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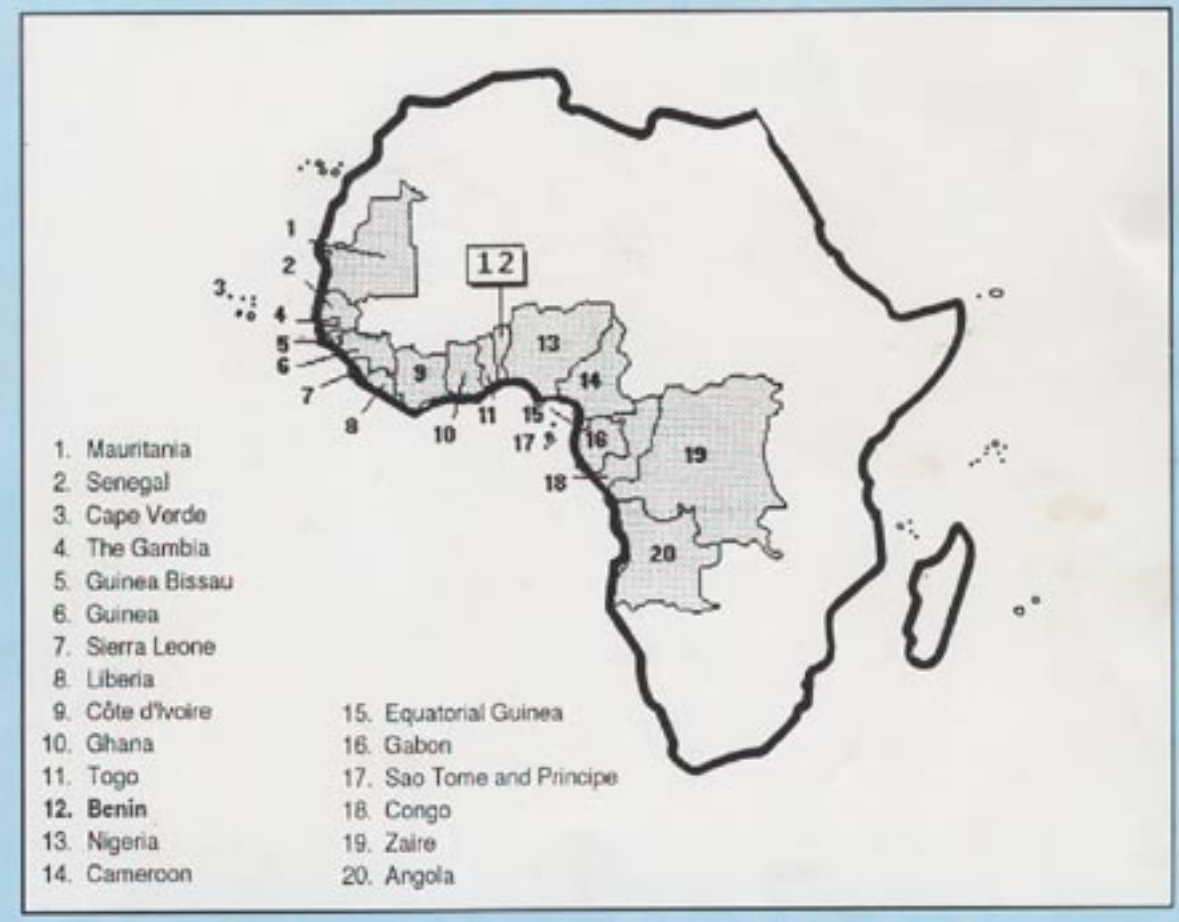
IDAF

PROGRAMME FOR INTEGRATED DEVELOPMENT OF ARTISANAL FISHERIES IN WEST AFRICA

IDAF PROGRAMME



DANIDA

DEPARTMENT OF INTERNATIONAL DEVELOPMENT COOPERATION OF DENMARK

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Technical Report N° 61 December 1994

Sub-Regional Workshop on Artisanal Safety at Sea

Banjul, The Gambia, 26 - 28 September 1994

by

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and

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Cotonou, December 1994

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SUMMARY

A sub-regional workshop on safety at sea was held in Banjul, The Gambia from 26 to 28 September 1994. Organised by the IDAF Programme, this workshop brought together 22 participants from Mauritania, Senegal, Cape Verde, The Gambia, Guinea-Bissau, Guinea and Sierra Leone. A representative of the Canadian Centre of Studies and International Cooperation (CECI) and FAO staff participated as well in the workshop.

The objectives of this workshop were: to review the results of the national accidents survey; to identify the fundamental problems and examine information on the status of safety at sea activities in the different countries and to prepare a draft proposal for a sub-regional project on safety at sea.

The participants reviewed the status of safety at sea in the seven countries which represent the north side of IDAF intervention area. Great changes have occurred in the artisanal fishing fleets of the sub-region over the past 15 years. The changes have come about mainly because of the development of new fisheries, the introduction of new fishing techniques and the higher level of the motorization. These innovations have enabled fishermen to make greater catches.

Unfortunately, this development has quite often been accompanied with some unpleasant and connected effects at various levels. One of the direct consequences of these side effects is that in countries with historical seafaring backgrounds there has been a gradual degradation of traditional navigational and seafaring skills over the years. The result is the high debt that the fishermen pay each year to the sea, as a result of repeated accidents and wreckages which range from a simple capsizing of boats with no serious consequences to a fatal collision between small and large boats.

Perils at sea may be due to natural causes, to insufficiencies that are linked to the performance of equipments, overloading, the non-respect for navigation rules, or to professional inadequacies.

With regard to the statistics, the participants recommended more emphasis on information, education and communication as well as training and technical demonstrations. All these activities should be undertaken with fisherfolk using the participatory approaches.

The participants wish the creation and the reinforcing of insurance systems for the artisanal fisheries which could solve damage problems. The insurance should cover the death cases, damaged boats and fishing material linked to accidents at sea.

The participants lay emphasis on the need of strengthening safety at sea to promote artisanal fisheries, a pledge for food security in the sub-region.

A draft proposal for a sub-regional project on safety at sea was studied and approved. FAO was requested to seek funds for the implementation of the project. The participants would like to see the project executed by FAO and maintains close collaboration with IDAF Programme. The participants recommended that the project should be located in one of the seven countries in the sub-region.

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SECTION 1

REPORT OF THE WORKSHOP ON ARTISANAL SAFETY AT SEA
26 - 28 SEPTEMBER 1994 BANJUL THE GAMBIA

AGENDA ITEM 1. OPENING OF THE WORKSHOP

1. The sub-regional workshop on artisanal safety at Sea organized by the IDAF Programme took place at the Friendship Hostel, Stadium Complex, Banjul, The Gambia from 26th - 28th September 1994.

2. 22 Participants of the 7 countries of the sub-region namely : Mauritania, Senegal, Cape Verde, The Gambia, Guinea Bissau, Guinea and Sierra Leone, as well as a respresentative of CECI and staff of FAO took part in the workshop.

3. Mr. Drammeh, Director of Fisheries for the Gambia, welcomed Mr. Cherno Joof, Principal Assistant Secretary of the Ministry of Agriculture and Natural Resources and participants of the different countries and requested Mr. Bayagbona FAO representative to The Gambia to address the Meeting.

4. On behalf of Mr. J. Diouf, Director General of FAO and Mr. W. Krone, Assistant Director General ad interim of the Department of Fisheries, Mr. Bayagbona stressed the importance of artisanal fisheries as an essential source of animal protein for human consumption and employment in the sub-region. However, he regreted the heavy losses in both human and material terms incurred by artisanal fishermen due to accidents at sea. He therefore stressed the importance of providing safety measures to artisanal fishermen and others involved in the sub sector.

5. The Workshop was declared open by Mr. Cherno Joof on behalf of the Minister of Agriculture and Natural Resources. Mr. Joof recalled the importance of artisanal fisheries in the region and insisted on the necessity to better understand the severity of accidents at sea, to create awareness on the subject and to prevent these accidents. He also stated that the issue of ASAS is a priority activity within the Department of Fisheries of The Gambia. He congratulated FAO and the IDAF Programme for taking the initiative to organise the present workshop, the objectives of which are:

1. to review the results of the national accident surveys;

2. to identify the fundemental problems and examine information on the status of safety at Sea activities in the different countries; and

3. to prepare a draft proposal for a Sub-regional Project on Safety at Sea.

6. The list of participants is given in appendix 1.

AGENDA ITEM 2. ADOPTION OF THE AGENDA

7. Mr. Drammeh was unanimously elected Chairman of the session with Mr. Boba of Mauritania and Mr. M. Njie of The Gambia as rapporteurs.

8. The agenda which appears in appendix 2 was adopted. Appendix 3 contains the list of documents presented at the session and the documents themselves are presented in appendix 4.

9. The IDAF Programme served as The Secretariat of the Meeting.

AGENDA ITEM 3. THE STATUS OF SAFETY AT SEA IN THE DIFFERENT COUNTRIES

10. The participants reviewed the status of safety at sea in the seven countries. It was observed that great changes have occurred in the artisanal fishing fleets of the sub-region over the past 15 years. The changes have come about mainly because of the development of new fisheries, the introduction of new fishing techniques and perhaps most importantly the increased reliance on engine power as well as nationals from other professions, newly reconverted to artisanal fisheries. Technological advances coupled with increasing participation in monetary economies have expanded the opportunities of fishermen to exploit their fishery resources. The widespread use of relatively new technologies including light weitht outboard engines and marine plywood in some countries following the diminishing or the lacking of timber resources have been coupled with the gradual adoption of newer vessel designs and the concurrent mechanization of traditional small craft. These innovations have often enabled fishermen to make greater catches, to capture previously underexploited species, to reduce the time necessary for fishing trip or to improve the quality to their catch.

11. The participants remarked that this development has quite often been accompanied with some unpleasant side effects at various levels. In the areas where fishermen have traditionally fished the number of exploiters has increased considerably; the fishing grounds have progressively become distant; fishery resources are becoming increasingly rare; and the profitability of some types of fishing techniques is questionable.

12. The result is the high debt that artisanal fisheries pay each year to the sea, as a result of repeated accidents and wreckages which range from a simple capsizing of boats with no serious consequences to a fatal collision between small and large boats. In addition to these, we have injured persons, engine failure, fire outbreaks, the destruction and loss of material and equipment, quarrels and fights between fishermen.

13. Artisanal safety at sea like the artisanal fisheries sector in general has been for decades the object of neglect and misplaced policies in favour of the industrial fisheries sector. However Governments are now adopting a more realistic attitude to development more in tune with the needs of fisherfolk. In this regard Round Table Meetings and national seminars have been organized in Senegal, Mauritania and Guinea on artisanal safety at sea. Senegal, Cape Verde and Guinea also have specific administrations to handle issues related to the subject.

14. IDAF in collaboration with the Department of Fisheries in the seven countries of the sub-region embarked on a methodical seeding of national safety at sea surveys. The surveys resulted not only in the production of a seemingly sad data base on the different types of accidents and their frequency but also on the importance of human and material loss as detailed in the Table below.

Table 1. Summary of available data on artisanal fishery losses at sea in the sub-region

Country	Number of Accidents	Deaths	Accidents	Total cost of losses ($US)	Period	N° of registered fishermen	Annually Estimated N° of deaths
Mauritania	42	63	42	334,572	(7 months) 1.1.94-31.7.94	10000	108 deaths/yr
Senegal	141	50	11	228,794	91-94	48182	0,035 % 17 deaths/yr
Cape Verde		8	0	-	92-94 (3 yrs)	7000	0,03% 3 deaths/yr
Gambia	41	57	11	48,276	91-93		14 deaths/yr
Guinea Bissau	61	10	2	19,811	91-94 (3 yrs 3 months)		19 deaths/yr
Guinea	225	110	68	258,000	89-91 (3 yrs)	6894	0,53% 37 deaths/yr
Sierra Leone	25	129*	120	94,162	84-94(10 yrs)	16722	0,08% 13 deaths/yr
TOTAL	535	427	254	USD 1,659,249		88798	211 deaths/yr

* Figures are only indicatives, and often not complete.

These figures are both indicative and partial.

15. Based on their experience in undertaking the accidents surveys in their respective countries the participants updated the Data Collection Sheet which is iven in Appendix 5.

