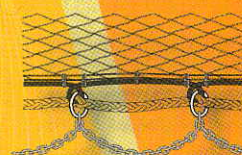
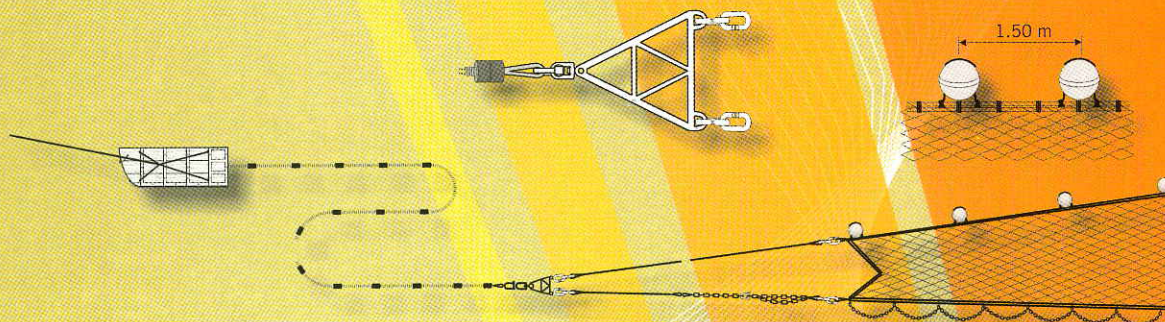
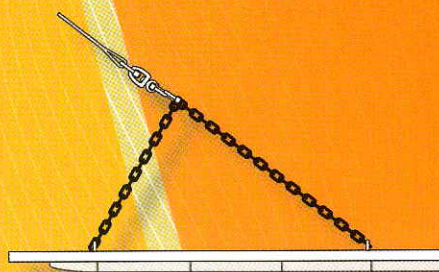
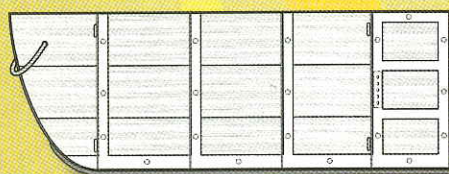


FISHING GEARS AND METHODS IN SOUTHEAST ASIA :

VI. CAMBODIA



FISHERIES ADMINISTRATION / CAMBODIA
SEAFDEC / TRAINING DEPARTMENT



What is SEAFDEC?

The Southeast Asian Fisheries Development Center (SEAFDEC) is an autonomous intergovernmental body established as a regional treaty organization in 1967 to promote sustainable fisheries development in Southeast Asia.

Objectives

SEAFDEC aims specifically to develop fishery potential in the region through training, research and information services in order to improve the food supply through rational utilization of fisheries resources in the region.

Functions

To achieve its objectives the Center has the following functions:

1. To offer training courses, and to organize workshops and seminars, in fishing technology, marine engineering, extension methodology, post-harvest technology, and aquaculture.
2. To conduct research and development in fishing gear technology, fishing ground survey, post-harvest technology and aquaculture, to examine problems related to the handling of fish at sea and quality control, and to undertake studies on the fisheries resources in the region; and
3. To arrange for the transfer of technology to the countries in the region and to make available the printed and non-printed media, which include the publication of statistical bulletins for the exchange and dissemination related to fisheries and aquaculture development.

Membership

SEAFDEC members are the ASEAN Member Countries (Brunei Darussalam, Cambodia, Indonesia, Lao PDR., Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam) and Japan.

Fishing Gears and Methods in Southeast Asia :

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SEAFDEC / TRAINING DEPARTMENT

FISHING GEARS AND METHODS IN SOUTHEAST ASIA:

VI. CAMBODIA

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ISBN: 978-974-13-3009-6



Printed in Cooperation with the Financial Assistance
of Japanese Trust Fund Project

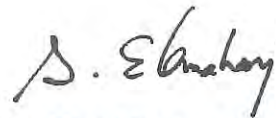
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Preface

This compilation of the most important fishing gears and methods in use in Cambodia is the sixth volume in the Monograph Series, "Fishing Gears and Methods in Southeast Asia". The aim is for better understanding of the existence marine fishing gears and methods in the Cambodia, therefore with the initiative of SEAFDEC/ Training Department conducted the study with a view to introduce the structure of gear and fishing techniques of the main fishing gears commonly used in Cambodia since 2003 in collaboration with the Fisheries Administration/Cambodia. The study was a part of ASEAN-SEAFDEC program on "Responsible Fisheries Technology and Practices" funded by Government of JAPAN through the trust fund program in fisheries.

This volume contains description of 74 types of marine fishing gears presently employed in the marine fisheries of Cambodia. Fishing methods of tenth important groups namely surrounding nets, trawl nets, lift nets, falling gear, gill nets, traps, hook and lines, scoop nets, dredges and miscellaneous gears are also described. It is hoped that this book can serve as a useful reference for those who are interested in marine fisheries in Cambodia.



Dr. Siri Ekmaharaj
Secretary-General
and
Chief of the Training Department

Chapter 1
INTRODUCTION

General Information of Fishing Gear

There are many types of small-scale or artisanal, middle-scale and large-scale or commercial fishing gears that are used in Cambodia. According to proclamation of Ministry of Agriculture, Forestry and Fisheries, the small-scale or artisanal and middle-scale fishing gears are distinguished by the capacity of boat engines and size of fishing gears. The term commercial fishery is used only for inland fisheries and is very rarely used in marine fisheries.

The marine capture fisheries in Cambodia are divided into two categories called middle-scale fisheries and small-scale or artisanal fisheries. The middle-scale fisheries refer to those fishing activities that have highly efficient fishing gears and have the capacity to fish offshore and inshore using all fishing gears, with the exception of trawling in inshore waters (Table 1 and 2).

Table 1. List of Commercial fishing gears in the coastal areas of Cambodia

No.	Type of Fishing Gear		No.	Type of Fishing Gear	
	English Name	Khmer Name		English Name	Khmer Name
1	Trawl	Uon Os	7	<i>Scomberomorus</i> gill net	Mong Trey Beka
2	Purse seine/Ring net	Uon Tith	8	Mackerel gill net	Mong Trey Kamong
3	Anchovy encircling seine	Uon Ka Kocum	9	Shrimp gill net or Trammel net	Mong Bang Kear
4	Beach Seine	Uon Khov	10	Crab gill net	Mong Kdam
5	Encircling seine	Uon Huom	11	Horizontal long line	Santouch Ro Noug
6	Gill net	Mong Peak	12	Cluepea gill net	Mong Trey KborK

(Source: DoF, 2002)

Table 2. List of of small-scal or artisanal fishing gears in Cambodia

No.	English Name	Khmer Name	No.	English Name	Khmer Name
Gill net (Mong Peak)					
1	Crab gill net	Mong Kdam	3	Fish gill net	Mong Peak
2	Shrimp gill net	Mong Bang Kear	4	Seabass gill net	Mong Trey Spong
Stationary Gear					
5	Squid trap	Lop Meuk	8	Bamboo crap trap	Lop Kdam Roeusey
6	Fish trap	Lop Trey	9	Small winged set bag	Pong Pang
7	Crab trap	Lop Kdam	10	Circular net crab trap	Lop Mong Kdam
Mobile gear					
11	Push net	Thnong Os Ky	13	Drift gill net	Mong Bandel
12	Hook	Santouch			

(Source: DoF, 2002)

The total numbers of all types of gear commonly used in Cambodia from 1992 to 2001 are shown in Table 3.

Table 3. Number of fishing gears in coastal provinces and municipalities of Cambodia form 1992 to 2001

No	Fishing gears	Unit	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1	Trawl net	Set	422	442	549	634	560	460	545	654	1,516	1,310
2	Purse seine	Set	13	14	15	16	16	15	15	8	10	10
3	Anchovy encircling seine	Set	13	13	9	8	10	2	-	4	5	3
4	Beach seine	Set	18	19	6	6	1	26	7	20	26	21
5	Encircling seine	Set	15	-	-	6	1	26	7	7	7	2
6	Gill net	m	64,180	8,940	36,050	29,991	31,491	13,779	6,200	190,730	231,835	325,500
7	Mackerel gill net	m	3,700	9,800	36,050	12,050	15,550	131,220	140,500	198,200	178,300	64,700
8	<i>Scomberomorus</i> gill net	m	31,403	31,202	59,595	7,000	51,300	66,800	85,000	140,100	148,000	184,000
9	Shrimp gill net	m	114,705	13,450	110,950	161,486	694,563	469,100	469,050	996,055	653,890	323,200
10	Crab gill net	m	43,852	32,100	37,450	95,728	580,439	393,200	426,000	538,545	961,370	635,200
11	Clupea gill net	m	500	1,200	3,000	8,850	10,250	23,900	23,900	33,600	38,000	27,500
12	Trap	No. trap	60	637	2,277	1,600	26,761	23,200	23,242	33,960	51,249	66,255
13	Horizontal long lines	No. trap	16,000	760	920	1,950	14,620	4,750	4,750	8,600	15,360	15,600

(Source: DoF, 2002)

1. Trawl (Khmer name *Uon Os*)

There are two types of trawl fishing gears operating in Cambodian waters. The trawl operated from one fishing vessel is called single trawler and the trawl that is operated by two fishing vessels is called pair-trawlers. Trawl nets were introduced in Cambodia in 1960 (MoE, 1998) and the target species it caught originally were pelagic and demersal species, and the non-commercial species were thrown or non-thrown back to the sea. However, pair-trawlers are illegal according to Cambodian Fishery Law. After the opening of the fertilizer factory in 1993, the trawlers have changed their target species to catching trash fish for fertilizer. Trash fish is composed of small-size fish that have no value in the market, non-edible species and juveniles of economically important species that are unacceptable in the market. During the 1980s the fish production caught by trawl fisheries contained about 30-40% of the total catch

Cambodian trawl fisheries are not yet developed. Around 95% of the trawlers are single trawlers. They spend only one or two days inshore or offshore during each fishing trip and their catch are preserved with ice for the target species and kept it alive for some commercial species. Trawl fisheries are more dominant in Sihanoukville (Table 4.) because it has good road (national road number 4) connection to Phnom Penh, it has tourist facilities, electricity and also, it has many fish processing factories and the fertilizer factory. The pair trawlers have been operated in Cambodian waters by foreign fishermen who came to fish in Cambodian waters illegally.

Table 4. Number of trawling vessels in Cambodia

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	-	-	5	7	52	52
Kampot	31	16	5	186	186	20	30	22	89	89
Sihanoukville	227	242	276	262	244	226	296	283	656	756
Koh Kong	164	184	268	186	130	214	214	342	719	413
Total	422	442	549	634	560	460	545	654	1,516	1,310

(Source: DoF, 2002)

2. Purse Seine/ Ring Net (Khmer name *Uon Tith*)

There are two types of purse seine that have been introduced in Cambodian waters. The ones that are operated without light are legal fishing gears which have been used for a long time by Cambodian coastal fishermen. This gear was operated only in the shallow water (inshore zone) or offshore. The second one, which is used in combination with light to attract schools of fish, is called light luring purse seine. This fishing gear has been prohibited in Cambodian waters and it is very rarely used by Cambodian fishermen, but it has been used by vessels from neighboring countries in offshore waters of Cambodia.

Light luring purse seine is very difficult to control because it is operated with vessels that have high power and when they see the Cambodian fisheries inspection boat they escape to their waters and moreover, this gear is legal in Thailand and Vietnam.

The main species caught by the above mentioned fishing gears are pelagic fishes such as mackerel, sardines and other small fishes but mackerel comprises around 80 to 90 % of the total catch. Purse seine and Anchovy encircling seine are operated in the same manner but differ in mesh size. Purse seine has a mesh size of 1 cm and Anchovy encircling seine has a mesh size smaller than 1 cm like mosquito net and it catches mainly anchovy species.

This fishing gear use only the fishermen who live in Sihanoukville and number of this gear has decreased (Table 5) because of the degradation of the natural resources and also disturbance from pair-trawlers and light-luring purse seine in the offshore waters of Cambodia. Now the fishermen who use this type of fishing gear have changed their fishing methods to operate at night time and combine with other fishing gears such as trawl or gill net.

Table 5. Number of Purse seine/ring net in Cambodia

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	-	-	-	-	-	-
Kampot	-	-	-	-	-	-	-	-	-	-
Sihanoukville	13	14	15	16	16	15	15	8	10	10
Koh Kong	-	-	-	-	-	-	-	-	-	-
Total	13	14	15	16	15	15	15	8	10	10

(Source: DoF, 2002)

3. Anchovy Encircling (*Khmer name Uon Ka Kowum*)

This gear was just introduced to Cambodian waters in the 1960s. It is designed to catch anchovy during the daytime. It means that this fishing gear does not only catch anchovy, but a mixture of species. The most important target species is anchovy that constitutes nearly 70-90% of the total catch. This gear has been used almost exclusively by the fishermen who live in Sihanoukville and Koh Kong (Table 6). This fishing gear has a small mesh size as mosquito net and it is operated when fishermen see a school of anchovies.

So far this fishing gear has almost disappeared from Cambodian waters because of the degradation of the natural resources and also disturbance from pair-trawlers and light-luring purse seine in the offshore waters of Cambodia. The fishermen who use this type of fishing gear have changed to other fishing gears or combine with other fishing gears as shrimp, crab or fish gill net.

Table 6. List of Anchovy encircling seine in Cambodia

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep										
Kampot				7	7					
Sihanoukville	1		1	1	1	1		1	3	3
Koh Kong	12	13	8	7	2	1		2	2	
Total	13	13	9	15	10	2		3	5	3

(Source: DoF, 2002)

4. Beach Seine (*Khmer name Uon Khov*)

Beach seines are widely used in the shallow water or along the beach. They are operated with non-motorized boats or human power along the sandy beach without any hauling device. All beach seines have the same design in the coastal area. Beach seine is used for capturing small fishes as anchovy, sardine and shrimp that live in the shallow water along the beach. So far this fishing gear is used more by the fishermen who live in Kampot province and Kep municipality. Table 7 shows the number of beach seine gears in Cambodia from 1992 to 2001.

Table 7. Data of beach seine in Cambodia (Unit = set)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	-	-	3	3	3	2
Kampot	3	19	6	-	-	22	-	13	19	19
Sihanoukville	14	-	-	6	1	4	-	-	-	-
Koh Kong	1	-	-	-	-	-	4	4	4	-
Total	18	19	6	6	1	26	7	20	26	21

(Source: DoF, 2002)

5. Encircling Seine (*Khmer name Uon Huom*)

This Fishing gear is used for capture of mixed fishes in combination with an anchor lure or a branch of a tree used to aggregate schools of fish. This fishing gear is not so much uses in Cambodian waters and its quantities decreased in year 2001 (Table 8.)

Table 8. Data of encircling seine in Cambodia (Unit = set)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	-	-	3	3	3	2
Kampot	-	-	-	-	-	22	-	-	-	-
Sihanoukville	14	-	-	6	1	4	-	-	-	-
Koh Kong	1	-	-	-	-	-	4	4	4	-
Total	15	-	-	6	1	26	7	7	7	2

(Source: DoF, 2002)

6. Gill Net (Khmer name *Mong Peak*)

Many types of gill net with various mesh sizes can be encountered in Cambodian waters. They catch different species and body sizes of fishes when the fishes try to pass through it. These fishing gears have been introduced in Cambodia a long time ago and they operate in the shallow or inshore water. For example drift gill nets hang on floats barracuda, shark, trevelly, etc. Most set gill nets are anchored or weighted to the bottom and used to catch various demersal species. These fishing gears can be used during the night and day time, depending on the fishermen and the location of the site or zone for fishing. Table 9 shows the data of gill net operated in the coastal area of Cambodia from 1992 to 2001.

Table 9. Data of gill net use in the coastal area of Cambodia (Unit = m)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	500	700	800	1,000	1,000	4,200
Kampot	61,055	3,940	2,780	27,091	27,091	9,479	1,800	1,800	1,800	20,900
Sihanoukville	4,125	3,200	3,950	2,900	3,900	3,600	3,600	49,100	41,900	50,400
Koh Kong	-	1,800	-	-	-	-	-	138,830	187,135	250,000
Total	65,180	8,940	6,730	29,991	31,491	13,779	6,200	190,730	231,835	325,500

(Source: DoF, 2002)

7. Mackerel gill net (Khmer name *Mong Trey Kamong*)

This fishing gear is specifically designed. It is used to catch pelagic fish especially mackerel, which comprises more than 80-90% of the total catch. According to the Cambodia's Fisheries Law, *Khmer called Kret Chhbab Lek 33 Kra. Chor*, which was signed and came into force on 9th March 1987, Article 27 mackerel fishing is prohibited every year from 15 January to 31 March because this is the spawning period for mackerel. In Cambodia, one fisherman has at least two types of the fishing gears, so they can change to another fishery during the closed season. This fishing gear is used they can change to another fishery during the closed season. This fishing gear is used only the fishermen who live in Sihanoukville municipality and Koh Kong province (Table 10.).

Table 10. Data of mackerel gill net use in the coastal area of Cambodia (Unit = m)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	-	-	-	-	-	-
Kampot	-	-	9,450	-	-	-	-	-	-	-
Sihanoukville	3,700	9,800	26,600	12,050	15,550	17,620	26,900	84,600	64,700	64,700
Koh Kong	-	-	-	-	-	113,600	113,600	113,600	113,600	-
Total	3,700	9,800	36,050	12,050	15,550	131,220	140,500	198,200	178,300	64,700

(Source: DoF, 2002)

8. Scomberomorus Gill Net (Khmer name *Mong Trey Beka*)

This gill net is widely distributed in Sihanoukville and Koh Kong province (Table 11). One fishing boat has from 1 to 10 km of net depending on the size of the boat. For boats with engines from 10 to 90 HP, gill nets with a height of 9 m are used, whereas boats with engines bigger than 90 HP, use nets with a height of 18 m. On the bottom the gill nets are anchored or weighted and they are used to catch various pelagic fish species. The main fish species caught by this gill net are *Scomberomorus*, scads and shack.

Table 11. Data of *Scomberomorus* gill net use in the coastal area of Cambodia (Unit = m)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	-	-	-	-	-	-
Kampot	-	-	-	1,200	1,200	-	8,700	-	-	-
Sihanoukville	29,600	30,000	44,700	46,600	50,100	43,800	45,800	86,600	100,000	100,000
Koh Kong	1,800	1,200	14,895	1,200	32,100	23,000	30,500	53,500	48,000	84,000
Total	31,403	31,202	59,595	7,000	51,300	66,800	85,000	140,100	148,000	184,000

(Source: DoF, 2002)

9. Shrimp gill net or Trammel net (Khmer name *Mong Bang Kear*)

Trammel nets are widely used throughout Cambodian sea and more used in Sihanoukville and Koh Kong province (Table 12). This gear has a special design and consists of two or three layers of different mesh size. For example trammel net three layers, the layers 1 and 3 have a mesh size from 8 to 10 cm and layer 2 has a mesh size from 3.8 to 4.2 cm. This fishing gear is used for capture of mixed fishes but the most important is demersal fish because it is weighted to the bottom. It catches mainly shrimp, catfish and silver and black pomfrets.

Table 12. Data of shrimp gill net or trammel net use in the coastal area of Cambodia (Unit = m)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep					200	300	1,000	1,000	2,000	1,200
Kampot	9,775	4,050	1,600	13,143	13,143	10,500	9,750	4,100	4,100	27,100
Sihanoukville	102,905	86,800	109,350	135,200	168,700	145,700	145,700	121,900	104,900	104,900
Koh Kong	2,025	2,600		13,143	512,520	312,600	312,600	869,055	542,890	190,000
Total	114,705	93,450	110,950	161,486	694,563	469,100	469,050	996,055	653,890	323,200

(Source: DoF, 2002)

10. Crab Gill Net (*Khmer name Mong Kdam*)

This is another type of gill net with various mesh sizes, which is operated in the shallow or inshore water like other gill nets and is weighted at the bottom. It is used to capture of mixed fishes and the most important is demersal fish, and especially crab. They have mesh sizes around 4-10 cm. according to the depth or zone for fishing. Nets used in the shallow water have mesh sizes form 4 to 8 cm. and 80% of the nets had a mesh size of 6 cm; 80-90% of the total catch is crabs (see Table 13). For deeper water (inshore) a mesh size of 8-10 cm. is used and 80-90% of the catch is crabs.

Table 13. Data of crab net use in Cambodian waters (Unit = m)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep					300	500	20,000	10,000	10,000	10,000
Kampot	34,042	11,500	21,450	30,364	30,364	10,900	24,200	40,755	27,600	27,600
Sihanoukville	7,450	18,000	16,000	35,000	38,500	87,500	87,500	219,500	204,000	225,000
Koh Kong	2,360	2,600		30,364	511,275	294,300	294,300	268,290	719,770	372,600
Total	43,852	32,100	37,450	95,728	580,439	393,200	426,000	538,545	961,370	635,200

(Source: DoF, 2002)

11. Clupea Gill Net (*Khmer name Mong Trey Kborck*)

This is yet another type of gill net with various mesh sizes, which is operated in the shallow or inshore waters like other gill nets. It has a mesh size of 3.5 cm. and is used to capture demersal fish especially -->clupea. One fishing boat has from 150 to 200m of this gill net and it is used all year round. It is used more for the fishermen who live in Sihanoukville (Table 14.).

Table 14. The statistic of Clupea gill net use in Cambodian sea (Unit = m)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep									2,500	
Kampot								5,700	7,600	7,600
Sihanoukville	400	1,200	3,000	8,850	10,250	15,900	15,900	19,900	19,900	19,900
Koh Kong	100					8,000	8,000	8,000	8,000	
Total	500	1,200	3,000	8,850	10,250	23,900	23,900	33,600	38,000	27,500

(Source: DoF, 2002)

12. Traps (*Khmer name Lop*)

There are many types of traps in Cambodian waters. They are constructed from different types of material. For example crab traps (*Khmer name Lop Kdarm*) were previously constructed of bamboo and were very big whereas now they are constructed of net and can be collapsed. This means that one fisherman can use more than 100 traps.

Fish trap (*Khmer name Lop Trey*) were constructed of bamboo in various sizes. Usually, they are operated in association with bamboo-fender.

Squid traps (Khmer name Lop Meuk) are operated in association with squid eggs, which are used for attraction. This kind of fishing gear was introduced a long time ago in Cambodia and the frame is constructed of bamboo. Now the frame is covered with net and it is constructed of catch fish. Unfortunately, the data recorded by the Department of Fisheries could not be separated by type of trap (Table 15.).

Table 15. The statistic of traps (crab trap, squid trap and fish trap) use in Cambodian sea (Unit=Number)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	100	200	1,000	500	11,550	10,000
Kampot	-	-	997	151	151	2,303	1,745	1,745	1,745	6,175
Sihanoukville	-	320	1,280	1,600	2,450	1,620	1,420	2,300	2,080	2,080
Koh Kong	60	317		151	25,060	19,077	19,077	29,415	35,874	48,000
Total	60	637	2,277	1,902	26,761	23,200	23,242	33,960	51,249	66,255

(Source: DoF, 2002)

13. Horizontal Longlines (Khmer name Santouch Ro Noug)

This is the Simplest of fishing gears and requires only a line and a baited hook. The line is equipped with hooks which may be single or multiple, big or small depending on the species desired. These fishing gears are commonly used in Sihanoukville and Koh Kong (Table 16.).

Table 16. Data of Horizontal longlines use in Cambodian sea (Unit = Number of hook)

Province/Municipality	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Kep	-	-	-	-	-	-	-	-	-	-
Kampot	-	-	-	-	-	-	-	-	-	-
Sihanoukville	-	750	590	1,950	1,650	1,450	1,450	7,500	14,150	14,300
Koh Kong	16,000	10	330		12,970	3,300	3,300	1,100	1,210	1,300
Total	16,000	760	920	1,950	14,620	4,750	4,750	8,600	15,360	15,600

(Source: DoF, 2002)

Ranking by Type of Fishing Gears

So far there are no studies ranking the important species separately for provinces or landing sites. The coastal zone management project in Cambodia (1996) has ranked major species by specific fishing gears (Table 17.).

Table 17. The target species of differences fishing gears

Fishing gear	Target group	Secondary group
Mackerel purse seine	<i>Rastrelliger brachysoma</i>	<i>Rastrelliger kanagurta</i> , <i>Megalaspis cordyla</i> , <i>Thannus tonggol</i>
Anchovy encircling seine	<i>Stolephorus indicus</i>	
Shrimp gill net	<i>Penaeus merguensis</i>	
Fish gill net	<i>Scomberomorus guttatus</i> , <i>Thannus thannus</i> , <i>Ariidae thalassinus</i> , <i>Eleuteronema tetradactylum</i> , <i>Liza argentea</i> , <i>Valamugil ceheli</i> , <i>Rastrelliger brachysoma</i> , <i>Rastrelliger kanagurta</i> , <i>Megalaspis cordyla</i> , <i>Formio niger</i> , <i>Lates calcarifer</i> , <i>Dasyatidae</i>	Serranidae, Lutjanidae, Nemipteridae, Sciaenidae, Drepanidae, Siganidae, Trichiuridae, Stromatoidae, Chirocentridae and Synodontidae.
Crab gill net	<i>Portunus</i> spp., <i>Scylla serrata</i>	
Crab trap	<i>Portunus</i> spp., <i>Scylla serrata</i>	
Squid trap	<i>Sepioteuthis lessoniana</i> , <i>Loligo</i> spp.	
Fish stake trap	Mixed fish species	
Horizontal longline	Orectolobidae, Carcharinidae, Dasyatidae, Serranidae, Lutjanidae	
Push net	Mixed fish, <i>Metapenaeus</i> spp. Sepiolidae, <i>Octopus</i> spp.	
Shellfish dredge	Arcidae, Veneridae	
(Source: DoF, 2002)		
Beach seine net	Mixed fish, Sepiolidae, <i>Loligo</i> spp.	

Chapter 2
EXPLANATORY NOTES

This volume of Monograph Fishing Gears and Methods in Southeast Asia : Cambodia was conducted in August 2003 with the aim to collect as many types of fishing gears and method as possible. Most data were collected by interviewing fishermen with the help of questionnaire prepared in advance.

Though the surveyed area spanned along the coast line of Cambodian water, some of the gears were not found in the surveyed period (see Map.1). Therefore, this volume of fishing gears in Cambodia would only be illustrated some parts of gears that were made and used at the time (see Table 18). In order to fulfill the completion, we best hope this volume will serve as the background knowledge for the future revision

In the classification of fishing gear, drawing and explanations in this volume, we have on the whole followed the system used in the "FAO Catalogue of Small-Scale Fishing Gear". The mode of presentation is summarized below.

Illustrations :

1) Drawing of the horizontal length of surrounding nets, purse seines and gill nets is drawn according to the length of the float line, and the vertical depth according to the fully stretched netting. In the case of gill nets with sidelines, the depth is drawn according to their length. The width of netting panels or sections of trawl gear is drawn according to half the stretched netting, and the depth or length according to fully stretched netting. Some gears are shown by schematic or partly perspective overall sketches, with dimensions indicated where applicable.

2) The general outline of drawings such as the rig of the complete gear and detailed drawings of components are mostly not to scale, but the main dimensions are given.

3) Dimensions are given only in meters (m) and millimeters (mm). Th units are not indicated but can easily be recognized, as follows:

Meters: Length of footropes, headlines, floatlines, etc. used with decimal of hundredths (e.g., 5.25, 90.20).

4) Mass and weight are indicated in the units of kilogram(kg) and gram(g)

5) Materials are indicated by abbreviations list in **Appendix1**.

6) The size of net yarns is show in Denier unit.

7) The mesh size (in millimeters, mm) is understood to be the distance between the centers of the two opposite knots in the same mesh when fully stretched.

8) The number of meshes in a straight row along the edges indicates the width and length or depth of net panels or sections.

9) The shape of netting section is indicated by the cutting rate at its edge. A tabulation of common cutting rate for a practical rang of taper ratios is shown in **Appendix 2**.

10) The term hanging ratio (E) designates the ratio between the length of a given portion of the mounting rope and the length of the stretch netting hung on this portion of the rope.

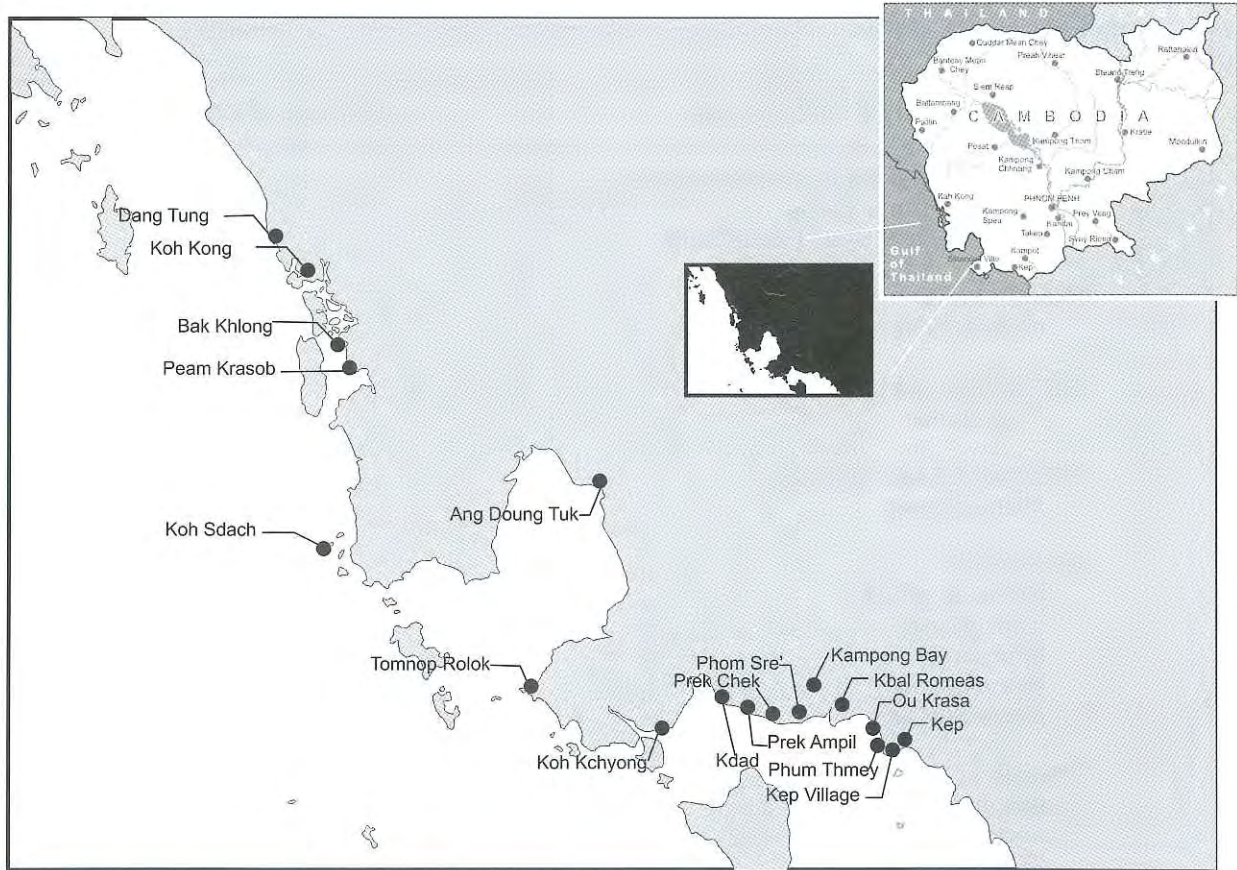
11) When there are two or more variants in the construction of gear or manner of use, there are indicated in the title and opposite the drawing by Roman numerals (I, II,.....). Where these variants refer to only one component part of gear, other possible ways of making this part are show with the abbreviation ALT.

12) Sequence in fishing operation is shown by sketches with circled Arabic numerals (1, 2,.....) which indicate the sequence of operation stages.

13) Part of gear drawn in detail are circled capital letters (A, B,)

Table 18. Amount of Fishing Gear designs collected from the surveys in Cambodia

Group of fishing gear	Amount of designs
SURROUNDING NET (with purse line)	
-Anchovy Purse Seine	1
-Mackerel and Scad Purse Seine	2
TRAWL NETS	
-Bottom otter trawls with booms	5
LIFT NETS (portable)	
-Fish lift net	1
FALLING GEAR (portable)	
-Fish cast net	1
GILL NETS	
-Surface gill net	9
-Drift gill net	
-Bottom gill net	17
-Trammel net	2
-Encircling gill net	4
TRAPS	
Portable traps (pot)	
-Octopus trap	1
-Squid trap	1
-Fish trap	2
-Collapsible crab trap	3
Stationary traps	
-Stake trap	1
-Fyke net	1
HOOKS AND LINES	
-Trolling lines	
Cuttle fish	2
Spanish mackerel	1
-Long line	
Drifting long lines	2
Bottom long lines	4
SCOOP NETS	
-Push net	
Portable (man push net)	2
Boat push net	4
-Scoop	3
DREDGES	
-Boat dredge	1
MISCELLANEOUS	
-Spearing gear	3
-Shell collecting basket	1
TOTAL	74



Map. 1 Location (●) where the surveys of fishing gears and methods used were carried out in this Volume of Monograph Illustrations

APPENDIX 1

ABBREVIATIONS AND SYMBOLS

Abbreviations and symbols used for the designs

ALT = alternative	\varnothing = diameter
BAIT = bait	\uparrow = upper panel
BAM = bamboo	\downarrow = lower panel
BR = brass	\leftrightarrow = side panel
CEM = cement	\odot = purse ring
CLAY = baked clay	\downarrow = N-direction in netting
COMB = combination rope	$\rightarrow \leftarrow$ = thickness
COT = cotton	$\dots\dots/$ = optional
Cu = copper	\sim = approximately
ELEC = electric	\curvearrowright = circumference
Fe = iron	\diamond = double braided
FISH = fish	\diamond = mesh
GALV = galvanised	\diamond = knotless (raschel type)
L = length	$\#$ = knotless (moji type)
LIVE = live-bait	$\#$ = knotless (twisted type)
MAT = material	 = braided
MET = metal	//// = twisted
MONO = monofilament	$\sim\rightarrow$ = current
MOT = motor	\rightarrow = wind
PA = polyamide	 = fish
Pb = lead	
PE = polyethylene	
PES = polyester	
PL = plastic	
PP = polypropylene	
PVA = polyvinyl alcohol	
PVC = polyvinyl chloride	
RED = red	
RUB = rubber	
SST = stainless steel	
ST = steel	
SW = swivel	
WD = wood	
WIRE = steel wire rope	
Zn = zinc	

APPENDIX 2

Cutting Rates and Taper Ratios

Number of Meshes Lost (or gained)

The shape of the pieces of netting of which a gear consists is achieved by increasing or reducing the number of meshes in width or length. This can be done by hand braiding or by shape cutting of which the latter is by far the most common. In this catalogue the shape of net sections is therefore specified in cutting rates only which can be converted into any hand braiding scheme by the reader himself.

The cutting rate gives the rhythmical combination of different types of cuts, either along a row of sequential knots (N or T cuts, see Figures 1 and 2) or parallel to a line of sequential mesh bars (B cuts, see Figure 3)

It is indicated for the N and T cuts by the number of consecutive meshes cut and for the B cuts by the number of consecutive bars severed along the cutting edge, not counting the bars on the preceding point (knot).

The following combinations are used for cutting netting to shape:

AB or all bar cuts (Figure 3)

N and B cuts (example 1N2B, Figure 4)

T and B cuts (example 1T2B, Figure 5)

N and T cuts (example 1N2T, Figure 6)

The taper ratio indicates the relation between the number of meshes lost (or gained) counted in the T direction at the end of the depth of the cut which is counted in meshes in the N direction.

In order to facilitate repairs, modifications or design of nets, the following table gives the most common cuttings rates in correspondence with the respective taper ratios.

Common Cutting Rates and Taper Ratios

Number of Meshes Lost (or gained)

Number of Meshes in Depth

	1	2	3	4	5	6	7	8	9	10
1	AB	1T2B	1T1B	3T2B	2T1B	5T2B	3T1B	7T2B	4T1B	9T2B
2	1N2B	AB	1T4B	1T2B	3T4B	1T1B	5T4B	3T2B	7T4B	2T1B
3	1N1B	1N4B	AB	1T6B	1T3B	1T2B	2T3B	6T6B	1T1B	7T6B
4	3N2B	1N2B	1N6B	AB	1T8B	1T4B	3T8B	1T2B	5T8B	3T4B
5	2N1B	3N4B	1N3B	1N8B	AB	1T10B	1T5B	3T10B	2T5B	1T2B
6	5N2B	1N1B	1N2B	1N4B	1N10B	AB	1T12B	1T6B	1T4B	1T3B
7	3N1B	5N4B	2N3B	3N8B	1N5B	1N12B	AB	1T14B	1T7B	3T14B
8	7N2B	3N2B	5N6B	1N2B	3N10B	1N6B	1N14B	AB	1T16B	1T8B
9	4N1B	7N4B	1N1B	5N8B	2N5B	1N4B	1N7B	1N16B	AB	1T18B
10	9N2B	2N1B	7N6B	3N4B	1N2B	1N3B	3N14B	1N8B	1N18B	AB
11	5N1B	9N4B	4N3B	7N8B	3N5B	5N12B	2N7B	3N16B	1N9B	1N20B
12	11N2B	5N2B	3N2B	1N1B	7N10B	1N2B	5N14B	1N4B	1N6B	1N10B
13	6N1B	11N4B	5N3B	9N8B	4N5B	7N12B	3N7B	5N16B	2N9B	3N20B
14	13N2B	3N1B	11N6B	5N4B	9N10B	2N3B	1N2B	3N8B	5N18B	1N5B
15	7N1B	13N4B	2N1B	11N8B	1N1B	3N4B	4N7B	7N16B	1N3B	1N4B
16	15N2B	7N2B	13N6B	3N2B	11N10B	5N6B	9N14B	1N2B	7N18B	3N10B
17	8N1B	15N4B	7N3B	13N8B	6N5B	11N12B	5N7B	9N16B	4N9B	7N20B
18	17N2B	4N1B	5N2B	7N4B	13N10B	1N1B	11N14B	5N8B	1N2B	2N5B
19	9N1B	17N4B	8N3B	15N8B	7N5B	13N12B	6N7B	11N16B	5N9B	9N20B

Figure 1. N cut ("Normal"). The cut is perpendicular to the general course of the yarn in knotted netting.

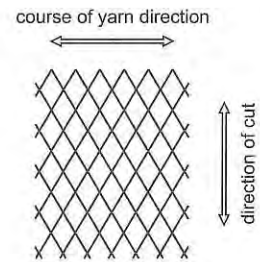


Figure 2. T cut ("transversal"). The cut is parallel to the general direction of the yarn in knotted netting.

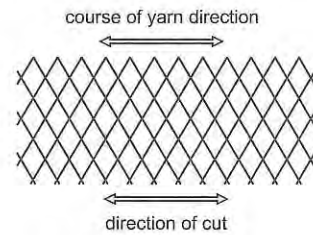


Figure 3. B cut ("bar"). The cut is parallel to a line of sequential mesh bars.

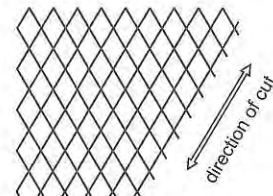


Figure 4. Cutting rate 1N2B.

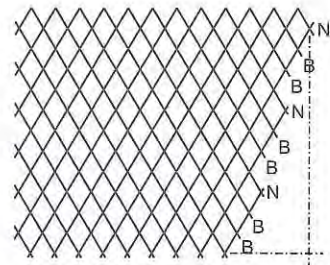


Figure 5. Cutting rate 1T2B

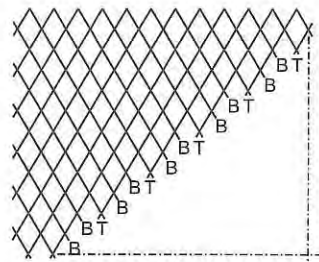
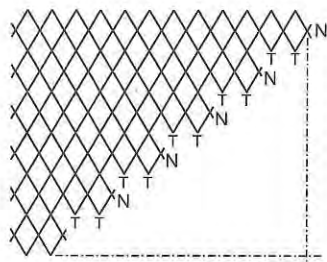


Figure 6. Cutting rate 1N2T



HANGING RATIO

The term hanging ratio (symbol E) designates the ratio between the length of a given portion of mounting rope and the length of the stretched netting hung on this portion of rope (Figure 7).

The hanging ratio may be written as a decimal fraction, or as a vulgar fraction, or as a percentage, such as in the following example:

$$E = 0.50 \text{ or } E = 1/2 \text{ or } E = 50\%$$

In this catalogue, the decimal fraction has been specified only. It is, however, of interest to point out that the corresponding vulgar fraction can be used in common practice for net mounting. For instance, with $E = 0.50$ or $1/2$, we have two meshes mounted on the length of one stretched mesh. Also, following the same method, with $E = 0.80$ or $4/5$, we have five meshes mounted on the length of four stretched meshes. More generally speaking, when the hanging ratio can be expressed by a vulgar fraction, the denominator of this fraction represents the number of meshes, the stretched length of which corresponds to that of the rope.

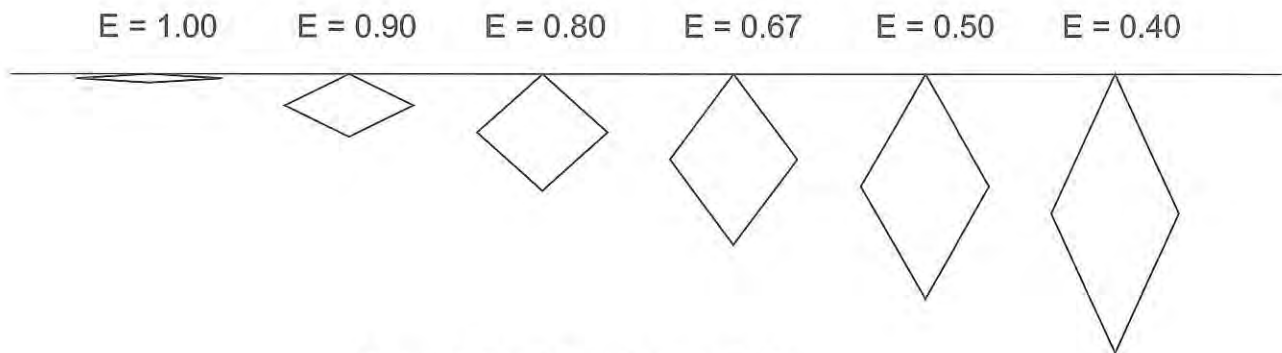
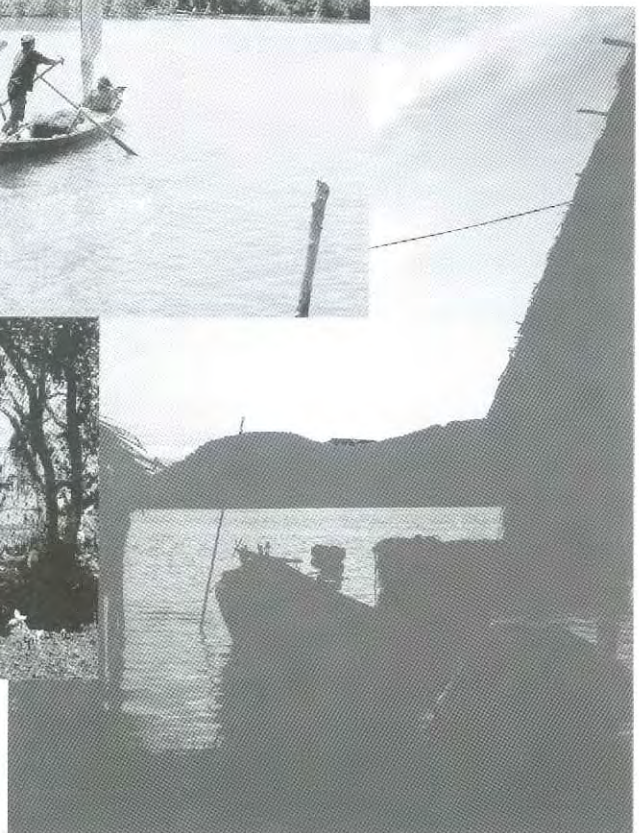
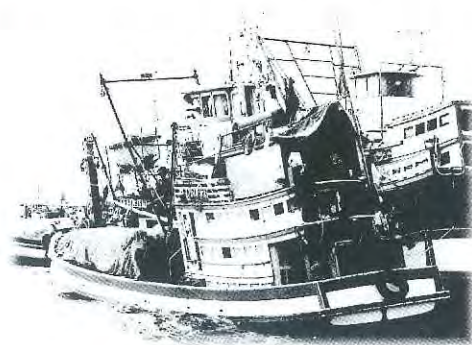


Figure 7. Usual hanging ratio (E).



