	06:00-09:00	-	16.0	-	06:00-09:00	4.0	4.0	10.0	19.0	20.0
		-	-	-	-	15:00-18:00	14.0	-	-	-	-	-	-	-	-
No. of operable days per month		29	19	23	29		21	30			17	18	23	28	29
Remarks: Gill net fishing boats include hand-line.															

Table 1-2. Fish Landing Volume by Major Types of Sample Boats  
(Data from actual fish landing site survey in Feb.-Mar. 2002)

A. BAGAN												
Location	KABORAU			KEPPO			LANAMALA		SAGI		LEKOLEBA	
Sample No.	No. 1	No. 2	Average	No. 1	No. 2	Average	Average	No. 1	No. 2	Average	Average	
No. of days surveyed (days)	25	25	25	28	28	28	32	22	22	22	26	
No. of days with fish landing (days)	20	22	21	12	10	11	6	20	20	20	26	
Total landing volume per boat (kg)	6,800	9,380	8,090	2,175	1,538	1,856	3,304	5,100	4,430	4,765	26,737	
(By Species) Lavang	6,200	6,830	6,265	475	475	475	1,989	0	0	0	13,025	
Teri	60	2,550	1,300	0	0	0	0	0	0	0	0	
Tembang	50	0	25	325	0	163	0	300	525	413	11,788	
Lemuru	0	0	0	625	625	625	0	0	0	0	0	
Sardin	0	0	0	0	0	0	1,180	1,750	600	1,175	0	
Krabung	0	0	0	250	0	125	0	0	0	0	0	
Peperak	0	0	0	450	125	288	0	0	0	0	0	
Juluw2	0	0	0	0	0	0	0	3,050	2,525	2,788	0	
Helus	0	0	0	0	0	0	0	0	780	390	1,923	
Tonkol	0	0	0	25	200	113	0	0	0	0	0	
Cum2	0	0	0	0	0	0	136	0	0	0	0	
Others	0	0	0	25	113	69	0	0	0	0	0	
Landing volume per day (kg/day)	340	426	383	181	154	168	114	255	222	238	1,028	

B. PURSE SEINE									
Location	KABORAU			KEPPO			M'U		
Sample No.	No. 1	No. 2	Average	No. 1	No. 2	Average	No. 1	No. 2	Average
No. of days surveyed (days)	25	25	25	28	28	28	27	27	27
No. of days with fish landing (days)	11	11	11	8	8	8	19	19	19
Total landing volume per boat (kg)	2,328	4,680	3,504	720	2,650	1,650	4,825	5,175	5,000
(By Species) Tuna	2,328	4,680	3,504	0	90	45	0	0	0
Cakarang	0	0	0	0	0	0	625	400	513
Lemuru	0	0	0	180	765	473	725	675	700
Lavang	0	0	0	485	185	340	0	0	0
Krabung	0	0	0	0	315	158	0	0	0
Peperak	0	0	0	0	1,035	518	0	0	0
Tembang	0	0	0	0	180	90	0	0	0
Juluw2	0	0	0	0	0	0	3,175	3,325	3,250
Others	3	9	6	45	90	68	300	775	538
Landing volume per day (kg/day)	212	426	318	240	333	285	254	272	263

C. GILL NET							
Location	LARANTUA		LANAMALA		SAGI		LEWOPAI
Sample No.	No. 1	Average	No. 1	No. 2	Average	Average	Average
No. of days surveyed (days)	26	30	22	22	22	22	26
No. of days with fish landing (days)	26	30	22	22	22	22	26
Total landing volume per boat (kg)	12,227	8,321	5,225	6,915	6,570	12,035	6,308
(By Species) Tonkol	873	965	0	0	0	0	0
Lavang	9,292	6,431	0	0	0	0	0
Krabung	58	0	1,650	5,650	3,655	6,523	0
Tembang	1,342	0	50	0	25	0	0
Juluw2	0	0	4,485	1,255	2,620	0	0
Selar	639	0	0	0	0	0	0
Batu	0	845	40	0	20	0	0
Cum2	0	60	0	0	0	0	0
Ekor kenir	0	0	0	0	0	6,185	0
Others	52	0	0	0	0	0	0
Landing volume per day (kg/day)	470	277	283	314	299	731	243

D. HAND-LINE									
Location	MAMERE			PAGA			PURSE SEINE		LAMPALA
Sample No.	No. 1	No. 2	Average	No. 1	No. 2	Average	Purse Seine	Lampala	Average
No. of days surveyed (days)	30	30	30	10	10	10	28	28	28
No. of days with fish landing (days)	29	28	29	10	10	10	15	15	15
Total landing volume per boat (kg)	20,243	19,326	19,785	6,547	4,165	5,356	4,125	7,925	5,000
(By Species) Tonkol	7,027	6,807	6,917	0	0	0	0	1,430	0
Cakarang	0	0	0	0	0	0	1,565	0	0
Lavang	4,064	6,180	5,122	3,413	1,825	2,624	0	7,055	0
Krabung	2,454	221	1,335	160	0	80	0	380	0
Tembang	0	0	0	1,427	1,197	1,312	0	85	0
Juluw2	0	0	0	0	0	0	1,170	0	0
Selar	5,214	4,359	5,087	1,847	1,133	1,340	0	405	0
Batu	1,236	1,641	1,438	0	0	0	0	0	0
Cum2	0	0	0	0	0	0	0	0	0
Others	248	318	283	0	0	0	0	0	0
Landing volume per day (kg/day)	688	666	682	655	417	525	258	456	179

E. GILL NET									
Location	M'U		BALAIRING		LAWALERA		PAGA		ENDE
Sample No.	No. 1	No. 2	Average	Average	Average	No. 1	No. 2	Average	Average
No. of days surveyed (days)	27	27	27	29	25	29	29	29	29
No. of days with fish landing (days)	10	8	9	29	22	29	29	29	29
Total landing volume per boat (kg)	570	460	515	795	1,015	2,052	1,634	1,843	751
(By Species) Cakarang	225	180	203	0	0	0	0	0	240
Tuna	0	0	0	0	0	0	0	0	156
Tonkol	0	0	0	134	0	0	0	0	0
Bambang	0	0	0	29	0	0	0	0	0
Burong	0	0	0	19	0	0	0	0	0
Selar	0	0	0	347	0	948	743	846	0
Krabung	0	0	0	257	0	1,104	891	998	0
Lavang	0	0	0	8	0	0	0	0	0
Tembang	0	0	0	0	1,015	0	0	0	116
Batu	165	115	140	0	0	0	0	0	0
Pari	0	0	0	0	0	0	0	0	239
Others	180	165	173	0	0	0	0	0	0
Landing volume per day (kg/day)	57	58	57	27	46	71	56	64	35

F. HAND-LINE							
Location	LARANTUA		BALAIRING		PAGA		ENDE
Sample No.	Average	Average	No. 1	No. 2	Average	Average	Average
No. of days surveyed (days)	26	29	29	29	29	29	28
No. of days with fish landing (days)	3	29	29	29	29	29	27
Total landing volume per boat (kg)	360	1,177	435	360	398	348	162
(By Species) Tuna	0	477	435	360	398	0	0
Cakarang	0	135	0	0	0	0	0
Tonkol	0	495	0	0	0	0	0
Alu2	0	0	0	0	0	35	0
Layar	0	0	0	0	0	19	0
Kayu	0	0	0	0	0	76	0
Kedung	0	0	0	0	0	41	0
Lavang	0	0	0	0	0	5	0
Selar	0	0	0	0	0	7	0
Senjil	0	0	0	0	0	3	0
Ekor/Bambang	360	66	0	0	0	162	0
Landing volume per day (kg/day)	120	41	15	12	14	13	5

Table 1-3. Average Size of Major Fish Species at Each Model Site (Data from actual fish landing site survey in Feb.-Mar. 2002)

1. BAGAN

Location	WAMORADA		KEMPO		LAMAHALA JAYA		SAGU		LEWOLEBA	
	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)
Layang	200	15.8	120	13.5	30	18.6	91	12.6		14.0
Teri	50	4.5								
Cumi2	20	2.5			24	5.7				
Lemuru			120	13.5						
Tembang			110	14.1						16.0
Sardine			16	13.5	28	14.0				
Julang2			20	14.5			100	11.5		
Peperck			70	4.2						
Tongkol			30	22.7						
Kembang			50	24.8			87	14.1		
Welus										15.0

2. PURSE SEINE

Location	KEMPO		IU'U		LARANTUKA		LAMAHALA JAYA		SAGU		LEWOLEBA		MAMERE		ENDE	
	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)
Lemuru	80	13.3	270	13.4												
Layang	70	13.5			125	20.8	27	22.2	67	15.6			153	8.4		
Tembang	30	13.0			50	14.6										
Sardine							15	15.2	66	11.4						
Kembang	60	22.7										18.0				
Peperck	80	4.5														
Julang2	10	15.0	370	19.7					63	17.7					80	19.5
Tongkol	10	25.0			20	20.2	12	29.0				21.0	159	11.6	70	27.5
Cakarang															40	50.8
Cumi2							24	6.0								
Selar					75	13.8							155	7.6		
Ekor kuning												19.0				

3. GILL NET

Location	IU'U		LAMAHERA		PAGA		Remarks (Observation by the Team in Mar. 2002)
	No. samples	B.L. (cm)	No. samples	B.L. (cm)	No. samples	B.L. (cm)	
Cakarang	75	22.2					Species
Ilu	50	59.0					Sape
Terbang			237	18.7			Larantuka
Layang					212	10.7	Tongkol
Selar					205	8.8	Tuna
							Layang

4. HAND-LINE

Location	PAGA	
	No. samples	B.L. (cm)
Species	149	30.0
Tuna		
Cakarang		

Reference: Relationship between Body Length and Weight

Tongkol		Selar		Layang		Sardin/Lemuru/Tembang		Kembang		Julang2	
B.L. (cm)	B.W. (g)	B.L. (cm)	B.W. (g)	B.L. (cm)	B.W. (g)	B.L. (cm)	B.W. (g)	B.L. (cm)	B.W. (g)	B.L. (cm)	B.W. (g)
14	50	11	40	16	60	12	30	17	100	18	60
15	60	12	50	17	100					19	80
16	80	13	60	18	120					20	100
17	90	14	70	19	140						
18	100			20	150						
19	110			21	160						
20	150										
21	200										
22	250										
23	300										
24	330										
25	360										
26	380										
27	400										

Table 1-4. Fishermen's Log-Book Data (1)

TAYORASA (01/02 - 28/02/2002)													
No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Sarjan	42	Gill Net		05-19	No	9	20	2	12	117	10	Tongkol, Tuna, Tenggiri, Malaka, Bangkalo
2	Iwar Ismail	50	Gill Net		05-19	No	9	20	2	25	258	10	Tongkol, Tuna, Tenggiri, Morlin, Bangkalo
3	Jakarya Aza Kaha	55	Gill Net	1'	05-19	No	9	20	2	23	450	20	Tongkol, Tuna, Keabang, Layang, Bungkul
4	H. M. Kor	46	Gill Net		04-19	No	9	20	2	18	375	20	Tongkol, Tuna, Tenggiri, Layang, Bawal
5	Barahina	28	B. Trollin	86	06-17	No	4.5	5.5	1	13	21	2	Semu, Kerapu
6	H. Kor	36	B. Trollin	86/7	06-17	No	4.5	5.5	1	20	44	2	Semu, Kerapu, Tenggiri, Bangkalo
7	Sulaiman	28	B. Trollin		06-17	No	4.5		1	16	37	2	Semu, Bangkalo
8	Anrudin	25	B. Trollin		06-17	No	4.5	5.5	1	18	40	2	Semu, Kerapu, Kakap, Tenggiri, Ekor Bulek
9	Ibrahim Majid	50	Bagan Lis.	32x23m	18-07	Lamp	31	23	17	25	1,590	280	Toni
10	H. Yusun	50	Bagan Lis.	32x23m	18-06	Lamp	33	23	15	26	4,830	186	Toni, Layang, Mixed
11	H. Ridwan	45	Bagan Lis.	32x23m	18-05	Lamp	33	20	10	21	10,200	486	Toni, Mixed
12	H. Baharudin H.	43	Bagan Lis.		06-18	Lamp	21	23	8	15	1,355	90	Tongkol, Julung2
13	H. M. Said R. Sanjani	50	Purse Seine		08-20	No	10	23	7	17	4,878	287	Tongkol, Sardin
14	H. M. Said	48	Purse Seine		08-20	No	10	23	7	17	4,878	287	Tongkol, Sardin
15	H. Sati	40	Purse Seine		08-20	No	10	23	8	26	4,860	187	Tongkol, Tuna, Sawbain, Julung2, Koempul
16	H. Mansyur	42	Purse Seine		06-19	No	9.5	23	8	17	2,300	135	Tongkol

KEMPO (01/02 - 28/02/2002)													
No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Basri H. M. Saleh	45	Purse Seine	250x50m/2'	16-06	Lamp	15	23	15	16	2,798	175	Layang, Lemuru, Tembang, Ori2
2	Abdurrahman M. Hasan	33	Purse Seine	250x50m/2'	15-07	Lamp	15	23	15	9	2,620	291	Sardin, Layang, Peperek, Tembang
3	Hasan	46	Bagan Lis.	17x10m	16-05	Lamp	17	23	6	15	1,285	86	Sardin, Layang, Tembang, Peperek, Keabang
4	Abas H. Sonusi	50	Bagan Lis.	21x13m	16-07	Lamp	21	16 / 20	11	15	1,400	94	Lemuru, Layang, Tembang, Peperek, Ori2
5	Sulaiman	37	B. Handlin	46/7/8/9	04-11	No	6		1	22	364	14	Mixed
6	Bakar Duce	31	B. Handlin	46/7/8/9	04-11	No	6		1	23	81	4	Mixed
7	Ibrahim Ahmad	30	B. Handlin	46/7/8/9	04-11	No	6	5.5	1	23	331	14	Mixed
8	Supriadin Akbar	37	B. Handlin	46/7/8/9	04-11	No	6	5.5	1	25	600	24	Mixed
9	Ulf Sulaiman	45	Gill Net	500x50m/2'	16-07	No	12	16	2	15	1,362	91	Keabang, Tongkol, Bote2, Reo2, etc.
10	Ibrahim H. Fide	25	Gill Net	500x50m/2'	16-07	No	12	16	2	14	1,437	103	Keabang, Tongkol, Bote2, Reo2, etc.

MU'II (02/02 - 28/02/2002)													
No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	H. Hasan	50	Purse Seine	400x15m/1'	07-15	No	12	23	10	16	3,250	517	Julung2, Cakarang, Lemuru, Keabang, etc.
2	H. Abdulbar	58	Purse Seine	400x15m/1'	07-15	No	12	23	10	16	6,912	378	Julung2, Cakarang, Lemuru, Keabang, etc.
3	Sulaiman	47	Gill Net		15-20	No	10	23	3	7	340	43	Hiu, Cakarang, etc.
4	H. Masjid	49	Gill Net	1.5'	16-20	No	12	23	3	5	415	69	Hiu, Cakarang, etc.
5	Suwesudin	24	Pancing b.		05-10	No	5	7	2	18	201	13	Kerapu, Kakap, Tenggiri, etc.
6	Adi Muliadi	42	Pancing b.		05-11	No	5	7.5	2	17	297	17	Kerapu, Kakap, Tenggiri, etc.
7	Iwan	24	Bawal		16-07	No	4		2	25	111	4	Kerapu, Kakap, Tenggiri, etc.
8	Saleh	25	Pancing b.		17-07	No	4		2	25	25	13	Kerapu, Kakap, Tenggiri, etc.
9	Solo	32	Bawal		16-07	No	5	7.5	2	16	376	24	Kerapu, Kakap, Tenggiri, etc.
10	Safrudin	37	Bawal		16-09	No	6	7.5	2	16	359	22	Kerapu, Kakap, Tenggiri, etc.