AGENDA ITEM 4. IDEAS FOR A SUB-REGIONAL PROJECT ON SAFETY AT SEA

16. The participants studied and approved the draft proposal for a sub-regional project on safety at Sea which is reproduced in appendix 6

17. The participants recommended that emphasis should be placed on information, education and communication as well as training and technical demonstrations. All these activities should be undertaken with fisherfolk using the participatory approach.

18. The participants also recommended that the project be independent with FAO as the executing agency and maintain close collaboration with the IDAF Regional Programme.

19. The participants recommended that the Headquarters of the project should be located in one of the seven countries in the sub-region.

20. The participants expressed gratitude to FAO and the IDAF Programme for the tireless assitance given to the development of artisanal fisheries in the sub-region. The participants also asked FAO and the IDAF Programme to finalise the project document proposal and seek funding for its implementation.

21. The participants promised to closely follow the evolution of the project proposal in their respective countries in order that the project may be approved and implemented within the shortest possible time.

AGENDA ITEM 5. ADOPTION OF THE REPORT

22. Participants adopted the present report and asked the secretariat to ensure its finalisation and distribution.

AGENDA ITEM 6. CLOSING OF THE WORKSHOP

23. The sub-regional workshop on ASAS was declared closed by Mr. Drammeh, Director of Fisheries for The Gambia.

Appendix 1

LIST OF PARTICIPANTS

MR. ABDERRAHMANE OULD BOBA
CHEF DE SERVICE DE LA
NAVIGATION ET DES TRANSPORTS
MARITIMES,
NOUAKCHOTT
MAURITANIA

MR. M. L. OULD MEYMOUN
CHEF DE SERVICE DE LA PECHE
CONTINENTALE
NOUAKCHOTT
MAURITANIA

MR. ALIOUNE DIAW
PROJET PROTECTION ET
SURVEILLANCE DES PECHES AU
SENEGAL (PSPS)
DIRECTION DE L'OCEANOGRAPHIE
ET DE LA PECHE MARITIME (DOPM)
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SENEGAL

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CHEF DIVISION PECHE
ARTISANALE, DOPM,
DAKAR
SENEGAL

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NATIONAL INSTITUTE FOR
FISHERIES DEVELOPMENT
MINDELO
CAPE VERDE

MR. ANTONIO CRUZ LOPES
CHEF DES PORTS DE BARLAVENTO
MINDELO
CAPE VERDE

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DIRECTEUR PROJET
SECURITE EN MER, OFFICE
POUR LE DEVELOPPEMENT
DE LA PECHE ARTISANALE (OPPA)
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GUINEA

MR. MOHAMMED CAMARA
DIRECTEUR PREFECTORAL
DE L'ANAM
CONAKRY
GUINEA

MR. ZAMORA JOSE INDUTA
MARINE NATIONALE
BISSAU
GUINEA BISSAU

MR. CARLOS DA SILVA
CAPITAINE DES PORTS DE
GUINEE BISSAU
DIRECTION GENERALE DES
PECHES
BISSAU
GUINEA BISSAU

MR. A.C.V. FORDE
SENIOR FISHERIES OFFICER
DEPARTMENT OF MARINE RESOURCES
FREETOWN
SIERRA LEONE

MR. O. DRAMMEH
DIRECTOR DEPARTMENT OF FISHERIES
BANJUL
THE GAMBIA

MR. ALHAJI M. JALLOW
SENIOR FISHERIES OFFICER
DEPARTMENT OF FISHERIES
BANJUL
THE GAMBIA

MR. MOMODOU N'JIE
FISHERIES OFFICER
DEPARTMENT OF FISHERIES
BANJUL
THE GAMBIA

MR. FASAINEY DUMBUYA
PRINCIPAL PLANNER
MINISTRY OF AGRICULTURE AND NATURAL RESOURCES
BANJUL
THE GAMBIA

CANADIAN CENTRE OF STUDIES AND INTERNATIONAL COOPERATION (CECI):
MR. PATRICK BOUNEAU
PROJET PILOTE SECURITE EN MER OPPA
CONAKRY
GUINEE

FAO ROME:
1. J.P. JOHNSON

IDAF PROGRAMME:
1. F. HOUEHOU
2. J.P. GALLENE
3. B.P. SATIA

SUB-REGIONAL WORKSHOP ON SAFETY AT SEA

Banjul, The Gambia, 26 - 28 September 1994

PROVISIONAL AGENDA AND TIMETABLE

SATURDAY 24 AND SUNDAY 25 SEPTEMBER 1994

Arrival of participants

MONDAY 26 SEPTEMBER 1994

8.00 Registration of participants

8.30 **Opening of the session**

- Opening by a Representative of the Ministry of Agriculture and National Resources of the Republic of the Gambia
- Statements by Director of Fisheries, Republic of the Gambia and FAOR for the Gambia

9.30 **WORKING SESSION BEGINS**

- Administrative arrangements
- Agreement on Chairman and two Rapporteurs

- **PRESENTATION OF COUNTRY REPORTS**

Senegal and Cape Verde

12.30 **LUNCH**

14.00 - 17.30 Sierra Leone, Mauritanie and Guinea Bissau

TUESDAY 27 SEPTEMBER 1994

8.00 - 10.00 Guinea and the Gambia

10.30 - 12.30 General discussion on the Status of Safety at Sea in the Sub-region.

12.30 **LUNCH**

14.00 Study ideas for a possible sub-regional Project Safety at Sea

WEDNESDAY 28 SEPTEMBER 1994

10.00 Presentation of Workshop Report
(Conclusions and recommendations)

10.30 Closing of the Session

AFTERNOON : DEPARTURE OF PARTICIPANTS

Appendix 3

Banjul, The Gambia, 26 - 28 September 1994

THE CONTENTS OF THE DOCKET

1. Information for Participants

2. Lists of participants and flight reservations

3. Provisional Agenda and Time table

4. Introductory Note

5. Country Papers

▪ Mauritanie,	Mohammed Lamine Ould Meymoun and Abderrahmane Ould Boba
▪ Sénégal,	Makane Diouf Ndiaye, Ousmane Ndiaye and Alioune Diaw
▪ Cape-Verde,	Paulino Monteiro and Antonio Cruz Lopes
▪ The Gambia,	Alhaji M. Jallow
▪ Guinea Bissau,	Caetano Fernandes and Carlos da Silva
▪ Guinea,	Joachim Alpha Touré and Mohammed Camara
▪ Sierra Leone,	A. C. V. Forde

6. Ideas for a Sub-regional Project.

Appendix 4

Workshop on Safety at Sea

Case Study: Mauritania

Banjul, The Gambia, 26 - 28 September 1994

by

Mohamed Lemine Ould Meimoun
Chef de service de la Pêche Continentale, Nouakchott

and

Abderahmane Ould Boba
Chef de service de la navigation et des Transports maritimes, Nouakchott

1. Typology and extent of sea accidents

Owing to meteorological disturbances and the swell phenomenon, artisanal fishery in Mauritania is impossible or difficult for more than two hundred (200) days a year. Therefore, the typology of sea accidents for this not very hospitable 720 km coastline which has only one artisanal fishery port is varied:

1.1 Atmospheric conditions disturbances

The Mauritanian coastline is often hit in many places by violent winds which provoke the swell phenomenon. The sea then becomes rough and fishing more and more difficult. Some fishing technics such as the "Imraguens" fishing from shore are risky too. It is estimated that ~ 85% of the accidents are due to various phenomenons.

1.2 Human error

10% of accidents are caused by a slackening in boats surveillance or captains' lack of competence or vigilance.

1.3 Collision between boats

It is estimated that 5% of accidents are caused by collisions between industrial fishing trawlers and artisanal fishing canoes. As they are after the same resource, there are often conflicts which can result in involuntary or voluntary collisions. This type of accident occurs frequently in the center zone called zone of imraguens fishermen.

2. Essential problems related to safety at sea

2.1 The lack, slackness or absence of surveillance facilitate piracy from industrial fishing boats which penetrate into the artisanal fishing zone.

Training of the crews.

2.2 There is a need to they must have sufficient practical knowledge in boat steering. They must also have knowledge in communication and assistance to persons in danger.

2.3 Communication and mass media should be mobilised. The meteorological service should inform artisanal fishermen daily of the state of the sea (calm or rough) and the forecasts for 24 hours.

In case of losses at sea, the name and identity of the persons concerned must be known immediately to facilitate research. Extension and sensitization are therefore necessary.

Safety equipment.

2.4 Each artisanal fishery canoe or boat should have, whenever going on a trip, a minimum of safety and rescue material.

2.5 Legislative texts and especially the organisation chart of the department should be updated to take safety problems into account. For example fishermen's safety at sea should be attributed to the direction of artisanal fisheries (DPA). The service in charge should also be clearly specified.

3. Status of activities undertaken or programmed for safety at sea, including organisation, administration, project aspects

Since the organisation by the Department of Artisanal Fisheries (DPA) from 10 to 12 August 1993 of a workshop in Nouakchott on registration, safety at sea and fish trade, the Departement of Fisheries and Maritime Economy pays particular attention to safety at sea problems. Thus, the protection of human lives as well as of the economic wealth that the boat and its cargo represent constitute a priority.

Many recommendations and resolutions were adopted at the end of the workshop. Thus emphasizing on:

- the necessity for every artisanal fishing canoe or boat to have on-board a minimum of safety material to rescue human lives.

- the organisation of a training seminar on safety at sea for crews.

- the setting up at the DPA of a safety at sea project, the financing of which should be quickly researched with potential donors. The assistance of IDAF is greatly desired in the formulation of the project.

4. Suggestions for priority actions to undertake at the national and regional level

4.1 At the national level

As mentioned above, the government takes safety at sea problems very seriously. It is therefore necessary to review the organisation chart of the department so as to clearly designate the structure responsible for safety in the department of artisanal fishery. Then, at least two (2) brigades should be set up in Nouakchott and Nouadhibou. They should have adequate staff and material to intervene quickly in case of accidents. As national navy concentrates its efforts on EEZ surveillance problems, it will be difficult to add the safety of artisanal fishermen to the task of the national navy.

4.2 At the sub-regional level

Within the framework of the subregional cooperation Mauritania is very pleased about the interest shown by IDAF programme for questions related to safety at sea. It supports any project which might be initiated in one or many member countries of the northern zone aiming at solving artisanal fishery problems similar to those in Mauritania.

Workshop on Artisanal Safety at Sea

Case Study: Sénégal

Banjul, The Gambia, 26 - 28 September 1994

by

Commander Makane Diouf Ndiaye
Director of PSPS Project - Dakar, Sénégal

Ousmane Ndiaye
Head of Artisanal Fisheries Division, DOPM
IDAF Liaison Officer, Dakar Sénégal

and

Alioune Diaw,
PSPS, DOPM - Dakar, Sénégal

I. Introduction

The last few years, marine artisanal fishery has become economically the most important sector in Sénégal, taking the lead over groundnuts (hit by the drought) and phosphate (affected by the oil crisis). Thus, 300,000 tons are produced each year, which represents about 60 billion Francs CFA. This sector has grown considerably during the last decade and it is estimated that its contribution to the Gross Domestic Product of the primary sector was about 11% in 1988, ie. FCFA 35 billion against 12.7 billion in 1980.

With a coastline of 700 km and a continental shelf of 23,000 square kilometers, Sénégal has relatively abundant fishery resources thanks to favourable natural conditions (upwelling phenomenon).

The Sénégalese fishery system is characterized by a pronounced complexity. In fact, fisheries are sequential, multispecific, pluri-gears and multi-fleets. One can distinguish between five (5) groups of fish stocks: coastal pelagics and demersals; high sea pelagics and demersals and estuarine species.

Coastal pelagic and demersal fish resources are exploited by artisanal fishering units, trawlers and sardine boats. These different fisheries operate in the same area in time and space with different means, strategies and constraints (biological, social and economic) and develop among themselves relationships based both on competition and cooperation.

Artisanal fishery which uses gears such as purse seine, beach seine, bottom gillnet or driftnet contributes 70% of landings. Moreover, its economic importance is visible as it is an activity that is carried out by more than 35,000 fisherfolk using 4,500 canoes in more than 200

fishing centers.

Contribution to the seminar on the safety of artisanal fishermen. The different technological innovations have caused a rapid progress of artisanal fishery the last few years (motorization, purse seine, ice boxes, etc...)

The dynamism of the subsector has also contributed to the frequency and importance of accidents with industrial fisheries and also within artisanal fisheries.

