



MedFisis

Fishery Statistics and
Information System in
the Mediterranean

The present status of fishery and information system in Egypt

**Enabling Participation in the fishery statistics and information
system in the Mediterranean (TCP/INT/2904)**



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Abstract: This document contains the report on statistics status and information system in Egypt. The report was prepared by Eng. Seham Abdallah Fayed, national expert in statistics and Eng. Ahmed Mohamed Salem, national professional in programming. The document was prepared for the MedFisis project. This document is based upon the annual report of GAFRD and interviews with workers in the fishery industry.

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1 Introduction

The General Authority for Fish Resources Development (GAFRD) established by the presidential decree number 190 for year 1983. GAFRD is the only responsible governmental authority for fish sector in Egypt, issues licenses for aquaculture farms, fishing units, fishermen, fish cooperation sector and to assure that fisheries decrees are respected from fishermen. GAFRD have it's own executive police departments "environment guard" and the coast guard which control Egypt border.

The Mediterranean fishery has been influenced by the construction of the High Dam at Aswan in Upper Egypt. The reduction in the outflow of nutrients carried by Nile reduced the production of sardine and shrimp. However, it seems that when the outflow from the Nile increases, total production increases as was the case in 1998 and 1999. It should be noted that the decreases in the Mediterranean sea fishery have been compensated by the creation of the world's largest man-made lake, Lake Nasser as a new fishery resource for Egypt. Egypt fleet in 2002 consisted of 3812 powered vessels of which 1337 are trawlers, 1676 long liners, 447 vessels use trammel nets, 342 purse seines and 10 use a variety of other gears. The main species landed from the Mediterranean are Sardine, Mullet, Shrimp, Silverside and Shells nei.

2 Overview of general country information

2.1 Geographic, demographic and international context

Location: Northern Africa, bordering the Mediterranean Sea, between Libya and the Gaza Strip, and the Red Sea north of Sudan, and includes the Asian Sinai Peninsula.

Geographic coordinates 27°00' N, 30°00' E, Area total: 1 001 450 km², land: 995 450 km² water: 6 000 km².

Maritime claims:

- contiguous zone: 24 NM
- territorial sea: 12 NM
- continental shelf: 200-m depth or to the depth of exploitation exclusive economic zone: 200 NM

Climate: Desert; hot, dry summers with moderate winters

Elevation extremes:

- lowest point: Qattara Depression -133 m
- highest point: Mount Catherine 2,629 m

Population: 67 976 000 (July 2003 est.) exclude Egyptians abroad, source Central Agency for Public Mobilisation And Statistics "C.A.P.M.A.S"

2.2 Economy – overview:

Egypt improved its macroeconomic performance throughout most of the last decade by following IMF advice on fiscal, monetary, and structural reform policies. As a result, Egypt managed to tame inflation, slash budget deficits, and attract more foreign investment. Lower foreign exchange earnings since 1998 resulted in pressure on the Egyptian pound and periodic dollar shortages. Monetary pressures have increased since 11 September 2001 because of declines in tourism and Suez Canal tolls, and Egypt has devalued the pound several times in the past year. The development of a gas export market is a major bright spot for future growth prospects.

2.2.1 GDP - composition by sector:

- agriculture: 17%, 8% of them from fisheries.
- industry: 34%
- services: 49% (2001)

2.2.2 Administrative divisions

26 governorates (muhafazat, singular - muhafazah); Al- Daqahliyah, Al Bahr al Ahmar, Al Buhayrah, Al Fayyum, Al Gharbiyah, Al Iskandariyah, Al Isma'iliyah, Al Jizah, Al-Minufiyah, Al Minya, Al Qahirah, Al Qalyubiyah, Al Wadi al Jadid, Ash Sharqiyah, As Suways, Aswan, Asyut, Bani Suwayf, Bur Sa'id, Dumyat, Janub Sina', Kafr ash Shaykh, Matruh, Qina, Shamal Sina', Suhaj



2.2.3 International organization participation:

ABEDA, ACC, ACCT, AfDB, AFESD, AL, AMF, BSEC (observer), CAEU, EBRD, ECA, ESCWA, FAO, G-15, G-19, G-24, G-77, IAEA, IBRD, ICAO, ICC, ICCT (signatory), ICRM, IDA, IDB, IFAD, IFC, IFRCs, IHO, ILO, IMF, IMO, Interpol, IOC, IOM, ISO, ITU, MINURSO, MONUC, NAM, OAPEC, OAS (observer), OAU, OIC, OSCE (partner), PCA, UN, UNAMSIL, UNCTAD, UNESCO, UNIDO, UNITAR, UNMIBH, UNMIK, UNMISSET, UNMOP, UNOMIG, UNRWA, UPU, WCO, WFTU, WHO, WIPO, WMO, WToO, WTrO

3 Fishery Administrative Structure

3.1 National, sub-regional, and regional structures:

The General Authority for Fish Resources Development (GAFRD) has 7 sites covering Egypt, each site covers two or more governorates as follows:

Western Site "Gharbia" for Fish Resources located in Alexandria and supervising Matruh, Alexandria, Al Buhayrah governorates and all fishery activities.

Med-Delta Site for Fish Resources located in Kafr El Shiekh and supervise Kafr El Shiekh, Menofia, Qalubia and Gharbia governorates with all fishery activities.

Damietta Site for Fish Resources located in Damietta and supervise Damietta, El Sharkia and Dakahlia governorates and all fishery activities.

Eastern Department for Fish Resources located in Port Said and supervise Port Said, Isamilia and North Sinai governorates with all fishery activities.

Red Sea Department for Fish Resources located in Suez and supervise Suez, South Sinai and Red Sea governorates and all fishery activities.