Chapter 3
Surrounding Nets



SURROUNDING NET

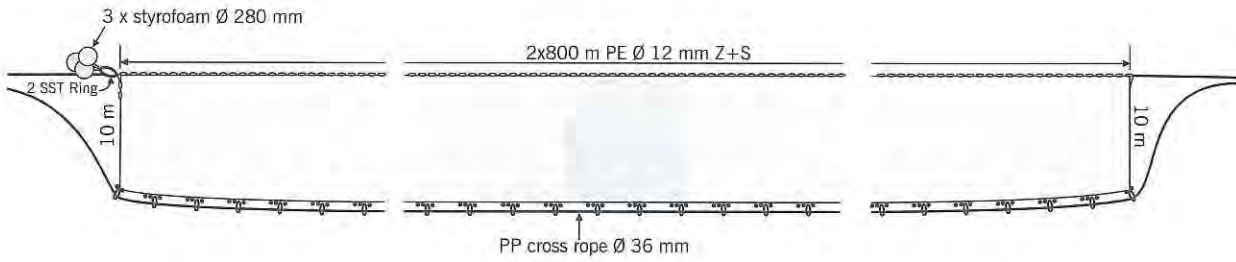
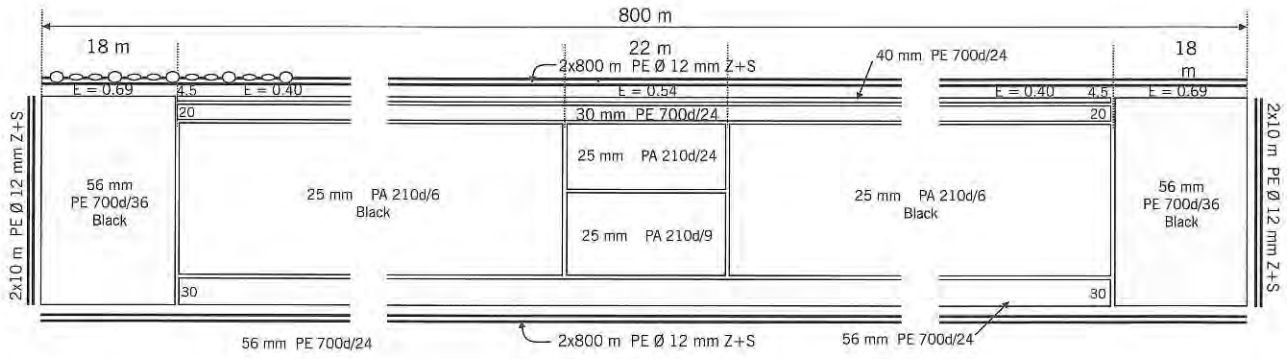
Purse seine
(*Uon Tith*)
Scad, Sardine

BOAT

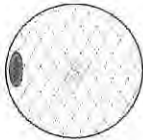
LOA : 20 m.
hp : 350

LOCATION

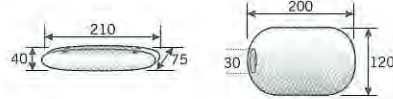
Tomnop Rolok
SIHANOUKVILLE



Styro foam Ø 280
with cover net



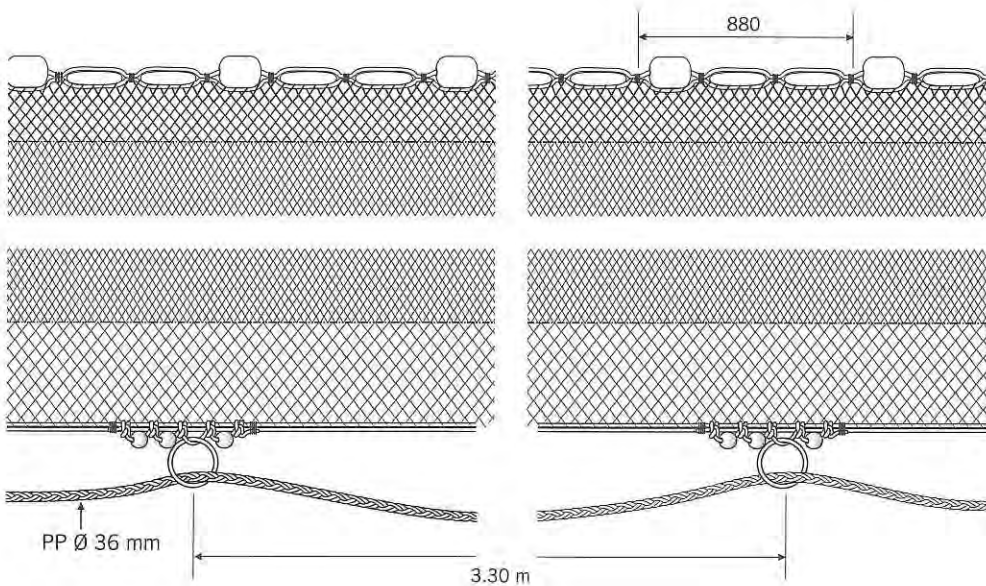
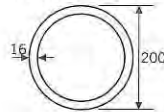
2 Size of Float



Sinker



Purse ring SST



SURROUNDING NET

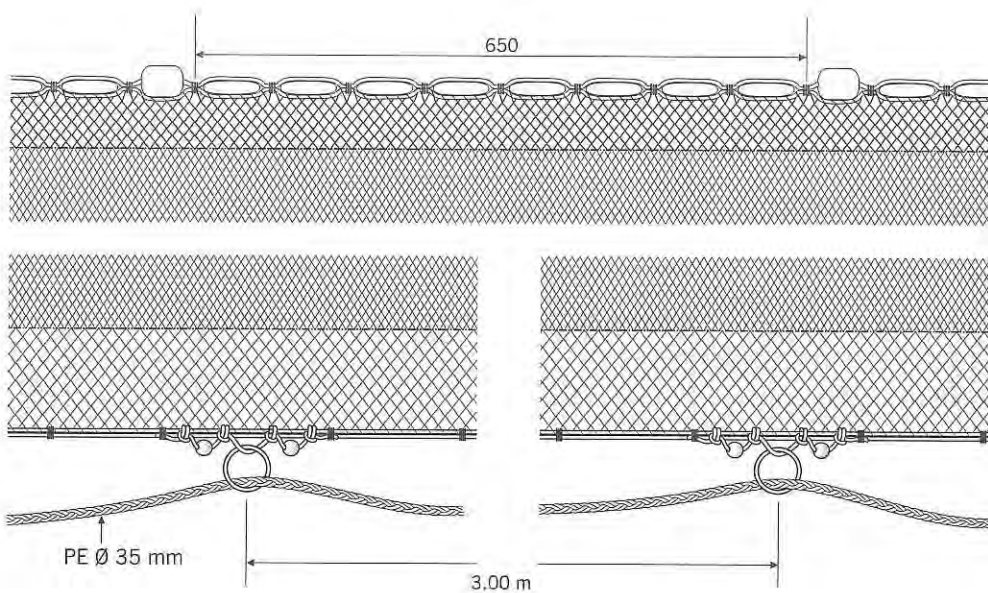
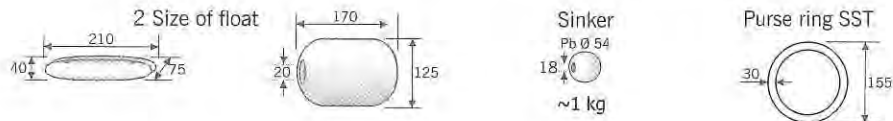
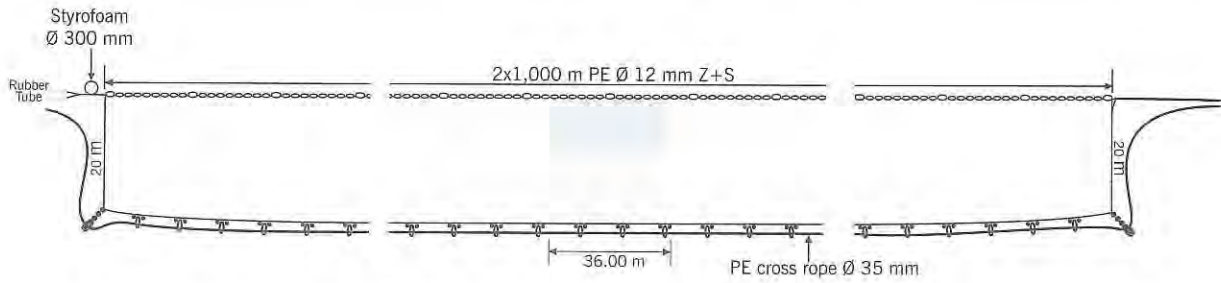
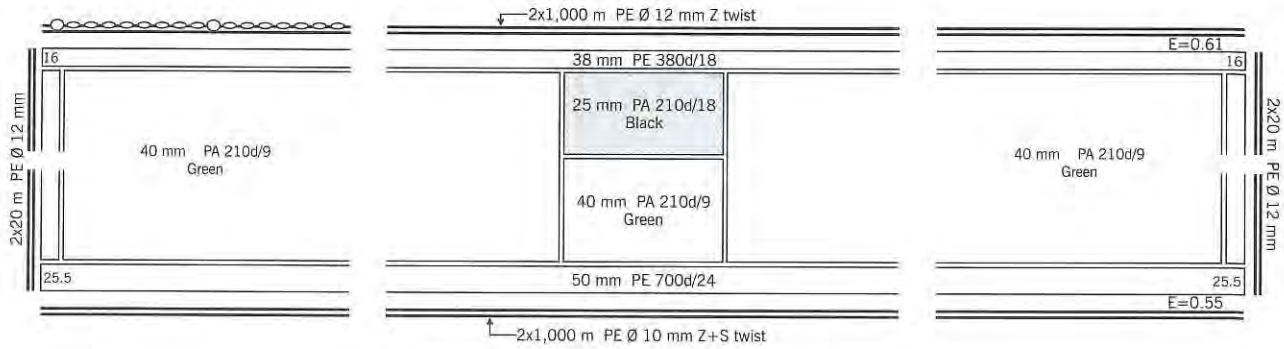
Purse seine
(Uon Tith)
Scad, Sardine

BOAT

LOA : 18 m.
hp : 190

LOCATION

Tomnop Rolok
SIHANOUKVILLE



SURROUNDING NET

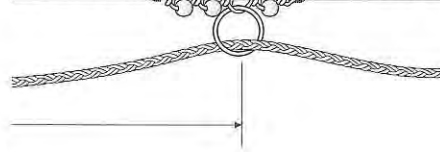
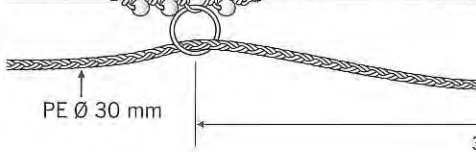
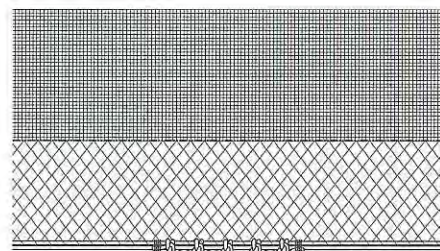
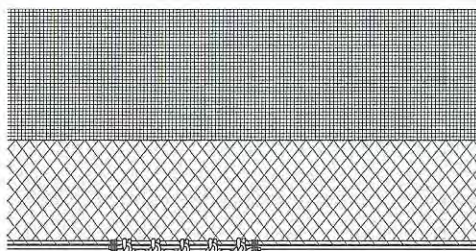
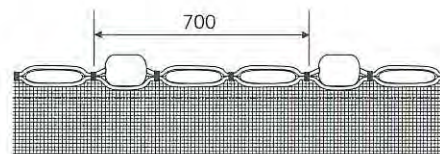
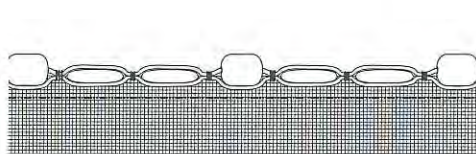
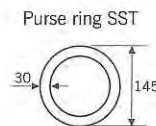
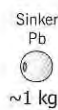
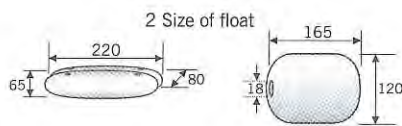
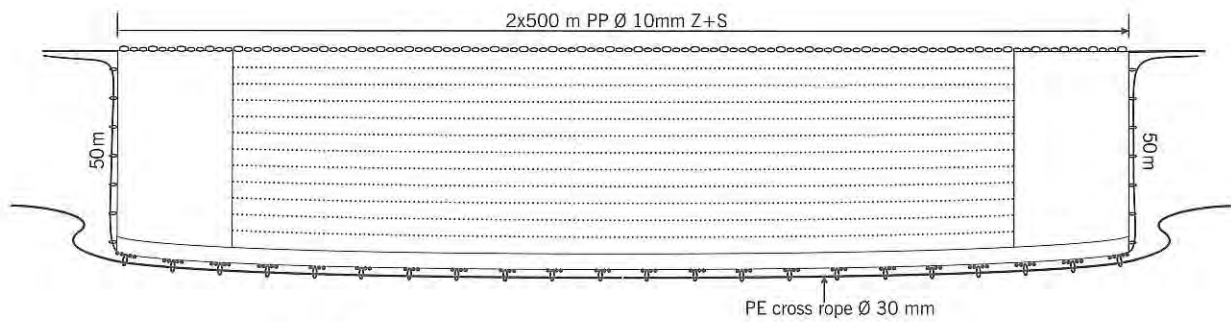
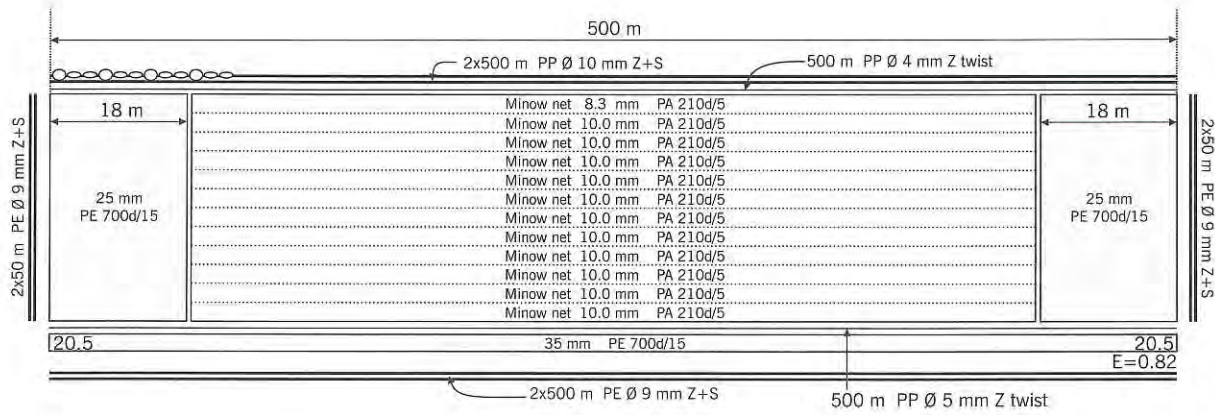
Purse seine
(Uon Tith)
Anchovy

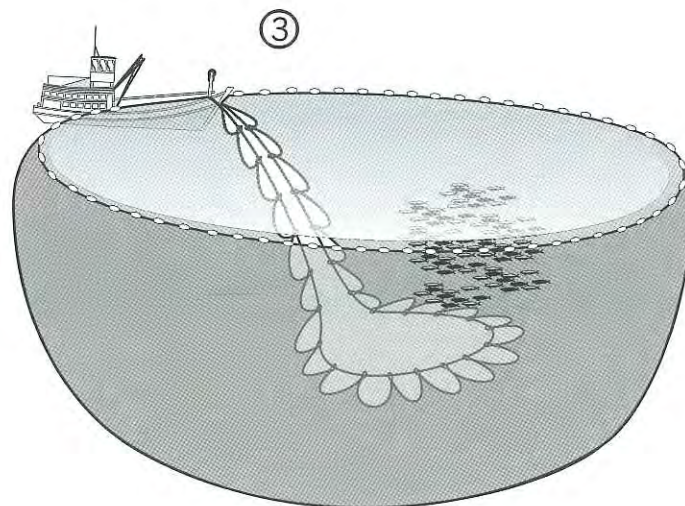
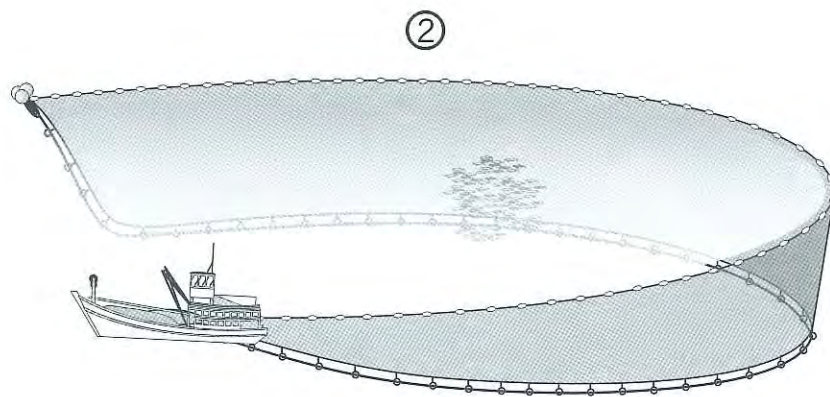
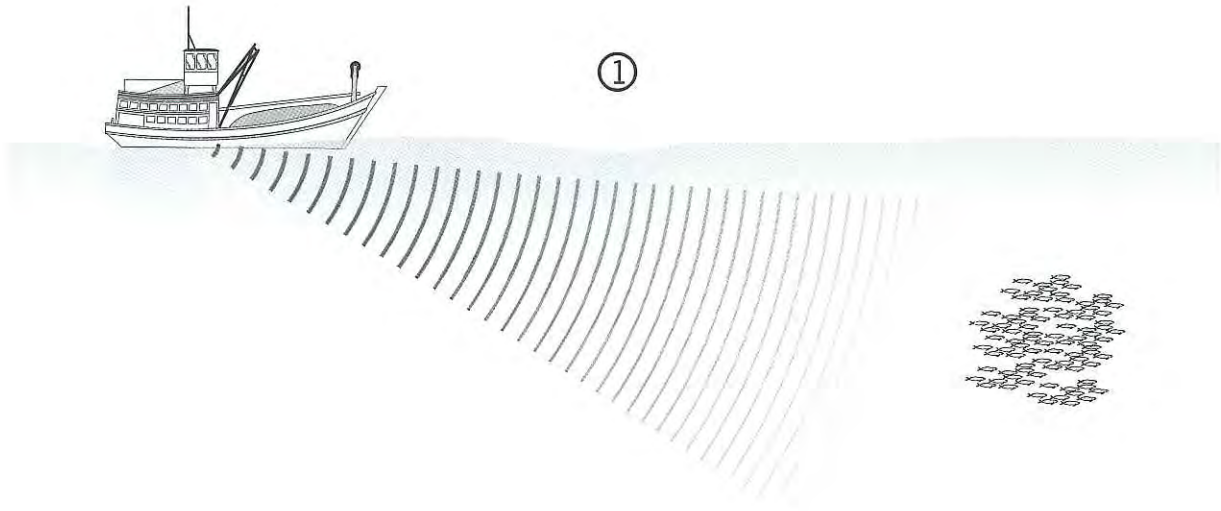
BOAT

LOA : 17 m.
hp : 300

LOCATION

Tomnop Rolok
SIHANOUKVILLE





Purse seine fishing boat in Cambodia



Chapter 4
Trawl Nets



T R A W L

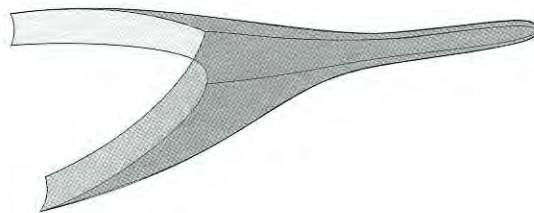
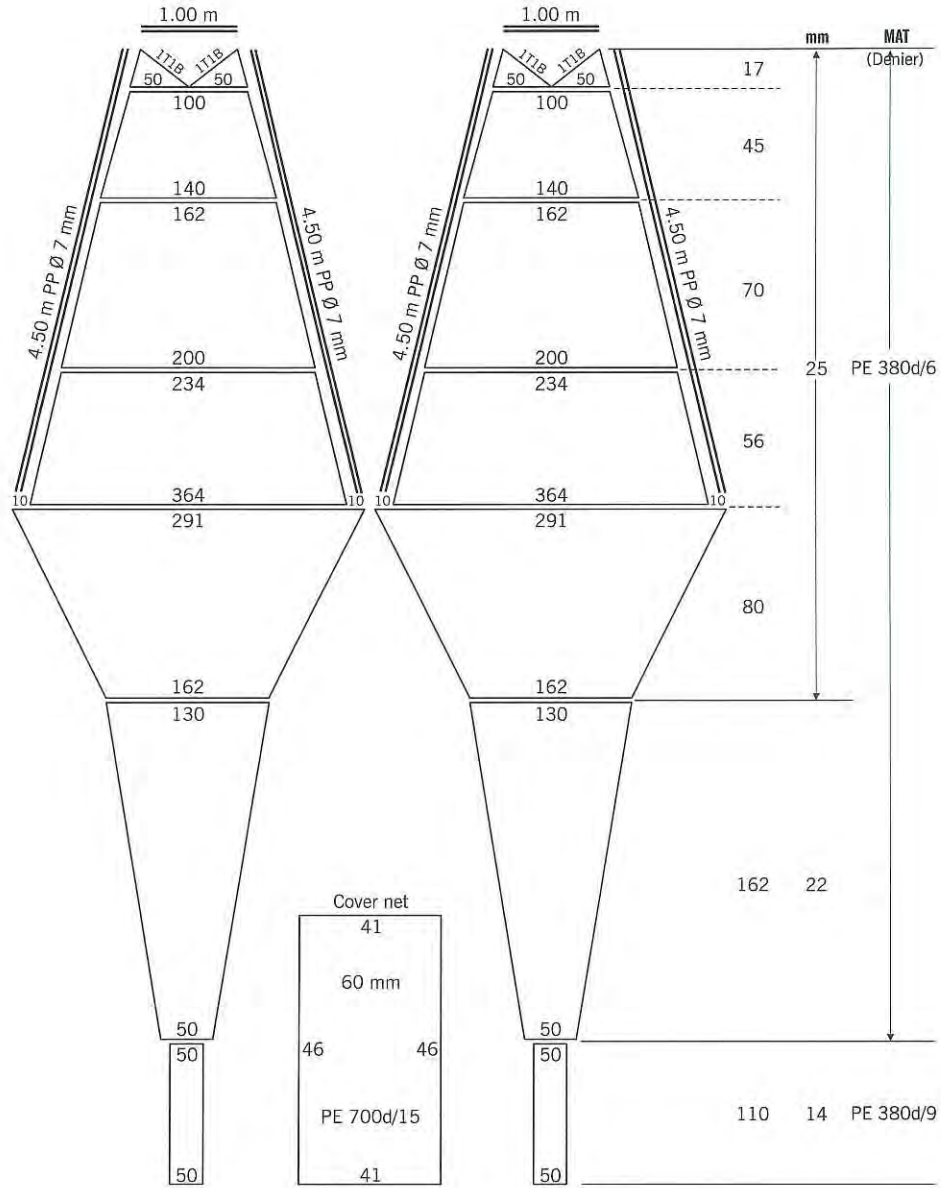
Boottom, Otter Trawl with Boom
(Un Os)
Shrimp, Fishes

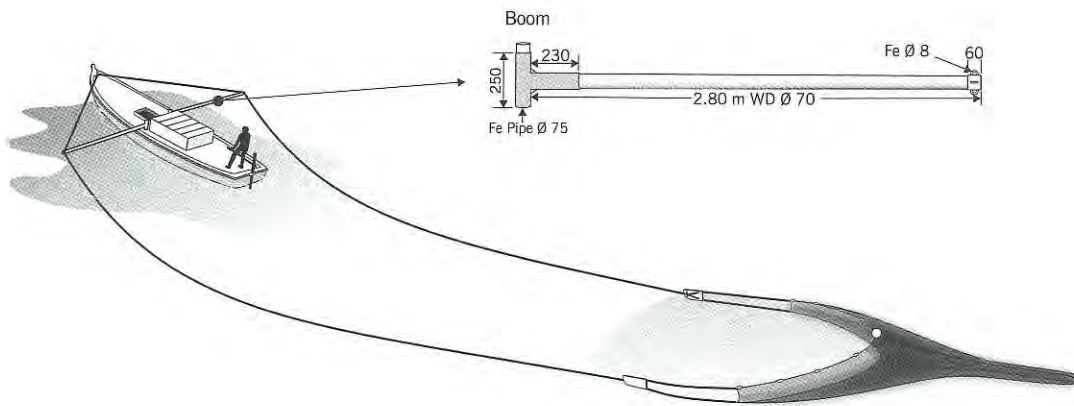
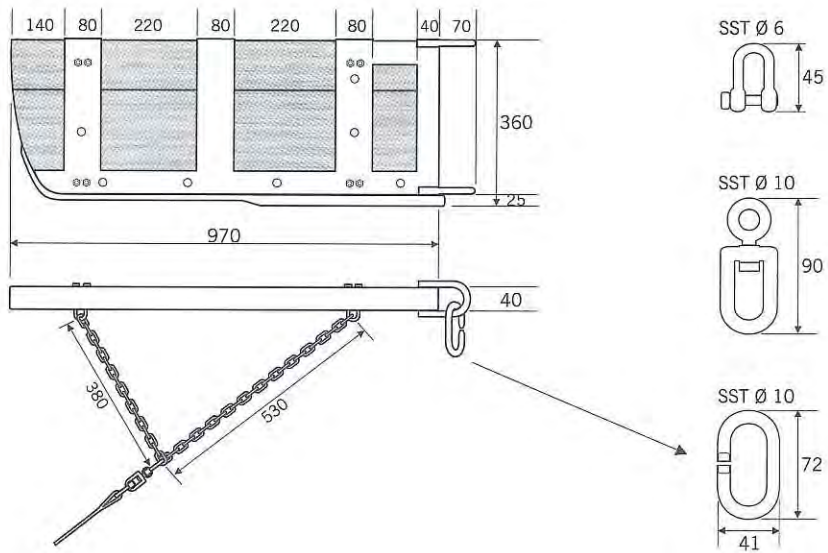
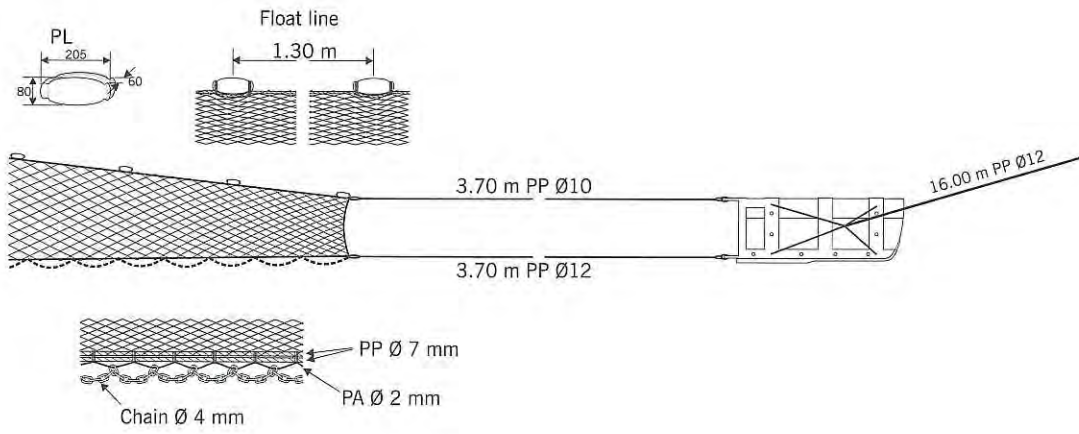
B O A T

Loa : 10 m
GT : -
Hp : 15

L O C A T I O N

Kbal Romeas
KAMPOT

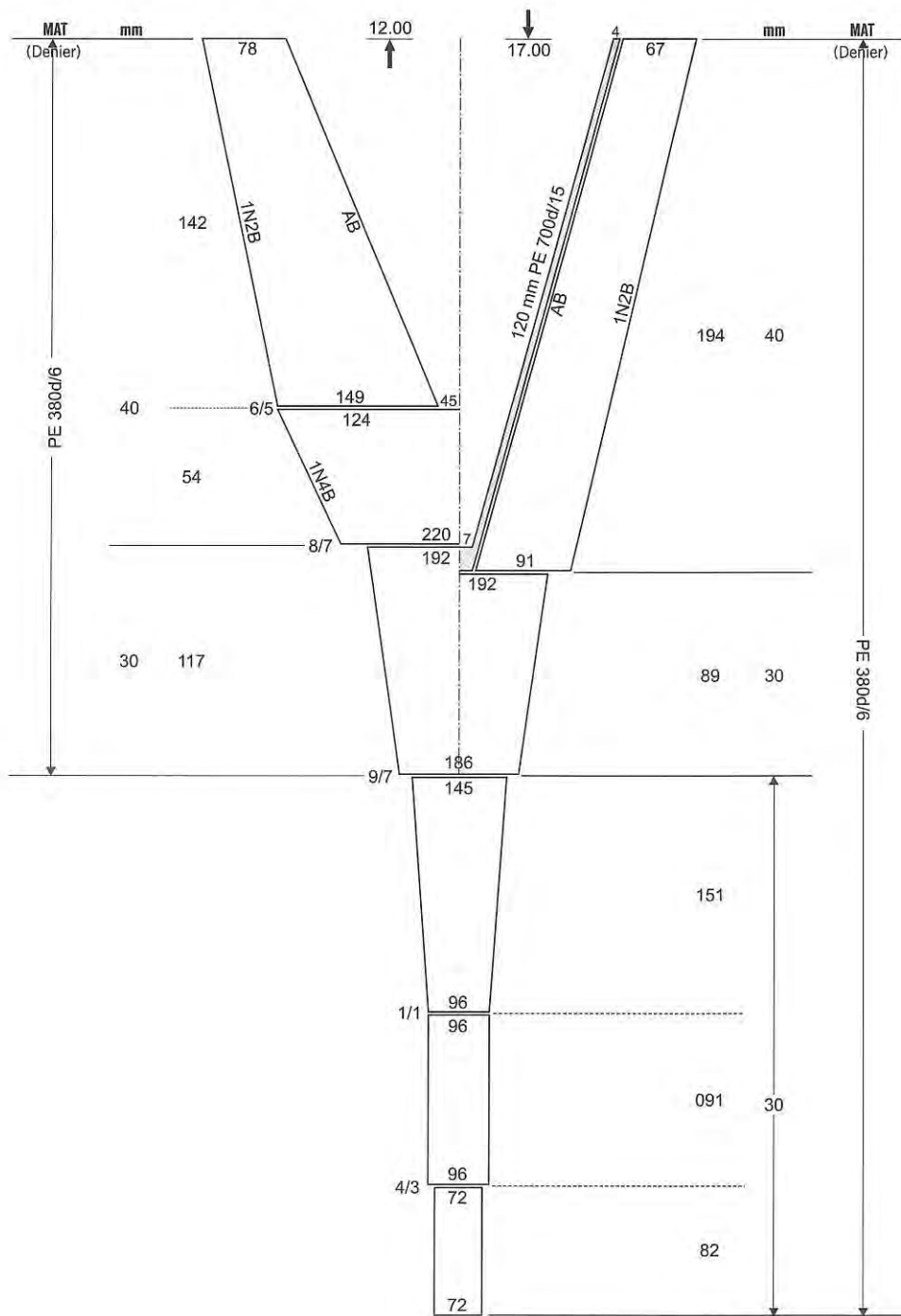


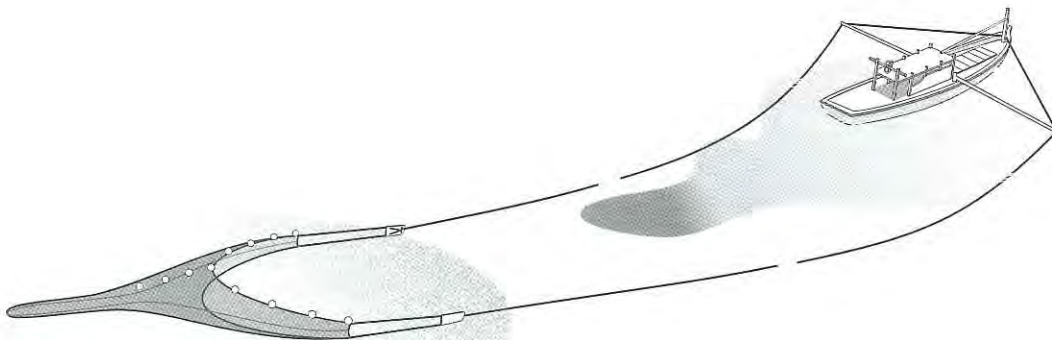
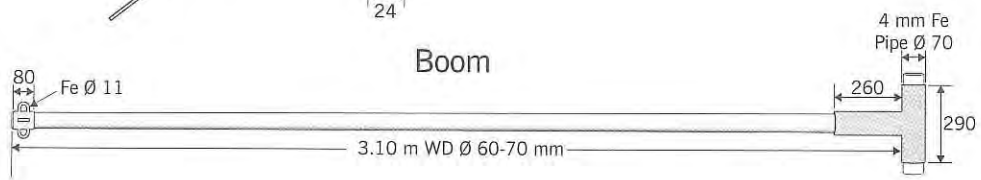
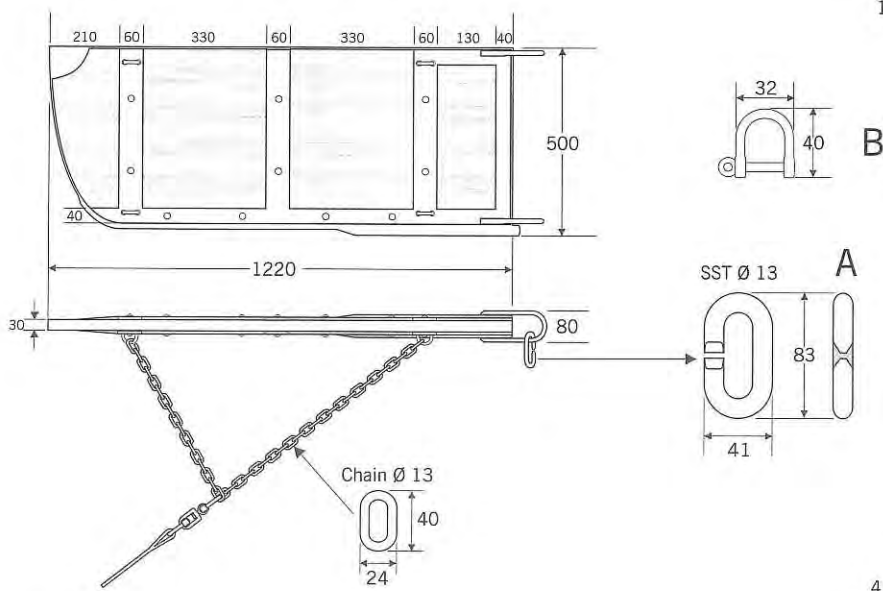
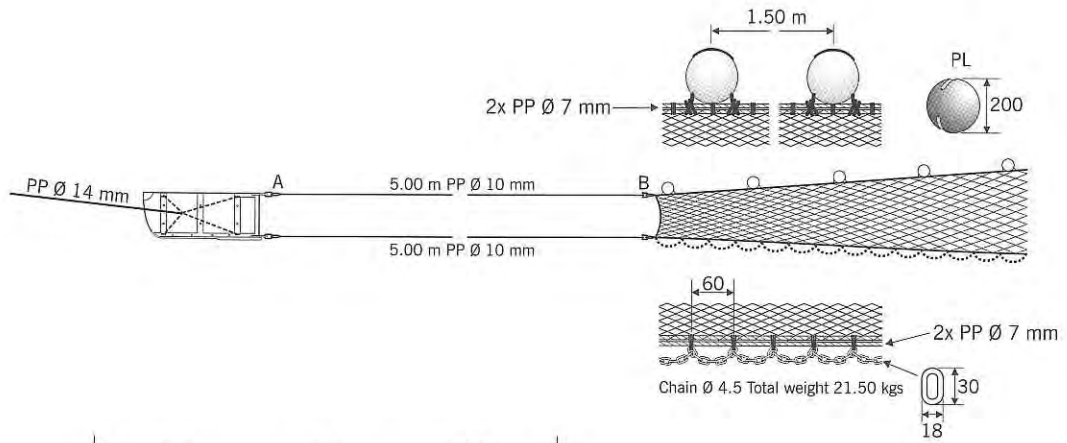


T R A W L
 Bottom, Otter Trawl with Boom
 (Uon Os)
 Shrimp, Fishes

B O A T
 Loa : 10.5 m
 GT : -
 Hp : 24

LOCATION
 Kdad
 KAMPOT





T R A W L

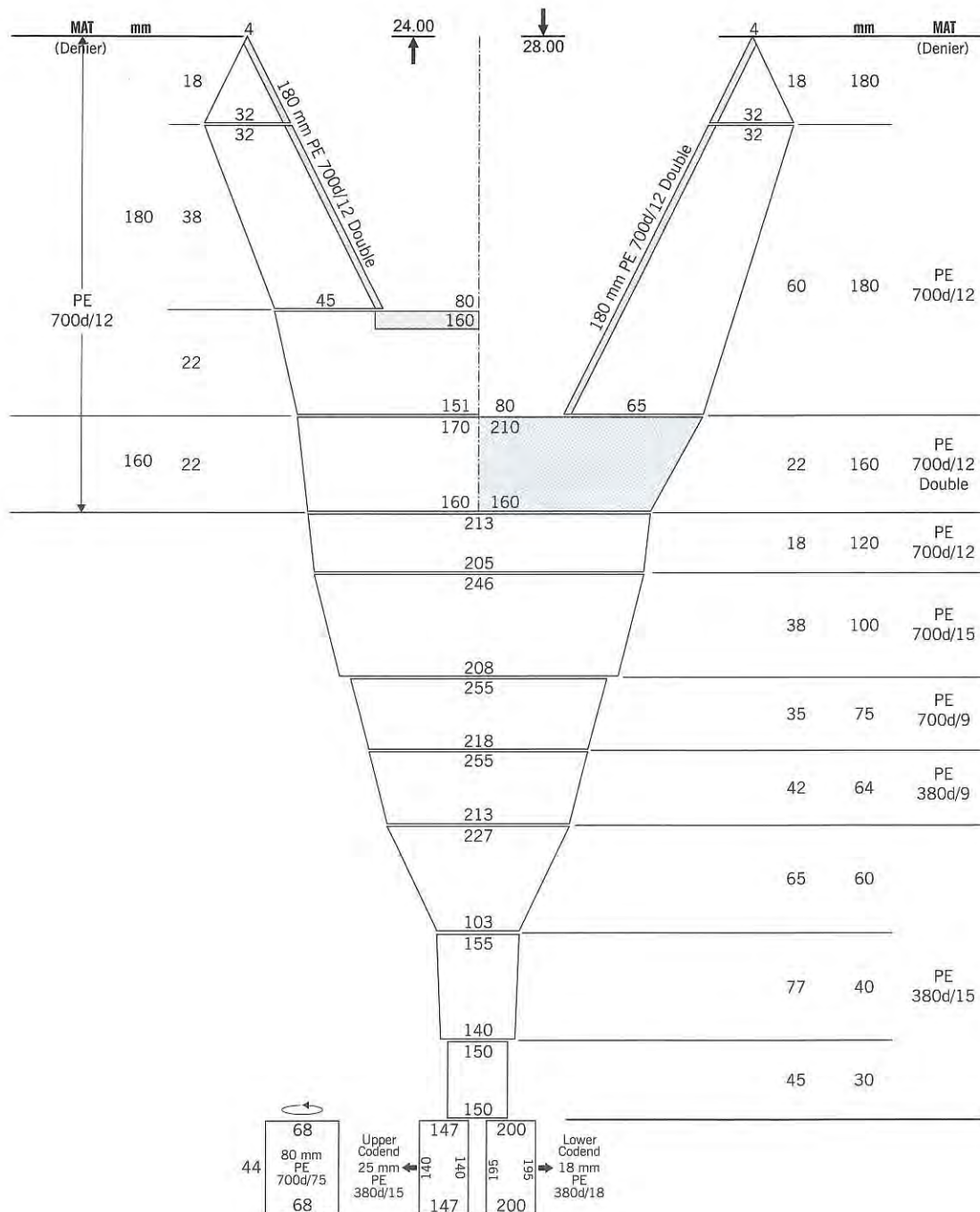
Bottom, Otter Trawl with Boom
(Uon Os)
Demersal Fishes

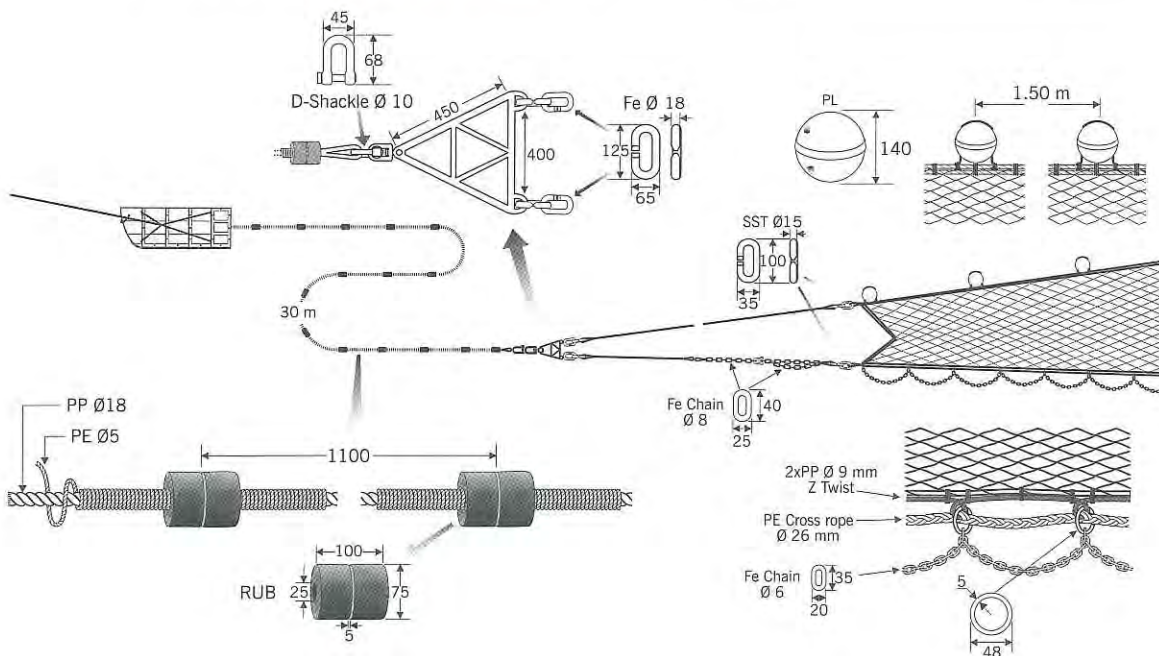
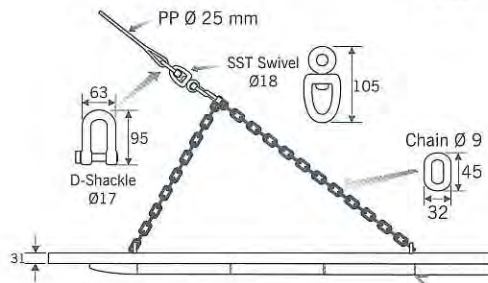
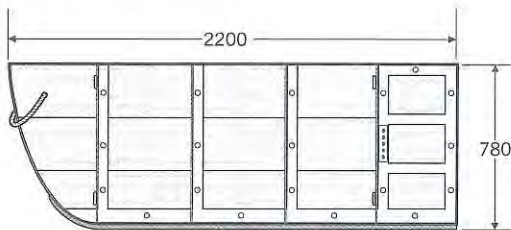
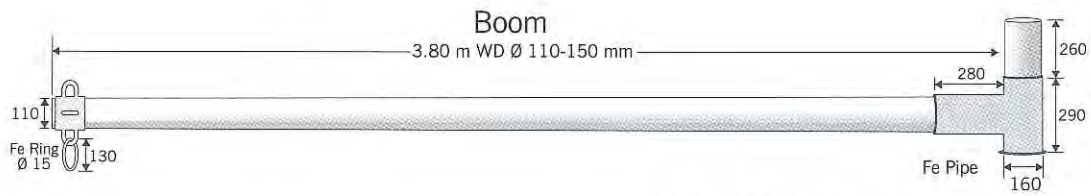
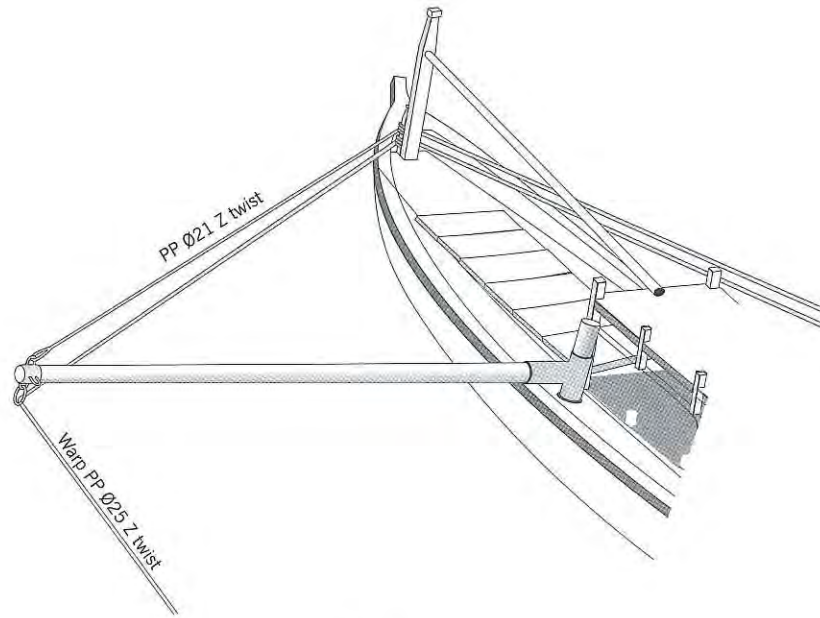
B O A T