Table 1. Fishermen victims and damages in accidents per area - Sénégal

N°	Areas	Number of fishermen in 1993	Number of accidents 1991-1993	Victims		Damages in CFA Francs
				Injuries	Deaths	
1	Dakar	5 110	24	03	05	22 104 000
2	Louga	224	9	00	01	25 567 850
3	Thiès	13 594	61	05	32	34 633 600
4	St. Louis	13 500	9	00	06	15 012 930
5	Ziguinchor	5 083	30	00	06	22 762 500
6	Fatick	203	4	00	00	3 107 350
	TOTAL	37 714	137	8	50	123 188 230

II. Typology and extent of Sea Accidents

Sea accidents take different forms: there are main causes and facilitating factors.

2.1 Main causes

1 capsizing
2 grounding
3 collision
4 net caught by trawlers
5 entanglement of nets
6 fire outbreaks
7 falling of fishermen overboard

2.2 Contributing factors

1 engine failure;
2 poor conditions of waterways;
3 meteorological conditions;
(violent wind and waves, bad visibility)
4 shortage of fuel;
5 overloadings.

III. Essential problems related to safety at sea

Beyond facilitating factors, accidents can have deeper origins namely:

3.1 Violation of rules and regulations

Many accidents occurred within the area forbidden to trawlers. This is mainly due to the fact that industrial fishermen believe resources are found in protected areas.

3.2 Encroachment

With the technological evolution of artisanal fishery sector, artisanal fishermen are more autonomous now and thus go beyond six (6) miles; thus increasing the chances of fierce competition between industrial and artisanal fishing units.

3.3 Lack of rules and regulations for the artisanal fishery sector :

Considered for a long time as an informal sector, artisanal fisheries developed without much control and without a code of regulation. The timid actions of regulation namely registration, organisation in Groups of Economic Interest (GIE), training by different projects contributed to make the sector to perform better, but these actions are inadequate for appropriate management of the sector.

3.4 Purely traditional activities

Artisanal fishery is a purely traditional family and ethnic groups activity and the activities are generally passed on from father to son. However the main concern here are the elders who thwart sensitization actions. Indeed their mentality, opposed quite often to every kind of evolution including, new ideas, works against attempts to reorganise the sector.

3.5 Migratory aspect

Artisanal fishermen are generally migrants who operate in many sectors at the same time. This great mobility of fishermen slows down actions of training and extention of security norms, thus making monitoring of the trained fisherfolk difficult.

3.6 Safety material proposed often inadequate

Artisanal fishermen cannot afford financially the safety materials proposed and the efficiency of some equipments is not convincing either, for example :

a) life jackets are very expensive and artisanal fishermen experience some difficulty using them;

b) light buoys cannot prevent trawlers from destroying nets;

c) the spare engine, advised to fishermen, becomes a luxury that many of them cannot afford, for they already have great difficulty buying one engine;

d) the magnetic compass is not very useful in navigation as fishermen are used to orientate themselves without compass.

IV. Present status of actions undertaken or programmed on safety matters.

In Sénégal, beside the Merchant Navy in charge of maritime navigation safety, the Fishery Protection and Monitoring Project in Sénégal (PSPS) is, among other things, in charge of artisanal fishermen's safety. As such, it intervenes in issues related to conflicts and accidents at sea in seeking to solve any misunderstandings amicably.

The PSPS has initiated many actions, such as:

a) Sensitization on safety at sea actions through radio, television and discussion sessions on beaches.

b) Strengthening surveillance efforts in the zone forbidden to trawlers through the creation of secondary surveillance centers set up along the coastline.

c) Computerized management of all the information on accidents and conflicts in order to better appreciate the situation and give new orientations.

d) Participation in technical demonstrations and practical training on navigation rules and practices.

e) Organisation of a national seminar on the safety of fishermen. The seminar brought together representatives of the fisheries sector namely artisanal and industrial fishers and the administration.

f) Broadcasting of marine meteorology by the secondary surveillance centers to help artisanal fishermen.

g) Registration of all the traditional names of fishing places in order to make their list on a maritime map so as to better organize assistance if need be.

h) Setting up a coordination structure working round the clock thus following all sea accidents and alerting surveillance units if need be.

PSPS also tried other actions which at present are only project ideas :

a. Marking out of the six mile zone to better materialize the demarcation between artisanal and industrial zone.

b. Installation on-shore of some guidance lamps which will enable fishermen to reach their localities safely.

c. Preparation of a maritime map with all the fishing zones of artisanal fishermen and the traditional names.

d. Organisation of courses to teach fishermen some survival techniques (method to stay as long as possible at sea with a minimum of means).

e. Installation of a national committee in charge of settling conflicts resulting from accidents between artisanal and industrial fisheries.

V. Suggestions for priority activities to undertake

Sénégal suggests the creation of a subregional project in charge of the following actions:

1. studying the equipment most adapted to artisanal fishery and promoting its popularization;

2. studying the manufacturing of safety equipment using local material more accessible and less expensive;

3. finding the most appropriate solution to penetrate the world of fishermen in order to increase their awareness;

4. studying an intermediary artisanal fishery system between the present artisanal fishery and industrial fishery.

5. experimenting and popularizing safety methods, techniques and measures at the subregional level;

6. follow up and analysis of accidents at sea.

This project could be responsible for all questions related to safety at sea.

Investigation and Rescue Operation on Sea in Sénégal

by

Alioune Diaw from PSPS

June 1994, on a training mission in a fishermen island where there is no communication means, I was called upon by a group of boaters who had just rescued a longliner with 13 sailors on board.

Having left Dakar harbour 22 days ago, the boat had a broken down engine in the Bissau-Guinean waters after five days fishing. The crew could not give the alarm as usual because of a power failure preventing all communication with the structures on shore.

Then the 13 sailors lived in total isolation in the area until completion of their water and food stock. This situation lasted for 8 days before a canoe sailing to Guinea Conakry searching for sharks could come and help them.

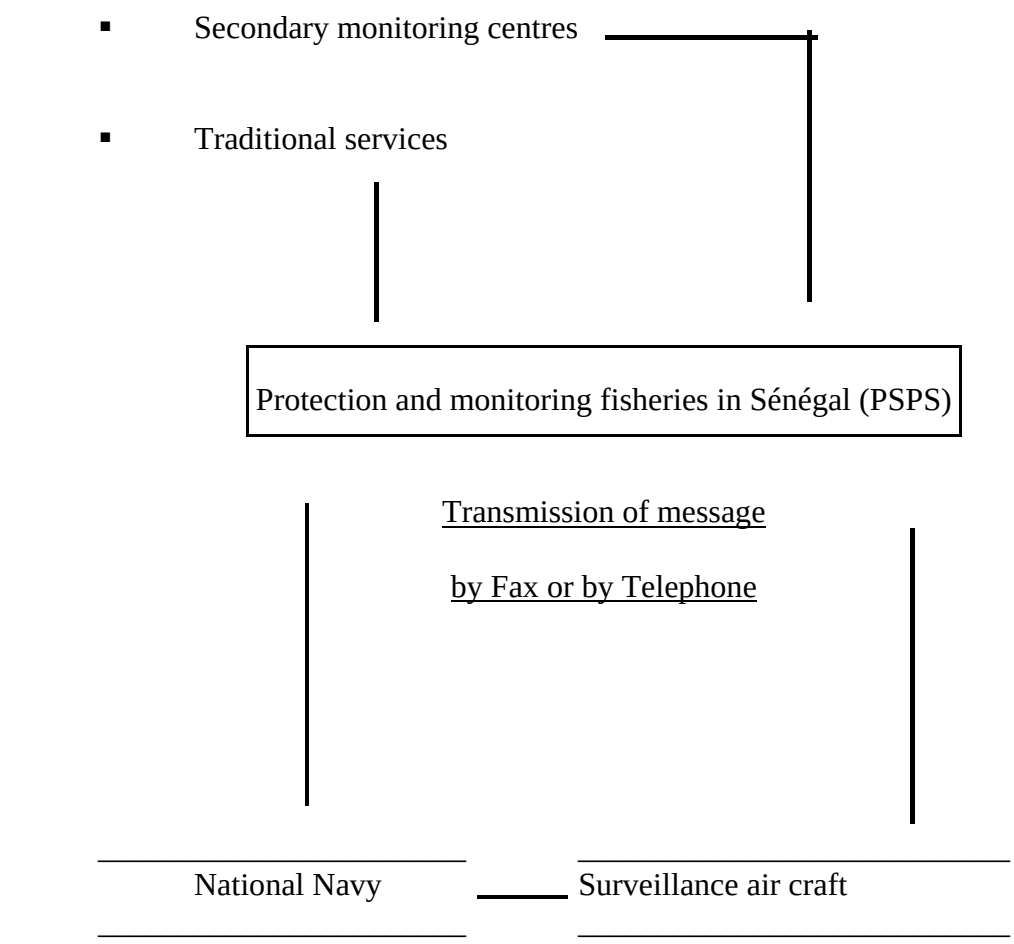
Following a tacit agreement allowing the boaters "to collect the canoe's radar as a guaranty" 5 sailors were brought back to dry land on board of the canoe. Once informed about the situation, I went down to the nearest area where I could get into touch with the Protection and Monitoring of Fisheries in Sénégal. (P.S.P.S.)

As soon as information was transmitted by telephone at about 1 p.m., the marine unit and the surveillance air craft were on the alert and combined operations of research were organised. Despite the indications we had, investigations remained fruitless on the first day because of weather conditions which make the longliner drifting further.

Taking this factor into account, we proposed other guiding-marks and the longliner was recovered on the second day by 10 a.m. with the 8 fishermen in a very sad conditions. It should be noted that this operation cost about three millions (3.000.000) CFAF and was fully covered by the senegalese government.

For the fishermen which interrupted their fishing in order to rescue the sailors, they were compensated by the shipowner for one million (1.000.000) CFAF.

Organisation chart of the off shore rescue system in Sénégal



A permanent contact is established by the patrol boat and the surveillance air craft till the end of the research operation. It should be noted that the fishermen do organise some parallel operations with their own canoes in cooperation with the subordinate monitoring centre of their area.

Artisanal fisheries in Cape Verde: Typologies and extent of accidents, activities undertaken and planned

by

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and

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1. Introduction

With a maritime area of about 750,000 square kilometers that is 200 times the emerged area,the major part of Cape Verde resources come from the sea.

Among the marine resources, we have artisanal fisheries which is, beside being important in the population's diet, a major economic activity and, in many cases, an exclusive one for many villages of the archipelago.

It uses about 2500 canoes most of which are in wood,contributes to more than 60% of fisheries landings in Cape Verde, employs more than 7000 fishermen who, together with their families represent about the 10% of the islands populations.

Artisanal fisheries is a vital sector for the economy of Cape Verde. Therefore the security of both canoes and fishermen must be a permanent concern for the authorities.

2. Typology and extent of sea accidents

A significant improvement was observed the last years in the artisanal fisheries sector, especially by canoes motorisation, the adoption of new fishing methods by fishermen as well as the creation of facilities to help fishermen.

However, at the same time a congestion of traditional fishing zones is observed due to the continuously increasing number of artisanal fisheries canoes. This explains the reduction of resources and represents an additional difficulty for the activity to be profitable.

These factors, associated with the needs of fishermen to take from the sea the resources necessary for their survival, oblige them to go very far from their home base in many cases, without securing a minimum safety conditions on board their canoes. These trips to remote areas without the observance of security norms, the bad weather in the archipelago between November and April - period during which most accidents happen -, the professional error and the lack of

information and sensitization on security are some of the main causes of sea accidents in Cape Verde.

Unfortunately, the consequences of those accidents on the life of fishermen and on the society at large are serious. For example, from 1992 to the first semester of this year, 12 important accidents were recorded in artisanal fisheries which caused 8 deaths in addition to important material losses.

This situation as well as the importance of artisanal fisheries in the development strategy of the country, led the authorities concerned to take some measures aiming to avoid sea accidents and reduce to the minimum their consequences on the life of artisanal fishermen.

3. Activities undertaken and planned for Safety at Sea

3.1 Activities undertaken

The problem of safety and rescue at sea in Cape Verde is an undeniable reality. The number of accidents and victims is continuously increasing.

