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CopeMed case study in Morocco and Tunisia
Involvement of fishers on standardized data collection in SSF and development of complementary activities to improve community livelihoods.

Málaga (Spain), 2016

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CopeMed case study in Morocco and Tunisia

Involvement of fishers on standardized data collection in SSF and development of complementary activities to improve community livelihoods.

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GFCM Regional Conference on Small Scale Fisheries, Algeria, March 2016

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1 Background and Introduction

CopeMed phase II, "Coordination to Support Fisheries Management in the Western and Central Mediterranean", is a project executed by FAO and funded by Spain (Fisheries Secretariat) and the European Commission (DG Mare), active since 2008. Building on the achievements of the first phase (1996-2005), the project aims to strengthen scientific and management collaboration among the countries involved in the project: Morocco, Algeria, Tunisia, Libya, Malta, Italy, France and Spain. Its main objective is to maintain the sustainability of marine fisheries, taking into consideration environmental, biological, economic and social issues.

During the first phase of the Project FAO-CopeMed, attention was brought to the situation of Small Scale Fisheries (SSF) in the western and central Mediterranean. Following request from the project Committee, Spain funded a second project targeting SSF, the FAO-ArtFiMed project.

ArtFiMed, "Sustainable development of artisanal fisheries in the Mediterranean Morocco and Tunisia ", was financed by the Spanish Cooperation Agency (AECID) from 2009 until 2011. The project included: (i) priorities of the two countries in the fight against poverty, ii) improvement of socioeconomic conditions of coastal communities and rehabilitation of small-scale fisheries; (ii) regional concerns regarding the exchange of experiences, improved management of shared stocks and species of mutual interest; (iii) international recommendations and targets set under the Millennium Development Goals and the FAO Committee on Fisheries. It was carried out within the framework of CopeMed II.

This document summarizes activities of ArtFiMed project in three Small Scale Fisheries Communities, one in Morocco and two in Tunisia, related to fisheries data collection and diversification of economic activities by the fishers' communities during 2009-2011.

2 The ArtFiMed Project

FAO, in collaboration with national administrations, identified a community of artisanal fishermen in Morocco (Dikky) in the Gibraltar Strait area and two in the Gulf of Gabès in Tunisia (Ghannouch and El Akarit) as suitable for the development of the project ArtFiMed. Regionally, the project aimed to establish the basis for a methodology to improve the management of national and regional fisheries through the integration of artisanal fisheries in the process. The project was implemented during an execution period of 36 months. Diagnoses reports of the three sites were done during the first phase of the project. The three diagnoses reports form

an accurate picture of fishing activity, poverty profiles and vulnerability of the target communities (ArtFiMed 2009; ArtFiMed 2009a, ArtFiMed 2009b; ArtFiMed 2009c).

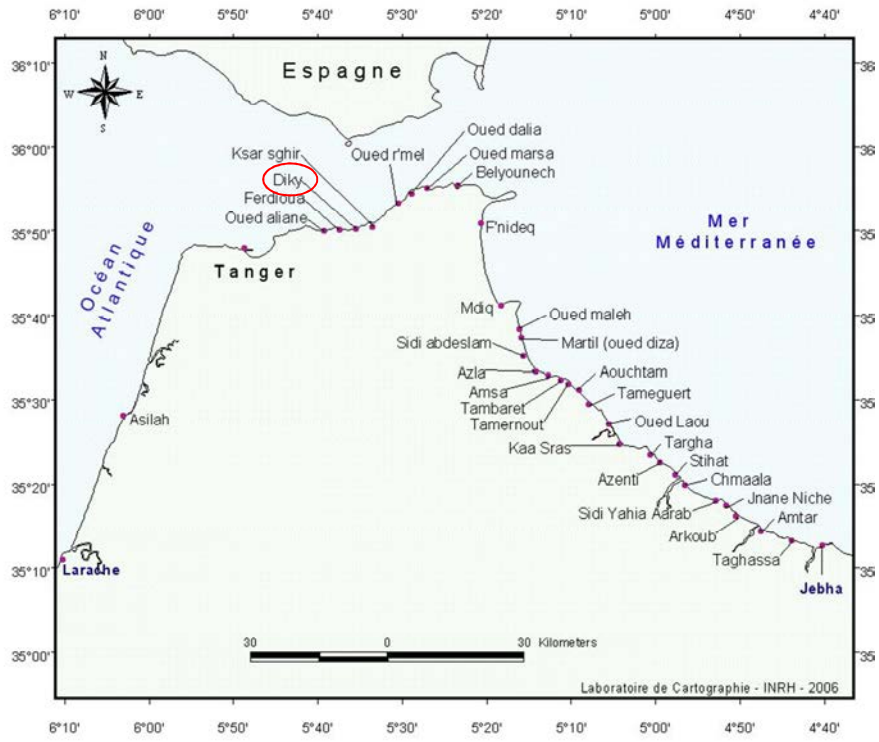

Figure 1: Map of the Strait of Gibraltar and the location of the fisheries community of Dikky (Morocco)

Dikky is a coastal community with important SSF activity located in the Gibraltar Strait coast of Morocco about 30 Km east of Tangier (Fig. 1) frequented by tourists in summer for the beach. Artisanal vessels are anchored at sea or protected on the beach during bad weather conditions. The site does not hold any fishery infrastructure.

Fishing activity began in the early sixties, with just 4 rowing boats and since then it has experienced an upward trend. The introduction in 1994 of longline fishing for bluefin tuna improved the incomes of fishermen and the attraction for building new boats. At the starting of ArtFiMed, around 50 boats were active at the site providing employment to about 250 fishers. The main gears used were longline and hand line. Thelonglineinclude 80 to 500 hooks, baits mainly with sardines, octopus and cuttlefish. Hand lines used from 2 to 10 hooks. The fleet consisted of wooden boats, with a length not exceeding 7 m and a capacity less than 2 tons, usually equipped with an inboard engine, with a capacity ranging from 15 to 55 horsepower (Hp).