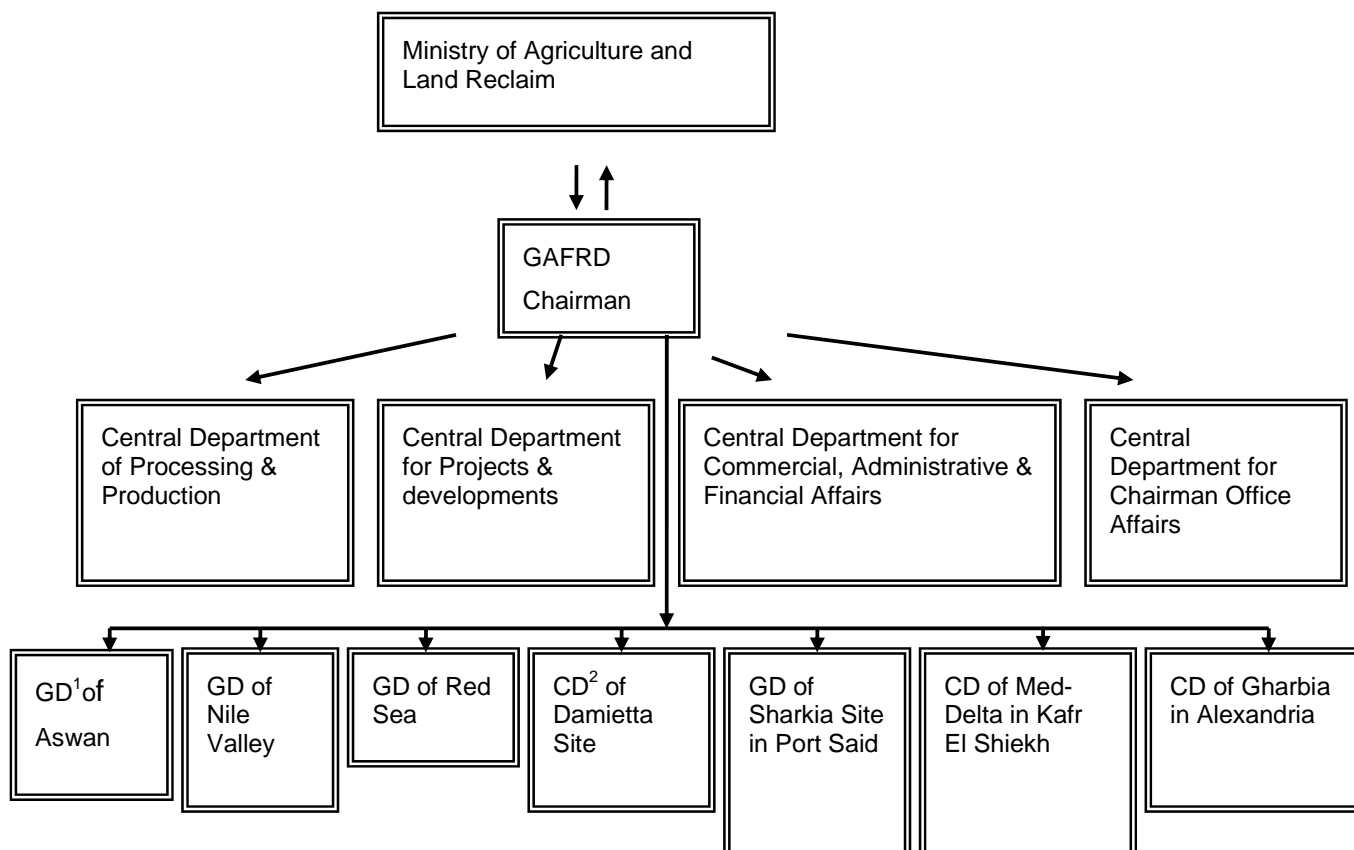
Wadi El Nile Department for Fish Resources located in Faium and supervise Cairo, Giza, Faium, Beni Suef, Elmina and Asuit governorates with all fishery activities.

Aswan Department for Fish Resources located in Sohag and supervise Sohag, Qena and Aswan governorates and all fishery activities.



3.2 National Fishery Organizational Chart:

Figure (1) describe the structure of GAFRD sites.



¹General Department

²Central Department

3.3 Fishery laws and obligations vis-a-vis the statistical issue:

Presidential Decree 190/1983: The decree forms the General Authority For Fish Resources Development (GAFRD) which aims to the development of national economy in fishery sector and establishment of projects that lead to vertical-extension and horizontal-extension in this sector.

Presidential Decree 465/1983: Defining the water- surface in which GAFRD supervises and controls.

Decision NO. 70/1986: This decision relates to the renting of land allocated by GAFRD for the establishment of fish culture and hatcheries.

Decision NO. 431/1987: It determines the rules to obtain Licenses of fish culture.

Decision NO. 203/1988: It is about estimating the rental value to all lands within 200 m of shorelines.

Ministerial Decree NO. 1043/1990: Stop renewing rental contracts in all areas around Tra'at- El Salam and complete all basic construction projects in these areas .

Publication NO. 40/1996: Demonstrates some problems that face officials in carrying out the rental value of fishing farms' instructions and solutions of it.

Decision NO. 399/2002: Concerns with the instructions of establishing fish cages.

Ministerial Decree NO. 2654/2003: It is about the period of lease of fish farming.

Ministerial Decree NO. 2655/2003: Prevents the use of "testosterone hormone" in hatcheries for its harm on health.

Ministerial Decree NO. 2656/2003: Any renting or selling aquaculture farms should be done under supervision of GAFRD.

3.4 Roles and responsibilities

The General Authority for Fish Resources Development (GAFRD) is the only responsible governmental authority to collect fisheries data, establish fisheries laws and decisions, control the fishery cooperation sector, establish fishing licenses for both fishermen and fishing vessels.

GAFRD is responsible to develop the closed lakes by stocking them with fingerlings of marine fish species, e.g. mullets nei (*Mugilidae*), Gilthead seabream (*Sparus aurata*), European seabass (*Dicentrarchus labrax*), Common sole (*Solea vulgaris*) and shrimps nei, penaeus (*Penaeus spp*).

GAFRD is the only authorized to collect brood stock or seed from natural populations, follow up governmental hatcheries and aquaculture farms issues and renew aquaculture private farms licenses, establish the annual reports which include the statistical tables in Arabic and English.

GAFRD, free of charge, helping the private sector with research, feeding, technical support and information departments through qualified employees, experts and publications.

GAFRD also is responsible for huge and expensive projects which affect the development of fishery sector such as cleaning the streams between the Northern lakes and the Mediterranean and establish fishing ports.

Fishing resources and aquaculture represent a considerable economic riches in Egypt. It has got more than 2 450 km. of coastline beside about 6 000 km² of inland water area. These riches exploitation produce about 425 170 mt of different fish species (GAFRD, 2002).

3.5 The Present National Fishery Survey Programme

3.5.1 Ongoing research activities

Egypt has more than 20 universities beside some institutes such as SADAT ACDEMY, Arabic Academy for science and Technology, German University in Cairo, American University in Cairo, French University in Cairo, 6 October University, Asuit University, Azhar University, Alexandria University, Zagazig University, Modern Science University, Cairo university, Mansora University, Menofia University, Elmina University, South Valley University, Helwan University, Tanta University, Ain Shams, Suez Canal University, Misr International University and Misr University for science and Technology. Most of them have Science, Agriculture and veterinary colleges each of those collages have a fisheries section and each section make some of the following researches:

1. Aquaculture studies.
2. Ecology of Egyptian water.
3. Ecological studies on Egyptian lakes.
4. Physiological studies on fishes.
5. Geological studies on Red Sea.
6. Fish feeding.
7. Fish rearing.
8. Classification of fishes.
9. Production of mono-sexual tilapia.
10. Fish manufacture.
11. Natural and chemical properties of water.
12. Micro-organism in Egyptian water.
13. Chemistry and pollution of water.
14. Chemical structure of Egyptian water.

