GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN

COMMISSION GÉNÉRALE DES PÊCHES POUR LA MÉDITERRANÉE

First Regional Symposium on Sustainable Small-Scale Fisheries in the Mediterranean and Black Sea

27–30 November 2013, St. Julian's, Malta

Final list of abstracts

N.B. Abstracts are divided by thematic session.

Thematic session I – FAO Regional Projects

Current situation of small-scale fisheries in the Mediterranean and Black Sea: strategies and methodologies for an effective analysis of the sector

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Oral presentations

N. IO.1

Title: *Paper title*: **Etude socio-économique de la pêche côtière-artisanale dans le golfe de Gabès** *Presentation title*: **Analyse de l'activité de la pêche côtière-artisanale dans le golfe de Gabès : moyens de production, métiers de pêche et aspects socio-économiques**

Author(s): BEN SALEM Scander , GAAMOUR Adel, ROMDHANE Mohamed Salah and CHARRADA RAFIK Ben

Abstract : Ce travail s'intègre dans le cadre de l'étude de l'impact de la pêche sur la biodiversité dans le golfe de Gabès qui constitue une composante du Projet « protection des ressources marines et côtières du Golfe de Gabès » financé par la banque mondiale (GEF) dont l'objectif est de permettre un développement économique et social basé sur l'exploitation rationnelle et durable des ressources marines et côtières. On s'intéressera à l'analyse sociale et économique de l'activité de la pêche côtière-artisanale. Les indicateurs sociaux choisis pour cette étude sont la structure socio-professionnelle, le système de partage des gains, le salaire moyen, la formation professionnelle et la taille des ménages des pêcheurs artisans actifs dans la pêche de capture (unités de pêche), dans les pêcheries fixes ou dans la collecte à pied des palourdes. Pour l'étude économique nous réaliserons une analyse comparative entre types de pêche à travers les indicateurs économiques suivants : la productivité moyenne par unité (en poids et en valeur), le capital moyen investi, le prix moyen des captures, le Résultat Brut d'Exploitation (RBE) et la valeur ajoutée. En outre, une description des voies de commercialisation par espèce et par type de pêche sera réalisée. Les données de bases sont collectées à partir de 445 enquêtes terrains réalisées dans les trois Gouvernorats de Sfax, Gabès et Médenine. La méthode d'échantillonnage adoptée est celle stratifiée en prenant comme niveaux de stratification la zone et le type de l'unité de pêche. Le taux

d'échantillonnage réalisé est de 5% pour les barques côtières, 6% pour les pêcheries fixes, 2,5% pour la pêche à pied à la palourde et 14% pour la pêche aux éponges à la plongée. Pour les unités de pêche côtière-artisanale, parmi les 942 personnes questionnées 311 sont des patrons de pêche, 46 mécaniciens et 585 marins. Tous les pêcheurs artisans sont rémunérés à la part. Cette dernière varie selon le poste de travail, elle est d'une part pour les marins, 1,8 parts pour les mécaniciens et 2,8 parts pour les patrons de pêche. Le taux de couverture sociale observé est de 50%. Nous avons noté un très faible taux de formation professionnelle avec uniquement 5% des personnes enquêtées. La taille moyenne des ménages est de 6 personnes (légèrement supérieure à la moyenne nationale : 5 individus par ménage) avec un maximum de 14 individus/ménage à Kerkennah. Pour la pêche à pied, parmi les 112 individus échantillonnés 90 sont de sexe féminin (80%). Le taux de couverture sociale (5%) est le plus faible parmi tous les pêcheurs du golfe de Gabès . En outre nous avons enregistré le plus faible taux d'instruction (50%). Ceci dénote du quasi absence de l'encadrement et de soutien pour la population de femmes collectrices de palourdes dans le golfe de Gabès. Concernant la productivité en poids et en valeur (revenu brut) nous notons une variabilité entre types de pêche et zones de pêche. Mais globalement, les unités côtières-artisanales motorisées sont les plus performants en termes de productivité par rapport aux autres types d'unités de pêche et ce dans toutes les zones du golfe de Gabès. Les prix moyens les plus élevés sont obtenus par les unités motorisées de Djerba et de Zarzis et ce en raison de leur proximité de la zone touristique la plus importante en Tunisie (Zone Djerba-Zarzis). Concernant le salaire moyen, le fait marquant c'est que les unités non motorisées des zones de zarzis et de Kerkennah ont devancé tous les autres types de pêche. Ces zones sont les lieux d'abondance de poulpe et de seiche et puisque les unités non motorisées utilisent en moyenne moins de main d'œuvre et consomment moins de charges, le salaire moyen est par conséquent plus élevé. En termes de résultat économique exprimé par le RBE, ce dernier a été positif pour toutes les catégories de pêche sauf pour les unités (motorisées et non motorisées) de la zone de Skhira/Mahares. Il est important de noter également les performances exceptionnelles des unités non motorisées des zones de Zarzis et de Kerkennah qui sont parvenus à réaliser des résultats supérieurs à ceux des unités motorisées actives dans tous les ports de la zone d'étude. Ainsi, ces segments ont démontré une meilleure efficacité d'utilisation du capital et de la main d'œuvre que tous les autres types de pêche.

N. IO.2

Title: **Economic performance of small scale fisheries versus active gears: the Albanian case study**

Author(s): COBAJ Patriot, COBANI Mimoza, PINELLO Dario, ARNERI Enrico and MILONE Nicoletta

Abstract: Small scale fisheries in Albania has developed remarkably since the 1990s as an alternative way to unemployment and low income in coastal areas. More than 50% of the artisanal fishing vessels in the country account for polyvalent passive gears and the remaining for polyvalent gears. Artisanal vessels play an essential social role as labour generator and as source of primary income in Albanian fishing communities while trawlers are a fundamental economic segment generally ensuring relatively high output in terms of production and gross income . In this study the performance of small scale fisheries versus active gears is analyzed. . A broad set of economic indicators is estimated for the fishing fleet operating in Albania in 2012, based on data obtained from a sample survey based on direct interviews with fishers. Artisanal and trawlers were the most representative segments of the study fleet. By considering the artisanal and the trawlers segments together, the two groups of vessels were generally performing adequately, although not all the performance indicators showed a profitability. The outcomes of the survey underlined the importance of this fisheries in the country and could be considered a reference background point for decision-makers for any management strategies may be taken for the development of small scale fisheries in Albania.

N. IO.3

Title: **Small-scale fisheries in the Adriatic Sea: information gaps at biological, socio-economic and environmental level**

Author(s): COBANI Mimoza, DRAGIČEVIĆ Branko, DULČIĆ Jakov, GAMBINO Monica, GIOVANARDI Otello, GRATI Fabio, GRGIČEVIĆ Robert, IKICA Zdravko, JOKSIMOVIC Aleksandar, KOLITARI Jerina, KRALJEVIĆ Miro, MARČETA Bojan, MATIĆ-SKOKO Sanja, PALLAORO Armin, STAGLIČIĆ Nika, ŠVAB Jernej, TUTMAN Pero, VRGOĆ Nedo, ARNERI Enrico, CERIOLA Luca and MILONE Nicoletta

Abstract: The small-scale fisheries is a prismatic and dynamic sector and its characteristics vary from one location to another. It tends to be strongly anchored in local communities reflecting their traditions and values. In the Adriatic Sea a wide range of small-scale fisheries (SSFs) are engaged in various set of gear fisheries over the year. SSFs in the region target a pool of species

using a high number of fishing methods mainly depending on season (e.g. only in Croatia a total of 55 different fishing gears are officially listed and currently used). Many small-scale fisheries are effectively unregulated, unreported and poorly monitored. Within the framework of the Working Group on Small Scale Fisheries in the Adriatic Sea of the FAO AdriaMed Project, the major knowledge gaps and priorities for the small scale fisheries sector in the Adriatic have been identified. Lack of appropriate and complete statistics is one of the main constraints identified for most of the Adriatic coastal countries (few countries have in place routinely monitoring programmes while others are dealing mostly with estimates). Moreover, when dealing with data requirements, the social and economic component of small scale fisheries should be addressed; in particular basic data on level of employment, catch quantity and value, fleet composition, fishing season, area and, ideally, on by-catch should be collected..In the Adriatic context, when dealing with shared stocks and subregional management processes, attention should also be paid at national management plans to tackle issues like territorial access rights. Adriatic SSFs management processes, they strongly require the harmonization of the information available, the data collection and data requirements. Management of SSF in the subregion has often been targeted to fishing gear, whereas individual species are caught with variety of gear types, so any future management indication needs to be based on all gear types used. Full participation of fishing communities in decisions on the sustainable use of natural resources should be facilitated as well as monitoring and surveillance through innovative approaches to marine conservation (co-management) should be considered. The outcomes of the discussion held among Adriatic experts on SSFs is provided as background for a wider discussion on perspectives and sustainable development of SSFs at Mediterranean level taking into account the FAO principles defined by in the International Guidelines on Securing Sustainable Small –scale Fisheries.

N. IO.4

Title: **Submission for First Regional Symposium on Sustainable Small scale Fisheries in the Mediterranean and the Black Sea**

Author(s): FLORES Martin Nicholas, MIFSUD Roberta, GATT Mark, MICALLEF Reno, MUSCAT Eric and PACE Marie Louise

Abstract: The Maltese fishery is a relatively small industry of a typically Mediterranean artisanal type, and is frequently described as multi-species and multi-gear fisheries, with the majority of the fishermen switching from one gear to another several times throughout the year. The Maltese fleet as at 31

December 2012 consisted of 1,041 professional vessels of which 39% were professional full-time and 61% were professional part-time vessels. A good 92% (960 vessels) of the professional vessels are less than 12 metres in length overall and more than half of them are of a traditional design, mainly 'Luzzu' and 'Kajjik' and these operate mainly in coastal waters. By far the most popular gear used by the Maltese fishing fleet, in terms of number of boats having specific registered gears, are various forms of hooks-and-lines (60%). Different types of gillnets and entangling nets are also popular (20%), whilst traps form over ten percent of the registered main gear. The most prevalent method of fishing is set bottom longlining, followed by trammel netting, which is practiced by 27% of the fishers, principally those operating smaller craft. Several species are targeted by the Maltese fishing fleet including the three main target species in Malta (*Thunnus thynnus*, *Xiphias gladius* and *Coryphaena hippurus*), demersal species and to a lesser extent pelagic species. Fishing activity and catches of these species very much depend on the season, mainly due to weather conditions as well as fishing seasons governed by local and international regulations.

N. IO.1

Title: *Paper title*: **La pêche côtière-artisanale dans le golfe de Gabès: Caractérisation des moyens de productions et activité des métiers de pêche** *Presentation title*: **Analyse de l'activité de la pêche côtière-artisanale dans le golfe de Gabès : moyens de production, métiers de pêche et aspects socio-économiques**

Author(s): GAAMOUR Adel, BEN SALEM Scander, ROMDHANE Mohamed Salah and CHARRADA RAFIK Ben

Abstract: Ce travail s'intègre dans le cadre de l'étude de l'impact de la pêche sur la biodiversité dans le golfe de Gabès qui constitue une composante du Projet « protection des ressources marines et côtières du Golfe de Gabès » financé par la banque mondiale (GEF) dont l'objectif est de permettre un développement économique et social basé sur l'exploitation rationnelle et durable des ressources marines et côtières. On s'intéressera à la présentation de l'activité de la pêche côtière-artisanale en terme de caractérisation des unités et des engins de pêche et des espèces cibles ainsi que de l'activité des métiers de pêche (associations engins-barques). Pour ces derniers l'étude a notamment concerné l'analyse spatiotemporelle des captures, de l'effort de pêche et des prises par unité d'effort (PUE). Les données de bases sont collectées à partir de 445 enquêtes terrains réalisées dans les trois Gouvernorats de Sfax, Gabès et Médenine. La méthode d'échantillonnage adoptée est celle stratifiée en prenant

comme niveaux de stratification la zone et le type de l'unité de pêche. Le taux d''échantillonage réalisé est de 5% pour les barques côtières, 6% pour les pêcheries fixes et 2.5% pour la pêche à pied. La majeur partie des barques côtières non motorisées (BCNM) appartient à la catégorie de longueur 0-6 m. Pour les barques côtières motorisées (BCM) c'est la catégorie de longueur 6-12 m qui domine. Les barques côtières opérant dans le golfe de Gabès sont relativement vieilles ; la catégorie d'âge >20 ans est la plus fréquente. La catégorie de puissance ≤50cv est la plus représentée. A côté de la pêche à pied, des pêcheries fixes et de la pêche aux éponges sept engin de pêche sont utilisé à bord des unités de pêche côtière : Filets encerclant, sennes, pots à poule, pierres creuses à poulpe, filets maillants, filets trémails et palangres. Parmi ces engins les filets trémails présentent l'éventail d'espèces le plus large. En effet, 37 espèces et groupes d'espèces sont présents dans les captures de ces filets dont 23 sont considérés par les pêcheurs questionnés comme espèces cibles totalisant 81.6% des réponses totales. Les plus importantes espèces et groupes d'espèces cibles sont la seiche commune (*Sepia officinalis*), le poulpe commun (*Octopus vulgaris*), les crevettes, les soles et les spars (*Diplodus* sp.). Pour les BCNM et les BCM nous avons identifié respectivement 17 et 28 métiers de pêche. Pour les deux types de barques l'association d'engin la plus utilisée est T,M (Trémail-maillant) avec 45% des réponses collectées pour chacun. Nous avons noté une grande variabilité de l'activité spatiotemporelle des différents métiers aussi bien en termes de captures, d'effort que de prise par unité d'effort. En moyenne :

- une BCNM est active durant toute l'année, elle réalise 166 sorties/an, sa PUE est de 22kg/sortie et elle opère dans les zones de profondeurs inférieures à 30m
- une BCM est active durant toute l'année, elle effectue 167 sortie/an, sa PUE est de 44 kg/sortie et elle exploite les zones de profondeurs inférieures à 50m.