LARANTIGA (09/02 - 10/03/2002)													
No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Alifius	37	Bagan	12x11m	18-06	Lamp	12	16	3	11	450	41	Layang, Tembang
2	Saleh Uzer	31	Purse Seine	400x30m/2.5'	05-17	No	10	22	8	16	970	61	Julung2, Cendro
3	Ibrahim Nerek	23	Purse Seine	250x50m/2.5'/1.5'	17-06	Lamp	12	30	8	14	5,835	417	Melus, Bedur, Mata Kemas
4	Musnin Rucis	35	Purse Seine	150x17m/2.5'	04-12	No	13	20	9	25	2,575	103	Julung2, Tembang
5	Mustapa Lembangulawa	33	Purse Seine	150x17m/2.5'	04-12	No	9	16	7	23	1,675	73	Julung2, Tembang
6	Syukur Leton	43	B. Gill Net	400x1.5m/2.5'	06-08	No	8	5.5	2	19	221	12	Mixed
7	Daeng Boris	26	B. Gill Net	400x1.5m/2.5'	02-09	No	8	5.5	2	12	40	3	Boronang, Kakap, Lemuru, Blijiang
8	Serfus D. I. G.	43	B. Gill Net	200x1m/1.5'	18-23/00-04	Rumpon	4	7	1	27	399	14	Melus, Layang, Tongkol, Kere, Siansang, etc.
9	Hans Labuan	35	B. Gill Net	200x1m/1.5'	04-02/16-24	Rumpon	4	7	2	26	177	7	Melu, Tongkol, Layang

SAGU (10/02 - 11/03/2002)													
No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Syanul	57	Purse Seine	240x27m/1'	05-11	No	12	16	9	29	9,580	368	Julung2
2	Jailani	21	F. Gill Net	450x1.5m/1.5'	05-12	No	8	3.5	1	29	1,034	37	Terbang, Julung2, Melus
3	Jainul	29	F. Gill Net	450x1.5m/1.5'-2.5'	04-30/16-07	No	8	7	1	27	992	37	Terbang, Batu
4	Asrain	34	B. Gill Net	360x1.5m/2.5'	06-12	No	12	16	3	28	29,613	1,058	Cendro, Keabang
5	Ibrahim Nur	31	B. Gill Net	360x1.5m/2.5'	17-05	No	5	5	2	28	585	21	Melus, Julung2, Tembang
6	La acu	54	B. Gill Net	20x1m/2'	02-07	No	5		1	10	271	27	

LABANALAJA (11/02 - 12/03/2002)													
No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Talbin Urang	36	Bagan	13x12m	18-06	Lamp	13	30	3	22	4,295	195	Layang, Tembang, Cumi2
2	Luhzan Jamil		Bagan			Lamp							(Unable to collect catch data sheet due to operation in T. Koneg)
3	Bakri H. Faher	40	Purse Seine	300x60m/1'	17-06	Rumpon	15	24	12	21	17,072	813	Layang, Tembang, Tongkol, Cumi2
4	Mansya Urang		Purse Seine										(Unable to collect catch data sheet due to operation in Lavoleda)
5	Abdon Kahar	31	Purse Seine	240x60m/1.5'	17-06	Lamp	12	24	5	21	11,716	559	Layang, Tembang, Tongkol, Keabang, Cumi2
6	Telip Saleh		Purse Seine										(Unable to collect catch data sheet due to operation in Lavoleda)
7	Baharudin	45	F. Gill Net	240x10m/3'	17-06	No	8	12	2	20	278	14	Tongkol, Keabang
8	Belasang Ali	30	F. Gill Net	300x10m/3'	17-06	No	7	5.5	2	20	278	14	Tongkol, Keabang
9	Sona Kuning	50	F. Gill Net	300x10m/3'	17-06	No	5	5	2	20	272	14	Tongkol, Keabang
10	Safrudin Bica	40	Pancing		17-06	No	6	6	2	23	314	14	Kerapu, Batu, Hiu, Ekor kening

## LEWOLERA (12/02 - 13/03/2002)

No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Yusnan Ferya	32	Roran	15x16m	18-06	Lamp	16	20	4	21	6,800	324	Larane, Luro, Kambang, Tembong
2	Basanudin	34	Roran	18x16m	18-06	Lamp	16	20	4	25	8,750	350	Larane, Ekor Kening, Melus, Tembong
3	Ahmad Bagja	39	Purse Seine	400x24m, 5'	17-06	Lamp	10.5	16	8	30	4,920	164	Tongkol, Larane, Melus
4	Umar H. Inhyr	38	Purse Seine	500x35m	17-06	Lamp	18	20	12	29	16,350	560	Larane, Tembong, Tongkol
5	Rudi Naryk	36	F. Gill net	600x7m 3'	17-06	No	6	5.5	1	30	383	13	Kembung, Tongkol
6	Ridwan Reza	39	F. Gill net	600x7m 3'	17-06	No	6	5.5	2	25	230	9	Kembung, Tongkol
7	Muhammad Nur	42	Hand-line		07-13	No	4	5.5	1	30	114	4	Peras, Tongkol
8	Diafer	28	Hand-line		06-15	No	4.5	3.5	1	28	171	6	Peras, Tongkol, Batu
9	Syaharudin	31	B. Handline		05-16	No	6	-	-	23	111	5	Tongkol, Peras, Kerang, Ekor kening
10	Ode Umar	40	B. Handline		08-13	No	6	-	-	30	250	8	Tongkol, Batu, Peras

## BALAUING (14/02 - 15/03/2002)

No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species	
1	Rusnan Hujid Lida'a	25	F. Gill net	18x12m, 5/1.75/2'	17-06	Rusnan	6	7	1	29	6,416	221	Larane	
2	Ahmad Malyi	36	F. Gill net	18x12m, 26/1.5/2'	17-08	Rusnan	5	7	1	7	140	20	Larane, Selar	
3	Baharudin Mahamad	31	F. Gill net	12x8m, 5/1.75/2'	15-06	Rusnan	7	7	1	19	1,280	104	Larane, Melus, Tuna, Cahayang	
4	Haji Marustu	53	Purse Seine	250x28m	07-14	No	13	23	10	27	2,150	80	Julung2	
5	Saleh Paji	37	Hand-line	E12-16	anytime	Rusnan	6	-	-	1	26	284	10	Batu, Tongkol, Cua12
6	Laila Usman	58	Hand-line		17-06	Rusnan	5	-	-	1	30	400	13	Larane, Selar, Tongkol
7	Misdar	32	Hand-line	B5-R, B9-12	17-07	Rusnan	5	-	-	29	858	30	Larane	

## LAWALERA (13/02 - 14/03/2002)

No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Gabriel Galubata	45	F. Gill net	500x2m, 5'	05-13	No	3	-	2	24	590	25	Terbang
2	Fransiskus Boli	43	F. Gill net	400x2m, 5'	05-12	No	3	-	1	23	560	24	Terbang
3	Yohanes Gaja	32	F. Gill net	300x2m, 5'	05-12	No	3	-	1	24	610	25	Terbang
4	Yohanes Sivo Kora	32	F. Gill net	400x2m, 5'	05-12	No	3	-	1	25	645	21	Terbang
5	Yohanes Nerek	24	Hand-line		05-11	No	3	-	1	25	700	28	Terbang
6	Yinson Labe	32	Hand-line		05-11	No	3	-	1	24	700	29	Terbang

## WAMBERKUNING (16/02 - 17/03/2002)

No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Baharudin	27	Purse Seine	240x18m	01-09	Rusnan	11	23	2	23	13,576	590	Larane, Selar, Kembung, Teri
2	H. Mulyana	50	Purse Seine	250x30m, 1.5'	03-09	Rusnan	14	33	12	30	8,224	274	Larane, Selar, Tongkol, Kembung
3	Hadijina	51	Purse Seine	300x30m	17-05	Rusnan	12	27	8	24	7,464	311	Lure
4	H. Abdulah Sahalin	46	Purse Seine	240x10m	16-05	No	10	20	7	16	1,742	109	Julung2, Centro, Tongkol, Tembong
5	H. Aleng	48	B. Gill net	150x6m, 2.5'	05-12	No	6	8	3	20	1,008	50	Selar kening, Kembung, Batu, etc.
6	Murcollis	30	F. Gill net	50x1.5m, 25/1.5'	05-12	No	6	8	-	12	160	13	Terbang
7	Murdin	23	Troll/Gill	480x2m, #8	06-19/18-04	No	7	5	2	4	10	3	Tongkol
8	Rifal Walibi	67	Hand-line	#7	05-09/15-18	No	5	-	-	30	150	5	Sruw, Tongkol
9	Ihah Mastin	32	Hand-line		05-11	No	5	1	1	18	64	4	Kerang, Kakap, Sruw, etc.
10	Geonar	30	Hand-line	Gill-net		No	5	-	2	0	0	0	(No operation due to out of fishing season. Working as one of)

## PAGA (18/02 - 19/03/2002)

No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Hajrin	29	Purse Seine	135x30m	05-18	No	10	23	9	23	14,170	616	Tembong, Larane, Selar, Julung2
2	Paulus Yago	55	Purse Seine	135x30m	05-18	Rusnan	10	23	9	27	6,892	248	Tembong, Julung
3	Fiheleng Wof	30	B. Gill-net	150x3m, 2/2.5'	17-07	No	3	5.5	2	30	1,759	59	Larane, Selar, Kembung, Batu
4	Yurengos Yoka		F. Gill-net	(Data sheet ves onl.)									
5	Paulus Dose	40	B. Gill-net	40x30m, 1.5'	17-06	Rusnan	11	35	3	30	1,600	60	Larane, Selar
6	Barusaji	30	Trolling	#4/5, #8/9	15-09	Rusnan	6	8	3	24	1,358	67	Tuna
7	Jawadin Osa	43	Trolling	20x6m, 5'	16-06	No	4	5.5	2	30	1,025	34	Tuna
8	Garis Dongo	63	Fix Gill-net	#5x30m, 1.5'	16-07	Rusnan	3.5	5	2	20	347	17	Larane, Selar
9	Kanisius Rosa	38	Fix Gill-net	#0x30m, 0.75/1'	16-08	Rusnan	3	3.5	3	30	3,476	116	Larane, Selar, Tuna, Tongkol
10	Yakobus Ebon	35	Fix Gill-net	#0x30m, 1.5'	16-08	Rusnan	3.5	5.5	2	29	946	47	Larane, Selar, Tuna
11	Hendrikus Nandes	38	Fix Gill-net	#0x30m, 1.75'	17-06	Rusnan	6	3.5	4	29	1,044	36	Larane, Selar
12	Yosef Mbena	53	B. Gill-net	120x2m, 2'	16-06	No	2.5	-	2	22	150	7	Selar, Kembung
13	Hania Rita	32	Hand-line	#6/8/9	16-06	Rusnan	3	-	2	28	1,875	67	Tuna

## BUNE (19/02 - 20/03/2002)

No.	Name of Boat Owner	Age	Type of fishing gear	Size of gear	Fishing time	FAD	Length of boat (m)	Engine of boat (hp)	No. of crew	No. of trips per month	Production per month (kg)	Production per trip (kg)	Fish Species
1	Pua Haji Abdurrahman	54	Purse Seine	315x15m	05-17	No	17	24	7	17	149	9	Julung2, Kembung
2	Gantol H. Rejab	32	Purse Seine	315x15m	05-15	No	12	16	1	21	2,343	112	Julung2, Tembong, Tongkol, Cahayang, Selar
3	Haji A. Pua Sulisman	59	Lampala	250x54m	17-06	No	16	23	10	9	861	96	Larane, Selar, Kembung
4	Mahabul Lou	40	B. Gill-net	500x6, 5m, 3'	17-06	No	4	8	1	18	66	4	Kerang, Kua, Kembung, Batu, Bandene
5	Muhammad Mahab	39	F. Gill-net	450x16m, 4'	17-06	No	7.5	16	2	11	148	11	Tongkol
6	Pua Abdul Bahsan	50	B. Hand-line	#5/6/7/8/10/18	16-08	No	4	3.5	-	4	162	20	Kembung, Kua, Larar
7	Amir Abdulah	48	B. Hand-line	#5/6/7/8/10/18	15-08	No	5	3.5	-	22	40	2	Larar, Tuna, Tangiri
8	Pua Abdul Rejab	38	B. Hand-line	#4-18	16-22	No	3	-	-	25	75	3	Merah, Kembung, etc.
9	Uzo Mahamad	50	B. Hand-line	#4-18	04-10	No	2.5	-	-	29	85	3	Merah, Larang merah, Batu
10	Ba Yua Numba	36	B. Hand-line	#4-18	15-07	No	3	-	-	23	88	4	Larar, Peri, Tongkol, Kembung
11	Abdul Haqid	40	B. Hand-line	#4-18	16-05	No	3	-	-	30	416	14	Larane, Kembung, Kakap, Kerang, Tuna
12	Hasanudin	58	Trolling	#2/4/17	19-05	No	3	-	-	30	0	0	Babi
13	Basir		Drumline	(No operation due to rough sea)									

Table 1-4. Fishermen's Log-Book Data (2)

NAWORADA (01/02 - 28/02/2002)																	
No.	Sales		Expenses		Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit			Income per month		
	Income (Rp)	Fuel for engine (Rp)	Fuel for lamp (Rp)	Fuel for lamp (Rp)								per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)		
1	1,018,000	350,000	0	0	0	2,000	60,000	0	0	0	422,000	596,000	49,667	298,000	149,000		
2	1,246,000	750,000	0	0	0	2,000	125,000	0	0	0	877,000	369,000	14,760	184,500	92,250		
3	1,816,000	690,000	0	0	0	80,500	120,000	0	23,000	0	913,500	902,500	39,239	451,250	225,625		
4	874,000	570,000	0	0	0	4,000	95,000	0	19,000	0	688,000	186,800	9,832	93,400	46,700		
5	660,000	130,000	0	0	0	2,000	32,500	0	0	0	164,500	495,500	38,115	247,750	0		
6	505,000	200,000	0	0	0	2,000	50,000	0	0	0	262,000	263,000	12,650	126,500	0		
7	621,000	0	0	5,000	55,500	80,000	0	0	0	0	140,500	480,500	30,031	240,250	0		
8	1,080,000	180,000	0	0	0	3,000	90,000	0	0	0	273,000	807,000	44,833	403,500	0		
9	12,773,500	1,355,000	0	0	0	450,000	1,040,000	0	0	0	2,855,000	9,918,500	381,481	4,959,250	291,721		
10	2,620,000	1,200,000	0	0	0	300,000	450,000	0	80,000	0	2,030,000	590,000	29,500	295,000	32,778		
11	10,715,000	1,560,000	0	0	0	600,000	975,000	0	780,000	0	3,915,000	6,800,000	261,538	3,400,000	225,667		
12	15,535,000	1,440,000	0	0	0	459,000	550,000	0	216,000	220,000	2,884,000	13,651,000	650,048	5,825,500	682,550		
13	4,850,000	1,125,000	0	0	0	2,000	337,500	0	75,000	0	1,539,500	3,310,500	220,700	1,655,250	206,905		
14	7,660,000	892,500	0	0	0	8,000	340,000	0	85,000	0	1,325,500	6,334,500	372,618	3,187,250	452,464		
15	6,735,000	1,560,000	0	0	0	22,000	520,000	0	130,000	0	2,232,000	4,503,000	173,115	2,250,000	281,313		
16	5,250,000	765,000	0	0	0	9,000	212,500	0	0	0	986,500	4,263,500	250,794	2,131,750	266,469		

KEWAGO (01/02 - 28/02/2002)																	
No.	Sales		Expenses		Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit			Income per month		
	Income (Rp)	Fuel for engine (Rp)	Fuel for lamp (Rp)	Fuel for lamp (Rp)								per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)		
1	5,475,000	285,000	195,000	0	0	0	2,035,000	0	0	0	2,516,000	2,959,000	184,838	2,959,000	136,567		
2																	
3	1,420,000	704,000	0	0	0	0	450,000	0	0	0	1,154,000	266,000	17,733	266,000	76,000		
4	2,210,000	1,007,000	0	0	0	0	250,000	495,000	167,000	0	1,919,000	291,000	19,400	291,000	45,900		
5	1,384,000	0	0	0	0	110,000	60,000	0	0	60,000	230,000	1,154,000	52,455	1,154,000	0		
6	639,500	0	0	0	0	33,000	60,500	0	5,000	0	2,500	91,000	648,500	23,848	548,500	0	
7	1,442,000	118,000	0	0	0	115,000	0	0	0	59,000	292,000	1,150,000	60,000	1,150,000	0		
8	1,787,000	260,000	0	0	0	125,000	125,000	0	0	20,000	620,000	1,267,000	60,680	1,267,000	0		
9	1,124,000	162,000	0	0	0	180,000	99,000	0	0	60,000	501,000	623,000	41,533	311,500	155,750		
10	1,120,000	136,000	0	0	0	197,000	65,000	0	0	82,000	480,000	640,000	46,714	320,000	160,000		