It's difficult to have detailed information about those researches.

3.5.2 Fisheries statistical system

The General Authority for Fish Resources Development GAFRD (through its hierarchal system) is responsible to do the following:

- Setup a statistical system covering the landing sites for marine and lake catches and most of the River Nile landing sites because River Nile canals and detaches are too long and too many to control thru GAFRD statistical system, beside some fishermen sell directly to the customers along the shores of Nile.
- GAFRD Establish the licenses for fishing units which allow all fishermen on board to use the unit beside establishing another licenses for fishermen without fishing units and amateurs and renew them every January.
- Register all fishing units in a registration book describe fishing units (length, horse power, fishing gears and fishermen names) for each fishing unit.
- Record all landing quantities (after making the necessary classifications) in a daily book.
- Collecting daily data in a monthly list according to species, amount and landing site.
- The manager of each catch office send the monthly data to the central statistical department in GAFRD.
- The Central Statistical Department in GAFRD establish statistical tables for catch production for each landing site and production area.
- The Information Department register the data on a computer application, establish the annual statistical report in English and Arabic beside some specific publications.
- The information department analyses the data present it in a graphic presentation to the higher management.
- GAFRD is responsible to train the whole staff working in the statistical field.

3.5.3 Biological fishery surveys

Egypt have a numerous research activities done by *Science, Agriculture and veterinary collages* in Egypt universities, next we will try to point out some of them:

1. Effect of pollutants on aquatic organisms.
2. Biology of fishes and fisheries.
3. Studies on biology of sea fishes and fresh water fishes.
4. Effect of pollutants and their bio-concentration in different tissues of fishes.
5. Biology of reproduction in different types of fishes.
6. Biology of invertebrates in Egyptian water.
7. Effect of pollutants on fish life.
8. Biology and ecology of Red Sea and Suez fishes.
9. Biology of Bardawil Lake.
10. Biology of Lake Naser.

3.5.4 Economical or socio-economical surveys

Economical or socio-economical surveys done by Social, Economical and Co-operatives faculties, colleges and some institutes:

1. Statistical system including production and fishing effort (Bardawil).
2. Evaluation of natural mortality ratios which result from fishing processing (Bardawil).
3. Study of effects which affect on fish production.
4. Economics of fresh water fish consumption in Egypt.
5. Energy and economical efficiency of different ways of fishing in Egypt.
6. Evaluate of fish stock in Egyptian water (Red Sea, Mediterranean Sea and Lake Naser).

3.5.5 National and international synergies

National and international synergy with other complementing interventions:

Egypt co-operate in many workshops, seminars and conferences concerning fisheries sector. Egypt founding most of the regional bodies such as MEDRAP I, MEDRAP II, GFCM and it's sub-committees, MedFisis and always welcome any new projects under the umbrella of United Nations and FAO.

Egypt signed international agreements and has a regional co-operation with Islamic Republic of Mauritania, Kingdom of Morocco, Eritrea, Yemen, Uganda, Tunisia, Sudan, Somalia and Libya.

3.6 The Present Statistical System:

3.6.1 Introductory considerations

The General Authority for Fish Resources Development (GAFRD) established by the presidential decree number 190 for year 1983. GAFRD is the only responsible governmental authority for fish sector in Egypt and the only confidential source for statistical and fisheries information. The Central Agency for Public Mobilization And Statistics (C.A.P.M.S) issue the yearly book depending on GAFRD data. GAFRD and CAMPS circulate this data locally and international.

3.6.2 Objectives

The main objectives are collecting reliable fisheries data, acceptable in both quality and quantity, GAFRD supervise hundreds of offices covers Egypt from side to side with a professional staff in fresh, brackish, marine water, co-operative society, hatcheries, aquaculture, fishing units and fishermen.

GAFRD collects fisheries data by two methods (Whole survey and Sampling):

Whole survey collecting system:

This system not computerized yet and depend on register every fishing unit in a special Log book which describe its kind, the unit name, its serial number, the name of the owner/owners and his/their (basic information and shares), the responsible leader, the length of the boat, the engine power by HP, the total number and names of the fishermen registered to work on deck.