Fishermen from Dikky use only hook gears, due to the rocky bottom nature of main fishing areas. Still, these gears capture high-value species (Table 1). During summer fishing period they use a hook line targeting bluefin tuna. Fishers frequently reported attacks by orcas during the hauling, which causes important losses in terms of captures, incomes and damaged gears.

Table 1. Characteristics of fishing gears and main target species in Dikky fishery.

Gears types	Hooks types Nº	Fishing period	Fishing area	Operation duration (hs)	Target species Common name	Target species Scientific name
Longline1	3-4	March-June	Zammij, Dalia; Bekhat	8-16	Blue-spotted seabream	*Pagruscaeruleostictus*
Longline2	11-12	October-April	Close to the site	6-12	Blackspotseabream	*Pagellusbogaraveo*
Longline3	1-0	July-August	Bakhat-Zemmig	5-10	Bluefin tuna	*Thunnusthynnus*
Hand line	7-15	all year round	Close to the site	6-12	Sparidae	*Sparidae*
Train line	10-15	all year round	Close to the site	6-12	Seabass; Grouper; Conger, Seabream	*Dicentrarchuslabrax; Epinephelusspp; Congerconger; Sparusaurata*

Ghannouch, located in the Gulf of Gabès (Fig. 2), is characterized by a tidal range that can reach 2 meters. The project site includes several consecutive beaches where fishermen had their boats concentrated in groups. In Ghannouch there are neither port facilities nor other tools for helping fishers. The services for maritime work (gas oil, ice, repair outlets, etc.) are all in Gabès.

Main target species include Sardinelle (*Sardinella aurita*); Ouzef, a denomination for juveniles of Bigscale sand smelt (*Atherina boyeri*) and Anchovies (*Engraulis encrassicholus*); Flathead grey mullet (*Mullus cephalus*); Pandora (*Pagellus erythrinus*); Marbled Sole(*Lithognathus mormyrus*) (*Solea aegyptica*); Common cuttlefish (*Sepia officinalis*); Octopus(*Octopus vulgaris*); Royal shrimp (*Penaeus kerathurus*) and White shrimp (*Metapenaeus monoceros*).

The number of boats is less than 200 out of which almost a third was in illegal situation at the beginning of ArtFiMed. The average length of boats is 4.2 m ranging between 3 and 6.3 m, with the largest being a beach seiner; rowboats represents 57% of all. Introduction of motors is recent (over 60% acquired in 2008). Outboard motors boats represent 43% of the fleet and average power is 9.9 HP. There are always two persons onboard for different types of fishing. Beach seine requires a larger number of people (14 - 17) on the beach.

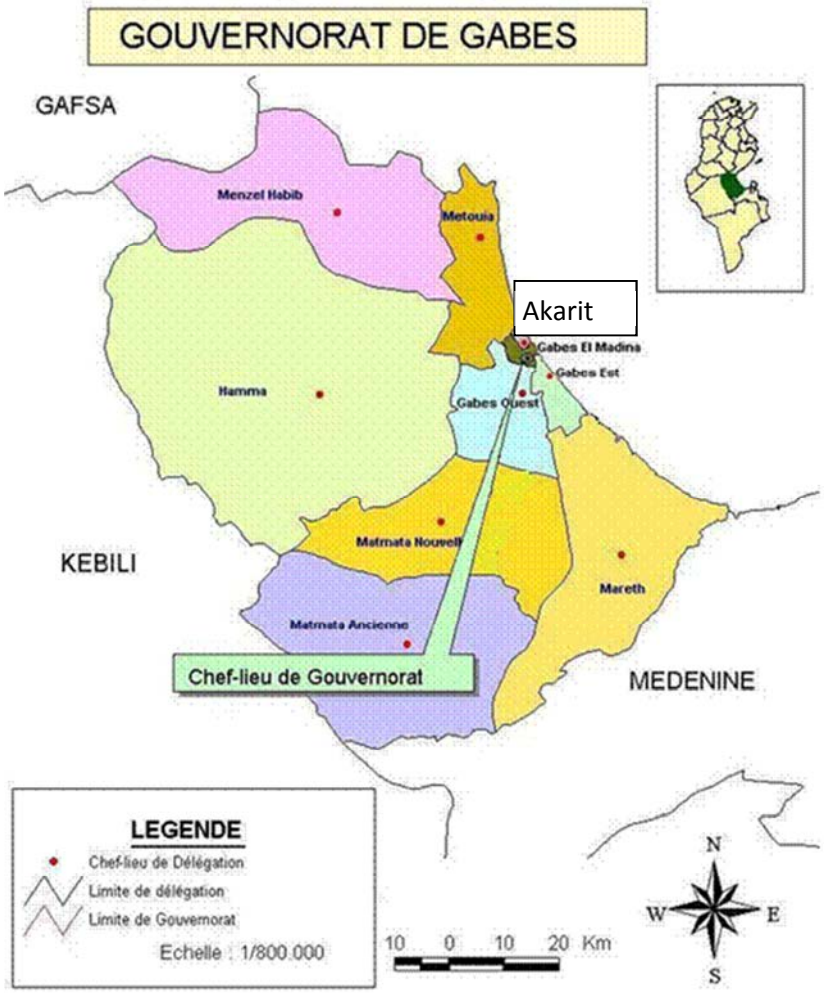

Figure 2: Map of the Gulf of Gabés and the location of the fishing community of Ghannouch in Tunisia.

Fishing gears used in Ghannouch include trammel nets, gillnets and the beach seines Hlig and Tilla, which are two traditional nets used for fishing the Ouzef. Trammel nets target cuttlefish and shrimp (22 and 30 cm central mesh size respectively and 120 mm external mesh size). The number of units used is between 20 and 30 for cuttlefish and between 14 and 20 for shrimp. Each unit measure is 42 m length. Trammel net for cuttlefish is the most used gear (97% of fishermen). Gillnets (29% of fishermen have this gear) are deployed on the bottom (in waters between 5 to 10 m.) they have a drop of up to 6 m and catch a large number of demersal and pelagic species. The fishermen have 10-25 units.