HULU (02/02 - 28/02/2002)																	
No.	Sales		Expenses		Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit			Income per month		
	Income (Rp)	Fuel for engine (Rp)	Fuel for lamp (Rp)	Fuel for lamp (Rp)								per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)		
1	4,105,000	350,000	0	0	0	325,000	320,000	1,760,000	0	0	2,745,000	1,360,000	85,000	1,360,000	175,000		
2	5,195,000	405,000	0	0	0	262,000	315,000	1,460,000	0	0	2,382,000	2,813,000	175,813	2,813,000	140,000		
3	480,000	120,000	11,000	0	0	70,000	70,000	100,000	0	0	371,000	109,000	16,571	109,000	33,333		
4	680,000	120,000	15,000	0	0	30,000	30,000	105,000	0	0	300,000	380,000	63,333	380,000	35,000		
5	1,770,000	90,000	45,000	0	0	35,500	43,000	30,000	0	0	293,500	1,476,500	92,281	1,476,500	40,000		
6	3,326,000	170,000	59,500	85,000	42,500	170,000	0	0	0	527,000	2,799,000	164,647	2,799,000	0			
7	1,387,500	0	66,000	46,000	85,500	198,000	250,000	561,500	0	0	1,207,000	180,500	7,220	180,500	0		
8	200,000	0	4,000	0	20,000	10,000	0	0	0	34,000	166,000	33,000	166,000	0			
9	2,265,000	150,000	32,000	80,000	320,000	160,000	0	0	0	752,000	1,513,000	94,583	1,513,000	0			
10	2,635,000	131,000	32,000	32,000	48,000	80,000	0	0	0	323,000	2,312,000	144,500	2,312,000	0			

LARANTURA (09/02 - 10/03/2002)																	
No.	Sales		Expenses		Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit			Income per month		
	Income (Rp)	Fuel for engine (Rp)	Fuel for lamp (Rp)	Fuel for lamp (Rp)								per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)		
1	801,000	15,000	60,000	0	0	60,000	90,000	0	0	15,800	240,500	660,500	60,043	330,250	110,083		
2	2,410,000	510,000	0	0	0	171,000	354,000	0	1,010,000	70,000	2,115,000	295,000	18,438	147,500	18,438		
3	9,785,000	840,000	70,000	0	0	129,000	350,000	0	28,000	0	1,417,000	8,348,000	596,288	4,174,000	521,750		
4	6,485,000	363,000	0	40,500	0	125,000	0	150,000	0	678,500	5,806,500	232,260	2,903,250	322,583			
5	3,325,000	390,000	0	27,500	0	115,000	0	137,000	0	668,500	2,656,500	115,457	1,327,750	189,679			
6	963,000	0	0	32,000	0	87,500	0	0	0	119,500	843,500	44,385	843,500	0			
7	440,600	0	0	3,500	0	41,000	0	0	0	44,500	396,100	33,000	396,100	0			
8	1,173,750	71,300	7,700	4,000	0	110,000	138,500	42,000	10,000	383,500	790,250	29,269	790,250	138,500			
9	296,500	60,950	14,400	0	0	24,000	85,000	50,000	20,000	0	254,350	42,150	1,621	42,150	25,000		

SAGU (10/02 - 11/03/2002)																	
No.	Sales		Expenses		Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit			Income per month		
	Income (Rp)	Fuel for engine (Rp)	Fuel for lamp (Rp)	Fuel for lamp (Rp)								per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)		
1	12,767,500	322,500	0	0	0	0	147,000	5,830,250	0	0	6,299,750	6,467,750	248,760	6,467,750	647,806		
2	1,629,500	267,500	0	0	0	83,000	105,000	0	23,000	42,500	521,000	1,108,500	39,589	1,108,500	0		
3	2,515,000	191,000	0	0	0	140,000	67,500	0	2,000	0	400,500	2,114,500	76,315	2,114,500	0		
4	21,225,000	2,209,000	0	570,000	980,000	790,000	775,000	0	0	0	5,324,000	15,901,000	567,893	15,901,000	258,333		
5	601,500	0	60,000	0	0	81,000	0	0	0	8,500	149,500	352,000	12,571	352,000	0		
6	974,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

LAWANLA JAYA (11/02 - 12/03/2002)																	
No.	Sales		Expenses		Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit			Income per month		
	Income (Rp)	Fuel for engine (Rp)	Fuel for lamp (Rp)	Fuel for lamp (Rp)								per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)		
1	10,685,000	900,000	220,000	0	0	220,000	220,000	0	32,000	67,000	1,659,000	9,026,000	410,273	4,513,000	1,504,333		
2																	
3	61,270,000	1,605,000	500,000	0	0	210,000	1,050,000	0	58,000	101,500	3,824,500	47,745,500	2,273,589	23,872,750	1,989,396		
4																	
5	36,352,500	840,000	210,000	0	0	420,000	840,000	0	26,500	69,500	2,406,000	33,946,500	1,616,500	16,974,250	1,885,917		
6																	
7	1,654,500	150,000	0	0	0	100,000	200,000	0	0	0	450,000	1,204,500	60,225	602,250	301,125		
8	1,573,000	0	0	0	0	200,000	100,000	0	6,000	16,000	322,000	1,251,000	62,550	625,500	312,750		
9	1,596,600	0	0	0	0	200,000	100,000	0	6,000	20,500	326,500	1,270,000	63,500	635,000	317,500		
10	1,882,500	138,000	0	0	0	115,000	230,000	0	4,000	19,500	506,500	1,376,000	69,826	688,000	344,000		

LEWOLERA (12/02 - 13/03/2002)

No.	Sales Income (Rp)	Expenses Fuel for engine (Rp)	Fuel for lamp (Rp)	Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)
1	4,975,000	392,000	295,200	0	490,000	105,000	0	99,000	10,500	1,391,700	3,583,300	170,633	1,791,650	447,913
2	6,120,000	114,000	237,805	0	180,000	175,000	0	14,000	100,000	826,805	5,293,195	211,740	2,416,748	601,687
3	7,550,000	965,000	760,000	0	450,000	1,080,000	0	0	3,245,000	4,305,000	143,500	2,152,800	209,003	
4	20,690,000	450,000	225,000	0	1,265,000	1,810,000	0	87,000	0	3,837,000	16,853,000	681,138	8,426,500	702,208
5	1,719,300	917,440	0	52,250	52,500	105,000	0	120,000	30,000	1,277,190	442,110	14,737	442,110	0
6	948,750	179,000	0	51,000	65,000	104,000	0	39,000	0	438,000	510,750	20,430	265,375	127,688
7	616,000	282,000	0	0	0	105,000	0	45,000	1,500	433,500	182,500	2,760	82,500	0
8	795,000	263,200	0	5,000	0	126,000	0	38,000	72,000	604,200	190,800	10,386	290,800	0
9	450,000	0	0	0	0	103,500	0	0	0	103,500	346,500	15,065	346,500	0
10	2,205,000	0	0	88,000	150,000	150,000	0	0	450,000	838,000	1,367,000	46,567	1,367,000	0

BALAUURING (14/02 - 15/03/2002)

No.	Sales Income (Rp)	Expenses Fuel for engine (Rp)	Fuel for lamp (Rp)	Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)
1	17,724,000	290,000	87,000	102,700	72,500	174,000	400,000	130,500	270,000	1,526,700	16,217,300	659,217	16,217,300	400,000
2	330,000	32,000	40,000	0	25,500	24,000	24,000	0	0	145,500	184,500	26,357	184,500	24,000
3	3,100,000	76,000	153,400	0	0	228,000	45,000	0	0	592,400	2,507,600	136,716	2,597,600	45,000
4	720,000	332,500	0	0	275,000	100,000	0	0	0	707,500	12,500	463	6,250	625
5	518,000	0	0	0	10,000	43,500	0	0	16,000	69,500	448,500	17,250	448,500	0
6	800,000	0	90,000	0	90,000	180,000	0	0	0	360,000	440,000	14,667	440,000	0
7	1,187,000	0	72,500	128,000	87,000	101,500	0	0	0	389,000	798,000	27,517	798,000	0

LAUALERA (13/02 - 14/03/2002)

No.	Sales Income (Rp)	Expenses Fuel for engine (Rp)	Fuel for lamp (Rp)	Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)
1	491,000	0	0	0	120,000	169,000	120,000	0	0	409,000	82,000	3,417	82,000	60,000
2	587,000	0	0	0	92,000	116,000	0	0	0	207,000	380,000	16,522	380,000	0
3	675,000	0	0	0	95,000	120,000	0	0	0	215,000	459,000	19,125	459,000	0
4	583,000	0	0	0	108,000	120,000	0	0	0	228,000	355,000	14,792	355,000	0
5	861,000	0	0	0	139,000	89,000	0	0	0	228,000	633,000	17,320	216,500	216,500
6	607,000	0	0	0	103,500	34,000	0	0	0	137,500	469,500	19,563	234,750	234,750

MAUWERE/WURING (16/02 - 17/03/2002)

No.	Sales Income (Rp)	Expenses Fuel for engine (Rp)	Fuel for lamp (Rp)	Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)
1	9,540,000	460,000	587,500	0	240,000	182,000	3,190,000	0	0	4,659,500	4,880,500	212,196	4,880,500	265,833
2	7,714,000	675,000	210,000	0	480,000	810,000	804,000	0	0	2,949,000	4,765,000	158,833	4,765,000	67,000
3	8,340,000	543,000	418,500	0	240,000	360,000	775,000	0	2,273,000	4,609,500	3,730,500	155,438	3,730,500	86,111
4	4,142,500	1,200,000	0	0	103,500	92,500	1,030,000	0	0	2,426,000	1,716,500	107,281	1,716,500	147,143
5	3,345,000	312,000	0	170,000	125,000	137,500	451,000	0	0	1,955,500	2,149,500	107,475	2,149,500	160,333
6	478,000	54,250	0	3,500	13,500	30,000	0	0	0	101,250	377,750	31,479	377,750	0
7	30,000	33,750	0	0	28,000	24,000	0	3,000	0	88,750	-58,750	-14,688	-58,750	0
8	1,800,000	0	0	0	0	22,500	0	0	0	22,500	1,777,500	59,250	1,777,500	0
9	297,000	0	0	0	7,500	30,000	0	0	0	37,500	259,500	17,300	259,500	0
10														

PAGA (18/02 - 19/03/2002)

No.	Sales Income (Rp)	Expenses Fuel for engine (Rp)	Fuel for lamp (Rp)	Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)
1	32,925,000	690,000	0	0	621,000	345,000	16,462,500	0	0	18,118,500	14,806,500	643,761	14,806,500	1,829,167
2	10,023,000	810,000	0	0	405,000	405,000	4,519,000	0	0	6,139,000	3,884,000	143,852	3,884,000	502,111
3	5,855,000	120,000	0	0	105,000	105,000	2,634,450	0	0	2,859,450	2,995,550	99,852	2,995,550	1,317,225
4														
5	6,831,000	225,000	90,000	0	210,000	300,000	0	0	0	825,000	6,006,000	200,200	3,003,000	1,001,000
6	5,430,000	180,000	108,000	0	180,000	480,000	65,000	0	0	1,013,000	4,417,000	184,042	2,208,500	767,833
7	2,230,000	300,000	60,000	0	210,000	225,000	0	0	0	795,000	1,435,000	47,833	717,500	358,750
8	1,315,000	200,000	60,000	0	140,000	100,000	0	0	0	500,000	815,000	40,750	407,500	203,750
9	21,820,000	240,000	240,000	0	450,000	600,000	9,447,000	0	2,560,000	13,537,000	8,283,000	276,100	8,283,000	3,149,000
10	3,810,000	130,000	96,000	0	101,000	138,250	1,302,900	0	600	1,768,750	2,041,250	102,063	2,041,250	651,450
11	4,680,000	120,000	82,000	0	192,500	370,000	0	0	385,000	1,129,500	3,550,500	122,431	1,775,250	443,813
12	782,000	0	0	0	131,500	219,500	299,000	0	0	650,000	132,000	6,000	132,000	149,500
13	5,087,000	184,000	66,000	0	91,000	195,000	0	0	0	526,000	4,561,000	162,893	2,280,500	1,140,250

ENDE (19/02 - 20/03/2002)

No.	Sales Income (Rp)	Expenses Fuel for engine (Rp)	Fuel for lamp (Rp)	Ice (Rp)	Food/water (Rp)	Cigaretts (Rp)	Wage to crew (Rp)	Transport cost (Rp)	Others (Rp)	Total (Rp)	Profit per month (Rp)	per trip (Rp)	per boat owner (Rp)	per crew (Rp)
1	403,500	255,000	0	0	51,500	44,500	0	0	3,000	354,000	39,500	2,324	19,750	2,821
2	8,090,000	667,000	0	0	460,000	345,000	0	115,000	0	1,587,000	6,503,000	309,667	3,251,500	464,500
3	4,528,000	212,500	42,000	0	157,000	52,000	0	8,000	29,000	590,500	4,027,500	447,500	2,013,750	201,375
4	840,000	0	23,800	0	42,500	105,000	0	56,000	0	227,300	212,700	11,817	212,700	0
5	340,000	195,000	45,500	0	60,000	50,000	62,500	0	0	415,000	-73,000	-5,214	-73,000	31,250
6	676,000	31,000	16,800	0	30,000	21,000	0	5,000	17,500	121,300	554,700	62,213	554,700	0
7	325,000	161,000	69,000	0	80,500	86,500	0	0	0	397,000	-72,000	-3,213	-72,000	0
8	278,500	0	50,000	31,500	132,500	81,500	83,500	0	0	379,000	-100,500	-4,020	-100,500	0
9	1,007,000	0	0	0	29,000	58,000	0	0	183,000	270,000	737,000	25,414	737,000	0
10	301,500	0	60,000	4,000	80,000	91,000	0	15,750	0	250,750	50,750	2,207	60,750	0
11	2,218,500	0	117,000	0	114,000	225,000	0	65,000	0	521,000	1,697,500	66,583	1,697,500	0
12	85,000	0	0	0	0	120,000	0	5,000	0	125,000	-40,000	-1,333	-40,000	0
13														



Table 1-5. No. of Fish Buyers / Retailers at Each Model Site

(1)-1 KAWORADA

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)				Dealing volume (kg/day)			No. of fresh fish buyers Fresh fish dealing capacity				
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion	
Less than 50kg	M	72	3.3	2	0	123	75	0	12%	10	382	4%	13%
	F	145	6.6	9	4	247	338	150	25%	21	769	8%	
50-100kg	M	54	2.5	3	1	184	225	75	9%	8	673	6%	19%
	F	113	5.1	8	0	385	600	0	20%	16	1,199	13%	
100-200kg	M	32	1.5	4	0	218	600	0	6%	5	679	7%	22%
	F	63	2.9	0	1	430	0	150	11%	9	1,337	15%	
Over 200kg	M	33	1.5	6	0	450	1,800	0	6%	5	1,401	15%	46%
	F	67	3.0	10	0	914	3,000	0	12%	9	2,844	31%	
Total	M	191	8.7	15	1	975	2,700	75	33%	27	3,035	33%	100%
	F	388	17.6	27	5	1,976	3,938	300	67%	55	6,150	67%	
M+F		579	26.3	42	6	2,951	6,638	375	100%	82	9,186	100%	

No. of days surveyed: 29 days  
 Numbers on the List: 47 persons  
 Observation in July 2001: 50 persons

(2)-1 KEMPO

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)				Dealing volume (kg/day)			No. of fresh fish buyers Fresh fish dealing capacity				
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion	
Less than 50kg	M	71	2.5	5	0	95	188	0	16%	23	860	10%	40%
	F	223	8.0	18	4	299	675	150	50%	72	2,703	30%	
50-100kg	M	35	1.3	2	0	94	150	0	8%	11	848	10%	29%
	F	70	2.5	4	0	188	300	0	16%	23	1,696	19%	
100-200kg	M	5	0.2	0	0	27	0	0	1%	2	242	3%	19%
	F	30	1.1	2	0	161	300	0	7%	10	1,454	16%	
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%	12%
	F	11	0.4	4	0	118	1,200	0	2%	4	1,066	12%	
Total	M	111	4.0	7	0	216	338	0	25%	36	1,950	22%	100%
	F	334	11.9	28	4	765	2,475	150	75%	108	6,917	78%	
M+F		445	16.9	35	4	980	2,813	150	100%	144	8,868	100%	