To change the trend, the marine authorities concerned jointly with the Department of Fisheries and the National Institute for Fisheries Development (INDP) have taken a number of actions among which:

- the training in sensitization of artisanal fishermen to security problems by INDP;
- the installation by marine and especially port authorities of new lights and the marking buoys of our coasts which will facilitates the navigation in Cape Verde territorial waters;
- significant efforts to ensure a better "fiscalisation" of boats before their departure for fishing trips;
- the recent acquisition by the coastguard station of a 16 m boat and an aircraft which will undoubtedly permit a better surveillance, research and rescue at sea;
- the revision of the legislation about safety on board fishing canoes;
- the possibility to use 6 private existing helicopters for rescue at sea;
- the weather forecast broadcast 6 times a day;
- the permanent listening on VHF and medium waves at Mindelo, Sal and Praia on 3 different channels in each of the listening centres;
- the training of sailor fishermen for 4 months in the nautical training center.

3.2 Activities planned

A number of activities aiming at improving security on board fishing and rescue at sea canoes in Cape Verde are planned. Some of these activities are being achieved. Among them we can mention :

- "Marine Security Project in Cape Verde". The project will install and renew lights and beacons along coasts thus ensuring better security conditions;

- the implementation of GMDSS-Global System of Safety and Rescue at Sea in Cape Verde. Works have already started and should end in 1996;

- the "Research and Rescue Project in Cape Verde Waters" will improve the existing communication system to ensure a better reception of assistance calls and transmit them to a research and rescue coordination center which will analyze the calls and launch research and rescue means.

However, the achievement of these activities didn't put an end to sea accidents in Cape Verde. For example in 1992, an artisanal fisheries canoe with 3 men on board has drifted during 45 days up to Brazil. When they arrived, the youngest of the fishermen was dead.

This accident proves, once again, that we should be constantly and permanently preoccupied with security, research and rescue at sea problems.

4. Suggestions

To reach the objectives defined we suggest:

1. The pursuance of training and sensitization actions of fishermen to security problems;

2. to make available to the institutions concerned, for example port navy forces, the material and human means necessary for an efficient surveillance of the application of security norms;

3. the study, by the National Institute for Fisheries Development jointly with the port navy forces, the coastguard station and town councils, of the possibility to install in fisherfolk communities VHF transmission means for example, in order to make it easier to inform of accidents and permit a quicker response from services in charge of research and rescue at sea. As the necessary equipment has been ordered and delivered, all the canoes should be equipped with VHF in 1995.

Insurance system.

It is necessary that after sea accidents without lost of life, fishermen be able to continue the activities which are their sole means of subsistence. That is why Cape Verde has set up an insurance system to help the fisherfolk community. Thus, the canoes or fishing equipment damaged, destroyed or lost in a sea accident are reimbursed by the insurance company.

Insurance concerning the persons transported is under discussion.

Workshop on Safety at Sea

Case Study: The Gambia

Banjul, The Gambia, 26 - 28 September 1994

by

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I. Introduction

The fisheries sector has been identified as a major source of rural employment, domestic food supply, and export earnings. The artisanal sub-sector, characterised by low investment levels and fishing operations in many dispersed and often isolated sites, provides about 95 per cent of the locally consumed fish. It also provides employment for over 17,000 people. These people operate in boat-building, fishing, fish handling, fish processing, fish transportation and marketing activities.

Although this sub-sector has the potential to increase its contribution to economic and social development in the country, its development is constrained by numerous factors; poor infrastructure, inefficient processing techniques, lack of skilled gambian fishermen, and low levels of credit availability. In order to address these and other constraints facing the industry, the government initiated artisanal fisheries development programmes along the coast and inland. These programmes have produced some successes in improving rural nutrition and increasing rural youth employment, especially through the fishermen training programme of the Department of Fisheries.

The increasing number of fishermen, the relatively higher level of motorization, and the encroachment of fishing trawlers in artisanal fishing zones have contributed to the progressive reduction of fishery resources in the artisanal fisheries zones. This condition has made the major species fishing grounds distant. In their pursuit of these commercially important species the fishermen encounter dangers that are created by human professional error, natural sea condition, and the conflict between trawlers and artisanal canoes in artisanal fishing zones.

The daily exposure to risk caused deaths and significant loss of property over the years. But for brevity this paper addresses only the incidents that occurred in the last three and a half years. These incidents are a reflection of the state of safety at sea in The Gambia from 1991 to July 1994.

1. Typology of Accidents at Sea

As in other parts of West Africa, Gambian fishermen have strong traditional beliefs. Some of their pre-fishing trip rituals are influenced by superstition which might have been created by a coincidence. Despite all the rituals and experiences, accidents continue to occur at sea. These accidents can be classified under natural, human error, and fishing zone conflict. The detail of the causes is given in table 1.

1.1 Natural causes:

The winds, especially at sea, can be very strong at times in The Gambia at certain times of the year. The rainy season seems to be the worst period when thunderstorm and heavy rains can make the sea condition very unbearable. Thunderstorms have directly contributed to one of the accidents recorded in table 2. The wind effect on the sea creates very big waves that affect propulsion and steering of fishing canoes. The condition is more perilous at night when the crew cannot gauge the height of approaching waves. So sometimes the sea gets so rough that fishermen abandon their canoes and seek refuge in bigger trawler vessels or bigger fishing canoes.

The rough sea condition is the major cause of accidents at sea in The Gambia. It caused 40.5 per cent of accidents recorded for the period under review - see table 1. Its impact is mainly the capsizing of canoes. The fog during the dry season contribute to poor visibility, which is the main cause of collision (7.1 per cent of accidents).

The lack of proper navigation lights at sea and in canoes has also caused a few accidents during the night, especially during bad weather. The crew gets disorientated and hit their canoes against something or destroy nets in rocks. This has happened at least twice during the period under review.

1.2 Human Error

The Department's fishermen training programme initiated in 1985 has succeeded in creating employment for some rural youth. But some of these young men seem to lack experience in handling certain fishing errors. They panic quickly and have been the main victim of the canoe overloading with catch which caused a few deaths. This condition has caused 14.3 per cent of accidents.

The fishermen deliberately operate fishing nets without adequate marking. These nets cannot be easily recognised in navigational lanes or in fishing areas; especially by drift net and ring net fishermen operating in the same area. Many useful gears have been destroyed through this careless act. Some also get obsessed with fishing in rocky zones. This obsession blurs the danger signals and has caused a significant loss of fishing nets and canoes. The situation is worsened by bad weather that drifts nets and canoes close to these areas and drives them into the rocks. Sometimes the drifting happens when the fishermen settle down to sleep in the canoes after setting their nets. Anchored canoes are equally affected by carelessness because some driftnet fishermen who do not have suitable navigational aids hit anchored canoes on their way.

Table 1 Causes of Accidents

CAUSE	N°. of cases	Percentage of occurrence
Disorientation of crew	1	2.4
Poor navigation light	1	2.4
Fishermen carelessness	4	9.5
Rain and thunderstorm	1	2.4
Rough sea (large waves and windy)	17	40.5
Fishing zone conflict	4	9.5
Poor visibility (collision)	3	7.1
Overloading of canoes with catch	6	14.3
Poor marking of nets	1	2.4
Operating in rocky zones	4	9.5

Source : *Safety at Sea Survey, August 1994*

1.3 Fishing Zone Conflict

Motorization of fishing canoes and the use of compass by some larger canoe operators has now provided fishermen with the means to fish in distant waters. The depletion of inshore fishery resources has also pushed operations further. The distant fishing has increased the probability of accidents at sea because not only do the fishermen move in more perilous lanes but are also exposed to larger vessels that sometimes encroach into the artisanal fishing zone, and drift net vessels that operate in gillnet setting areas.

The violation of the fisheries regulation which prohibits trawling operations within 7 nautical miles from the shore is frequently reported in Gambian waters. The strengthening of the surveillance capacity of the Department of Fisheries and the Marine Unit of the Gambia National Army has reduced the incidents, but the problem still prevails. So the trawlers do drag and destroy artisanal fishing nets and endanger the life of artisanal fishermen. Although encroachment, when passing or fishing, is the major cause of accidents related to trawlers, yet there are controversial cases of artisanal canoes operating in trawler lanes that are beyond their exclusive legal zone.

The other reported conflict that is causing accidents is the operation of driftnets at night in areas used by gillnet setters. This problem has cost the fishermen a lot in material and human life. The cumulative effect of the fishing zone conflict is the record of 9.5 per cent of recorded accidents in the surveyed period.

2. Present Status and Planned Activities

From 1991 to July 1994, the accidents that occurred along the coast of the Gambia, which had 389 and 404 full-time fishermen in 1990 and 1992 respectively are summarized in Table 2.

The low level of credit facility for artisanal fishermen coupled with the high cost of fishing materials has made it very difficult, almost impossible, for the fishermen to replace lost gear. Some of the materials are loan items that have to be repaid directly from operations because insuring fishing materials is not common in The Gambia. Where materials are lost in accidents many owners face hardship and distress. When the loss of materials is compounded by loss of life the trauma can sometimes be unbearable for some families and colleagues.

Without insurance there is very little hope for the victims. The only consolation for fishermen from the government is more loans (which increases the liability of the operators) or assisting in getting compensation from trawler owners who are identified by the registration number of their vessel. The fishermen detest supplementary loan and the compensation option has been hopeless to them.

Table: 2 Accidents at Sea in The Gambia : 1991 - July 1994

COASTAL FISHING SITE	Number of accidents	Fishermen involved	Accidental deaths	Average death/year
Banjul	17	93	33	9.43
Jeswang	6	52	4	1.14
Bakau	-	-	-	-
Brufut	2	10	6	1.71
Tanji	7	53	9	2.57
Batokunku	-	-	-	-
Sanyang	4	18	3	0.86
Gunjur	3	15	-	-
Kartong	2	10	2	0.57

Source : *Safety at Sea Survey , August 1994*

Despite the fatal accidents (see Table 2) and the considerable loss of materials, the fishermen themselves and the government are still doing very little to improve safety at sea. The Fisheries Department, through a grant aid, managed to supply life jackets to the trainees and some already trained independent fishermen. The training boats still do not have navigation lights, flare-up lights, compass, and other safety accessories. until these boat operators, sponsored by a government programme, do not take up safety at sea seriously, it will be very difficult to convince their colleagues to purchase safety equipment.

The Department of Fisheries is usually informed about every fatal accident that occurs in the waters. The officials agree that safety at sea should equally be a priority in artisanal fisheries development, but a safety at sea programme is yet to be formulated. The cost of the equipment for the fishermen might be inhibitive, but audio-visual aid targeting the fishermen might be a good reminder to the fishermen on the perils they are exposed to daily. Before a programme is formulated the fishermen will have to depend on the Marine Unit to effectively improve surveillance and protect artisanal fishing zones.

3. Suggestions on Priority Activities

Safety at sea has now been identified by the authorities as important for protecting the lives and investment of the fishermen in this country. This can be submitted as a component of a bilateral grant request. The grant can be delivered in the form of equipment and/or technical assistance to introduce, if necessary, a better planked canoe construction for a better stability, give safety instructions (even through national or regional seminars) and equipment, and provide suitable rescue boats in major fishing centres. The rescue boat operation will be facilitated by the radio network already available in all the major coastal landing sites, except Bakau for now.

A seminar or workshop that will include national and regional fisheries institutions, meteorological institutions, and maritime transport agencies will be useful in addressing the various sea safety problems and seek solutions to most, if not all, the major problems. Such a gathering can generate an inventory of the available devices and ways and means of using national radio and television channels (for countries with stations) to inform the fishermen on daily weather forecast and possible precautionary measures. After exhausting the information channel and the schemes that need voluntary adoption, legislation on the use of certain vital safety equipment, like life jackets, marker buoys for fishing gears, and navigation lights, can be introduced. But when any legislation is introduced the fishermen should be able to obtain the required safety aid, at least through a concessionary credit scheme; otherwise compliance will be difficult.

The monitoring and surveillance capacity of the parties concerned should continue to receive urgent attention in government budgeting in order to further protect the artisanal fishing zones and artisanal fishermen's investment. The Department of Fisheries, in collaboration with bilateral or multilateral donor agencies, should address the provision of at least one fish landing site identification light to ease night landing and the maintaining of appropriate navigation bearing relative to operation base. Insurance institutions in the country or region should be encouraged to provide low cost insurance schemes that can be a reliable source of prompt and appropriate replacement of fishing material, as well as family benefits after the death of household members or heads.

Undoubtedly any comprehensive safety at sea programme will require an investment of human and financial capital, but with the cooperation and assistance of regional bodies like IDAF (an FAO implemented regional artisanal fisheries programme in Cotonou, Benin) and the many donors interested in the well-being of fishermen, these major inhibitors in the provision of basic safety at sea can be overcome in many countries in West Africa; especially smaller ones like The Gambia.