There are two types of beach seines in Ghannouch: simple, called Hlig, and with pockets, called Tilla. Hlig is deployed with a large boat (5-6 meters) to form a semi-circle from the beach. When the Hlig is almost on the beach, and if they observe juvenile of sardines, anchovies or

atherinids (Ouzef) a second seine, Tilla, is deployed afoot behind the Hlig, to capture the Ouzef escaping from the first seine. If there is no Ouzef, the Tilla is not lowered.

In this community the focus of the project was the clam fishery. The clam (*Ruditapesdecussatus*) fishery is concentrated in the governorates of Sfax, Gabès and Medenine. The collection is done by a large number of collectors (an average of 5000 individuals) the majority (80%) of them is women. This collection is made afoot from November to May using rudimentary equipment (a sickle) and in periods strongly related to daily tidal range, at an average of six hours per day. Clam collectors in El Akarit area are 400 (72% women) coming from towns in an area ranging from 3 km to more than 20 km from El Akarit. The only fishing activity practiced in the area is the collection of clams. The characteristics of the area favor this activity, since at low tide large sandbars with a high density of clamsappear. The prices of this shell, the lack of other sources of income and the relative simplicity of this business, have led the villagers to get gradually involved in collecting clams since the 60s. In Akarit, production and effort statistics by fishing area date back from 2004, the year in which professional groups for development and exploitation of clams were created.

The authorized clam size is 3.5cm.Collectors use a sickle to remove the clam. It is a tool about 20 cm long and 1.5 cm wide (Fig 3). The average of sickles used by a collector is 4. Average price of a sickle is 2 TND (1 TND = 0,4949 USA $ in 2016). The collected clams are lodged in a container or a bag that doesn't retain water to prevent disease transmission until return to the beach for weighing and sale to traders.

Figure 3: Sickle and clams collected

Figure 4: A group of women collecting clams in Akarit

The maximum number of working days is 20 days a month. Moreover the Minister of Agriculture decree of 16 June 1997, states that clam fishing is prohibited from 15 May to 30

September. However and as a Minister's decision, this ban period can be extended until November 15, and clams can be exceptionally allowed in certain areas during the period from July 1 to August 31.

3 Socio-economic characteristics and description of the communities involved

Dikky

Fishermen houses are distributed mainly in three small towns located at distances from less than 1 Km up to more than 6 Km relative to the landing site. Almost 98% of the population is native from towns near the site. This is a generally illiterate population. Learning the fishery work is transmitted from fathers to sons. Fishermen are also engaged in subsistence agriculture. The fishing community is relatively young, with skippers being the oldest. The large proportion of fishermen is in the age group 35-50 years. Experience in fisheries is in average 14 years for fishermen and 22 years for skippers. The number of fishers by boat (3-5 people) depends on the gear performed.

The practice of SSF requires an investment of between TND 47,000 (=23260 $) and TND 300,000 (=150470 $) in means of production (boat, motor and fishing gears). These means of production are financed in almost all cases by own savings or loans from relatives.

The targeted species are all high-value and generally sold for exporting. Price is governed by two factors: i) demand from export companies and ii) demand increases in specific periods of the year, as the month of Ramadan or European celebrations. The SSF in Dikky practiced a traditional benefits “sharing system” described in ArtFiMed (2009).

The commercialization of species is done by 4 to 6 traders, who play a role of commissioners from large export companies. These traders ensure the supply of fishing inputs, including equipment, ice and bait to the crews. The rudimentary working conditions of fishermen and the distance to markets in Tangier are two factors that force fishers to sell their catch to intermediaries. In this scenario, a verbal commitment of mutual interest between the two parties is established based on the exclusive sale of catches by the fish wholesaler.

Generally, SSF fishers support their families. The average of persons supported by a fisherman in Dikky is about 5 people. Women does not participate in the development of economic activities, they are only limited to carry out the household tasks. In rare occasions women can contribute to the income, by carrying out subsistence farming or petty trading activities. Women live in a difficult situation, with limited freedom to develop any lucrative activity that could guarantee thema certain autonomy from the head of family.

Ghannouch

This site, covering an area of 19 km^2 is located in the Gulf of Gabès, approximately 15 km north of the city of Gabès and 400 km from Tunis, capital of Tunisia. Out of the 23,000 inhabitants of Ghannouch approximately 1500 are involved in the fishing activity, working on motorized or sail artisanal fishing boats.

The majority (72%) Ghannouch fishermen have had access to primary education, but only 11% have completed secondary education. There are 16% of the fishermen who are illiterate, mainly people over 60 years; more that 78 % are married. The average number of children per family is 3.6 although can have a maximum of 10. Family has an average of 5.6 persons in charge with a maximum of 10 people.

The price of different fishing gears used in Ghannouch varies from 90 to 200 TND the unit. Indeed, a gear for cuttlefish usually consists of 30 pieces representing a cost of 2700 TND on average, whereas a 17 units gear for shrimp cost around 1530 TND.The typologies of fishing equipment in Ghannouch are summarized in Table 2.

Table 2. Number of vessel using each combination of gears and cost of each combination. Cost values in TND (1 TND = 0,4949 USA $)

Gears combinations	Motor boat (Nº)	Rowing boat (Nº)	% of Total	Averageequipmentcost
cuttlefish trammel net	8	29	47	2700
cuttlefish trammel net + shrimp trammel net + gillnet	9	4	17	6100
cuttlefish trammel net + shrimp trammel net	8	4	15	4230
cuttlefish trammel net + gillnet	7	2	11	4570
cuttlefishtrammel net +beachseine + tilla	2	3	6	5100
beachseine + tilla	0	2	3	2400
cuttlefish trammel net + beach seine	0	1	1	4700
TOTAL	**34**	**45**	**100**	**4258**

Other investments include the price of the boat (from 1570 TND to 4935 TND), engines (2500TND for a 5 HP motor to 6000TND for a 15 HP), reparations cost (between 100 and 400 TND per year), cost of fishing authorizations set at 0.1 TND / GRT, and maintenance (80 - 200

TND/year). The 35% of fishermen have taken out a loan to purchase a motor. Most of the fishing equipment including trammel nets is financed through informal loans given by traders.