N. IO.5

Title: **Amélioration du Système Statistique de la Pêche Artisanale**

Author(s): BEN HAFSIA Inès

Abstract: La pêche artisanale (dite côtière) en Tunisie, se place au premier rang dans l'employabilité du secteur de la pêche avec une population maritime d'environ 33 500 marins exploitant près de 10500 unités de pêche à majorité sans moteurs. Elle participe avec plus de 25% des captures et 38% en valeur des produits de pêche. Néanmoins, ses caractéristiques et ses données de base font défaut en raison de la non adéquation du système actuel de collecte des données

statistiques. Ainsi, un projet pilote SSPAT a été réalisé au niveau du Gouvernorat de Monastir durant la période Octobre 2011-Mai 2012 avec l'appui technique et financier du Bureau Sous-Régional de la FAO à Tunis. Compte tenu des résultats concluants de la phase pilote du projet SSPAT et de l'approche par échantillonnage pour le suivi statistique de la pêche côtière avec intégration de l'aspect socio-économique de cette activité, un projet d'extension de la dite phase sur tout le littoral tunisien a été préconisé. L'objectif global de ce projet est : - L'amélioration de la performance de la base de données sur la pêche artisanale/côtière pour diverses applications statistiques; - Le développement et la mise en place d'un système informatique pour l'échange, l'analyse et le traitement des données statistiques de la pêche; - La consolidation et l'amélioration des revenus des pêcheurs artisans; - L'aide à l'élaboration de plans d'action pour une gestion durable des pêcheries artisanales.

N. IO.6

Title: **The Socio-economic situation of the small scale fishery in Lebanon**

Author(s): MAJDALANI Samir, EL MOKDAD Dahej, PINELLO Dario, DIMECH Mark and RIGA Constantina

Abstract: The Lebanese fishing fleet is the only fleet in the Mediterranean, which is completely made up of small scale fisheries. However, since the fishery is extremely small it has been neglected as opposed to other agricultural sectors. Apart from that, the sector has suffered enormously from the effects of war in 2006, both directly as a result of Israeli hostile actions and indirectly from loss of income caused by the conflict and its after effects. In this study, we investigated the socio-economic circumstances of the Lebanese fishing and tried to point out the main difficulties exhibited by the small-scale fishery in Lebanon, followed by suggestions on how it can be improved. In fact, this was the first countrywide socio-economic study ever undertaken. A questionnaire survey was conducted in order to investigate the main socio-economic characteristics of the fishing vessels, by interviewing the vessel owners or skippers. In total, 389 owners/skippers were interviewed which represented 27% of the total fleet. The results showed that the small scale fleet was making a profit of 24% which is comparable to other Mediterranean countries. The average price per kg of the production in Lebanon was $5.6, which is relatively high compared to the European prices ($6.1/kg). However, the revenue of the fleet provided an annual salary of about 3,000 USD per fisher to about 3,229 fishers. Considering that about 45% of the fishers are also owners, their revenue also included the net profit and which, on average, was 4,400 USD per vessel

per year. This resulted in an overall gross income of 7,400 USD per fisher who is also an owner (fisher-owner). The GDP per capita is 9,904 USD and the income per fisher-owner is about 20% lower than the national GDP per capita. However, a fisher who is not an owner earns about 70% less than the GDP per capita. The minimum annual wage in Lebanon is about 5,400 USD, so a fisher who is not an owner earns about 45% less than the minimum wage. Social security, social costs and pension contributions, are practically nonexistent. One has also to consider that the salary is also biased since it does not include any social contributions that are a form of deferred compensation. This is important in order to have a retirement plan, which is an arrangement to provide fishers with an income during retirement when they are no longer earning a steady income from the fishing activity. The results show that the fishing communities in Lebanon are considerably poor, and that they don`t pay any social security for pensions. Appropriate action should be taken in order to improve the livelihood conditions of this part of society. The study suggests several ways on how the incomes of the Lebanese fishers could be increased, from the social, economic and the efficient harvesting of the resources. The suggestions include the exploration of the possibility to support the fishers through social security contributions, to increase the added value of the product, to increase the quantity of production by adjusting the fishing effort in order to fish at the Maximum Sustainable Yield (MSY) or one of its proxies, to test the possibility to use alternative fishing techniques and to explore the possibility of shifting part of the fleet to new fishing grounds, in deeper and/or offshore waters, in order to put new unexploited species on the market and to reduce the present high pressure on coastal resources.

N. IO.7

Title: **Pêche artisanale en Méditerranée marocaine, un secteur en plein essor et un intérêt scientifique de plus en plus important**

Author(s): MALOULI IDRISSI Mohammed and FARAJ Abdelmalek

Abstract: La pêche artisanale en Méditerranée marocaine présente un grand potentiel halieutique, avec une production d'environ 7000 tonnes réalisée par 2650 barques et composée principalement d'espèces de haute valeur commerciale destinées à plus que 50 % vers l'exportation. Sur le plan scientifique, cette activité suscite un intérêt particulier tant pour les aspects socioéconomiques que pour les aspects bioécologique. L'Institut National de Recherche Halieutique (INRH) suit de près ce secteur, surtout pour accompagner les diverses actions de développement menées par le Département

des Pêches Maritimes. En raison de l'absence d'un système régulier de collecte de données, l'INRH a le grand défi de collecter les informations nécessaires pour répondre à deux questions cruciales pour le futur de ce secteur, il s'agit notamment de (1) Quelle est la place de la pêche artisanale dans le secteur productif de pêche dans sa globalité ; (2) Evaluer l'impact de l'activité de la pêche artisanale sur les ressources halieutiques méditerranéennes. Un autre axe sera analysé en s'inspirant de l'expérience Atlantique Marocain, il s'agit d'une pêche artisanale qui utilise des petits moyens traditionnels pour servir une grande industrie en amant, ce qui peut présenter une pression et un danger sur les ressources.

N. IO.8

Title: **A standard methodology to collect socio-economic data in the Eastern Mediterranean: experience from Egypt, Gaza Strip, Lebanon and Turkey**

Author(s): PINELLO Dario and DIMECH Mark

Abstract: Within the context of the Ecosystem Approach to Fisheries (EAF) socio-economic information is extremely important in order to provide fisheries managers with scientific advice on the socio-economic context of the fisheries. In this respect , in recent years socio-economic data has been collected in several parts of the world. Apart from the methodologies of the European Commission Data Collection Framework (DCF), at present there is no standard methodology to collect socio-economic data in the Mediterranean. In this paper we propose a standard methodology to collect socio-economic data in the Mediterranean based on the experience gathered in four different countries in the Eastern Mediterranean. The methodology is based on a statistical design, where the licensed fishing fleet, for the reference year is taken as the population and the data, refer to the year n-1. So during 2013 the data for 2012 was collected. The sampling unit was the single licensed fishing vessel and it was based on a stratified random sampling without replacement. Sampling is stratified due to the fact that the fishing vessels of the fleet are divided into homogenous groups or segments based on suitable variables. Independent samples are then taken from each of these segments. Following this process, each sampling unit is chosen, so that each sampling unit has the same probability of being chosen during the sampling process and avoiding the possibility to be chosen more than once. The sample size was determined in order to have a large sample and to minimize as much as possible the variance. Since in all the countries such a survey was convened for the first time, the appropriate sample size could not be determined a priori, and hence a coverage

rate from 15 - 50 % was used depending on the number of vessels in each fleet segment. The stratification was according to the GFCM task I fleet segmentation which is based on the technical and dimensional characteristics of the vessels. The statistical design was the most important step in order to maintain a standard methodology in all the areas sampled. Following that a questionnaire was designed to evaluate the socio-economic circumstances (costs and revenue) and activity of fishing vessels. The selected vessels were surveyed by means of direct interviews and the technical data on the fleet, such as vessel length, weight and power, age, and demographic data on vessel owners were obtained from the respective fisheries department. The socio-economic variables were the ones defined in the GFCM task I, however some additional variables were also collected which were specific to the area. The quality of the data was assessed using the coefficient of variation and modified for small populations. The methodology was successfully used in all the areas, where in general the data gathered had a low coefficient of variation which shows that the statistical quality of the data was extremely good.

N. IO.9

Title: **State of Small-Scale Fisheries Sector in the Romanian and Bulgarian Black Sea Coast during the past decade**

Author(s): NICOLAEV S., MAXIMOV V. and RAYKOV V. S.

Abstract: Changes during recent decades in the Black Sea ecosystem have contributed to the deterioration of structural and functional components of the marine ecosystem, which had direct impact on reducing the biological diversity and productivity, affecting the ecological balance and quality of life. Consequently, the Black Sea biota, including the ichthyofauna undergone major changes, both in the qualitative and quantitative structure and the behavior of different species. These changes are the result of anthropogenic activities, direct - through fishing pressure - and indirect - by environmental deterioration, especially in the western part of the sea. Characteristic of the Black Sea basin is that most of the fish occupy extensive areas, located in the exclusive zone of several riparian countries. In this respect, the Romanian coast is extremely important, knowing its role in the feeding and breeding of the main fish species, although the catches in this area do not exceed 2-3% of the total catch taken in the Black Sea. Romania and Bulgaria, Black Sea riparian countries, have together a coastline 622 km long (Romanian coastline - 245 km, Bulgarian coastline - 378 km) and the shallow continental shelf in their area of responsibility is an important segment of the regional fishery potential in terms of commercial interest, the domestic and international market demand, given the

competition created by opening the import of fishery products, especially frozen fish, the lack of operating experience in the new conditions, the ageing fleets and especially increased fuel and maintenance costs, which led to a drastic involution of commercial fisheries in the Black Sea. Small-scale fisheries are practiced in the Romanian and Bulgarian shallow marine waters with fixed gears and are characterized mainly by concentrating activities in the first six months of the season (April to September), when usually the main fish species of commercial interest approach the coast for breeding and feeding. Fishing is practiced along the coast, in about 30 fishing points, located between Sulina and Ahtopol, with *pound nets, gillnets, longliners, handlines* and *beach seines*, at depths between 3.0 and 11.0 m, and *turbot gillnets* and *longliners* - up to depths of 40-100 m. The catches and fishing productivity vary from year to year, depending on fishing effort, the evolution of hydroclimatic conditions, the state of the main fishable species stocks and anthropogenic factors. Catches in the shallow area in the last decade have fluctuated between 100 - 616 tons, at the Romanian coast, and 650 - 3,500 tons, at the Bulgarian coast.

Key words: *Black Sea ichthyofauna, fishing pressure, catches dynamics, small-scale coastal fisheries*

N. IO.10

Title: **Secteur de la pêche artisanale au Maroc**

Author(s): MOUSTATIR Abdellah

Abstract:

Posters

N. IP.1

Title: **Risks associated with lagoon and coastal small scale fisheries in Amvrakikos Gulf, western Greece**

Author(s): CONIDES Alexis, HUNTER Shane, KLAOUDATOS Dimitris, GLAMUZINA Branko and MANTAS George

Abstract: Risks associated with fisheries conducted by professional fishermen in lagoons and open sea (along the coast) were investigated in the area of Amvrakikos Gulf (Western Greece; N30°0'00.0", E21°0'00.0"). Amvrakikos Gulf is fjord-like elongated gulf with an area of 405 km² and a maximum depth of 55 m (though most marine area exhibits depths below 25 m) located in Western Greece. Along the coastline of the Gulf there are more than 20 large and small brackish water lagoons, from which the north lagoon complex is the largest in the Balkans with an area of 55 km². The lagoons are exploited for fisheries by local professional fishermen cooperatives while there are other professional fishermen who fish along the gulf coastline outside the lagoons. The information on coastal fishery typology and risks were collected directly from the fishermen by using a face-to-face approach for the completion of structured questionnaires suitable to build mental maps. The paper presents the results of the mental mapping of the lagoon and coastal fishermen, the analysis of the data and the comparison of the overall mental maps.

N. IP.2

Title: **La pèche responsable assure la futur**

Author(s): EL ANDALOSSI Mohamed

Abstract: Le respect des lois de pèche garantit ; la préservation de ressources halieutiques, sécurité alimentaire, des postes de travail durable et un développement économique durable.

- Les filets maillant dérivantes utiliser par de la flotte marocaine en méditerranée et dans les eaux atlantique adjacente, ont provoqué la disparition d'un nombre incalculables d'espèces marines non cible (tortues marines, dauphins, cétacés, poisson lunes….)
- Le chalutage illégales dans les eaux peux profonde est la cause principale des déclins de population de poissons et la destruction des écosystèmes marins.