Loa : 16 m
GT : -
Hp : 150

L O C A T I O N

Tomnop Rolok
SIHANOUKVILLE

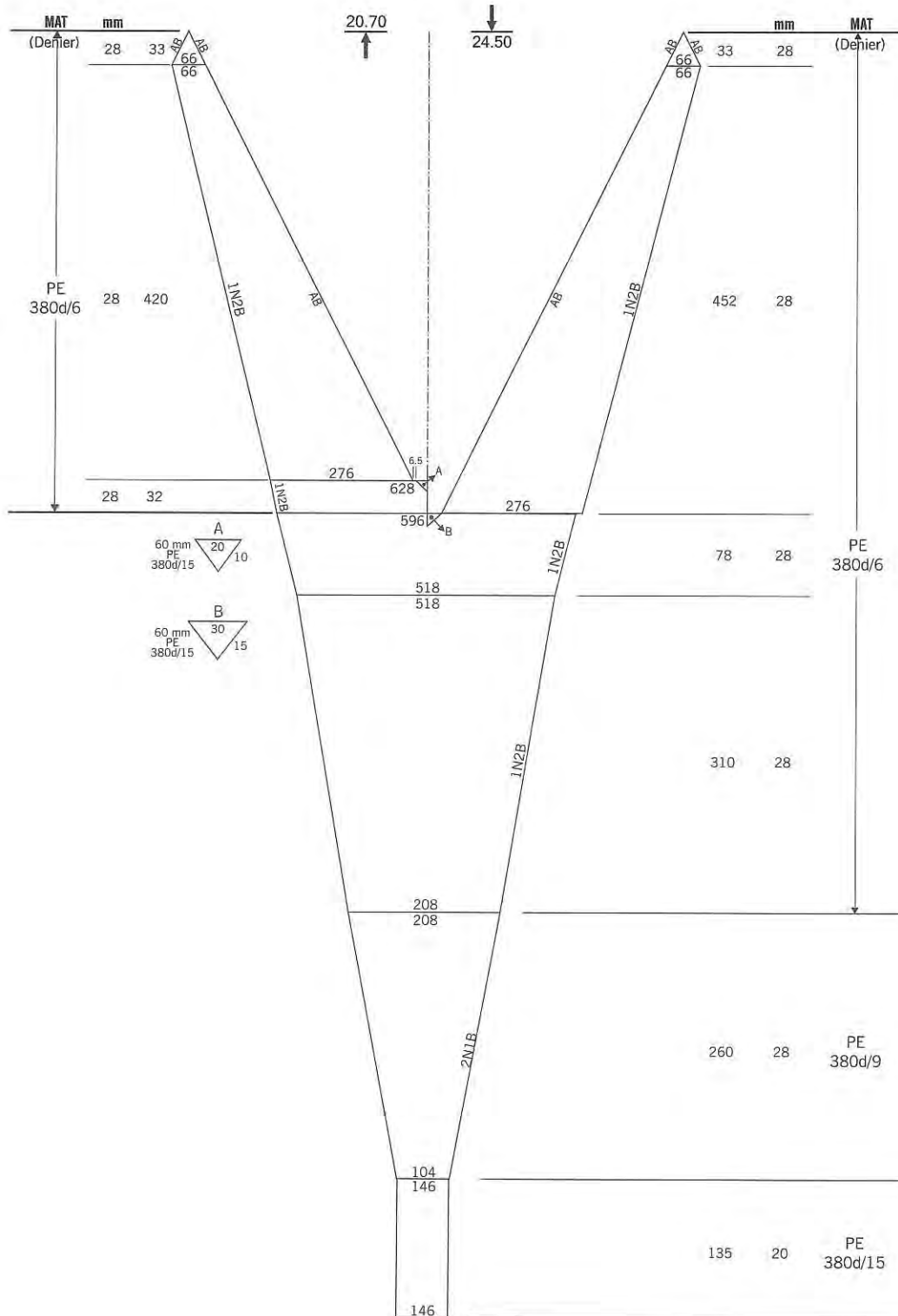


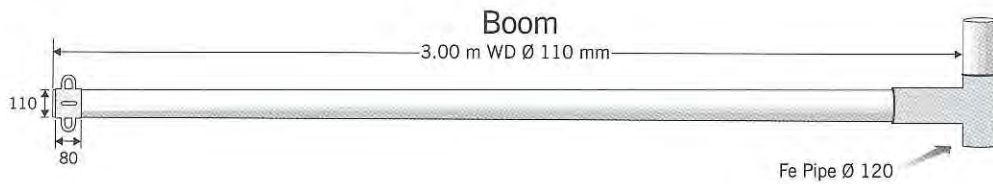
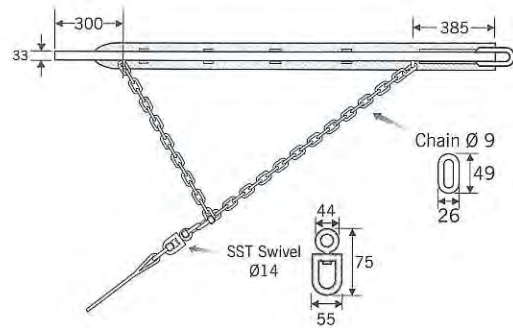
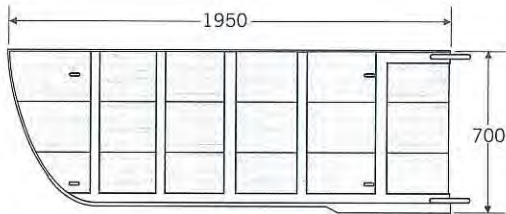
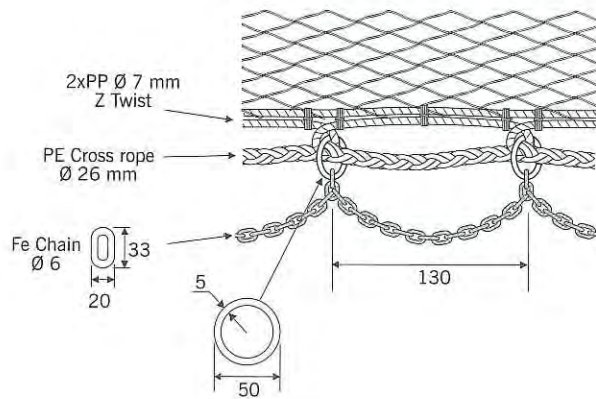
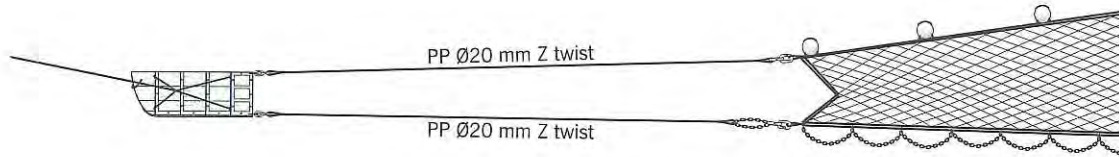


T R A W L
 Bottom, Otter Trawl with Boom
 (Uon Os)
 Shrimp

BOAT
 Loa : 14 m
 GT : -
 Hp : 33

LOCATION
 Bakkhlong
 KOH KONG

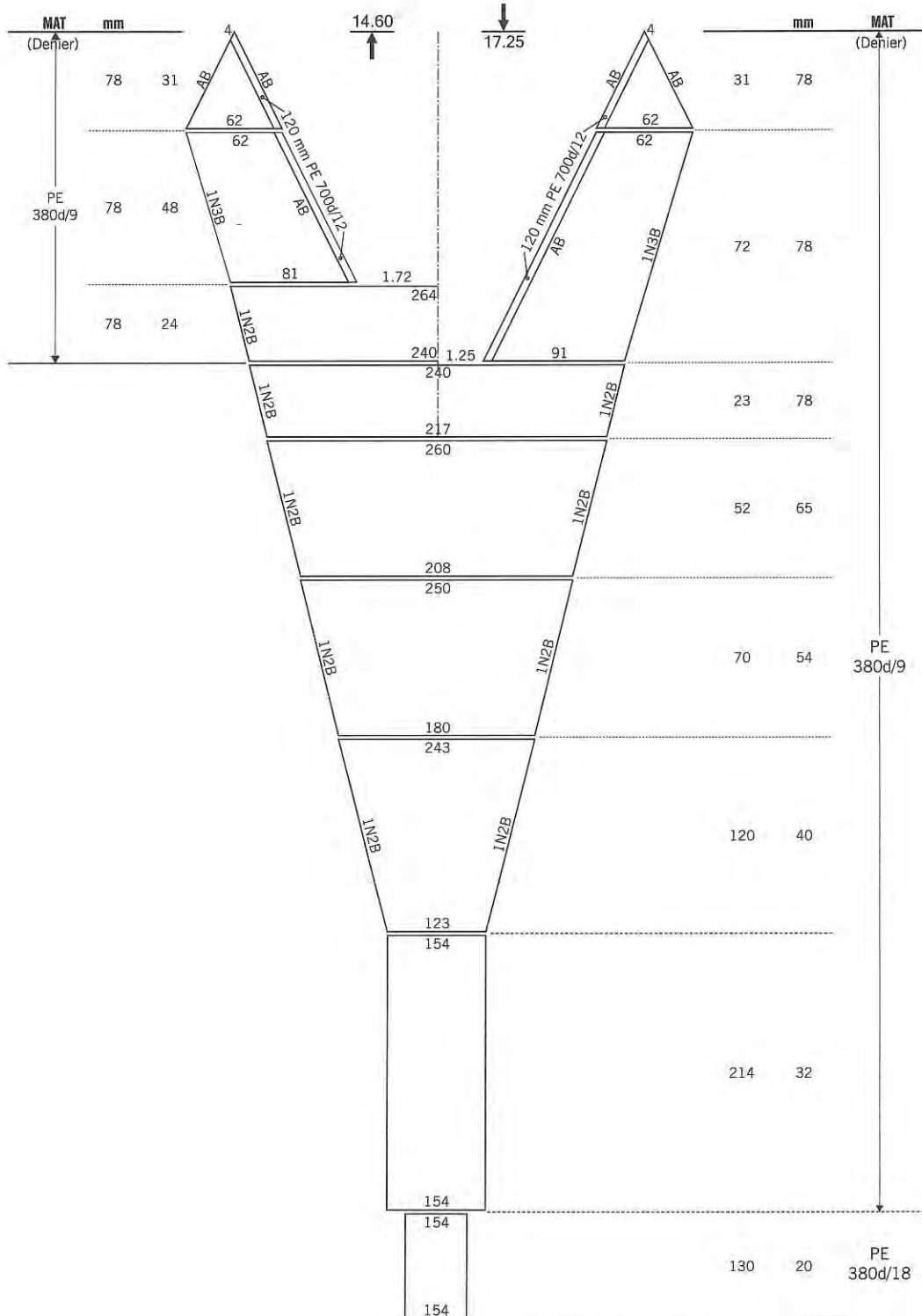


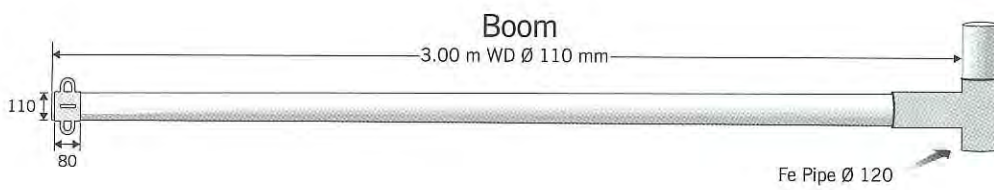
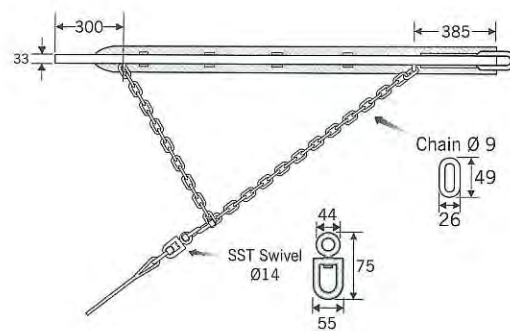
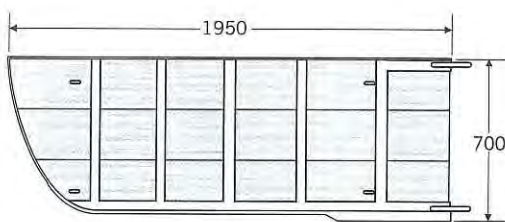
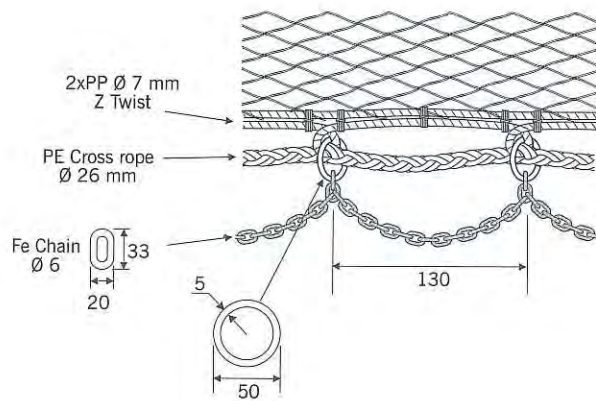
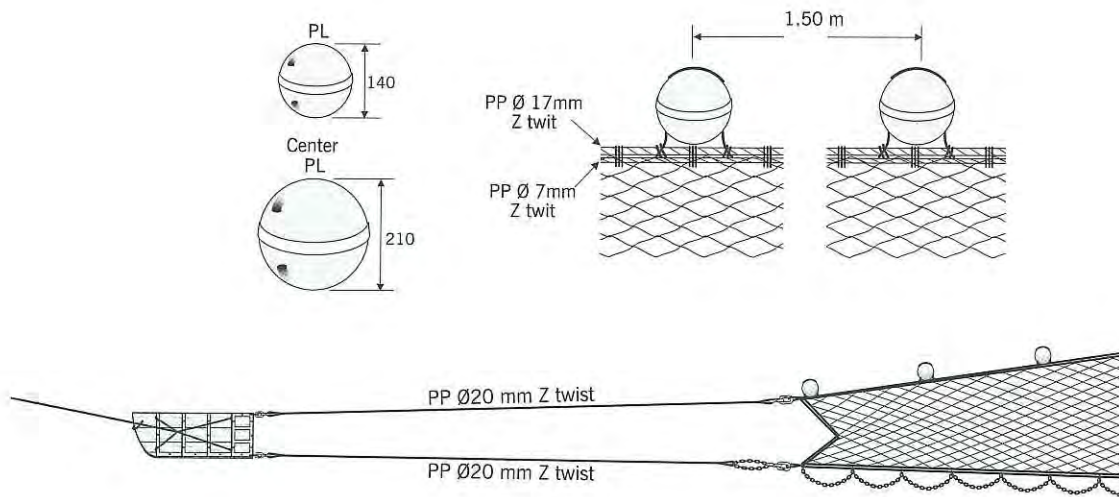


T R A W L
 Bottom, Otter Trawl with Boom
 (Uon Os)
 Squid, Fishes

B O A T
 Loa : 14 m
 GT : -
 Hp : 115-120

L O C A T I O N
 Bakkhlong
 KOH KONG







Chapter 5
Lift Nets



LIFT NET

Portable liftnet

Treadfin beam

BOAT

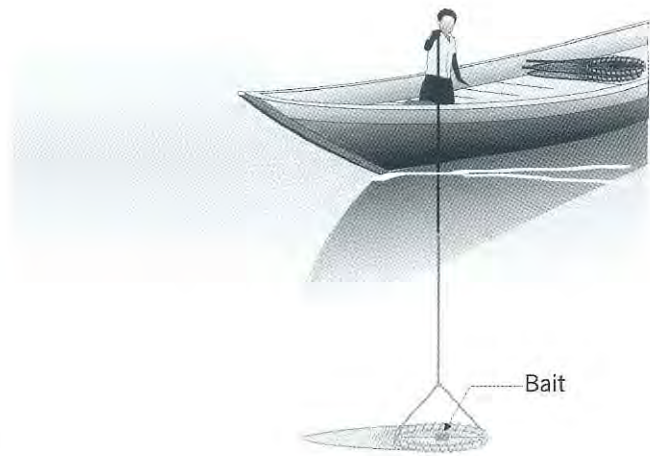
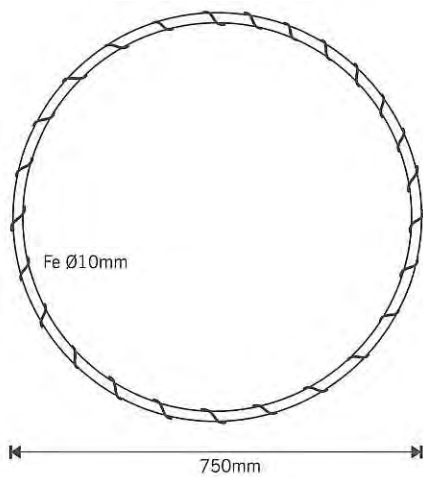
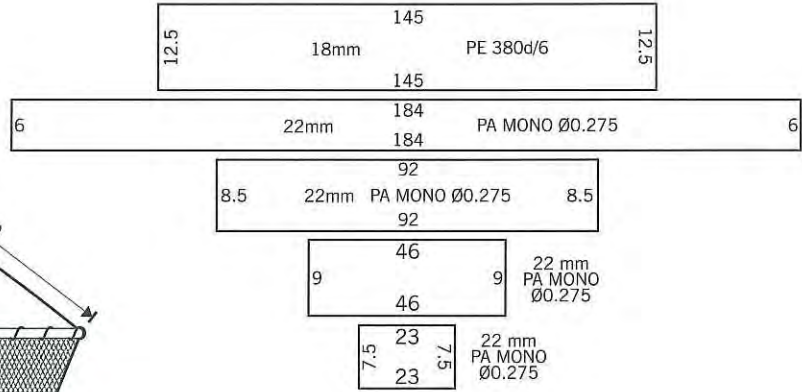
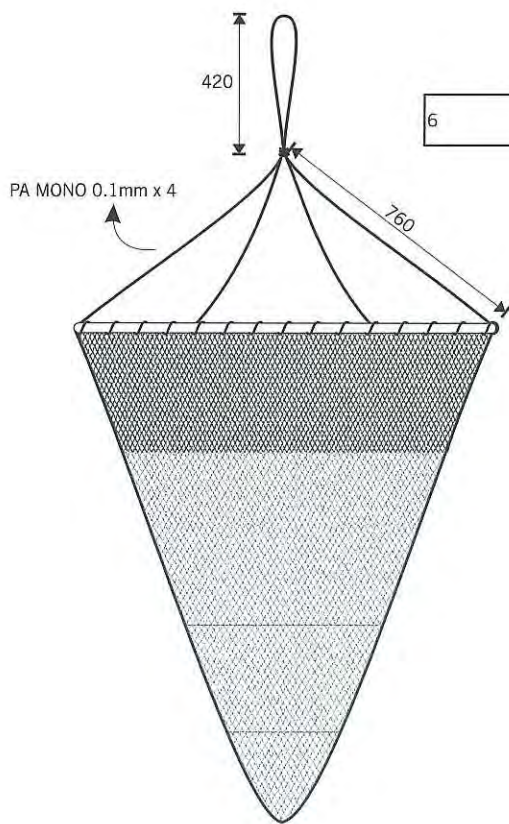
Loa : 10 m

Hp : 6.5

LOCATION

Ou Krasa Village

KEP



Chapter 6
Falling Gear



FALLING GEAR

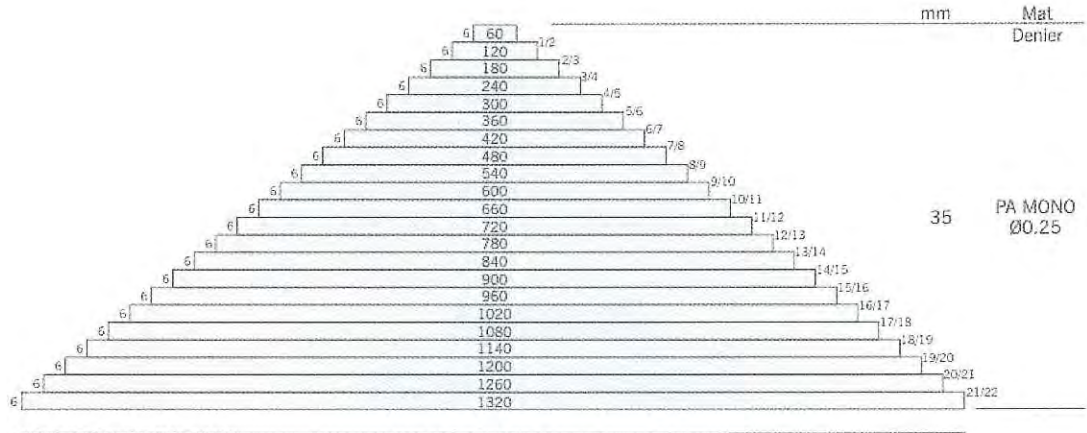
Marine water cast net
-
Clupia

BOAT

Loa : 5 m
Hp : 5

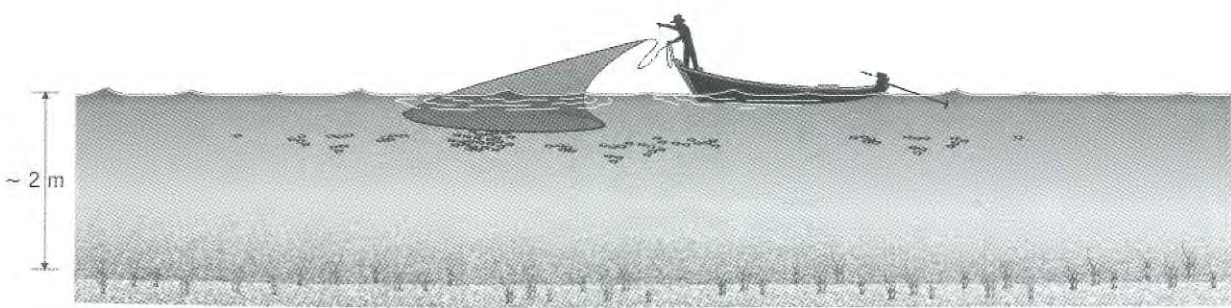
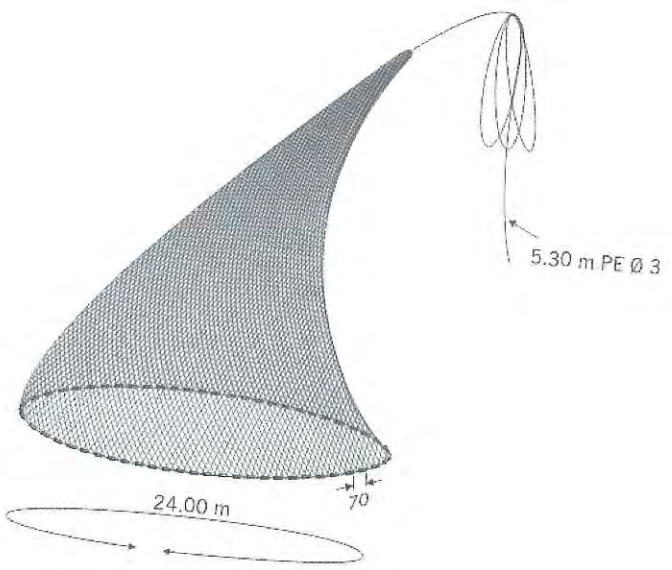
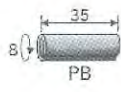
LOCATION

Kdad
KAMPOI

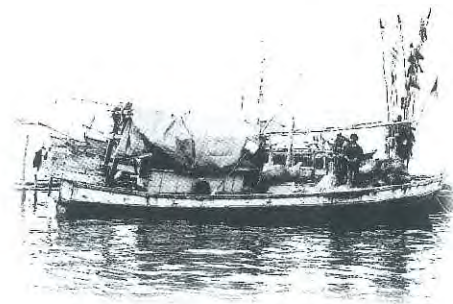


-9.00 g x333
Total 3.00 kg

24.00 m PA Ø4.0 mm



Chapter 7
Gill Nets



GILLNET

Drift gillnet

Mullet

BOAT

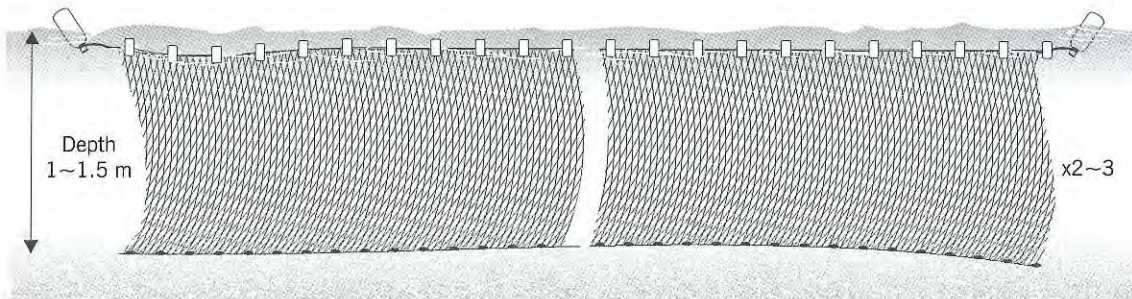
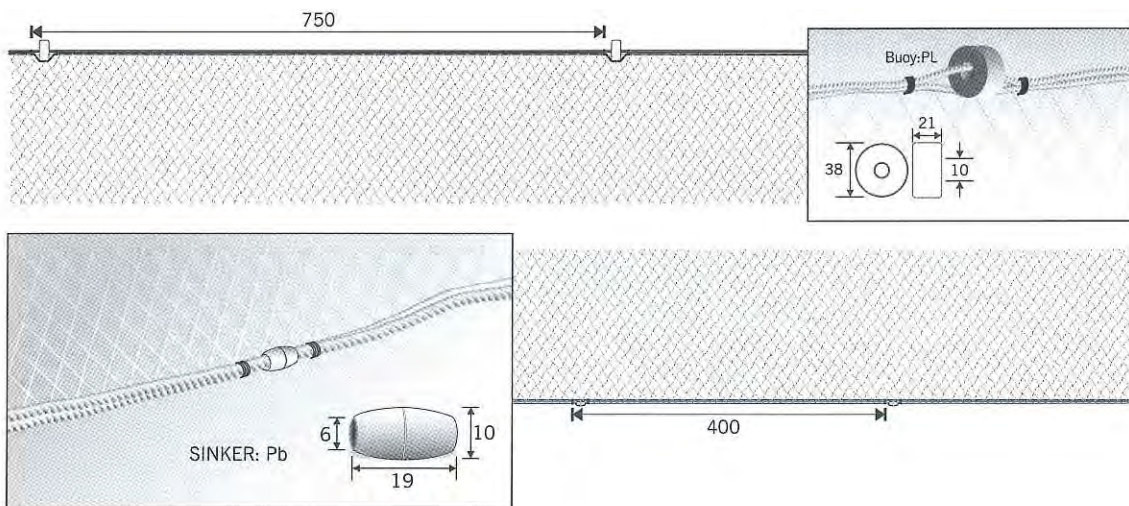
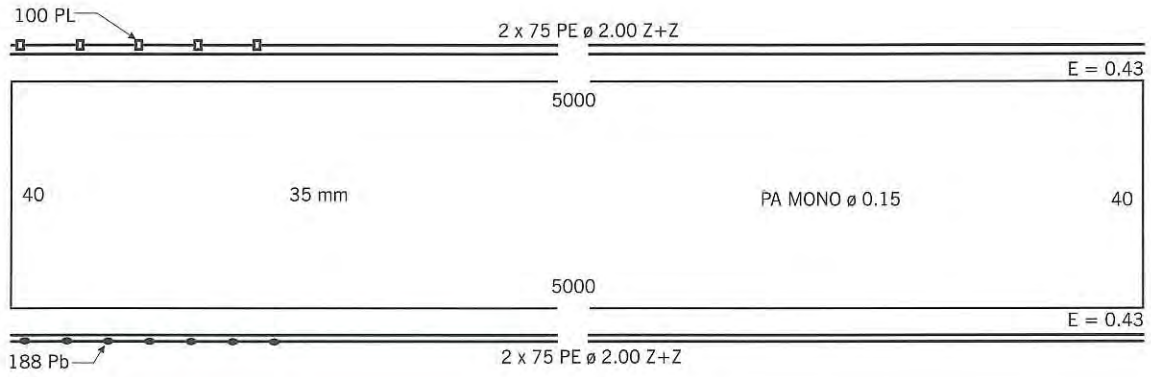
Loa :-

Hp :-

LOCATION

Phum Thmey Village

KEP



GILLNET
Bottom gillnet

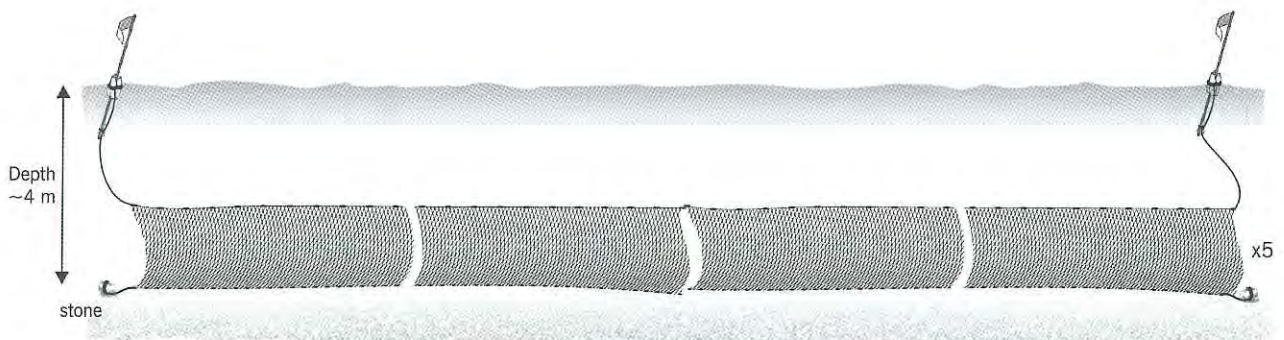
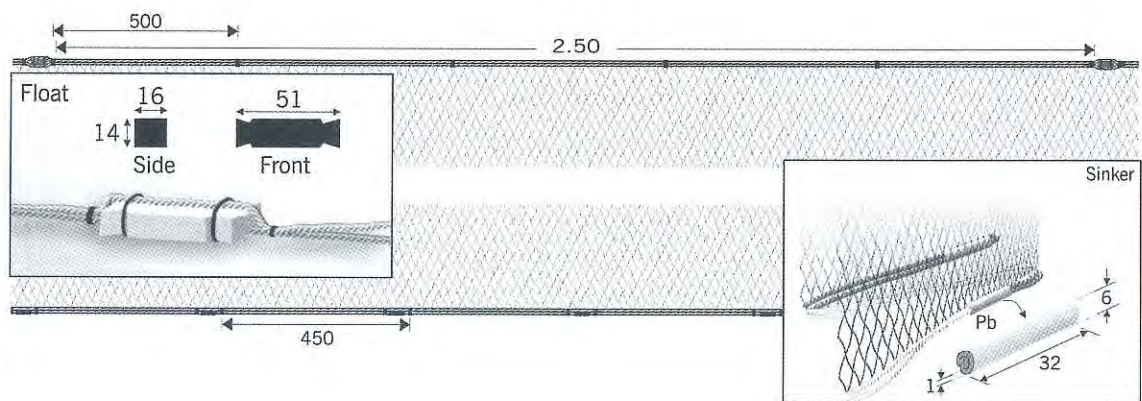
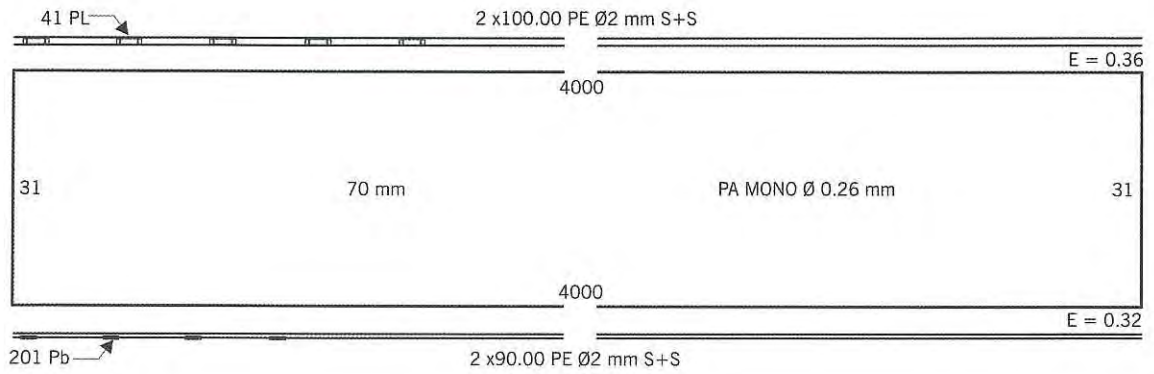
BOAT
Loa : 8.5 m

LOCATION
Kampong Bay

Croaker

Hp : 5

KAMPOT



GILLNET

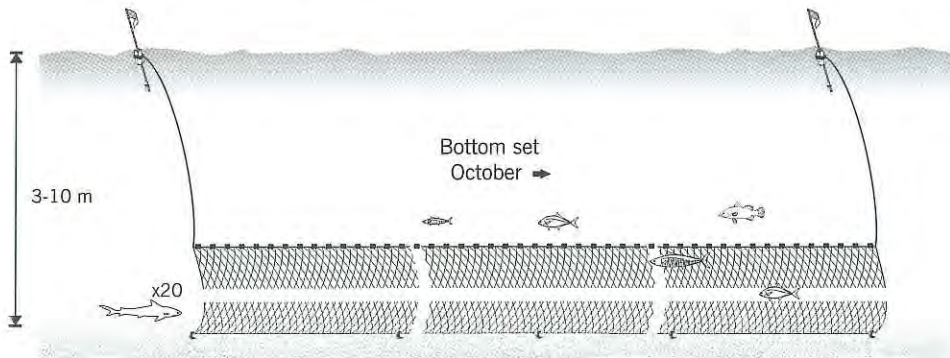
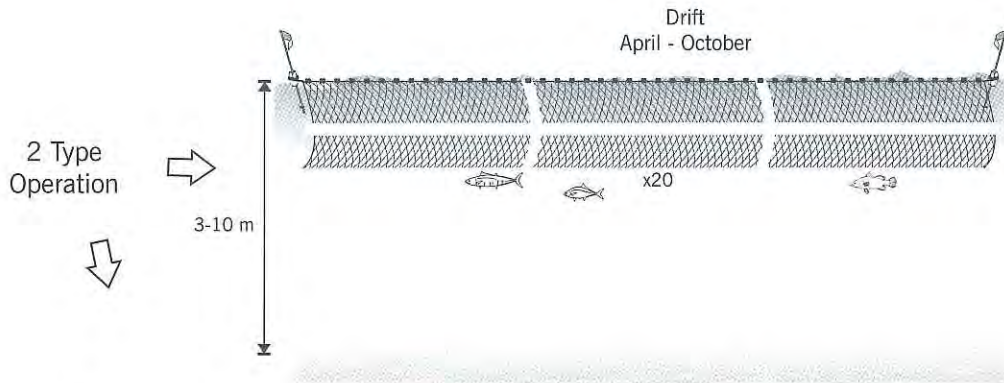
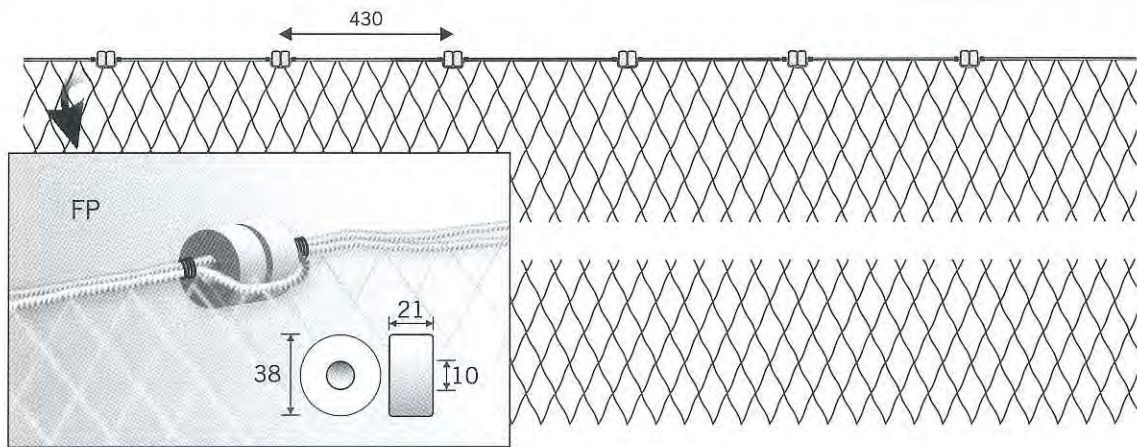
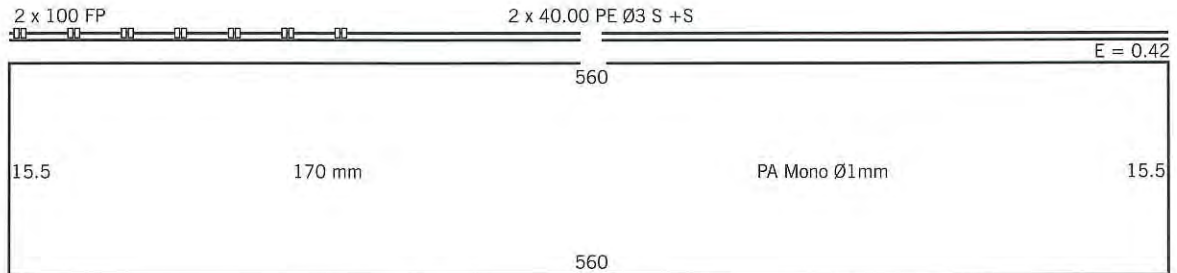
Drift/Bottom gillnet
 Shark, Queenfish,
 Spanish mackerel

BOAT

Loa : 9.8 m
 Hp :5x2

LOCATION

Kampong Bay
 KAMPOT



GILLNET

Drift Gillnet

Halfbeak

BOAT

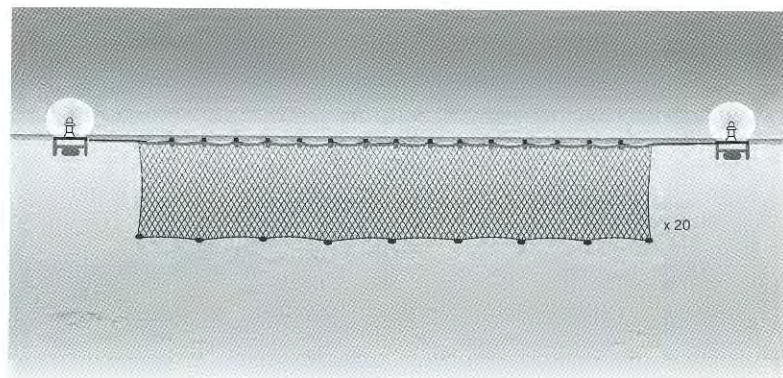
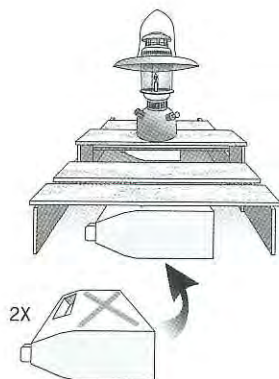
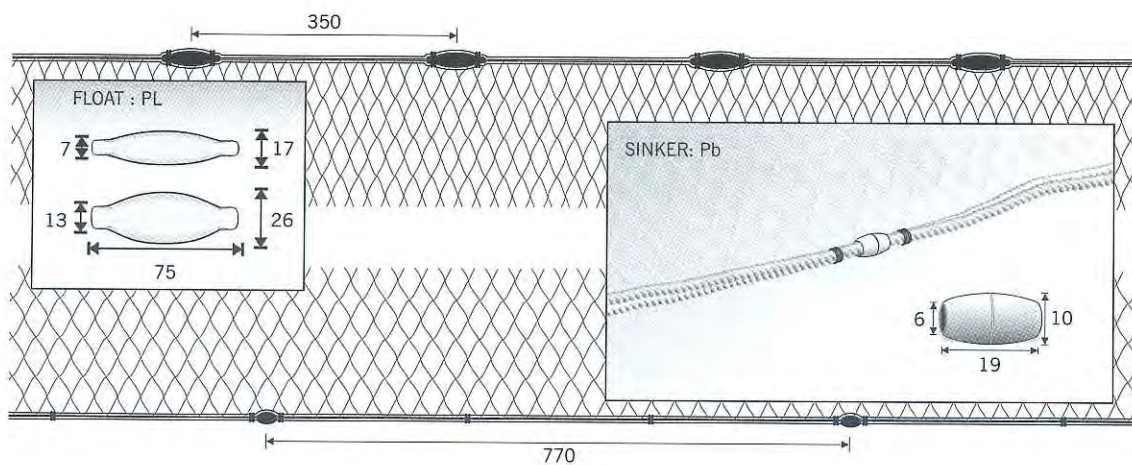
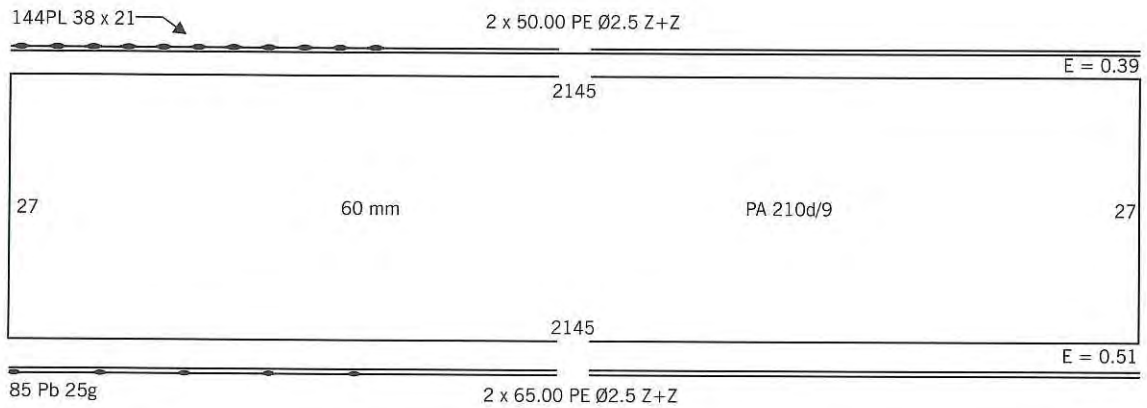
Loa : 6 m

Hp :

LOCATION

Prek Chek

KAMPOT



GILLNET

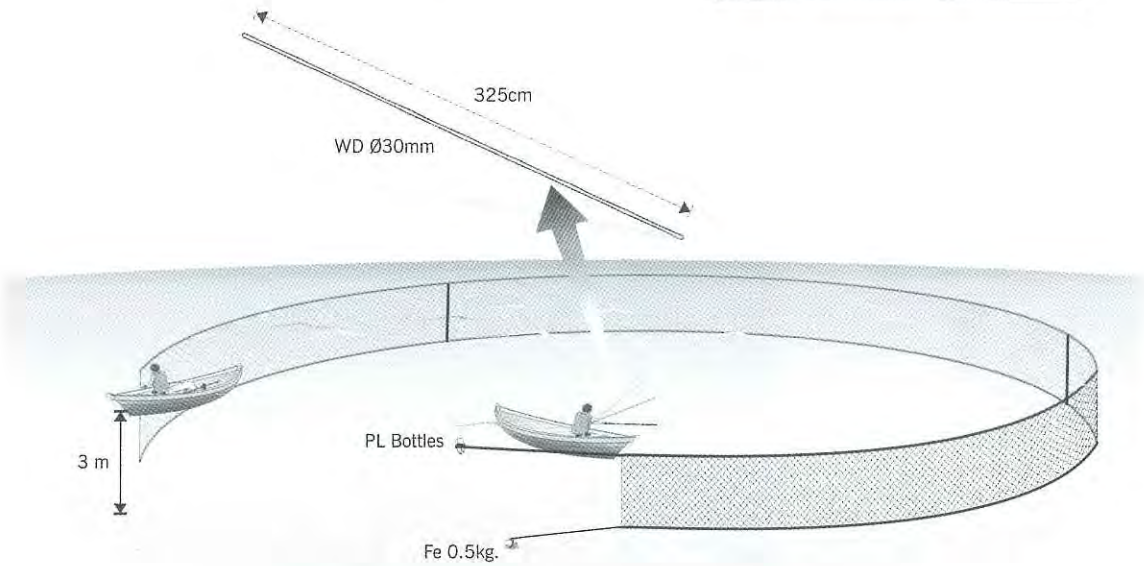
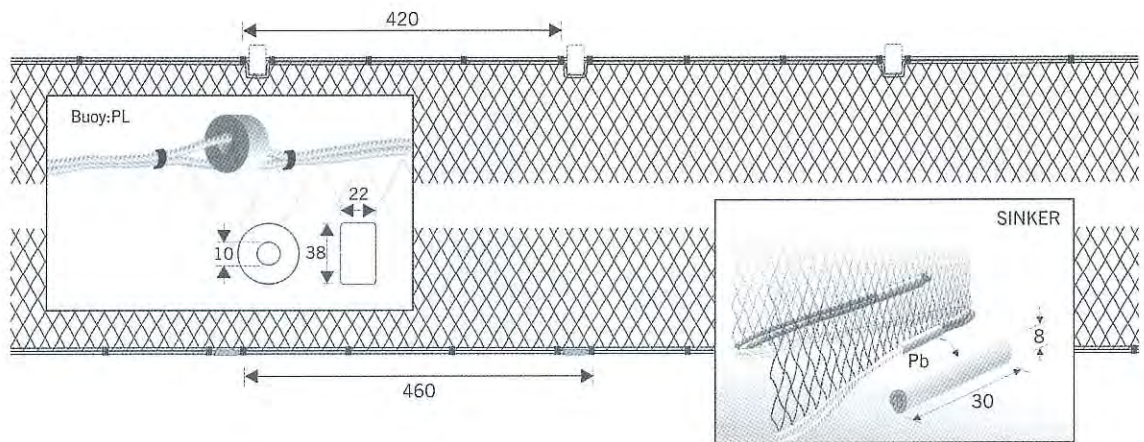
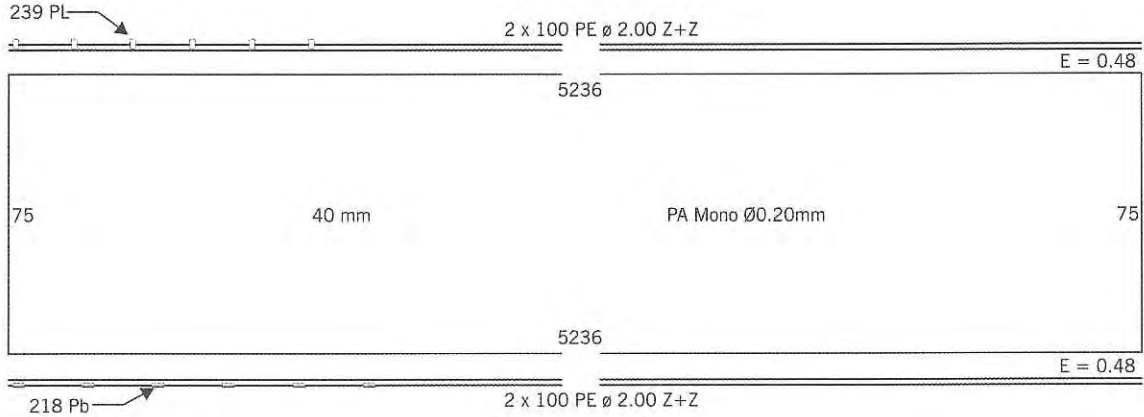
Encircling gillnet
Mullet, Halfbeak
Rocky fish