Research and rescue at sea in Guinea-Bissau

by

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The Republic of Guinea-Bissau located in West Africa has both a continental part and an archipelago part. The latter comprises fifty (50) islands and many islets.

The Research and Rescue at Sea service depends on the Department of Navy and Ports which is under the supervision of the Ministry of Transports and Communications.

Considering the distinctive characteristic of our territory which is cut across by rivers and canals, maritime navigation on the whole national territory and especially the North and the South, is very dense and sometimes carried out by defective canoes. The lack of means of maritime transport with better security conditions, as well as the lack of knowledge in weather notably weather forecast have caused many accidents which cost many human lives at sea. For a better understanding of the situation, we will make an analysis of each region with the main causes of maritime accidents.

1. Northern region- Transport of passengers

In the North, the crossings of Caio/Jeta, Ponta Pedra/Pecixe and Sao Domingos/Cacheu by "Nhominca" type canoes propelled by outboard engines have been the causes of maritime accidents.

The accidents depend on the variation of the tide. The absence of maritime authorities in the differents ports also contributes to these accidents. The owners ignoring the exact capacity of their canoes or neglecting security on board canoe or simply being attracted by lure of easy gain, overload their canoes and, if the weather is bad, the accident is inevitable. These owners have not received any training and are ignorant about weather forecasts.

The unavailability of communication radio either on board canoes or in ports still remains an obstacle to overcome before being able to follow the departures from and arrivals to ports.

2. Artisanal Fisheries

The lack of training in navigation and weather forecasts (notions on the weather) has been and still is the cause of many accidents in the artisanal fisheries sector. For their guidance all the fishermen use landmarks, big trees or other natural indicators. In case of heavy rains or when the sky is clouded, many canoes disappear for many days until other canoes come to help them.

3. Southern region- Transport of passengers

Considering its distinctive feature, the southern part of the country is cut across by many rivers and canals. Most of the crossings (Quinara region and Tombali) are done by oars canoes because the stream of rivers is not very important.

Bolama - Bijago's Region, the main artisanal fisheries region, comprises 36 islands and many small islets and remains the focus area where most major maritime accidents occur.

There are boats which ensure the liaison of Bolama and Bubaque, but to reach the other islands, Nhominca type canoes or canoes equiped with inboard or outboard engines are required. Considering the distance between Bubaque and the other islands, the loss of an artisanal fisheries canoe which serves some islands can cause a delay of many days awaiting another canoe. The irregularity of transportation means is severe, this leads the inhabitants of these islands to overload canoes. Most accidents were caused by the overloading of canoes with persons and goods. The lack of communication means in natural ports has caused many deaths which could have been saved if there were rapid communication means.

As far as the artisanal fisheries is concerned, the canoes are similar to those in the Northern region with, in addition, fishing out at sea without compass and even without the least auxiliary equipment of navigation and communication.

4. Major problems of rescue at sea

The lack of safety jackets, lifebuoys, rescue rafts, radio-communication and compass on the local market, makes more difficult the work of maritime and national authorities who insist on having on board the necessary and fundamental equipment.

The existence of only one canoe which serves both as buoy keeper and carrier of passengers and goods at a speed of nine knots (nine miles per hour) has made the work of services more difficult. The non existence of a maritime traffic control station, either central or in the ports frequented by cargo ships remains a problem, as well as the lack of quick lifeboats for maritime research and rescue. All these are problems that the services in charge of providing assistance to shipwrecked persons are faced with.

5. Present state of security, research and rescue at sea

The possession by the Department of Navy and Ports of N/M SAMBUIA, by the one of Artisanal Fisheries Development of a lifeboat and many canoes equiped with outboard engines as well as Ilha da Paz project at Bolama, have greatly contributed to improving maritime research and rescue services. However, the latter two structures participate in research although this is not part of their job.

6. National suggestions

For safety at sea it is necessary to make available in the whole country and at reasonable prices all the equipment recommended by the International Convention for Human Life Safeguard at Sea (CISVHM); install fixed radios with a system of solar panels in the main ports and portable and fixed radios on board the boats and canoes which do not belong to the port traffic.

7. Sub-regional suggestions

- Create training schools for sailors and coastal fisheries owners in areas where navigation and artisanal fisheries are dense;

- train, at the national level, the staff of maritime safety, research and rescue services;

- install radio-communication coastal stations thus connecting all the national as well as the sub-region's ports;

- work and study visits for exchange of experience among the different countries in order to appreciate the evolution of works and the application of recommendations;

- compulsory application of the norms recommended and follow up of their implementation.

Workshop on Safety at Sea

Case Study: Guinea

by

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and

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I. Introduction

The marine artisanal fishery production is very important in Guinea. It represents about 70% of the total landings and as such contributes greatly to feed the population, creating jobs as well as improving artisanal fishermen's earnings. Marine artisanal fishery in Guinea has about 2,000 canoes and provides a living for more than 12,000 fisherfolk, more than 5,000 fishmongers, and also for many other related professionnals (canoe's builders, mechanics, etc...) During these last years, artisanal fishery production has been integrated to the fishery products exported by local companies which are indeed involved in a very active trade sector.

The remarkable progress made in the artisanal fishery sector is undoubtedly due to the courage of fishermen which brave the sea and meteorological conditions, but also to the sector-based policy of the Fisheries Department which has chosen since 1984 to promote artisanal fishery by creating appropriate structures such as the Office for the Development of Artisanal Fisheries and Aquaculture in Guinea (ODEPAG) and recently the Office for the Promotion of Artisanal Fisheries (OPPA).

At the same time many projects arises especially the Boussoura Motorization Center, Landreah Engine Repair Shop, Dubreka Fishing Center, Kaback Islands (Forecariah) Integrated Project, Benty Fishing Center (Forecariah), Kamsar Fishing Project (Boke), Douprou Fishing Project (Boffa) and finally CECI-MARA Safety at Sea Pilot Project.

All these projects have contributed in supplying artisanal fishermen with inputs, and this has undoubtedly increased the number of operators and hastened the development of the sector.

Beside the importance of artisanal fisheries and the support it has received to increase its production and make its actors happy, there is a paradox, that is, the danger that sea accidents represent for artisanal fishermen and boatmen. In all fairness however, it should be noted that with regards to the safety of boatmen, considerable efforts have been made to lower accident rates.

1. Typologies and extent of accidents

The National Committee for Safety at Sea with the technical assistance of the former IDAF Antenna (IDAF/GANT), carried out in 1992 surveys on sea accidents along the Guinean coast. Those investigations enabled us to have a clear idea about the typologies as well as the extent of the accidents.

1. Typologies

Contrary to the ancestral beliefs that lead some fishermen to attribute accidents to supranatural origins and causes, investigations carried out among the fishing communities along the Guinean coast revealed that there are some kinds of typical accidents:

- capsizing;
- grounding;
- collision;
- net caught by trawlers;
- entanglement of nets;
- fire outbreaks;
- disorientation of crew;
- on board accident.

These so called main causes are favoured by many other factors called facilitators of which the following are the most important.

- engine breakdowns;
- leaks (winds, waves);
- shortage of fuel;
- overloadings;
- poor visibility
- panic;
- mishandled fishing manoeuvres;
- violation by industrial fishing trawlers of zones reserved for artisanal fishery.

Capsizing

It is one of the most feared causes of damage boatmen face. It can be defined as the turning over at sea of a boat (raft, canoe) due to a mishandled manoeuvre or an external factor.

Grounding

It is generally caused by the ignorance of the operation zone and the low tides. When it occurs, the boat, even at top speed, is stopped by sand banks or rocks which are sometimes protruding during low tides or ebbs. Under the effect of these shocks, the contents of the boat are

often violently thrown overboard and sometimes the tacks, ribs and keels are even destroyed.

Collision

It is generally defined as the more or less violent encounter of two boats, which might be rare between a boat (ship) and an artisanal canoe because they don't operate in the same zone. However, it should be noted that if this ever occurred, the artisanal canoe might be lost at sea.

Net caught by trawler

Trawlers deliberately enter zones reserved for artisanal fishery passing over the nets set by artisanal fishermen. Fixed gillnets and stow nets are the most affected.

Net entanglement

Fishermen regularly complain about their nets which are torn after they had pulled them off a submerged rock, a carcass or tree trunks in channel.

Disorientation

Distant fishing, poor visibility and the lack of safety materials (compass) resulting in are facilitating factors for loss of crewmen at sea. When this happens the crewmen are subjected to tiredness, thirst, famine. At times there is a fairly high consumption of fuel, and the boat is exposed to bad weather (wind, wave) and other aggravating factors.

On-board accidents

They are many accidents which occur on-board artisanal fishing boats, such as: :

- fish stings;
- injuries caused by some tools;
- burns caused by cooking on board;
- fights.

We should also mention that accidents frequently happen because of :

- the low training level of boatmen;
- the poor conditions of equipment used;
- the influence of sea conditions;
- the type and nature of fishing zones.
- the vocation of boats (fishing or transport);
- the type or model of the boat used;
- the propulsion (motorized or not).

2. Sea accidents and their extent

In Guinea as in many developing countries, the boatman doesn't worry much about his safety at sea. If he finds the safety material expensive, he is neither informed about the sales in the market of some safety materials nor about their directions for use.

Boatmen believe that "Everything belongs to God" which means "God has created them, therefore he will protect them, why then worry?" So they are still reluctant to be advised about their own protection which is not a priority for them. This reluctance results in unprepared trips and as a consequence high risks of accidents.

The information obtained during the surveys carried out by the Guinean National Committee for Safety at Sea with the technical assistance of IDAF indicate that 225 cases of accidents were recorded from January 1, 1989 to December 31, 1991.

The following table indicates the extent of accidents in the coastal prefectures of Guinea, between 1989 and 1991.

Table 1. Number of accidents per Prefecture (1989-1991)

N°	Prefectures	Number of canoes	Number of accidents	Annual average
1	Boké	178	30	10
2	Boffa	475	64	21,3
3	Dubréka	102	31	10,3
4	Conakry	394	100	33,3
TOTAL		1149	225	74,9

Table 2. Number of victims in accidents (1989-1991)

N°	Prefectures	Number of accidents	Deaths	Injuries
1	Boké	30	20	
2	Boffa	64	1	
3	Dubréka	31	9	
4	Conakry	100	80	
TOTAL		225	110	68

NB: Conakry and Boffa fishermen are the most exposed to accidents and have suffered the highest losses if we consider the years of these surveys.

Since February 1992 when the Safety at Sea Pilot Project was initiated, there is a training programme at some landing sites that sensitizes, and carries out technical demonstrations on the use of safety at sea equipment.

These initiatives would seem to be beneficial for at the national seminar on safety at sea held in Conakry in March 1994, fishermen reported that they had noticed a reduction in the number of accidents in the artisanal fishery ports where the Pilot Project had marked its

presence.

II. Basic problems related to safety at sea

Besides the numerous accidents mentioned above, the artisanal fisherman is very often the victim of his old working means and methods. He periodically lacks fishing inputs and is defenceless when opposed to industrial fishermen.

Generally fishing inputs are imported by development projects. Unfortunately, since these inputs are expensive, fishermen are unable to buy them. Furthermore to have access to these inputs one has to belong to a cooperative. Few furtherfolk are members of a cooperative.

The only safety material used is the life jackets, (essentially by agents and project's expatriates). Nationals don't use them. Thus, the import of it is limited.

When there is an accident and the boatman's net is torn or scraped by trawlers the artisanal fisherman wastes his time between the Maritime Navigation Agency (ANAM), the National Center of Fisheries Surveillance and Protection (CNSP), the Fisheries Ministry looking for reimbursement. Very often his efforts are fruitless because he cannot give reliable data on the violating boat and usually the incompetence and/or corruption of those in charge of settling conflicts worsen the situation.

III. Main activities in favour of safety at sea

Due to the number of victims and the importance of the damage caused to boatmen by sea accidents, safety at sea has become a vital activity in the protection of fishermen in fishery resources exploitation and transport by canoe. That is why the round table on fisheries organised in Conakry in March 1990 by the Fisheries State Secretariat studied the necessity to protect artisanal fishermen.

With reference to the numerous recommendations formulated by this round table, the IDAF antenna in Guinea initiated and organised in February 1991 a sub-group for boatmen's safety at sea called National Committee for Safety at Sea. The Committee comprises representatives of fisheries, ANAM, National Navy, fisheries projects, fishermen and transporters by canoe.