El Akarit

El Akarit is a village located 30 km from the capital of the governorate Gabès and about 370 km from Tunis and about 3 km from the sea. The population is about 400, including 190 men and 210 women, and thereto counts a hundred families. Average age of clam's collectors is 40.9 years. However, there are also older women, with no other source of income, who are also involved in the clam collection. Average number of children per household is 3.4 with a maximum of 10 children.

Schooling became compulsory in Tunisia since the sixties but 49% of fishermen in El Akarit are illiterate (aged more than 40 years), 47% have primary education and 3% secondary level. Collectors are members of the Clam's Development and Conservation Grouping.

Fishing effort to collect clams is regulated depending on the health status of the areas. Maximum production occurs in January and February. The average workday production/collector peaks in February (1.3 kg/person). Individual production is weighed by an intermediary that has a commission of 0.2 TND/Kg. The clam's Group (a sort of cooperative) brings together the production of all women and is responsible for selling it by taking an additional commission of 0.1 TND/kg. After the selling, the Group pays the production to each woman. Women estimated at 7,30 hours/day their involvement in collection, time divided into one hour of transport, 5,30 hours collecting clams and 1 hour to select sized clams and return home. The Akarit Regional Office for Agricultural Development of Gabès control the size of harvested clams and issue the travel vouchers certifying the origin of the product. Daily incomes vary between 12 and 2 TND.

4 The ArtFiMed Monitoring System

A protocol was prepared by ArtFiMed (ArtFiMed 2010) to test a methodology, monitoring the activities, define indicators and develop analytical results.

The ArtFiMed monitoring system was created to follow up local fishing activities by the own fishermen/members of the community. This system provides data on fishing effort (in number of daily trips) and information on the fishing techniques, catch, fishing areas and prices of the target species on landing. In general, the procedure followed by ArtFiMed with the communities included: 1. Description of the activities of beneficiaries;2. Preparation of the baseline information; 3. Process of consultation and identification of beneficiaries; 4.

Awareness, information, exchange of experiences; 5. Preparation of the training contents through participation and involvement of beneficiaries; 6. Cooperation with other organizations experienced in capacity development; 7. Organization of training activities; 8. Analysis of problems encountered and solutions proposed; 9. Results and; 10. Lessons learned concerning:

i) Procedures and duration, ii) Involvement of beneficiaries, iii) Involvement of local and national stakeholders and administrations, iv) Evaluation (the pros and cons),v) If repeated again, what would do differently and vi) Opportunities and Sustainability: What must be done to ensure the development and sustainability of the activity?

The phases of implementation include:

- *Capacity building and community involvement*. The procedure for the implementation of the activities was based on mutual respect, transparency, the involvement of the communities, the participation of the administration and the strengthening of cooperation and coordination with other stakeholders, agencies and actors in the countries. Capacity building activities were based on selected requests by the SSF communities, supported by ArtFiMed, with the participation of national agencies responsible for each requested theme and involving experienced experts on the field.
- *Definition and selection of monitoring indicators.* A methodology for the selection of indicators in a local context was defined in Document ArtFiMed TD Nº13. Based on surveys conducted during the diagnosis phase, it was possible to define five focus areas (themes) requiring follow-up through indicators: 1. Significant fisheries for the selected site; 2.Socio-economic aspects of fishing communities; 3. Fishery products marketing; 4. Professional organization Systems and; 5. Environmental aspects associated with the fisheries.

The indicators selected for each theme were classified in two priority levels, 1 and 2. The identification and classification of indicators was done taking into account the available means in terms of human and financial resources. Priority 1 indicators are those essential for the supervision of the activities. Priority 2 indicators are also relevant to the objectives but depend on their follow-up and the opportunities that arise during the project.

4.1 Monitoring of artisanal fishing in Dikky, Morocco.

The landing site is concentrated in a small area easy to cover. Thus, ArtFiMed implemented a system to monitoring fishing activity in March 2010 with the participation of a local

fisherman. On a daily basis, he collected data following an agreed sampling schema at landing requesting: Name of the boat; Duration of the fishing trip; Fishing gears used; Species caught; Number of pieces/specie; Weight by species and boat (Kg); Commercial categories; Price and Destination (marketing, consumption, others). If the number of active boats did not exceed six boats, then the field monitor conducted extensive surveys to all the skippers; if the number of active boats in a day exceeded 6, then he proceeded to sample at least 30 % of the active boats.

4.2 Monitoring of artisanal fishing in Ghannouch, Tunisia.

The landing zone is very large (about 20 km). The ArtFiMed monitoring system instead of implemented by fishermen as in Morocco it was based on the collaboration of two wholesalers who provided information for 50 boats landing in two different landing points in Ghannouch area. This allowed us to obtain information on a sample of approximately 25% of the boats operating in the area. To implement the monitoring system, we're inspired by the own notebook of the wholesalers by asking them to supplement the information obtained with other information of interest to the project. These traders provided each day the following information of the boats of which they buy the products: Name and register of the boat; Engine power; Fishing gears used; Fishing effort (number of trips); Capture by species and boat; Buying price; The financial situation of the fisherman; Notes regarding the loss or purchase of nets and of the species sold. This system allows recovering the data on active boats, but not on captures which are not sold.

4.3 Monitoring of shellfish clams in Akarit, Tunisia.

Collecting clams during low tide occurs over a relatively large area (about 10 km) and therefore monitoring of this activity necessarily requires significant displacements over the area. A woman of the community was selected and trained to carry out daily data collection and transcription on an "*ad hoc*" notebook on the following items: Fishing effort (number of people practicing the collection); IUU fishing (number of persons practicing the collection during the prohibition period); Production in value (only when the seasonal collection is allowed); Quantity collected with legal and illegal size; Sale price (only when the seasonal collection is allowed); Number of traders on the field.

Complementary to the monitoring systems, a guide was elaborated to harmonize and standardize the data and methods of measurement of the species sampled during landings operations. (Annex 3,CopeMed-ArtFiMed TD Nº 13). Other guides and technical documents

prepared in support of the professionals and administrations are available in the CopeMed Web page (http://www.faocopemed.org/html/publications.html).