No. of days surveyed: 28 days  
 Numbers on the List: 42 persons  
 Observation in July 2001: 90 persons

(2)-2 HOU

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)				Dealing volume (kg/day)			No. of fresh fish buyers Fresh fish dealing capacity				
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion	
Less than 50kg	M	93	3.4	5	0	122	188	0	44%	12	456	36%	63%
	F	69	2.6	6	1	96	225	38	33%	9	338	27%	
50-100kg	M	29	1.1	2	0	81	150	0	14%	4	284	23%	37%
	F	18	0.7	2	0	50	150	0	9%	2	176	14%	
100-200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%	
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%	
Total	M	122	4.5	7	0	210	338	0	58%	16	740	59%	100%
	F	87	3.2	8	1	146	375	38	42%	11	614	41%	
M+F		209	7.7	15	1	356	713	38	100%	27	1,254	100%	

No. of days surveyed: 27 days  
 Numbers on the List: 51 persons  
 Observation in July 2001: 25 persons

(3)-1-1 LARANTUKA (Pasar Uluu)

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)				Dealing volume (kg/day)			No. of fresh fish buyers Fresh fish dealing capacity				
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion	
Less than 50kg	M	6	0.2	0	0	9	0	0	2%	1	53	1%	41%
	F	234	10.9	13	5	410	488	188	76%	67	2,517	40%	
50-100kg	M	2	0.1	0	0	5	0	0	1%	0	35	1%	10%
	F	32	1.2	8	0	92	600	0	9%	8	567	9%	
100-200kg	M	1	0.0	0	0	6	0	0	0%	0	35	1%	6%
	F	14	0.5	4	0	81	600	0	4%	3	496	8%	
Over 200kg	M	14	0.5	1	0	162	300	0	4%	3	993	16%	41%
	F	23	0.9	0	1	265	0	300	6%	5	1,631	26%	
Total	M	23	0.9	1	0	182	300	0	6%	5	1,117	18%	100%
	F	353	13.6	25	5	848	1,688	488	94%	83	5,211	82%	
M+F		376	14.5	26	5	1,030	1,988	488	100%	89	6,327	100%	

No. of days surveyed: 26 days  
 Numbers on the List: 30 persons  
 Observation in June 2: 50 persons

(3)-1-2 LAHAHALA JAYA

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)				Dealing volume (kg/day)			No. of fresh fish buyers Fresh fish dealing capacity				
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion	
Less than 50kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%	35%
	F	1,500	51.7	59	32	1,940	2,213	1,200	52%	38	1,434	35%	
50-100kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%	65%
	F	1,278	47.5	63	25	3,564	4,725	1,875	48%	35	2,634	65%	
100-200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%	
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%	
Total	M	0	0.0	0	0	0	0	0	0%	0	0	0%	100%
	F	2,878	99.2	122	57	5,503	6,938	3,075	100%	73	4,068	100%	
M+F		2,878	99.2	122	57	5,503	6,938	3,075	100%	73	4,068	100%	

No. of days surveyed: 29 days  
 Numbers on the List: 255 persons  
 Observation in June 2: 100 persons

## (3)-1-3 SAGU

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)						Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)			Dealing volume (kg/day)			No. of fresh fish buyers		Fresh fish dealing capacity		
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion
Less than 50kg	M	116	4.5	12	5	167	450	188	32%	13	475	32%
	F	245	9.4	15	2	353	563	76	68%	27	1,003	68%
50-100kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
100-200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	116	4.5	12	5	167	450	188	32%	13	475	32%
	F	245	9.4	15	2	353	563	76	68%	27	1,003	68%
	M+F	361	13.9	27	7	521	1,013	263	100%	39	1,478	100%

No. of days surveyed 26 days  
Numbers on the List 17 persons

Observation in June 2 30 persons

## (3)-2-1 LEWOLEBA

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)						Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)			Dealing volume (kg/day)			No. of fresh fish buyers		Fresh fish dealing capacity		
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion
Less than 50kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	472	16.3	19	17	610	713	638	39%	57	2,156	20%
50-100kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	530	18.3	19	14	1,371	1,425	1,050	44%	65	4,842	45%
100-200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	202	7.0	21	0	1,045	3,150	0	17%	25	3,691	35%
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	1,204	41.5	59	31	3,026	5,288	1,688	100%	147	10,689	100%
	M+F	1,204	41.5	59	31	3,026	5,288	1,688	100%	147	10,689	100%

No. of days surveyed 29 days  
Numbers on the List 34 persons

Observation in June 2 15 persons

## (3)-2-2 BALAIRING

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)						Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)			Dealing volume (kg/day)			No. of fresh fish buyers		Fresh fish dealing capacity		
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion
Less than 50kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	560	20.0	25	8	750	938	300	79%	12	449	65%
50-100kg	M	51	1.8	2	2	137	150	150	7%	1	82	12%
	F	98	3.5	4	2	263	300	150	14%	2	157	23%
100-200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	51	1.8	2	2	137	150	150	7%	1	82	12%
	F	658	23.5	29	10	1,013	1,238	450	93%	14	606	88%
	M+F	709	25.3	31	12	1,149	1,388	600	100%	15	688	100%

No. of days surveyed 28 days  
Numbers on the List 27 persons

Observation in June 2 20 persons

## (4)-1 MAJHERE (Najmati)

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)						Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)			Dealing volume (kg/day)			No. of fresh fish buyers		Fresh fish dealing capacity		
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion
Less than 50kg	M	719	24.0	32	16	899	1,200	600	31%	24	911	12%
	F	210	7.0	8	8	263	300	300	9%	7	266	4%
50-100kg	M	692	23.1	31	22	1,730	2,325	1,650	30%	23	1,753	23%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
100-200kg	M	509	17.0	22	12	2,545	3,300	1,800	22%	17	2,578	34%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Over 200kg	M	199	6.6	12	2	1,920	3,600	600	9%	7	2,016	21%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	2,119	70.6	97	52	7,164	10,425	4,650	91%	72	7,259	96%
	F	210	7.0	8	8	263	300	300	9%	7	266	4%
	M+F	2,329	77.6	105	60	7,426	10,725	4,950	100%	79	7,525	100%

No. of days surveyed 30 days  
Numbers on the List 115 persons

Observation in Aug. 2 80 persons

## (4)-2 PAGA/MAULO

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)						Planned Capacity in fishing seasons (Average)				
		No. of fish buyers (persons)			Dealing volume (kg/day)			No. of fresh fish buyers		Fresh fish dealing capacity		
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (psn.)	Vol. (kg/day)	Proportion
Less than 50kg	M	602	20.8	29	13	778	1,088	488	25%	9	349	15%
	F	204	7.0	21	4	264	788	150	8%	3	116	5%
50-100kg	M	1,200	41.4	64	17	3,103	4,800	1,275	49%	19	1,389	59%
	F	399	13.8	12	7	1,032	900	525	16%	5	462	19%
100-200kg	M	24	0.8	2	0	124	300	0	1%	0	56	2%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	1,826	63.0	95	30	4,006	6,188	1,763	75%	28	1,793	76%
	F	603	20.8	33	11	1,296	1,688	675	25%	9	580	24%
	M+F	2,429	83.8	128	41	5,302	7,875	2,438	100%	37	2,373	100%

No. of days surveyed 29 days  
Numbers on the List 126 persons

Observation in June 2 50 persons

(4)-3 ENDE (Mhargayani)

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)			
		No. of fish buyers (persons)				Dealing volume (kg/day)			No. of fresh fish buyers		Fresh fish dealing capacity	
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (pers.)	Vol. (kg/day)	Proportion
Less than 50kg	M	454	15.1	25	9	568	938	338	52%	66	2,083	28%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
50-100kg	M	314	10.5	19	6	785	1,425	450	36%	38	2,881	39%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
100-200kg	M	86	2.9	6	1	430	900	150	10%	11	1,578	21%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Over 200kg	M	23	0.8	4	0	230	1,200	0	3%	3	844	11%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	877	29.2	54	16	2,013	4,463	938	100%	107	7,386	100%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
H+F		877	29.2	54	16	2,013	4,463	938	100%	107	7,386	100%

No. of days surveyed 28 days  
Numbers on the List 82 persons

Observation in June 2 80 persons

(5)-1 BIMA (Pasar Pazi)

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)			
		No. of fish retailers (persons)				Dealing volume (kg/day)			No. of fresh fish retailers		Fresh fish dealing capacity	
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (pers.)	Vol. (kg/day)	Proportion
Less than 50kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	1,218	64.1	83	45	2,404	3,113	1,688	40%	79	2,960	21%
50-100kg	M	18	0.9	1	1	71	75	75	1%	1	87	1%
	F	1,436	75.6	91	42	5,668	6,825	3,180	47%	93	6,979	50%
100-200kg	M	17	0.9	1	1	134	150	150	1%	1	165	1%
	F	382	20.1	23	12	3,036	3,450	1,800	12%	25	3,713	27%
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	35	1.8	2	2	205	225	225	1%	2	253	2%
	F	3,036	159.8	197	69	11,088	13,388	6,638	99%	197	13,652	98%
H+F		3,071	161.6	199	71	11,293	13,613	6,863	100%	199	13,904	100%

No. of days surveyed 19 days  
Numbers on the List 199 persons

Observation in June 2 100 persons

(5)-2 BIMA (Pasar Sore)

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)			
		No. of fish retailers (persons)				Dealing volume (kg/day)			No. of fresh fish retailers		Fresh fish dealing capacity	
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (pers.)	Vol. (kg/day)	Proportion
Less than 50kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	130	6.8	7	6	257	263	225	40%	8	304	22%
50-100kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	157	8.3	10	8	620	750	600	49%	10	734	54%
100-200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	34	1.8	3	0	268	450	0	11%	2	318	23%
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	321	16.9	20	14	1,145	1,463	825	100%	20	1,355	100%
H+F		321	16.9	20	14	1,145	1,463	825	100%	20	1,355	100%

No. of days surveyed 19 days  
Numbers on the List 20 persons

Observation in June 2 10 persons

(5)-3 BOMPU (Pasar Dampu)

Dealing volume/day	Sex	Actual Survey Data (Feb. 2002)							Planned Capacity in fishing seasons (Average)			
		No. of fish retailers (persons)				Dealing volume (kg/day)			No. of fresh fish retailers		Fresh fish dealing capacity	
		Total No.	Average/day	Max./day	Min./day	Average	Max.	Min.	Proportion	No. (pers.)	Vol. (kg/day)	Proportion
Less than 50kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	338	12.1	20	7	453	750	263	71%	107	4,003	50%
50-100kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	107	3.8	6	2	287	450	150	23%	34	2,534	32%
100-200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	30	1.1	3	0	161	450	0	6%	9	1,421	18%
Over 200kg	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	0	0.0	0	0	0	0	0	0%	0	0	0%
Total	M	0	0.0	0	0	0	0	0	0%	0	0	0%
	F	475	17.0	29	9	900	1,650	413	100%	150	7,958	100%
H+F		475	17.0	29	9	900	1,650	413	100%	150	7,958	100%

No. of days surveyed 28 days  
Numbers on the List 26 persons

Observation in June 2 150 persons

Table 1-6. No. of Fishing Boats and Fish Buyers on the Survey List  
(Based on the survey in Feb. – Mar. 2002)

1. Waworada (Kab. Bima)

(1) Fishing Boats

Place of Living	Purse Seine	Bagan L.	Bagan P.	Gill Net	Handline	Compreser	Total
Rompo	44	-	2	14	25	4	89
Rimba	-	22	-	-	4	-	26
Doroo	-	-	-	-	3	-	3
Total	44	22	2	14	32	4	118

(2) Fish Buyers

Type of buyers	Place of living	Place for fish selling				Total
		Tente	Sila	Waworada	Outside	
Village women	Tente	3	-	-	-	3
	Ngali	3	-	-	-	3
	Waworada	1	-	-	-	1
	Neera	3	-	-	-	4
	Sila	-	4	-	-	5
	Pali Pena	1	-	-	-	1
	Lida	1	-	-	-	1
Collecting boats	Waworada	-	-	30	-	30
Fish collectors	Waworada	-	-	-	3	3
Total		13	4	30	3	50

2. Kempo (Kab. Dompu)

(1) Fishing Boats

Place of Living	Purse Seine	Bagan L.	Gill Net	Handline	Total
Soro Timur	-	6	1	-	7
Soro Tengah	-	4	8	8	20
Soro Barat	4	1	1	-	6
Total	4	11	10	8	33

(2) Fish Buyers

Type of buyers	Place of living	Place for fish selling			Total
		Bima	Dompu	Kempo	
Village women	Soro Timur	1	11	1	13
	Soro Tengah	2	4	-	6
	Soro Barat	8	16	-	24
Total		11	31	5	47

3. Hu'u (Kab. Dompu)

(1) Fishing Boats

Place of Living	Purse Seine	Gill Net	Handline	Total
Finis (Hu'u)	49	1	26	76

(2) Fish Buyers

Type of buyers	Place of living	Place for fish selling			Total
		Bima	Dompu	Sila	
Village women	Finis (Hu'u)	25	15	11	51

4. Larantuka (Kab. Flores Timur)

(1) Fishing Boats

Place of Living	Purse Seine	Gill Net / Handline	Total
Delang	2	11	13

Postoh	2	-	2
Lokea	2	-	2
Lamahala Jaya	3	-	3
Total	9	11	20

(2) Fish Buyers

Type of buyers	Place of living	Place for fish selling (Larantuka)
Village women	Lokea	6
	Postoh	1
	Ekasapta	1
	Others	12
Total		20

5. Lamahala Jaya (Kab. Flores Timur)

(1) Fishing Boats

Place of Living	Purse Seine	Bagan	Lampala	Gill net	Total
Lamahala Jaya	77	1	5	8	91

(2) Fish Buyers

Type of buyers	Place of living	Place for fish selling		
		Waiwerang	Pedamar	Total
Village women	Lamahala Jaya	116	139	255

6. Sagu (Kab. Flores Timur)

(1) Fishing Boats

Place of Living	Net	Handline	Total
Sagu	12	13	25

(2) Fish Buyers

Type of buyers	Place of living	Place for fish selling				Total
		Waiwerang	Koli	L. Bunga	Rebory	
Village women	Sagu	9	-	2	-	11
	K. Masang	-	3	-	-	3
	Others	-	2	-	1	3
Total		9	5	2	1	17

7. Lewoleba (Kab. Lembata)

(1) Fishing Boats

Place of Living	Bagan	Purse Seine	Gill net/handline	Total
Lewoleba	39	4	2	45

(2) Fish Buyers

Type of buyers	Place of living	Place for fish selling (Lewoleba)
Village women	Lewoleba	34

8. Balauring (Kab. Lembata)

(1) Fishing Boats

Place of Living	Jala lombo	Purse Seine	Gill net	Handline	Total
Balauring	1	2	21	10	34

(2) Fish Buyers

Type of buyers	Place of living	Place for fish selling (on the road)
Village women	Lewoleba	27

9. Lamalera (Kab. Lembata)

## (1) Fishing Boats

Place of Living	Gill net
Balauring	6

## (2) Fish Buyers

Type of buyers	Place of living	Place for fish selling (From house to house)
Village women	Lamalera	6

## 10. Maumere (Kab. Sikka)

## (1) Fishing Boats

Place of Living	Purse Seine	Gillnet/Handline	B. longline	Trolling	Total
Wuring	53	38	5	28	124

## (2) Fish Buyers (Total 94)

Type of buyers	Place of living	Place for fish selling	Place of living	Place for fish selling
		Kalimati		Kalimati
All kinds	W. Milok	2	Nita	1
	W. Rotang	4	I. Geang	1
	W. Oti	3	Nangafure	10
	Brai	1	Kt. Uneng	7
	Blatat	1	Kabor	43
	Nitune	1	W. Ria	3
	Kamey	1	Beru	5
	W. Pare	1	Wuring	5
	Kt. Baru	1	N. Meting	2
H. Gete	1	Natakoli	1	