N. IP.3

Title: **La transformation des « charfias » et son impact sur l'écosystème marin**

Author(s): KACEM Hichem and NEIFAR Lassaf

Abstract: Les charfias sont des engins de pêche passifs dont le principe consiste à intercepter les poissons au cours de leur nage, au moyen de palissages en branches de palmier, et à les diriger vers des chambres de capture se terminant par des nasses. Ces engins de pêche traditionnels sont utilisés dans le golfe de Gabès et particulièrement aux îles Kerkennah, à Chebba et à Djerba. Ils sont calés dans une zone des hauts fonds et où l'amplitude des marées est importante (Sellemi et al., 1994). L'implantation des Cherafi se faisait à partir de l'automne (septembre –octobre) jusqu'au début de l'été (Juin – Juillet). Actuellement, cette pêcherie fixe est sujette à une profonde transformation au niveau de sa structure. Les sous produits du palmier dattier qui formaient la presque totalité de la structure de la Charfia sont remplacés par d'autres produits tels que le polyamide, l'acier et le PVC. Des observations effectuées à Kerkennah (34°45´N, 11°17´E) et Chebba (34°14´N, 11°06´E) et ont été menée sur deux types de charfias, l'une construite à partir des sous-produits de palmiers dattier et l'autre bâtie à partir de produits synthétiques (polyamide, PVC) et des matériaux ferreux. Cette étude révèle que les oeufs de seiche Sepia Officinalis et de poulpe Octopus vulgaris qui sont fixés sur les feuilles de palmiers restent humectés lors de la basse marée. Par contre, ils sont déshydratés lorsqu'ils sont fixés sur les filets polyamide des charfias transformées. De plus, les résultats obtenus montrent que les feuilles de palmiers forment un microhabitat pour plusieurs épibiontes faisant partie du régime alimentaire de nombreuses espèces de poissons. Les charfias traditionnelles sont démantelées au cours des mois de l'été, période de repos biologique crucial, pour préserver et renouveler les stocks. (Rhouma et Labidi, 2006) alors que les nouveaux matériaux utilisés dans les charfias transformées permettent sont gardé sur place deux à trois ans de suite. Le mollusque exotiques Pinctada radiata, considéré comme l'une des pires espèces invasives de Méditerranée (Treftaris et Zenetos, 2006), trouve en effet, un support idéal pour se fixer sur les filets des charfias transformées. En revanche, la prolifération de cette espèce est limitée sur les feuilles de palmiers du fait qu'elles ne représentent pas un support adéquat pour leurs fixations sur les folioles. Puisque les individus accrochés finissent par tomber sous l'action de leur propre poids sur les fonds de mer pour être capturés par les poulpes.

N. IP.4

Title: **La pêche dans les barrages Tunisiens: Diagnostic de la situation actuelle et opportunités de développement**

Author(s): MILI Sami, NOURI Rym, LAOUAR Houcine and Hechmi MISSAOUI

Abstract: L'expérience tunisienne dans l'exploitation des retenues de barrages par la pêche remonte aux années 1960. Cette activité est initiée par l'Office National des Pêches (ONP) à travers l'alevinage de certaines retenues de barrage par les alevins de diverses espèces et leur exploitation par la pêche. Actuellement, neuf gouvernorats sont concernés par ce type d'activité (Béja, Ben Arous, Bizerte, Jendouba, Le Kef, Nabeul, Zaghouan, Kairouan et Siliana). Le nombre de barques est estimé à 232 et le nombre de pêcheurs à 450. Ces pêcheurs sont des paysans des régions intérieures du pays qui ont un niveau de trésorerie assez bas. La pisciculture extensive leur offre la possibilité de produire de façon rentable un poisson pas cher, qu'ils pourront facilement vendre ou consommer. La production dans les retenues de barrages est passée de 843,5 tonnes en 2000 à plus de 1170 tonnes en 2010. Les captures les plus importantes sont enregistrées en hiver, les espèces communément pêchées sont : la carpe, le sandre, les mulets, l'anguille, le silure, le barbeau et le tilapia. Lorsqu'elles sont importantes, les captures sont écoulées sur le marché de gros de Tunis sinon elles sont commercialisées dans les villes et villages proches des retenues ou autoconsommées. Les bonnes croissances observées sur les espèces introduites, les installations de quelques groupements et jeunes diplômés sur quelques retenues, les productions obtenues, montrent à l'évidence que les lacs de barrage représentent un potentiel important dont il faut poursuivre leur mise en valeur. Néanmoins, la gestion halieutique des retenues de barrages en Tunisie connait plusieurs problèmes tant sur le plan administratif que technique. L'absence d'un système fiable de collecte des statistiques de pêche dans ces retenues forme un handicap majeur pour le développement de cette filière. Les statistiques déclarées sont aussi bien critiqués par les professionnels que par les scientifiques inhibant ainsi toute étude fiable se basant sur ces données. D'autre part, et malgré les efforts déployés par l'état à travers ces différents organismes (administration, centre technique, instituts de recherche) que ce soit par intervention directe ou bien à travers des projets de développement financé par des fonds internationaux, les quantités produites restent au delà des prévisions de différents plans et stratégies de développement économique et social. Comme solutions, on recommande la mise en valeur piscicole de toutes les retenues de barrage en favorisant au maximum la capture de mulet pour le marché tunisien et le sandre pour l'exportation. Le potentiel de production de

1000 tonnes/an peut être atteint suite au transfert du sandre et des poissons fourrages dans les barrages où ils ne sont pas présents, l'introduction de carpes chinoises produites en écloserie et l'alevinage annuel et systématique en alevins de mulets ainsi que l'amodiation progressive de toutes les retenues à des groupements de pêcheurs ou à des sociétés privées.

N. IP.5

Title: **Developing and Adopting the National Reporting System for Artisanal Fisheries in Lebanon, FLOUCA Web**

Author(s): NADER Manal R., EL INDARY Shadi and STAMATOPOULOS Constantine

Abstract: In Lebanon, fisheries are artisanal in nature with the country's coastal sea comprising 1685 fauna species, 50 of which are fish of commercial importance. The legal framework of the sector suffers from an outdated fishing law (No. 2775) that was enacted in 1929, while a new updated law was drafted and is currently pending in the Lebanese Parliament. In addition, the overlapping of mandates of national authorities and the severe stress on the coastal marine environment from sea-filling, destruction of habitats, land based pollutants, global warming and invasive species are leading to a decrease in fish catch. The sector also suffers from irregular data collection adding to the difficulty of establishing management plans for sustainable fishing practices. The Marine Resources and Coastal Zone Management Program (MRCZM) at the Institute of the Environment (IOE) at the University Of Balamand (UOB) initiated a data collection program of commercial fisheries that has been on-going since 2005. Information about effort, fishing gear, species, quantity, price and size is collected on a weekly basis for 88 commercial species from the four major ports in North Lebanon covering 45% of the Lebanese coastline. Gathered information is entered in the FLOUCA utility (Fish Landing Operational Utility for Catch Assessment) allowing the generation of monthly and yearly trends of catch, catch per unit effort (CPUE), and average price for the monitored species. Currently, FLOUCA is being expanded into FLOUCA Web through a collaborative activity between the FAO-EastMed project, the IOE-UOB and the Ministry of Agriculture (MoA) to cover the whole Lebanese coastline. This entailed training of the MoA rangers and staff on FLOUCA Web that included training on the updated catch/effort and vessel registration forms, and field data collection, entry and reporting. The FLOUCA Web system handles catch/effort data to regularly produce monthly and yearly estimates on catch, fishing effort, prices, values and average fish size on national scale. FLOUCA Web operates as an internet-driven system with outposts at selected

major ports of the Lebanese coastline. Data inputting and estimations are performed locally but are visible throughout the network. It also offers a wide variety of statistical diagnostics that are in line with the latest requirements demanded by regional and international fisheries bodies (specifically FAO and GFCM Task 1). FLOUCA Web will be delivered to the MoA to act as the fisheries national reporting system. The country of Lebanon will therefore possess for the first time a system to report on its fisheries sector according to FAO and GFCM Task 1 requirements and will have trend, empirical datasets to enact appropriate management plans.

N. IP.6

Title: **La pêche artisanale en Tunisie: Diagnostic des techniques et des engins de pêche utilisés**

Author(s): NOURI Rym, MILI Sami, JARBOUI Othmen and MISSAOUI Hechmi

Abstract: La pêche côtière est pratiquée en Tunisie par le moyen de petites embarcations motorisées ou non motorisées. De plus, cette activité peut être réalisée à pied comme la pêche de la palourde, des éponges ou en utilisant l'épervier. Ces techniques artisanales sont intégrées dans les coutumes locales et nécessitent des populations stables, des sites accessibles permettant la pêche à pied ou au moyen de petites embarcations. Du point de vue économique, la pêche côtière se caractérise par un faible investissement par rapport aux autres modes de pêche et par une structure économique et sociale simple et relativement homogène. La pêche artisanale tunisienne gagne progressivement de l'importance en passant du Nord vers le Sud avec une concentration au alentour de l'archipel de Kerkennah et l'île de Djerba. De plus, la pêche artisanale tunisienne se localise au niveau des lagunes et des sites abris. Cette activité s'étend sur une frange littorale relativement étroite et exploite une multitude d'espèces de haute valeur commerciale au moyen d'engins de pêche divers. Au total, on recense 20 techniques de pêche réparties en 5 catégories utilisées en Tunisie. Ces techniques sont orientées vers des espèces cibles au cours des saisons et dans des zones bien déterminées. Les principales techniques utilisées sont les lignes et les palangres, la pêche à pied, les pièges, les filets droits et les sennes de plage. Les travaux d'évaluation de stocks effectués par l'INSTM (2010) ont montré que les principales espèces ciblées par la pêche artisanale sont dans une situation d'exploitation optimale à surexploitées. L'utilisation des techniques de pêche artisanale devient de plus en plus rare aujourd'hui. Cette activité est menacée de disparaître sous l'effet conjugué de pressions multiples dont l'impact de la pêche industrielle sur les stocks et

l'exode de la population maritime. En effet, cette activité souffre du rendement faible par rapport aux autres techniques modernes ce qui entraine une faiblesse de la rentabilité économique. La pêche artisanale en Tunisie subi d'autres types de pressions telles que la concurrence des matériaux synthétiques provoquant le changement des conceptions initiales des charfias, des nasses et des pierres creuses.

N. IP.7

Title: **How does an outnumbered small scale fleet perform? The case in Egypt**

Author(s): PINELLO Dario, EL HAWEET Alaa, SALAH Atif, DIMECH Mark and RIGA Constantina

Abstract: The backbone of the Egyptian fishing fleet in the Mediterranean is made up of trawlers and small scale fisheries are a minority compromising 20% of the fleet in terms of number of vessels and 4 % in terms of tonnage. Actually, there is an inverted pyramid in the structure of the Egyptian fleet where the big vessels, mostly trawlers, make up the largest part of the fleet as opposed to the small scale fishing vessels. Being outnumbered in a sea of larger vessels, the small scale fishery exhibit all sorts of competition. The larger vessels including trawlers do not have any restriction in fishing grounds, and can fish at all depths and as close to the coast as they can. Since the area off the Nile delta is characterized by shallow water muddy bottoms, without rocky areas, trawl activities are practically conducted everywhere thus limiting the area that the small scale and passive gear fishery can exploit without the influence of trawlers. This often results in conflicts with the small scale fisheries, where for example they can easily loose fishing gears due to considerable trawling activities. The competition and conflicts between the trawl and small scale fishers and the dominance of the larger vessels by time could have led to the inverted pyramid structure of the Egyptian fleet. One other restricting factor for the small scale fleet is that the shelf area around the Nile delta is extremely large so deep waters are relatively far away from the port, so that deep water demersal resources and large pelagic species are not easily accessible by the small scale fisheries. In this study we compare the economic performance of the small scale fleet with the average values of the fishery in Egypt. The data for this study was gathered through a questionnaire survey in order to investigate the main socio-economic characteristics of the fishing vessels, by interviewing the owner or skipper. Mean Socio-economic indicators by vessel were then calculated for the small scale fleet and the total fleet. The indicators included the return on investment, salary per crew, revenue per crew member, landings per crew, fuel

consumption per crew, profit as percentage of gross revenue, gross cash flow as a percentage of revenue, capacity utilisation. From the results of the questionnaire survey the fishing vessels less than 6 m are not active in the Mediterranean and mostly fish in the lagoons and canals. In this respect only the small scale fishery between 6 - 12 m was considered in the analysis, which in effect constitutes the bulk of the Egyptian small scale fishery in the Mediterranean Sea. On a daily basis the vessels generated revenue of US$211, sustained US$141 of operating costs and gained a net profit of US$59. The salary per crew member was US$17 per day. Considering the social pattern of the fishery and its very artisanal nature, where normally more members of the same family are directly involved in the onboard activity, the vessels tend to operate more as a single economic unit. The salary per crew and the profit are therefore a figurative value that would likely be additive. In economic terms the small scale vessels performed quite well when compared to the other fleet segments, having the highest ROI and net profit against gross revenues. The salary per fisher per day was also comparable to the larger vessels.