5 Main Results from the analysis of the data obtained with the ArtFiMed Monitoring System involving the SSF sector

The Methodology for analysis of data (FAO-ArtFiMed-CopeMed 2012) used the tools of descriptive statistics. Regarding the available time series, to be free of short-term changes and to facilitate comparison between sets, the general trend series was extracted by smoothing. The method chosen was the local regression smoothing type LOWESS1 (Robust Locally Weighted Regression), based on the adjustment of local polynomials.

Main results obtained includes the following parameters: numbers of different fishing gears, fishing effort by gear and target species, production by gear (in Kg), value (national currency) and CPUE. Complete results from the analysis and complementary information are available in CopeMed web page and technical document Nº 28 (CopeMed 2012). Examples of results in Dikky,Akarit and Ghannouch in format of tables and figures are presentedhere as examples.

Table 3: Equipment of fishermen in Dikky. Maximum, minimum and average number of gears used by each active fisherman.

Gears	Minimum	Maximum	Average	CV
Longlineblackspotseabream	4	25	15	23
Longlinecommonseabream	3	10	5	27
Longlineblue spotseabream	3	8	5	18
Handlinebluefin tuna	2	6	5	21
TOTAL	**12**	**49**	**30**	**23**

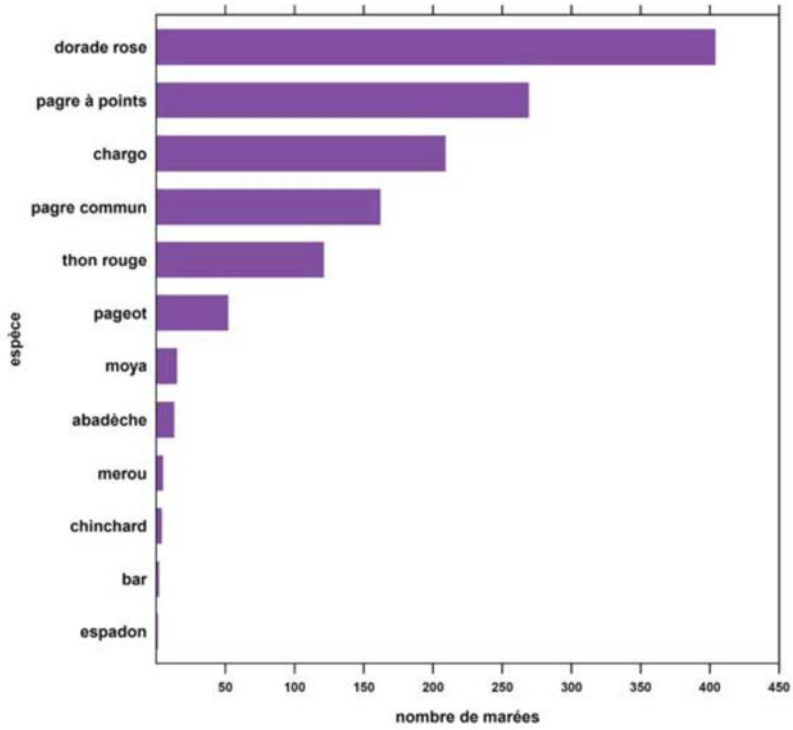

Figure 5: Fishing effort (nº of fishing days, “mareés”) by specie in Dikky.

Table 4. Production (in kg) of main target species landed in Dikky

période	espèce	production (kg)	%
mars 2010- décembre 2010	thon rouge	20234.0	53.27
	dorade rose	5983.0	15.75
	pagre à points	5118.5	13.48
	chargo	3694.0	9.73
	pagre commun	1775.5	4.67
	pageot	614.0	1.62
	termes (moya)	182.0	0.48
	chinchard	148.0	0.39
	abadèche	91.5	0.24
	merou	75.5	0.20
	espadon	53.0	0.14
	bar	13.0	0.03
	total	**37982.00**	**100.00**

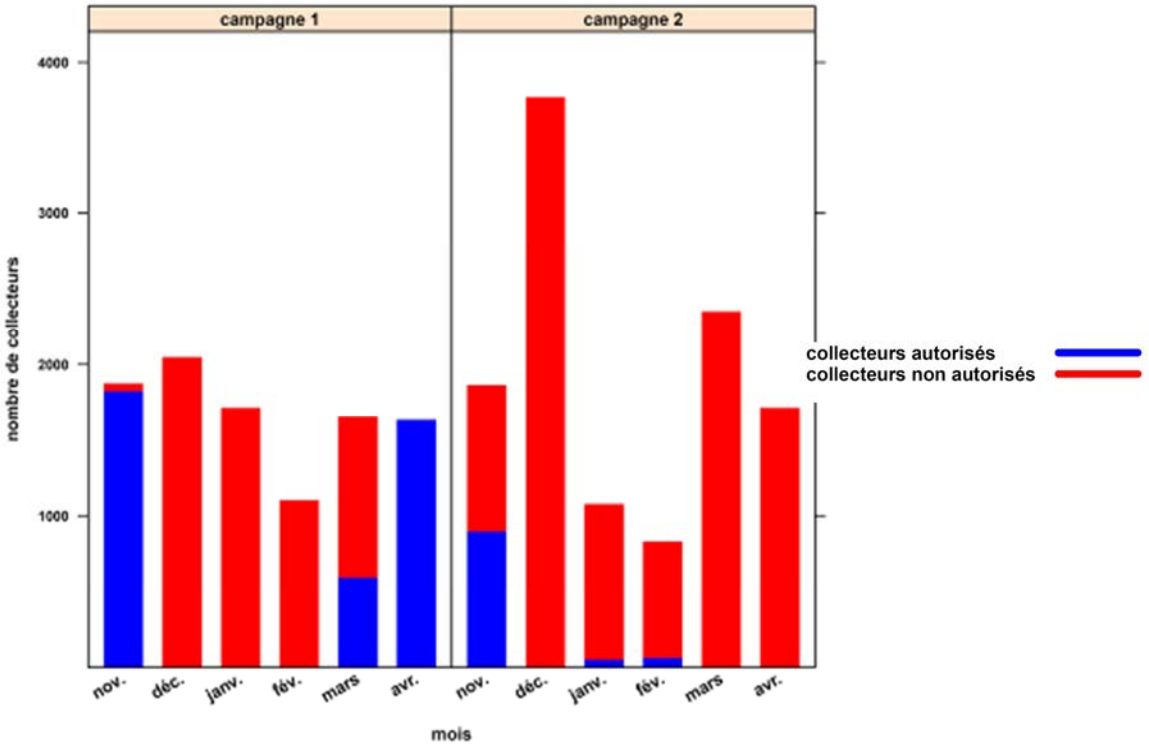

Figure 6: Fishing effort (number of women collectors by month) in two consecutive campaigns in Akarit, Tunisia. In blue authorized and in red unauthorized collectors.