## 11. Paga/Mauloo

## (1) Fishing Boats

Place of Living	Purse Seine	Fixed Gillnet	B. Gill net	F. Gill net	Trolling	Total
Paga	2	4	4	2	7	19

## (2) Fish Buyers

Type of buyers	Place of living	Place for fish selling (Pasar)
Small venders	Paga	10
	Others	5

## 12. Ende/P.Ende (Kab. Ende)

## (1) Fishing Boats

Place of Living	Purse Seine	Lampara	Gill net	Payang	Handline	Others	Total
Mbongawani	3	1	-	-	-	-	4
Rekun Lima	11	-	2	2	3	-	18
Paupanda	3	5	3	-	-	-	11
Tetandaru	5	-	4	-	2	-	11
Mautapaga	-	-	-	8	-	-	8
Pulau Ende	11	6	106	-	15	7	145

## (2) Fish Buyers

Type of buyers	Place of living	Place for fish selling (Pasar Mbongawani)
All kinds	Paupanda	30
	Mbongawani	7
	Rekun Lima	36
	Kota Ratu	7
	Onekore	1
	Waloare	1

Table 1-7. Conditions of Fishing Villages

1. Kab. Bima

(1) Kec. Langgule

Desa	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Waworada	Rompo	5 ( 5 )	311 ( 311 )	1	-	1 (184)
Karunbu	Rimba / Bugis	2 ( 2 )	114 ( 114 )	1	-	
	Soro Afu	4 ( 4 )	232 ( 232 )	-	-	
Karanpi	Karampi/ Siro	3 ( 3 )	125 ( 125 )	-	-	

2. Kab. Dompu

(1) Kec. Kempo

Desa	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Soro	Nciu	( 2 )	(445)	3	2	1 (440)
	Kajenje	( 2 )	(233)	2	2	
	Karama	( 2 )	(423)	3	2	

(2) Kec. Hu'u

Desa	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Hu'u	Labuhan	( 3 )	87 ( 13 )	-	-	1 (219)
	Sigi	( 2 )	105 ( 12 )	-	-	
	Mambon	( 3 )	160 ( 13 )	-	-	
	Finis	( 2 )	114 ( 30 )	-	-	
	Nanga Doro	( 2 )	80 ( 5 )	-	-	

3. Kab. Flores Timur

(1) Kec. Larantuka

Desa / Kel.	Desun	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Blepanama	Bama	9 ( . )	145 ( 89 )	-	-	1 (163)
Mokantarak	Mokantarak	12 ( . )	229 ( 46 )	2	-	
Lewoloba	Oka	7 ( . )	165 ( 29 )	2	-	
Lamawalang	Lamawalang	9 ( . )	148 ( 39 )	-	-	
Waibalun	Waibalun	16 ( . )	536 ( 289 )	5	16	
Lewolere	Lewolere	22 ( . )	466 ( 128 )	2	-	
Pantaibesar	Pantaibesar	11 ( . )	237 ( 15 )	1	-	
Larantuka	Larantuka	8 ( . )	205 ( 19 )	-	-	
Pohonsirih	Pohonsirih	6 ( . )	120 ( 9 )	-	-	
Lohayong	Lohayong	6 ( . )	108 ( 11 )	-	-	

Lokea	Lokea	8 ( )	280 ( 30)	1	-	
Postoh	Postoh	19 ( )	368 ( 58)	4	-	
Amagarapati	Amagarapati	16 ( )	375 ( 38)	3	-	
Ekasapta	Ekasapta	20 ( )	439 ( 75)	2	-	
Sarotari	Weri	14 ( )	351 ( 74)	-	-	
Tiwatobi	Delang	6 ( 6)	70 ( 70)	15	-	

(2) Kec. Adonara Timur

Desa / Kel.	Desun	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Lamahala Jaya	Lama	7 ( 7)	500 ( 365)	3	-	3 (220)
Sagu	Binongo	4 ( 1)	165 ( 64)	-	-	-
	Bajo	4 ( 4)	275 ( 275)	-	-	1 (48)

4. Kab. Lembata

(1) Kec. Nubatukan

Desa / Kel.	Desun	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
L. Utara	4	16 ( 9)	507 ( 87)	4	7	-
L. Tengah	4	4 ( 2)	285 ( 72)	49	5	1 (126)
L. Timur	4	3 ( 2)	507 (87)	1	5	-

(2) Kec. Omesuri

Desa / Kel.	Desun	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Balauring	3	9	107	3	4	-

(3) Kec. Wulandoni

Desa / Kel.	Desun	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Lamalera A	3	6	126	3	2	-
Lamalera B	4	11	158	4	2	-

5. Kab. Sikka

(1) Kec. Maumere

Desa / Kel.	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Kotadoi	Kotadoi 1 & 2	( )	273 ( 190)	2	1	-
Parumaan	Barat / Timur	( )	( 274)	2	1	-
Kotagete	Nele/Loane/ Nebura	( )	( 111)	3	1	-



## (2) Kec. Alok

Desa / Kel.	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Wolomarang	Wuring	26 ( 8 )	876 (151)	4	2	-
Wuring	Nangafure	28 ( 10 )	893 (200 )	3	1	-

## (3) Kec. Nita

Desa / Kel.	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Kolisla Magepanda	Waturia	27 ( 3 )	532 (120)	2	1	-

## (4) Kec. Paga

Desa / Kel.	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Paga	Paga	30 ( 15 )	928 ( 150 )	23	-	1 (80)
Mbengu	Mauloo	13 ( 10 )	537 ( 247 )	25	1	

## 6. Kab. Ende

## (1) Kec. Ende Selatan

Desa / Kel.	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Paupanda	Paupanda	8 ( 4 )	1,094 ( 750 )	31	-	1 (150)
	Rate	4 ( 4 )	75 ( 75 )	-	-	
	Kp. Baru	4 ( 2 )	165 ( 110 )	-	-	
Ruknlima	7	18 ( 7 )	1,075 ( 128 )	3	-	
Mbongawani	2	12 ( 3 )	929 ( 56 )	-	1	
Tetandala	Arubara	4 ( 4 )	183 ( 128 )	-	-	
Mautapaga	Bitta Beach	34 ( 28 )	1,342 ( 28 )	30	1	
Ipi		8 ( 8 )	336 ( 115 )	2	-	

## (2) Kec. Pulau Ende

Desa / Kel.	Desun Nelayan	No. of RT (No. of fishing RT)	Total No. of households (No. of fishing households)	No. of fisher's groups	No. of women's groups	Coops. (No. of members)
Pu'u Utara	3	12 ( 4 )	360 ( )	-	-	-
Aejeti	4	16 ( 16 )	364 ( 340 )	-	-	
Ndoriwoy	4	16 ( 16 )	307 ( 457 )	-	-	
Baderape	2	8 ( 2 )	360 ( 139 )	-	-	
Renderatuma	2	8 ( 4 )	230 ( 157 )	-	-	
Rorurunggu	3	12 ( 3 )	250 ( 120 )	1	-	

Table 1-8. Fish Price (Beach Price) at Each Model Site  
(Based on the Hearing from Fishermen)

(1) WAWORADA

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Sardin/Lem	Ciro	35	15,000	40,000	429	1,143	July-Aug.	Nov.-Mar.
Kembung	Dodo/Ronde	pc. (3pcs.)	-	-	4,500	7,500	July-Aug.	Nov.-Mar.
Layang	Laja	35	35,000	60,000	1,000	1,714	July-Aug.	Nov.-Mar.
Julung2	Oras	pc. (15pcs.)	100	200	1,500	3,000	July-Aug.	Nov.-Mar.
Teri putih		35	80,000	110,000	2,286	3,143	July-Aug.	Nov.-Mar.
Tongkol	Tankara	pc. (3pcs.)	-	-	2,100	4,600	July-Aug.	Nov.-Mar.

(2)-1 KEMPO

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Sardin/Lem	Ciro	40	25,000	100,000	625	2,500	Nov.-Apr.	May-Oct.
Kembung	Dodo/Ronde	40	100,000	200,000	2,500	5,000	Nov.-Apr.	May-Oct.
Layang	Laja	40	40,000	100,000	1,000	2,500	Nov.-Apr.	May-Oct.
Peperek	Kapela	40	50,000	80,000	1,250	2,000	Nov.-Apr.	May-Oct.
Selar	Boto2	40	70,000	120,000	1,750	3,000	Nov.-Apr.	May-Oct.
Tembang	Temba	40	15,000	50,000	375	1,250	Nov.-Apr.	May-Oct.

(2)-2 HU'U

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Sardin/Lem	Ciro	6	5,000	20,000	833	3,333	May-July	Dec.-Feb.
Julung2	Oras	pc. (15pcs.)	100	250	1,500	3,750	May-July	Dec.-Feb.
Tongkol	Tankara	pc. (2pcs./)	1,000	2,000	2,000	4,000	May-July	Dec.-Feb.
Tongkol	Tankara	pc. (4pcs./)	500	1,000	2,000	4,000	May-July	Dec.-Feb.
Cakarang		pc. (4kg/pc.)	12,000	20,000	3,000	5,000	May-July	Dec.-Feb.
Dorphinfish	Bengkolo	1	-	-	3,500	-	-	-
Kerapu (local)		1	-	-	5,000	-	Stable price	-
Kerapu (for export)		1	-	-	25,000	-	Stable price	-
Kakap		1	-	-	6,000	-	Stable price	-
Sirup		1	-	-	300,000	600,000	By Quality	-

(3)-1-1 LARANTUKA

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Julung2	Sembe	pc. (10pcs/)	2,500	4,000	2,500	4,000	3-5/10-12	1-2/6-8

(3)-1-2 LAMAHALA JAYA

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Kembung		pc. (3pcs./)	1,500	2,500	4,500	7,500	Apr.-Nov.	Dec.-Mar.
Layang	Bedu	30	50,000	100,000	1,667	3,333	Apr.-Nov.	Dec.-Mar.
Tembang		30	50,000	100,000	1,667	3,333	Apr.-Nov.	Dec.-Mar.
Tongkol		pc. (1pc./kg)	1,000	2,000	1,000	2,000	Jul.-Nov.	Dec.-Mar.

(3)-1-3 SAGU

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Julung2	Sembe	10 pcs.kg	1,000	7,500	1,000	7,500	Mar-Apr	May-Feb
Terbang		10 pcs. (1.)	3,500	7,500	2,333	5,000	Mar-Apr	May-Feb

## (3)-2-1 LEWOLEBA

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Sardin								
Kembung		pc. (3pcs/kg)	1,500	3,000	4,500	9,000	Nov-Apr	May-Oct
Layang k.		50	35,000	100,000	700	2,000	Nov-Apr	May-Oct
Layang b.		50	60,000	150,000	1,200	3,000	Nov-Apr	May-Oct
Tembang		50	10,000	50,000	200	1,000	Nov-Apr	May-Oct
Teri putih		50	50,000	120,000	1,000	2,400	Nov-Apr	May-Oct

## (3)-2-2 BALAURING

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Layang k.		pc. (30g/pc.)	50	-	1,650	-	Jan.-Mar.	-
Layang b.		pc. (7pcs/kg)	143	667	1,000	4,667	Oct.-Apr.	May-Sep.
Selar		10pcs (30g/)	500	1,000	1,650	3,300		
Terbang		pc. (5pcs/kg)	250	400	1,250	2,000	Nov.-Mar.	Apr.-Oct.
Tongkol k.		10pcs. (kg)	1,000	-	1,000	-	Feb.-Mar.	-
Tongkol b.		pc. (2pcs/kg)	625	1,667	1,250	3,333	Sep.-Mar.	Mar.-Aug.
Cakarang		pc. (5kg)	10,000		2,000			
Tuna		pc. (5kg)	12,500	15,000	2,500	3,000		
Cendro	Tuda	pc. (500g)	1,000	2,000	2,000	4,000	Nov.-Mar.	Apr.-Oct.

## (3)-2-3 LAMALERA

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Terbang		5pcs. (kg)	1,000	1,000	1,000	1,000		

## (4)-1-1 MAUMERE/WURING

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Kembung		12	25,000	150,000	2,083	12,500	Dec-Apr	May-Nov
Layang k.		12	25,000	175,000	2,083	14,583	Dec-Apr	May-Nov
Selar k.		12	25,000	150,000	2,083	12,500	Dec-Apr	May-Nov
Julung2	Nibe	pc. (10pcs.	50	150	500	1,500	Feb-July	
Lure		12	3,000	25,000	250	2,083	Feb-Apr	
Terbang		pc. (7pcs/kg)	50	250	350	1,750	Dec-Apr	May-Nov
Tongkol k.		12	1,000	30,000	83	2,500	Mar-May	
Cakarang		pc. (3kg)	3,000	15,000	1,000	5,000	Dec-Apr	May-Nov
Kerapu (alive)		1	60,000		60,000			
Kerapu (fresh)		1	25,000		25,000			

## (4)-1-2 PAGA

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Kembung		3pcs. (kg)	5,000	5,000			Mar-Apr	
Layang k.		40pcs. (15/	7,500	15,000	2,813	5,625	Apr.	Nov.-Dec.
Layang b.		40pcs. (7/kg)	20,000	30,000	3,500	5,250	Apr.	Nov.-Dec.
Selar k.		40pcs. (10/	5,000	15,000	1,250	3,750	Apr.	Nov.-Dec.
Selar b.		40pcs. (7/kg)	15,000	17,500	2,625	3,063	Apr.	Nov.-Dec.
Tongkol k.		4pcs. (kg)	2,000	2,500	2,000	2,500	July-Aug	
Tongkol b.		pc. (kg)	2,500	5,000	1,667	3,333	July-Aug	

## (4)-2 ENDE

Indonesian Name	Local Name	Weight per unit (kg)	Beach Price per Unit		Beach Price per kg		Price by Seasons	
			Low	High	Low	High	Low	High
Kembung		kg			3,500	4,000		
Layang k.		kg			3,000	5,000	Jun.-Aug.	Dec.-Mar.
Layang b.		kg			3,000	5,000	Jun.-Aug.	Dec.-Mar.
Tembang		kg			1,000	2,500	Jun.-Aug.	Dec.-Mar.
Julung2	Nibe	kg			1,000	2,500	Jun.-Aug.	Dec.-Mar.
Terbang		kg			1,000	2,500	Jun.-Aug.	Dec.-Mar.
Tongkol k.		kg			1,500	2,500	Jun.-Aug.	Dec.-Mar.
Tongkol b.		kg			2,500	3,000	Jun.-Aug.	Dec.-Mar.
Cakarang		kg			2,000	8,000	Jun.-Aug.	Dec.-Mar.
Tuna		kg			2,000	8,000	Jun.-Aug.	Dec.-Mar.
Kakap		kg			6,000	12,000	Jun.-Aug.	Dec.-Mar.