Thematic session II - WWF

Management and co-management options for small-scale fisheries in the Mediterranean and Black Sea

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Oral presentations

N. IIO.1

Title: **Gestion durable de la pêche artisanale Actions menées par la Fondation Mohammed VI pour la Protection de l'Environnement dans la Marchica (Nador)**

Author(s): FATINE Najia

Abstract: La Fondation Mohammed VI pour la Protection de l'Environnement, sous la présidence de Son Altesse Royale La Princesse Lalla Hasnaa, a pour mission principale la sensibilisation, l'éducation et la formation dans le domaine de la protection de l'environnement et de développement durable. Depuis sa création en Juin 2011, la Fondation, engage et mène, des initiatives locales et nationales notamment en faveur de la protection du Littoral, œuvre pour l'émergence de solutions de développement économique durable compatibles avec la préservation et la valorisation des écosystèmes et des ressources naturelles et accompagne des Départements Ministériels et des Collectivités Territoriales dans leur volonté de dépolluer et de valoriser la façade Méditerranéenne du Royaume. C'est dans ce cadre et au vu résultats sur le terrain des actions concrétés en faveur et de la Protection du Littoral et de la valorisation du patrimoine environnemental du Maroc que le Programme d'Action pour la Méditerranée, dépendant du Programme des Nations Unies pour l'Environnement avait nommé, en Octobre 2007, Son Altesse Royale La Princesse Lalla Hasnaa, Ambassadeur de la côte. Les avancées actuelles du Maroc dans le domaine de l'environnement et du développement durable (la création du Conseil Economique, Social et Environnemental, la charte de l'environnement et du développement durable,..) et les engagements internationaux de notre pays vont certainement favoriser la promotion des modes de production et de consommation durables et assurer une gestion durable des ressources naturelles. La Fondation joue le rôle de fédérateur en mobilisant divers partenaires, parfois d'intérêts divergents, autour de projets communs concrets dont notamment ceux de la mise à niveau environnementale des plages, de la protection du littoral et ses sites d'Intérêt Biologique et Ecologiques (Projets d'appui au développement durable de la Lagune de

Marchica, de la réserve de biosphère intercontinentale de la Méditerranée, de la Baie d'Oued Eddahab,…) où l'activité de la pêche est présente. Ainsi, la Fondation œuvre pour l'émergence de solutions de développement économique durables compatibles avec la préservation et la valorisation de nos écosystèmes et de nos ressources naturelles, notamment par la promotion de la pêche durable et le renforcement de la sensibilisation des pêcheurs à l'exploitation rationnelle des ressources du littoral et aux bonnes pratiques contribuant au respect des écosystèmes qu'elle exploite notamment par: ¬ l'intégration de l'approche écosystémique permettant de mettre en relation les ressources côtières, leurs usages et les impacts des activités sur l'environnement, l'économie et la société ; ¬ l'information, la formation et la sensibilisation sur de la biodiversité marine, les espèces à protéger et sur les défis environnementaux à relever afin de rendre les pêcheurs plus responsables et respectueux de l'environnement ; ¬ le suivi environnemental des écosystèmes côtiers, l'actualisation régulière des indicateurs environnementaux permettant d'évaluer l'impact des actions entreprises sur la qualité des écosystèmes ; ¬ la valorisation des aires marines protégées pour en faire des lieux privilégiés d'éducation et de sensibilisation. L'approche adoptée par la Fondation et les résultats du projet d'appui au développement durable de la Lagune de Marchica seront présentés, notamment le plan de gestion durable de la Lagune de Marchica et de son environnement, en particulier pour l'activité pêche et la gestion des ressources halieutiques : ¬ les actions pour une utilisation rationnelle et optimale des ressources naturelles de la Lagune et de son environnement ; ¬ l'élaboration de plan d'actions concertés et partagés entre tous les acteurs locaux; ¬ les différents usages actuels et futurs de la masse d'eau (espaces naturels aquatiques protégés, sports nautiques, pêche, algoculture, Station d'épuration/effluents liquides, baignade, conchyliculture, etc.) et mise en cohérence de ces usages; ¬ les actions pour une pêche durable et rentable pour les pêcheurs de la Lagune par l'organisation et la valorisation de l'activité de pêche dans la Lagune (points de débarquement, village des pêcheurs, indicateurs de suivi,…).

N. IIO.2

Title: **La Méditerranée et la gestion de territoires halieutiques : un nouveau modèle de production durable et responsable**

Author(s): FÉRAL François and CAZALET Bertrand

Abstract: Depuis les trois dernières décennies, la FAO a ouvert de nombreuses pistes de réflexion sur la gestion des pêcheries. Les États confrontées à la surexploitation de la plupart des stocks et à de nombreuses crises

socioéconomiques s'engageaient dans des spirales interventionnistes illustrées par des reconversions, des sorties de flottes et une reconfiguration de l'administration halieutique. La Méditerranée a pu apparaitre comme un cas d'étude emblématique de ces nombreuses problématiques et des études ont été engagées pour mieux connaitre la dimension anthropologique de ce dossier en approfondissant la connaissance des facteurs économiques, juridiques, historiques ou sociologique des populations maritimes de Méditerranée. Dans un même temps les pouvoirs publics s'interrogeaient sur le rôle de la société civile comme acteur majeur du développement en concordance avec les impulsions venues des marchés : l'idée de décentralisation fut alors largement documentée. Ces deux mouvements ont fait apparaitre le dualisme des modes de production halieutiques bien illustrés par l'évolution des pêcheries de Méditerranée : - un mode de production halieutique entrepreneurial prenant pour modèle l'ingénierie industrielle, appuyé sur une administration scientifique et un régime de police administrative étatique ; - un mode de production traditionnel, artisanal, appuyé sur des disciplines de groupe décentralisées et se référant à des territoires de pêche. Le village de pêcheurs, la prud'homie, les cofradias, les coopératives de pêcheurs… apparaissent comme des institutions de discipline collective qui tirent leur origine des modèles traditionnels de gestion et d'allocation des ressources. Leurs principes de fonctionnement reposent sur la définition de « territoires halieutiques » pris en main par un groupe de professionnels se dotant d'une discipline. Celle-ci est illustrée par la limitation des efforts de pêche et des capacités de capture formalisés dans des normes locales : calendriers de pêches des petits métiers, zones et périodes interdites, taille et configuration des engins de pêches, règlement des litiges d'accès, hiérarchisation des métiers … L'étude de ces groupements révèle une forte capacité d'encadrement et de gouvernance décentralisée qui fut récemment déstabilisée par la logique industrielle et interventionniste. A l'heure où se mettent en place des réseaux d'aires marine protégées, comment ne pas évoquer en parallèle la gestion halieutique territoriale traditionnelle des côtes de Méditerranée ? La communication se propose de présenter une analyse institutionnelle des groupements de pêcheurs de Méditerranée occidentale en contrepoint de la gouvernance administrative et entrepreneuriale qui s'est substituée à ce mode de gestion universel mais qui sera illustré par la Méditerranée orientale. Il ne s'agit pas d'une contribution folklorique destinée à réhabiliter le passé pécheur de la Méditerranée, mais de proposer analyse approfondie des mécanismes et des principes de gestion territoriaux et juridiques qui ont fonctionné pendant des siècles comme modes de régulation et

d'accès à la ressource. Celle-ci pourrait inspirer de nouveaux modèles des gestions spatiales et décentralisées pour une pêche responsable.

N. IIO.3

Title: **Co-management. Getting States and fishing sector to share responsibilities and dialogue on Sustainability of the Sea**

Author(s): GARCÍA-ALLUT A., CAVALLÉ M., COLMENAREJO P., GÓMEZ-BLANCO J., MONTERO M., MOSQUERA A., TEDIN S. and VÁZQUEZ-PORTELA E.

Abstract: There are many factors in fisheries that encourage a productive rationale oriented towards the overexploitation and potential collapse of fisheries resources. The market, with its fragile regulations and lack of transparency, is one of them. Centralized models, their frameworks and dynamics from within fisheries are managed, are another factor leading to the intensification of fishing effort. Centralized management models in modern States –pushing management from the top- have led to a significant dissociation between the States and civil society. This dissociation has rendered management ineffective. Centralized models, supported by a powerful and expensive fishery regulatory and control systems, have been unable to prevent a productive behavior based on a maximization strategy by the fishing sector, leading to bad practices (poaching and illegal fishing). Given this situation, how should sustainability be addressed in the management of fishery resources? Strengthening the centralized management models or turning to new models of governance? How can a fragmented artisanal fishing sector address it? This paper shows, through two case studies (the Marine Reserves for Fishery Interests "Os Miñarzos" and "Ría de Cedeira") which the keys to a paradigm shift are, and how equally-based co-management is a fundamental tool for opening up a dialogue and collaboration between States and the fishing sector.

N. IIO.4

Title: **How could we convince fisheries stakeholders to establish No-Take-Zones?-Lessons from small-scale fishery in Gökova Bay (Eastern Mediterranean), Turkey**

Author(s): ÜNAL Vahdet, KIZILKAYA Zafer and YILDIRIM Derya

Abstract: This study aims to share the experiences and procedure followed on the way to establish 6 separate No-Take-Zones (NTZs) within the Marine Protected Area (MPA) in Gökova Bay, Eastern Mediterranean, Turkey. Although many small and large budget projects and studies have been carried out in Gökova Bay in the last decade pertaining directly or indirectly to small-scale fisheries, we've observed a falling rate of production and increasing unhappiness among fishermen. In a couple of years fishermen began to suffer from puffer fish damage (Lagocephalus sceleratus), which the species was firs time recorded in 2003 in their fishing zones. In the following years, landings of a commercially significant species, caramote prawn (Penaeus kerathurus), dramatically decreased in the area. Through illegal spearfishing -especially practiced during the night times by light and scuba equipment, large amounts of grouper species were harvested. This discontent peaked in 2009. We studied the production quantities and income records of local cooperatives between 2006 and 2009; the comparison revealed that there were serious declines. Traditional management tools were good neither for the fisherman nor the preservation of the fish. We also detected significant decrease in the incomes and catch quantities of fishermen, whether working alone or as a cooperative shareholder. In 2010, we started organizing a series of meetings under the scope of a UNDP-SGP project and invited all shareholders, fishermen leaders, cooperative managers, representatives of legislative bodies, scientists who've worked in the area and NGOs. The topic was obvious: To eradicate illegal fishing in Gökova Bay, to include all fishermen and shareholders in the management and revive the fisheries of the area to its days of abundance. To accomplish this, we related that traditional management tools were insufficient and NTZs should be established within the MPA, and both fishermen and NGOs should partake in the combat against illegal fishing. In July 2010, six NTZs were established; a declaration was passed to regulate fisheries and fishing in the bay. This was a first success of the co-management movement. Efforts of establishing NTZs in the Gökova MPA also helped development of co-management which indeed is an important approach to fisheries management. The evaluation of the following

3 years contains plenty of information and experience that could well be the subject of another study.

N. IIO.5

Title: **The Co-management Committee of the Catalan sand-eel Fishery: a bottom-up approach successfully delivering on sustainability for fish and fishing**

Author(s): Comite de Cogestión del Plan de Gestion de la Sonsera

Abstract: The sandeel fishery in Catalonia targets two species, *Gymnammodytes cicerelus* and *Gymnammodytes semisquamatus*, which are small short-lived fish typically found in shallow sandy bottoms in the Mediterranean. The fishery is based on small-scale boat seines which operate on a daily trip basis, and landings are entirely aimed at direct human consumption. The Co-management Committee, created in April 2012 with the responsibility to manage the fishery, proved to be a watershed in the performance of the fishery. The Committee is composed by representatives of five main pillars: fishermen, Catalan authorities, Spanish national authorities, scientists and NGOs, all on equal footing with respect to decision-making regarding the rules and their implementation. A regular follow up of the fishing activity is being made by a Permanent Commission of the Committee which is meeting once a month. The functioning of the Co-management Committee and the permanent adaptation of the management and control measures has proven to be extremely successful. The first very encouraging and promising results can be summarized as follows: 1) a strong sense of ownership of the management process among all relevant stakeholders resulting in very high adherence to the rules; 2) the fishing effort have been reduced by half but the price of the fish had multiplied per three, basically due to the eradication of a previously existing black market and to the implementation of an individual daily quota; and 3) a positive social impact on the local communities through an increment of vessels' crew. The experience is also being highly instructive for all stakeholders as regards the relevance of bottom-up participative approaches in improving fisheries management. Moreover, the strong buy-in from the administrations involved crystalizes in their promotion of the replication of the model to other fisheries. The Co-management Committee of the Catalan Mediterranean sandeel fishery brings in a novel participative, bottom-up approach to the management of fisheries.

Posters

N. IIP.1

Title: **An experimental management of the octopus fishery in Sardinia**

Author(s): CUCCU D., MEREU M., AGUS B., FOLLESA M.C., CAU AL., CAU A.