Table 5: Average CPUE (expressed in kilograms of biomass collected by number of collectors) per campaign (1 and 2) and month during the period 2009-2011 in Akarit with confidence intervals.

campagne	mois	cpue moyenne	sd	CV(%)	n	95%LL	95%UL
1	11	1.86	1.71	0.92	18	1.06	2.65
	12	0.00	0.00	NA	26	0.00	0.00
	1	0.00	0.00	NA	23	0.00	0.00
	2	0.00	0.00	NA	24	0.00	0.00
	3	0.72	1.13	1.57	27	0.29	1.15
	4	2.04	0.86	0.42	19	1.65	2.42
2	11	2.44	6.36	2.60	23	0.00	5.04
	12	0.00	0.00	NA	26	0.00	0.00
	1	0.00	0.00	NA	16	0.00	0.00
	2	0.00	0.00	NA	25	0.00	0.00
	3	0.00	0.00	NA	27	0.00	0.00
	4	0.00	0.00	NA	27	0.00	0.00

Table 6: Total number of operations (effective fishing days) per month in Ghannouch

année	mois	engin				
2009		FM	FTC	FTS	SP	**total**
	novembre			1568		**1568**
	décembre			1972		**1972**
2010		FM	FTC	FTS	SP	**total**
	janvier			1512		**1512**
	février	4		2296		**2300**
	mars	36	8	1520		**1564**
	avril	104	364	552		**1020**
	mai	508	432	880	32	**1852**
	juin	284	0	2596	8	**2888**
	juillet		16	2668		**2684**
	aôut	1536	4	1364		**2904**
	septembre	660		1012		**1672**
	octobre	128		2288		**2416**
	novembre	52		3064		**3116**
	décembre			2920		**2920**
	total	**3312**	**824**	**26212**	**40**	

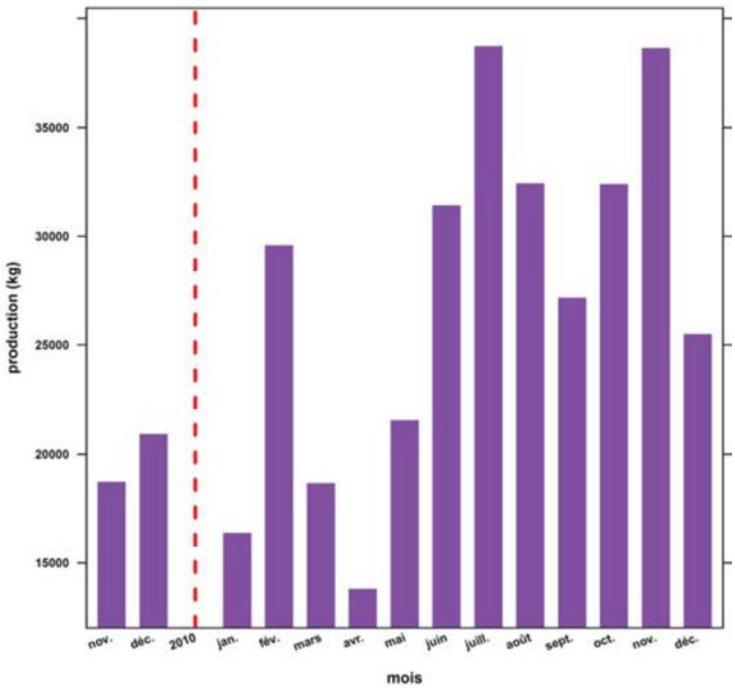

Figure 7: Production (Capture total in Kg) by month in Ghannouch

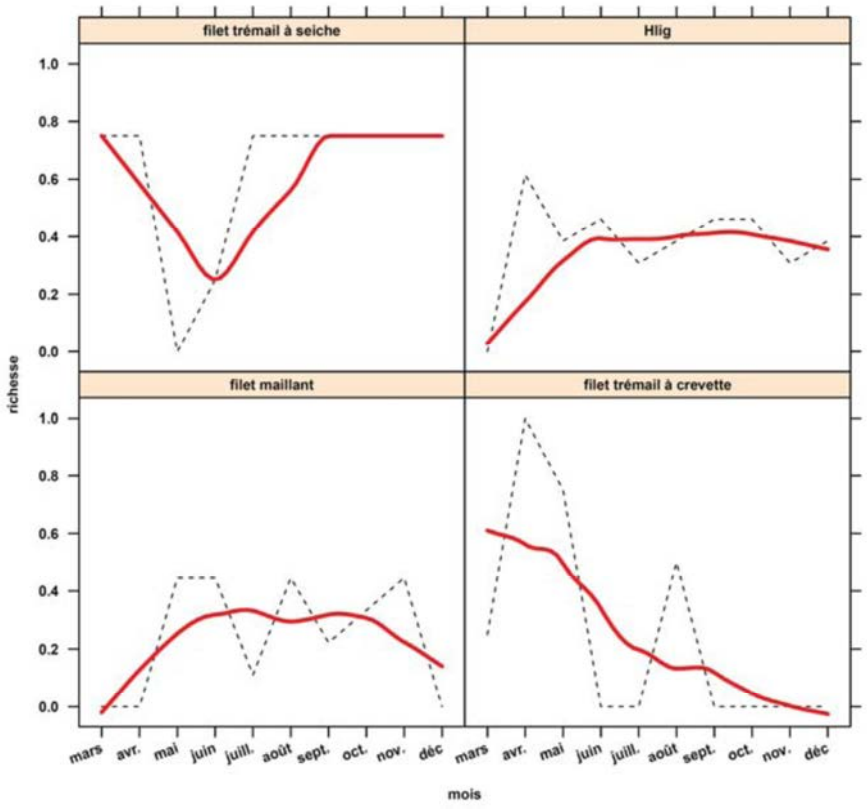

Figure 8: Richness of species by fishing gear and month in Ghannouch. Richness is expressed as the ratio between the number of species recorded and the total number of possible species sold for the considered stratum.