Table 1-9. Composition of Fish Species at Priority Areas  
(Statistic Data on Sub-District Base)

(1) By volume (ton)

Fish Species	Waworada (Langgulu)	Keapo (Keapo)	Hu'u (Hu'u)	Hauwere (Alok)	Paga (Paga)	Paupanda (Ende Selatan)	Oka (Larantuka)	Lawahala (Adonara I.)	Lewoleba (Nubatukan)	Balauring (Omesuri)
Layang	1,156	103	168	221	52	619	0	0	0	0
Teri	1,631	0	0	197	8	0	224	3	7	11
Tembang/Lemuru/Sardine	1,238	680	5	62	11	114	14	81	0	0
Kembung	844	457	4	72	36	244	106	159	8	7
Peperok	81	416	143	4	2	58	281	51	6	5
Selar	161	25	13	349	73	106	153	253	7	3
Julung2	153	28	14	36	8	170	38	101	5	4
Terbang	0	0	0	96	8	54	18	18	2	5
Tongkol	386	151	285	104	18	716	559	595	9	8
Cakarang	250	24	234	2,363	38	411	537	189		
Tuna	144	13	236	640	17	273				
Tenggiri	126	27	13	8	3	40	20	26	6	4
Layur/Layaran	450	6	258	4	2	284				
Alu2	9	0	0	3	1	0	4	2	8	5
Other Pelagics	123		59	20	8	465	457	830	37	14
Kakap/Merah/Kerapu				118	25	176	48	52	28	15
Ekor kening				21	2	83	68	40	10	8
Kuwe	38	66	16	3	2					
Pari/Hiu/Cucut		19	55	9	6	324	10	21	7	7
Other demersals		396	101	19	7					
Udang			373	5	1					
Cumi2/Gurita	413		0	18	3		0	18		
Rumput Laut	0		114							
Penyu				2	1					
Total	6,779	2,411	1,603	4,247	327	4,160	2,537	2,420	141	96

(2) By Percentage (%)

Fish Species	Waworada (Langgulu)	Keapo (Keapo)	Hu'u (Hu'u)	Hauwere (Alok)	Paga (Paga)	Paupanda (Ende Selatan)	Oka (Larantuka)	Lawahala (Adonara I.)	Lewoleba (Nubatukan)	Balauring (Omesuri)
Layang	15%	4%	10%	5%	16%	15%	0%	0%	0%	0%
Teri	24%	0%	0%	5%	2%	0%	3%	0%	5%	12%
Tembang/Lemuru/Sardine	18%	25%	0%	1%	3%	3%	1%	3%	0%	0%
Kembung	12%	19%	0%	2%	11%	6%	4%	7%	6%	7%
Peperok	1%	17%	9%	0%	1%	1%	11%	2%	4%	5%
Selar	2%	1%	1%	8%	22%	3%	6%	10%	5%	3%
Julung2	2%	1%	1%	1%	3%	4%	1%	4%	4%	4%
Terbang	0%	0%	0%	2%	3%	1%	1%	1%	2%	6%
Tongkol	6%	6%	18%	2%	6%	17%	22%	25%	7%	9%
Cakarang	4%	1%	15%	56%	12%	10%	21%	8%	0%	0%
Tuna	2%	1%	15%	13%	6%	7%	0%	0%	0%	0%
Tenggiri	2%	1%	1%	0%	1%	1%	1%	1%	4%	4%
Layur/Layaran	7%	0%	16%	0%	1%	7%	0%	0%	0%	0%
Alu2	0%	0%	0%	0%	0%	0%	0%	0%	6%	5%
Other Pelagics	2%	0%	4%	0%	3%	12%	18%	34%	27%	14%
Kakap/Merah/Kerapu	0%	0%	0%	3%	8%	4%	2%	2%	20%	16%
Ekor kening	0%	0%	0%	0%	1%	2%	3%	2%	7%	8%
Kuwe	1%	3%	1%	0%	1%	0%	0%	0%	0%	0%
Pari/Hiu/Cucut	0%	1%	3%	0%	2%	8%	0%	1%	5%	7%
Other demersals	0%	16%	6%	0%	2%	0%	0%	0%	0%	0%
Udang	0%	0%	23%	0%	0%	0%	0%	0%	0%	0%
Cumi2/Gurita	6%	0%	0%	0%	1%	0%	0%	1%	0%	0%
Rumput Laut	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%
Penyu	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total (Fin fish only)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 1-10. Estimated Number of Fishing Boats and Fish Landing Volume at Each Model Site

WAWORADA

Major fishing boats	Bagan (w/generator)		Bagan (w/Petromax)		Purse Seine				Gill Net/Hand-line		Collecting Boats	
	July-Feb.	Mar.-June	July-Feb.	Mar.-June	Jan.-Apr.	May-June	July-Aug.	Sep.-Dec.	Nov.-Apr.	May-Oct.	July-Feb.	Mar.-June
Seasons	300	600	150	300	200	300	400	300	15	30	220	440
Daily catch (kg/day/boat)												
No. of boat (units)	22		18		22		44		14		25	
Operating efficiency	0.60		0.60		0.34		0.88		0.72		0.85	
No. of boats entry per day	13		11		7		39		10		21	
Total daily catch (kg/day)	3,976	7,962	1,629	3,257	1,488	11,621	15,495	11,621	149	302	0	0
Daily landing volume (kg/day)	663	1,327	271	543	1,488	11,621	15,495	11,621	149	302	4,670	9,349
No. of operable days/month	25	25	25	25	19	25	25	25	25	25	25	25
Landing volume per month (ton)	17	33	7	14	29	291	387	291	4	8	118	236
Operating months	8	4	8	4	4	2	2	4	6	6	8	4
Annual landing volume (ton/year)	267		109			2,632			68		1,884	
Total No. of boats entry (units/year)	4,013		3,283			8,319			3,044		6,425	

KEMPO

Major fishing boats	Bagan (w/generator)				Purse Seine				Gill Net		Collecting Boats			
	Jan.-Mar.	Apr.-May	June-Sep.	Oct.-Dec.	Jan.-Mar.	Apr.-May	June-Sep.	Oct.-Dec.	Oct.-May	June-Sep.	Jan.-Mar.	Apr.-May	June-Sep.	Oct.-Dec.
Seasons	125	250	500	250	250	375	500	375	100	150	89	241	430	241
Daily catch (kg/day/boat)														
No. of boat (units)			33				10			14			80	
Operating efficiency	0.61		0.95		0.71		1.00		0.72				0.50	
No. of boats entry per day	20		31		7		10		10				10	
Total daily catch (kg/day)	2,517	7,830	15,659	7,830	1,766	3,750	5,000	3,750	1,007	1,510	0	0	0	0
Daily landing volume (kg/day)	419	1,305	2,610	1,305	294	625	833	625	1,007	1,510	3,569	9,650	17,216	9,650
No. of operable days/month	16	25	25	25	17	25	25	25	27	27	17	25	25	25
Landing volume per month (ton)	7	33	65	33	5	16	21	16	27	40	59	241	130	241
No. of months	3	2	4	3	3	2	4	3	3	4	3	2	4	3
Annual landing volume (ton/year)		444				177			377				3,105	
Total No. of boats entry (units/year)		8,017				2,613			3,235				10,993	

III'U

Major fishing boats	Purse Seine				Gill Net				Hand-line	
	Dec.-Feb.	Mar.-Apr.	May-Jul.	Aug.-Nov.	Dec.-Feb.	Mar.-Apr.	May-Jul.	Aug.-Nov.	Feb.-Aug.	Sep.-Jan.
Seasons	250	375	500	375	50	75	100	75	35	35
Daily catch (kg/day/boat)										
No. of boat (units)	4		14			3			6	
Operating efficiency	0.86		0.86			1.00			1.00	
No. of boats entry per day	3		12			3			6	
Total daily catch (kg/day)	855	4,490	5,987	4,490	150	225	300	225	210	210
No. of operable days/month	21	25	25	25	10	25	25	25	29	29
Landing volume per month (ton)	18	112	150	112	2	8	8	6	6	6
No. of months	3	2	3	4	3	2	3	4	7	5
Annual landing volume (ton/year)		1,177				61			73	
Total No. of boats entry (units/year)		2,911				755			2,080	

LARANTUKA

Major fishing boats	Bagan (w/Petromax)			Purse Seine				Hand-line/Gill Net			
	Dec.-Feb.	Mar.-May	June-Aug.	Sep.-Nov.	Dec.-Feb.	Mar.-May	June-Aug.	Sep.-Nov.	Dec.-Mar.	Apr.-May	June-Nov.
Seasons	50	150	100	150	150	300	250	300	30	60	30
Daily catch (kg/day/boat)											
No. of boat (units)			26		10		35			30	
Operating efficiency	0.32		0.81		0.40		0.81			0.09	
No. of boats entry per day	8		21		4		28			3	
Total daily catch (kg/day)	420	3,150	2,100	3,150	606	8,481	7,067	8,481	83	165	83
No. of operable days/month	10	25	25	25	26	26	26	25	25	25	25
Landing volume per month (ton)	4	79	53	79	16	221	184	221	2	4	2
No. of months	3	3	3	3	3	3	3	3	4	2	6
Annual landing volume (ton/year)		643				1,922			29		
Total No. of boats entry (units/year)		4,977				6,930			825		

AI-27

LAMAHALA JAYA

Major fishing boats	Bagan (w/Petromax)		Purse Seine				F. Gill Net	
	Nov.-Jun.	Jul.-Oct.	Nov.-Feb.	Mar.-May	June-Aug.	Sep.-Oct.	Nov.-Mar.	Apr.-Oct.
Seasons								
Daily catch (kg/day/boat)	100	200	200	400	300	400	15	30
No. of boat (units)	2		82		52		10	
Operating efficiency	0.52		0.38		0.77		0.70	
No. of boats entry per day	1		32		40		7	
Total daily catch (kg/day)	104	208	6,310	12,621	9,468	12,621	105	210
No. of operatable days/month	24	24	27	27	27	27	23	23
Landing volume per month (ton)	3	5	172	343	257	343	2	5
No. of months	7	5	4	3	3	2	5	7
Annual landing volume (ton/year)	43			3,174			47	
Total No. of boats entry (units/year)	304			12,135			1,969	

SAGU

Major fishing boats	Bagan (w/Petromax)		Purse Seine		E. Gill Net		Hand-line/Trolling			
	Sep.-Mar.	Apr.-Aug.	Sep.-Mar.	Apr.-Aug.	Sep.-Mar.	Apr.-Aug.	Dec.-Feb.	Mar.-May	June-Aug.	Sep.-Nov.
Seasons										
Daily catch (kg/day/boat)	200	100	300	150	30	15	5	10	5	10
No. of boat (units)	5	2	6		10				11	
Operating efficiency	0.88		0.63		0.63				0.62	
No. of boats entry per day	4	2	4		6				7	
Total daily catch (kg/day)	882	441	1,134	567	189	95	34	68	34	68
No. of operatable days/month	25	25	25	25	29	29	29	29	29	29
Landing volume per month (ton)	22	11	28	14	5	3	1	2	1	2
No. of months	7	5	7	5	7	5	3	3	3	3
Annual landing volume (ton/year)	212		269		52				18	
Total No. of boats entry (units/year)	1,004		1,134		2,181				2,367	

LEWOLEBA

Major fishing boats	Bagan (w/Petromax)		Purse Seine			Gill Net		Hand-line/Trolling			
	Dec.-Mar.	Apr.-Nov.	Jan.-Apr.	May-Jul	Aug.-Dec.	Nov.-Mar.	Apr.-Oct.	Dec.-Feb.	Mar.-May	June-Aug.	Sep.-Nov.
Seasons											
Daily catch (kg/day/boat)	150	100	200	300	200	10	5	5	10	5	10
No. of boat (units)	47		3	7		10				2	
Operating efficiency	0.99			0.65		1.00				1.00	
No. of boats entry per day	46		2	5		10				2	
Total daily catch (kg/day)	6,946	4,631	390	585	390	100	50	10	20	10	20
No. of operatable days/month	24	24	30	30	30	29	29	5	29	29	29
Landing volume per month (ton)	169	113	12	18	12	3	1	0	1	0	1
No. of months	4	8	4	2	6	5	7	3	3	3	3
Annual landing volume (ton/year)	1,580			152		25			5		
Total No. of boats entry (units/year)	13,545			1,326		3,488			551		

BALURING

Major fishing boats	Purse Seine		Gill Net		Hand-line/Trolling			
	Sep.-Feb.	Mar.-Aug.	Sep.-Apr.	May-Aug.	Dec.-Feb.	Mar.-May	June-Aug.	Sep.-Nov.
Seasons								
Daily catch (kg/day/boat)	200	100	100	50	20	40	20	80
No. of boat (units)	2	3	7			14		
Operating efficiency	0.94		0.63			0.63		
No. of boats entry per day	2	3	4			9		
Total daily catch (kg/day)	375	188	441	221	177	353	177	706
No. of operatable days/month	30	30	30	30	30	30	30	30
Landing volume per month (ton)	11	6	13	7	5	11	5	21
No. of months	6	6	8	4	3	3	3	3
Annual landing volume (ton/year)	101		132			127		
Total No. of boats entry (units/year)	845		1,589			3,178		

IAMALERA

Major fishing boats	Whaler (Harpon)		Gill Net			Gill Net/land-line (no motor)		
	May-Oct.	Nov.-Apr.	Nov.-Apr.	May-Jul.	Aug.-Oct.	Nov.-Apr.	May-Jul.	Aug.-Oct.
Seasons								
Daily catch (kg/day/boat)	125	0	50	75	100	25	38	50
No. of boat (units)	20			11			40	
Operating efficiency	1.00	0.00		0.50			0.50	
No. of boats entry per day	1	0		6			20	
Total daily catch (kg/day)	2,500	0	275	413	550	500	750	1,000
No. of operable days/month	20	0	25	10	10	25	10	10
Landing volume per month (ton)	50	0	7	4	6	13	8	10
No. of months	6	0	6	3	3	6	3	3
Annual landing volume (ton/year)	300			70			128	
Total No. of boats entry (units/year)	80			1,155			4,200	

MALMERE/WURING

Major fishing boats	Purse Seine				Gill Net		Hand-line	Collecting boats				
	Mar.-May	June-July	Aug.-Nov.	Dec.-Feb.	Mar.-July	Aug.-Feb.		All season	Mar.-May	June-July	Aug.-Nov.	Dec.-Feb.
Seasons												
Daily catch (kg/day/boat)	300	200	300	150	50	25	5	300	200	300	200	
No. of boat (units)		54				24	47			19		
Operating efficiency		0.54				0.13	0.06			0.44		
No. of boats entry per day		29				3	3			8		
Total daily catch (kg/day)	8,669	5,779	8,669	4,334	153	76	14	2,503	1,669	2,503	1,669	
No. of operable days/month	29	29	29	29	19	19	23	29	29	29	29	
Landing volume per month (ton)	251	168	251	126	3	1	0	73	48	73	48	
No. of months	3	2	4	3	5	7	12	3	2	4	3	
Annual landing volume (ton/year)		2,472				15	4			750		
Total No. of boats entry (units/year)		10,056				290	756			2,904		

PAGA/MAULOO

Major fishing boats	Purse Seine				Gill Net		Gill Net (w/FAD)		Trolling		
	Dec.-Feb.	Mar.-Apr.	May-Aug.	Sep.-Nov.	Sep.-Apr.	May-Aug.	Dec.-May	June-Nov.	Jan.-Apr.	May-Aug.	Sep.-Dec.
Seasons											
Daily catch (kg/day/boat)	150	300	200	300	50	75	50	25	40	20	10
No. of boat (units)		21				3		6		2	
Operating efficiency	0.34		0.69			1.00		1.00		1.00	
No. of boats entry per day	7		14			3		6		2	
Total daily catch (kg/day)	1,080	4,320	2,880	4,320	150	225	300	150	80	40	20
No. of operable days/month	21	30	25	30	30	30	30	30	30	30	30
Landing volume per month (ton)	22	130	72	130	5	7	9	5	2	1	1
No. of months	3	2	4	3	8	4	6	6	6	6	6
Annual landing volume (ton)		1,003				36		54		25	
Total No. of boats entry (units/year)		4,047				720		1,080		1,080	

ENDE

Major fishing boats	Purse Seine				Lampala				Gill Net/land-line			
	Dec.-Feb.	Mar.-Apr.	May-Aug.	Sep.-Nov.	Dec.-Feb.	Mar.-Apr.	May-Aug.	Sep.-Nov.	Dec.-Feb.	Mar.-Apr.	May-Aug.	Sep.-Nov.
Seasons												
Daily catch (kg/day/boat)	100	200	300	200	100	200	300	200	25	38	50	38
No. of boat (units) Ende Selatan		22					6				9	
		Pulau Ende					6		0		15	
Operating efficiency	0.11		0.69			0.32		0.69			0.60	
No. of boats entry per day	3		23			37		8		5	32	
Total daily catch (kg/day)	347	4,526	6,789	4,526	3,709	1,646	2,469	1,646	135	1,211	1,614	1,211
No. of operable days/month	17	30	25	30	18	30	25	30	25	25	25	25
Landing volume per month (ton)	6	136	170	136	68	49	62	49	3	30	41	30
No. of months	3	2	4	3	3	2	4	3	3	2	4	3
Annual landing volume (ton/year)		1,376					696				325	
Total No. of boats entry (units/year)		5,836					4,084				7,723	

Table 1-11. Estimated Monthly Fish Landing Volume at Each Model Site

(1) WAWORADA

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condition (No change with Project)	Bagan L.	17	17	25	33	33	33	25	17	17	17	17	17	267	22		
	Bagan P.	7	7	10	14	14	14	10	7	7	7	7	7	109	9		
	Purse Seine	29	29	160	291	291	291	387	387	291	291	291	160	2,894	241		
	Gill Net	4	4	4	4	8	8	8	8	8	8	4	4	68	6		
	Collect boat	118	118	177	236	236	236	177	118	118	118	118	118	1,884	157	H. V.	572
	Total	174	174	375	577	581	581	607	536	439	439	436	305	5,223	435	L. V.	150
	(exp. BG)	150	150	340	530	534	534	572	513	416	416	412	281	4,846	404	H. V. / L. V.	3.8

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	145	145	167	218	219	219	229	213	187	187	185	151	2,265	47%	Max. 286
	Processed	5	5	131	258	261	261	286	247	182	182	179	92	2,088	43%	Min. 143
	Unsold	0	0	42	54	55	55	57	53	47	47	47	38	494	10%	
Improved plan (with Project)	Fresh	150	150	228	229	229	229	229	229	229	229	229	213	2,573	53%	Max. 286
	Process (local)	0	0	112	255	257	257	286	242	169	169	166	68	1,981	41%	Min. 191
	Process (outside)	0	0	0	47	47	47	57	42	18	18	17	0	293	6%	

(2)-1 KEMPO

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condition (No change with Project)	Bagan L.	7	7	20	33	33	65	65	65	65	33	33	20	444	37		
	Purse Seine	5	5	10	16	16	21	21	21	21	16	16	10	177	15		
	Gill Net	27	27	27	27	27	40	40	40	40	27	27	27	377	31		
	Collect boat	59	59	150	241	241	430	430	430	430	241	241	150	3,106	259	H. V.	471
	Total	98	98	207	316	316	557	557	557	557	316	316	207	4,104	342	L. V.	86
		(exp. BG/PS)	86	86	177	268	268	471	471	471	471	268	268	177	3,483	290	H. V. / L. V.