Abstract: In Sardinia, the largest segment (about 80%) within the fleet is represented by small-scale fisheries, whose productivity for the year 2011 was 5056 tons equal to an induced €35,290 m (Irepa , 2012). These are almost all family business small boats that operate primarily with passive gear such as nets, lines, pots and/or traps. The specificity in the use of gears is closely related to the time of year and the depth in which they operate. In particular, the fishery by traps with bait (*Carcinus aestuarii*) is usually carried out in spring - summer within a depth of 50 metres and brings to catch the common octopus *Octopus vulgaris* Cuvier , 1797 with a very low by-catch (Cuccu et al., 1999). Among the Italian regions Sardinia is the largest producer of Octopus with 1672 tonnes and € 9,3 m of profitability in 2011 (Irepa, 2012). However, FAO statistics show continuous temporal fluctuations of the octopus landed on the island, particularly in the last decade; in fact the production has gone from 3400 t in 2001 to 1586 in 2010. This negative trend reflects the more general decline that has been registered worldwide for this species (FAO, 2006, 2013). Despite the lack of Italian measures to regulate the fishery of *O.vulgaris*, the Autonomous Region of Sardinia has put in place some regulations fixing the minimum landing size (300 g) and limiting the number of traps (i.e. Decree n° 22 of 17/07/2002). Regional annual fishing bans, were decreed with differences in the timetable according to the different maritime districts to protect the recruitment (Decrees n° A/68 2067 of 29/08/2008 and n° A/87 2067 of 08/09/2009). In the absence of fishing bans, despite the regulation of the minimum size, starting at the end of the summer in conjunction with the bulk of recruitment (Cuccu et al., 1999) the capture and illegal marketing of undersized octopuses (<300 g) can represent a problem. Only a few fishermen under their own decision, stop the trap fishery and divert towards other artisanal activities. In the belief that the problem of octopus fishery should be addressed at national level taking into account the socio-economic and bio-ecological aspects, we report an experimental management that fishermen and researchers have carried out in a maritime district of central western Sardinia. This experience is based on the

annual monitoring of the commercial octopus fishery by traps. Small specimens are, tagged and realised in a restricted sea area where the fishery has been temporary banned. Moreover on the ground of this area some artificial dens have been laid as shelter and for the spawning. The recapture of tagged specimens inside the area of release and near it suggest that saving the youngest octopuses from the trade could be a guarantee for the fishery in the following year, in agreement with the validity of a regulation on the minimum commercial size. At the same time the observation of spawning females inside the artificial dens confirms the effectiveness of this experiment to create spawning area.
However other results like the different sizes at maturity in the two genders (Cuccu et al., 2013) and also the possible temporal skidding of the recruitment among the years, show the need of flexible regulations to be determined on the base of an annual monitoring at local level in close cooperation with the fishermen.

N. IIP.2

Title: **Modelling and forecasting monthly CPUE from small scale fisheries in Cyprus**

Author(s): JOSEPHIDES Marios and GEORGAKARAKOS Stratis

Abstract: Univariate seasonal ARIMA models were developed using monthly standardized CPUE data series from four fishing regions in Cyprus waters in the period 1980-2005. The high values of coefficient of determination of the forecasted monthly values using the log-transformed and ordinary standardized CPUE for one year ahead (2006) with a range of error rates 1.6-6.4% in three areas, is an important goal as a first step for modelling time series of Cyprus CPUE data for the first time, considering the limitations there are in a multispecies fishery from the small scale fihing sector. In case of Cyprus, short term forecasting of catches or CPUE is quite important especially for the summer period where the demand in fresh fishery products is increased because of the tourism.

N. IIP.3

Title: **Review of small-scale fisheries aspects in Greek waters: aiming towards the identification of science priorities that may contribute to the effective management of the sector**

Author(s): KARACHLE Paraskevi K. and VASSILOPOULOU Vassiliki

Abstract: Small-scale fisheries (SSF) is a sector of high importance for the EU, as clearly indicated in the reformed Common Fisheries Policy (CFP). In the

Mediterranean Sea, and particularly in Greece, SSF is characterised by great spatio-temporal heterogeneity. With a Greek coastline of more than 18,000 km and numerous islands and islets, SSF is crucial for supporting local communities, especially in distant areas from the mainland; it accounts for a high number of vessels (94% of the Greek fleet) and has a high contribution in the overall fisheries production (55% of the total landings in 2008). In this study, we present an overview of the existing information on SSF in Greece, with respect to: (a) catch species composition and production; (b) discarding; (c) métiers identification (both in terms of gears used and targeted species); (d) socio-economic data; (e) SS fishers' perspectives. Our results revealed that SSF in Greek waters still remain understudied, with relevant information existing only sporadically and for a restricted spatial coverage. Yet, all available data indicate: (a) the multi-gear (approximately 18 different gears) and multi-species (more than 60 target species) nature of the fisheries corresponding to numerous métiers (in some cases almost as many as 21); (b) the local character of the practice, with significant differences appearing between areas; (c) low discarding (ranging between 3.2 and 14.7%); (d) the "traditional-family" nature of the profession, with the majority of SS fishers being full time professionals, with their livelihoods depending exclusively on the viability of the sector. Therefore, it is essential to undertake targeted studies in order to identify the peculiarities of this highly diversifying sector and hence to "collect data on fleets and their fishing activities" that would provide the "best available scientific advice", as highlighted in the CFP. Proper characterisation of the different métiers should be conducted, and an effective registry and monitoring system should be established in selected representative areas that could serve as pilot cases aiming to shed light on approaches, drivers and incentives on a local basis. In parallel, interaction with fishers is considered of key importance since it would result in gaining from their knowledge, along with raising their awareness on critical issues of ecosystem sustainability, as well as promoting the "co-management" concept. We consider that the "regionalization and further stakeholder involvement" foreseen in the new CFP appears to be towards this direction and will enable the establishment and implementation of more effective SSF management measures.

N. IIP.4

Title: **Estimating fishing pressure from coastal fisheries using Multi-criteria Decision Analysis methodology**

Author(s): KAVADAS S., MAINA I., VASSILOPOULOU V., DAMALAS D. AND PANTAZI M.

Type: Paper, Presentation

Abstract: The aim of this work was to provide a tool for mapping the distribution and intensity of fishing pressure of the coastal fishing fleet by bathymetric stratum. The Greek coastal fishery is characterized by an enormous number of professional fishing vessels operating in the coastal zone, most of them not equipped with a geographical positioning control system. Our aspiration was to estimate fishing pressure from coastal fisheries (FPc) applying a Multi-criteria Decision Analysis methodology on currently available geospatial data. The estimated coastal fishery suitability index (Sc) and the spatial coastal vessels activity index (Ac), for the registered vessels by port, have been used as an input to estimate FPc based on a fuzzy product process. A simulation process including pair-wise comparisons of pressure importance, based on the minimization of a consistency ratio, was used as a measurement method in the Analytic Hierarchy Process (AHP). In the model, an additional fishing capacity indicator was computed based on the length and internal volume (GT) of the vessels. Spatial interpolation techniques and a Fuzzy membership (FM) function have been used for the estimation of the Ac. Sensitivity analysis was applied on the weights of the decision criteria and the performance values of the alternatives were estimated according to the AHP. The optimal interpolation result was defined by a cross validation process; four different scenarios were investigated in order to select the most suitable formulation for the FM function. Finally, visualization was obtained by spatially mapping the estimated fishing pressure index, derived by a spatial clustering process. For the implementation of the model, the fishing area of Patraikos Gulf and the outer part of Ionian Sea was selected, a marine region characterized by an intense fishing footprint and continuous conflicts among numerous coastal and open-sea fisheries.

Key words: *Small-scale fisheries, MCDA, AHP, Fuzzy sets, GIS, sensitivity analysis*

N. IIP.5

Title: **Sustainable development of Bardawil lagoon fisheries**

Author(s): MEHANNA Sahar Fahmy

Type: Presentation

Abstract: The Egyptian Mediterranean coast exhibits six lakes or lagoons which are situated along the Nile delta coast (Northern delta lakes) and to the east of the Suez Canal (Port-Fouad and Bardawil). These lakes are namely, from west to east, Mariut, Edku, Burullus, Manzalah, Port-Fouad and Bardawil. All of them, with the exception of Lake Mariut, are directly connected to the sea. The northern lake fisheries play an important role in Egyptian economy, where they provide a rich and vital habitat for estuarine and marine fish and their regeneration, and more than 75% of Egyptian lakes' production was harvested from them. Also, they are internationally important sites for wintering water birds, providing valuable habitat for several hundred thousand birds. Many challenges are facing the sustainability of our northern lakes; overfishing, illegal and destructive fishing gears, degradation and habitat loss, decreasing of salinity levels that damaged the fish habitat and nursery of some marine high–valued fish, pollution and waste disposal. Also, the low awareness of fishermen about environmental issues as well as management plans and their importance, combined with limited understanding of the role of protected areas and their value (at both local and national levels) are some of the basic factors, which hinder the proper fisheries management of northern lakes and threaten their integrity in the long run. Bardawil lagoon is one of the northern lakes in Egypt and plays an important role in lakes' fisheries of Egypt since it is the least polluted wetland in Egypt and most of its catch is exported. It is a prominent landform feature of North Sinai and an important source of local and economic fishes in Egypt, such as seabass, seabream, sole, grey mullet, eel, meager and white grouper. Bardawil lagoon total annual commercial landings varied between 2226 and 5410 ton (1995-2011) corresponded to a value of almost 96 million LE. About 3000 local fishermen are working in the lagoon using different kinds of fishing gears some of them are very harmful to the lagoon ecosystem. The present work addresses the assessment of the fishery status of the lagoon as well as its socioeconomic situation. It will also give a complete picture about the trophic levels in the lagoon and the life history of the commercial species and finally will propose a future plan for the rational exploitation of the lagoon considering the ecosystem approach for its management.

Thematic session III - MedPAN

Integration of small-scale fisheries in marine protected areas (MPAs)

Oral presentations

N. IIIO.1

Title: **The Tonnarella of Camogli, an example of sustainable fishery in Portofino MPA**

Author(s): CAPPANERA V., CATTANEO-VIETTI R., CASTELLANO M. and POVERO P.

Abstract: Since the17th century, the Tonnarella of Camogli, a small static tuna trap, has been used to catch pelagic fish along the western coast of the Portofino Promontory (Ligurian Sea, northwestern Mediterranean) where an Italian MPA named Portofino, was instituted in 1999. The MPA has been carrying on monitoring activity of the tonnarella catches since 2000. The availability of a long-term data set on fish catches (1950-2012), together with information related to the physical properties of the water mass, has allowed to study the relationship between the type and the amount of fish harvests and specific meteorological and environmental variables in the Ligurian Sea. From 1950-1974, catches remained relatively constant over time (average of 35.6±8.7 t/y), whereas in the period of 1996-2000, the values increased to 52.0±13.0 t/y. From 2004-2011, harvesting remained high (38.7±15.5 t/y) but inconsistent with strong annual variability in catches. Actually, the primary catches are *Seriola dumerili*, *Auxis rochei*, *Sarda sarda* and *Trachurus* spp. Changes in species composition of harvests have occurred: Seriola dumerili has appeared recently, whereas *Thunnus thynnus* has been absent for many years. A significant decrease in boreal scombroids (*Scomber scombrus*) and an increase of warm-temperate carangids and other typically southern Mediterranean species, such as *Coryphaena hippurus* and *Sphyraena viridensis*, appear to be linked to the warming of the surface water layer, which has been particularly evident in the Ligurian Sea, for the last 10 years. The analysis of this kind of trends seems to be a powerful tool for assessing structural changes of the pelagic fish community inside the MPA, so that in the Ligurian Sea and, possibly, in the entire northwestern Mediterranean. The Tonnarella has also becoming an

important touristic attraction as tool of common people rising awareness in front of the small scale fishery problems and its possible integration to the sustainable management goals. A good example of promotion and valorisation of the maritime traditions at risk of disappearing.

N. IIIO.2

Title: **The North Sporades Marine Park and historical co-management with its artisanal fishing community**

Author(s): CEBRIAN Daniel

Abstract: The North Sporades Islands are located in the North Aegean Sea, Greece, (GSA 22). A National Marine Park embracing 2200 square Km exists in Sporades, headed to the protection of the interesting and well preserved ecosystems, rare flora and fauna of the area, (including the Mediterranean seal Monachus monachus, Eleonora's falcon Falco eleonorae, Audouin's gull Larus audouini and exuberant coralline beds). Conversations with scientists and conservationist groups rendered the volunteer agreement of the artisanal fishermen co-operative of Alonissos to co-operate from 1982 in the creation and safeguarding of the Park, provided than several conditions were implemented by the State. The main one was the request of exclusive fishing rights for the local fishermen community, with traditional methods, within the Park area and the effective guarding against illegal fishing. In order to implement the guarding, local wardens and speedboats were assigned to the Marine Park area from the beginning of 1987 until the end of 1988. From then on, the fishing limitations (but not the state warding) were annually extended until the creation of the Park by a Presidential Decree on May\28\1992. From 1990 on, the warding was implemented by a private environmentalist group, but without legal power to issue fines. The occurrence of these events allowed testing the efficiency of such fishing resources conservations schemes, based on local participation and ecosystem protection, by analyzing average total catch obtained by every artisanal boat in the Park during the period studied. The results showed that the State guarding of the Park with local personnel engaged from the artisanal fishing community was linked to a statistically significant recovery in the catch of most fish species, some of them clue for the local fishermen economy.