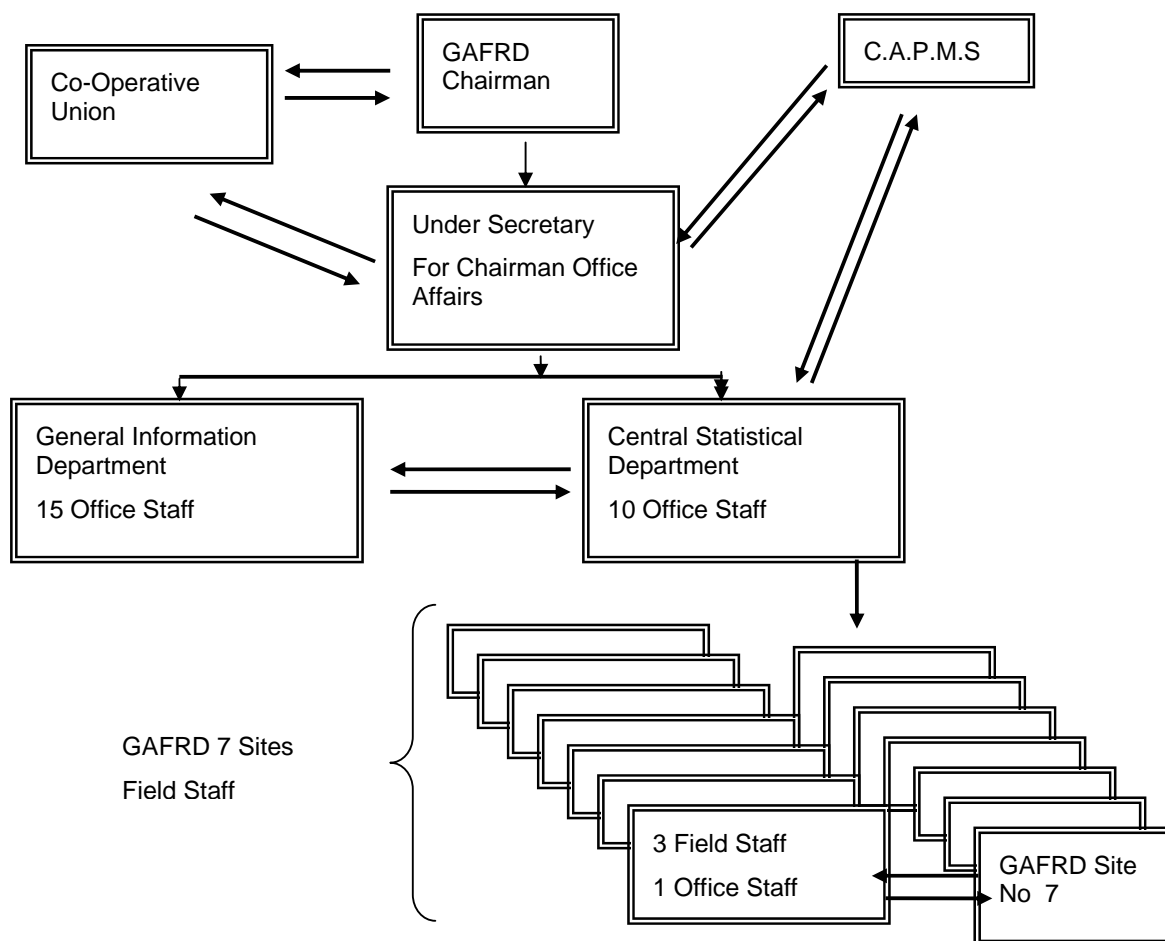
- Register the daily harvest for each unit by quantity and species on every official landing site.
- River Nile and its branches, canals and drainages daily harvest quantity registered by species and landing sites, small collecting sites, markets, whole sale markets and markets brokers, by the co-operative selling receipts which include the price of each quantity had been fished and this process is doing daily and recorded in special books at every co-operation landing site.
- Each statistical office send a monthly report to the Central Statistical Department and a yearly report before February of the next year.
- The Central Statistical Department prepare tables covers the production on a yearly base by species, quantities for each landing site.

Random Sampling System: (not computerized yet)

- The Central Statistical Department prepare all the needed questionnaires and with the technical specialist from (GAFRD), supervised by specialist PhDs, check the entire statistical process and ensure the quality and quantity of the collected data and solve any problems may appears.
- The General Department of Information enter all the data comes from the Central Statistics Department electronically into the computer, prepare the statistical reports in Arabic and English.
- The General Department of Information establish the necessary reports needed to the upper management.
- GAFRD presents all statistical reports for decision-makers, planners, investors, and researchers.

3.7 Staffing, office and field staff:

Figure (2) show the staffing in GAFRD Cairo and fields.



3.7.1 Financial considerations

The only financial source for statistical surveys and data collecting comes from GAFRD budget under develop statistical system, it should cover the staff transportation, overtime, stationary and misalliance.

3.7.2 Achievements and results

The achievement is to provide the decision-makers, planners and researches with accurate, reliable and timely information to allow making future work strategies, and to develop needed policies with the purpose of the upgrading the sector as well as maintaining the sustainability of fisheries sector development for the future.

Evaluate the available data, data collection and registration system, types of registration and statistical reports produced, and personnel responsible in each stage of collection.

Develop a manual system, to collect data on different aspects of the fishery industry in selected Egyptian governorates using standard data collection forms.

Determine the data flow from different selected governorates to the H.Q of GAFRD in Cairo.

Develop a computerized information system to store and retrieve different data, and produce the required reports to the end-users.

Implement a computerized fishery information system, testing, debugging and documentation.

Produce regular periodicals on different aspects for the end-users.

The results available from the current information system as the follow:

- Introducing an accurate and effective data collection system reflects the actual situation of the fisheries on a regular and systematic basis.
- Retrieval of accurate data using computerized network with sufficient storage capacity and minimum risk of losing or destroying the data.
- Available data bank fulfil the needs of decision-makers, planners, investors and other users in a uniformed and standardized fashion.
- Information system management ensure integration between the content of the system's files, produce the required reports, rapid retrieval of the information system's content.

4 Marine Fishery Sector:

4.1 Brief overview

The fishery sector is one of the most important sector in the economic structure of Egypt. The investment in fishing units represent more than on billion Leg. (about 19 741 966 US\$), (Source Cooperation Union for Fish Resources, 2003).

The fisheries national income represent about 10% of the national income from agriculture. The total agriculture production in 2001 was 7 457.3 million US\$ (59.9% of the total national production), the animal total production was 4 000.5 million US\$ (32.12% of the total national production) and fish production represent about 999 million US\$ (about 8% of the national production).(GAFRD 2002).

Number of marine fishing vessels using different gears in 2002

Gears	Trawling	Purse Seine	Long Line	Trammel	Others	Total
Sources						
Mediterranean	1159	234	1021	447	10	2871
Red Sea	178	108	655	-	-	941
Total	1337	342	1676	447	10	3812

(Source GAFRD, Annual Statistic Report, 2002)

In year 1995 the total licenses for Mediterranean fishing units was 1 852 beside 1 631 sail boats and about 29 837 licenses for fishermen. In year 2002 the total licenses for Mediterranean fishing units was 2 871 beside 4 526 sail boats and about 22 337 licenses for fishermen (GAFRD, 2002).

The recorded fishermen through the fishermen cooperation system about 90 055, and non cooperation licenses about 11 748. Besides about the same number of fishermen not registered officially and working in the fisheries sector (manufacturing, transportation, suppliers, preparations, net and equipment manufacturing, fishing units manufacturing and maintenance, vessels power unit maintenance.

The average of fishermen families about 5 persons which tell us that the total fisheries society contains about one million persons.

The sector has to be consolidating by a perfect and a suitable industrial basis, which allow to guarantee a durable equilibrated development even for the activities before and after the production operation. Most of fisheries industries are medium or small size. It is summarized in:

- Building, repairing and maintaining the fishing equipment.
- Mechanical maintenance of fishing boat and marketing of spares.
- Consolidating means used to keep the fishing units in the ports.
- Establishing companies for conditioning, transforming and marketing the product.

- Organizing the national Chamber of Fishing and aquaculture, as well as the National Assembly of Fishing.

Egypt's fishery sector continuously undergoes biological, ecological and socio-economic changes that are not fully documented. In addition, there is an evident absence of an adequate information system that provides credible fisheries data for government officials, industry executives and other decision makers.

Recent estimations of the Maximum Sustainable Yield (MSY) for marine and inland fisheries are not available. The increase in the landings from some resources should be looked upon with reservation. Further confirmation of these statistics is urgently required.