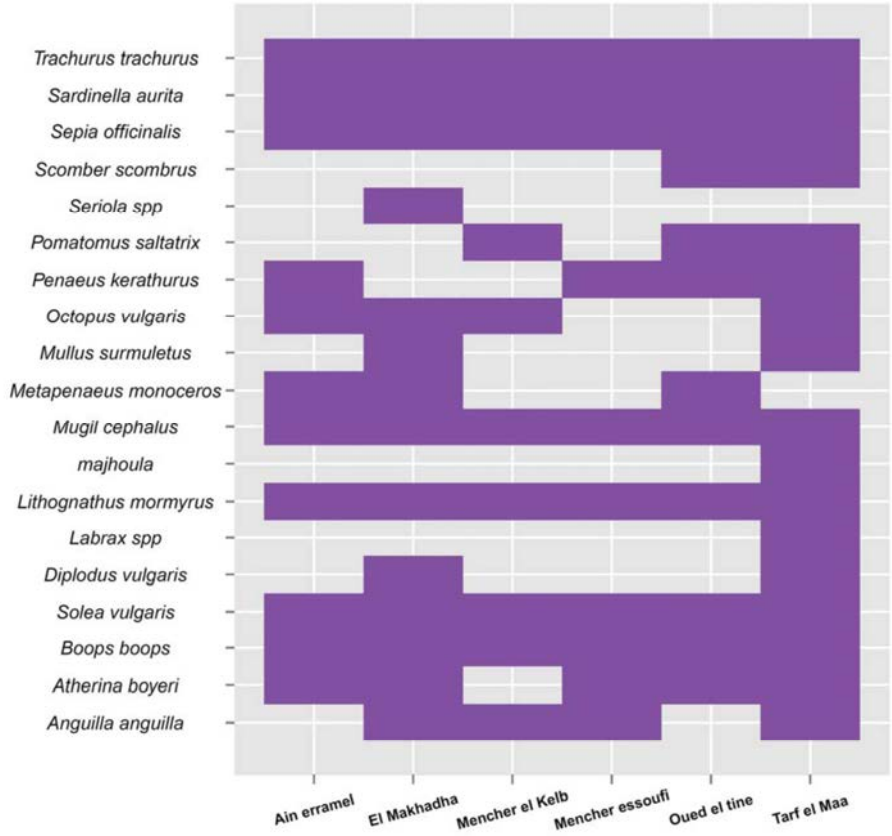

Figure 9: Fishing area used by the Ghannouch SSF related to target species

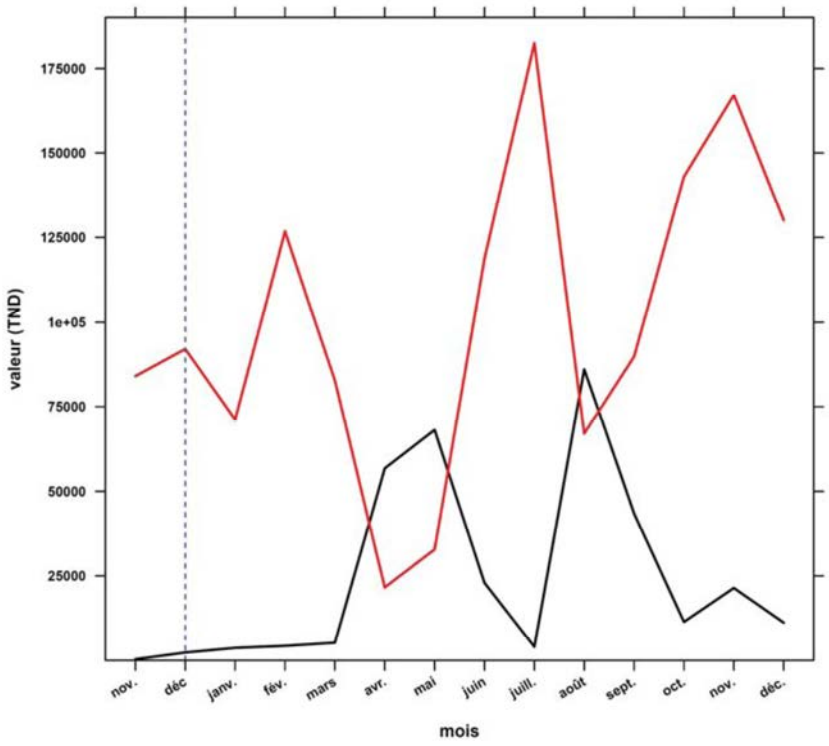

Figure 10: Production (in national Tunisian currency) by specie and month (Red: cuttlefish; Black: Others)

5.1 Conclusions from the Monitoring System and the Analysis of data

▪ The ArtFiMed monitoring system implemented by members of the fishing communities trained to collect all the necessary information provided baseline information on SSF in the communities studied.

▪ Data obtained with the ArtFiMed monitoring system provide accurate information and indicators on all aspects of SSF activity: fleet, fishing gear characteristics, catches by gear or period, effort by boat and gear, sizes distribution in the capture and economic production.

▪ The results are reliable, comparable between sites and countries and adapted to the calculation of indicators.

▪ The implementation of this system is very efficient in terms of human and financial costs compared to conventional monitoring systems, which do not involve fishermen.

▪ The participation of fishing communities contributes to strengthening the capacities of fishermen and professional organizations and their involvement in the fisheries management process, as a first step towards co-management.

▪ Data and information resulting from this monitoring system was used in some sub regional working groups of CopeMed for the assessment of shared stocks, as for example the blackspot seabream of the Gibraltar Strait area (CopeMed 2011).

▪ Replicating that system in other artisanal fishing sites would help to fill the current gaps in the monitoring of the SSF activity in the Mediterranean and Black Sea.