N. IIIO.3

Title: **Present state of fishermen engagement into management of Mediterranean Marine Protected Areas**

Author(s): DI FRANCO Antonio, BODILIS Pascaline, GUIDETTI Paolo, FRANCOUR Patrice, PIANTE Catherine, DI CARLO Giuseppe and WEBSTER Chloë

Abstract: Small-scale fishing is an historical activity deeply rooted along the coasts of the Mediterranean basin. It involves a considerable number of fishermen and vessels. Compared to industrial fishing, small-scale fishing may have a fairly limited impact on marine ecosystems, but, if not properly managed, it may anyway affect local stocks. Small-scale fishing has thus a number of socio-economic, cultural and ecological implications. Marine protected areas (MPAs) represent a valuable tool for both fishery management and marine conservation. MPAs may allow fish population to recover, fishery profits to be enhanced and fishermen traditions to be maintained. Only scarce information, however, is available about the success/failure of small-scale fishing management in Mediterranean MPAs. The aim of this work was to improve the available knowledge on small-scale fishing in Mediterranean MPAs through: 1) questionnaires submission to 30 MPA's managers/scientists; 2) literature review. A set of variables describing the interdisciplinary (ecological and socio-economic) attributes and performance of management of small-scale fishing in MPAs were defined. A management success score (from 0 to 100%) was built up by combining variables. Results (based on questionnaires received from 25 MPAs) suggest a generalized lack of studies addressing ecological and socio-economic aspects of small-scale fishing management in Mediterranean MPAs. Five MPAs do not allow fishing within their boundaries, 12 have a specific management plan, while 8 authorize fishing activities without a working management plan. Regression trees and random forests analyses highlighted that the most important condition explaining the management success is the level of fishermen engagement, with the highest success scores displayed by MPAs where fishermen are strongly engaged. According to our results, further management effort should be spent and research activity carried out to improve management of small-scale fishing in MPAs, having the long-term vision towards a progressive decision power sharing between management bodies and fishermen.

N. IIIO.4

Title: **Artisanal fisheries and marine protected areas in the Western MediterraneaN. monitoring for assessing effects and benefits**

Author(s): GOÑI Raquel, MALLOL Sandra, DÍAZ David and ÀLVAREZ Federico

Abstract: Marine protected areas (MPAs) are effective management tools for restoring biomass and community structure in exploited areas in need of conservation. Fisheries restrictions, and in particular implementation of no-take zones, force the spatial redistribution of fishing effort, while biomass recovery within MPAs enhances recruitment of fishery species and enhances yields of adjacent fisheries. The area covered by Mediterranean coastal MPAs amounts to 9910 km² (0.4% of the total area of the Mediterranean Sea), with a cumulative surface of no-take area of 202 km² (0.01% of the total area of the Mediterranean Sea) (MEDPAN, 2008). The 19 MPAs currently existing in the Spanish Mediterranean protect 910 km² of which 83 km² (9.2%) are no-take. We present two case studies of Mediterranean "artisanal fisheries – MPA" systems to illustrate monitoring approaches and documented effects of spatial fishery restrictions/closures: 1) the Llevant de Mallorca-Cala Rajada Marine Reserve (LMCRMR) created in 2007 in the Balearic Islands with an extension of 113 km², of which 12 km² no-take; 2) the Columbretes Islands Marine Reserve (CIMR) created in 1990 in the Gulf of Valence with an extension of 55 km², all of which is effectively no-take. In the LMCRMR, artisanal fisheries in the area were described and characterized prior to its creation and have been monitored thereafter. In the CIMR, target fishery species and their fisheries are being monitored since 1998 inside and outside the MPA, respectively.

N. IIIO.5

Title: **Marine protected areas for artisanal fisheries: recent activities in the southern and eastern Mediterranean**

Author(s): JEUDY DE GRISSAC Alain

Abstract: Since 2011, IUCN Mediterranean, in collaboration with different partners and under different projects (MedRAS, NEREUS and MCC-Morocco) has been testing and reviewing a methodology involving fishermen and fisheries administration for improving the management of artisanal fisheries in coastal waters, in a participatory approach, to identify and select sites, realize a local diagnostic, negotiate with fishermen the management measures and regulatory

mechanisms for marine protected areas for fisheries, in line with the objectives and guidelines developed by FAO for Marine protected areas and fisheries and the IUCN category VI of management for marine protected areas. The lecture/paper will present the first results in Morocco, and the activities under development in North Africa and in Lebanon and will review the lessons learned during the development of the different projects.

N. IIIO.6

Title: **Three years' experience with small-scale fishers and No-Take-Zones in Gökova Bay (Eastern Mediterranean), Turkey**

Author(s): KIZILKAYA Zafer , ÜNAL Vahdet, and YILDIRIM Z. Derya

Type: Paper, Presentation

Abstract: Since their designation in 2010, enforcement has been the weakest link in the management of recently-established network of No Take Zones (NTZs) in Gökova Bay Marine Protected Area (MPA). It has been known that with low enforcement marine protected areas produce very little benefit. In addition, involvement of local stakeholders is the crucial point for the compliance and effective enforcement. The location of Gökova's NTZs provides an excellent opportunity to protect many threatened and key species for Mediterranean (such as Monachus monachus, Posidonia oceanica, Epinephelus marginatus, Carcharhinus plumbeus, Caretta caretta, Chelonia mydas, etc.) and encourages ecological connectivity between these protected areas. By joining forces with Mediterranean Conservation Society (MCS), project partners and local community will aim to improve enforcement and other conservation regulations in NTZs to strengthen marine ecosystem resilience to facilitate recovery of fish stocks in Gökova Bay MPA. Mutual respect, transparency, genuine dialogue and support from local fishing community allow taking the next step towards restoring and strengthening marine ecosystem. In 2012 MCS designed community marine guard training and NTZs patrolling scheme to improve effectiveness of protected areas together with the cooperation of Coastguard and other relevant stakeholders. Marine guard training modules were developed to provide theoretical knowledge and practical training for effective NTZs enforcement. The local fishermen trainees received knowledge on a range of topics from protected area patrolling techniques and boat safety to marine biodiversity monitoring and public awareness raising strategies. A community marine guard units were fully

equipped to deliver effective enforcement and monitoring in NTZs. Dialogue with the government has already been initiated to establish the mandate and process to ensure legitimacy to surveillance and patrol activities. Financing strategies to support long-term enforcement and operation of NTZs are being explored to find the most appropriate solution for the local situation. MCS raised conservation awareness and widens understanding of local fishing community members, general public and government to enhance compliance and facilitate enforcement in the MPA. MCS designed and set up NTZ information boards in all areas as well as built NTZs border poles for further awareness of the MPAs. Marine rangers deliver brochures to visitors come by boat and anchor in NTZs areas. At the end of the third year, monitoring of NTZs and surrounding areas shows substantial increase in fish biomass as well as the local fishery cooperative records about increase in revenues are clear signs of pay outs of NTZs. Revenues of cooperative members increased %53 according to Akyaka Fishery Cooperative accounting statistics. Fish monitoring in the biggest NTZ Ingiliz Limanı where active ranger system has been very well adopted shows up to 40 folds increase in grouper sightings comparing to 2008 data. In a recent comprehensive conservation meeting in the area fishermen expressed their opinions about NTZs; although they all agree about the positive benefits of the NTZs as long as proper enforcement ensured, they demand to change borders of two NTZs due to they have very limited fishing areas specially for winter season. This successful NTZs management example could easily be replicable in the other areas of Eastern Mediterranean.

N. IIIO.7

Title: **Projet Pilote de création de trois Aires Marines Protégées aux Fins de Pêche au Maroc**

Author(s): NAJI Mohamed

Abstract: Dans le cadre du "Projet pêche artisanale", financé par la Millenium Challenge Corporation (MCC) et exécuté par le Département des Pêches Maritimes (DPM), trois Aires Marines Protégées aux Fins de Pêche (AMP) ont été mises en place au Maroc, durant la période 2010 - 2013. Ces AMPs visent à contribuer à un développement durable du secteur de la pêche artisanale, tout en préservant les ressources et les habitats marins. Après l'élaboration d'une stratégie nationale pour la mise en place d'un réseau d'AMPs aux fins de Pêche, trois AMPs pilotes ont été implémentées selon une approche éco systémique et participative. Toutes les étapes clefs du Projet ont fait l'objet d'une large

concertation auprès des parties prenantes, notamment les usagers des AMPs. Les AMPs ont été renforcés par des récifs artificiels à vocation d'enrichissement et de protection contre les activités de chalutage de fond. Elles ont été aussi dotées de moyens de surveillance en mer et d'un plan d'aménagement et de gestion.

N. IIIO.8

Title: **Petite pêche côtière et gestion d'aire marine protégée: des objectifs partagés**

Author(s): PIBOT Alain

Abstract: Sur les côtes rocheuses de Méditerranée française, gestionnaires d'aires marines protégées et pêcheurs convergent progressivement vers des travaux collectifs de protection et de gestion du milieu marin. C'est en avril dernier que la prud'homie de pêche d'Ajaccio adressait au président de la collectivité de Corse un courrier sollicitant une réflexion, avec l'appui de l'Office de l'environnement de Corse et de l'Agence des aires marines protégées, sur le déploiement d'un réseau d'aires marines à finalité halieutique. Mais les pêcheurs méditerranéens n'en sont pas à leur coup d'essai car depuis longtemps ils ont élaboré des règlements locaux destinés à améliorer la durabilité des stocks et de l'activité. Mais c'est aujourd'hui dans un contexte de confiance partagée de protection et de gestion que s'engagent les nouveaux chantiers. En Corse, la première étape va être de réaliser une synthèse des connaissances sur les zones à fonctionnalités halieutiques, frayères, nourriceries, couloirs migratoires, … définissant ainsi dans l'espace et dans le temps des secteurs devant bénéficier de repos biologiques. C'est sur la base de ces travaux que très rapidement des mesures seront prises pour améliorer la cohérence des règlements existants, et proposer des zones, des périodes, des espèces, des techniques ou des mixtes de ces quatre types d'interventions à règlementer. Cependant, l'objectif est plus large ! Dans un avenir proche, il faudra s'attacher à entreprendre tous les chantiers transversaux : protection renforcée des habitats fonctionnels au regard des autres pressions (aménagements, pêche plaisance, mouillage forain, pollution, …), renforcement des mesures de surveillance et de police, et mise en œuvre de mécanismes financiers devant permettre de rendre opérationnels ces projets. Ces mécanismes financiers pourront s'appuyer sur un permis de pêche plaisance, dont les recettes devraient pouvoir être affectées aux moyens de contrôle et de formation des pêches plaisances et professionnelles. Tout ceci est encore en discussion. Une réflexion autour d'une amélioration du

mécanisme de paiement d'amarrage sur mouillage organisé (dont les ZMEL) est également en cours.

N. IIIO.9

Title: **La consultation et la concertation avec les pêcheurs pour le classement de la zone marine du Parc National de Taza**

Author(s): RAMDANE Nadia

Abstract: Le parc National de Taza et pour le classement de sa partie marine en AMP a engagé un processus de consultation et de concertation avec ses partenaires particulièrement les pêcheurs dont la plus grande partie sont de la catégorie de la pêche artisanal ; un long chemin de négociation sur l'idée de classement d'un territoire depuis 2009 pour gagner un terrain d'entente et de cogestion durable ; a ce jour le PNTaza a besoin d'échange d'autre expérience similaires pour mieux gérer les opportunités qui lui offerte à ce jour et optimiser la faisabilité et l'efficacité de la cogestion future.

N. IIIO.10

Title: **How can MPAs be used to bridge fisheries management and biodiversity conservation?**

Author(s): WESTLUND Lena

Abstract: MPAs were initially introduced mainly as a tool for biodiversity conservation. In fisheries, spatial-temporal-gear closures are historically a common management measure. However, closures are not always the preferred one and MPAs generally need to be combined with other management measures to avoid negative effects including increased fishing pressure outside the MPA and higher costs of fishing. In fact, not all MPAs provide direct benefits to fishers, especially not when designed mainly for conservation purposes. Many small-scale fishing communities are sceptical to MPAs and do indeed suffer hardship when they are introduced in a top-down manner and with limited understanding of fisheries and fishery based livelihoods. The FAO Technical Guidelines[1] on MPAs and fisheries discuss the biological and ecological effects, and social and economic impact of MPAs in the context of fisheries. They address the interface between biodiversity conservation and fisheries

[1] FAO. 2011. Fisheries management. 4. Marine protected areas and fisheries. FAO Technical Guidelines for Responsible Fisheries. No. 4, Suppl. 4. Rome, FAO. 198p.

Available at http://www.fao.org/docrep/015/i2090e/i2090e.pdf

management with a view to promote better collaboration and coordination for enhancing the use and benefits of MPAs with multiple objectives. These issues were also discussed in a couple of workshops at the IMPAC3, the international MPA congress organised by IUCN and the French Government in October 2013. It was noted that the participation of fishers in MPA design and management is fundamental for successful outcomes. The livelihoods of fishing communities have to be respected and legal and institutional structures established that guarantee their customary rights and access to the marine and coastal resources on which they depend. The Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines), which are currently being negotiated by FAO member states, provide an important framework for supporting small-scale fishing communities through the application of a human rights based approach. The SSF Guidelines are closely linked to the Voluntary Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (the Tenure Guidelines) that recognise the importance of secure and equitable access to natural resources for food and nutrition security and sustainable livelihoods, in particular for vulnerable and marginalised groups. Both these instruments are of direct relevance to MPA management in the context of small-scale fisheries. MPAs have the potential to be a powerful tool to support sustainable environmental, social and economic development, but they should be used wisely and equitably. It has to be ensured that their benefits also flow to the small-scale fishing communities bearing their costs.