4.2 The main components of the Marine Fishery

The Mediterranean Sea has a coastline of about 1 100 km long, extending from Sallum in the west to Rafah in the east. The continental shelf of 200 m deep. From Sallum to Alexandria about 600 km length with 10-100 m deep, From Alexandria to Port Said about 300 km in length with a maximum of 70 m long in front of the Delta then from Port Said to Rafah about 200 km length.

GAFRD supervises the fishery activities through nine census located in four Sites:

Western Site "Gharbia" for Fish Resources located on Alexandria and supervise Matruh, Alexandria, Al Buhayrah governorates and all fishery activities.

Kafr El Shiekh Site for Fish Resources located in Kafr El Shiekh and supervise Kafr El Shiekh, Menofia, Qalubia and Gharbia governorates with all fishery activities.

Damietta Site for Fish Resources located in Damietta and supervise Damietta, El Sharkia and Dakahlia governorates and all fishery activities.

Eastern Department for Fish Resources located in Port Said and supervise Port Said, Ismailia and North Sinai governorates with all fishery activities.

The Red Sea are based on a long-standing traditional (artisanal) fishery where coral reefs spread along the Red Sea Coast and Gulf of Aqaba, with relatively shallow fishing grounds (maximum 70 m depth) with flat sandy bottoms in the Suez Gulf. The narrow, reef-rich continental shelf of much of the coastline is suitable only for artisanal fishing with hook and line or inshore set net. There are 4 fisheries census along the Suez Gulf, 6 along the Red Sea Coast and 3 along the Gulf of Aqaba. There are only two developed fishing ports (Suez and Hurghada).

4.3 The data collection programme

- Data collected in different census as previously reported, then sorted according to species, quantity and landing site.
- Collecting the daily catch data, delivered the reports to the statistical site office and then in a monthly report sent to site office leader to review and sign.
- The recorded quantities of each region in a three months report delivered to the Central Statistical Department in Cairo.
- The Central Statistical Department in Cairo at the end of each year prepare a total quantities of the each region by species, landing site and month.
- The Central Statistical Department in Cairo establish a yearly based tables deliver them to the General Information Department.
- The General Information Department check the tables, enter the data electronically and produce all necessary statistical analysis.
- The General Information Department comprise the quantities of each region with previous years.

4.4 Information exchange between offices/institutions

GAFRD is considered the only governmental authority for fish sector in Egypt cooperation and information exchange take place between GAFRD and other authority enhance the fish sector level ,among these authorities:

National Institution of Sea and Fisheries Science (NISF): responsible for most research objectives which carried fishery field.

Central Agency for Public Mobilization and Statistics (CAMPS): responsible for general governmental statistics.

Ministry of Supply and Interior Trading (MSIT) responsible for control prices, handling, marketing, and fish import.

Fish Marketing Company responsible for handling, transportation, distribution of fishes from different resources and Lake Naser.

Authority of lake Naser development responsible for development of lake Naser fisheries also it includes fisheries development center which consists of two major departments:

Fisheries Research Department which study fish stock, environmental studies, and fresh water aquaculture.

Fisheries Development Department which supervise Lake Naser fleet, fishing gears, handling, manufactory, ports and hatcheries.

4.5 The system design and its implementation plan

Data of specified fish production are collected in questionnaires which designed by Central Statistical Department.

Workers in Central Statistical Department follow the work in different regions all round the year.

At the end of each year, final statistical tables of fish production are established in addition to knowing numbers of motorized and non-motorized boats which help in fishing.

At the same time, fish production data are collected in details through using random sample questionnaires for 8 days/month (2 days/week).

Comparison between random sample and final statistical tables of fish production takes place.

4.6 Catch disposition

As soon as the fishing unit collects the net the fishermen on deck classify the production in 12:25 kg capacity boxes (according to different species and size).

Some crushed ice used on vessels to deliver the boxes in a good condition to the landing sites.

Some governorates insist on keeping a definite percentage for internal consumption, the rest go to the whole sale markets in Cairo, Giza and Tanta (Mid-Delta).

From the whole sale markets the brokers, wholesalers and retail dealer and consumer have their needs.

5 Last Completed Fishery Census (2002)

5.1 Objectives and coverage:

GAFRD have fishery census covers most of Mediterranean Sea and Red Sea and some of the Inland landing sites. Collecting statistical information concerning the quantity and species is the main purpose of those census.

5.2 Fishing fleet census results

Fishing fleet comes in two types:

Motorized vessels:- are fishing unite equipped with fixed engine motors, they are using gears like trammel, trawling, hock line, seine purse, and others.

Sails (non-motorized vessels) comes in their three levels (first, second, third).

Some of the first class sail units uses portal motorized engine (up to 20 HP).

5.3 Main data elements

Questionnaires of fishing units include:

Permanent Registry Certificate for Egyptian Ship issued by Ministry of Maritime, Ports and Lighthouses Administration, Central Department of Maritime Inspection include (No., Date and Port of Previous Registry, Registration Number and Date, Port of Registry, Official No., Name of Ship, Name and address of Shipyard, Date of Build, Place of Build, IMO No., Description of Ship, Length Over All, Build, Register Net Tonnage,

Register Gross Tonnage, Particular of Propelling Power (B.H.P., place of origin, Description, Type and Serial No.), Owner/Owners Name, Occupation, Residence, Issue Date and Shares in 24 Kirats).

Fishing License issued from GAFRD and includes (GAFRD Site and Office, License No., Fishing Area, Gears Used, Permanent Registry Certificate "Vessel Name, Engine Serial No., Engine Model Registration No., Date, Registered Port, Vessel No., License No. and Date", Ownership Date "Owner Name, Share, ID Data, Fishing License Data, Co-Operative Data").

Navigation License issued by Ministry of Maritime, Ports and Lighthouses Administration, Central Department of Maritime Inspection and include (Crew total No., Fishing Area, Owner Name, Vessel Name, Registration No., Date and Port, Gross weight, Net Weight, Starting Activation Date, End Date).

Engine Release issued by Ministry of Maritime, Ports and Lighthouses Administration, Central Department of Maritime Inspection and include (Owner Name and Address, Vessel Name, Registration Port, Registration No. and Date, Gross Weight, Net Weight, Engine Owner, Engine Description, Inspection Date and Place).

5.4 Small-scale (Artisanal) Fishery

The Mediterranean fleet consists of 2 871 engine vessels, about 1 612 with less than 100 hp engine power and 1 198 with less than 250 hp engine power and 61 with engine power more than 250 hp. Besides the mentioned vessels with an engine, there are also 1655 vessels without an engine (wind or oar propulsion). Most of the Mediterranean fleet is considered small-scale (artisanal).