6 Diversification of activities improving communities livelihoods

Improving community livelihood was one of the main objectives for ArtFiMed. A series of case studies implemented to develop new community activities generating additional incomes in the selected sites in Morocco and Tunisia are summarized here below. The implementation of each activity had 4 Phases: 1. Participatory approach; 2. Selection of candidates; 3. Training of beneficiaries; 4. Monitoring and evaluation of results.

6.1 Activities in El Akarit and Ghannouch (Tunisia)

6.1.1 Developing capacity of Small Scale fisherwomen in El Akarit on traditional weaving and hand embroidery.

Objective: Training of fisherwomen and fishing community members in producing traditional products. Beneficiaries: 3 groups of 25 women trained during10 months. Results: women trained producing local products and new commercial opportunities.

6.1.2 Developing capacity of women of SSF in Ghannouch and Akarit on traditional tapestry.

Objective: Training of fishermen's wife and daughters in producing traditional carpets. Beneficiaries: 25 women were trained during 10 months. Results: women producing handmade traditional carpets.

6.1.3 Developing capacity of women in Ghannouch on reparation of fishing gears.

Objective: Training of fishermen's wife and daughters in repairing and assembly fishing nets. Beneficiaries: 20 women were trained during 10 months. Results: women repairing gears of her husband or other fishermen.

6.1.4 Developing capacity of women in Ghannouch on transforming fishing surplus products.

Objective: Training of fishermen's wife and daughters in handling and preserving fish products (sardines) for consumption other than fresh. Beneficiaries: 15 women trained in a workshop. Results: sardines increased their value when sold in different cooked ways.

6.1.5 Supporting the creation of a SSF organization in Ghannouch.

Objective: Create an SSF organization adapted to the needs of fishermen. Beneficiaries: More than 250 fishermen working in the Ghannouch area.

Phases for implementation: 1. Consultation and participatory approach with fishermen; 2. Preliminary study phase; 3. Awareness and capacity development of beneficiaries; 4. Contacts with other existent local organizations; 5. Creation of the organization and election of their representatives; 6. Administrative support of the SSF organization; 6. Monitoring and evaluation of the organization.

Results: A local organization of SS fishers is currently recognized and very active at national and international level.

6.2 Activities implemented in Dikky. Morocco

Document ArtFiMed 2009d reports activities implemented by ArtFiMed related with complementary actions to improve the community livelihood in Dikky. Main results are summarized below:

6.2.1 Creation of an Organization of SSF in Dikky.

Objective: Create Dikky fishermen's group for equipping, management and monitoring of winches Dikky.

Beneficiaries: more than 100 fishermen.

Phases: 1. Consultation and participatory approach; 2. preliminary study phase; 3. Awareness and capacity development of beneficiaries; 4. Creation of the organization; 5. Supporting the SSF organization; 6. Monitoring and evaluation of the organization. Problems: Identification of partners; Cost of winches; administrative procedure.

Results: Originally boat's owners and intermediaries had the power to manage the decision of the group; at the end of the process fishermen are predominantly represented in this grouping (strengthening the role of fishermen).

6.2.2 Support an organization of women of artisanal fishers.

Objective: Create a group of women for the development and diversification of activities generating new income. Beneficiaries: more than 25 women. Results: A group of organized women of fisherman administratively recognized generating new activities. Problems: consultation with administrations; Local costs.

6.2.3 Support the creation of a beekeeping organization for fishermen in Dikky.

Objective: Diversification of activities generating revenues independent of SSF.

Beneficiaries: 25 fishers of the SSF Cooperative of Dikky (Morocco) trained and supported during 20 days. Results: A group of fisher organized in a new activity. Problems: Stop ArtFiMed support; low production; bee mortality.

7 Lessons learned

The implementation of activities by ArtFiMed supporting SSF and organizations in Morocco and Tunisia provided many lessons, including those related to:

7.1 Support to the fishermen's Organization:

The creation of a fishermen's organization in Ghannouch (Tunisia) permitted to legalize the activity of 100 fishermen/artisanal boats. Main lessons derive from the participatory process that allowed to give them the right to access fishery resources; eligibility among others for obtaining micro-credit in the framework of the national fisheries development program; gave them access to training (security at sea, management), knowledge and information and facilitated their representation and integration in the national fisheries management system.

7.2 The creation of beekeeping cooperatives

As alternative and complementary activity to diversify the fishermen incomes this experience was relatively innovative. Indeed, in the case of Morocco, it was successful, it gave the

opportunity to fishers to develop both activities, This diversification reduces vulnerability and poverty. Thelessons we can draw from the participatory process to create a beekeeping cooperative are related to:

- The administrative process. Once engaged in the action, they can demonstrate they are eligible for subsidies and beekeeping material to increase the production
- The professional organization process takes time and requires follow up over a long period
- Finding a place to meet and to establish the headquarters of the organization is a general and important problem for a new organization.
- The process to create Professional Organization (PO) for SSF may be replicated in other sites in Morocco and Tunisia because the PO provide solutions to major problems faced by SSF communities (representativeness and implication in co management process, added value, trade and commercialization of products, access right to the resources, eligibility to micro credit and sector development programs, diversification and income increase, access to knowledge information education and training)
- The involvement of local authorities and institutions are crucial during the whole process, from the identification to the creation of a PO.
- The PO legislation is different in each country. Each country should provide updated training and education materials, support to the PO during the first years (in term of training, basic material, monitoring and assessment and facilitate the hosting of the organization) and facilitate the access to micro credits.
- Develop networking and experience sharing for PO by sector in each country and at international level.

7.3 Support to the creation and follow up of a SSF community based monitoring system (in Morocco and Tunisia).

Main lessons learned related to this activity include:

- Have a very low human and financial cost of implementation
- It is a reliable and responsive system for the calculation of indicators for monitoring SSF activities
- Contribute to develop capacity of SSF community, fishermen and professional organizations
- Strengthens the participation of fishermen and SSF communities in the fisheries management process

- Provides comparable data between sites and countries
- Is adapted to the specificities of small-scale fishing in the Mediterranean

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