N. IIIO.11

Title: **ACCOBAMS-GFCM joint project on interactions between cetaceans and fishing activities**

Author(s): LE RAVALLEC Célia

Abstract: ACCOBAMS and GFCM Secretariats will implement in 2014-2015 a project supported by MAVA Foundation aiming at improving the conservation of endangered marine species, such as cetaceans, marine turtles and seabirds, with respect to fishing activities in the Mediterranean. The project will be based on case studies in the western Mediterranean Sea with the view towards extending this experience to the rest of the area of competence of both organizations.

The project is composed of following components:

- Reducing negative interactions between endangered marine species and fishing activities considering at the same time by-catch and depredation issues
- Reducing pressure on marine species through the diversification of the artisanal fishermen activities by promoting the development of ecotourism activities.

For the first component of the project, information on technical characteristics of fishing gears as well as fisheries practices that cause negative interactions will be collected and assessed. Innovative and concrete solutions/methods will be tested; their efficiency and their impacts will be assessed. The project will also pay attention to improve fishermen's awareness and to build capacity in terms of reduction of negative impacts. Information collected and lessons learned from the case studies will be then used to replicate management actions to similar fisheries cases in the region and to develop appropriate strategies.

For the second component of the project, activities will be dedicated to promote the development of ecotourism activities in Morocco and Tunisia contributing to raise awareness on the conservation of whales and dolphins issue. The initiative will include the development of responsible whale watching activities and pescatourism activities.

Posters

N. IIIP.1

Title: **Etude socioéconomique de la pêche côtière-artisanale et évaluation des actions du plan de gestion liées à l'aménagement des ressources halieutiques de la lagune de Boughrara**

Author(s): BEN SALEM Scander, BOUCHRIKA Nadhem, MTIMET Nadhem and GAAMOUR Adel

Abstract: La lagune de Boughrara, qui s'étend sur 430 km2, est la première lagune tunisienne en termes de superficie. Elle se situe à l'extrême sud tunisien et elle est délimitée par l'île de Djerba au nord et par le continent au sud. La pêche côtière artisanale constitue l'activité principale de la lagune. La flottille côtière artisanale compte 344 unités non motorisées et 217 unités motorisées distribuées entre trois ports qui sont par ordre d'importance Ajim, Boughrara et Hassi Jellaba. La lagune de Boughrara, est soumise à différentes dégradations d'origine anthropique qui se sont traduites par une surexploitation chronique de ses ressources halieutiques suite à un effort de pêche excessif et par des pollutions diverses, notamment, l'eutrophisation et la prolifération du phytoplancton toxique qui ont un effet négatif sur la qualité de ses eaux. Ainsi, la Lagune de Boughrara a été choisie parmi les 05 sites sensibles pour la création d'aires protégées marines et côtières dans le cadre du Projet « protection des ressources marines et côtières du Golfe de Gabès » financé par la banque mondiale (GEF). Parmi les cinq objectifs opérationnels du plan de gestion élaboré pour la lagune de Boughrara, deux concernent principalement l'activité de la pêche côtière-artisanale ; il s'agit de : • Orienter la pêche vers les pratiques respectueuses des ressources halieutiques • Développer des activités alternatives permettant de réduire la pression sur les ressources naturelles Pour concrétiser ces objectifs, le plan de gestion prévoit en premier lieu la limitation de l'effort de pêche soit par la cessation définitive de l'activité soit par l'orientation de certaines barques vers de nouvelles activités génératrices de revenus. En plus il a été proposé la possibilité de créer un fond spécial pour la compensation matérielle des barques qui quitteront la pêcherie. On s'intéressera à l'analyse socioéconomique de l'activité de la pêche côtière-artisanale et surtout à l'attitude des pêcheurs vis-à-vis de la création d'une aire protégée dans la lagune ainsi qu'à leur disposition d'abandonner leur activité contre une indemnisation monétaire. Les données de bases sont collectées à partir de 48

enquêtes terrains réalisées dans les trois ports de la Lagune. La méthode d'échantillonnage adoptée est celle stratifiée en prenant comme niveaux de stratification le port et le type de l'unité de pêche. Le taux d''échantillonage réalisé est de 8,7% pour les barques motorisées et de 8,3% pour les unités non motorisées. Concernant l'avis des pêcheurs vis-à-vis de la création d'une AMP, l'analyse logit a permis de conclure que les pêcheurs enquêtés propriétaires de barques, ayant participé au projet de protection des ressources marines et côtières du Golfe de Gabès (sessions de sensibilisation) et trouvant qu'il y'a des effets d'atténuation de la pollution au niveau de la lagune de Boughrara, sont plus hostiles à la création d'une aire marine protégée au niveau de la lagune. Pour ces pêcheurs, la création d'une aire protégée aura comme conséquence la réduction des zones de pêche et par suite la diminution de leur productivité. Concernant la question d'abandon de l'activité de pêche contre une indemnisation monétaire, le même modèle d'analyse a permis de conclure que les pêcheurs enquêtés ayant un niveau d'étude secondaire, disposant de plus d'une source de revenus au niveau de leur ménages et acceptant de suivre une formation afin de se réorienter professionnellement sont les plus favorables à l'abandon de l'activité de pêche. D'une manière globale, le montant de disposition à recevoir (DAR) est variable en fonction du type de l'unité de pêche. Pour les unités non motorisées les propriétaires acceptent de recevoir une compensation moyenne de 28000 DT avec un minimum de 5000 DT et un maximum de 60000 DT. Alors que pour les barques motorisées la compensation moyenne pour l'abandon de l'activité a été estimée à 42700 DT avec un minimum de 10000 DT et un maximum de 100000 DT. Les activités envisageables par les pêcheurs favorables à l'abandon de l'activité de pêche contre une indemnisation sont par ordre d'importance: l'agriculture (37% des réponses), le commerce (30%), l'élevage (18%) et enfin d'autres activités telles que la restauration, le tourisme, l'artisanat et le transport (15%).

N. IIIP.2

Title: **Caractéristiques sociotechniques de la pêcherie artisanale et l'attitude des pêcheurs vis-à-vis la création de l'AMPC des « îles Kuriat »**

Author(s): BEN ARFA Yessine et BEN SALEM Scander

Abstract: Ce travail constitue une photographie de la situation sociotechnique de l'activité de la pêche côtière dans le gouvernorat de Monastir (Centre-est de la Tunisie) ainsi qu'une première prospection de l'attitude des pêcheurs vis-à-

vis de la création de l'Aire Marine Protégée (AMP) « les îles Kuriat ». Durant cette dernière décennie, la politique de la conservation des ressources naturelles en Tunisie a été renforcée en incitant la création des parcs et des réserves naturelles ainsi que les aires marines protégées (AMP). En partant de ce principe et en relation avec l'activité de la pêche côtière dans la zone et l'implantation de l'aire marine protégée (les îles Kuriat), il s'est avéré que l'AMP affecte les comportements socioéconomiques des pêcheurs et par voie de conséquences conditionne les bénéfices écologiques des AMP et leurs performances en termes de conservation et de gestion. Afin de mieux comprendre ces enjeux, une analyse sociotechnique de la pêche artisanale ainsi que la perception des pêcheurs vis-à-vis la création de cette APMC est nécessaire. Ce travail s'est basé sur des enquêtes élaborées dans ce but. Elles ont été réalisées d'une manière aléatoire dans les 4 ports représentatifs de l'activité de la pêche dans la zone à savoir le port de Monastir (hauturier), Sayéda (Côtier), Teboulba (Sardinier) et Bkalta (côtier). Quand au taux d'échantillonnage, on est arrivé à réaliser 14% de la population maritime active dans la zone d'étude. Les résultats des enquêtes ont révélé que la flottille côtière active dans la zone d'étude est une flottille âgée, modestement équipée et ayant une motorisation relativement faible. Quand à la population maritime, elle est relativement jeune dont la majorité présente un niveau primaire et une expérience de plus de 20 ans. Il est important de mentionner aussi que 94 % des pêcheurs n'ont aucune formation professionnelle ainsi que 80,4% des pêcheurs n'exercent aucune autre activité supplémentaire. Concernant la structure socioprofessionnelle, elle est de 4 marins pour les barques côtières-artisanales motorisées et 2 marins pour les unités non motorisées. En additionnant un refus majoritaire pour la création d'une AMP contre une bonne volonté de participation dans l'élaboration de plan de gestion de la zone, la situation devient inquiétante. Cette dernière est stimulée par plusieurs problèmes relevés lors de l'enquête qui sont par ordre d'importance: l'utilisation des engins prohibés, la surexploitation des ressources marines, le faible revenu, la pêche illicite. A ce stade, l'établissement d'une AMP devient indispensable afin de garantir d'une part une certaine conservation des ressources écologiques et marines vivantes et d'autre part pour assurer une certaine continuité du secteur dans le cadre du développement durable.

N. IIIP.3

Title: **From the Regulation of the "Egadi Islands Marine Protected Area" to the "Local Management Plan from Castellammare del Golfo to Marsala, including the Egadi Islands": an example of integration and sharing of best practices**

Author(s): BERTOLINO Francesco, RINAUDO Ilaria, BASCIANO Giovanni, ASARO Eliana, DONATI Stefano, FIORENTINO Fabio, VITALE Sergio and MALTESE Mario

Abstract: In recent years the Egadi Islands, an archipelago located off the western coast of Sicily, have become "strategic" to experiment sustainable fisheries through two different management tools. From 2010 (year of entry into force, by decree of the Ministry for the Environment, the Implementing and Organization Regulation of the Marine Protected Area) the "Egadi Islands Marine Protected Area", the largest in Europe, is in charge for the implementation in such territory of more restrictive rules compared with the current regulation on fishery issues. In addition, from September 2012 the "Local Management Plan of the area from Castellammare del Golfo to Marsala, including the Egadi Islands" is operating in this field. It was presented within the measure 3.1 letter m) of the EFF 2007-2013 by the Consortium of Management of Artisanal Fisheries (Co.Ge.P.A.) of Trapani with the scientific support of the Institute for Coastal Marine Environment of the National Research Council (IAMC-CNR, U.O.S. of Mazara del Vallo) and including about 70% of the fishing fleet in the area. The general objective of this plan is to improve the state of fish stocks through the management of fishing effort and the introduction of technical measures in order to ensure the sustainable fisheries. In particular, the plan is aimed at maintaining a sustainable level of the fishing impact on marine ecosystems, reducing conflicts among different fishing gears, improving the economic conditions of workers in the sector and to maximizing employment opportunities in areas dependent on fisheries. Unlike what usually happens in Marine Protected Areas in which the protection of the sea coincides exactly with its perimeter, the "Egadi Islands Marine Protected Area" and its rules are hereby included within a much larger area, in which the management measures have been proposed in a bottom-up logic from the same fishermen participating in the Co.Ge.P.A. of Trapani. This aspect allows the area covered by the "Local Management Plan of the area from Castellammare del Golfo to Marsala, including the Egadi Islands" to work as a buffer zone where the fisheries pressure is handled in a co-management approach.

N. IIIP.4

Title: **Introduction to Project LIFE+ MIGRATE**

Author(s): SAGARMINAGA Ricardo and MELERO David

Abstract: In the framework of the European Union's Habitat Directive, MEPA (Malta Environmental Planning Authority) coordinates a EC LIFE+ Project focusing on the conservation of cetaceans and sea turtles in Maltese waters. KAI Marine Services, an interdisciplinary and international team of scientists with over 24 years of experience in the field of biodiversity conservation and development of technological measures to mitigate the negative effects of interactions between protected species and fisheries, will be conducting the work to provide a scientific foundation for management. Based on a series of success stories of solving problems of bycatch and depredation interactions in the Mediterranean and Central America, KAI focuses on the relevance of coastal community and especially artisanal fishery active involvement in MPA management schemes.

N. IIIP.5

Title: **Présentation des résultats du projet « Rôles de l'aire Marine protégée cap negro/cap serrât dans la Durabilité de la Pêche Artisanale à Cap Serrât »**

Author(s): SKANDRANI Yassine

Abstract: L'intérêt principal poursuivi par le projet MADPA se situe au niveau de la conservation de la diversité biologique au niveau de l'aire marine protégé qui revête une grande importance sociale et économique locale. A ce titre, le projet appuie les différents acteurs au niveau de la zone pour développer la coopération, la collaboration et la solidarité requises afin d'assurer la durabilité des ressources naturelles et des écosystèmes. Il faut souligner que la zone Cap Serrat ciblée par le projet est exploitée par la pêche artisanale, un sous-secteur bien intégré dans l'économie locale et assurant l'approvisionnement des populations en produits marins.