It should be mentioned that during the life time of the IDAF antenna in Guinea the committee has always benefited from its technical assistance.

During these last years, IDAF and the Safety at Sea Pilot Project have made efforts to guarantee the safety of artisanal fishermen through their knowledge and application of safety at sea basic principles. Some of these actions include the following:

1. Setting up the National Committee for Safety at Sea

The main objective of the National Committee for Safety at sea (CNSM) is to collect and transfer information related to sea accidents, to find beginnings of solutions to the problems raised by these accidents. To reach these objectives the committee comprises representatives of fisheries, ANAM, National Navy, National Direction of Meteorology, Center for Marine Professional Training, artisanal fisheries projects as well as representatives of fisherfolk communities (URPAC).

2. Safety at sea Pilot Project

The Safety at Sea Pilot Project which is financed by CIEO, CECI and the Guinean government, was identified by CECI Guinea following a SOS from the National Committee for Safety at Sea during its consultative meetings.

The following programmes summarize the major activities of the project:

- programme of socio-economic surveys through the deep knowledge of navigation and fishing techniques;
- programme of training-sensitization of target populations through sessions on themes related to safety at sea;
- programme of experimentation at sea within the framework of coastal navigation;
- programme of assistance in safety equipment to ensure the safety of boatmen;
- organisation of a national seminar on artisanal fishermen's safety at sea. It has formulated recommendations to the government concerning the measures to be taken to avoid sea accidents.

The pilot project was initially planned to work only in two landing sites. But considering the urgent need in training-sensitization expressed by fisherfolk communities along the coast and financial constraints, it extended its efforts to more than 1,000 operators of 23 landing sites in the Prefectures of Conakry, Boffa, Durbreka and Forecariah. The table below shows the recipients of the training-sensitization sessions.

Table 3. Participants by Class and Locality at the Safety at Sea Training Courses.

Locality	Industrial Fishermen	Ship Captain	Fishermen	Boat transporters	Mechanics	Carpenters	Total
Conakry	117	85	150	1	19	11	383
Dubréka	9	0	16	0	0	0	25
Boffa	291	162	33	12	-	7	509
Forécariah	92	30	43	6		4	175
TOTAL	509	277	242	19	23	22	1092

Concerning the programme of assistance in equipment, an important amount of safety material was imported and subsidized in favour of boatmen. Also posters on safety at sea were placed in nine (9) landing sites. Two (2) landing sites located in rural areas have also been provided with mini light houses by a system of solar panels which guide and facilitate night fishing activities.

As far as the experimentation programme is concerned, the project has the minimum equipment required to contact 125 skippers selected in 11 coastal landing sites, and this was accomplished.

Finally, in order to follow up the actions undertaken by the pilot project, eleven (11) Vigilance or Overseeing Committees on Safety at sea (CVS) were set up in the target landing sites.

National Seminar on Safety at Sea

A national seminar on safety at sea was organised from 27 to 29 April 1994 in the Palais du Peuple under the aegis of the Office for the Promotion of Artisanal Fisheries (OPPA), the Ministry of Agriculture and Animal Resources (MARA) and the Canadian Center of Studies and International Cooperation (CECI).

This three-days seminar brought together representatives of fishermen, boat owners, port authorities, ship builders, meteorologists and the Oceanographic Research Center of Rogbanet, Conakry (CERESCOR) executives and agents, university professors, fisheries projects staff, journalists, the Navy, the Maritime Navigation Agency and Fisheries Department. The seminar made a detailed analysis of all the risks boatmen are exposed to in order to be able to formulate concrete recommendations likely to improve the safety of artisanal fishermen at sea.

Thus, the seminar contributed in creating awareness of the need to apply the existing regulations and formulate new recommendations likely to make the fishing activity more economic and less dangerous for fishermen at sea.

Here are some of the pertinent recommendations of the seminar:

- providing big fishing and transport boats with observation and communication facilities;

- inserting in the Guinean Radio and Television programme "Transports and Transport Infrastruture" a slot in local languages and French to sensitize intended port authorities and artisanal fishermen on issues of safety at sea.

- continuing the training-sensitization of boatmen initiated by the safety at sea project. It could be useful to introduce themes about distress signals, techniques and operations of rescue and survival in case of shipwreck;

- marking out engines and artisanal fishing zones;

- creating a legal commission responsible for solving conflicts. It could include representatives of the Maritime Navigation Agency, National Center of Fisheries Surveillance, Regional Union of Artisanal Fishermen and Safety at Sea Project;

- supporting the continuation and extension of the safety at sea project;

- continuing the provision of landing sites where necessary, with mini light house.

3. Scouting for finances for Phase II of Safety at Sea Project

A draft project document is ready and has been submitted to the Ministry of Fisheries and Aquaculture with the request that the Ministry scouts for funding. This second phase of the Project will be the logical continuation of the pilot phase. For a large coverage of communities, it is envisagd to extend the project to 50 coastal landing sites.

IV. Suggestions

Because of the importance of artisanal fishery and the problems related to safety at sea, it is desirable:

1. At the national level

To train and sensitize artisanal fishery operators in order to improve working conditions. In this regard, the boat builder could make improvements on the traditional canoe, the skipper would understand the necessity to acquire basic knowledge in coastal navigation, out board engines mechanics would be more trained,...etc.

To continue the works undertaken by the Safety at Sea Pilot Project in order to perpetuate and reinforce the results obtained. To reach these objectives emphasis should be placed on implementing the recommendations of the national seminar on safety at sea. That is why an interministerial commission is being set up to follow up the implementation of the resolutions of the seminar.

Finally there is a need to improve on human and institutional capacity, to ensure an adequate supply if safety materials and equipment is available and to seek more efficient ways by which to resolve conflicts and guarantee safety at sea for fishermen.

2. At the sub-regional level

In their research of sea products, fishermen go far away from their maritime territory. Thus, it is common to see senegalese fishermen doing fishing trips along Guinean coasts. The same for the guineans which are often in the waters of Sierra-Leone, Guinea-Bissau etc...

The sub-regional project could have sufficient reliable marine communication equipment, safety materials, rescue boats as well as a coherent training-sensitization programme for base communities. Accidents could thus be reduced and safety conditions of boatmen improved. To give a stronger feeling of security to those boatmen who are sometimes migrants, it is necessary to have an harmonious safety programme at the sub-regional level.

A Few investigation and life saving actions at sea.

The "Solas" "Safeguarding Human Life at Sea" convention is applied in the Republic of Guinea. As a result the Maritime Navigation Agency (ANAM) monitors and makes sure that maritime regulations and laws are implemented and enforced for security purposes. Cooperation among artisanal fishermen is compulsory in case of assistance to a canoe in distress. This can be observed among members from the same fishermen community. This form of assistance is also noted between national and foreign fishermen. The ANAM provides also support to any intervention in the framework of investigation and rescue at sea. These are two examples.

- On September 22nd, 1983, fishermen from Soro (Kassa island in the Kaloum constituency) rescued a Sierra-Leonese fishing canoe in distress at sea for three days with a broken down engine. Three children aged 6, 7 and 8 years old were reported among the passengers on board. First aid was provided by ANAM to peoples on board together with accommodation, food and fuel used for their rescue.

- A Senegalese canoe dealing with shark fishing ran short of fuel and has been drifting at sea for 12 days. It was spotted by a small canoe which was unable to pull it but informed the ANAM which launched immediately a rescue operation with the assistance of volunteers and four embarcations. That was on the 18 October 1993. After landing, the team was offered first aid treatment by the "ANAM".

Safety at Sea in the Artisanal Fisheries of Sierra Leone

by

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I. Introduction

Sierra Leone has a land area of 71,740 km², with a 26,400 km² continental shelf (up to 200 m depth) and a 155,700 km² EEZ.

The Artisanal Fishing Industry is carried out all along its 402 km coast length from 330 landing sites in six Districts as follows:

Western area		50
Kambia District		18
Port Loko	"	61
Moyamba	"	42
Bonthe	"	139
Pujehun	"	20

Artisanal fisheries is an important contributor to the gross national industrial product, providing employment for about 17,965 fishermen, supplying 50,303 mt fish estimated at contributing about 56,5% to the animal protein in take of the country's population

Fishing Crafts and Gears

Fishing crafts used in the Artisanal Fishing Industry are of the following categories:

- Kru (dug-out) canoe with a one or two man crew using gill nets and hook & line methods.

- Standard 1-3 meters and Standard 3-5 meters. The two types are medium size canoes, either dug-out or planked, or a combination of both and categorized by 1-3 and 3-5 meters referring to the crew size on these boats.

- The fishing gears used in these two categories of boats ranges from beach seines, gill nets, hook & line long line and shark nets.

- Standard 5-10 are large planked canoes with up to 10 crews, using gill or ring nets.

- Ghana Boats are large Planked 15 meter length canoes with a crew of 17 or more using Ring nets fishing for Sardinella and Etmalosa.

Propulsion Categories

(a) Sail and Paddle

Kru Canoe, Std 1-3, Std 3-5, Std 5-10 may be propelled by use of sail or paddles.

(b) Motorised

- Std 1-3 propelled by 10 HP outboard engine
- Std 3-5 propelled by 15 HP outboard engine
- Std 5-10 propelled by 10 HP inboard engine
- Std 5-10 propelled by 25 HP outboard engine
- Ghana Type canoes propelled by either 40 HP outboard engine or with 30 HP inboard diesel engines.

II. Safety at Sea

Artisanal fishing vessels as well as Industrial vessels (i.e. Trawlers), also have inherent occupational dangers practised under hostile and at times under inhospitable environment, with very little consideration given to maintaining safety regulations and measures for personnel, gears and cargo while at sea.

Fishing boats set out on fishing trips on the assurance that the boat construction and propulsion (sails, paddles, inboard or outboard engines) are reliably good and safe for incident free return trips.

Transport vessels (Pampa) are constructed with low transom stem to accommodate a 25 or 40 HP outboard engine, with a solid canopy which is constructed for sun and rain protection but also used to carry cargo and passengers.

Fishing boats and Transport vessel are operated on the assumption that expenditure must not be directed to the purchase of life saving equipments such as:

Life Jacket, Life Ring Buoys, Radio, Fire Extinguisher, Torch Lights or Navigation Lights, Compass, Radar, Marker buoys (for fishing gears).

Fishermen and transport vessels operators do not also see the need for on board storage of the following equipments for emergency use on every trip:

- First Aid Medical Kit
- Tool Kit
- Caulking Materials
- Scoop (Bailing bucket)

- Drinking Water
- Spare/Emergency outboard engine
- Reserve Fuel
- Emergency Food ration.

III. Types of Accidents and Causes

Certain accidents and their causes are peculiar or common to certain category of vessels.

(a) **Motorised vessels** as listed above are usually associated to the following accidents:

- engine failure caused by unclean fuel and engine oil (grip) or by the use of wrong fuel oil i.e. heavy engine oil as mixing oil, in place of the prescribed two stroke oil, including wrong mixing ratio of 10 gallons petrol to 1 gallon oil, instead of the correct ration of 50 gallons petrol to 1 gallon oil mixture,
- fire caused by open flame (cigarette flame) especially during refuelling of petrol engine,
- capsizing cause by improper storage of fish catch. On transport vessels due to overloading of Pampas and the improper placement of passengers and cargo, especially on their canopies.

(b) **Sail and Paddle categories:** capsizing and sinkage caused by heavy wind and thunder storms. These are the Kru canoes, Std 1-3, Std 3-5, and Std 5-10 which are also prone to disability caused by overloading or improper storage of fish catch or cargo.

Other accidents common to all categories and sizes of boat, both fishing and transport vessels are:

- Running aground
- Collision between artisanal vessels
- Entanglement or dragging of fishing gears on underwater hidden objects,
- Running over and destruction of artisanal fishing boats or their fishing gears by Industrial fishing vessels (Trawlers) fishing within the five miles IEZ.

IV. Conflicts

Because little or no measures are taken at sea with regard to safety by Artisanal fishermen, accidents with Industrial fishing vessels results in either loss of life and/or the fishing gears of the Artisanal fishing canoes.

This give rise to conflict between Industrial and Artisanal fishing categories of vessels, with the Fisheries Department having to mediate in settling of such conflicts peacefully. This is one of the reasons for the introduction of the canoe Registration with the payment of a fee by each canoe, to the Fisheries Department.