BOAT

Loa : 6 m
Hp :-

LOCATION

Prek Ampil
KAMPOT

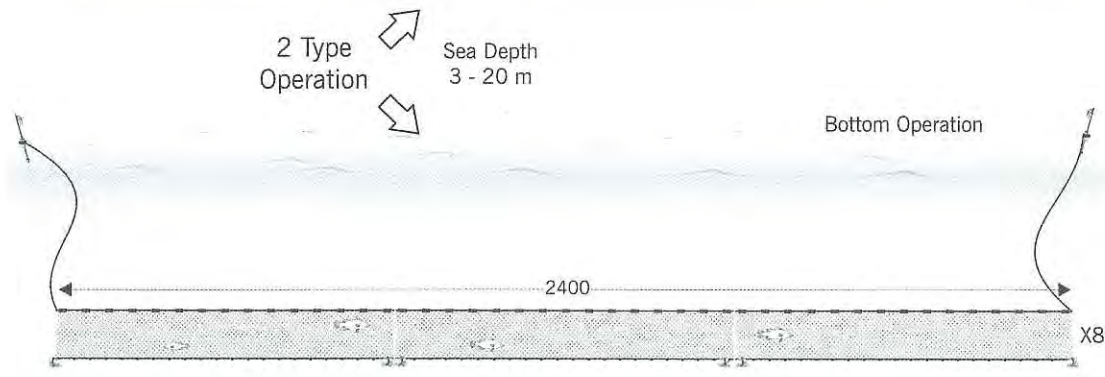
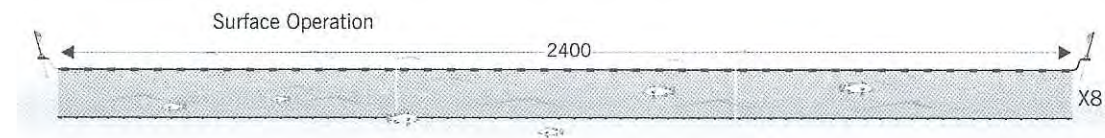
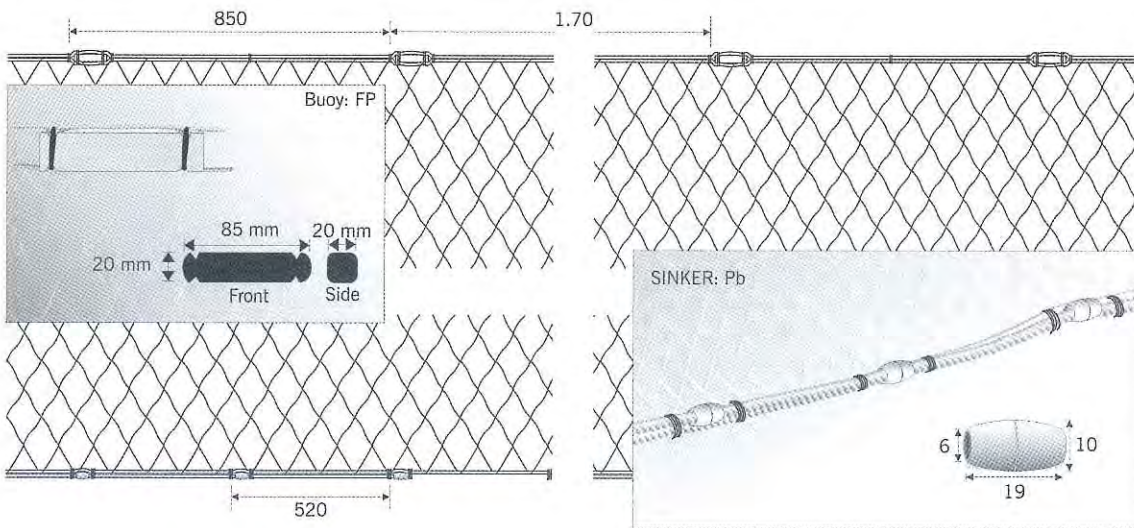
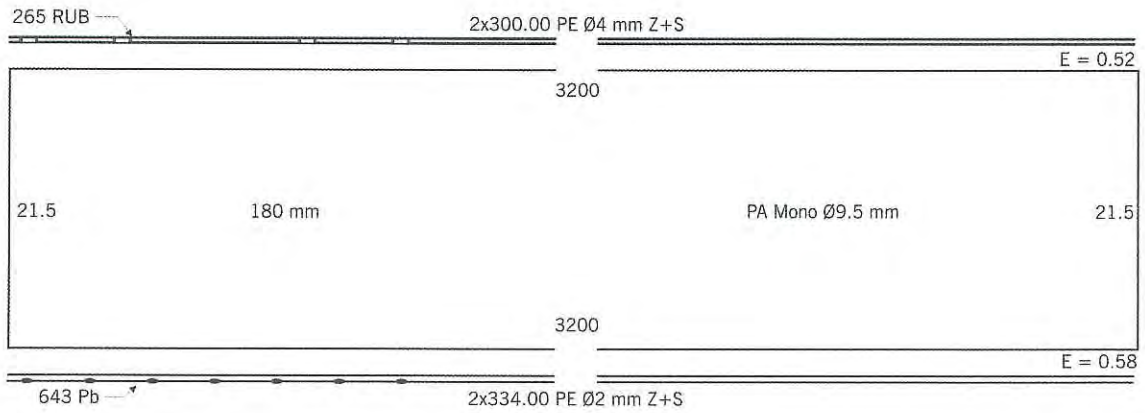


GILLNET
Drift/Bottom Gillnet

BOAT
Loa : 21 m
Hp : 10

LOCATION
Koh Kchyong
SIHANOUKVILLE

Sea bass



GILLNET

Drift gillnet

Spanish mackerel

BOAT

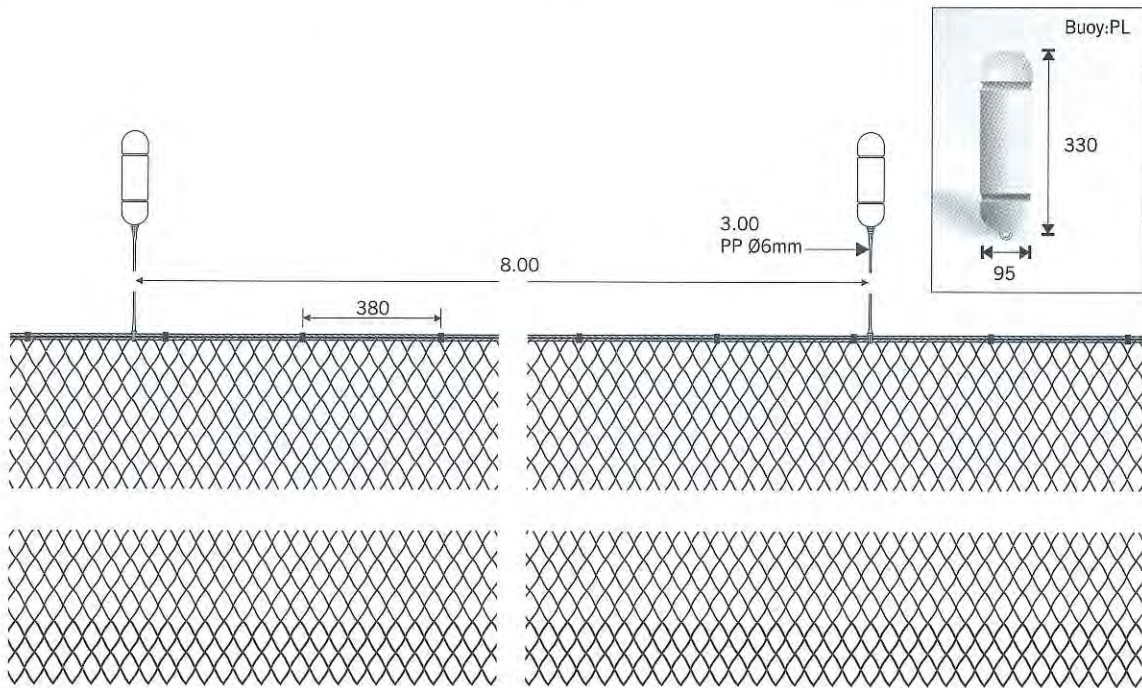
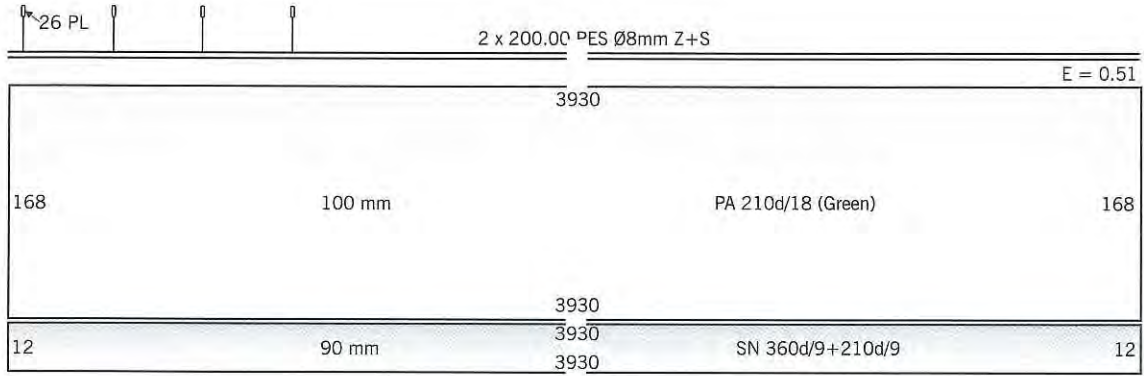
Loa : 15 m

Hp : 100-250

LOCATION

Tomnop Rolok

SIHANOUKVILLE



GILLNET

Gillnet

Shad, Sardine

BOAT

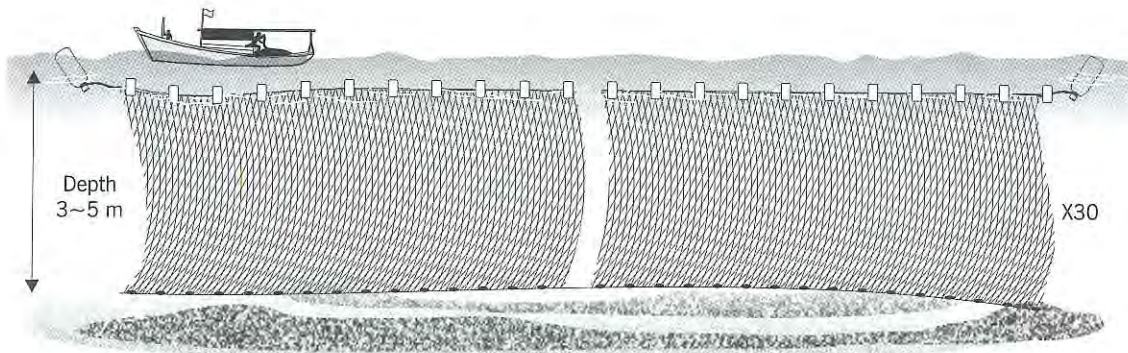
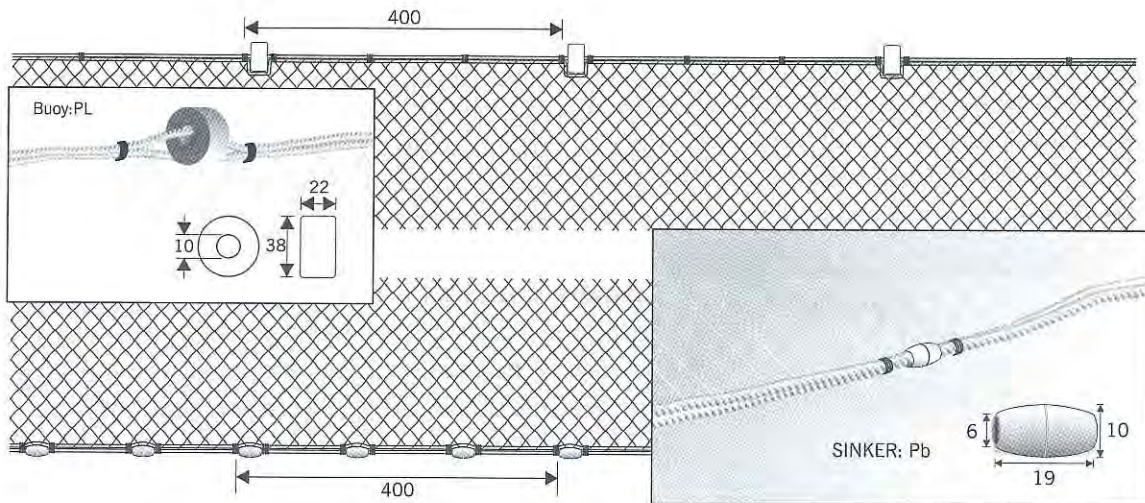
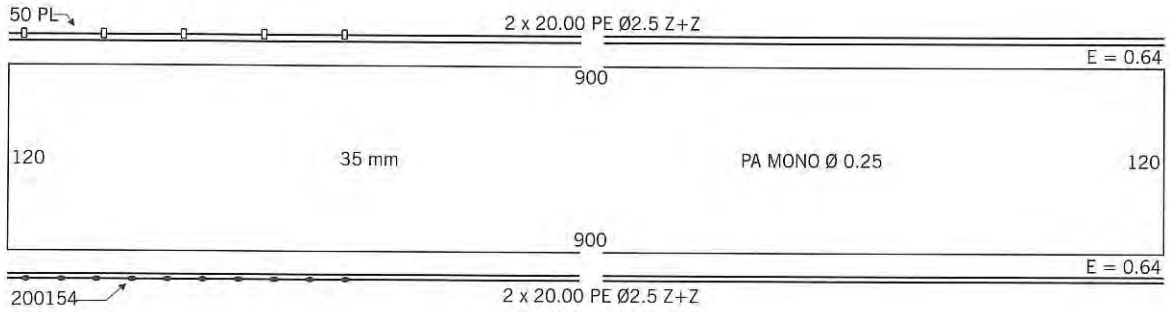
Loa : 11 m

Hp : 13

LOCATION

Phom Sre'

KAMPOT



GILLNET

Bottom Gillnet

Sand whiting

BOAT

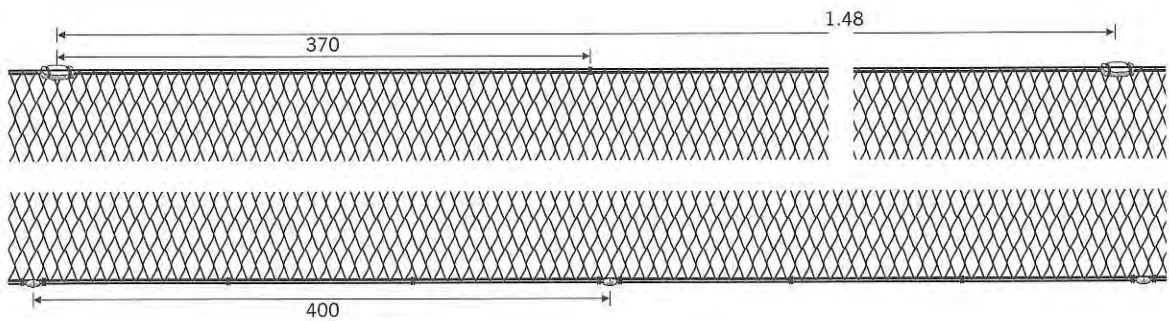
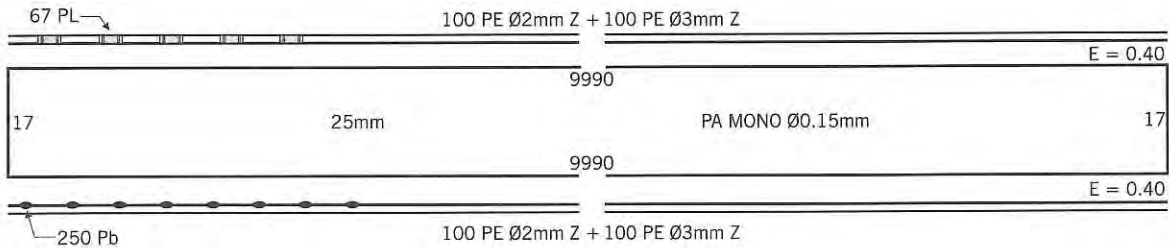
Loa : 8 m

Hp : 8

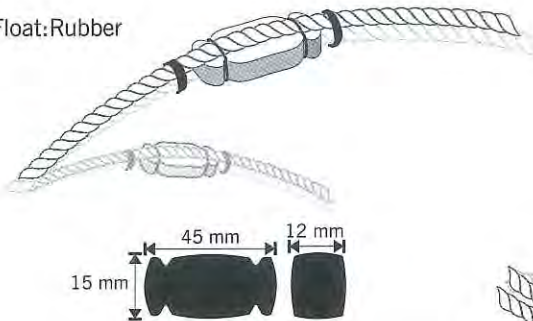
LOCATION

Koh Kchyong

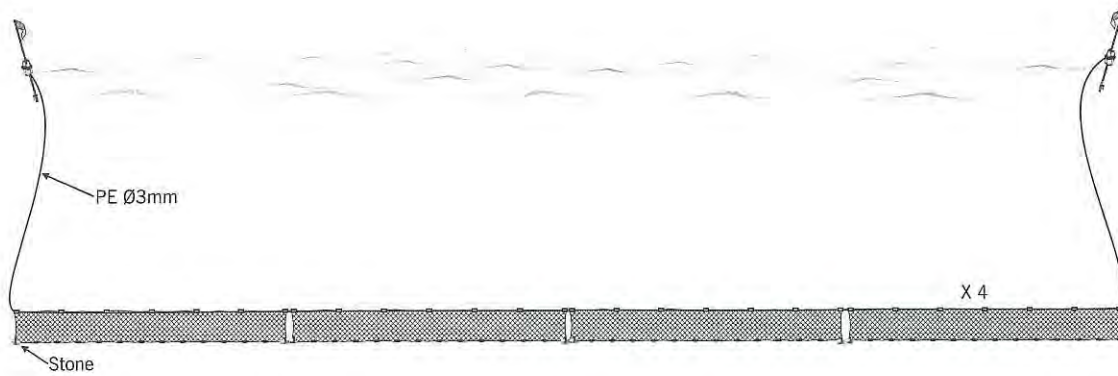
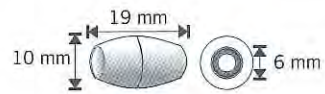
SIHANOUKVILLE



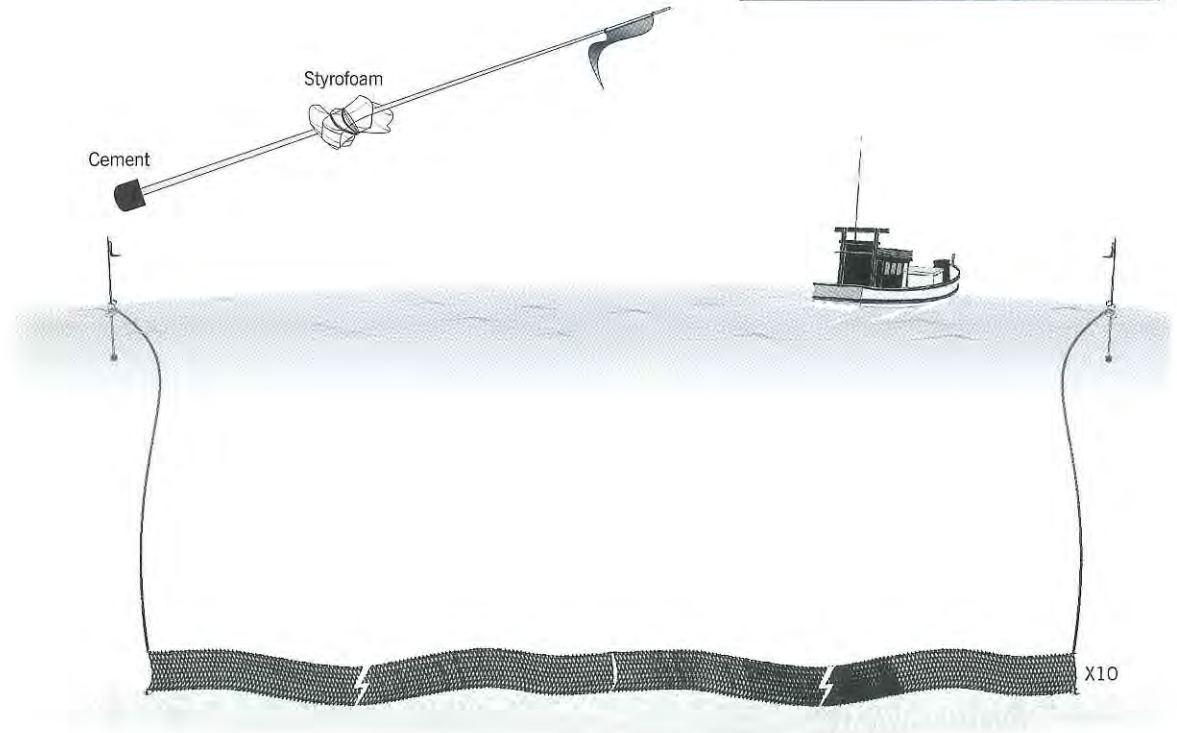
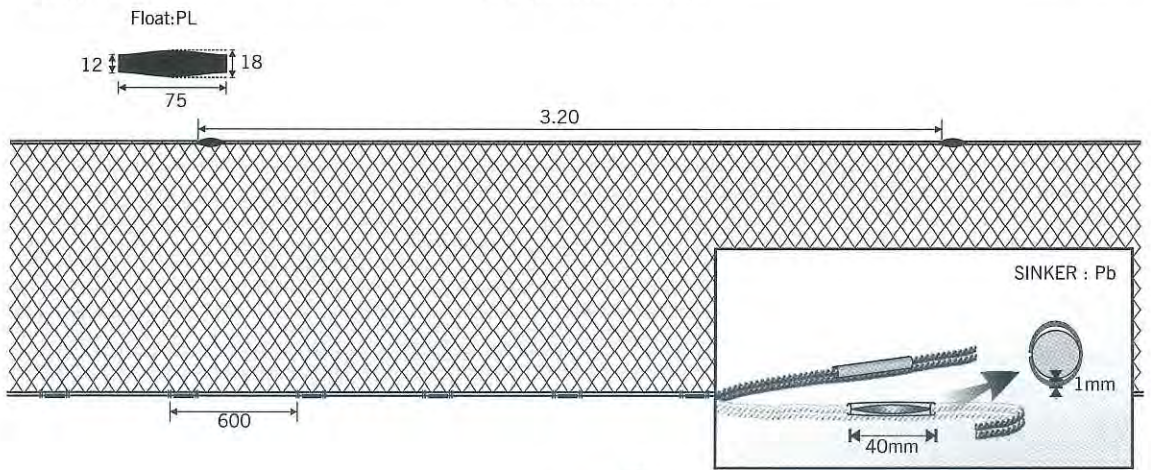
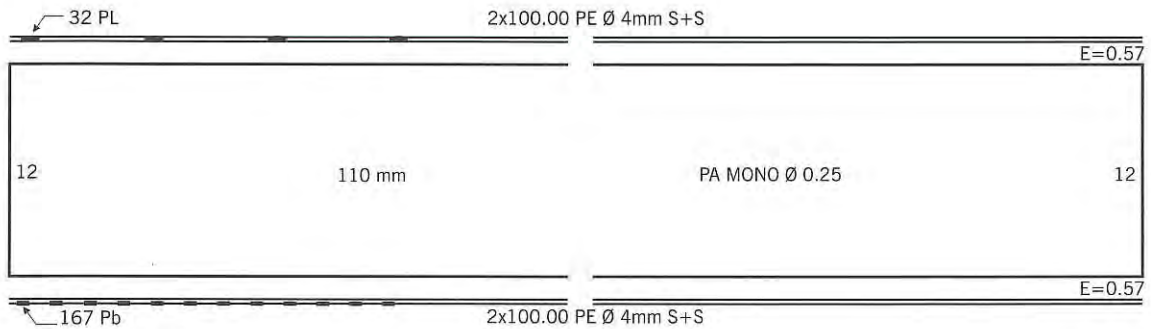
Float:Rubber



Sinker:Pb



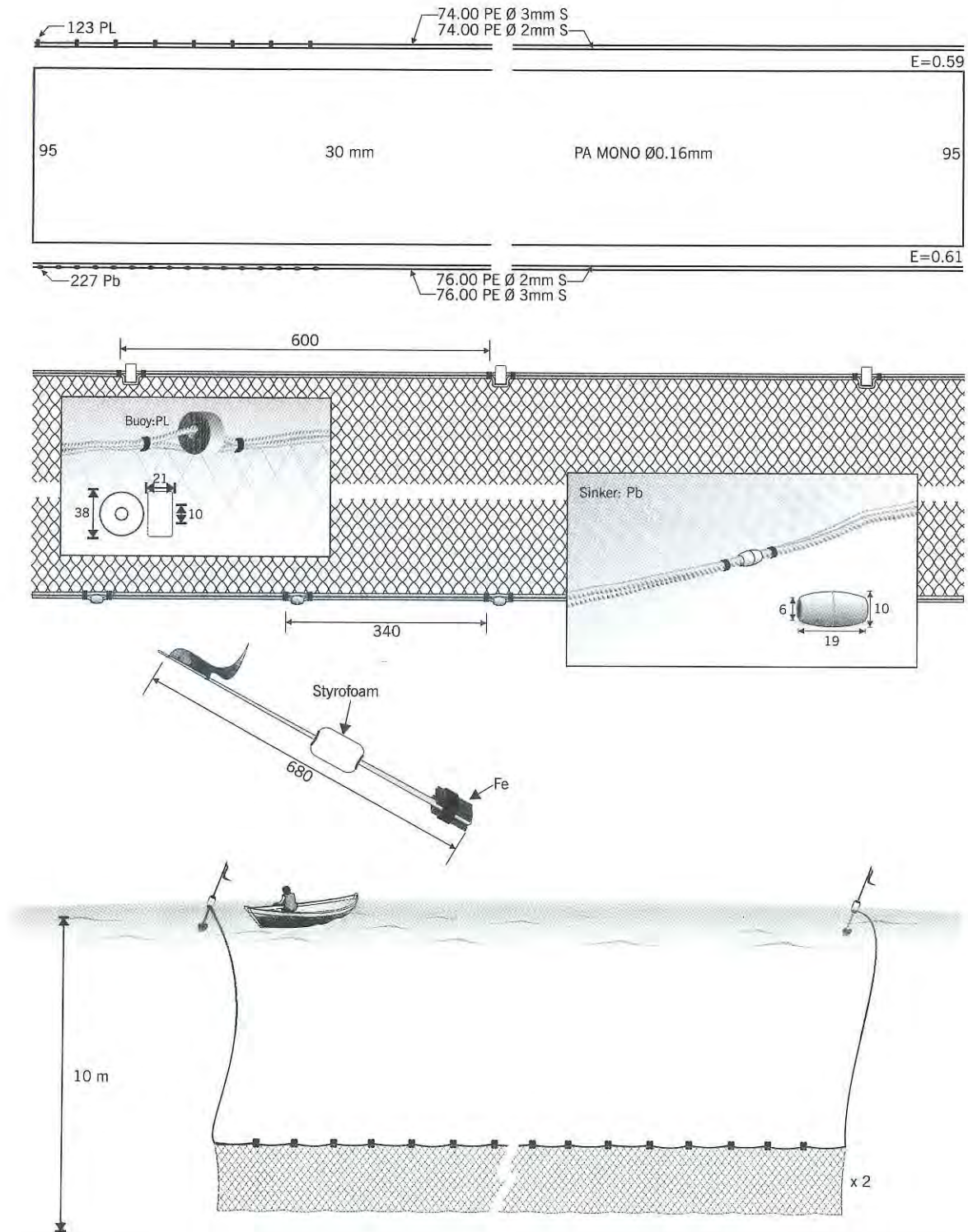
GILLNET	BOAT	LOCATION
Bottom gillnet	Loa : 12 m	Koh Sdach
Blue swimming crab	Hp : 7	KOH KONG



GILLNET
 Bottom gillnet
 Shrimp, Prawn

BOAT
 Loa : 5 m
 Hp :-

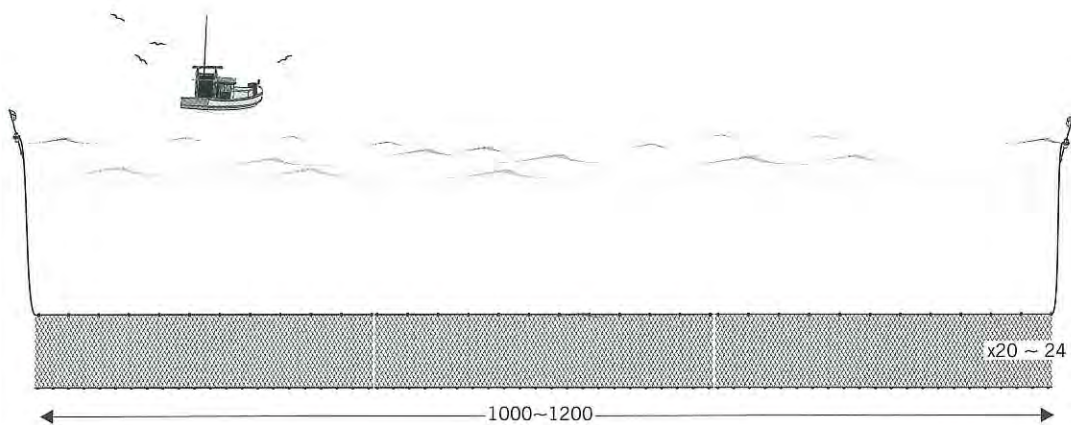
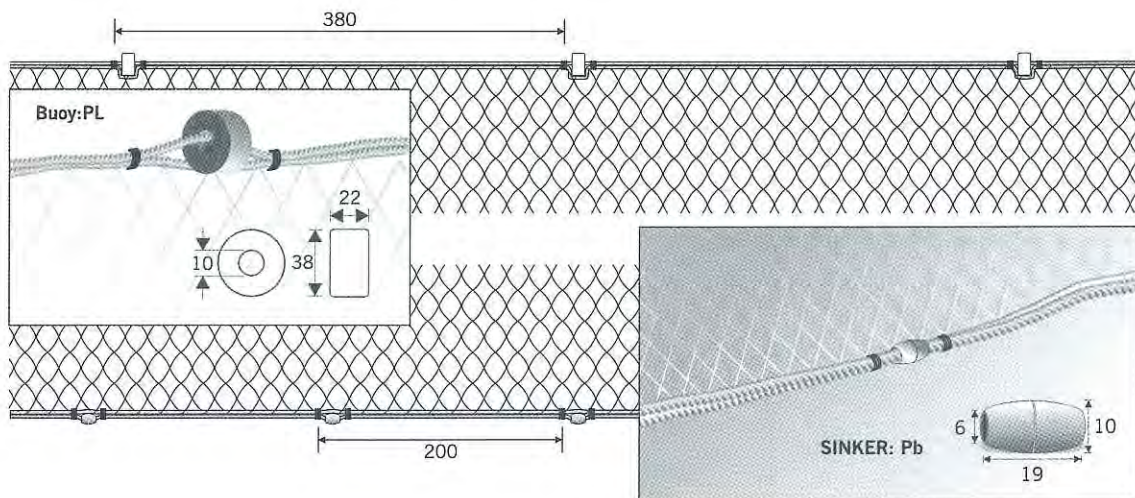
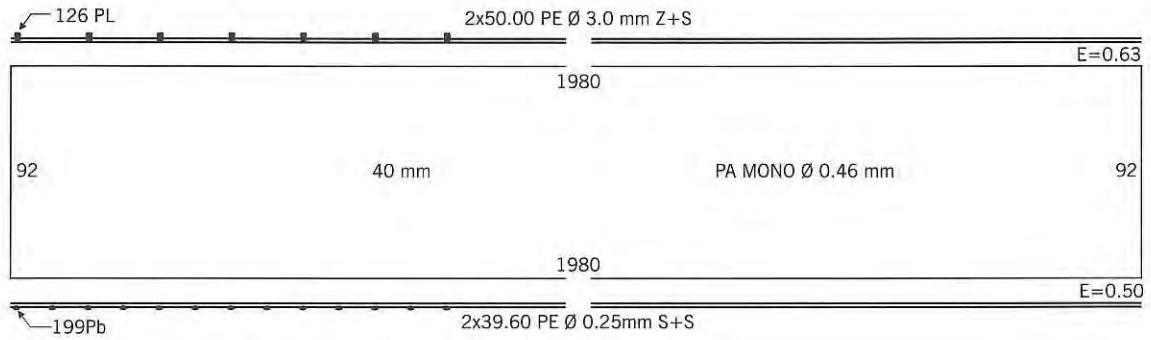
LOCATION
 Koh Kchyong
 SIHANOUKVILLE



GILLNET
 Bottom gillnet
 Indian mackerel,
 Short-bodied mackerel

BOAT
 Loa : 12 m
 Hp : 13

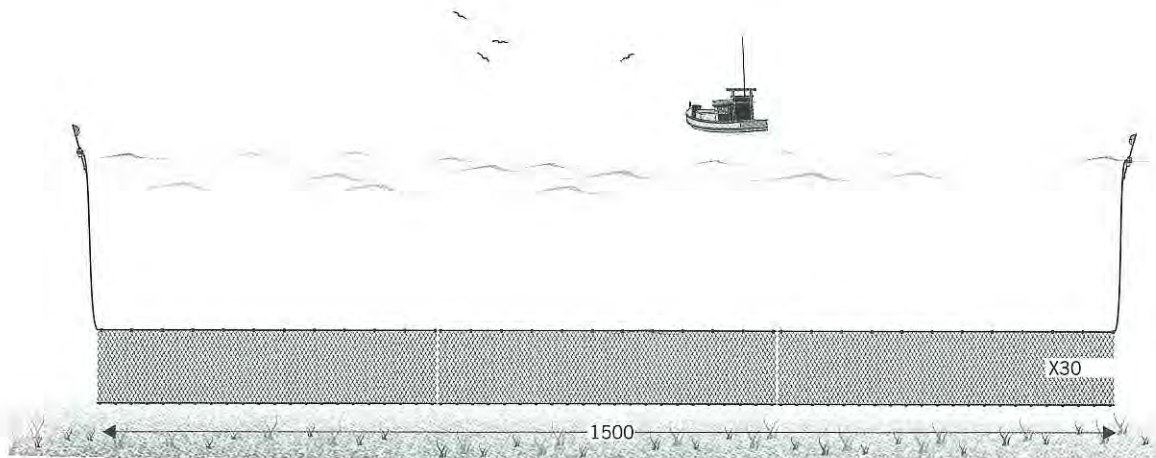
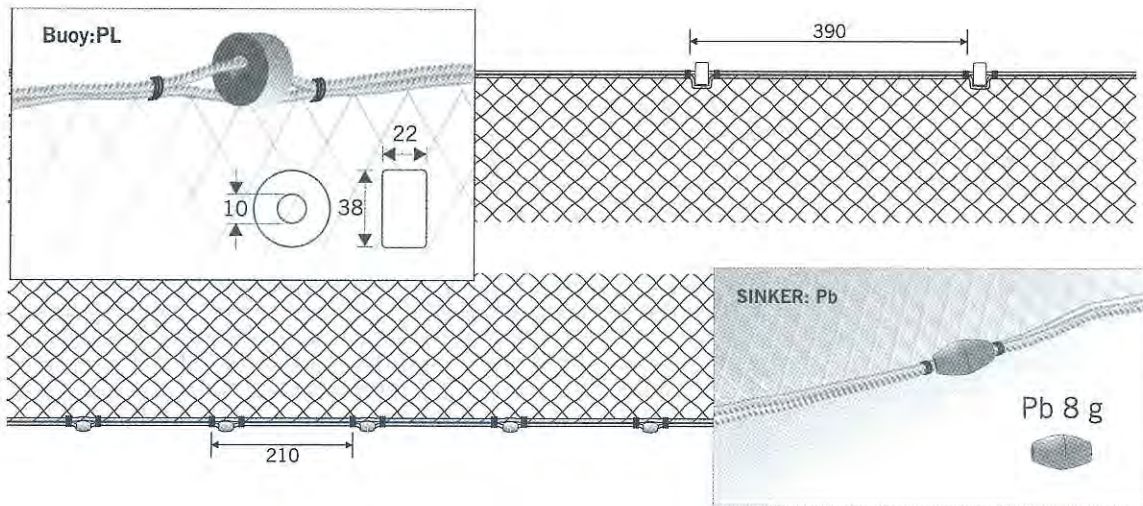
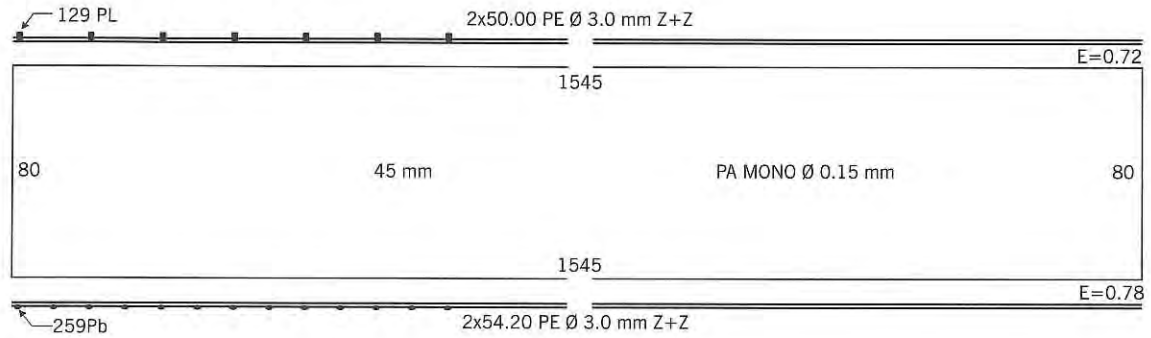
LOCATION
 Tomnop Rolok
 SIHANOUKVILLE



GILLNET
 Bottom gillnet
 Indian mackerel,
 Short-bodied mackerel

BOAT
 Loa : 12 m
 Hp : 13

LOCATION
 Tomnop Rolok
 SIHANOUKVILLE



GILLNET

Gillnet

Yellow stripe trevally, Scad

VESSEL

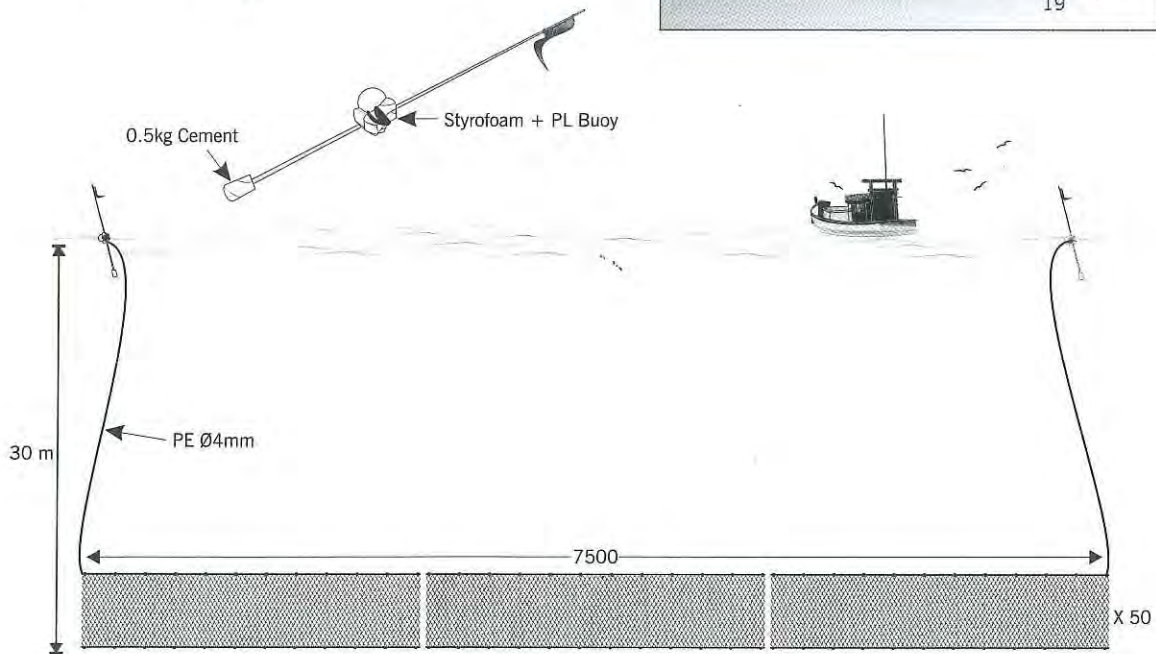
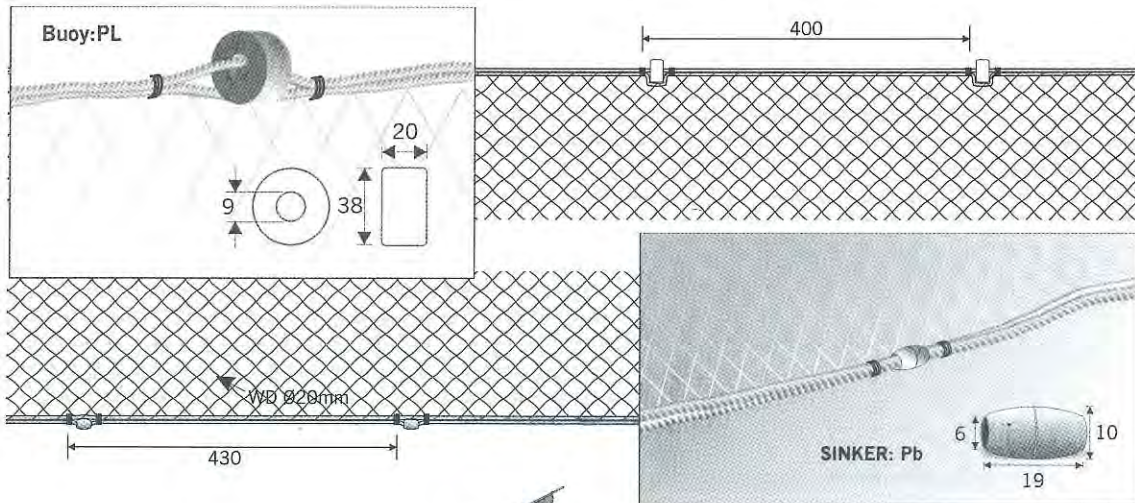
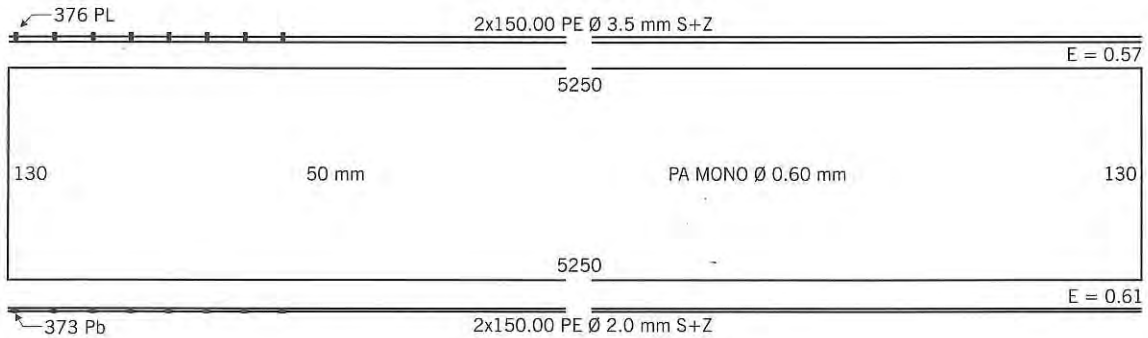
Loa : 20 m

Hp : 25

LOCATION

Koh Sdach

KOH KONG



GILLNET

Gillnet

Queenfish

BOAT

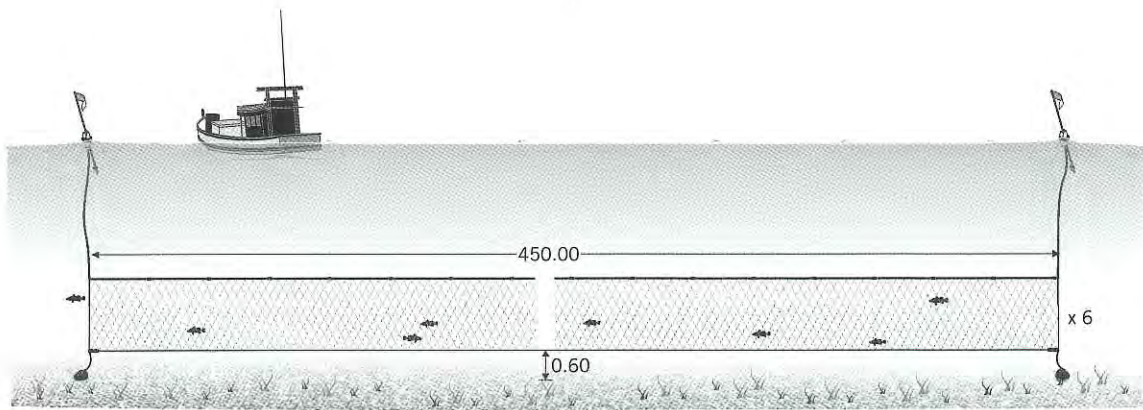
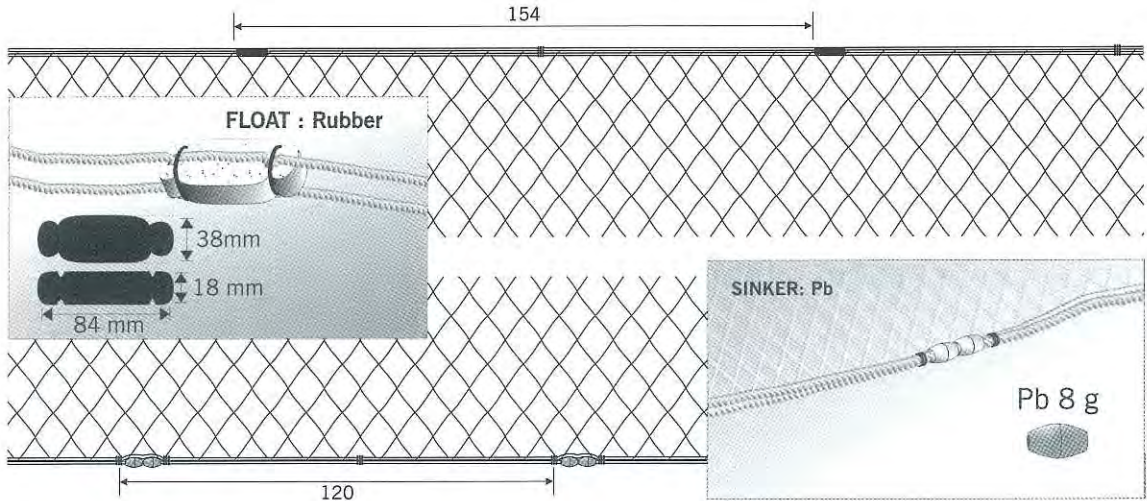
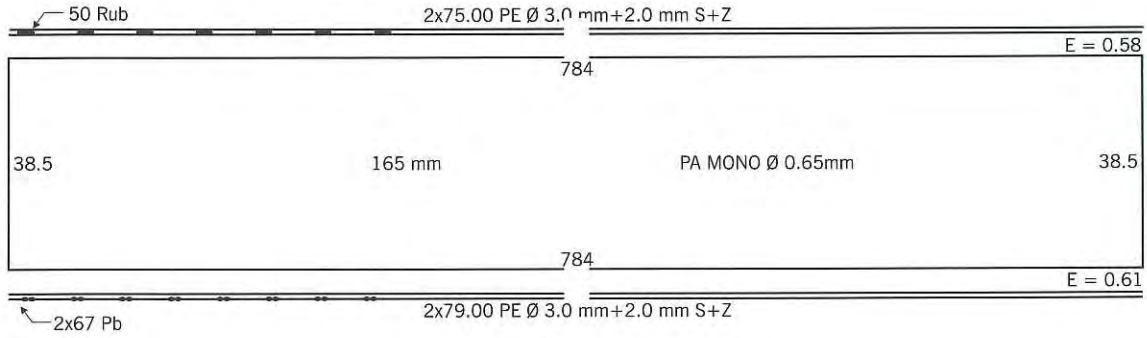
Loa : 8 m