5.5 Commercial (Industrial) Fishery

Some of the commercial (industrial) fleet in the Mediterranean according to regional agreements fish in Libya, Tunisia, the Kingdom of Morocco and the Islamic Republic of Mauritania, according to regional agreements.

5.6 Last or Ongoing Catch and Effort Survey

Current statistical system does perform any effort survey neither for marine nor for inland fleet.

5.7 Data collection model

Whole survey data collecting model for fleet depends on register every fishing unit in a special Log book which describe its kind, the unit name, its serial number, the name of the owner/owners and his/their (basic information and shares), the responsible leader, the length of the boat, the engine power by HP, the total number and names of the fishermen registered to work on deck. The daily harvest for each fishing unit by quantity and species on every official landing site registered in an official log-book and by using the co-operative selling receipts which include the price of each quantity and species.

At the end of each month the statistical office send a monthly harvest report to the Central Statistical Department, prepared tables covers the production on a yearly base by species, quantities for each landing site sent from Central Statistical Department to General Information Department.

The Central Statistical Department prepare another type of questionnaires, with the help of technical specialist from (GAFRD) and the supervision of specialist PhD's, check the entire statistical process and ensure the quality and quantity of the collected data by Random Sampling.

5.8 Marketing approach

As soon as the vessel collect the harvest a quick classification done according to species and fish size, small boxes of 12 to 25 kg filled and covered by crushed ice. Special refrigerator trucks receive the harvest from the vessels on arrivals to the landing site or port and sometime small trucks of 2 tons used instead to transport the harvest to the whole sale markets or directly retail markets. Consumers have their daily needs from the market.

5.9 Statistical Electronic Data Processing

5.9.1 Data Processing Resources

Fleet and catch are the two main types of data vertically process from landing sites and GAFRD field offices up to Central Statistical Department and General Information Department. The catch data comes in a monthly reports describe the quantity of each species comes from each landing sites through each GAFRD

Site leader, fleet data comes in the first three months of each year. Most of data comes on questionnaires prepared by Central Statistical Department, and some comes electronically

5.9.2 Computer equipment

Most of GAFRD sites on the Mediterranean Sea have working stations consists of PC, and printer

Western Site "Gharbia" for Fish Resources in Alexandria.

Med-Delta Site "west El Delta" for Fish Resources in Kafr El Shiekh.

Damietta Site "Domiat" for Fish Resources in Damietta.

Eastern Department "El Sharkia" for Fish Resources in Port Said.

Some important landing sites and ports dose not have this luxury like:

- Matrouh Port in Gharbia Site.
- Anfoshi Port in Alexandria.
- Baltiem Office in Med-Delta Site.
- Ezbet El-Borg Office in Damietta Site.
- Arish office in North Sinai.

Most of the data exchange between Cairo and field offices done electronically, beside the hard copy which handled in person. Central Statistical Department has one computer set without modem, on this computer all the data entered with MS Office "Excel sheets". General Information Department has 5 computer sets with ISDN connection to the internet. Some trials with MS Office "Access applications" to put the fishery data in one container, and a yearly report in English and Arabic established normally on August of the second year.

5.9.3 Internal data exchange model

Data exchange, based on prepared questionnaires by Central Statistical Department, done between Cairo and Sites either electronically (by computer disks), hard copy or in some emergency cases by phone. At the end of each year Central Statistical Department send all the collected data to the General Information Department which prepare all the reports needed to decision makers and outer world, some analytical tools from MS Office used to clear some points.

6 Main Findings and Conclusions

The current statistical system has some good points to mention:

- Collecting fisheries data through large-scale system from landing sites using registration books and daily fishing units' movement books.
- General Authority for Fish Resources Development (GAFRD) is the only governmental authority to collect fisheries data, establish decisions and decrees concerning the fisheries sector.
- General Authority for Fish Resources Development (GAFRD) is the only governmental authority to establish all fisheries data in a yearly-based reports (electronic or paper forms).

There is a substantial need for an information system for fisheries management and development planning which is currently lacking in the present information infrastructure available.

6.1 Constraints and drawbacks:

Weakness of the current statistical system :

- Inaccurate socio-economic data for fisheries sector (number of persons per family, education level and age).
- Insufficiency data for industry, marketing, distributing and assistance services in fishery sector.
- High partiality during collecting data because of financial shortage, facilities (transportation, storage equipments).
- Shortage of qualified staff, beside unawares social ware at the producers.
- Shortages on register data electronically at landing sites.
- Using different forms to register fisheries data.

The following are some of the shortcoming of the present system:-

- Inaccurate socio-economic data for fishermen society.
- Insufficient data about manufacturing, marketing and supporting services in the fisheries sector.
- Shortage of financial supplies which affect the accuracy of collecting data, store it on a computer system and analyzes it statistically.
- Entraining collecting data staff beside lack of statistical conscious at the producers.
- Disability of registering landing data on the site.
- Weakness of collecting data electronically, send it to central office at Cairo.

7 Recommendations:

- Planning observation operations, supervision, financing and executions in a way aimed to increase the ability to prevent illegal fishing operations (or at least reduce it to the minimum).
- Support researches and improve fisheries equipment technology.
- Increase the production and preservation the fisheries resources.
- Exchange data between Mediterranean region in one form, using the same standards and units.
- Cooperate with other Mediterranean countries to collect data concerning fisheries.
- Increase the international cooperation in transferring experiences, technology, observation, controlling operation thru international agreements.
- Collecting socio-economic data for fisheries sector.
- Collecting data for industry, marketing, distributing and assistance services in fishery sector.
- Solving the financial shortage, facilities (transportation, equipments)
- Prepare qualified staff.
- Raise the importance of the fishery sector between the producers.
- Improve the electronic registration at landing sites level.
- Increase the awareness of the foundations and manufactures decision makers and planners in order to have their support in controlling the observation activities to prevent illegal fishing operations.
- Establish information data bank (electronic registration with suitable application) and activate some workshops (with FAO financial support) to promote national and regional dialogue.
- Develop the scientific base to plan and operate management strategy to maintain the ecological systems considerations and to maintain sustainable yield.
- Improve the side catch.

Annex 1. People participating involved in the preparation of the document:

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Annex 2. Fishing Vessel Class and Category with national codes:

Table 2 shows the fishing vessel class and category according to engine hp.