Accidents resulting in the destruction of artisanal fishing gears, usually occur during the night as they are not clearly marked with marker buoys or with lights.

Setting these disputes or conflicts are usually very difficult due to the following reasons:

(1) Identification and or proof of the place/point of incident.

(2) Disagreement between the Trawler and the canoe that the incident occurred within the 5 mile IEZ.

(3) Agreement by both parties on damages incurred by the artisanal fishermen.

(4) Non-visible markings of artisanal fishing gears with marker buoys during day time nor with lights during the night.

(5) The Fisheries Department is building up an improved Monitoring, Control and Surveillance (MCS) system, to help prevent conflicts or for speedy settlements.

It is expected that a well-working MCS will help in clearly demarcating the IEZ and so restrict the Industrial vessels from fishing within its limits.

V. Introduced Safety Measures

The Fisheries Department of the Department of Marine Resources in co-operation with Fisheries Development Projects, are introducing some safety measures to artisanal fishermen:

- the introduction and sale of life saving equipments, such as life jackets, buoys etc.;
- the construction of improved type boats for safety reasons;
- introduce and encourage the use of two-stroke mixing engine oil;
- high quality fuel oil;
- make available the sale of spare parts at reasonable price;
- improve MCS to be linked to life saving measures and regulations;
- the Ports Authority and the Department of Transport and Communication plan to conduct a seminar on safety at sea;
- the Amalgamated Artisanal Boats Men Union in association with other Artisanal Fishing and Transport Canoe Organisations, aim to improve safety of boats, passengers and cargo at sea;
- the introduction of navigational equipment, such as navigation lights, radar, radio, land marks etc.;
- stop overloading and so prevent capsizing and sinking of boats.

Additional information.

1. Motorized artisanal fishing boats can now go beyond the Inshore Exclusive Zone (5 miles) to fish on, so are prone to:

- Running into shipping lanes of Cargo vessels, which they may mistake for trawlers. There has been incidents of reports being made of trawlers damaging fishing gears of an artisanal canoe, (with lost of lives), only to be later (i.e. culprit vessel) identified as being a cargo vessel. Fishing gears so lost cannot be compensated for, as the vessel would have by then been way out of the territorial waters and out of communication.

- Outside the 5 miles IEZ the trawlers feel that the artisanal fishing boats have no right being there or that they were intentionally provocating conflicts, so as to make claims to replace worn-out or damaged fishing gears.

2. Artisanal fishing boats within the IEZ feel justified that there is no need for their gears to be properly marked with either marker buoys during the day, nor with light in the night. Because of this justification very little efforts are made to avoid such incidents with trawlers.

3. Fishermen although aware of prevalent risks and danger of their occupation are very vocally vibrant and the freshness of an accident (especially with the loss of lives) but within a short time do not take or observe safety measures onboard their boats to prevent reoccurrence. This might be due to the unavailability of necessary equipments or unaffordable finances.

4. Among artisanal fishermen it is an unwritten rule to help each other when in difficulty or in distress.

DANIDA

DIPA IDAF

ACCIDENTS ET INCIDENTS DE PIROGUES DE PECHE ET DE TRANSPORT

FICHE D'ENQUETE

PAYS :

Année :

Date de l'enquête :

Nom de l'enquêteur :

Adresse de contact :

Nom de l'embarcation :

Numéro d'enregistrement de l'embarcation :

INFORMATIONS GENERALES

Date de l'accident
Heure de l'accident
Zone de l'accident

1. Luminosité

O Lumière
O Jour
O Nuit

2. Conditions météorologiques

O Vent
O Brume
O Pluie (orage)

3. Etat de la mer

O calme
O Agitée
O Très agitée
O Tempête

4. Mouvement de l'embarcation

O A quai
O En route
O En pêche
O Ancré

5. Type d'embarcation

Immatriculation: Année de construction

O Unité de pêche. Longueur:
O Unité de transport. Longueur:
O Monoxyle:
O Bordée/membrure:
O Autres matériels de construction:

6. Mode de propulsion

O Moteur interne, chevaux: âge: marque:
O Moteur hors-bord, chevaux: âge: marque:
O Voile
O Rames/pagaies

7. Type de combustible utilisé:

1. O Essence pure 2. O Pétrole 3. O Gasoil
4. O Essence mélangée à un certain pourcentage d'huile

8. Principales raisons de l'accident

1. O Chavirement
2. O Echouage
3. O Collision
4. O Raclage des filets par un chalutier
5. O Accrochage des filets sur le fond
6. O Incendie à bord
7. O Incendie (dans la pirogue sur la plage)
8. O Explosion
9. O Chute à bord ou par dessus bord
10. O Blessure
11. O Piraterie
12. O Autres

9. Facteurs contribuants

1. O Panne(s) de moteur(s)
2. O Voie d'eau
3. O Surcharge
4. O Orage
5. O Vent
6. O Vagues
7. O Brume
8. O Manque de carburant
9. O Désorientation
10. O Panique
11. O Bagarre
12. O Inattention
13. O Discorde
14. O Ligne de mouillage
15. O Autres

10. Dommages **Coût par élément**

O. Embarcation.....
O. Equipement de pêche.....
O. Equipement de transport.....
O. Moteur.....
O. Cargaison.....

valeur totale:.....

II. Crew and passengers on board at the moment of the accident ?

Total number of crew on board : .....

Number of injured.....Number of death.....

Total passengers on board : .....

Number of injured..... Number of death.....

III. Complementary informations :

I. Antecedents of the accident :

2. Description of the accidents

3. Identification of the injuries :

O Light, Number :
O Severe, Number :
O Fracture, Number :
O Contusion, Number :
O Burn, Number :
O Bleeding, Number :

4. Causes of the death ?

5. Equipment and load on board at the moment of the accident ?

6. Do you think that the weight, the area, where the material or the load were placed, may have contributed to the accident ?

7 Safety equipments available on board at the moment of the accident
(Please mark)

	Were any of the following items on board?	Could you reach it / take it?	Did you try to use it?	Was it operational?	
1	O	O	O	O	Life jackets
2	O	O	O	O	Paddles
3	O	O	O	O	Bamboo
4	O	O	O	O	Scoop
5	O	O	O	O	Sail
6	O	O	O	O	Tools box
7	O	O	O	O	Emergency engine
8	O	O	O	O	Emergency fuel
9	O	O	O	O	Ring buoy
10	O	O	O	O	Navigation lights
11	O	O	O	O	Radar réflector
12	O	O	O	O	Markers buoys for fishing gears
13	O	O	O	O	Flare-up lights
14	O	O	O	O	Hand torch
15	O	O	O	O	Compass
16	O	O	O	O	Radio marine transceiver
17	O	O	O	O	First aid kit
18	O	O	O	O	Drinking water
19	O	O	O	O	Food provisions
20	O	O	O	O	Extinguisher
21	O	O	O	O	Caulking material
22	O	O	O	O	Knife
23	O	O	O	O	Other

8. Assistence offered ?

What kind of rescue operation and/or action taken by the fishermen, the official authorities, and /or the project ?

Appendix 6

A PROJECT IDEA

(SUB-REGIONAL PROJECT ON SAFETY AT SEA)
Banjul, The Gambia, 26 - 28 September 1994

A. GENERAL BACKGROUND

Mauritania, Senegal, Cape Verde, The Gambia, Guinea-Bissau, Guinea and Sierra Leone constitute the northern sub-region of the 20 countries covered by the IDAF Programme. Six of these countries, the exception being Sierra Leone, are members of the Sub-regional Commission of Fisheries created in March 1985. The commission constitutes a basis for cooperation in the field of fisheries management and development for these countries characterized by a geographical and biological interdependence of fish stocks. The convention for the Commission has not yet entered into force. However, the Commission's main functions are to facilitate harmonization of policies concerning the preservation, conservation and exploitation of fisheries resources and cooperation among the countries with a view to deriving maximum benefit from the resources for their populations. The Commission's Headquarters are in Dakar, Senegal.

The seven countries have a total coastline of 3,352 km which in 1992 was exploited by some 77000 artisanal fishermen operating about 17,000 crafts, 46 percent of which were motorized. Total landings in 1992 were estimated at 490,000 tons with 83 percent coming from the artisanal fisheries sector. In some cases, the same boats and canoes used by artisanal fishermen are those often used for transportation or commerce. Hence the operators are fishermen one day and "water taxi drivers" the next.

In addition to providing employment to many thousands of fisherfolk and associated workers, the artisanal fisheries sector provides a significant amount of animal protein to an increasing population representing on average over 40 percent of animal protein supplies. Despite these contributions, fisherfolk lead a precarious existence at or below the subsistence level. This is so because fisherfolk, like other segments of the populations, have undergone over the last decade prolonged periods of decline in per capita real income and real per capita consumption, increased poverty and social deprivation as a result of the general economic stagnation in the countries and the weakness of the population's purchasing power.

In the endeavour to combat these adverse conditions, the fishermen are taking every day more and more risks by seeking far distant fishing grounds but using the same fishing units or units that are unadapted for mid-offshore fisheries which is already a challenge for them.

Artisanal safety at sea like the artisanal fisheries sector in general has been for decades the object of neglect and misplaced policies in favour of the industrial fisheries sector. However Governments are now adopting a more realistic attitude to development more in tune with the needs of fisherfolk. In this regard Round Table Meetings and national seminars have been

organized in Senegal, Mauritania and Guinea on artisanal safety at sea. Senegal and Guinea also have specific administrations to handle issues related to the subject. Furthermore in Guinea, the Canadian Centre of Studies and International Cooperation (CECI) has executed a safety at sea project for 3 years; while the Office for the Promotion of Artisanal Fisheries (OPPA) in collaboration with CECI and the IDAF Programme in 1992 undertook with the active participation of fisherfolk surveys along the Guinean coast in the prefectures of Boke, Boffa, Dubreka and Conakry with a view to cataloguing the importance and possible causes of accidents at sea.

Thus with the exception of Mauritania, Guinea and Senegal very little activity on artisanal safety at sea has been carried out in the other countries. Nonetheless, conscious of the need to improve the security conditions of artisanal fisherfolk, participants at the IDAF Programme's Seventh Liaison Officers Meeting held in Cotonou, Benin in November 1993 asked the Programme to lay greater emphasis on matters related to artisanal safety at sea and also to look into the possibility of contributing to the setting up of sub-regional projects on safety at sea.

IDAF therefore in collaboration with the Department of Fisheries in the seven countries of the sub-region embarked on a methodical seeding of national safety at sea surveys. The surveys resulted not only in the production of a seemingly sad data base on the different types of accidents and their frequency but also on the importance of human and material loss as detailed in Table 1:

Table 1: Magnitude of Accidents at Sea in the Sub-region.

Country	Deaths	Accidents	Total cost of losses (DUS)	Survey Period	Number of registered fishermen	Annually Estimated number of deaths
Mauritania	63	42	334.572	1 month 1.1.94-31.7.94	10.000	(108 morts/year)
Senegal	50	11	228.794	91-94	48.182	0,03%
Cape Verde	8	0			7.000	0,03%
The Gambia	47	11	48.276	91-93		
Guinea Bissau	10	2	19.811	91-94 3 years 3 months		
Guinea	110	68	258.000	1989-1991/1992-1994	6.894	0,53%
Sierra Leone	129*	120	94.162	84-94	16.722	0,08%

* Figures are only indicatives, and often not complete.

A workshop was later organized in Banjul, The Gambia from 26-28 September 1994 with a total of - participants from the 7 countries together with representatives of CECI and IMO. The workshop reviewed the results of the national accident surveys, identified the fundamental

problems and examined information on the status of safety at sea activities in the different countries and also elaborated the present Project document.

B. PROJECT RATIONALE-JUSTIFICATION

Great changes have occurred in the artisanal fishing fleets of the sub-region over the past 15 years. These changes have come about mainly because of the development of new fisheries, the introduction of new fishing techniques and perhaps most importantly the increased reliance on engine power. Technological advances coupled with increasing participation in monetary economies have expanded the opportunities of fishermen to exploit their fishery resources. The widespread use of relatively new technologies including light weight outboard engines and marine plywood in some countries following the diminishing or the lacking of timber resources have been coupled with the gradual adoption of newer vessel designs and the concurrent mechanization of traditional small craft. These innovations have often enabled fishermen to make greater catches, to capture previously underexploited species, to reduce the time necessary for a fishing trip, or to improve the quality of their catch.