Hp : 75

LOCATION

Koh Sdach

KOH KONG



GILLNET

Gillnet

Clupea

BOAT

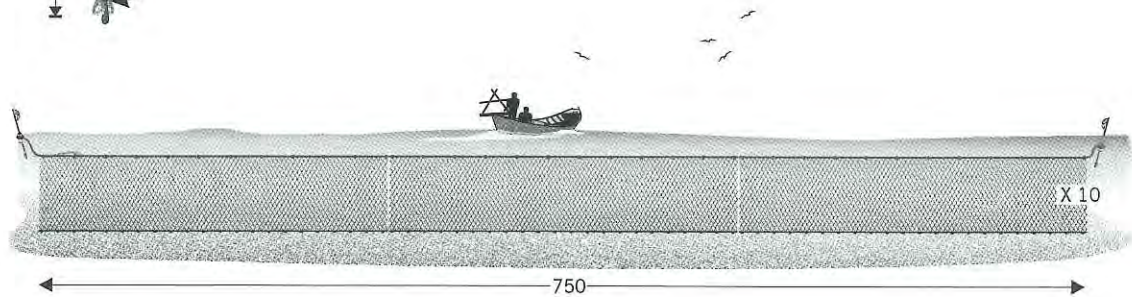
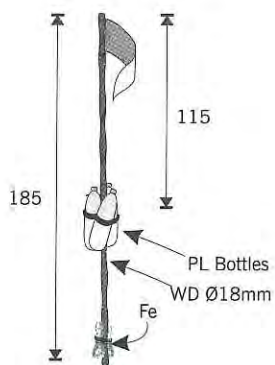
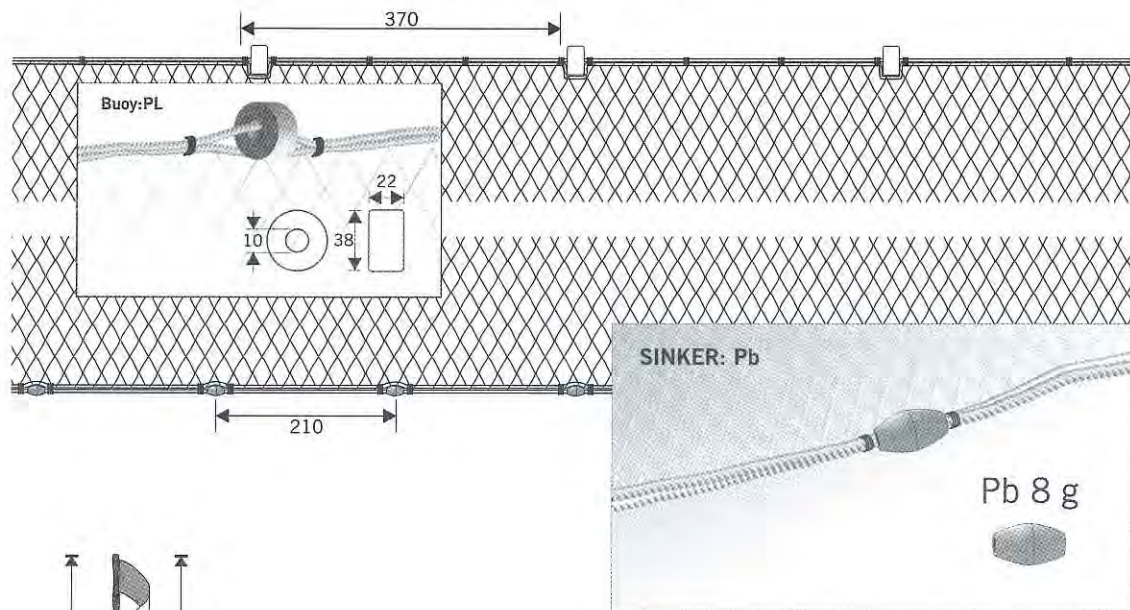
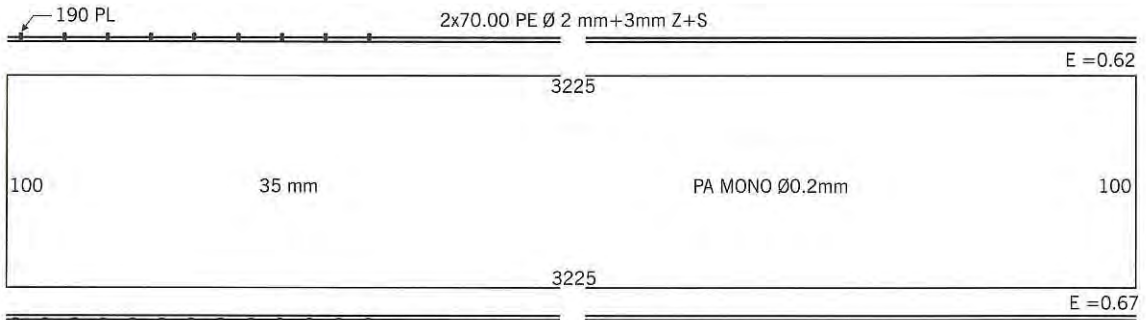
Loa : 12 m

Hp : 7

LOCATION

Ang Doudg Tuk

KOH KONG



GILLNET

Drift gillnet

Mackerel

BOAT

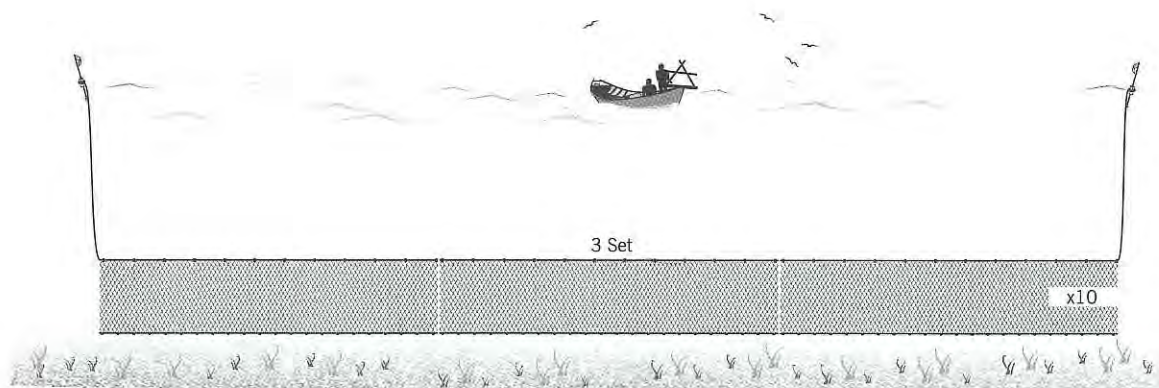
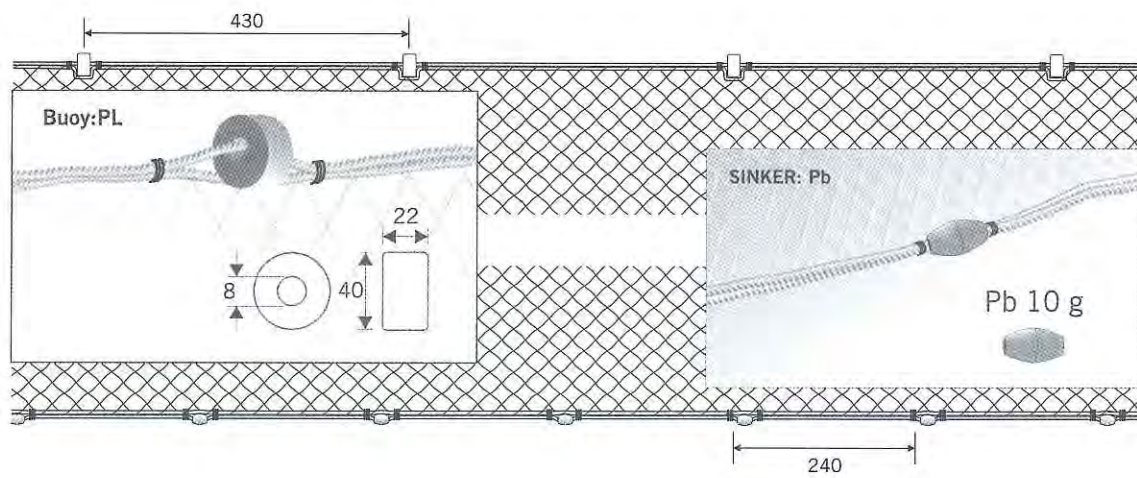
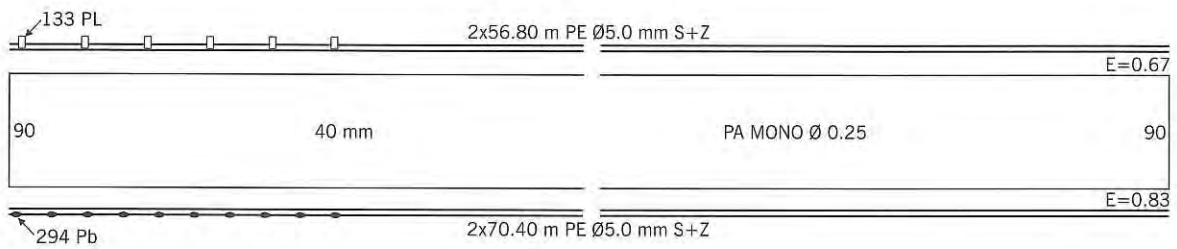
Loa : 12 m

Hp : 13

LOCATION

Dung Tung

KOH KONG



GILLNET

Drift gillnet

Spanish Mackerel

BOAT

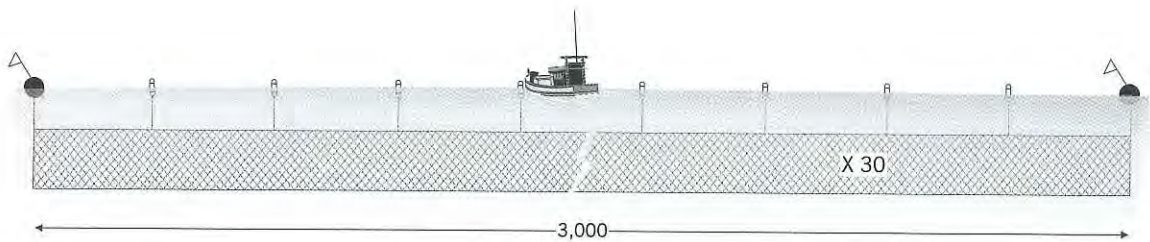
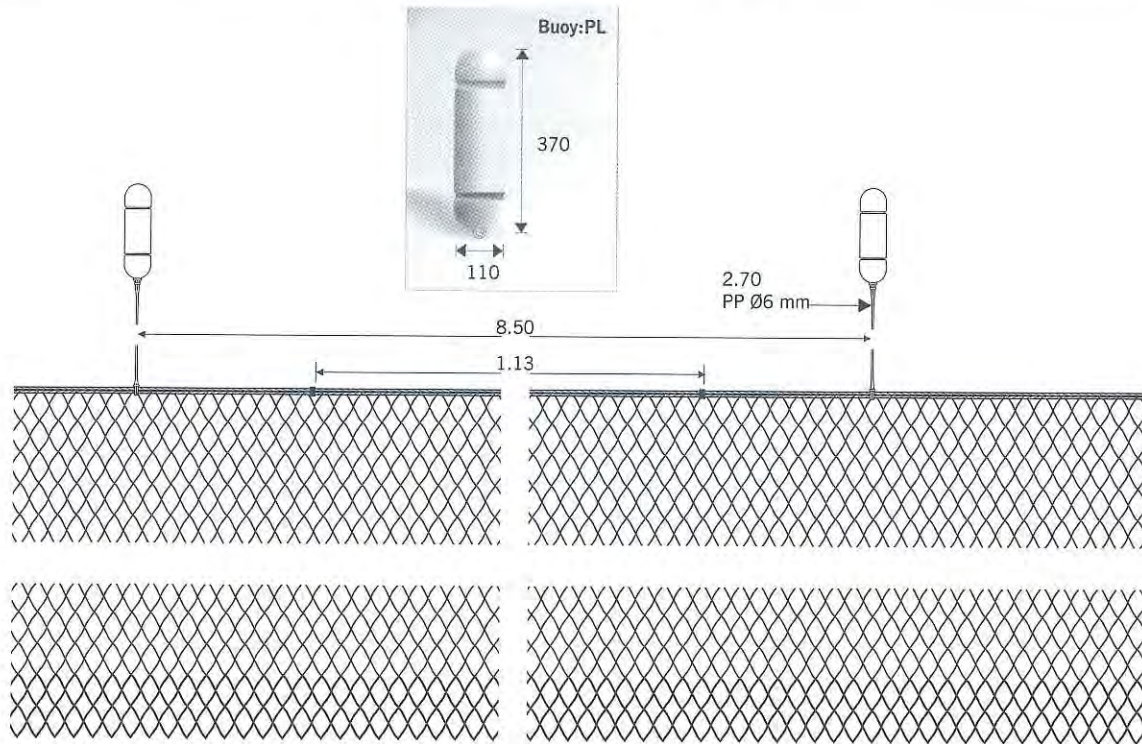
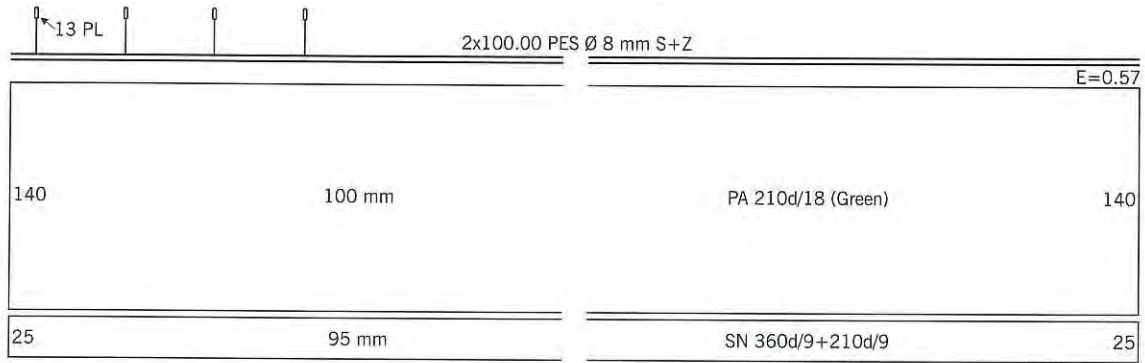
Loa : 12 m

Hp : 168

LOCATION

Koh Sdach

KOH KONG



GILLNET

Tammel Net

Shrimp, Tiger Prawn

BOAT

Loa : 11 m

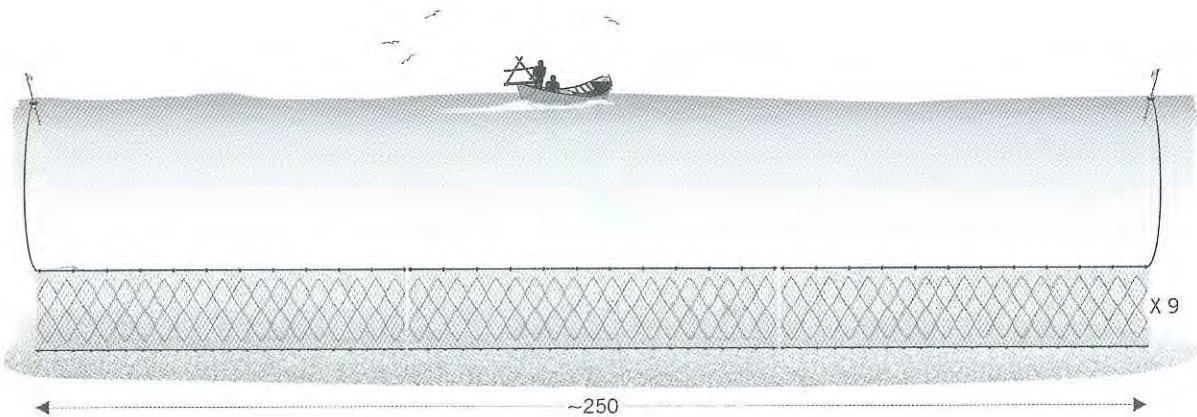
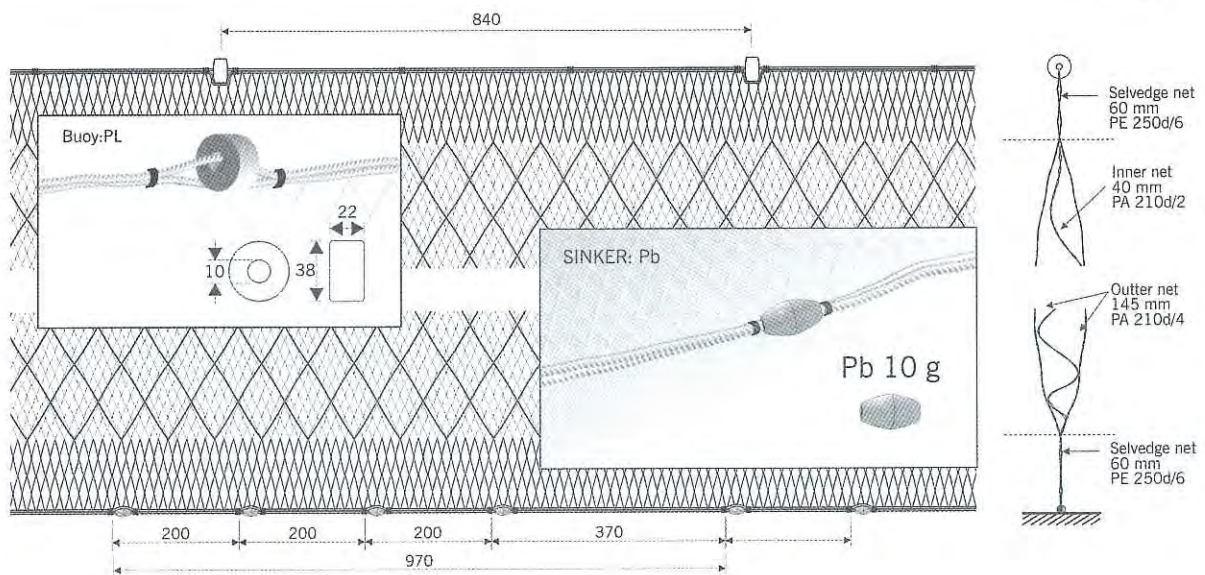
Hp : 24

LOCATION

Koh Sdach

KOH KONG

E=0.50				
10	145 mm	348	PA 210d/4 (white)	10
		348		
30 PL 2 X 25.00 m PE Ø 3.0 mm Z+S				
2	60 mm	1740	PE 250d/6	21
E=0.24				
E=0.36				
50	40 mm	1740	PA 210d/2	50
		1740		
2	60 mm	1740	PE 250d/6	21
E=0.31				
133 Pb 2 X 32.36 m PE Ø 2.0 mm Z				
10	145 mm	348	PA 210d/4 (white)	10
		348		
E=0.50				



GILLNET

Trammel Net

Shrimp, Prawn

BOAT

Loa : 12 m

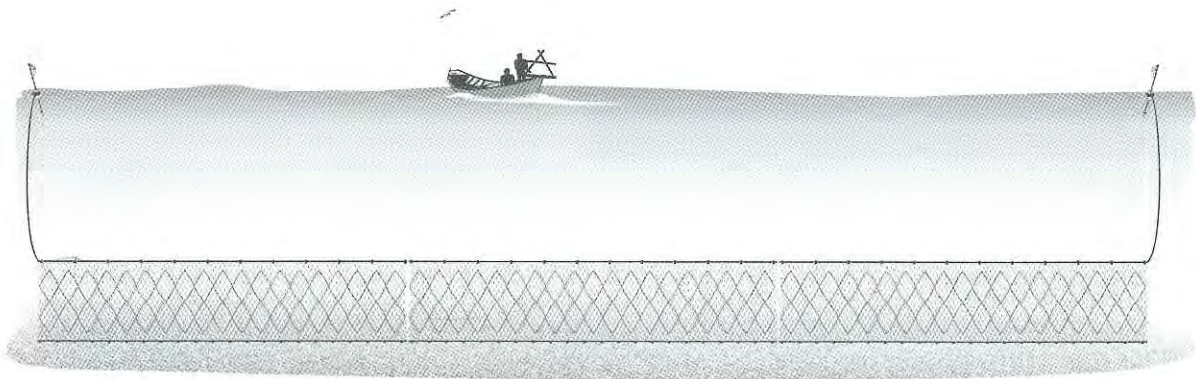
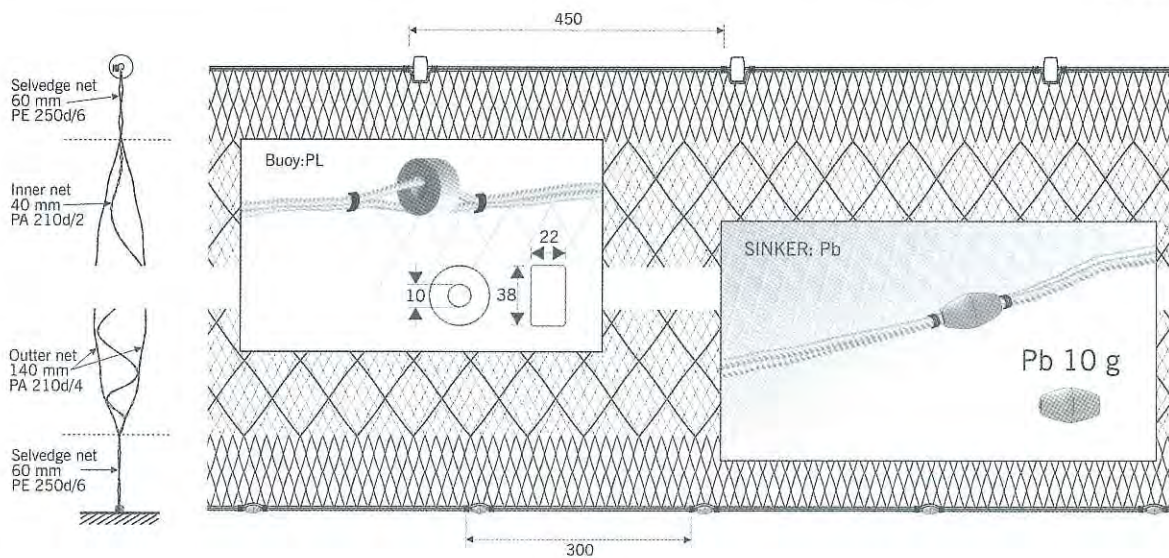
Hp : 7

LOCATION

Aung Doung Tuk

KOH KONG

11	140 mm	274	PA 210d/4 (white)	11	E=0.57
		274			
50 PL 2 X 22.00 m PE Ø 3.0 mm Z+S					
2	60 mm	1370	PE 250d/6	2	E=0.27
		1370			
50	40 mm	1370	PA 210d/2(white)	50	E=0.40
		1370			
2	60 mm	1370	PE 250d/6	2	E=0.25
		1370			
74 Pb 2 X 22.00 m PE Ø 2.0 mm Z					
11	140 mm	274	PA 210d/4 (white)	11	E=0.57
		274			



GILLNET

Gillnet

BOAT

Loa : 12 m

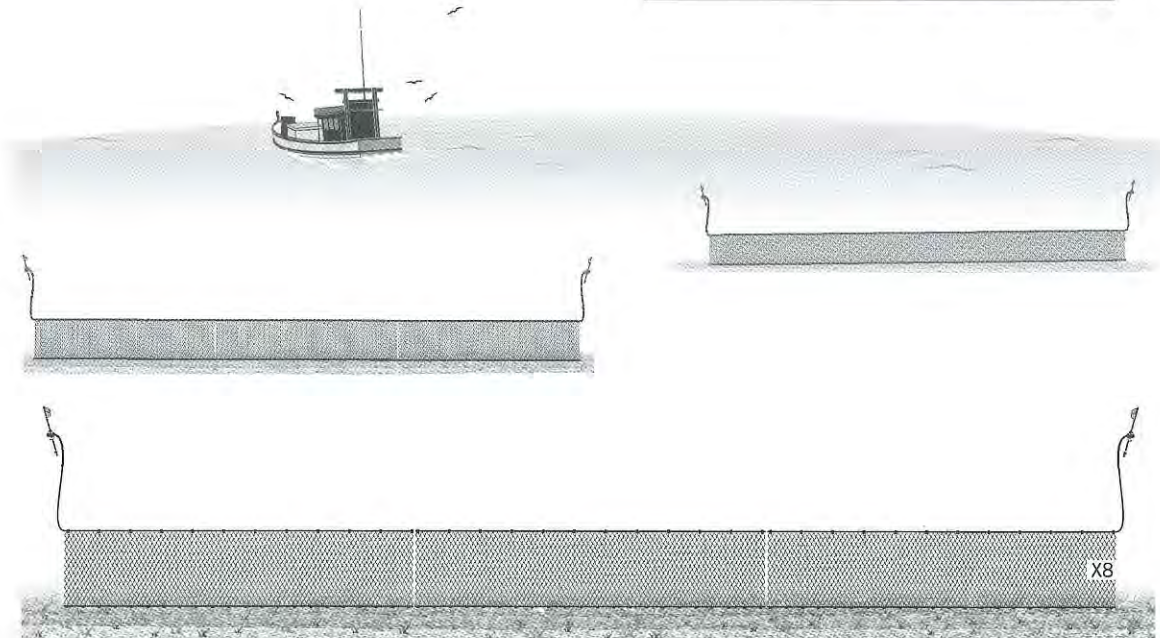
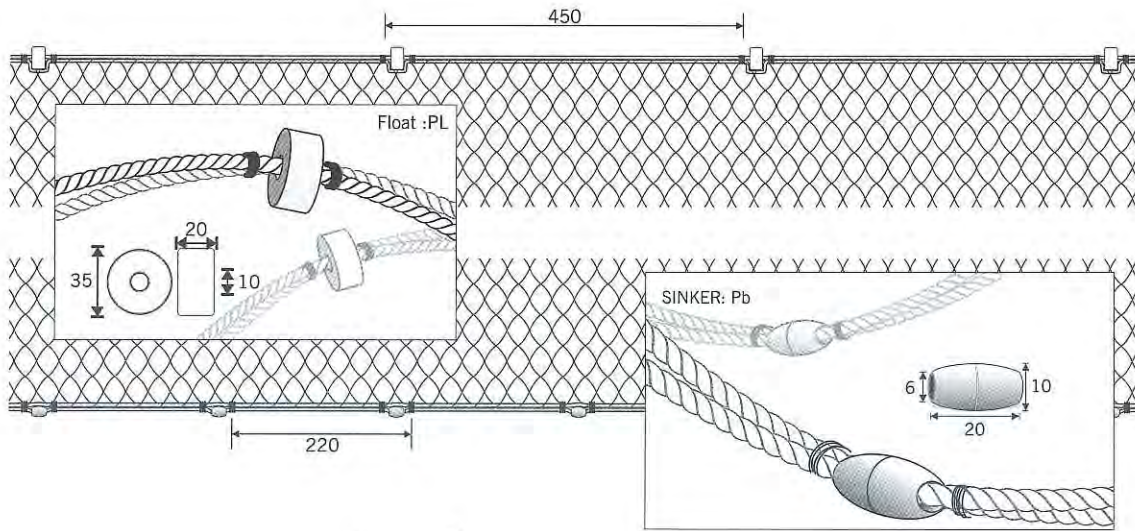
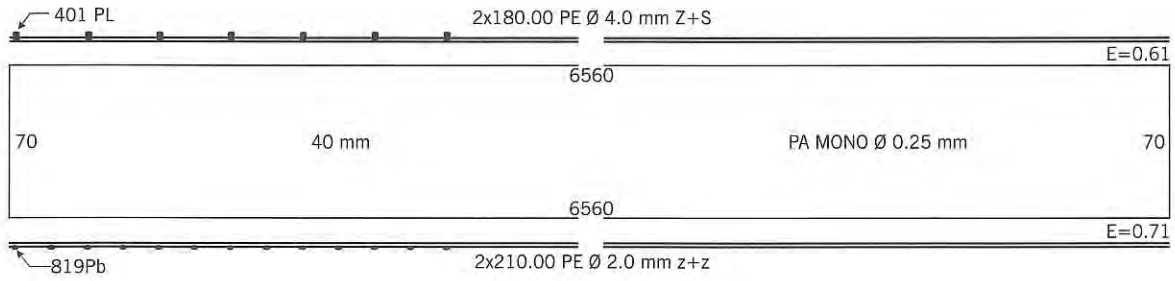
LOCATION

Bakklong

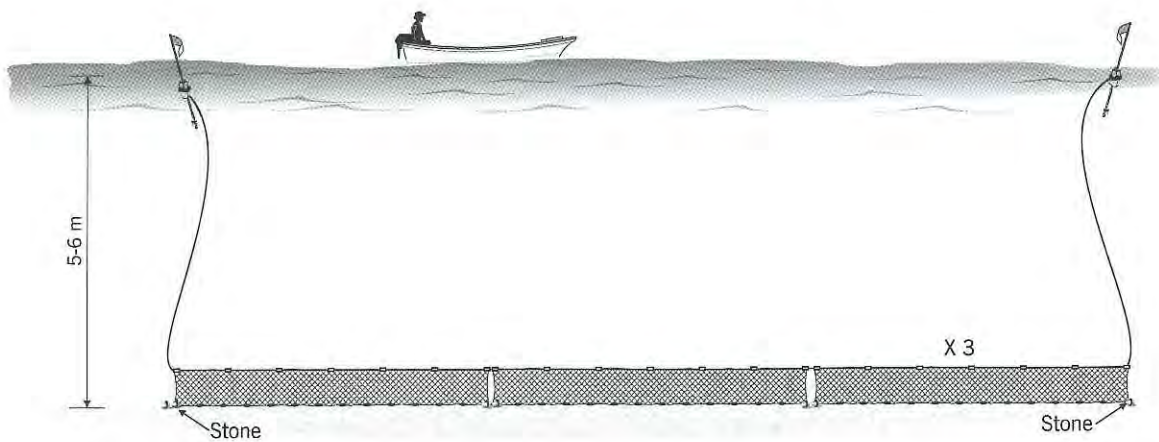
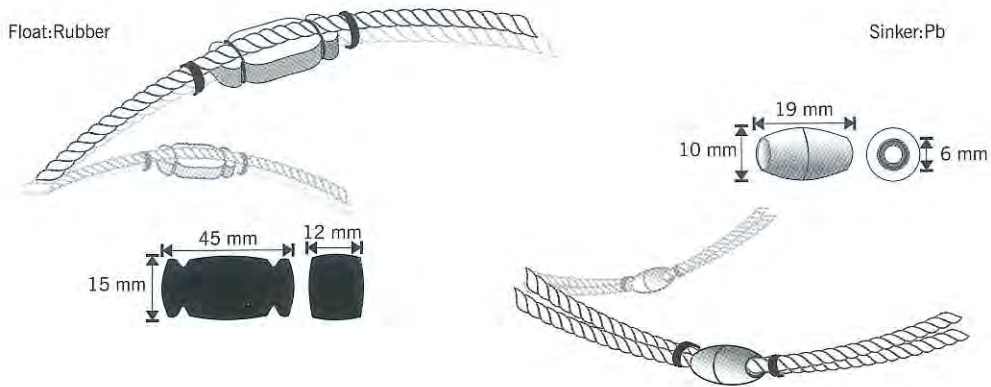
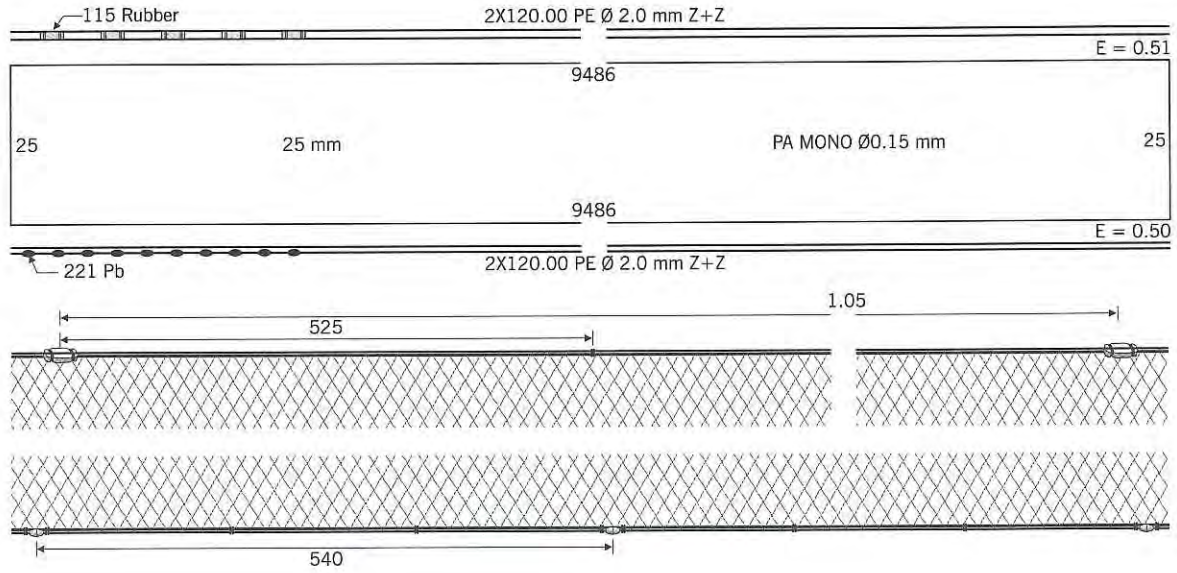
Short-bodied Mackerel,
Indian Mackerel

Hp : 13

KOH KONG



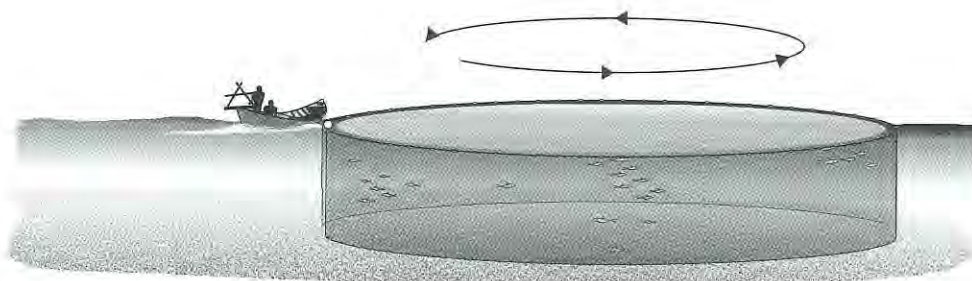
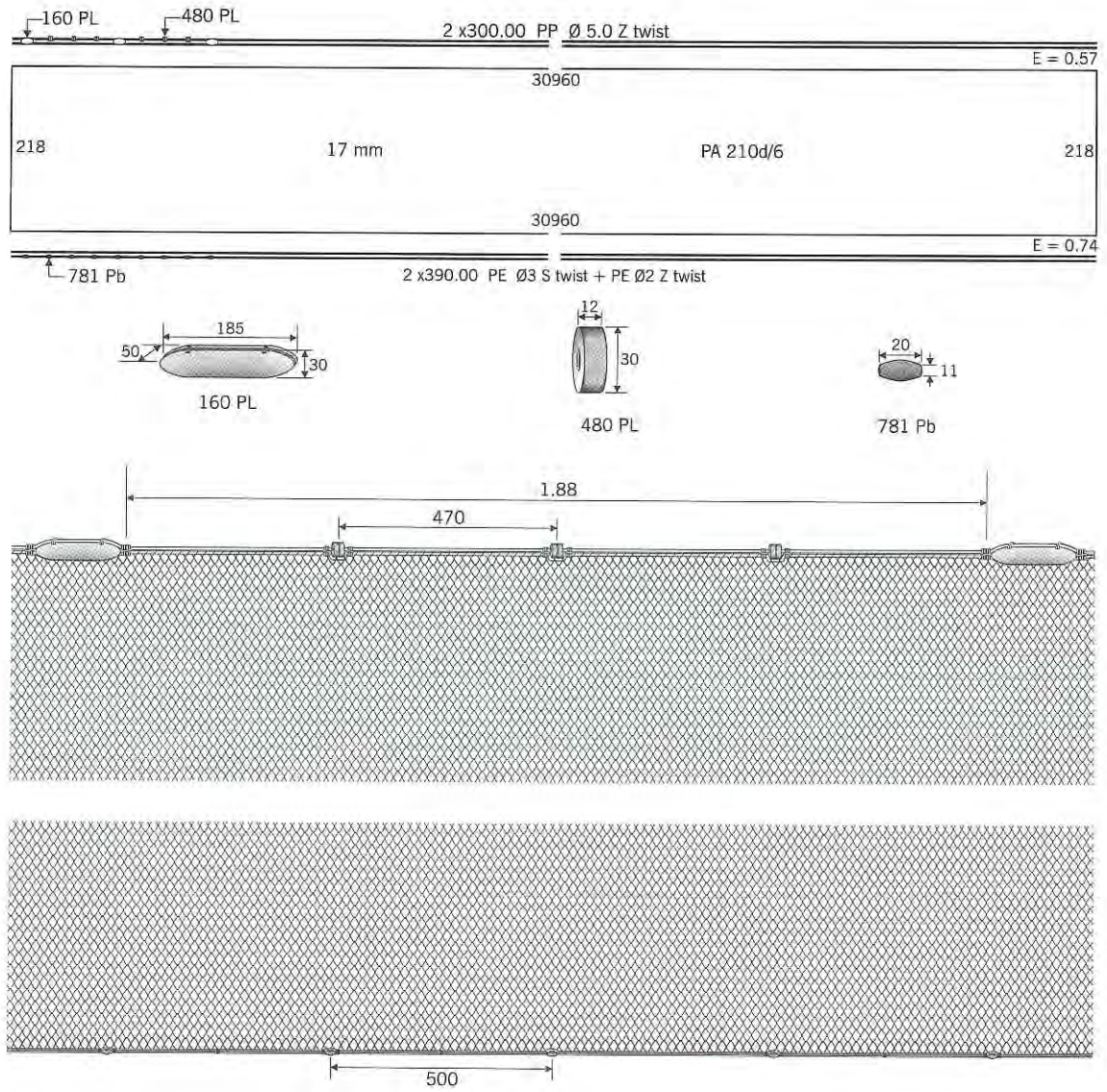
GILLNET	BOAT	LOCATION
Bottom gillnet	FRP Loa : 6 m	Bakklong
Sand whiting	Hp : 5	KOH KONG



GILLNET
 Encircling gillnet
 Mullet, Halfbeak
 Rocky fish

BOAT
 Loa : 12 m
 Hp : 7 X 2

LOCATION
 Peam Krasob
KOH KONG



GILLNET

Bottom gillnet

Seabass

BOAT

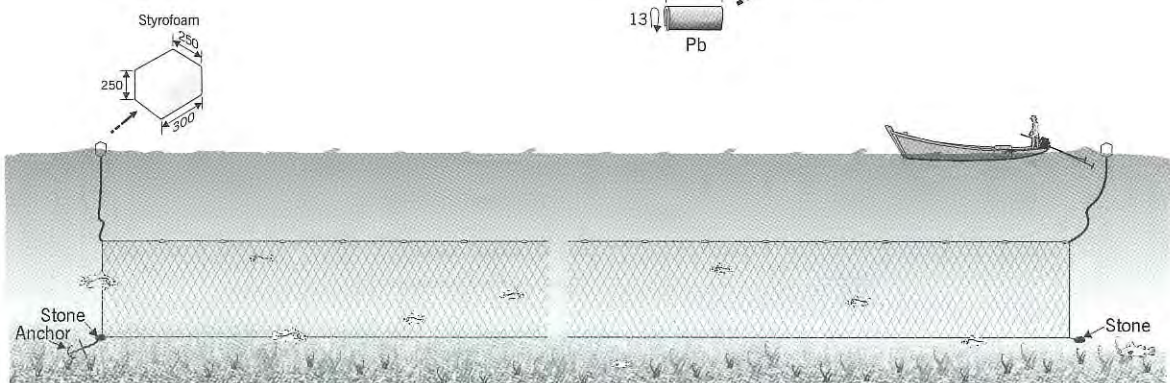
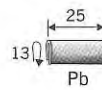
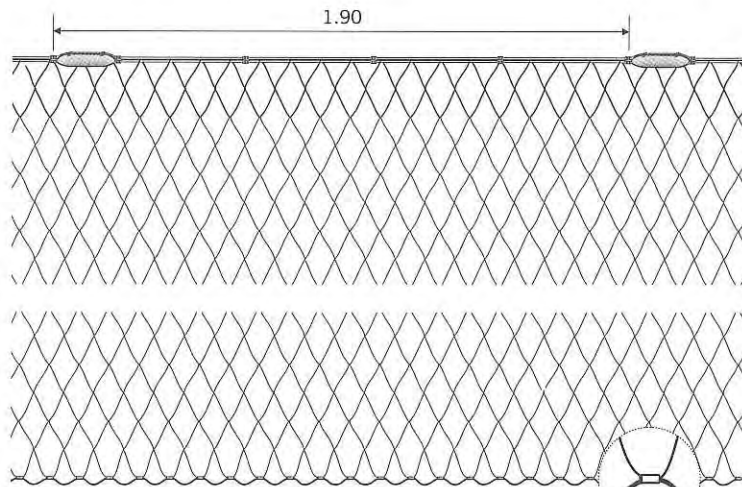
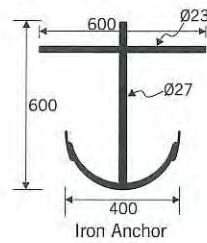
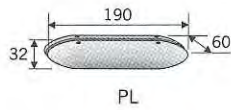
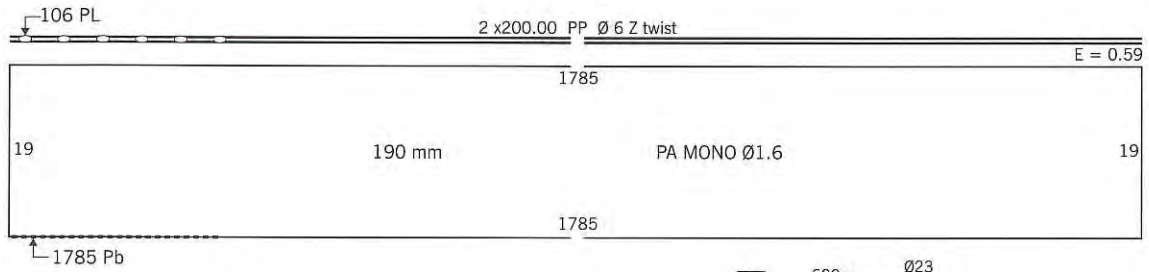
Loa : 12 m

Hp : 7 X 2

LOCATION

Peam Krasob

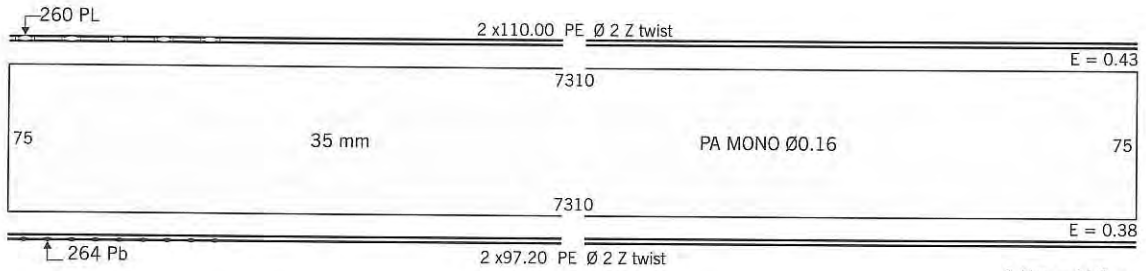
KOH KONG



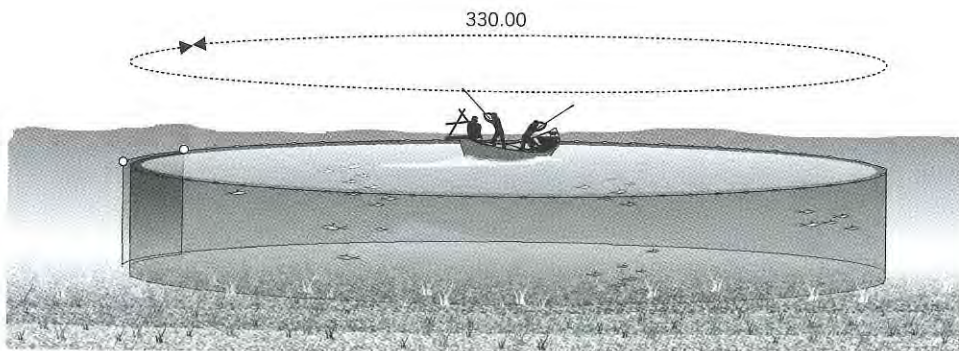
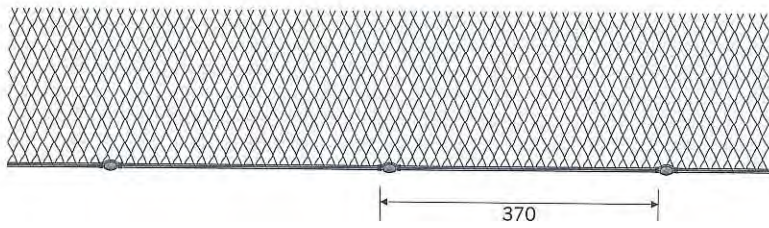
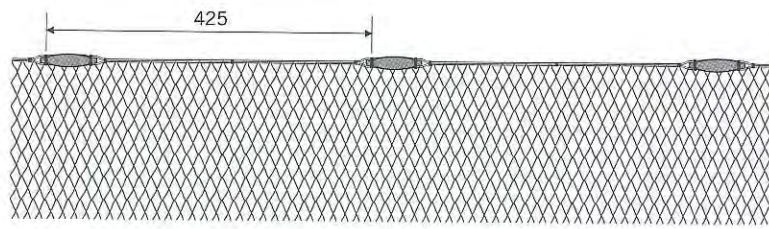
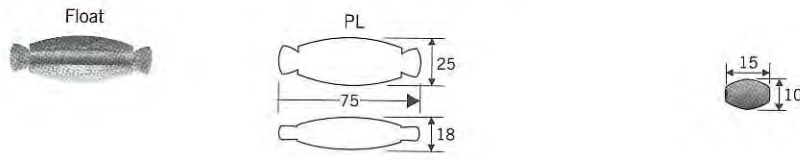
GILLNET
 Encircling gillnet
 Mullet