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	86	86	110	134	134	188	188	188	188	134	134	110	1,683	48%	Max. 235
	Processed	0	0	40	100	100	235	235	235	235	100	100	40	1,423	41%	Min. 118
	Unsold	0	0	28	34	34	47	47	47	47	34	34	28	373	11%	
Improved plan (with Project)	Fresh	86	86	162	185	185	188	188	188	188	185	185	162	1,989	57%	Max. 235
	Process (local)	0	0	15	83	83	230	230	230	230	83	83	15	1,286	37%	Min. 157
	Process (outside)	0	0	0	0	0	52	52	52	52	0	0	0	208	6%	

(2)-2 HU'U

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condition (No change with Project)	Purse Seine	18	18	65	112	150	150	150	112	112	112	112	65	1,177	98		
	Gill Net	2	2	6	6	8	8	8	6	6	6	6	2	61	5	H. V.	163
	B. longline	6	6	6	6	6	6	6	6	6	6	6	6	73	6	L. V.	26
	Total	26	26	77	124	163	163	163	124	124	124	124	73	1,310	109	H. V. / L. V.	6.4

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	26	26	42	55	65	65	65	55	55	55	55	41	605	46%	Max. 82
	Processed	0	0	24	55	82	82	82	55	55	55	55	21	567	43%	Min. 41
	Unsold	0	0	11	14	16	16	16	14	14	14	14	10	138	11%	
Improved plan (with Project)	Fresh	26	26	60	65	65	65	65	65	65	65	65	59	689	53%	Max. 82
	Processed	0	0	17	42	61	61	61	42	42	42	42	14	424	32%	Min. 54
	Process (outside)	0	0	0	17	37	37	37	17	17	17	17	0	197	15%	



## (3)-1 LARANTUKA

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condit (No change with Project)	Bagan P.	4	4	41	79	79	53	53	53	79	79	79	41	643	54		
	Purse Seine	16	16	118	221	221	184	184	184	221	221	221	118	1,922	160	H. V.	303
	Gill Net	2	2	2	4	4	2	2	2	2	2	2	2	29	2	L. V.	22
	Total	22	22	162	303	303	238	238	238	301	301	301	162	2,593	216	H. V./L. V.	13.3

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condit (without Project)	Fresh	22	22	105	162	162	136	136	136	161	161	161	105	1,468	57%	Max. 202
	Processed	0	0	30	101	101	69	69	69	100	100	100	30	769	30%	Min. 101
	Unsold	0	0	26	40	40	34	34	34	40	40	40	26	356	14%	
Improved plan (with Project)	Fresh (Local)	22	22	155	162	162	162	162	162	162	162	162	155	1,649	64%	Max. 202
	Fresh (Outside)	0	0	0	40	40	17	17	17	39	39	39	0	250	10%	Min. 152
	Processed	0	0	7	101	101	60	60	60	100	100	100	7	693	27%	

## (3)-1-1 LAMAHALA JAYA

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condit (No change with Project)	Bagan P.	3	3	3	3	3	3	5	5	5	5	3	3	41	3		
	Purse Seine	172	172	343	343	343	257	257	257	343	343	343	343	3,517	293		
	Gill Net	2	2	2	5	5	5	5	5	5	5	2	2	47	4		
	Sub-Total	177	177	348	351	351	265	267	267	353	353	348	348	3,604	300		
	Direct selling to Sinjai boats on sea																H. V.
	Volume (ton)	71	71	139	140	140	106	107	107	141	141	139	139	1,440	120	L. V.	106
	Balance	106	106	209	211	211	159	161	161	212	212	209	209	2,164	180	H. V./L. V.	2.0

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condit (without Project)	Fresh	71	71	84	84	84	85	85	85	85	85	84	84	987	46%	Max. 106
	Processed	35	35	104	105	105	71	72	72	106	106	104	104	1,019	47%	Min. 53
	Unsold	0	0	21	21	21	4	4	4	21	21	21	21	158	7%	
Improved plan (with Project)	Fresh (Local)	80	80	85	85	85	85	85	85	85	85	85	85	1,008	47%	Max. 106
	Fresh (Outside)	27	27	20	21	21	19	18	18	21	21	20	20	252	12%	Min. 71
	Processed	0	0	104	105	105	55	58	58	106	106	104	104	904	42%	

## (3)-1-2 SAGU

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condit (No change with Project)	Bagan P.	22	22	22	11	11	11	11	11	22	22	22	22	212	18		
	Purse Seine	28	28	28	14	14	14	14	14	28	28	28	28	269	22		
	Gill Net	5	5	5	3	3	3	3	3	5	5	5	5	52	4	H. V.	58
	Handline	1	1	2	2	2	1	1	1	2	2	2	2	18	1	L. V.	29
	Total	57	57	58	30	30	29	29	29	58	58	58	58	551	46	H. V./L. V.	2.0

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condit (without Project)	Fresh	23	23	23	16	16	15	15	15	23	23	23	23	240	44%	Max. 29
	Processed	28	28	29	10	10	10	10	10	29	29	29	17	239	43%	Min. 15
	Unsold	6	6	6	4	4	4	4	4	6	6	6	6	71	13%	
Improved plan (with Project)	Fresh (Local)	23	23	23	22	22	22	22	22	23	23	23	23	272	49%	Max. 29
	Fresh (Outside)	34	34	3	0	0	0	0	0	3	3	3	3	83	15%	Min. 19
	Processed	0	0	32	8	8	7	7	7	32	32	32	31	196	36%	

## (3)-2 LEWOLEBA

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condition (No change with Project)	Bagan P.	169	169	169	141	113	113	113	113	113	113	113	141	1,580	132		
	Purse Seine	12	12	12	12	12	18	18	12	12	12	12	12	158	13		
	Gill Net	3	3	3	1	1	1	1	1	1	1	3	3	25	2	H.V.	185
	Handline	0	0	1	1	1	0	0	0	1	1	1	1	5	0	L.V.	126
	Total	184	184	185	155	132	132	132	126	127	127	128	156	1,767	147	H.V./L.V.	1.5

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	74	74	74	66	60	60	60	58	58	58	59	66	767	43%	Max. 92
	Processed	92	92	92	72	58	57	57	53	54	54	55	73	809	46%	Min. 46
	Unsold	18	18	18	16	15	15	15	15	15	15	15	17	192	11%	
Improved plan (with Project)	Fresh (Local)	74	74	74	74	74	74	74	74	74	74	74	74	886	50%	Max. 92
	Fresh (Outside)	110	110	9	6	3	3	3	2	2	2	2	6	261	15%	Min. 62
	Processed	0	0	101	75	56	55	55	50	50	50	52	76	621	35%	

## (3)-2-IBALURING

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condition (No change with Project)	Purse Seine	11	11	6	6	6	6	6	6	11	11	11	11	101	8		
	Gill Net	13	13	13	13	7	7	7	7	13	13	13	13	132	11	H.V.	46
	Handline	5	5	11	11	11	5	5	5	21	21	21	5	127	11	L.V.	18
	Total	30	30	29	29	23	18	18	18	46	46	46	30	361	30	H.V./L.V.	2.6

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	14	14	14	14	12	11	11	11	18	18	18	14	169	47%	Max. 23
	Processed	12	12	12	12	8	4	4	4	23	23	23	12	149	41%	Min. 11
	Unsold	4	4	3	3	3	3	3	3	5	5	5	4	42	12%	
Improved plan (with Project)	Fresh (Local)	18	18	18	18	17	16	16	16	18	18	18	18	208	58%	Max. 23
	Fresh (Outside)	12	12	1	1	0	0	0	0	5	5	5	1	41	11%	Min. 15
	Processed	0	0	11	11	6	2	2	2	23	23	23	11	112	31%	

## (3)-2-2 LANALERA

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condition (No change with Project)	Whaler	0	0	0	0	50	50	50	50	50	50	50	0	300	25		
	Gill Net	7	7	7	7	4	4	4	6	6	6	7	7	70	6	H.V.	19
	No-motor	13	13	13	13	8	8	8	10	10	10	13	13	128	11	L.V.	12
	Total	19	19	19	19	62	62	62	66	66	66	66	19	498	41	H.V./L.V.	1.7
	(exp. whale)	19	19	19	19	12	12	12	16	16	16	19	19	198	16		

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	8	8	8	8	6	6	6	7	7	7	8	8	84	17%	Max. 10
	Processed	10	10	10	10	55	55	55	57	57	57	10	10	393	79%	Min. 5
	Unsold	2	2	2	2	1	1	1	2	2	2	2	2	21	4%	
Improved plan (with Project)	Fresh (Local)	8	8	8	8	8	8	8	8	8	8	8	8	93	19%	Max. 10
	Fresh (Outside)	12	12	2	2	0	0	0	2	2	2	2	2	36	7%	Min. 6
	Processed	0	0	10	10	54	54	54	56	56	56	10	10	369	74%	

Note: 100% of whale meat would be processed (no fresh meat marketing).

## (4)-1 MAUMERE/WURING

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condition (No change with Project)	Purse Seine	126	126	189	251	251	168	168	251	251	251	251	189	2,472	206		
	Gill Net	1	1	3	3	3	3	3	1	1	1	1	1	25	2		
	Handline	0	0	0	0	0	0	0	0	0	0	0	0	4	0	H. V.	327
	Collect boat	48	48	73	73	73	48	48	73	73	73	73	48	750	63	L. V.	176
	Total	176	176	264	327	327	219	219	326	326	326	326	239	3,251	271	H. V./L. V.	1.9

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	114	114	149	175	175	131	131	174	174	174	174	139	1,824	56%	Max. 218
	Processed	33	33	78	109	109	55	55	108	108	108	108	65	971	30%	Min. 109
	Unsold	28	28	37	44	44	33	33	43	43	43	43	35	456	14%	
Improved plan (with Project)	Fresh (local)	168	168	175	175	175	175	175	175	175	175	175	175	2,085	64%	Max. 218
	Fresh (Outside)	8	8	23	44	44	7	7	42	42	42	42	13	324	10%	Min. 164
	Processed	0	0	67	109	109	37	37	108	108	108	108	50	842	26%	

## (4)-2 PAGA/MAULOO

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average		
Present Condition (No change with Project)	Purse Seine	22	22	76	130	101	72	72	72	101	130	130	76	1,003	84		
	Gill Net	5	5	5	5	7	7	7	7	5	5	5	5	63	5		
	Fixed G/N	9	9	9	9	9	5	5	5	5	5	5	9	81	7	H. V.	146
	Trolling	2	2	2	2	1	1	1	1	1	1	1	1	17	1	L. V.	38
	Total	38	38	92	146	118	84	84	84	84	110	139	139	90	1,164	97	H. V./L. V.

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	37	37	44	58	51	42	42	42	49	57	57	43	558	48%	Max. 73
	Processed	1	1	37	73	54	32	32	32	49	69	69	36	485	42%	Min. 36
	Unsold	0	0	11	15	19	10	10	10	12	14	14	11	121	10%	
Improved plan (with Project)	Fresh (local)	38	38	58	58	58	57	57	57	58	58	58	58	654	56%	Max. 73
	Fresh (Outside)	0	0	1	15	8	0	0	0	6	14	14	1	58	5%	Min. 49
	Processed	0	0	33	73	52	27	27	27	46	68	68	31	452	39%	

## (4)-3 ENDE (PAUPANDA)

Fish Landing	Boat Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average			
Present Condition (No change with Project)	Purse Seine	6	6	71	136	170	170	170	170	136	136	136	71	1,376	115			
	Lampala	68	68	49	49	62	62	62	62	49	49	49	68	696	58			
	Gill Net	3	3	30	30	41	41	41	41	30	30	30	30	352	29			
	Total	77	77	151	216	272	272	272	272	216	216	216	169	2,424	202			
	Fish transported from Flores Timur directly by Sinjai boats																H. V.	342
	Volume (ton)		35	35	70	70	70	53	53	71	71	71	70	70	720	60	L. V.	112
Total		112	112	220	286	342	325	325	286	286	286	285	238	3,144	262	H. V./L. V.	3.1	

Fish Treatment	Type	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Ratio (%)	Fresh fish (ton/month)
Present Condition (without Project)	Fresh	77	77	134	160	182	176	176	176	160	160	160	141	1,773	57%	Max. 228
	Processed	35	35	70	86	114	105	106	106	86	86	86	62	977	31%	Min. 114
	Unsold	0	0	17	40	46	44	44	44	40	40	40	35	390	12%	
Improved plan (with Project)	Fresh (local)	77	77	151	182	182	182	182	182	182	182	182	169	1,932	61%	Max. 228
	Fresh (Outside)	0	0	0	27	46	40	40	40	27	27	27	0	274	9%	Min. 171
	Processed	35	35	70	76	114	103	103	103	77	77	76	70	938	30%	

Formula to calculate the monthly volume of fresh fish at each site:

$$X = \text{Min.} + \{ (A - \text{Min.}) \times (\text{Max.} - \text{Min.}) / (\text{H.V.} - \text{Min.}) \}$$

X: Volume that can be marketed as fresh fish at each month.

Min.: Minimum volume that can be marketed as fresh fish per month (Present Condition: Urban Area = H.V. x 1/3; Rural Area = H.V. x 1/4, Improved Plan: Urban Area = H.V. x 1/2; Rural Area = H.V. x 1/3)

Max. Maximum volume that can be marketed as fresh fish per month (Urban Area: H.V. x 1/1.5; Rural Area: H.V. x 1/2)

H.V.: Maximum total volume of fish per month.

A: Total volume of fish landed at each month.

Unsold fish volume is calculated based on the following conditions:

(1) About 20% of fresh fish in peak month would not be able to sold in condition resulting in the economic loss in price (about 20%).

The remaining 80% of fresh fish after deducting the above 20% in the peak month is assumed as maximum volume to be marketed as fresh fish throughout year.

(2) Processed fish during rainy season (Jan.-Feb.) shows salted fish. All processed fish accounted as causing economic loss of 50% during dry season and 75% during rainy season.

Volume of fresh fish (outside region) is calculated based on the following conditions:

(1) About 20% of fresh fish in peak month would be able to sold to outside the region.

The remaining 80% of fresh fish after deducting the above 20% in the peak month is assumed to be maximum volume to be sold locally as fresh fish throughout year.