Unfortunately this development has quite often been accompanied with some unpleasant side effects at various levels. In the areas where fishermen have traditionally fished the number of exploiters has increased considerably; the fishing grounds have progressively become distant; fishery resources are becoming increasingly rare and the profitability of some types of fishing techniques is questionable.

One of the direct consequences of these side effects is that in countries with historical seafaring backgrounds there has been a gradual degradation of traditional navigational and seafaring skills over the years. The loss of such skills by fishermen in some places can be traced to the effects of modernisation but is also due to local beliefs. Even populations who were not necessarily as reliant on the sea have nonetheless been enticed by the economic opportunities presented by the new technologies and have been quick to embrace the innovations. Their adoption has injected another variable into an already marginally safe occupation and in many instances has heightened the chances of disaster at sea.

The result is the high debt that artisanal fisheries pay each year to the sea, as a result of repeated accidents and wreckages which range from a simple capsizing of boats with no serious consequences to a fatal collision between small and large boats. In addition to these, we have injured persons, engine failure, fire outbreaks, the destruction and loss of material and equipment, quarrels and fights between fishermen. These and many other damages call attention to the permanent risk that exists in the maritime environment.

Perils at sea may be due to natural causes, to insufficiencies that are linked to the performance of equipments, or to professional inadequacies or faults.

The progressive farness of fishing grounds has greatly contributed to accidents and even conflicts at sea. Fishermen now have equipments with better autonomy and hence fish in distant areas. Sometimes these boats which are in someway floating bombs are stowed with hundreds of litres of fuel and sail several hundred kilometres from their mother port. A good example are boats that ply between Senegal and Guinea without any signal systems, no extinguishers and

have no contact with the continent. The risk of a fire outbreak, of drifting at sea, of running out of fuel, or of engine failure always exists and without security measures such situations might be fatal.

Furthermore, the fatalism of many fishermen admit themselves to brave inclement weather or conditions such as sandriffs, heavy storms, river mouths etc. with little or no protection. This attitude is ingrained in the minds of fishermen and is difficult to change.

Several examples exist of human and material losses. For example in 1992, there were 60 recorded cases of deaths and the equivalent of 150 millions francs CFA or about $500 000 of material loss in Senegal ($ 1 = 300 CFA). On July 28 1993, a heavy storm stroke Gunjur village in the Gambia. Although there was no loss of human life, property lost is estimated at 1.8 million Dalasis or about $200 000 ($1 = 9 Dalasis). In Guinea between 1989 - 1991, there were 225 reported accidents with 110 recorded cases of deaths together with considerable material loss in the 4 coastal prefectures of the country.

Furthermore, the subject of safety on artisanal fishing craft has received little attention in past fisheries development projects. There are also no international conventions which provide requirements or guidelines in safety standards for design, construction and equipment of fishing vessels the size and type of which are generally used by artisanal fishermen. Within the sub-region, national legislations are rather thin on the matter of safety of small boats.

Safety at sea is therefore a major problem and there is a need to seek ways to promote the presence of safety equipment on board and to use them, to influence the organisation of providing help and rescue service at sea and on a medium term basis devise insurance systems that are adaptable to small scale fisheries.

The raison d'être therefore of the present project is to create an awareness of the existing safety situation in the sub-region and to propose and introduce potential improvements in safety at sea for small scale fishermen and others involved in the sub-sector.

C. STRATEGY OF THE PROJECT.

The Project's strategy will consist in sensitizing the Governments and the population at large on a recurring basis, through publicity campaigns, repeated and reinforced over a long period of time to heighten awareness of safety requirements in the artisanal fisheries sector. Consideration will be given to publicity campaigns directed to developing and maintaining an awareness of requirements for safety at sea in young people in schools within fishing communities.

Cadres of the Fisheries Departments, the local population and staff of other administrations working directly with fisherfolk will receive training on the basic elements required for a safer artisanal sea going activity. Technical demonstrations on the manufacture (where applicable) and use of safety equipments will be one of the major training techniques.

These demonstrations will be geared to achieving maximum impact with modest inputs using appropriate methods and approaches, particularly participatory approaches.

IDAF Fellows will be a key element of the Technical Cooperation between Developing Countries (TCDC) and this will be reinforced by the Project working with and through national Fisheries Departments, specialized services and agencies working in the various fishery related fields; in particular: the envisaged Sub-regional Monitoring, Control and Surveillance (MCS) Programme being experimented by Lux-Development, national MCS units, the Merchant Navy and existing projects. This will permit coordination of activities particularly with regards to search and rescue operations.

Sub-regional collaboration with be enhanced through regular meetings of experts on safety at sea; triangular linkages with institutions, projects and relevant NGOs.

These strategies will contribute to improving the human competence at the local, national and sub-regional levels as well as ingrain in fisherfolk a high sense of empowerment thus ensuring the sustainability of the actions undertaken.

D. THE MAIN THRUSTS AND THEMES

Although the basic problems of Safety at Sea are common to all the seven countries, it is also recognized that their level of complexity and local conditions vary considerably, each country possessing a unique set of circumstances relating to safety at sea. The activities to be undertaken will therefore be tailored specifically for each country. In general, however, the main thrusts and themes to be covered by the Project are summarized in the table 2.

Table 2: Main thrusts and themes to be covered by the Project.

Thrusts	Public Awareness and Education	Technology Transfer and Assistance	Policy and Planning
Themes	▪ Publicity campaigns	▪ Maintenance and repair of vessels	▪ Registration schemes
	▪ Cataloguing and Monitoring of accidents	▪ Maintenance and repair of outboard motors	▪ Inspection schemes
	▪ Extension Methodologies	▪ Maintenance and use of Life Saving Aids (LSA)	▪ Acquisition and maintenance of Equipments and spare parts
	▪ Issues of Participatory approaches	▪ First Aid and Survival Skills	▪ Information Service
	▪ Training	▪ Use of radio and simple navigation equipments	▪ Legislation
		▪ Manufacture of LSA	
		▪ Search and Rescue	▪ Insurance
		▪ Monitoring Control and Surveillance (MCS)	
ACTIVITIES TO BE CHOSEN			
Key Experts	- Extension specialist - Specialist in Safety at Sea	- Specialist in Safety at Sea - Extension specialist	- Specialist in Safety at Sea - Extension specialist
APOs	- Socio-Anthropologist	- Socio-Economist	- Monitoring & Evaluation
COMMUNICATION SPECIALIST (NATIONAL RECRUITMENT)			
IDAF FELLOWS			

E. DEVELOPMENT OBJECTIVE

To create an awareness among Governments and the public at large on issues of artisanal safety at sea and to propose and implement potential improvements in the safety of fisherfolk in the sub-region.

F. IMMEDIATE OBJECTIVES OUTPUTS AND ACTIVITIES

Objective: 1 To assess the magnitude of safety problems confronting artisanal fisherfolk.

Output 1.1 a repertoire of fishermen and fishing vessels established in the countries where it does not exist

Activity:	1.1	preparing the data base sheets
Activity	1.2	testing the instruments
Activity	1.3.	training of enumerators
Activity	1.4.	conducting the survey
Activity	1.5.	analyzing the information
Activity	1.6.	preparing the results.

Output 2.2 a national catalogue of accidents at sea set up in the different countries

Activity:	2.1	revamping the questionnaire
Activity	2.2	training of enumerators
Activity	2.3	conducting the surveys
Activity	2.4	analyzing the information
Activity	2.5	preparing the reports.

Objective 2 To create awareness through publicity campaigns on issues related to artisanal safety at sea.

Output: 2. 1 Government, and public at large particularly fisherfolk and small scale transporters sensitized on the problems and requirements of safety at sea and on-shore.

Activity	2.1.1	identifying the major types of disasters
Activity	2.1.2	preparing of publicity materials
Activity	2.1.3	contacting mass media services
Activity	2.1.4	testing the publicity materials
Activity	2.1.5	technical demonstrations at sea and on shore
Activity	2.1.6	translating publicity materials into Vernacular languages
Activity	2.1.7	diffusion of material
Activity	2.1.8	preparing report on lessons learned.

Output 2.2 the competent safety at sea administrations provided with information for use in the development and organization of safety at sea matters.

Activity	2.2.1	a state of the arts (review) of safety at sea in the sub-region
Activity	2.2.2	a study on the costs of a coastal fishing unit or transport unit equipped with recommended emergency materials
Activity	2.2.3	a study on the needs of equipments and spare parts for the seven countries
Activity	2.2.4	a review of existing legislation and proposals for standardized legislation for the 7 countries

Activity	2.2.5	a review of existing search and rescue procedures making proposals for introduction or improvements
Activity	2.2.6	a study on the need and practical modalities of marine insurance schemes for small scale fisheries operators
Activity	2.2.7	a study of the main lessons learned from the project.

Objective 3 **To improve the competence of safety at sea (SAS) trainers and eventually local operators in issues related to artisanal safety at sea.**

Output 3.1 a nucleus of SAS trainers available in each country.

Activity	3.1.1	identifying the needs (maintenance and repairs of vessels and engines, manufacture and use of LSA, use of radio and other navigation equipment, first aid skills etc;)
Activity	3.1.2	preparing training handbooks
Activity	3.1.3	selecting participants
Activity	3.1.4	organising national training courses
Activity	3.1.5	translating training handbooks in to vernacular languages
Activity	3.1.6	providing in the field support
Activity	3.1.7	publishing report on lessons learned.

Output 3.2 local craftsmen trained in the manufacture of certain LSAs and safety equipment.

Activity	3.2.1	identifying the needs
Activity	3.2.2	inventory of local materials
Activity	3.2.3	selecting participants
Activity	3.2.4	training of participants
Activity	3.2.5	backstopping participants
Activity	3.2.6	control test of LSA and equipment
Activity	3.2.7	diffusion and valorisation of LSA/equipment

Output 3.3 local mechanics and fisherfolk trained on basic maintenance and repairs of out board engines.

Activity	3.3.1	identifying major shortcomings/problems
Activity	3.3.2	identifying participants
Activity	3.3.3	training the mechanics
Activity	3.3.4	backstopping mechanics
Activity	3.3.5	publishing a report on lessons learned.

Output 3.4 local boat builders trained in appropriate techniques for building sturdier and safer crafts.

Activity	3.4.1	identifying the needs

Activity	3.4.2	selecting participants
Activity	3.4.3	training the builders
Activity	3.4.4	backstopping the builders
Activity	3.4.5	publishing a report on lessons learned.

Output 3.5 fishers provided first aid skills

Activity	3.5.1	identifying the needs
Activity	3.5.2	awareness and information actions
Activity	3.5.3	technical demonstrations
Activity	3.5.4	preparing the reports.

Output 3.6 local operators trained in the use of radio and others navigation equipment.

Activity	3.6.1	prepare appropriate technical documents in vernacular languages.
Activity	3.6.2	train the personnel involved in the radio communication procedure
Activity	3.6.3	training in radar operation and interpretation
Activity	3.6.4	training in alarm procedure for starting a research at sea operation
Activity	3.6.5	produce a monthly report on the activities carried out and work plan progress and submit it to the project manager.

Objective: 4 To improve information and experience exchange related to issues on safety at sea.

Output 4.1. reports and articles published and widely distributed.

Activity	4.1.1	gathering information
Activity	4.1.2	writing report
Activity	4.1.3	publishing and distributing report.

Output 4.2 study tours organised in the sub-region.

Activity	4.2.1	identifying potential candidates and subject matters
Activity	4.2.2	organising study tours
Activity	4.2.3	accepting mission reports

Output 4.3 project steering committee meeting organized two times a year.

Activity	4.3.1	organising the meeting
Activity	4.3.2	holding the meeting
Activity	4.3.3	preparing and distributing report

Objective 5. To promote sub-regional collaboration in development work related to safety at sea

Output 5.1 linkages established with specialized services, agencies, NGOs, projects and institutions.

Activity	5.1.1	identifying specialized services, projects etc.
Activity	5.1.2	undertake collaborative initiatives
Activity	5.1.3	exchange of information
Activity	5.1.4	preparing joint reports

Output 5.2 consultants of the region are hired for short missions in the participating countries to the Project (IDAF Fellowship)

Activity	5.2.1	identifying qualified candidates
Activity	5.2.2	prepare and update regularly an inventory of available expects in the sub-region and in IDAF Programme
Activity	5.2.3	organizing, conducting and reporting on training courses for IDAF Fellows
Activity	5.2.4	identifying the needs and proceed to recruiting IDAF Fellows
Activity	5.2.5	accepting and publishing, reports.