BOAT
 Loa : 5 m
 Hp : -

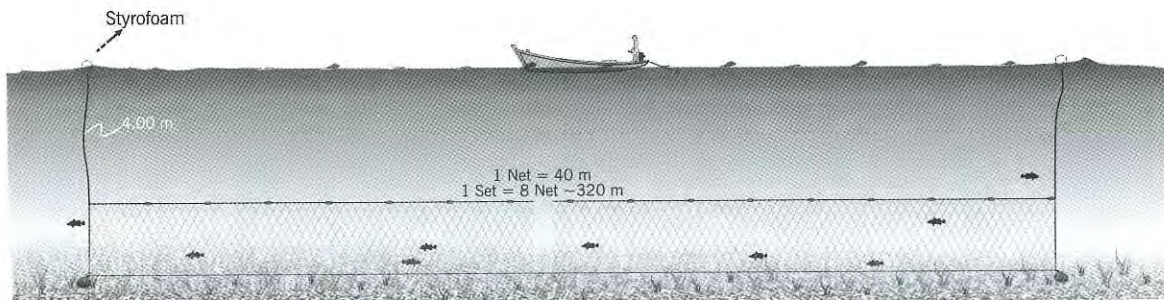
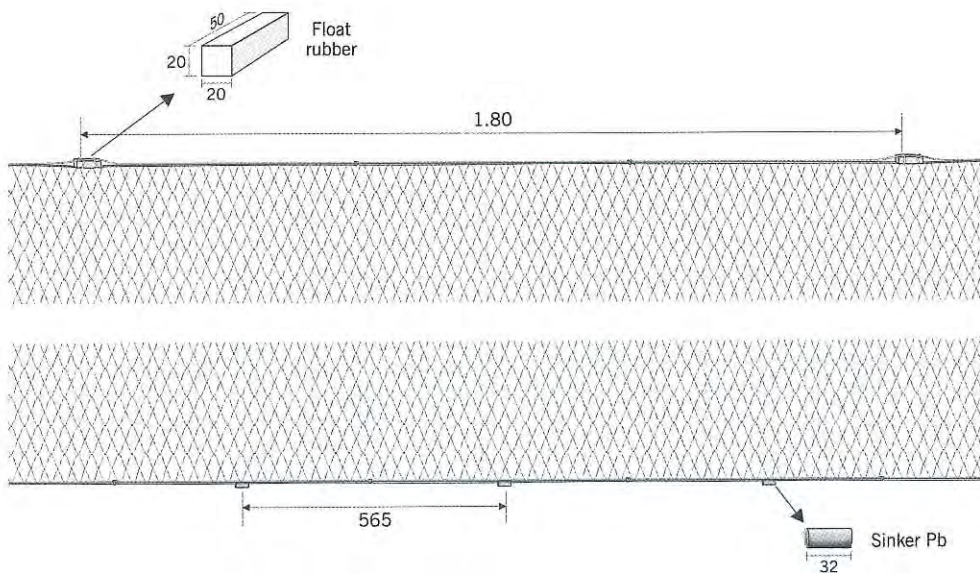
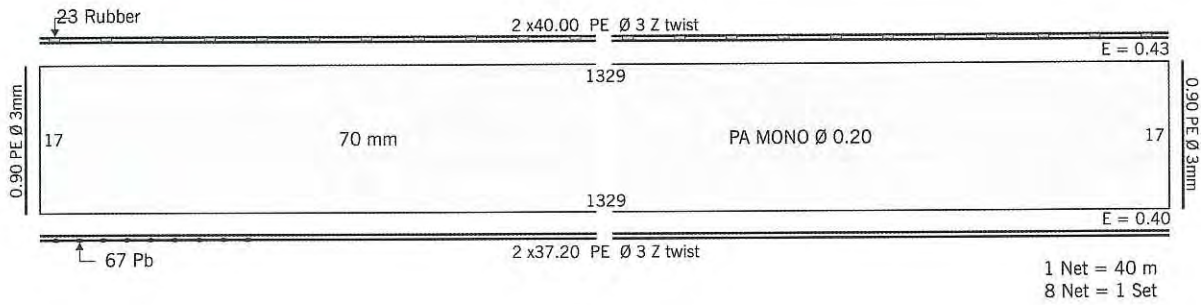
LOCATION
 Kdad
 KAMPOT



1 Net = 110 m
 3 Net = 1 Set



GILLNET	BOAT	LOCATION
Bottom gillnet	Loa : 6 m	Prek Ampril
Surgeonfish, Spinefoot	Hp : -	KAMPOT



GILLNET

Gillnet

Threadfin bream, Mackerel

BOAT

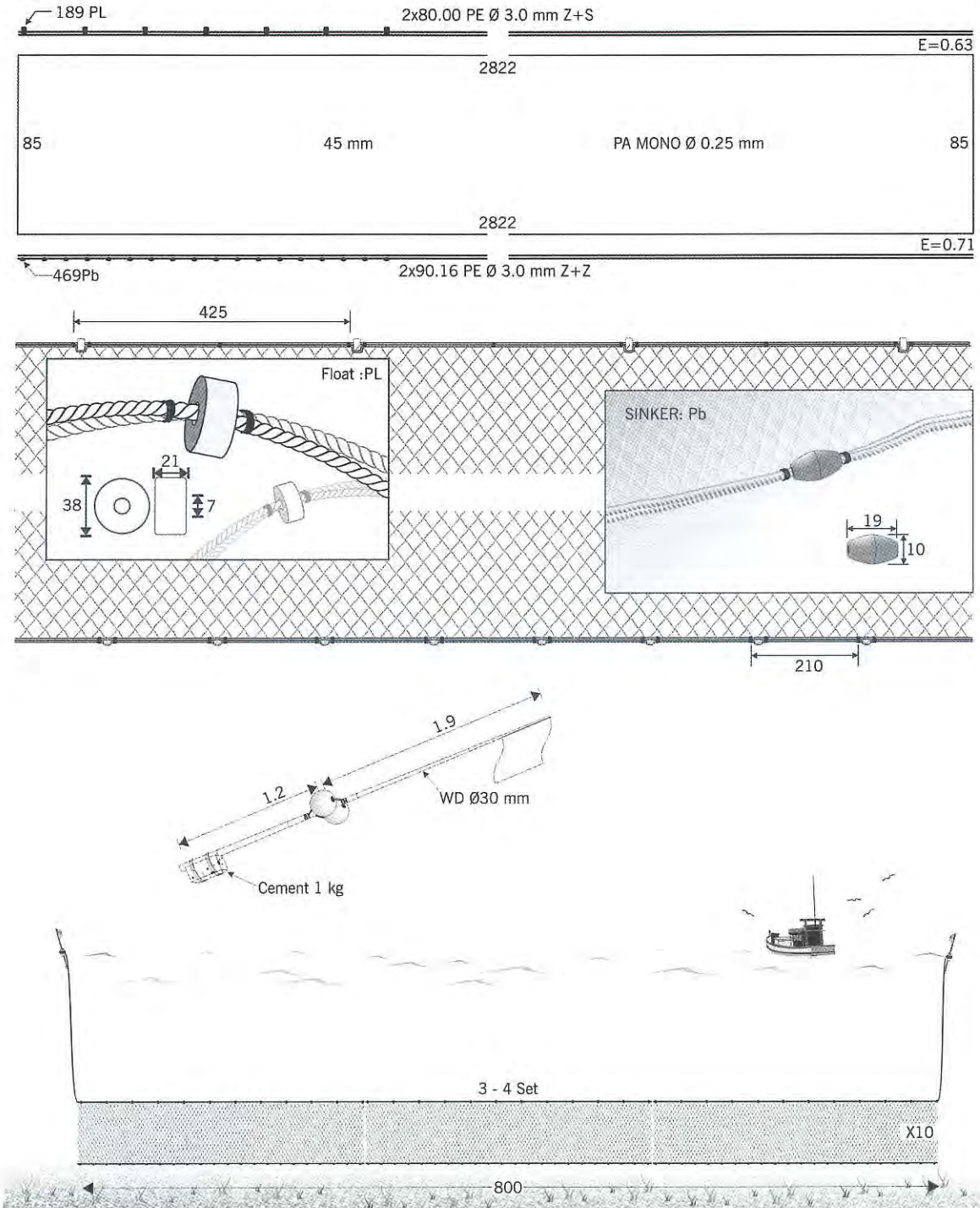
Loa : 12 m

Hp : 13

LOCATION

Koh Kchyong

SIHANOUK VILLE



GILLNET

Bottom Fixed Gillnet

Therapon

BOAT

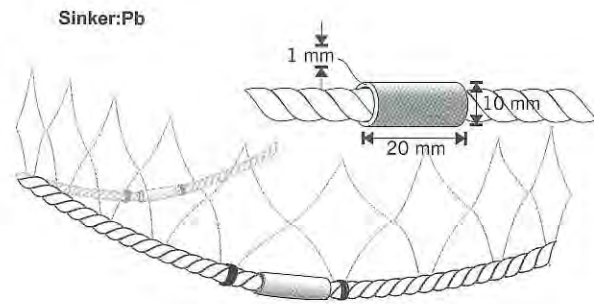
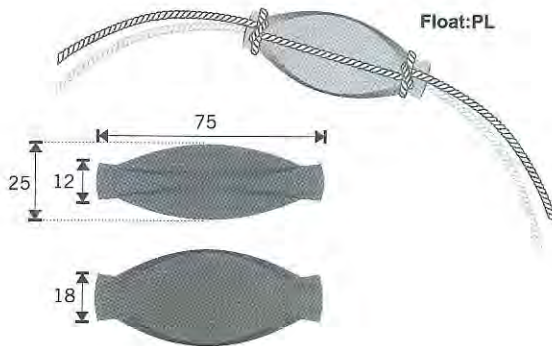
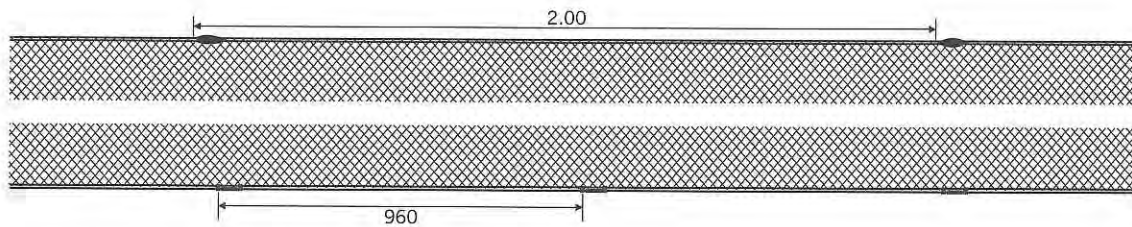
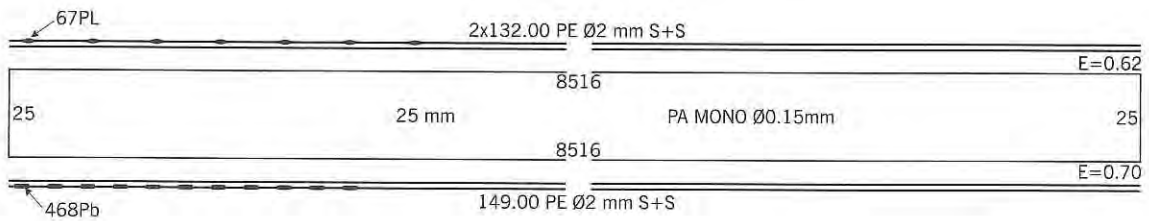
Loa : 6 m

Hp : 5

LOCATION

Prek Chek

KAMPOT



GILLNET

Encircling gillnet

Sea bass, Snapper,
Grouper

BOAT

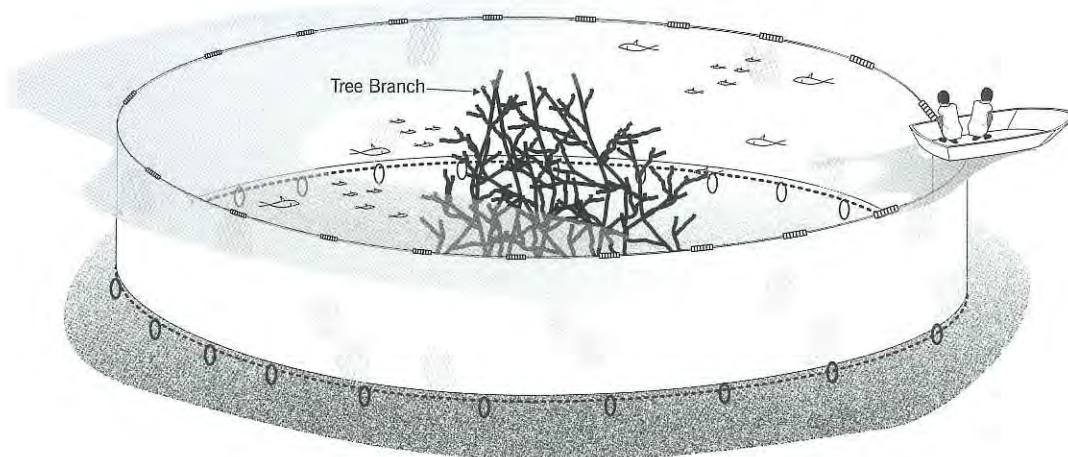
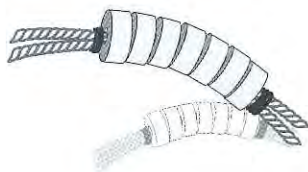
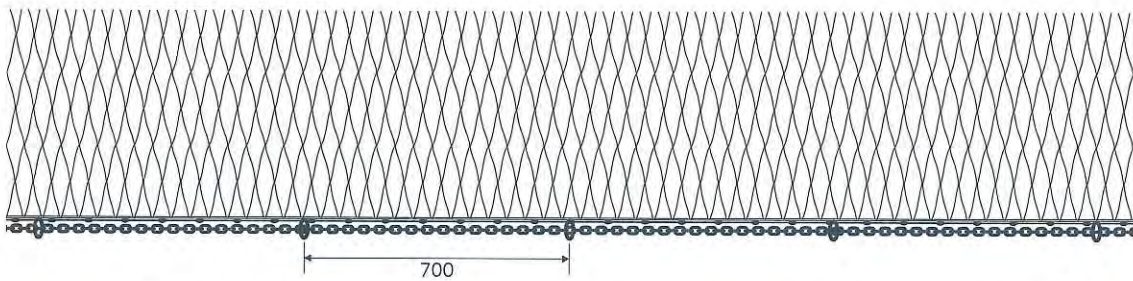
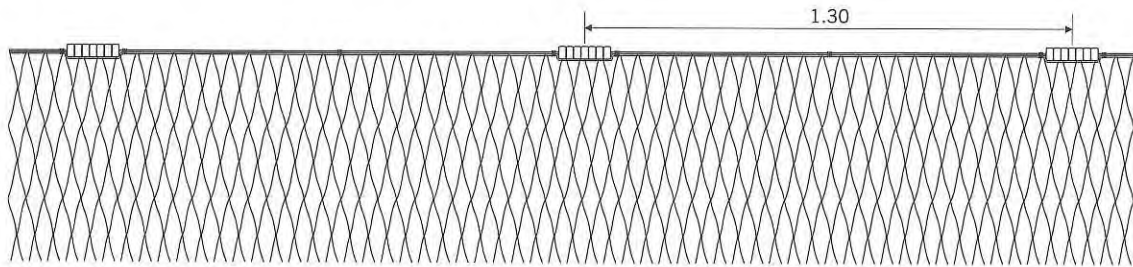
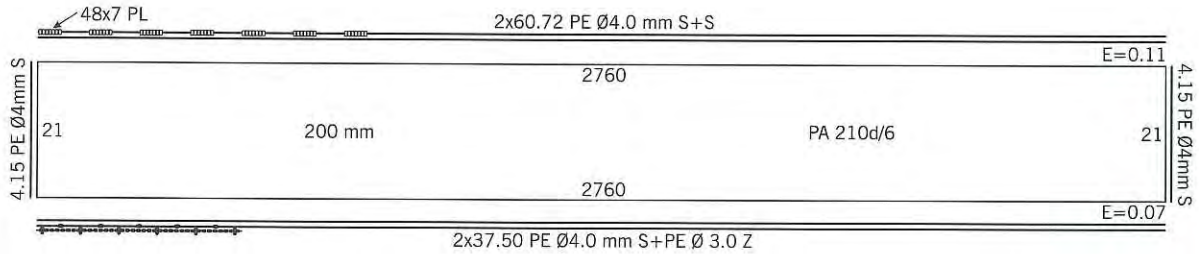
Loa : 4 m

Hp : 5

LOCATION

Bakklong

KOHKONG



Gill nets fishing boat in Cambodia



Chapter 8
Traps



TRAP

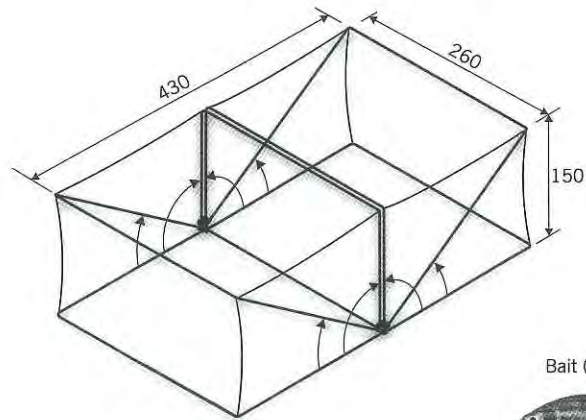
Collapsible Crab Trap
(Lop Kdam)
Crab

BOAT

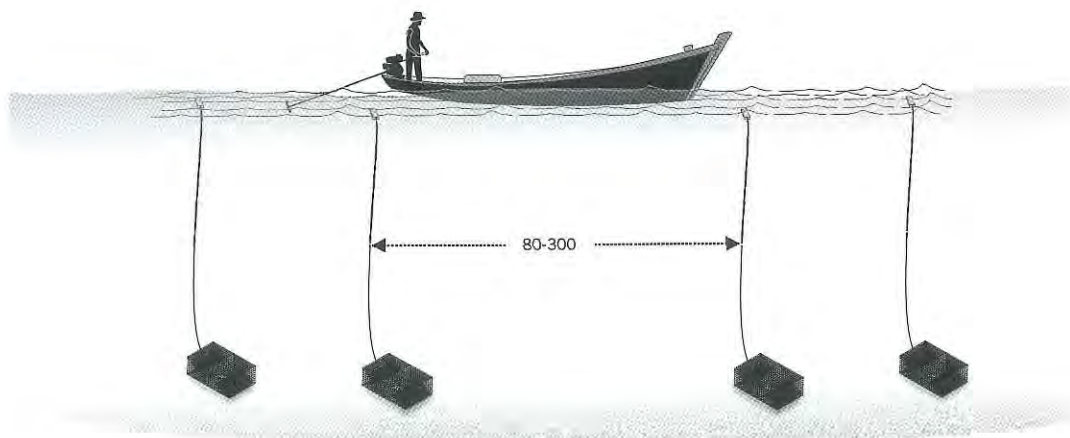
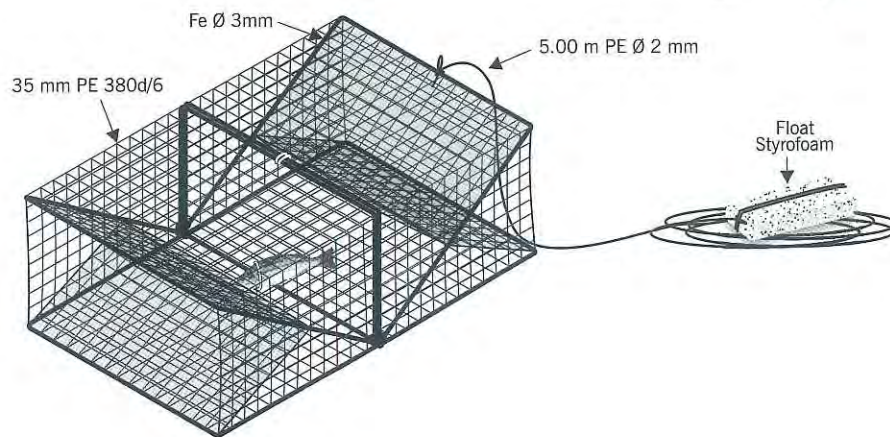
LOA : 6 m
Hp : 5-7

LOCATION

Prek Chek
KAMPOT



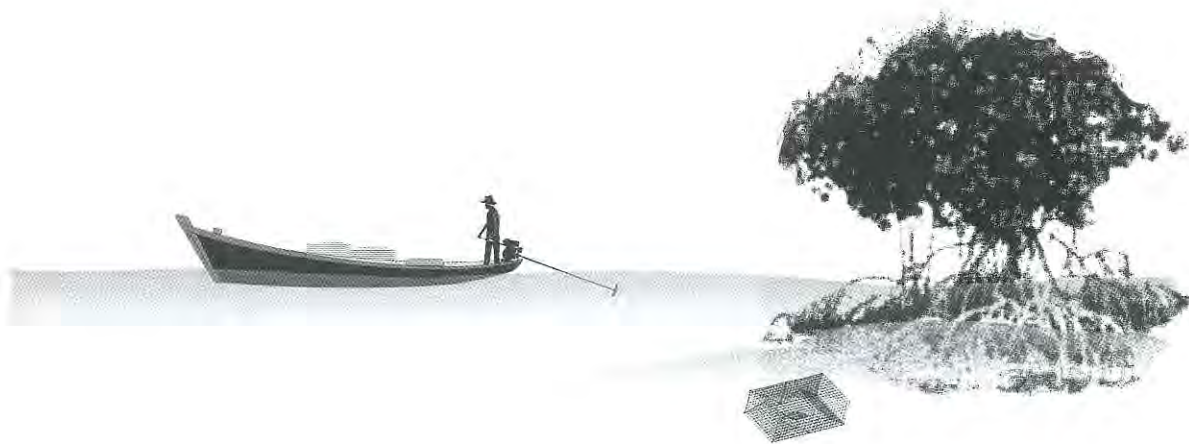
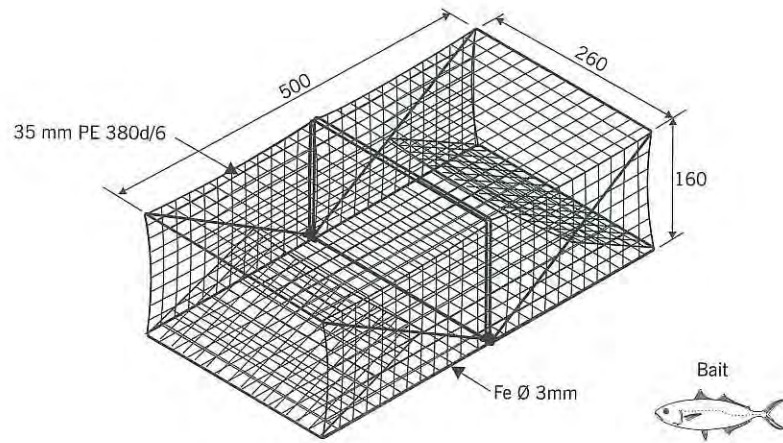
Bait (Terapon)



TRAP
 Collapsible Crab Trap
 (Lop Kdam)
 Crab

BOAT
 LOA : 6 m
 Hp : 5-7

LOCATION
 Koh Sdach
KOH KONG



TRAP

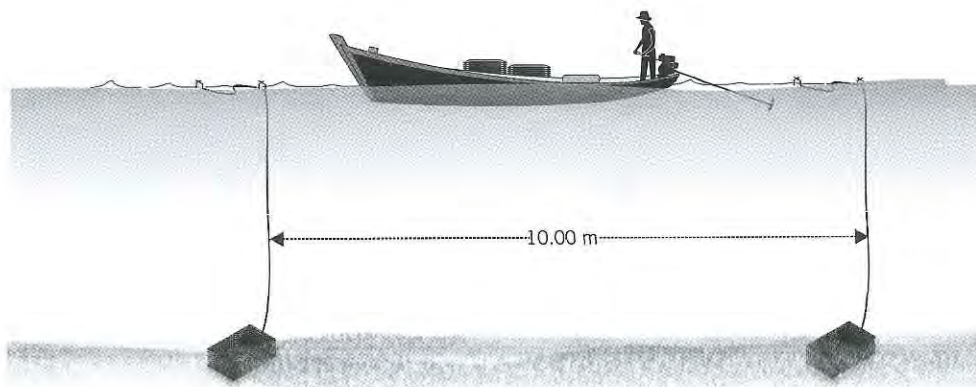
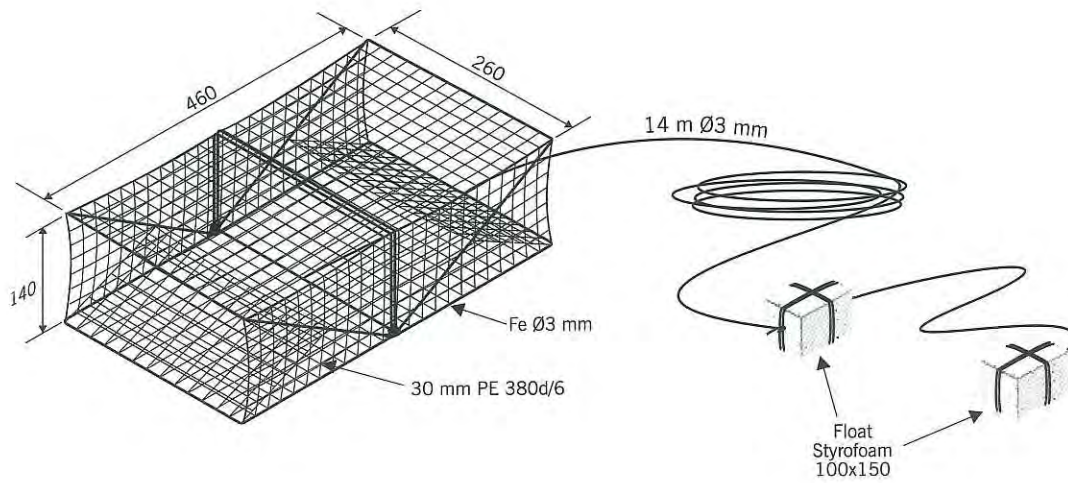
Collapsible Crab Trap
(Lop Kdam)
Crab

BOAT

LOA : 9 m
Hp : 13

LOCATION

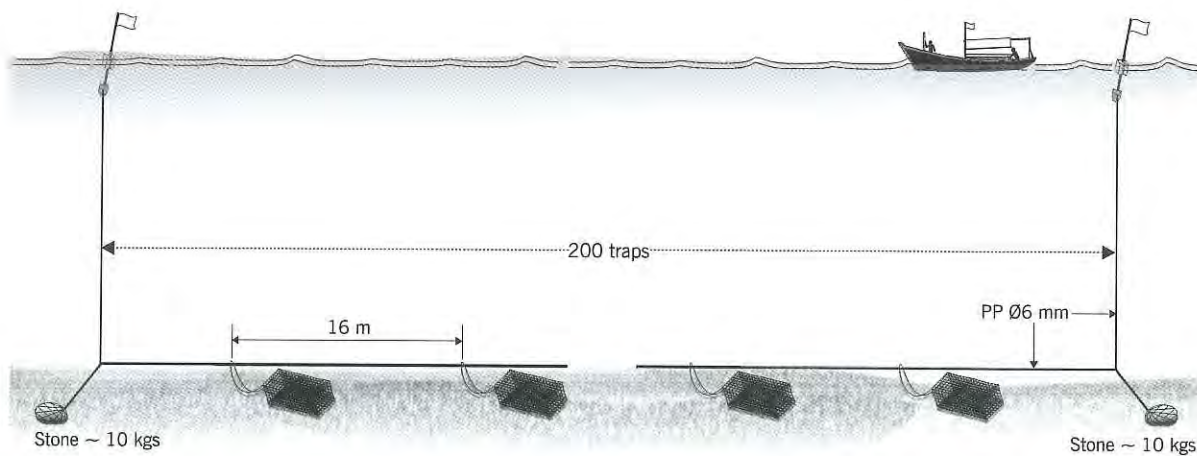
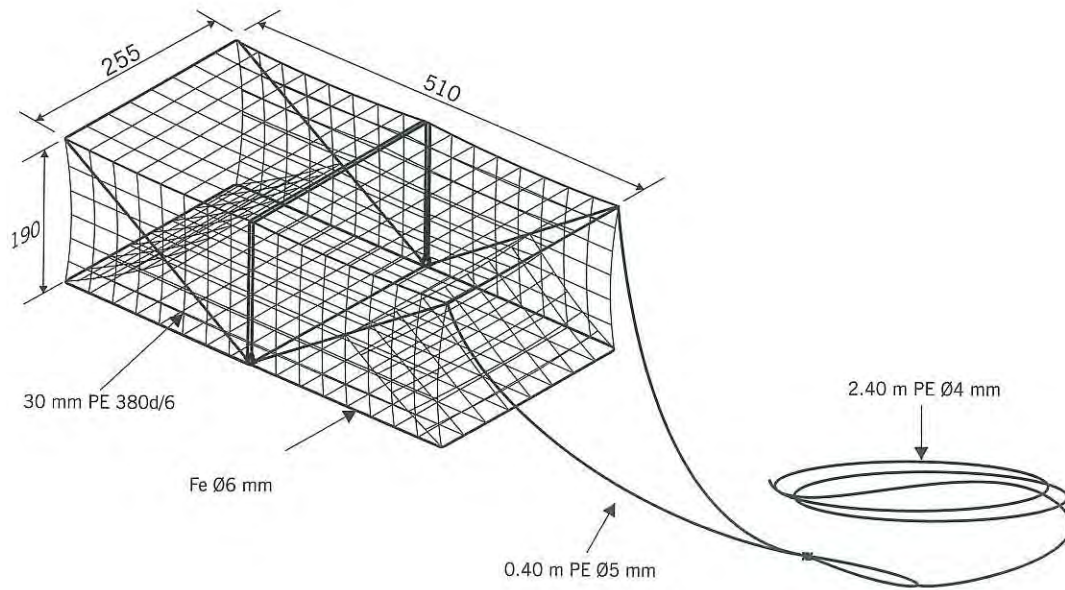
Koh Sdach
KOH KONG



TRAP
 Collapsible Crab Trap
 (Lop Kdam)
 Crab

BOAT
 LOA : 19 m
 Hp : 190

LOCATION
 Koh Sdach
 KOH KONG



TRAP

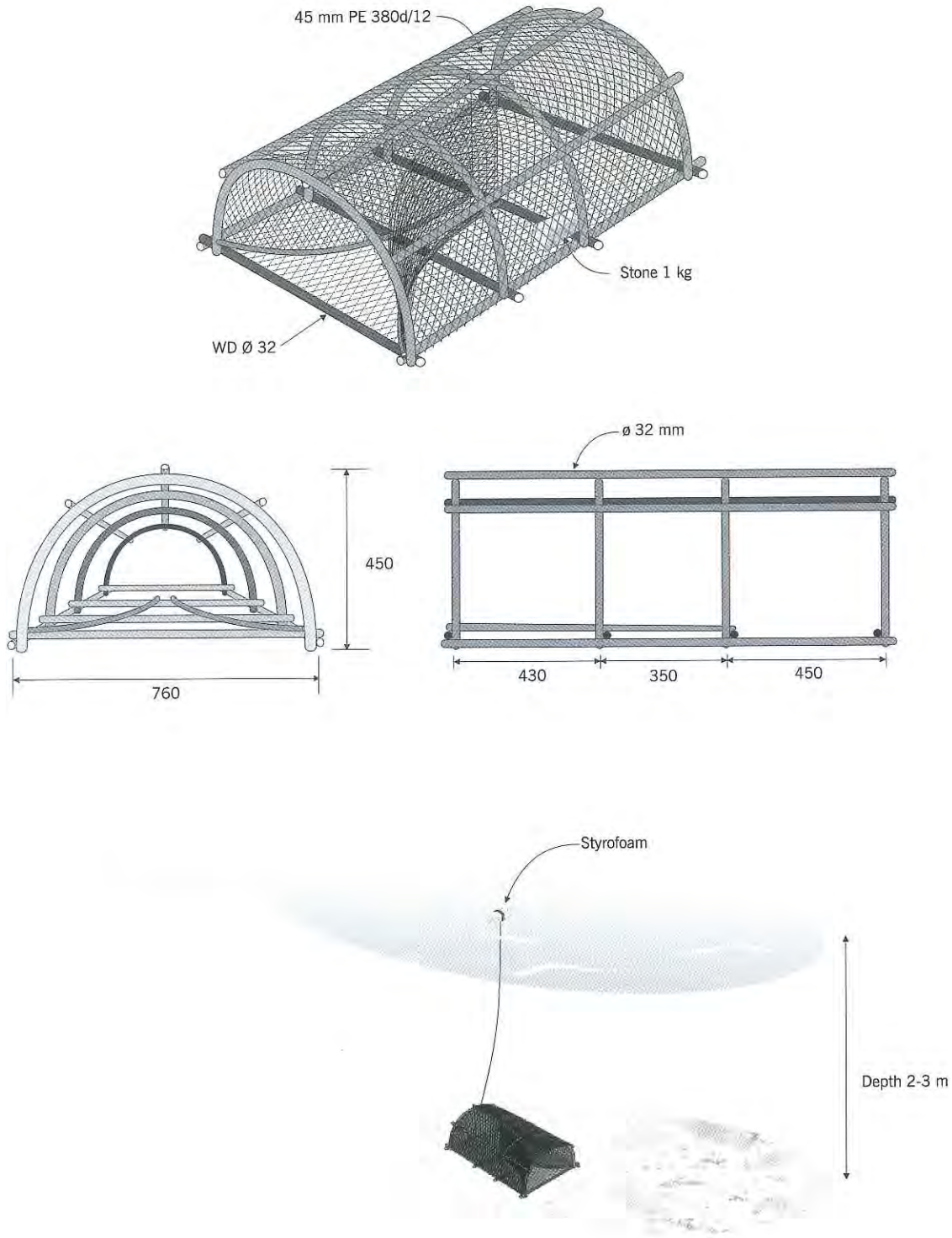
Fish Trap
(Lop Trey)
Grouper, Snapper, Shark

BOAT

LOA : 6 m
Hp : no engine

LOCATION

Prek Ampil
KAMPOT



TRAP

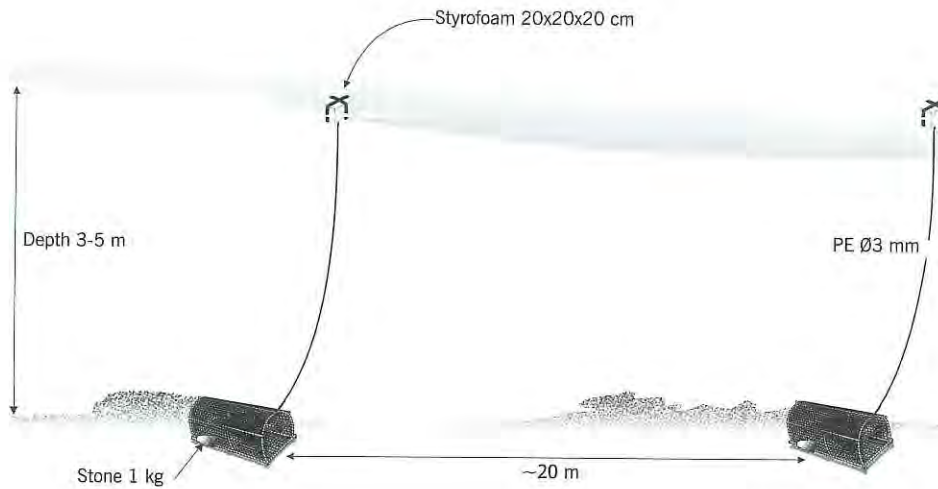
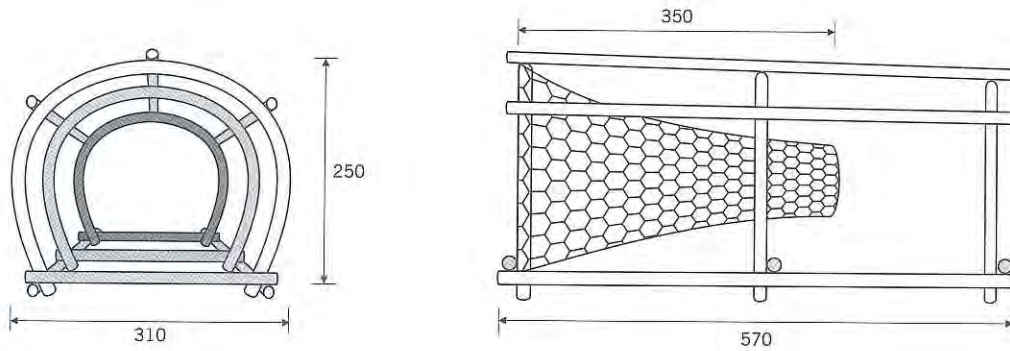
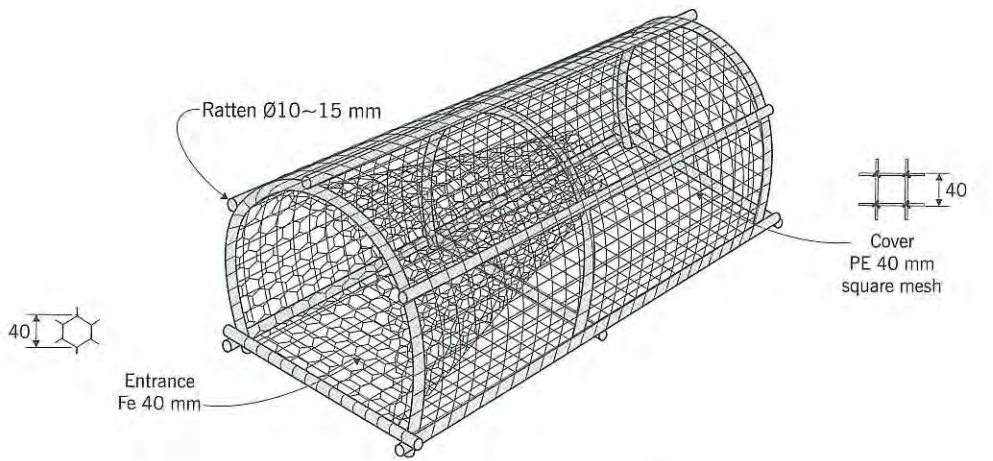
Fish Trap
(Lob Trey)
Grouper

BOAT

LOA : FRP 6 m
Hp : 5

LOCATION

Bakklong
KOH KONG



TRAP

Squid Trap
(Lob Meuk)
Cuttle fish

BOAT

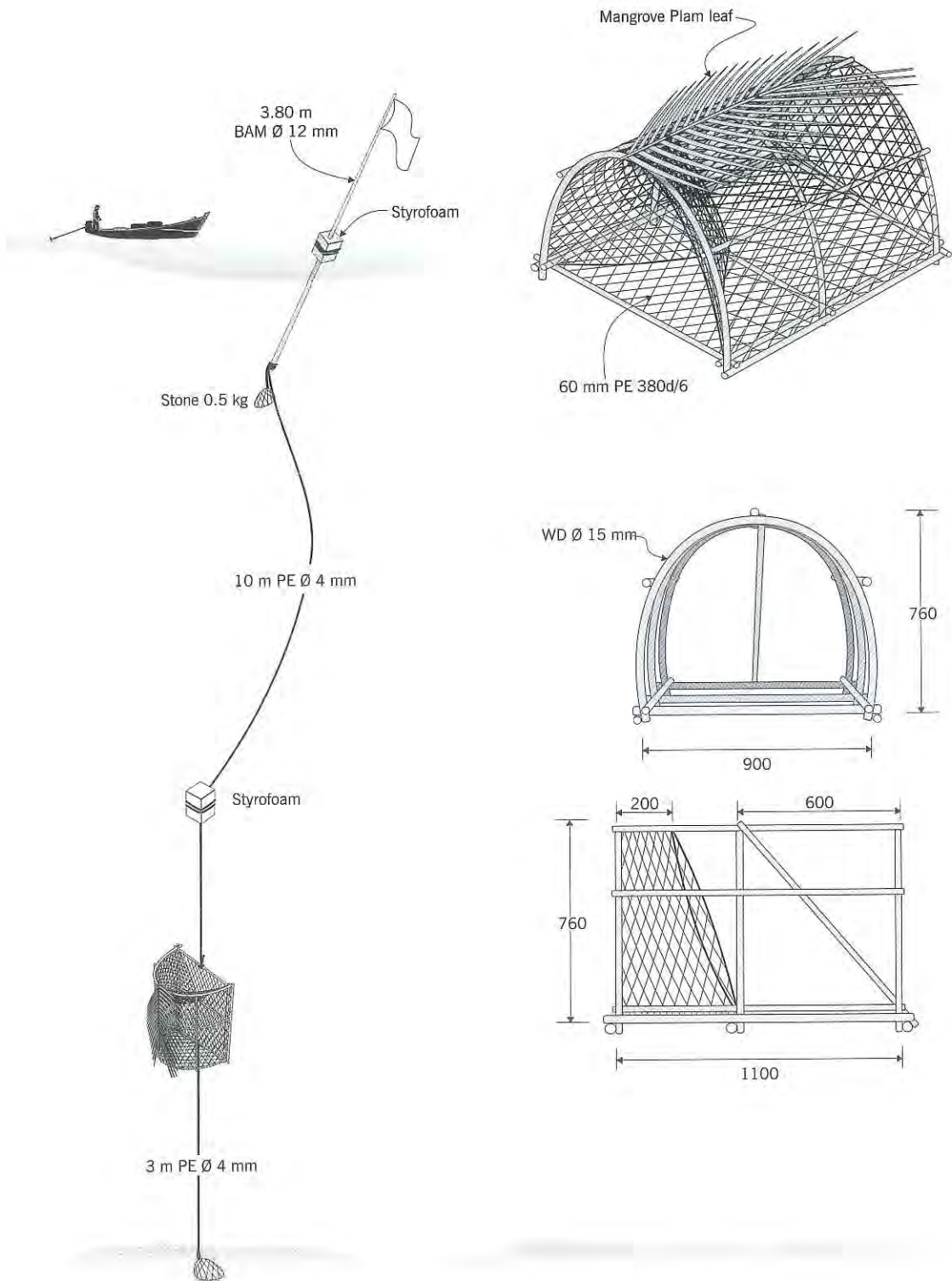
LOA : 9.5 m

Hp : 27

LOCATION

Koh Kong

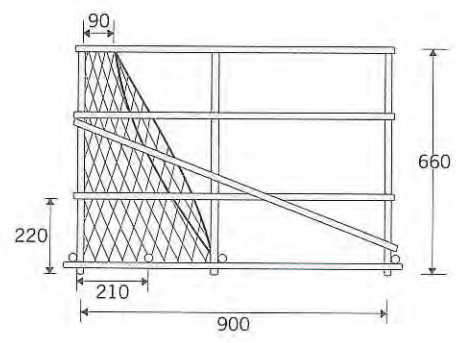
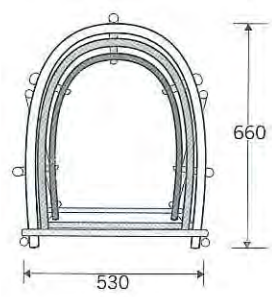
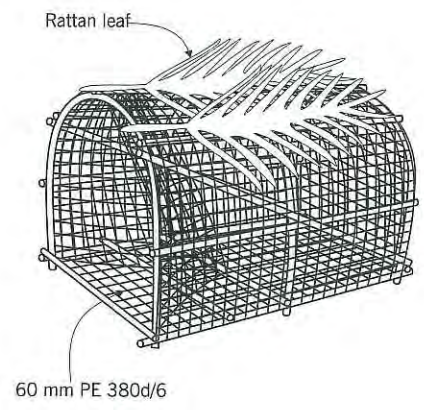
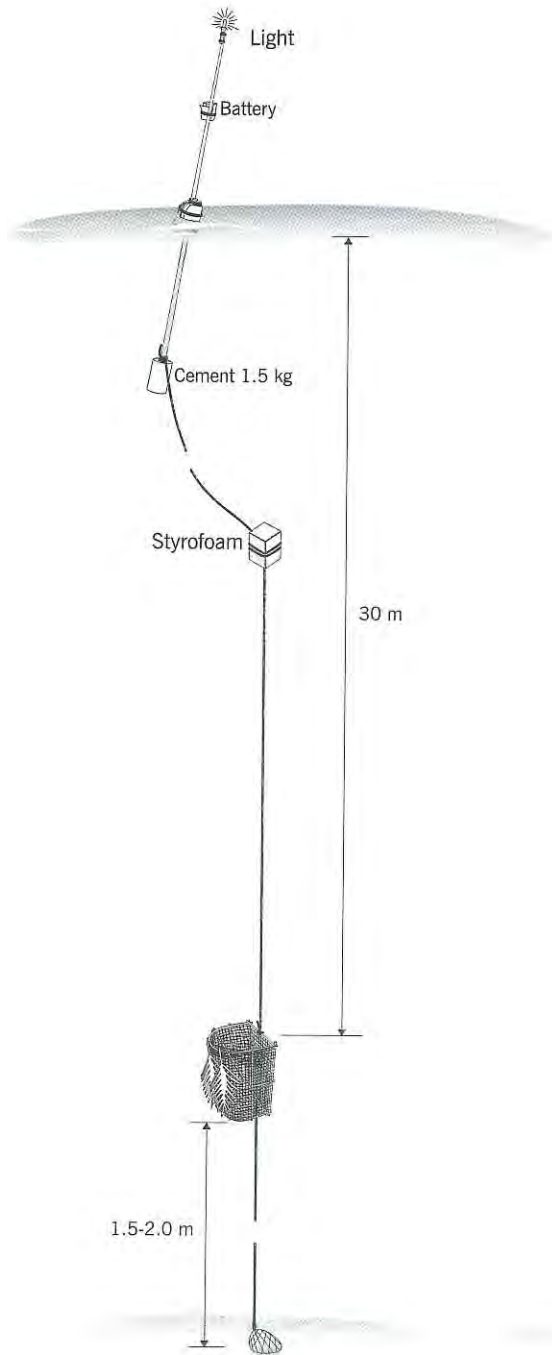
KOH KONG



TRAP
 Squid Trap
 (Lob Meuk)
 Cuttle fish

BOAT
 LOA : 9-10 m
 Hp : 22

LOCATION
 Koh Sdach
 KOH KONG



TRAP

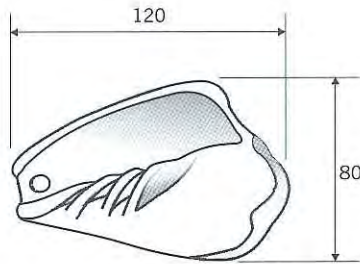
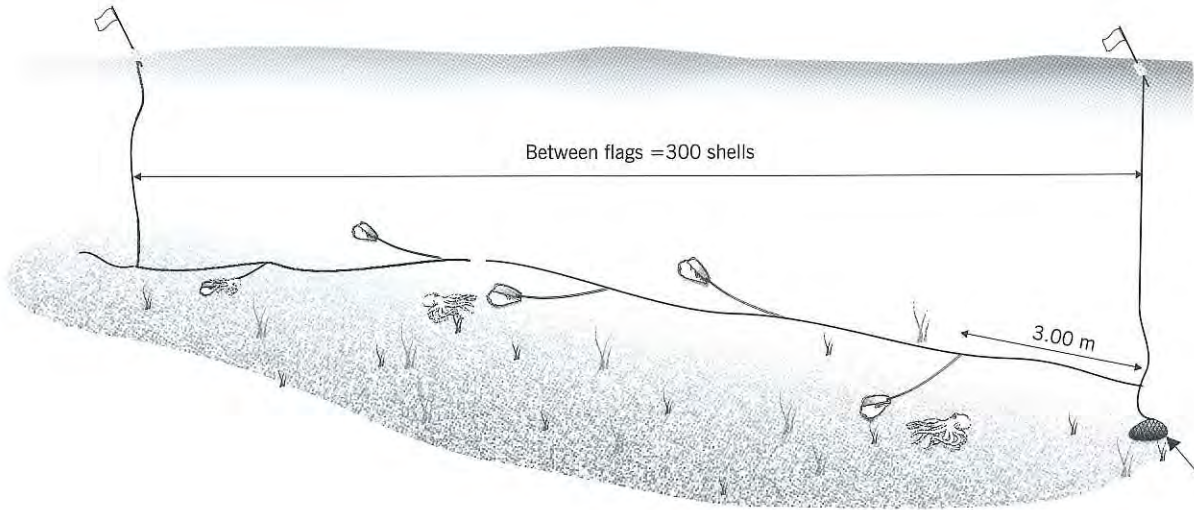
Octopus Trap
(.....)
Octopus