Summary (Improvement of Fish Treatment)

		Average in 12 Project Sites			Sumabawa (3 sites)			Flores (9 sites)			Bima (1 site)		Dompu (2 sites)		East Flores (6 site)		Central Flores (3 si)	
Without Project	Fresh	49%	Fresh	47%	Fresh	51%	Fresh	47%	Fresh	48%	Fresh	47%	Fresh	55%				
	Processed	39%	Processed	42%	Processed	38%	Processed	43%	Processed	42%	Processed	43%	Processed	32%				
	Unsold	11%	Unsold	10%	Unsold	12%	Unsold	10%	Unsold	11%	Unsold	11%	Unsold	13%				
With Project	Fresh (L)	56%	Fresh (L)	54%	Fresh (L)	57%	Fresh (L)	53%	Fresh (L)	56%	Fresh (L)	52%	Fresh (L)	62%				
	Fresh (O)	6%	Fresh (O)	No change	Fresh (O)	10%	Fresh (O)	No change	Fresh (O)	No change	Fresh (O)	12%	Fresh (O)	9%				
	Process (L)	35%	Process (L)	38%	Process (L)	33%	Process (L)	41%	Process (L)	36%	Process (L)	36%	Process (L)	30%				
	Process (O)	3%	Process (O)	7%	Process (O)	No change	Process (O)	6%	Process (O)	8%	Process (O)	No change	Process (O)	No change				

AI-34

Balance of Fresh Fish (ton)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total	Average	
Lack of fresh	Larantuka	140	140	7	0	0	0	0	0	0	0	0	7	292	24	
	Maumere	8	8	1	1	1	0	0	0	0	0	0	0	18	1	
	Ende	106	106	32	0	0	0	0	0	0	0	1	13	258	21	
	Total	253	253	39	1	1	1	1	0	0	0	0	20	568	47	
Surplus fresh	Lewoleha	110	110	9	6	3	3	3	2	2	2	2	6	261	22	
	Balauring	12	12	1	1	0	0	0	0	5	5	5	1	41	3	
	Lamalera	12	12	2	2	0	0	0	2	2	2	2	2	36	3	
	Lamahala Jaya	27	27	20	21	21	19	18	18	21	21	20	20	252	21	
	Sagu	34	34	3	0	0	0	0	0	3	3	3	3	83	7	
	Larantuka	0	0	0	40	40	17	17	17	39	39	39	39	0	250	21
	Maumere	8	8	23	44	44	7	7	42	42	42	42	13	324	27	
	Pagu	0	0	1	15	8	0	0	0	6	14	14	1	58	5	
Ende	0	0	0	27	46	40	40	40	27	27	27	0	274	23		
Total	203	203	59	155	162	86	85	122	148	155	154	46	1,578	131		
Balance (Fresh fish to Bajawa)	-50	-50	19	154	161	86	85	121	149	156	154	26	1,010	84		

3-1-2. Lamahala Jaya - Kec. Adonara Timur, Kab. Flores Timur, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON			
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery		Others	
																Start at PPI	Back to PPI		
Purse Seine		Jan 12			Jan 12, Cabaran, Lariak	20 days month								5-6 t	8-10	8	Start at PPI	17:00 / 01:00	
														11-13m (L)	Fishermen/Vessel	(Mar-Oct 5)	Back to PPI	06:00 / 18:00	Day/Fishing
Bagan														5-6 t	5-6	2	Start at PPI	17:00	
														12m (L)	Fishermen/Vessel		Back to PPI	6:00	Day/Fishing
Gill Net					Jan 12, Cabaran, Lariak	20 days month								0.5-1 t	2-3		Start at PPI	18:00-17:00	
														0.5-1 t	Fishermen/Vessel		Back to PPI	5:00	Day/Fishing
Hand-line		Jan 12, Babay												0.5-1 t	1-2		Start at PPI	05:00 / 18:00	
														6-8m (L)	Fishermen/Vessel		Back to PPI	10:00 / 23:00	Day/Fishing

About 30 purse seiners of Lamahala Jaya (Adonara Timur) change their operating area to Tl. Konga and Tg. Bunga (Flores mainland, 20 units), Adonara Barat (5 units) and Lewoleba (5 units) during May to October.

3-1-3. Sagu - Kec. Adonara Timur, Kab. Flores Timur, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON			
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery		Others	
																Start at PPI	Back to PPI		
Bagan					15 days month					15 days month				5 t	4-5	2	Start at PPI	17:00	
															Fishermen/Vessel	(Sep-Mar: 6)	Back to PPI	6:00	Day/Fishing
Purse Seine		Jan 12			Jan 12	25 days month				Jan 12				3-4 t	7-9	5	Start at PPI	6:00 / 12:00	
														10-12m (L)	Fishermen/Vessel		Back to PPI	10:00 / 17:00	Day/Fishing
Gill Net					Jan 12	25 days month				Jan 12				5-12m (L)	1-4	10	Start at PPI	17:00	
															Fishermen/Vessel		Back to PPI	6:00	Day/Fishing
Hand-line					Jan 12, Babay	25 days month								4-5m (L)	1-2		Start at PPI	18:00	
															Fishermen/Vessel		Back to PPI	6:00	Day/Fishing
Trolling (w/FAD)					Jan 12, Cabaran, Lariak	25 days month				Jan 12, Cabaran, Lariak				4-5m (L)	1-2	11	Start at PPI	5:00	
															Fishermen/Vessel		Back to PPI	13:00	Day/Fishing

3 units of Bagan of Larantuka are supposed to operate based on Sagu during September to March.

3-2-1. Lewoleba - Kec. Nubatukan, Kab. Lembata, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON			
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery		Others	
																Start at PPI	Back to PPI		
Bagan		Jan 12, Serda												3-5 t	4-5	4	Start at PPI	17:00 - 18:00	
														12-15m (L)	Fishermen/Vessel		Back to PPI	05:00 - 06:00	Day/Fishing
Purse Seine					Jan 12, Babay, Lariak, Lariak	25 days month								2-3 t	8-9	3	Start at PPI	any time (Tongkol)	
														9-12m (L)	Fishermen/Vessel	(Mar-Oct 7)	Back to PPI	Night (Layang)	Day/Fishing
Gill Net		Jan 12, Lariak												0.5-1 t	1-2	10	Start at PPI	17:00 - 18:00	
														4-6m (L)	Fishermen/Vessel		Back to PPI	05:00 - 06:00	Day/Fishing
Hand-line														0.5-1 t	1-2	2	Start at PPI	05:00 - 06:00	
														4-6m (L)	Fishermen/Vessel		Back to PPI	13:00 - 14:00	Day/Fishing

3 - 4 units of purse seiners of Lamahala Jaya (Adonara Timur) are supposed to operate in Tl. Lewoleba during March - October.

3-2-2. Balaurine - Kec. Omesuri, Kab. Lembata, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON			
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery		Others	
																Start at PPI	Back to PPI		
Purse Seine		Jan 12, Lariak				Jan 12, Lariak				Jan 12, Lariak				12-13m (L)	10-11	2	Start at PPI	8:00	
															Fishermen/Vessel	(Mar-Oct 3)	Back to PPI	17:00	Day/Fishing
Gill Net (w/FAD)		Jan 12, Lariak, Lariak								Jan 12, Lariak, Lariak				0.5-1 t	1-2	7	Start at PPI	17:00	
														5-7m (L)	Fishermen/Vessel		Back to PPI	6:00	Day/Fishing
Hand-lines (w/FAD)					Jan 12, Lariak, Lariak					Jan 12				0.5-1 t	1-2	11	Start at PPI	17:00	
														5-7m (L)	Fishermen/Vessel		Back to PPI	6:00	Day/Fishing
														Non-motor	1-2	about 80	Start at PPI		
														5-7m (L)	Fishermen/Vessel		Back to PPI		Day/Fishing

1 - 2 units of purse seiners of Lamahala Jaya (Adonara Timur) are supposed to operate in Tl. Lewoleba during March - October.

3-2-3. Lamalera - Kec. Wulandoni, Kab. Lembata, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON			
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery		Others	
																Start at PPI	Back to PPI		
Whaler (Herpon)														3-4 t	12-15	20	Start at PPI	6:30	
														Non-motor	Fishermen/Vessel	(A.B. 8:12)	Back to PPI	13:00-14:00	Day/Fishing
Gill Net		Jan 12												8-11m (L)	2-3	11	Start at PPI	17:30	
														w/15-25 hp	Fishermen/Vessel	(A.S. 8:5)	Back to PPI	10:00-11:00	Day/Fishing
Hand-line					Jan 12, Babay, Lariak, etc.									Non-motor	1-2	about 10	Start at PPI	7:00 / 14:00	
														3-4m (L)	Fishermen/Vessel	(A-20, 8:20)	Back to PPI	13:00 / 16:00	Day/Fishing

Figure 1-1. Fishing Pattern at Each Model Site  
(Based on the Hearing from Fishermen)

1. Waworada - Kec. Langgulu, Kab. Bima, NTB

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON		
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery	Others	
Purse Seine													3-4 GT 11-12m (L)	2-10 Fisherman/Vessel	11 (Jan-Apr.: 22)	Start at PPI Back to PPI	7:00 19:00-20:00	Day/Fishing
Bagan Listrik													20-40m(L)	10-15 Fisherman/Vessel	22 (Rampok 1)	Start at PPI Back to PPI	17:00 07:00-08:00	Day/Fishing
Bagan Petromas													15-20m (L)	5-7 Fisherman/Vessel	20 (Rampok 2)	Start at PPI Back to PPI	17:00 07:00-08:00	Day/Fishing
Bottom long-line													7-12m (L)	2-3 Fisherman/Vessel	11	Start at PPI Back to PPI	17:00 07:00-08:00	2-3 days/trip (Sep.-Mar.)
Gill Net													7-12m (L)	2-3 Fisherman/Vessel		Start at PPI Back to PPI	17:00 07:00-08:00	Day/Fishing
Hand-line/Bottom troll													4-5m (L)	1-5 Fisherman/Vessel	4 (Rimba)	Start at PPI Back to PPI	6:00 17:00	Day/Fishing
Collecting Boat													8-9m (L)	1-2 Fisherman/Vessel	25	Start at PPI Back to PPI	17:00-18:00 03:00-04:00	Day/Fishing

2-1. Kempo - Kec. Kempo, Kab. Dompu, NTB

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON		
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery	Others	
Bagan Listrik													17-23m (L)	6-10 Fisherman/Vessel	33	Start at PPI Back to PPI	15:00 7:00	Day/Fishing
Purse Seine													12-15m (L)	12-15 Fisherman/Vessel	10	Start at PPI Back to PPI	15:00 7:00	Day/Fishing
Gill Net													11-12m (L)	2-3 Fisherman/Vessel	14	Start at PPI Back to PPI	15:00 7:00	Day/Fishing
Hand-line													5-6m (L)	1-2 Fisherman/Vessel		Start at PPI Back to PPI	Any time	Day/Fishing
Collecting Boat													8-9m (L)	1-2 Fisherman/Vessel	30	Start at PPI Back to PPI	17:00-18:00 02:00-07:00	Day/Fishing
													(Non-motor)	1-2 Fisherman/Vessel	About 200	Start at PPI Back to PPI		Day/Fishing

2-2. Hu'u - Kec. Hu'u, Kab. Dompu, NTB

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON		
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery	Others	
Purse Seine													4-5 t 12-13m (L)	6-10 Fisherman/Vessel	14	Start at PPI Back to PPI	5:00 12:00	Day/Fishing
Gill Net													3-4 t 10-12m (L)	3-4 Fisherman/Vessel	3	Start at PPI Back to PPI	16:00 6:00	Day/Fishing
Hand-line / B. longline													4-6m (L)	1-2 Fisherman/Vessel	6	Start at PPI Back to PPI	15:00 6:00	2-3 days/trip (Sep.-Jan.)
													(Non-motor)	1-2 Fisherman/Vessel	About 10	Start at PPI Back to PPI		Day/Fishing

Note: About 50 purse seiners coming from Waworada, Sape, and Sumbawa operate for a week during May - July if it is said that there are abundant fishes in Ti. Cempi.

3-1-1. Larantuka, Kab. Flores Timur, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON		
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery	Others	
Pole-and-line													15-50 t	7-8 / 10-13 Fisherman/Vessel	15 t : 33 30-60 t : 14	Start at PPI Back to PPI	16:00 - 17:00 10:00 - 14:00	Day/Fishing
Bagan													10-12m (L)	3-6 Fisherman/Vessel	25 (with motor: 17)	Start at PPI Back to PPI	18:00 6:00	Day/Fishing
Purse Seine													9-13m (L)	8-10 Fisherman/Vessel	19 (Mar-Oct: 35)	Start at PPI Back to PPI	18:00 6:00	Day/Fishing
Hand-line													3.5-9m (L)	2-3 Fisherman/Vessel	About 30	Start at PPI Back to PPI	06:00 / 14:00 10:00 / 16:00	2 times/day Day/Fishing
Gill-net													3.5-9m (L)	1-2 Fisherman/Vessel		Start at PPI Back to PPI	06:00 / 14:00 10:00 / 16:00	2 times/day Day/Fishing

About 25 purse seiners of Lamahaja Jaya (Adonara Timur) operate in Ti. Konga and Tg. Bunga (Flores mainland, 20 units) and Adonara Barat (5 units) with a landing base in Larantuka during May to October.

4-1-1. Wuring - Kec. Alok, Kab. Sikka, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON		
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery		Others
																Start at PPI	Back to PPI	
Purse Seine			10-15 days/month			20-25 days/month			10-15 days/month				10-14m (L)	5-10	51	Start at PPI	Back to PPI	20:00
Gill Net / Hand-line						20 days/month							5-7m (L)	1-3	31	Start at PPI	Back to PPI	17:00-21:00
B. longline/Trolling/Hand						20 days/month							5-7m (L)	1-3	47	Start at PPI	Back to PPI	05:00 / 15:00
			10-15 days/month													Start at PPI	Back to PPI	
			10-15 days/month													Start at PPI	Back to PPI	

4-1-2. Paga & Mauloo - Kec. Paga, Kab. Sikka, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON		
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery		Others
																Start at PPI	Back to PPI	
Purse Seine			10-15 days/month			20 days/month			10-15 days/month				3 t	5-10	21	Start at PPI	Back to PPI	6:00
Gill Net						20 days/month							10m (L)	Fishermen/Vessel	3	Start at PPI	Back to PPI	17:00
Gill Net (Fixed w/FAD)						20 days/month							0.5 t	1-2	6	Start at PPI	Back to PPI	15:00
Trolling						20 days/month							4-5m (L)	Fishermen/Vessel	2	Start at PPI	Back to PPI	6:00
Hand-line						20 days/month							2.5-3m (L)	Fishermen/Vessel	2-3	Start at PPI	Back to PPI	08:00-09:00
						20 days/month							Non-motor	1-2		Start at PPI	Back to PPI	05:00 / 17:00
						20 days/month							2.5-3m (L)	Fishermen/Vessel		Start at PPI	Back to PPI	05:00 / 17:00

4-2. Paupanda - Kec. Ende Selatan/P. Ende, Kab. Ende, NTT

FISHERY METHODS	FISHING SEASON												Tonnage of Fishing Vessels	Number of Fishermen	Number of Fishing Vessels	FISHING HOURS IN MAJOR SEASON		
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.				A Day's Fishery		Others
																Start at PPI	Back to PPI	
Purse Seine						20 days/month							12-17m (L)	Fishermen/Vessel	7-8	Start at PPI	Back to PPI	6:30
Lampara						20 days/month							8 t	10	E. Selatan: 11	Start at PPI	Back to PPI	19:30
Gill Net						20 days/month							16m (L)	Fishermen/Vessel	P. Ende: 6	Start at PPI	Back to PPI	15:00-17:00
Hand-line/B. longline						20 days/month							4-1m (L)	Fishermen/Vessel	2-3	Start at PPI	Back to PPI	17:00
Payang						20 days/month							2.5-3m (L)	Fishermen/Vessel	1-2	Start at PPI	Back to PPI	6:00
						20 days/month									E. Selatan: 5	Start at PPI	Back to PPI	15:00
						20 days/month									P. Ende: 15	Start at PPI	Back to PPI	10:00
						20 days/month									E. Selatan: 8	Start at PPI	Back to PPI	
						20 days/month									Fishermen/Vessel	Start at PPI	Back to PPI	
						20 days/month									E. Selatan: 2	Start at PPI	Back to PPI	

Figure 1-2. Fish Landing Pattern

8E-IV