Classification of marine fishing vessels

According to power and gears in 2002

Engine Power	Trawling	Purse seine	Long line	Trammel	Others	Total
Up to 10 hp.	-	-	67	43	-	110
10 : 20	-	-	93	102	-	195
20 : 30	-	-	67	82	1	150
30 : 50	1	6	177	139	4	327
50 : 100	113	33	601	79	4	830
100:150	325	118	15	2	-	460
150:200	427	49	-	-	-	476
200:250	244	16	1	-	1	262
250:300	17	8	-	-	-	25
300:400	7	4	-	-	-	11
400:500	16	-	-	-	-	16
500:600	2	-	-	-	-	2
600:700	-	-	-	-	-	0
700:800	-	-	-	-	-	0
More than 800	7	-	-	-	-	7
Total	1159	234	1021	447	10	2871

Table (2)

Annex 3. Fishing gear classes and national codes:

Table 3 shows the fishing gear classes in Mediterranean Sea

Fishing gear classes in Mediterranean Sea in 2002

Motorized Engine Vessels					wind or oar propulsion		
Trawling	Purse Seine	Hock Line	Trammel	Others	Sails Grade (1)	Sails Grade (2)	Sails Grade (3)
1159	234	1021	447	10	30	487	1138

Table (3)

Annex 4. Major commercial fish species and national codes:

GAFRD uses FAO Codes as reference to Egypt marine and inland species, small quantities of undefined species comes under other species.

Table 4 shows the major commercial fish species in Mediterranean Sea

Local Name	Family Name	Scientific Name	English Name	FAO Code	
Moza	SPARIDAE	Boops boops	Bogue	1,70(39)261,01	BOG
Sbares	SPARIDAE	Diplodus spp	Bream, sargo	1,70(39)033,xx	SRG
Shrghosh	SPARIDAE	white seabream	Diplodus sargus sargus	1,70(39)033,03	SWA
Ghdrofia		Chondrichthyes spp.	Cartilagenous fish nei	1,99(xx)xxx,xx	SKX
QwaQe		Ex Mollusca	Shells nei, marine	3,99(xx)xxx,xx	MSH
Gmbery	PENAEIDAE	Penaeus spp	Shrimps nei, penaeus	2,28(01)001,xx	PEN
Berboni	MULLIDAE	Mullus surmuletus	Red Mullets	1,70(41)007,01	MUR
Mkrona	SYNODONTIDAE	Saurida undosquamis	Brushtooth lizardfish	1,41(20)068,04	LIB
Sobeit	SEPIIDAE	Sepia officinalis	Cuttle Fish, common	3,21(02)002,02	CTC
Segan	SIGANIDAE	Siganus spp.	Sigans	1,73(03)001,xx	SPI
Mosa	SOLEIDAE	Solea vulgaris	Sole, common	1,83(03)007,01	SOL
Denis	SPARIDAE	Sparus aurata	Gilthead seabream	1,70(39)235,08	SBG
Mghazel		SPHYRAENIDAE	Sphyræna spp	1,64(01)001,xx	BAR
Frakh	TRIGLIDAE	Eutrigla gurnardus	Grey gurnard	1,78(02)070,01	GUG
Loot	SCIAENIDAE	Argyrosomus regius	Meagre	1,70(37)106,01	MGR
Qarous	MORONIDAE	Dicentrarchus labrax	European seabass	1,70,(06)345,03	BSS
Nkt	MORONIDAE	Dicentrarchus punctatus	Spotted seabass	1,70(06)345,01	SPU
Wkar	SERRANIDAE	Epinephelus spp.	Groupers nei	1,70(02)042,xx	GPX
Morgan	SPARIDAE	Pagrus pagrus	Red porgy	1,70(39)191,03	RPG
Derak	SCOMBRIDAE	Scomberomorus commerson	Narrow - Barred Spanish Mackerel	1,75(01)015,03	COM
Sieof	TRICHIURIDAE	Trichiurus lepturus	Largehead hairtail	1,74(04)003,02	LHT
Enshoga	ENGRAULIDAE	Engraulis encrasicolus	European anchovy	1,21,(06)002,01	ANE
Shakhora	CARANGIDAE	Caranx rhonchus	False scad	1,70(23)044,42	HMY
Blamita	SCOMBRIDAE	Euthynnus affinis	kawakawa	1,75(01)024,06	KAW
Bori	MUGILIDAE	Mugilidae	Mullets nei	1,65,(01)xxx,xx	MUL
Mieas	POMATOMIDAE	Pomatomus saltatrix	Bluefish	1,70(20)213,01	BLU
Sardien	CLUPEIDAE	Sardinella spp.	Sardinellas nei	1,21(05)012,xx	SIX
Bagha	GARANIGIDAE	Trachurus mediterraneus	Mediterranean horse mackerel	1,70(23)004,08	HMM

Besaria	ATHERINIDAE	Atherinidae	Silversides(=Sand smelts)	1,65(02)xxx,xx	SIL
Kaboria	PORTUNIDAE	portunus spp	Crabes	2,29(11)004,xx	CRS

Table (4)

Annex 5. The Mediterranean Sea area stratification

In the Mediterranean Sea fisheries, the fishing grounds are located on the wide continental shelf in front of the Delta and the Sinai Peninsula. It has a coastline of about 1 100 km. long, extending from Sallum in the west to Rafah in the east. The continental shelf of 200 m deep along the coast is largely composed of salty mud and muddy sands. It widens up to a maximum of 70 m long in front of the Delta. Most of the fishing operations are concentrated in the coastal zone, from Alexandria to Port Said, about 300 km in length using principally trawls, at depth of 10-100 m. the rest of the shelf is hardly exploited.

Maps and pictures:



Sample Document 1) **Sample Register book for the commercial fishery:**

General Authority for Fish Resources Development GAFRD

Fisheries source: Mediterranean Sea (**Marine**/Brackish/Freshwater)

GAFRD Site Name: ABCD

GAFRD Fishery Office: ABCD

Landing Site / Port Name:

Total quantities of landed Species

from January 9999 Till December 9999 by mt

Species	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Moza													
Sbares													
Shrghosh													
Ghdrofia													
QwaQe													
Gmbery													
Berboni													
Mkrona													
Sobeit													
Segan													
Mosa													
Denis													
Mghazel													
Frakh													
Loot													
Qarous													
Nkt													
Wkar													
Morgan													
Derak													
Sieof													
Enshoga													
Shakhora													
Blamita													
Bori													
Mieas													
Sardien													
Bagha													
Besaria													
Kaboria													

location	Fishery office	landing site
vessel No.	vessel name	Engine hp:
vessel value	Tools value	
fisherman share :	the value of journey needs (fuel , iceetc):	