BOAT

LOA : 11 m
Hp : 85

LOCATION

Bakkhlong
KOH KONG

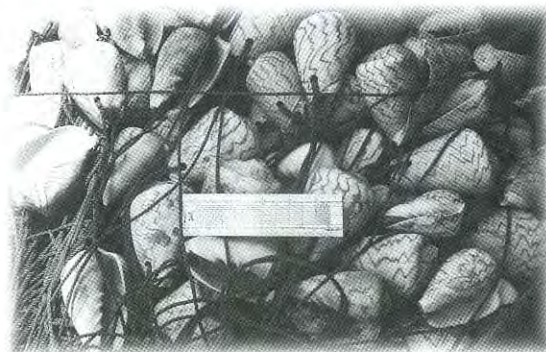


Melon shell

PE Ø 3 mm



Octopus



TRAP

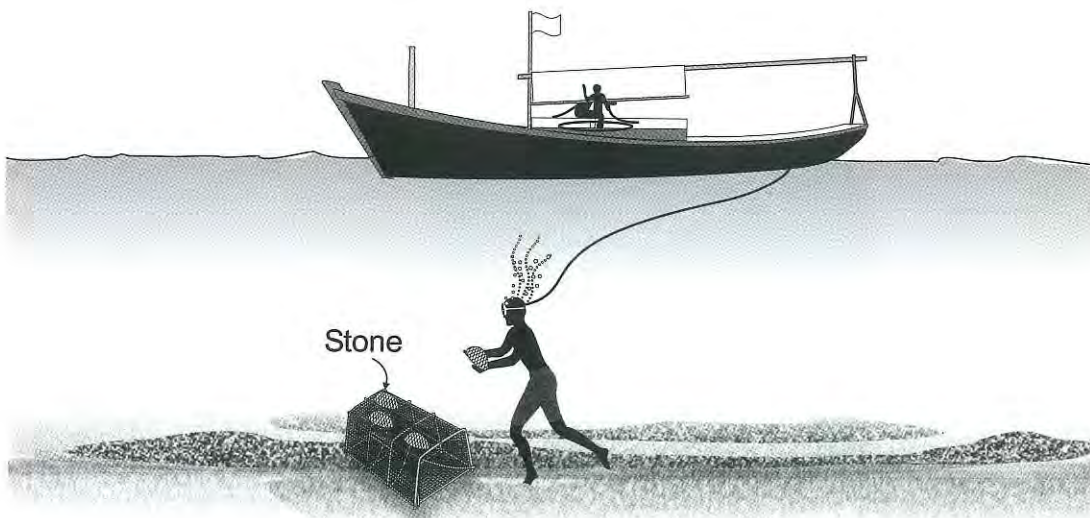
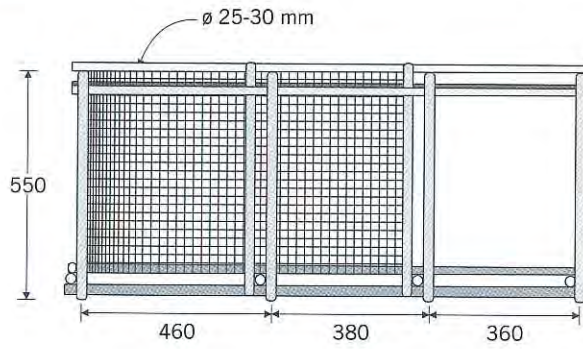
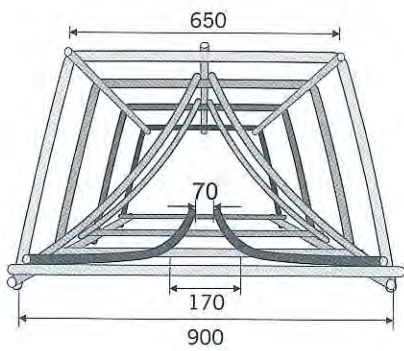
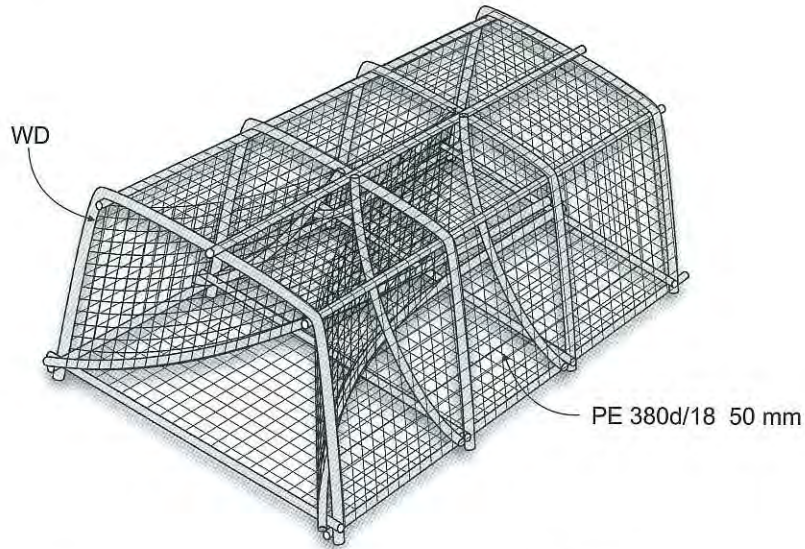
Fish trap
(Lob Trey)
Grouper, Snapper

BOAT

Loa : 8 m
Hp : 75

LOCATION

Koh Sdach
KOH KONG



TRAP

Stake trap

Miscellaneous fish, Shrimp
crap

BOAT

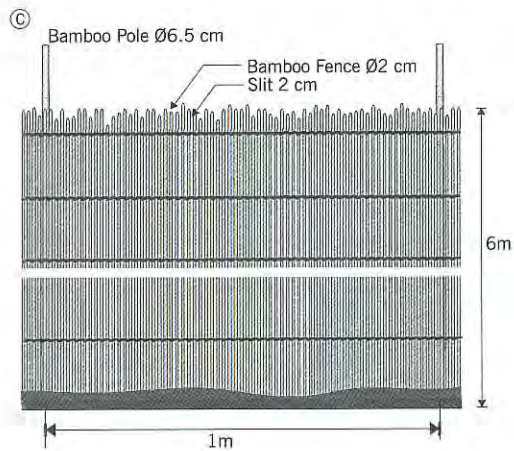
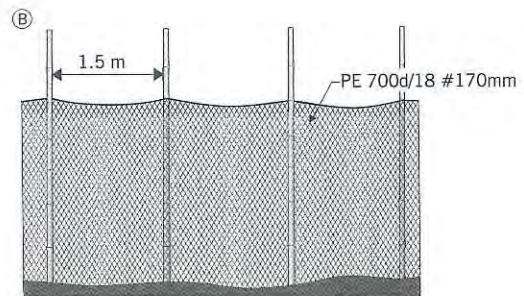
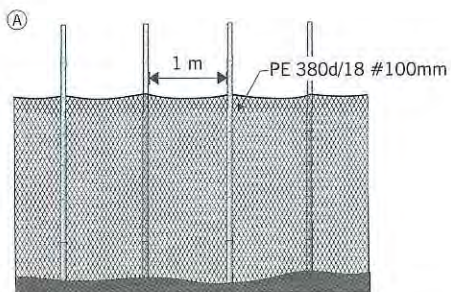
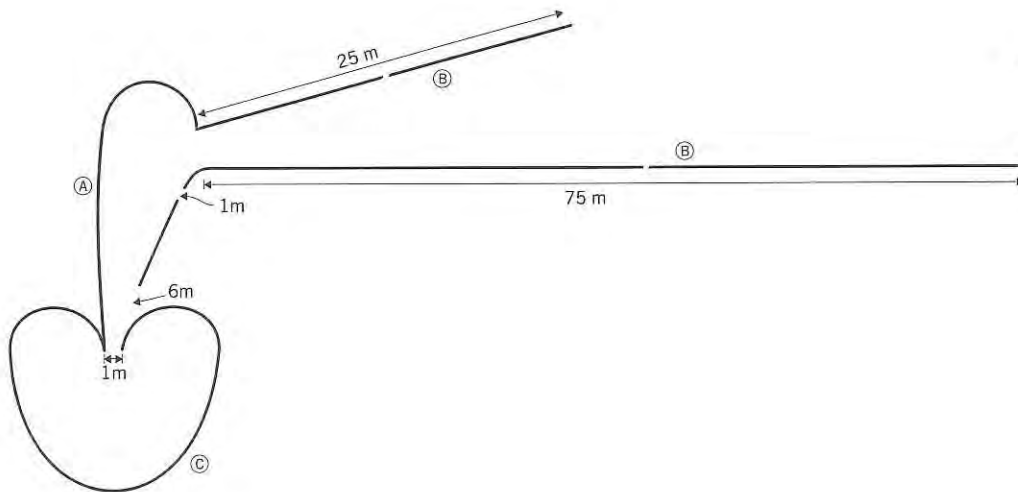
Loa : 10 m

Hp : 6.5

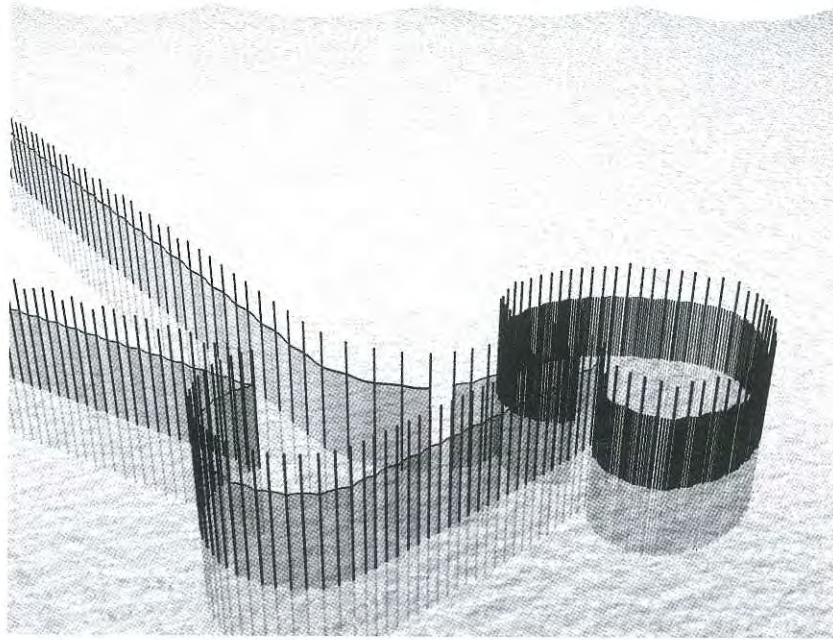
LOCATION

Ou Krasa Village

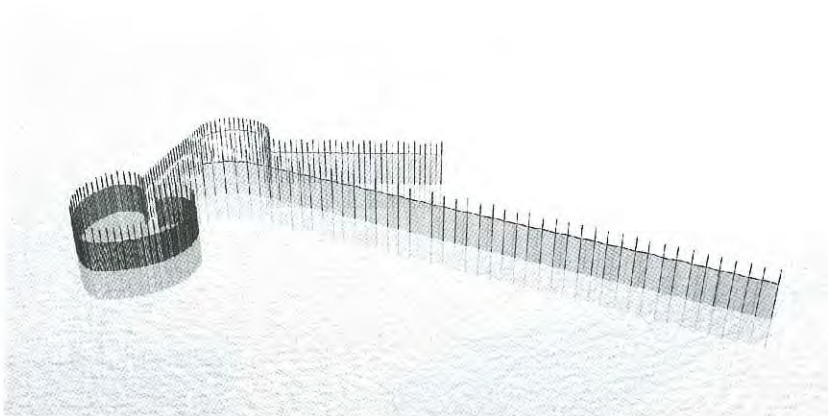
Kampot



Entrance and Catching Chamber



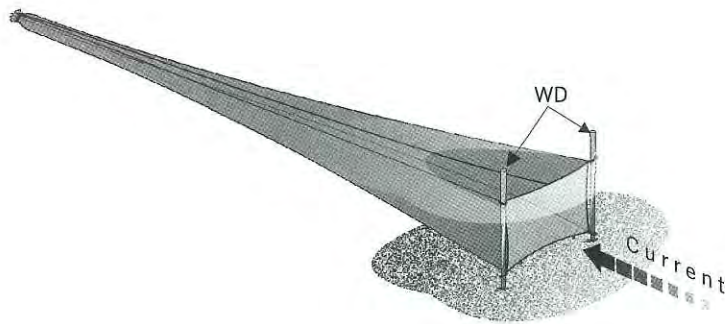
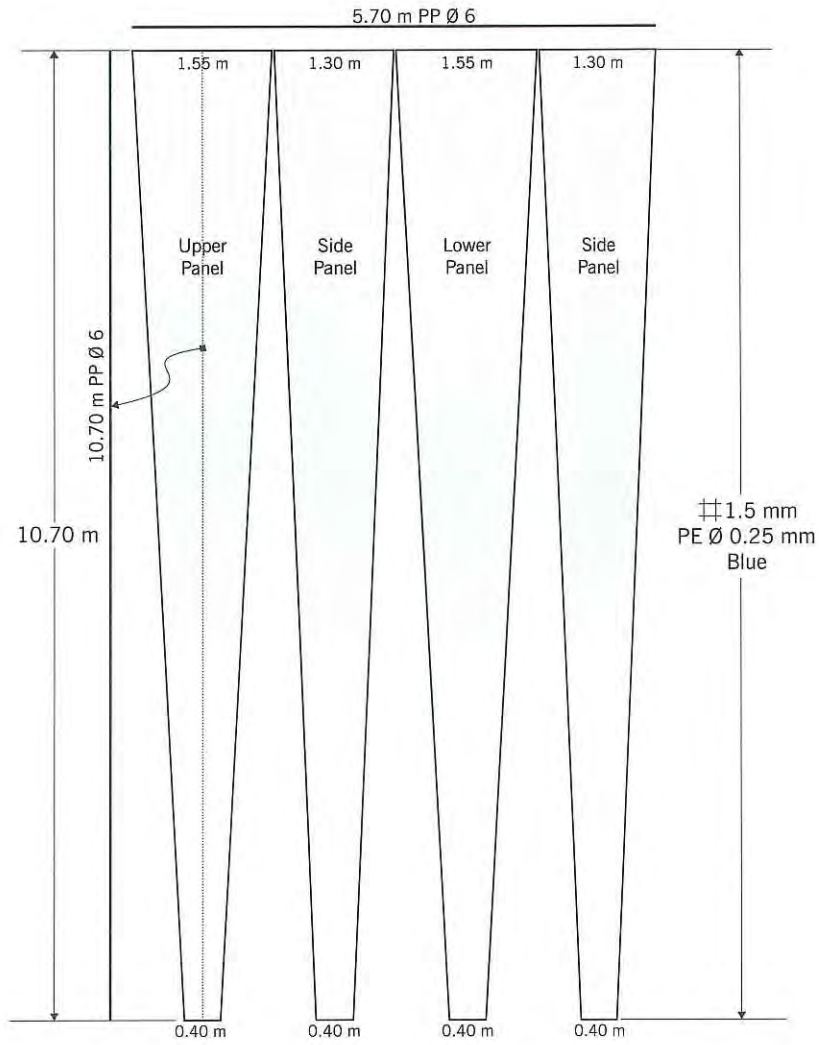
Perspective figure



TRAP
 Fyke net
 (Pong Pang)
 Planktonic Shrimp,
 Small Shrimp

BOAT
 LOA :-
 Hp :-

LOCATION
 Peam Krasob
 Koh Kong



Fyke net setting at fishing ground area



Chapter 9
Hooks and Lines



H O O K A N D L I N E

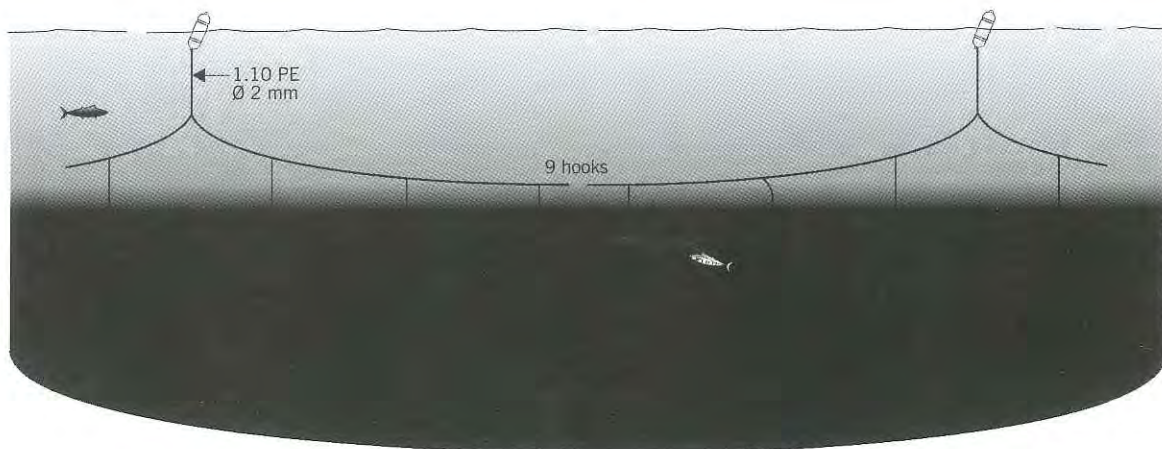
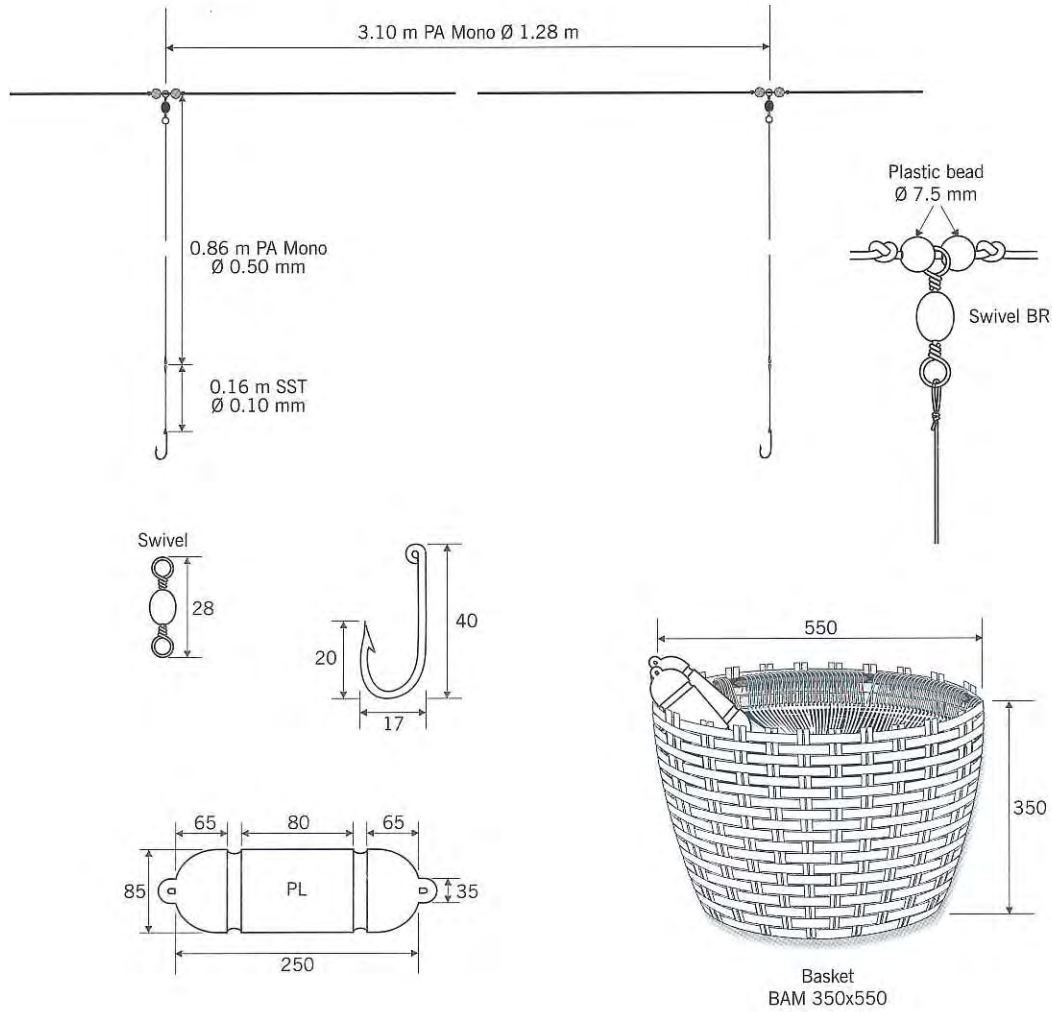
Drift longline
 -
 Spanish mackerel, Shark

B O A T

Loa : 8.5m
 Hp : 5

L O C A T I O N

Kampong bay
 SIHANOUKVILLE



HOOK AND LINE

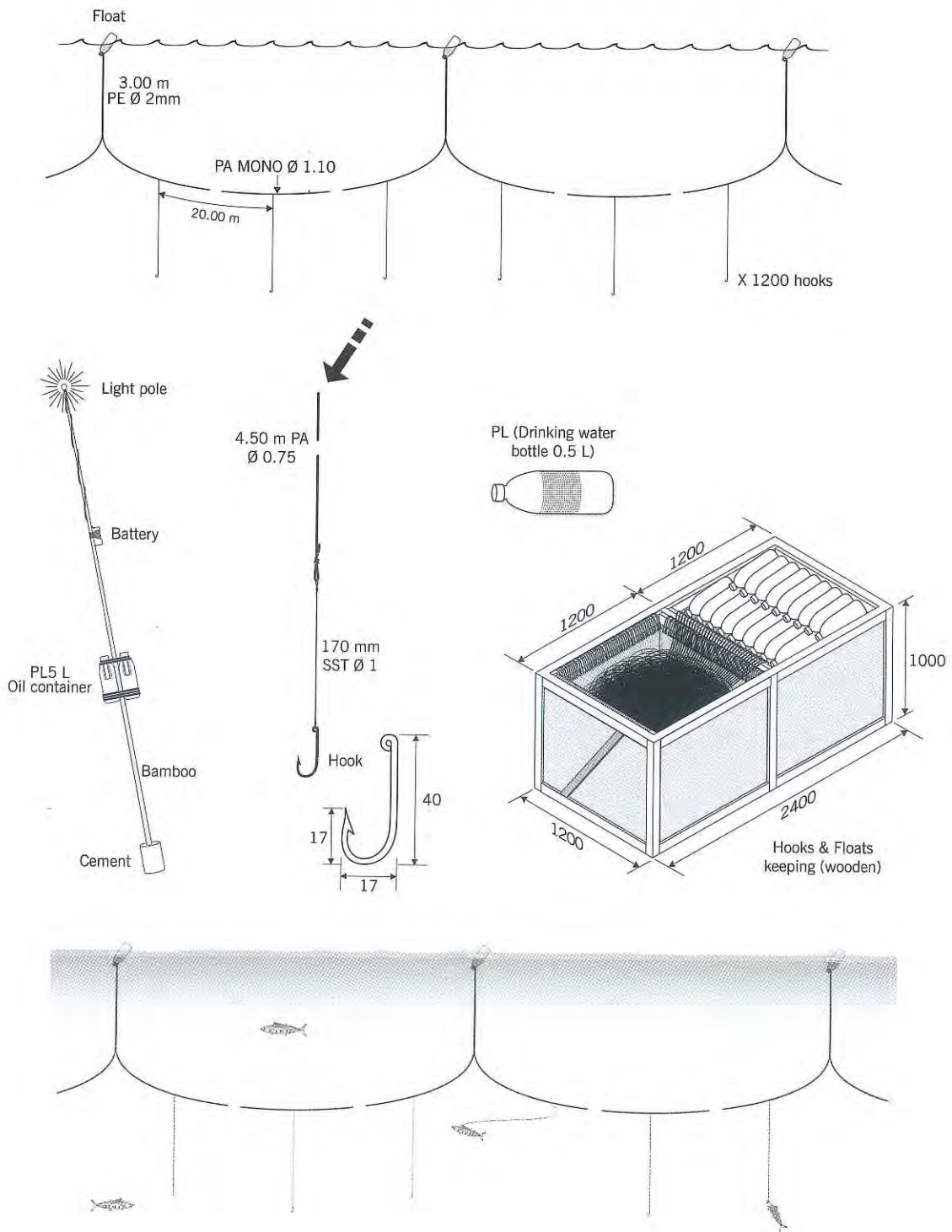
Drift longline
-
Spanish mackerel

BOAT

Loa : 8.5m
Hp : 5

LOCATION

Bakkhlong
KOH KONG



H O O K A N D L I N E

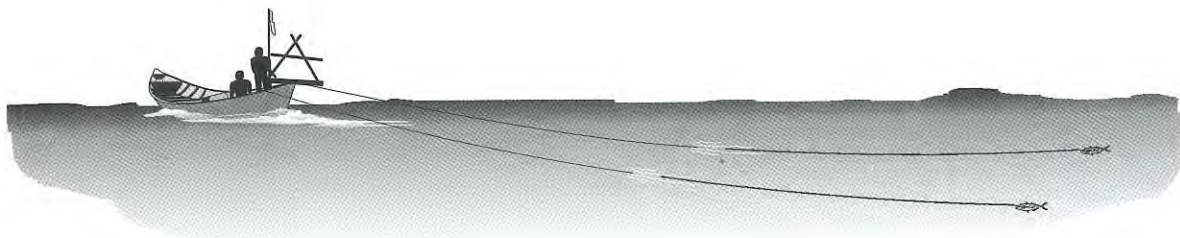
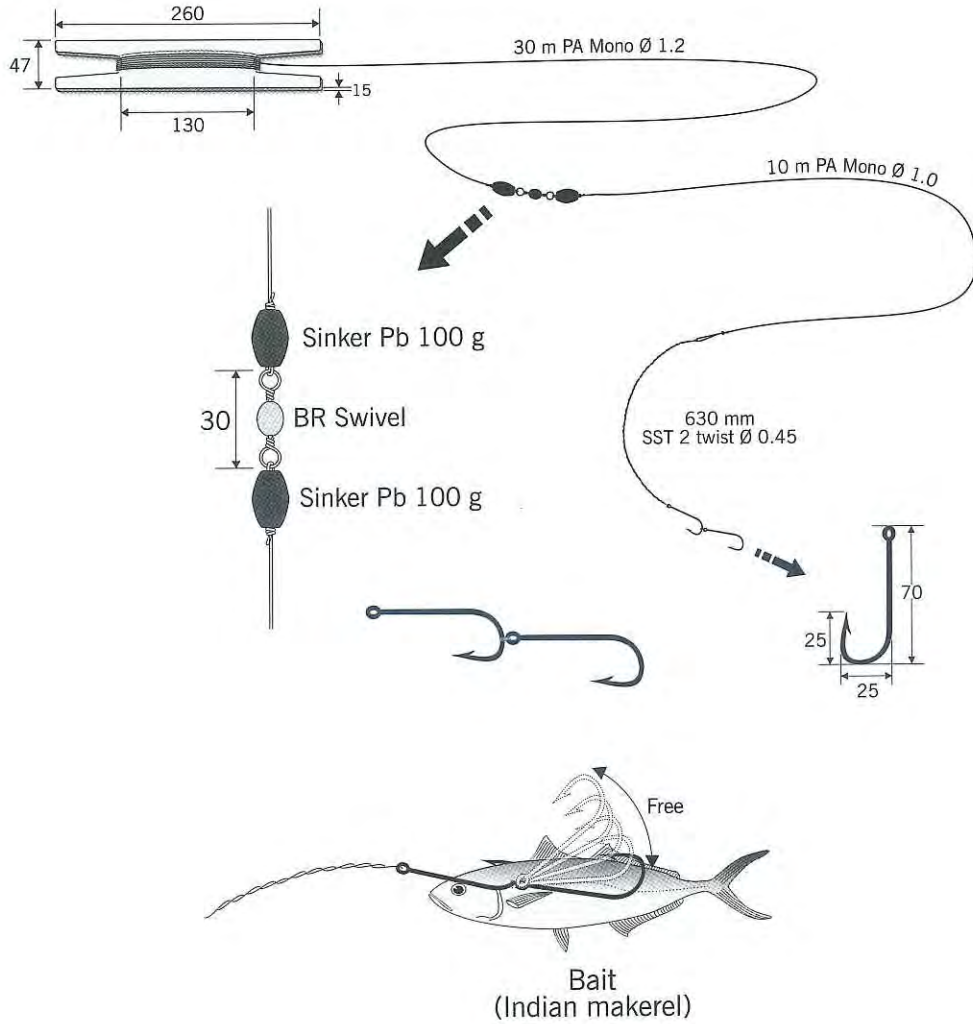
Troll line
-
Spanish mackerel

B O A T

Loa : 4m
Hp : 4

L O C A T I O N

Bakkhlong
KOH KONG



HOOK AND LINE

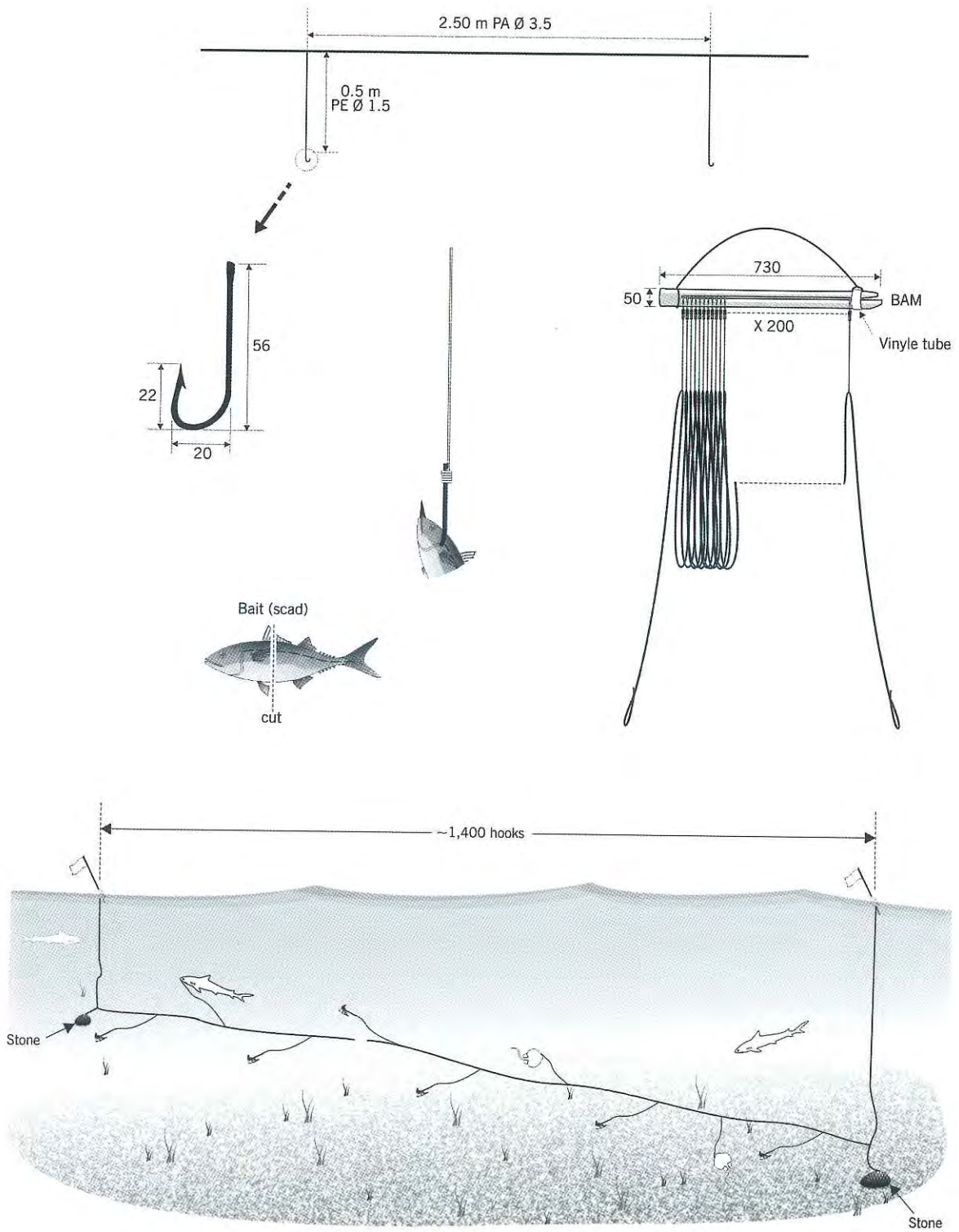
Bottom longline
-
Ray, Shark

BOAT

Loa : 12m
Hp : 7 X2

LOCATION

Peam Krasob
KOH KONG



H O O K A N D L I N E

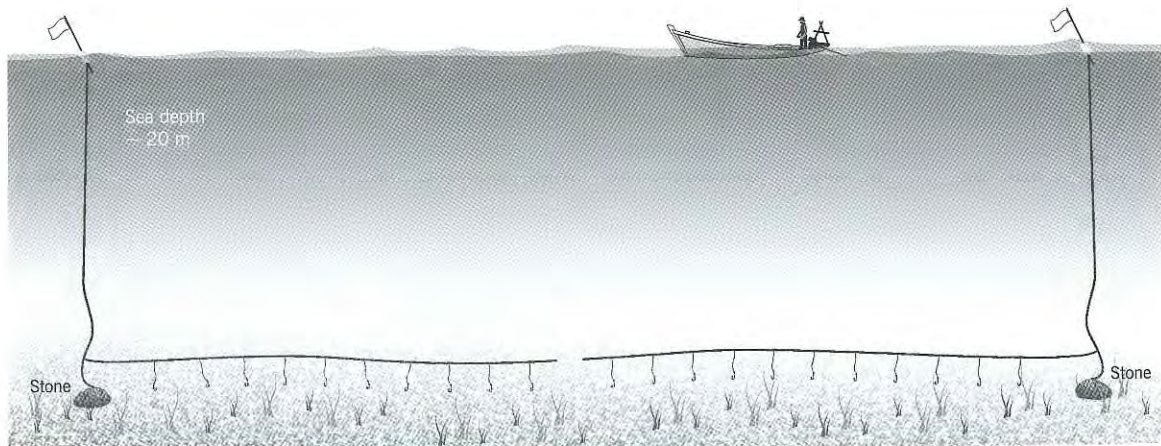
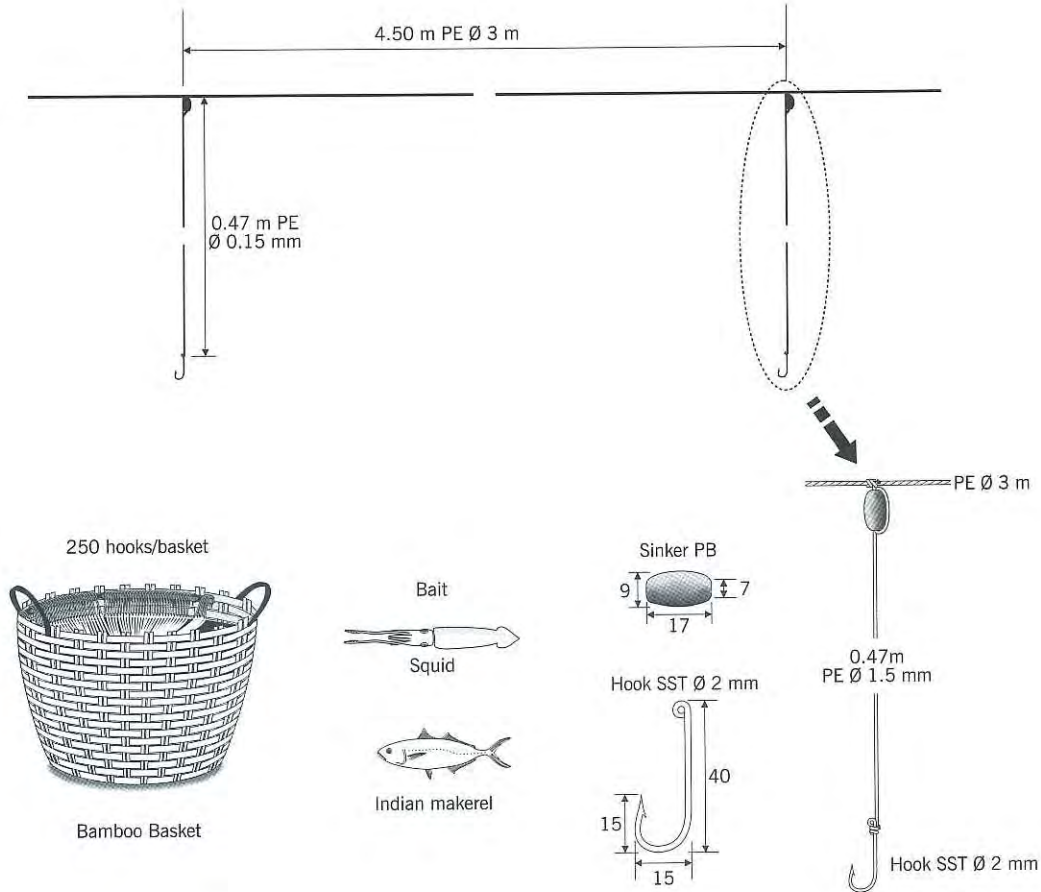
Bottom longline
-
Catfish

B O A T

Loa : 12m
Hp : 13

L O C A T I O N

Koh Sdach
KOH KONG



H O O K A N D L I N E

Troll line
-
Cuttlefish

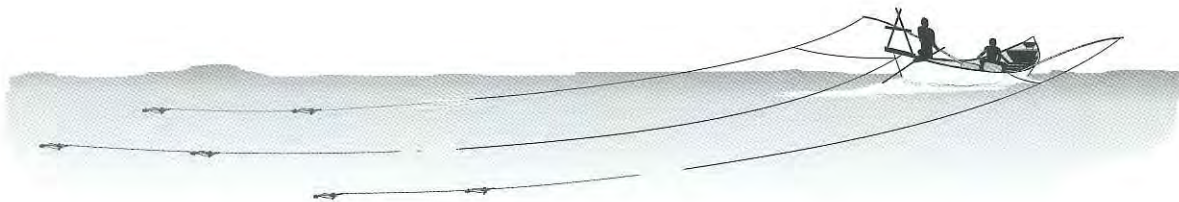
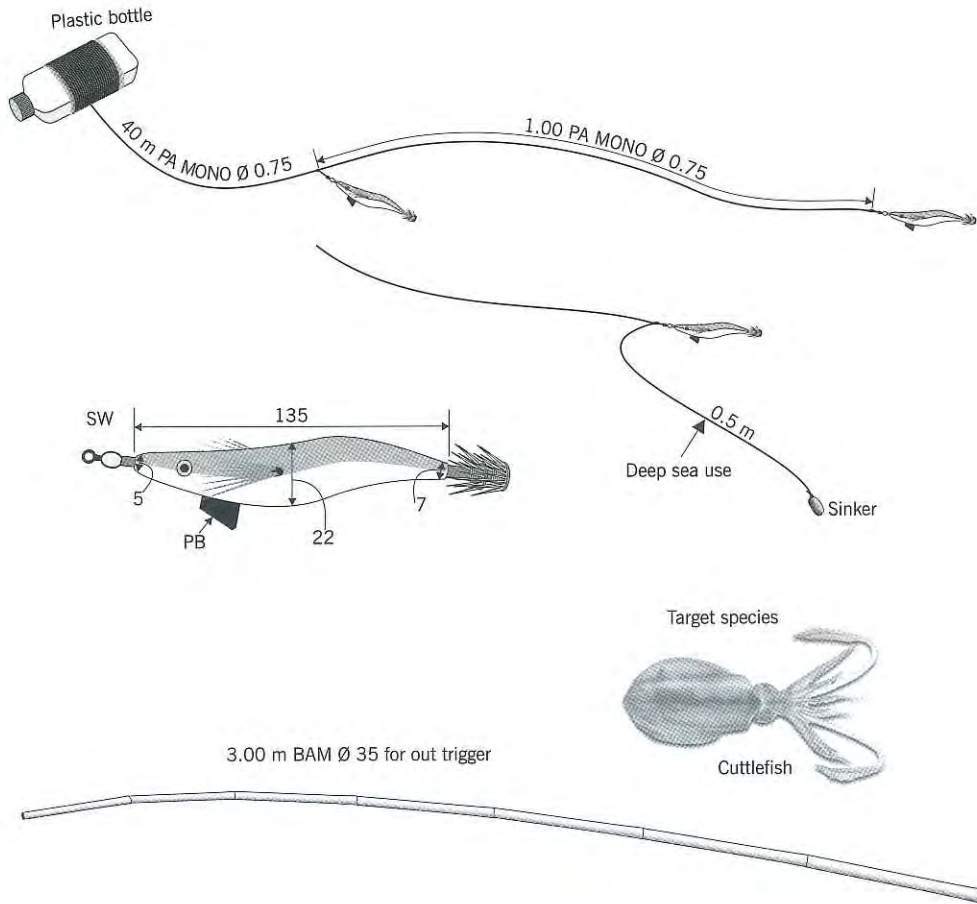
B O A T

Loa : 10 m
Hp : 8

L O C A T I O N

Koh Sdach

KOH KONG



H O O K A N D L I N E

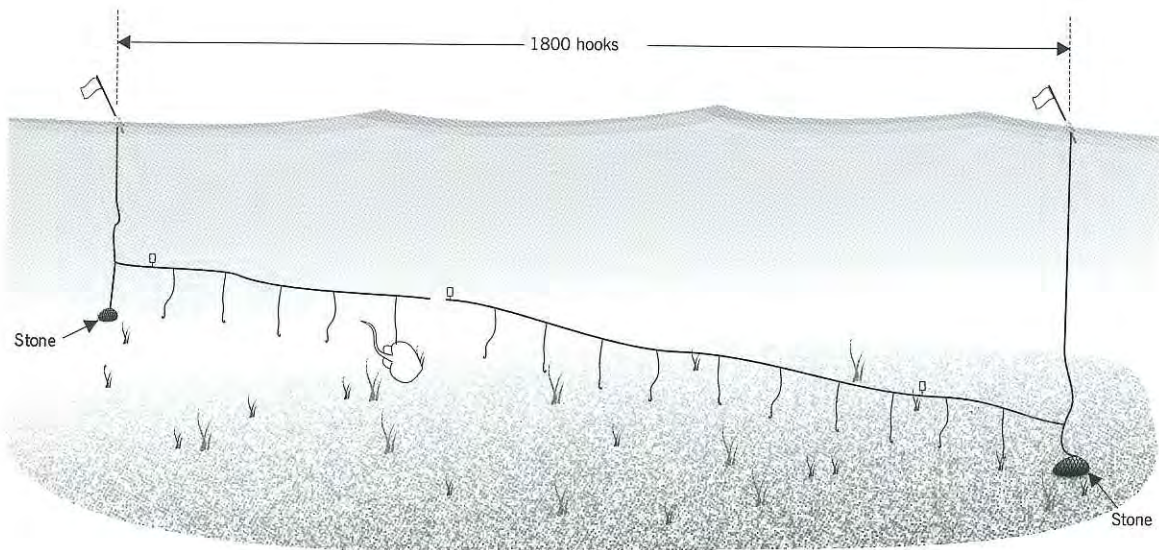
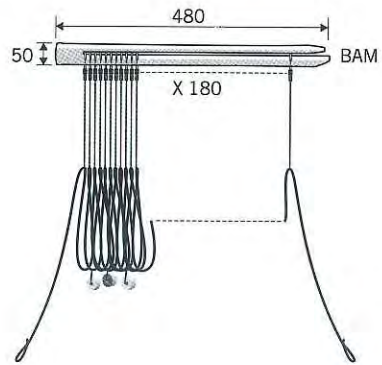
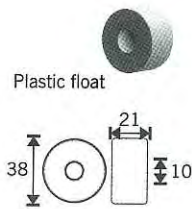
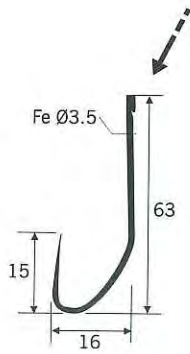
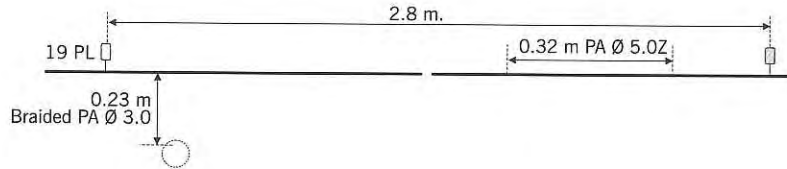
Botom longline
-
Ray

B O A T

Loa : 12m
Hp : 13

L O C A T I O N

Dang Tung
KOH KONG



H O O K A N D L I N E

Botom longline
-
Shark, Ray

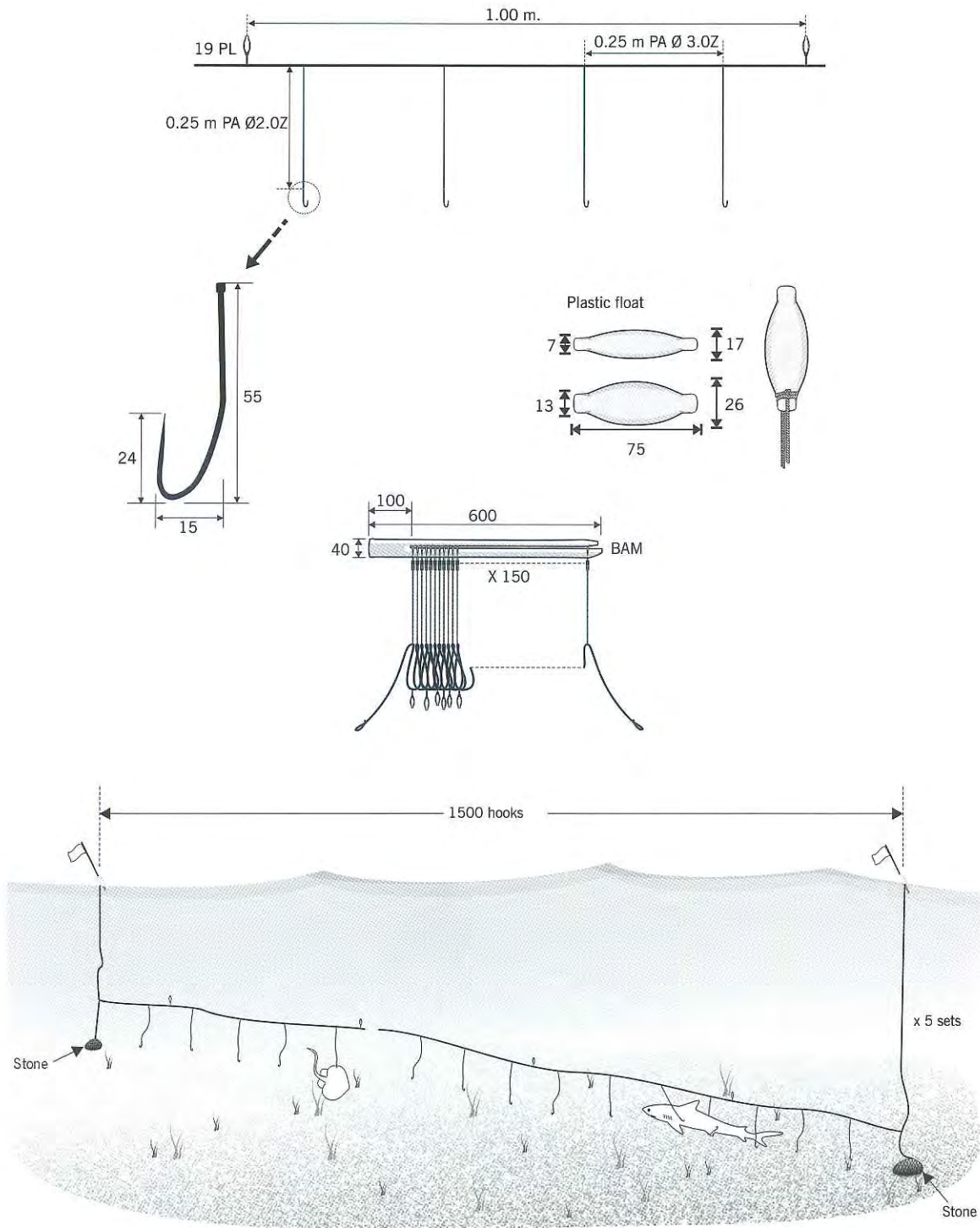
B O A T

Loa : 5 m
Hp : 13

L O C A T I O N

Ou Krasa Village

KEP



H O O K A N D L I N E

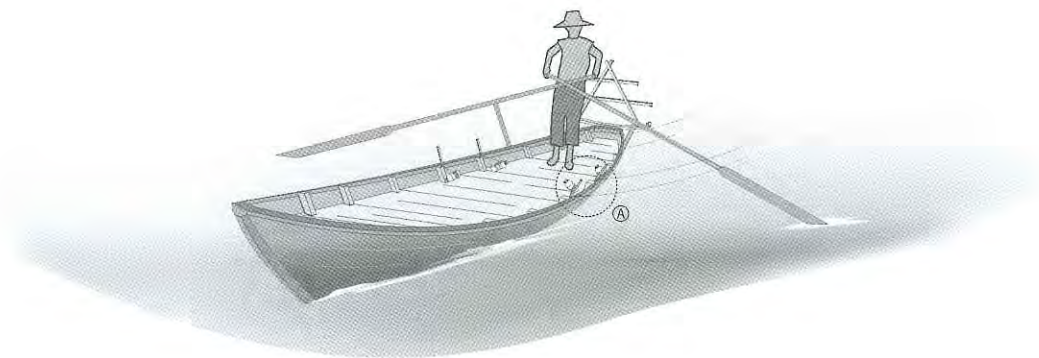
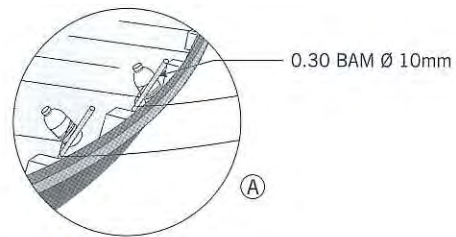
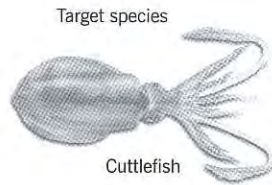
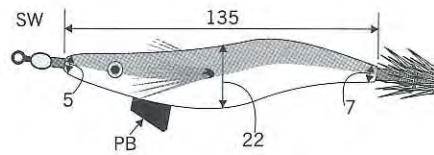
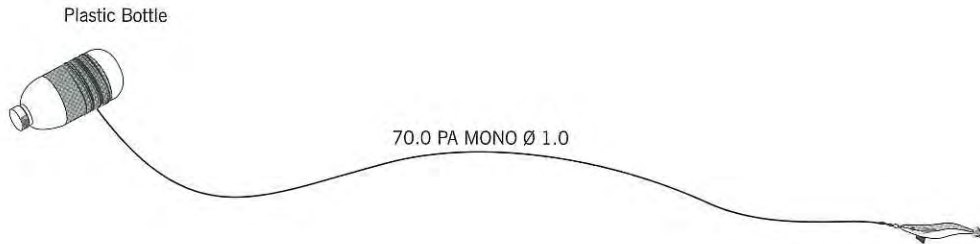
Troll line
-
Cuttlefish

B O A T

Loa : 10 m
Hp :-

L O C A T I O N

Prek Chek
KOH KONG



Chapter 10
Scoop Nets



SCOOP NET

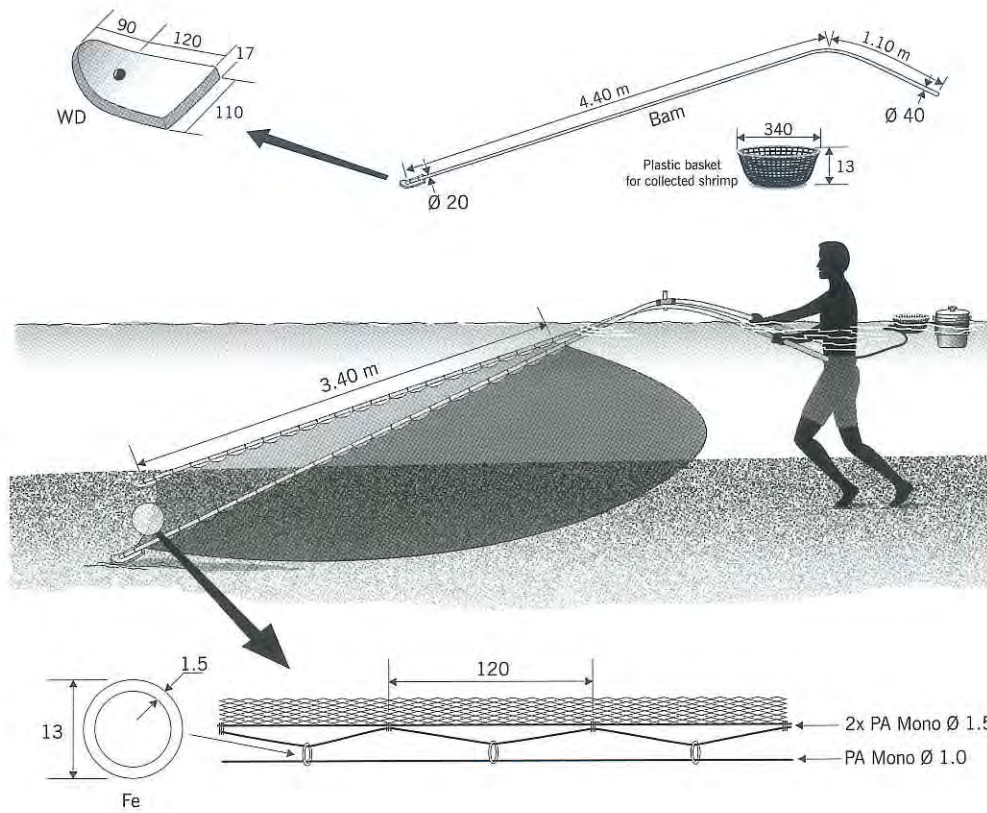
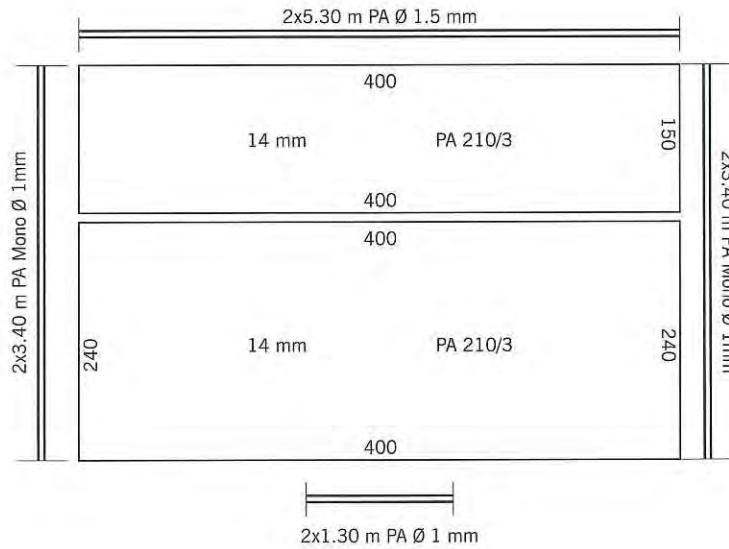
Man-push net
(Thnong Os Ky)
Small Shrimp

BOAT

LOA : -
Hp : -

LOCATION

Koh Kchyong
KOH KONG



SCOOP NET

Man-push net
(*Thnong Os Ky*)
Platonic Shrimp,
Small Shrimp

BOAT

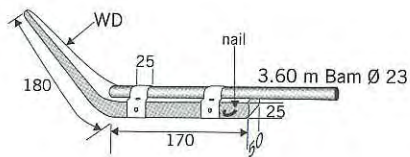
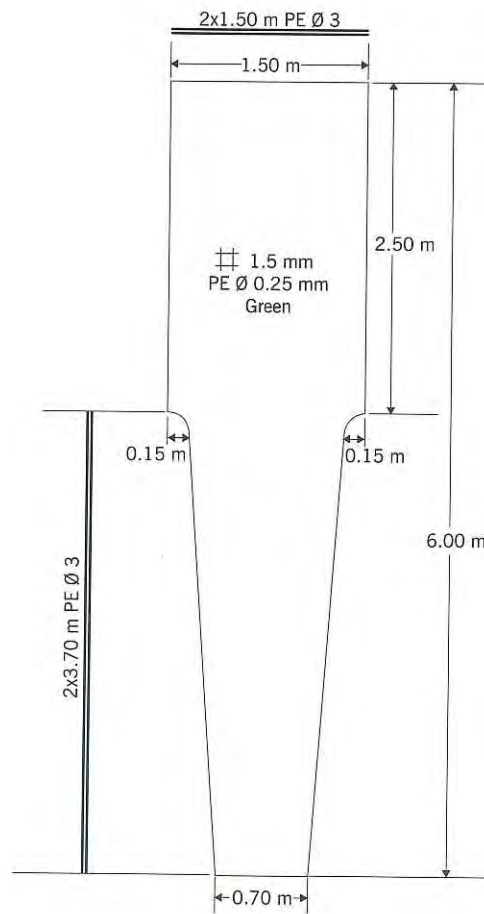
LOA :-

Hp :-

LOCATION

Phsa Kdam

KEP



SCOOP NET

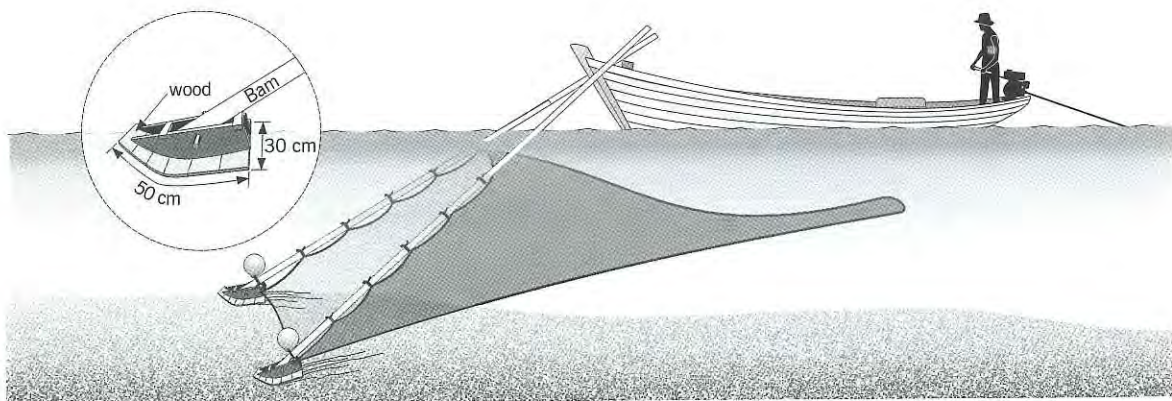
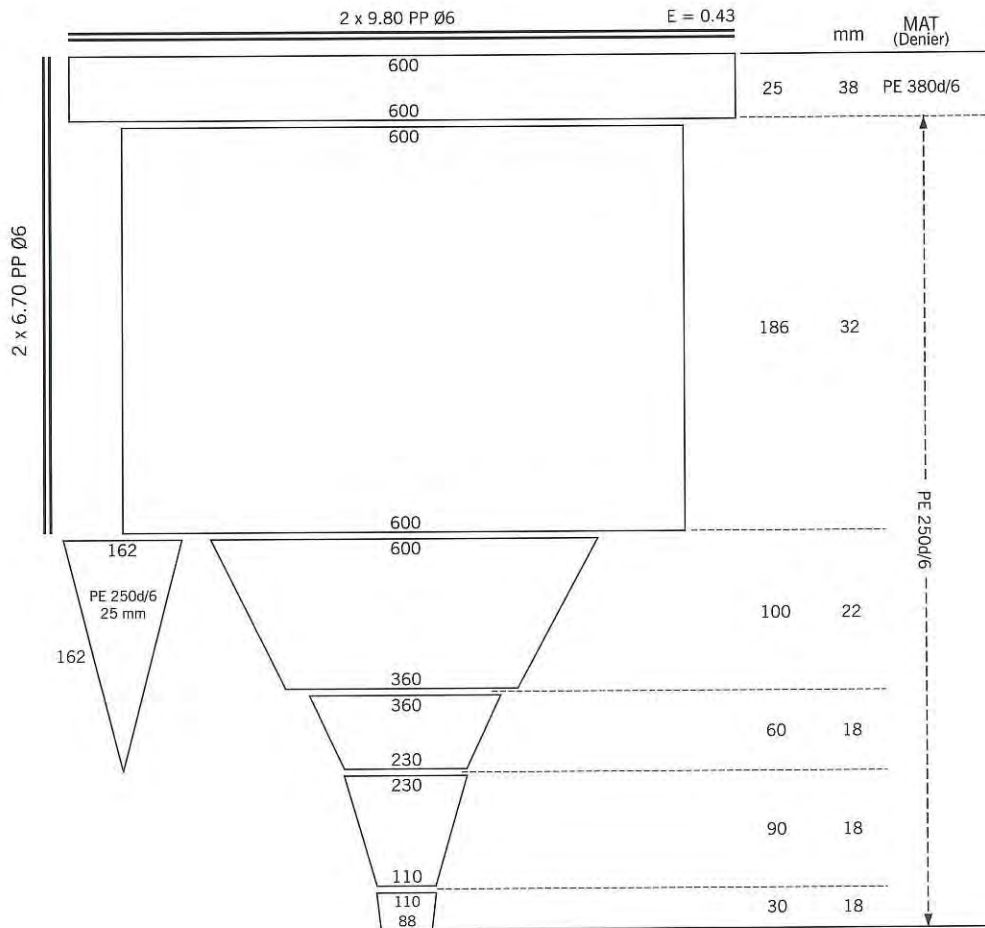
Boat-push net
(Thnong Os Ky)
Shrimp

BOAT

LOA : 7-9 m.
Hp : 6-12

LOCATION

Koh Kchyong
SIHANOUKVILLE



SCOOP NET

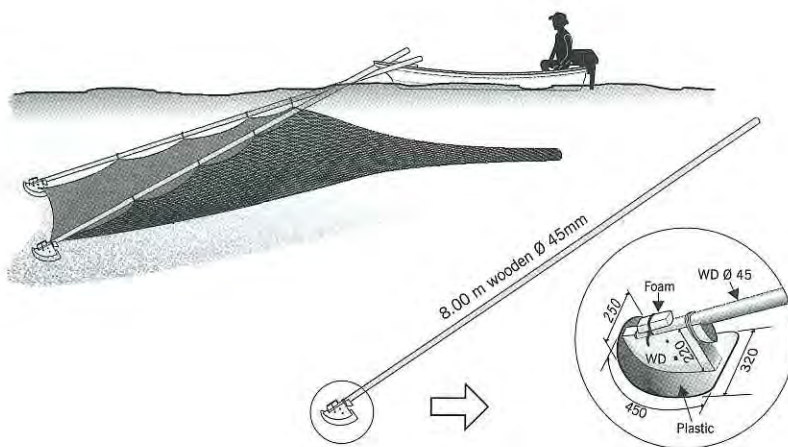
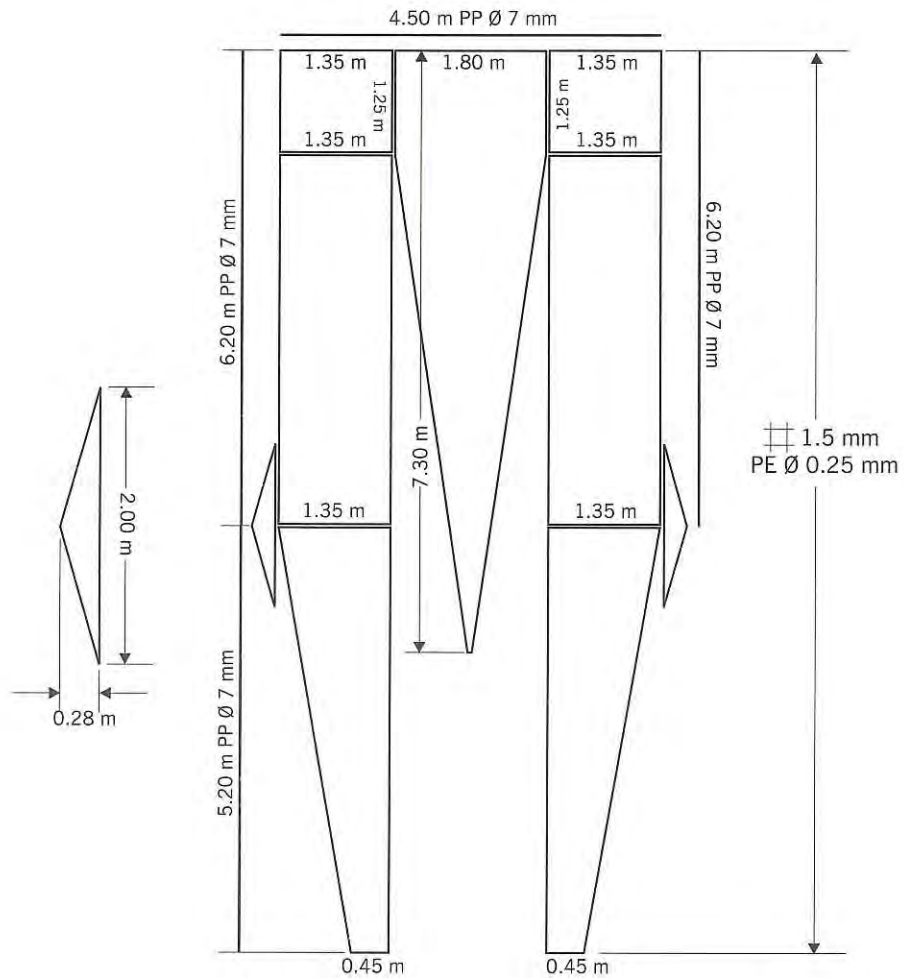
Boat-push net
(Thnong Os Ky)
Planktonic Shrimp,
Small Shrimp

BOAT

FRP LOA : 3 m.
Hp : 6

LOCATION

Peam Kasob
KOH KONG



SCOOP NET

Boat-push net
(Thnong Os Ky)
Planktonic Shrimp,
Small Shrimp

BOAT

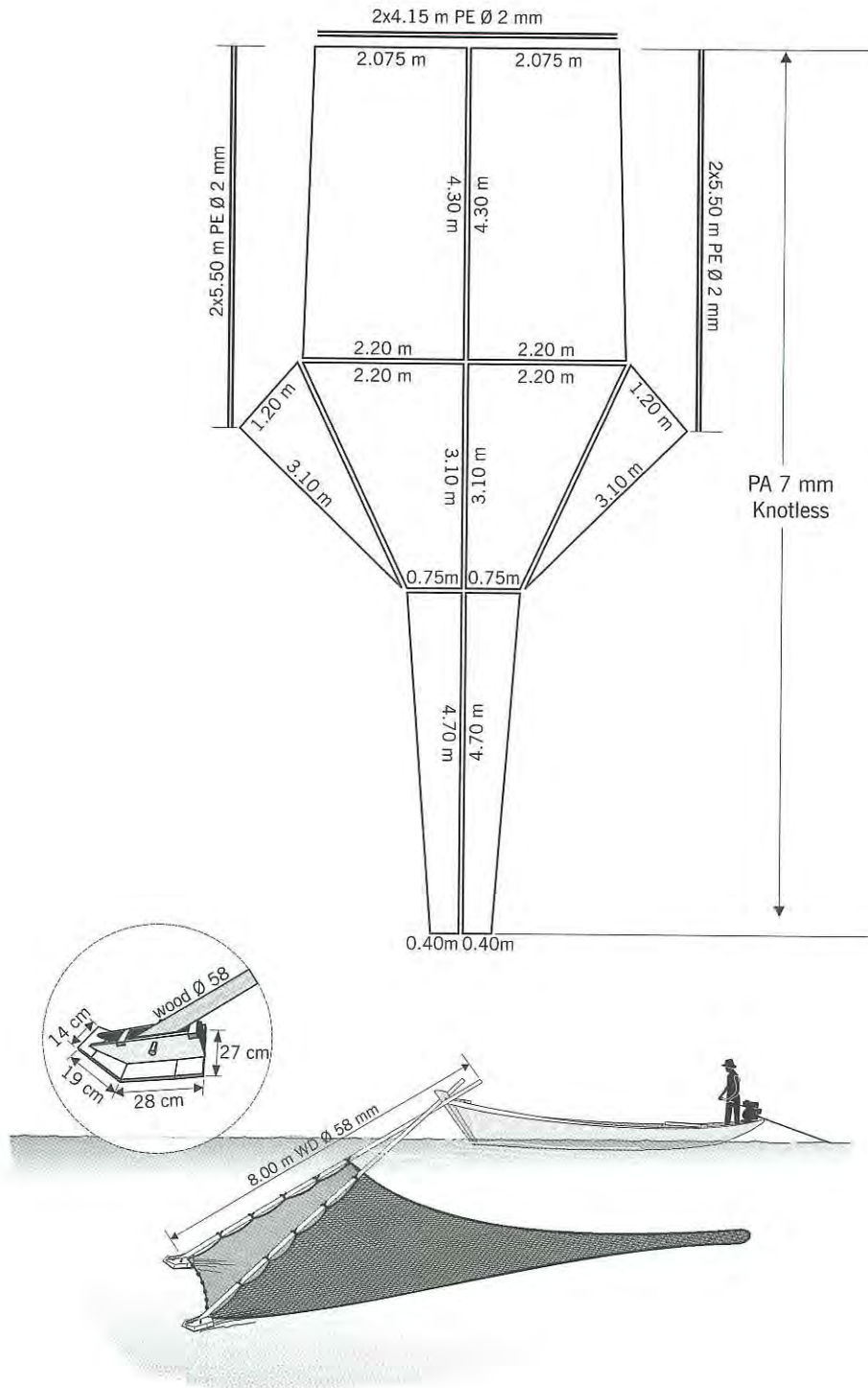
LOA : 6-8 m.

Hp : 7-8

LOCATION

Koh Kchyong

KOH KONG



SCOOP NET

Scoop

Shellcrab, Swimming crab

BOAT

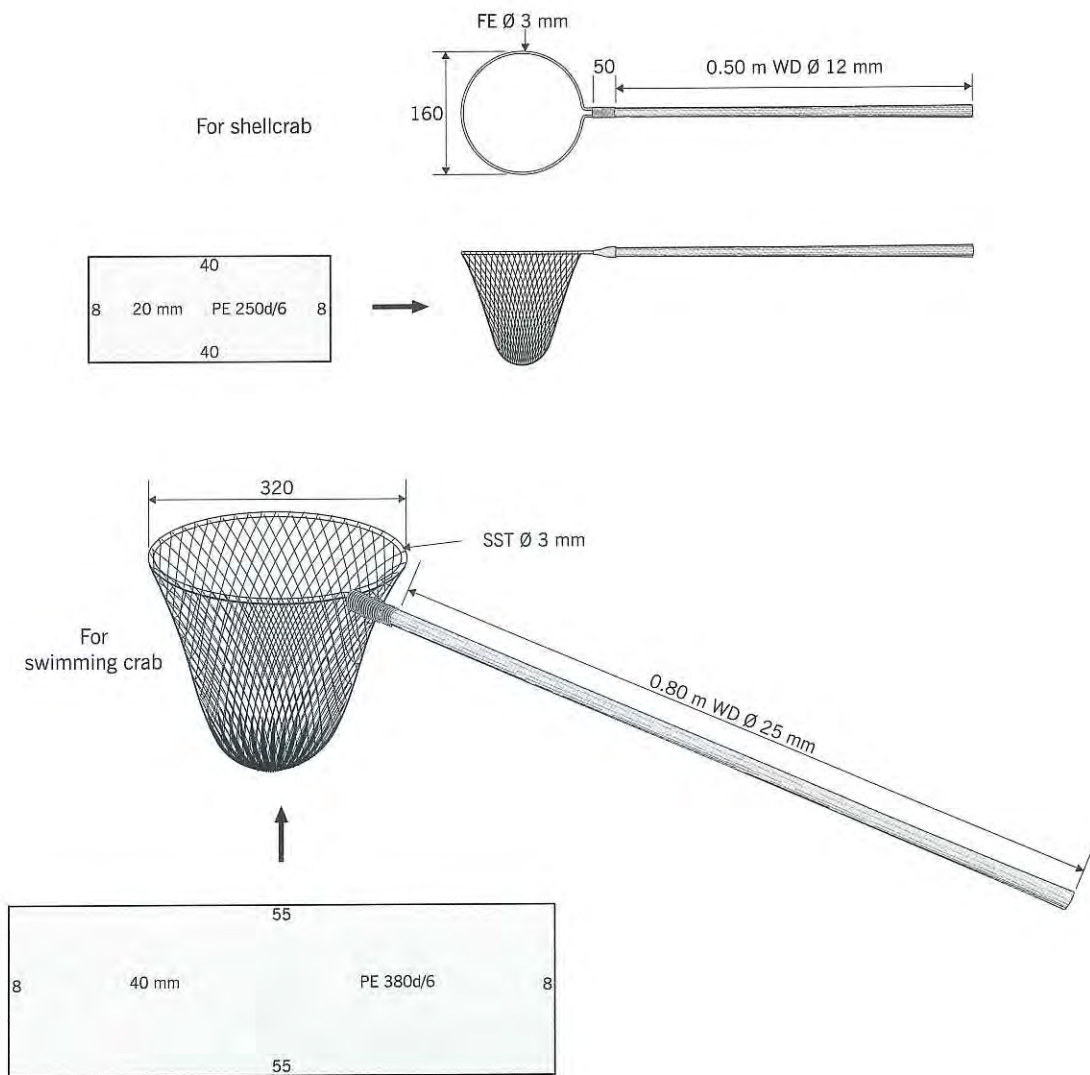
LOA : 8 m.

Hp : 16

LOCATION

Peam Krasob

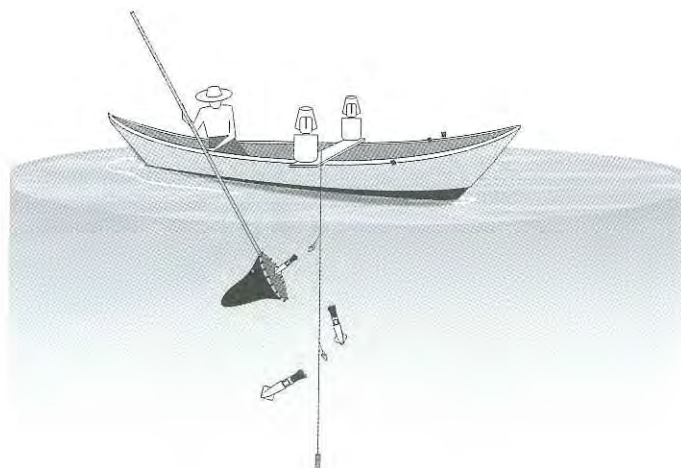
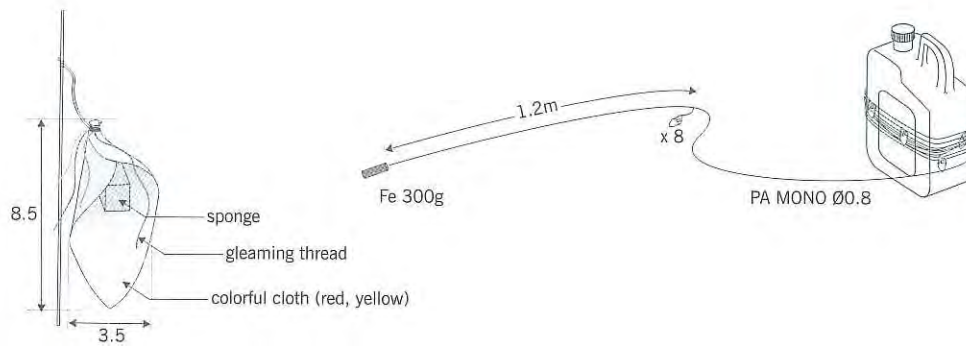
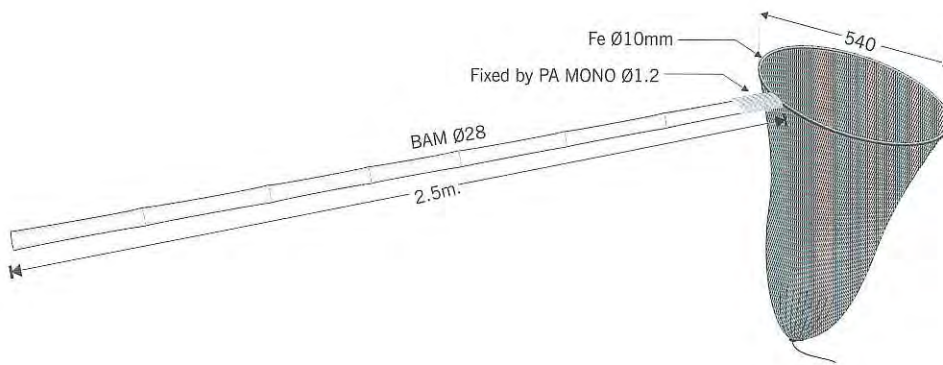
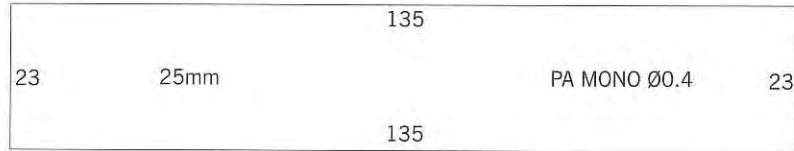
KOH KONG



SCOOP NET
Scoop with luring bait
Squid

BOAT
LOA : 10 m.
Hp : 8

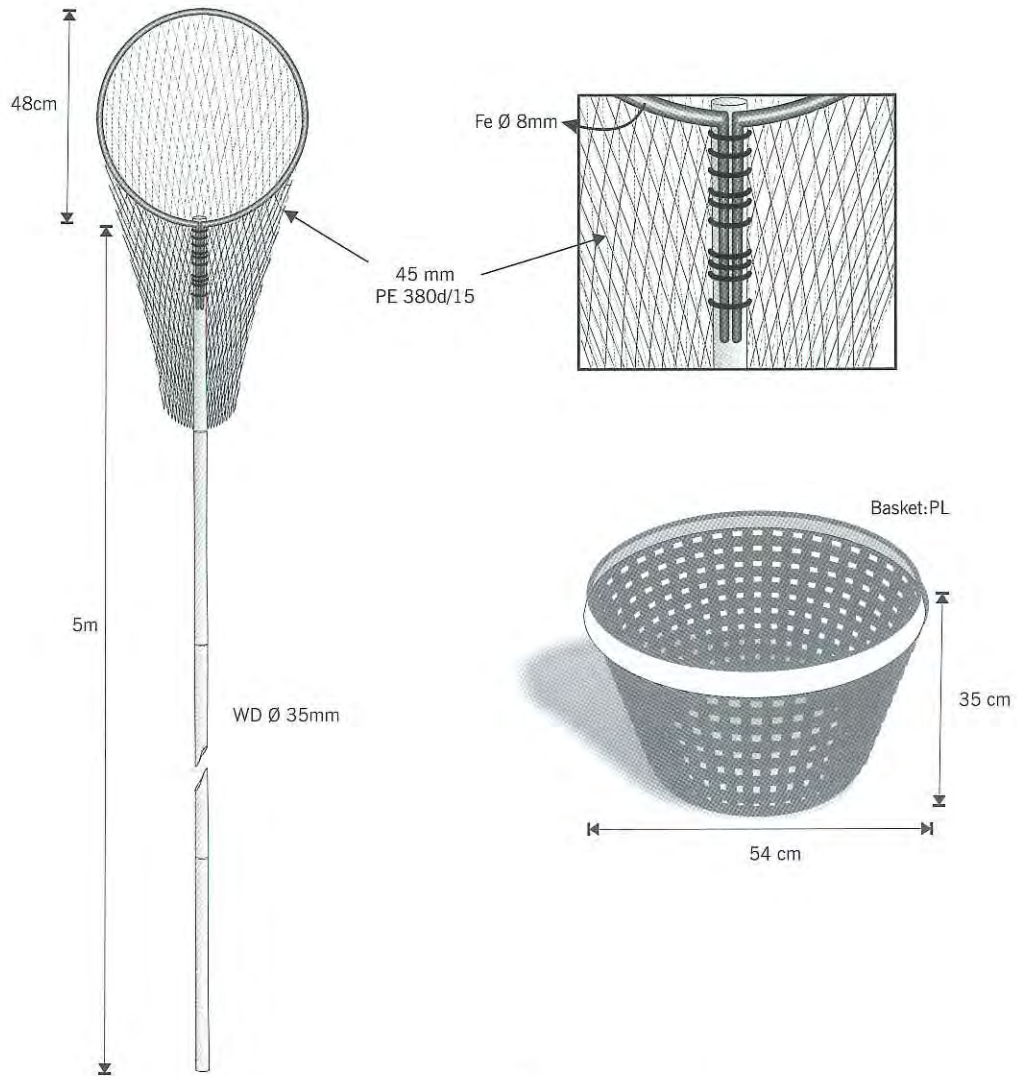
LOCATION
Koh Sdach
KOH KONG



SCOOP NET
Scoop

BOAT
Loa : 6 m
Hp :

LOCATION
Peam Krasob
KOH KONG



Chapter 11
Dredges



DREDGE

Dredge

Undulated surf clam

BOAT

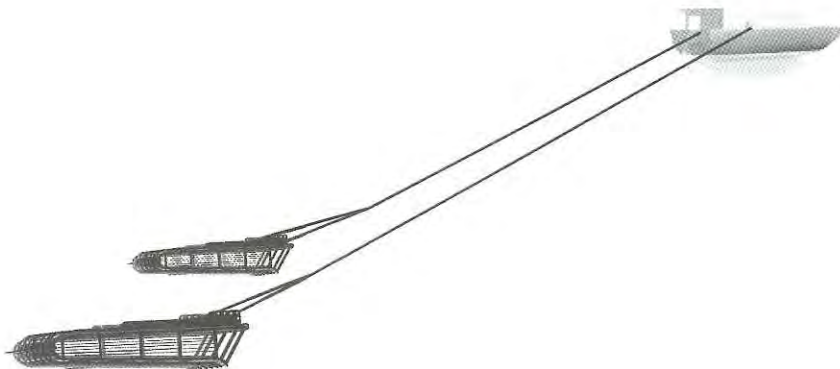
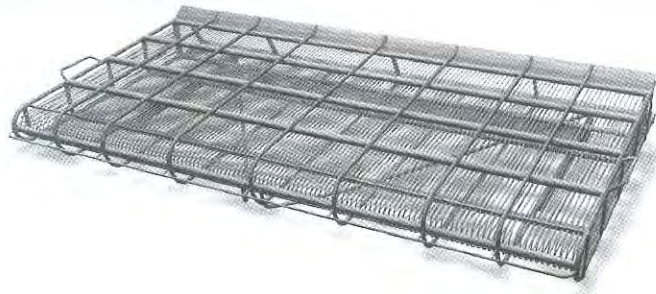
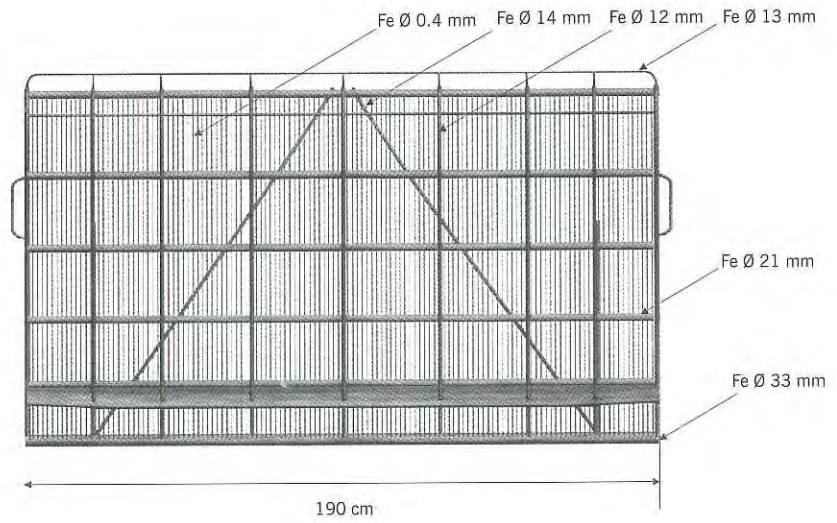
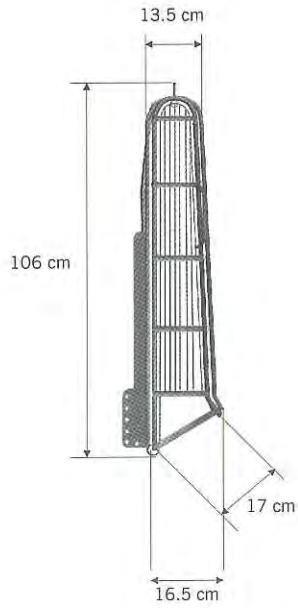
Loa : - m

Hp : -

LOCATION

Tamnop Rolok

Koh Kong



Chapter 12
Miscelleneos



MISCELLLENEOUS

Shell collecting
(-----)
Wing shell, Melon shell

BOAT

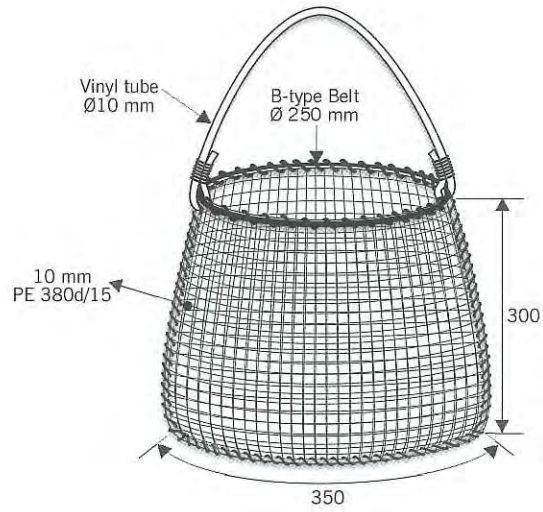
LOA : 7 m

Hp : 12

LOCATION

Prek Chek

KAMPOT



Wing shell



Melon shell



MISCELLANEOUS

Spearing gear
(*Snor Chak Bang Kear*)
Shrimp

BOAT

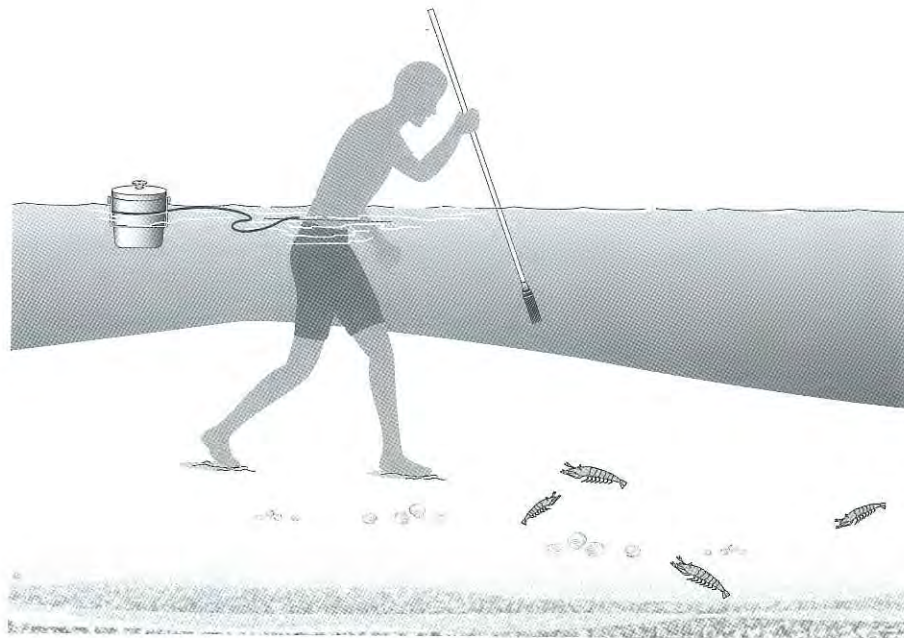
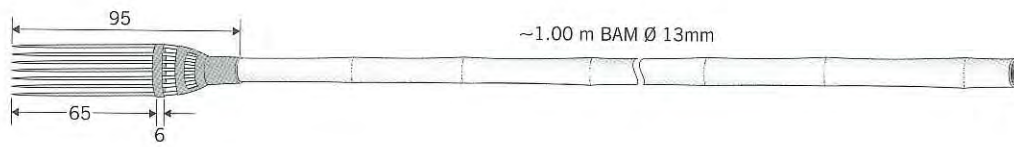
LOA :-

Hp :-

LOCATION

Koh Kchyong

SIHANOUKVILLE



MISCELLANEOUS

Spearing gear
(Snor Chak Bang Kear)
 Small shrimp, Tiger prawn,
 Fish

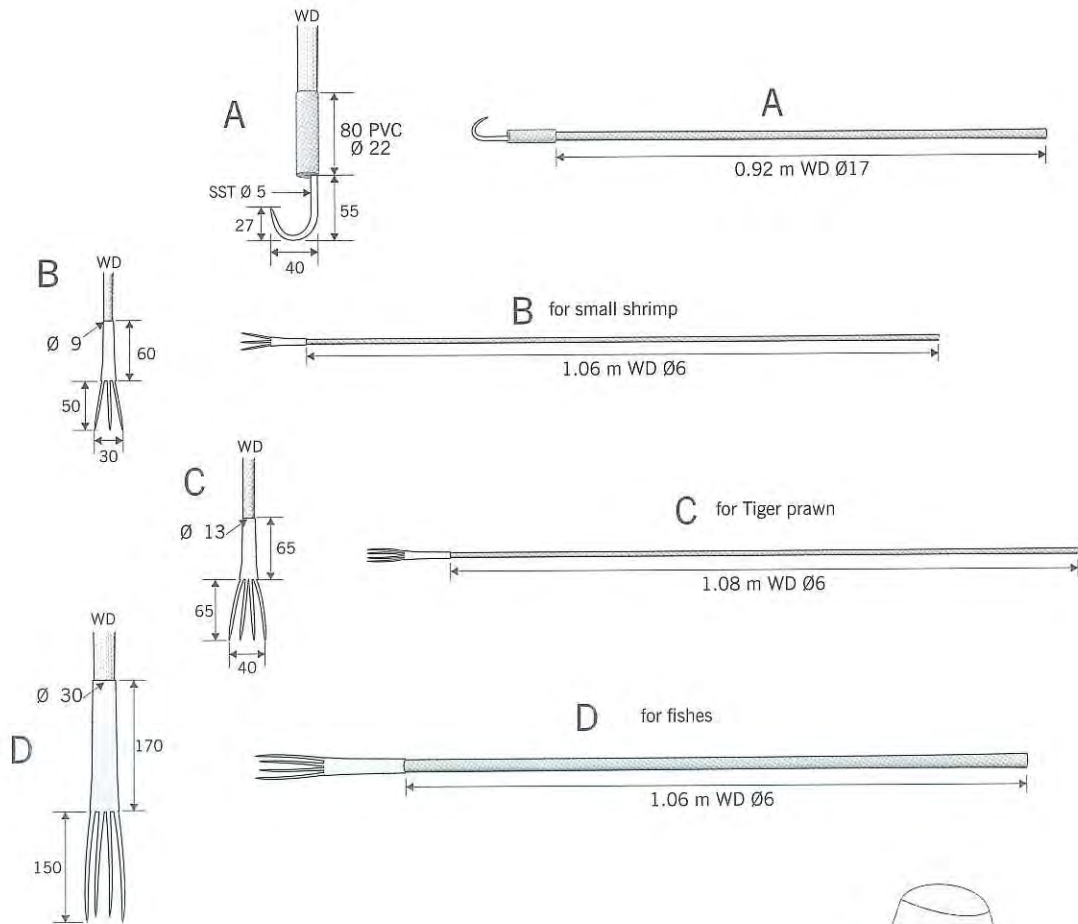
BOAT

LOA : 5.20 m.
 Hp : 5.5

LOCATION

Peam Krasob

KOH KONG



MISCELLANEOUS

Spearing gear
 (*Snor Chak Bang Kear*)
 Shrimp

BOAT

LOA :-

Hp :-

LOCATION

Koh Kchyong

SIHANOUKVILLE