Species	K.G	No. of Fishes per K.G	Price
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Sample Document 3) **Sample Questionnaire for the Census of Artisanal Fishery:**

location	Fishery office	landing site
vessel No.	vessel name	
vessel value	Tools value	
fisherman share :	the value of journey needs (fuel , iceetc):	

Day of the week [Saturday/Sunday/Monday/Tuesday/Wednesday/Thursday/Friday]

[illegible]

Sample Document 4) **Sample Log-Book for the Industrial Fishery:**

Vessel Name:

Vessel Certificate No. & Date:

Fishing License No. & Date:

Port of departure:

Date & Time out:

Fishing Area:

Crew Names & Position:

	Name	Position
1 -	Commander
2 -	
3 -	
4 -	
5 -	
6 -	
7 -	
8 -	
9 -	
10-	
11-	
12-	
13-	
14-	
15-	
16-	
17-	
18-	
19	
20-	

Border Guard Officer Signature (out)

Date & Time in:

Border Guard Officer Signature (in)

Sample Document 5) **Sample Log-Sheet for Industrial Fishery:**

The owner of fishing units does not register their harvest in Log-Sheet on their vessels, most of them does not even have any Log-Sheet on board, instead there is a sort of Log-Sheet in GAFRD Office in the landing Site or Port of Arrivals.

Landing Site/Port Log-Sheet form looks like the following form:

General Authority for Fish Resources Development GAFRD

Fisheries source: Mediterranean Sea (**Marine**/Brackish/Freshwater)

GAFRD Site Name: ABCD

GAFRD Fishery Office: ABCD

Landing Site / Port Name:

Date:

Serial No.	Vessel Name	Quantity in kg
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		

Registered by:

Signature:

Sampling Survey done twice a week by using the following form, send it in a monthly base to Cairo.

GAFRD Site Name: ABCD

GAFRD Fishery Office: ABCD

Landing Site: ABCD

Vessel No.: 9999

Vessel Name: ABCD

Departure Date:

Arrival Date:

Officer Name:

Officer Signature:

Sample Document 7) **Annual Report for Catch and Effort Statistic-Industrial Fishery:**

Total production for main species
in Mediterranean Sea
for year 2002 in mt

Local Name	English Name	Quantity
Moza	Bogue	1541
Kaboria	Crabes nei, marine	2222
Sobiet	Cuttlefish, common	1734
Karous	European seabass	1336
Shakhora	False scad	1122
Wkar	Groupers nei	1453
Blamita	Kawakawa	1416
Sieof	Largehead hairtail	1096
Loot	Meagre	1305
Bori	Mulletts nei	5696
Derak	Narrow - barred spanish mackerel	1301
Brboni	Red mullet	1957
Morgan	Red porgy	1231
Serdien	Sardinellas nei	12106
Ghedrofia	Sharks, rays, skates, etc	2020
Koake	Shells nei, marine	3243
Gambry + Estakoza	Shrimps nei, Penaeus	4685
Besaria	Silverside(=Sand smelts)	3267
Others+Hared+Klmary+Wzfa+Bagha+Khna zer	Others	4035
	Total	52766

Sample Document 8) **Sample Annual Report for Catch and Effort Statistic-Artisanal Fishery:**

Catch Production from Mediterranean Sea
for Year 2002

Local Name	English Name	Quantity
Mias	Bluefish	549
Makrona - Haret	Brushtooth lizasrdfish	900
Denis	Gilthead seabream	974
Frakh	Grey gurnard	611
Segan	Sigans	923
Mosa	Sole, common	898
Mghazel	Sphyraena spp	995
Nokt	Spotted seabass	556
Shraghosh	white seabream	447
	Total	6853

Sample Document 9) **Sample Fishing Vessel License – Industrial Fleet:**

General Authority for Fish Resources Development GAFRD

GAFRD Site Name: ABCD

GAFRD Fishery Office: ABCD

Fishing License for Motorized Vessel No.: 99999

Assigned to work in: ABCD Gear Used: ABCD

Fishing License Data	Maritime Registry Certificate Data
Vessel No.: 9999 License No.: 9999 Engine Power by hp.: 9999 Fishing Fees: Leg Social Insurance Certificate No. & Date: License Date:	Vessel Name: Engine No.: Certificate No.: Engine brand: Certificate Date: Port Issued from: Navigation Certificate No. & Date:

Ownership Data

Owner Name:

Owner Share:

ID No.:

ID Issued From:

ID Date of Issue:

Fishing License No.:

Issued From:

Date of Issue:

Co-operative Name:

Participate No.:

Date of Participation:

Responsible Officer Signature:

Office Stamp:

Chief of Office Staff Signature:

* This License should be carried during fishing operations and present it to the Authorized Authority.

Sample Document 10) **Sample Fishing Vessel License – Artisanal Fleet:**

General Authority for Fish Resources Development

GAFRD Site Name: ABCD

GAFRD Fishery Office: ABCD

Assigned to work in: ABCD Gear Used: ABCD

Fishing License Data	Registration Certificate Data
Vessel No.: 9999 License No.: 9999 Fishing Fees: Leg Social Insurance Certificate No. & Date: License Date:	Vessel Name: Certificate No.: Certificate Date: Issued from:

Ownership Data

Owner Name:

Owner Share:

ID No.:

ID Issued From:

ID Date of Issue:

Fishing License No.:

Issued From:

Date of Issue:

Co-operative Name:

Participate No.:

Date of Participation:

Responsible Officer Signature:

Office Stamp:

Chief of Office Staff Signature:

* This License should be carried during fishing operations and present it to the Authorized Authority.

Sample Document 11) **Sample Fishing License:**

General Authority for Fish Resources Development

GAFRD Site Name: ABCD

GAFRD Fishery Office: ABCD

Fishing License for Motorized Vessel No.: 99999

Assigned to work in: ABCD Gear Used: ABCD

Fishing License Data	Maritime Registry Certificate Data
Vessel No.: 9999 License No.: 9999 Engine Power by hp.: 9999 Fishing Fees: Leg Social Insurance Certificate No. & Date: License Date:	Vessel Name: Engine No.: Certificate No.: Engine brand: Certificate Date: Port Issued from: Navigation Certificate No. & Date:

Ownership Data

Owner Name:

Owner Share:

ID No.:

ID Issued From:

ID Date of Issue:

Fishing License No.:

Issued From:

Date of Issue:

Co-operative Name:

Participate No.:

Date of Participation:

Responsible Officer Signature:

Office Stamp:

Chief of Office Staff Signature:

* This License should be carried during fishing operations and present it to the Authorized Authority.