Thematic session IV – CIHEAM IAM Bari

Enhancing small-scale fisheries value chains in the Mediterranean and Black Sea

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Oral presentations

N. IVO.1

Title: **Small-Scale Fisheries in Emilia Romagna Region: Structural, Social and Marketing Issues**

Author(s): MULAZZANI Luca and CAMANZI Luca

Abstract: In Emilia Romagna Region, small-scale fishery plays an important role in the regional fishing industry. In fact, looking at the official data (IREPA) we can see that the number of small-scale fisheries boats represent 59% of total vessels in Emilia Romagna, while gross tonnage constitutes 11%. Work contribution is also relevant. In fact, the small-scale fisheries account for about 55% of the fishing days, with 40% of the total regional crew. On the other hand, as far as production is observed, that small-scale fisheries contribute with around 9% of the regional catch and 20% of the revenues. The researches, through secondary data and direct investigation on samples of fishermen, have focused on the structure of the small-scale enterprises and, in a second step, on the perception of fishermen about the local collective brand known as "Prodotto Certificato dell'Alto Adriatico". Most interesting results indicate that 84% of enterprises are personal enterprises and 79% of crews are composed by one person; in 95% of cases the crew coincides with the entrepreneur or is relative of his. In other words, there is almost complete coincidence between entrepreneur, ship owner, captain, worker and seller. Average age is quite low, being 44 years. Interviews show that the main reason leading fishermen to this work is "sea passion" rather than revenue perspectives or familiar tradition; about half of the fishermen had relatives involved in some fishing activity, but few of them have carried on a familiar enterprise. Cultural and territorial relations seem to be stronger with the local community rather than with the fishing activity. Investments, at least in the pre-crisis period, have been quite common, taking advantage of public incentives. Almost all small-scale entrepreneurs are associated in cooperatives. However, cooperative services are mainly used only for administrative and bureaucratic procedures, while other

services such as material provision (e.g. fuel, ice) and trade services are considered secondary. 64% of production is sold to local wholesalers, 23% is directly sold to consumers from the boat, and 12% is sold in auction markets.
Going beyond average figures, it is possible to identify clusters of enterprises characterized by similar behaviors. The analyses indicate that best economic results are obtained by the enterprises with more than one crew component and which are more specialized in one or two target species; in fact, specialization seems to reduce costs and to increase work productivity. The results related to the survey reveal that fishermen see the collective brand as a potential mean to increase the competitive advantage over other fishermen, to improve the relations with buyers, to access better markets, and to assure higher quality. Theoretically, the brand could facilitate several distribution circuits including: i) direct sale from fisherman to retailer (restaurant or fishmonger); ii) coordination between a large processing/trade enterprise and associations of fishermen; iii) integration through the auction market. On the other hand, the label entails long-run investments regarding the productive process, the training of workers, and the restraints in the organization and management needed to respect the certification procedures. Actually, many of the requirements needed to join the brand were judged difficult to respect. Finally, despite the positive aspects of the brand, few operators (especially few fishermen) joined it, due to costs for satisfying the requirements, to some incoherence in the procedural guideline and to the free riding risk.

N. IVO.2

Title: **Ecotourism Potential in the Artisanal Fisheries Sector along the Lebanese Coast** (Document produced for the United Nations Development Program in Lebanon)

Author(s): NADER Manal, ABOU DAGHER Manale and EL INDARY Shadi

Abstract: The fisheries sector in Lebanon is an ancient practice using artisanal techniques that are still widespread among coastal communities. Fishermen are among the poorest groups of the Lebanese society since their livelihood is widely and directly dependent on natural coastal and marine resources. Those resources are under severe pressure threatening the livelihoods of fishers and their families. This report examines the potential for diversification of the activities of the artisanal fisheries sector to improve the livelihood of fisher communities and conserve coastal and marine natural resources, with special

emphasis on ecotourism. Three sets of activities with their sub-sets are proposed with a detailed description of each. Each set is also supported by a related success story in addition to an estimated budget, timeframe and season for implementation. Set one recommends the establishment of a National Fishermen's Week that includes Fishing and Rowing Tournaments, a Sea Food Festival, Women Activities, and a Traditional Boat Building and Painting Competition. Set two proposes launching Guided Fishing and Diving Trips, Camps and Lodges where it is suggested for the fishermen communities to establish an official system for Guided Fishing and Diving Trips for visitors, host interested tourists in their Lodges to provide them with an authentic artisanal fishing experience, and to create Camps and Camping Sites for the same purpose. Set three foresees the promotion of Cultural Activities through the creation of a Fisheries Museum, the holding of a Traditional Music and Theatre Festival as well as a Photography and Painting Competition. Joining forces between fishermen cooperatives, syndicates, Non-Governmental Organizations, municipalities and other public institutions will contribute to creating new socio-economic opportunities for the fishermen and improve the livelihood of one of the poorest communities in the Lebanese society while sustaining natural coastal and marine resources. Fisheries ecotourism activities once launched and properly managed can be self-sustaining from the funds generated by the events in addition to the funds provided by sponsors and advertisements that are attracted by similar initiatives. In addition, collaboration with similar actions in Lebanon and the region is highly encouraged to attract not only local but also regional tourists.

N. IVO.3

Title: **A comparison of the Economic constraints of the small scale fishery in the Eastern Mediterranean**

Author(s): PINELLO Dario and DIMECH Mark

Abstract: The small scale fisheries are present in all the Mediterranean countries with a general similarity in their technical characteristics and fishing behavior. However, the structure of the input factors (harvesting costs) and the average value of its output (ex-vessel price) vary remarkably. Although the fisheries are small scale, among countries some economic constraints vary considerably. The comparison of the input and output factors among the different countries reveals the role they play, and the trade-offs with the existing general economic situation of the country. A qualitative risk assessment was also carried out in

order to understand if such constrains could be a major problem in the future and can also give an indication if any management measures could be undertaken. This paper adds to the understanding of the harvesting costs structure and the constrains the cost items represent. The data used was derived from current socio-economic surveys which are currently being conducted within the framework of the FAO EastMed project, and include data from Egypt, Gaza strip, Lebanon and Turkey. As a comparison to a Mediterranean European country the data from the small scale fishery of Italy was also used. The data has been collected using a simple random survey were the sample unit was the licensed fishing vessel. The same standard methodology to collect and estimate the same economic variables made the sub-regional comparison highly valuable. Our results show that fuel represents the main constrain for the fleet operating in Gaza and in Lebanon while the labour is the main constrain for the Egyptian small scale fleet. In Italy a key role is played by the capital costs as well as the fuel cost, while Lebanon incurs in the highest commercial costs. Taking into account the volume of fuel consumed it appears that in Egypt the subsidies on fuel are distorting the economic performance of the vessels, making them highly vulnerable to possible changes in the subsidies' policy. The labour was also compared against the national minimum wage across the countries in order to determine how the small scale segment is performing from the view point of the working fishers. Furthermore a specific analysis of the outputs was done in order to compare ex-vessel prices with the purchasing power of consumers.

N. IVO.4

Title: **Projet de création d'une organisation de producteurs de pêche artisanale dans le Golfe du Lion, Méditerranée française**

Author(s): RESTE Frédérick et CAZALET Bertrand

Abstract: Le projet GOLION s'inscrit autour de l'idée de transition qui touche actuellement la pêche professionnelle dans la région Languedoc-Roussillon, France. Cette situation est marquée par l'effondrement des segments chalutiers, lamparos et thonier-senneurs (industriels et semi-industriels) qui ont représenté pendant plusieurs décennies l'essentiel des débarquements de poissons bleus (sardines, anchois, maquereaux, thonidés, etc.) et dans une moindre mesure de poissons blancs (merlu, merlan, lotte, dorades, etc.). Cette situation engendre un rééquilibrage des débarquements au profit des pêches artisanales petits métiers

et la nécessité de faire évoluer les mécanismes de commercialisations longtemps dominés par une approche historique purement quantitative. Le projet GOLION souhaite porter cette réflexion pour aboutir à des propositions/solutions concrètes en faveur de ce segment et de son développement durable. Les attentes des professionnels en matière de commercialisation sont très fortes, tout comme la demande sociale et économique autour de la valorisation des produits du petit métier (faibles volumes, fortes diversités, hautes qualités sanitaires et gustatives). Le projet GOLION se penche sur la faisabilité et la création d'une organisation de producteurs exclusivement tournée vers la commercialisation et la valorisation des produits de la pêche au petit métier. Selon Lefebvre et al. (2004), les organisations de producteurs (OP) sont « créées par des pêcheurs… s'associant librement afin de mettre en œuvre des mesures garantissant les meilleures conditions de mise sur le marché de leurs produits (…) la reconnaissance d'OP est nécessaire quant à l'octroi de nombreuses aides financières ainsi qu'à l'obtention de l'extension des règles de discipline ». La création, le fonctionnement et le contrôle des OP sont encadrés par le droit européen et le droit français en tant qu'organes « de régulation du marché des produits de la pêche ». Dans une zone déterminée, les OP sont constituées par « les sociétés commerciales, les groupements d'intérêt économique ou les associations régies par la loi du 1er juillet 1901 relative au contrat d'association, constitués de producteurs, ou les associations de telles organisations peuvent être reconnus par le ministre chargé des pêches maritimes comme organisations de producteurs conformément aux dispositions des règlements de l'Union européenne ». La reconnaissance en tant qu'OP nécessite donc un travail préparatoire dense (conditionnalité, représentativité au sein de la filière) afin d'obtenir un agrément national porteur de droits et d'obligations (cahiers des charges) relativement contraignants. Outre ses « finalités d'amélioration des conditions de vente », une OP porte également des ambitions complémentaires dans le but de pérenniser l'activité de ses membres : 1) adapter la production aux marchés (quantité et qualité 2) assurer la transparence et la traçabilité de la filière ; 3) promouvoir des méthodes de production respectueuses de l'environnement. Ces différents objectifs sont tous très importants et s'inscrivent dans la réalisation du projet GOLION. En effet, la pêche au petit métier est majoritairement considérée comme étant la plus durable car porteuse des pratiques et techniques les moins impactantes sur le milieu et ses ressources. La Réforme de la Politique Commune des Pêche (PCP) qui doit entrer en vigueur début 2014 (négociations finales en cours) a d'ailleurs reconnu ce

particularisme et souhaite désormais favoriser un plus fort soutien à ce segment. Sur ces bases, la présentation proposée se penchera sur les objectifs de et conditions de constitution d'une structure juridique, institutionnelle et économique susceptible d'être reconnue de façon effective (au terme du projet) en tant qu'OP petit métier par les autorités nationales et de l'UE.

N. IVO.5

Title: **High Added Value Processed Seafood from Fish Species of Low Demand (*Thunnus alalunga, Boop boops* etc.) in the island of Kalymnos, Greece**

Author(s): STAMATIS Nikos and RIGA Constantina

Abstract: The island of Kalymnos is located on the eastern side of the Aegean Sea with 1600 inhabitants. Kalymnos is known and billed as the "Sponge-divers" island. Sponge diving has long been a common occupation on Kalymnos and sponges were the main source of income of local people, bringing wealth to the island and making it famous throughout the Mediterranean. A disease at the mid-80s hit the eastern Mediterranean destroying a great number of sponges and damaging the sponge-fishing industry as a result. Although a recovery seems to appear on the sponge population, the production is still low. However due to the high mountain, the only sources for the local economy are coming from fishery and tourism. Nowadays the fishing vessels count around 1000 and the fishermen are considered as the most efficient among the Greek fishermen. Although species like *Thunnus alalunga* or *Boop boops* are abundant, they don't have big market demand. Considering the high nutritional value of the species, it has been a request from the local community to the EastMed project to provide support in training fishermen wives on process methods in order to improve the welfare not only of the family but also the community. The courses included lectures related with fishes' conservation on ice and freezing, the processing (marinating, drying, smoking, salting) and canning of the fishes, the preparation of surimi products, quality control based on chemical, microbiological and organoleptic criteria, traditional and new techniques on packaging and canning, as well as the marketing of the fishes including EC regulations. The trainees were also practiced on the field in sterilizing, drying, salting and smoking techniques. Needed apparatus for the processing were submitted through the Project. The trainees processed *Thunnus alalunga* which is caught in big quantities by the local fishermen, while they used only local ingredients. The activity was very welcome by the local

community and became public through the local media. As a follow up of the activity, was that the fishermen wives established a cooperative which 1) acquired a VAT number from the Ministry of Finance which will enable fish products marketing and 2) has submitted a proposal to be supported by the Ministry of Agriculture concerning the further development of the infrastructure of the processing laboratory with the aim to improve product quality, while enhance the different production lines. At the same time the fishermen wives at any opportunity like local fiesta or festival prepare ad=hoc their products for direct consumption at an effort to make it more widely public.

N. IVO.6

Title: **Viability of small-scale fisheries in Datça-Bozburun Special Environmental Protection Area (SEPA), (Eastern Mediterranean), Turkey**

Author(s): ÜNAL Vahdet, GÖNCÜOĞLU Huriye, DURGUN Denizcan, TUNCA Sezgin and GÜÇLÜSOY Harun

Abstract: Although small-scale fisheries play an important role along the coasts of Turkey where employment opportunities are limited, so far they've been poorly investigated from the economy perspective. In the present study, we focused on the small-scale fisheries sector where it dominates overall fisheries in order to help decision makers to develop appropriate management measures. We analyzed the viability of small-scale fisheries in the Datça-Bozburun Special Environmental Protection Area (SEPA), (Eastern Mediterranean), Turkey, from an economic and social point of view. The analysis was performed using a set of some socio-economic indicators. The field study was carried out in the ten fishing ports and three fishery cooperatives of the SEPA from 13 November 2010 to 27 July 2011. The main data was gathered from face-to-face interviews with the managers of all fishery cooperatives, and a total of 211 fishermen, all of whom were vessel owners (80% of all vessel owners) in the study area). Findings proved 41% of the fishermen in the area live solely on fishing. Fishermen with at least a secondary income besides fishing add up to 59%. Most of the fishermen (42%) work in the tourism sector as a secondary job, following free trade (28%), agriculture (24%) and civil service or pension (6%). Among the fishermen interviewed, 94% stated that they are not hopeful about the future of fisheries, 39% stated that they are thinking about quitting and 80% did not want their children to do this job. Fisheries in the region are difficult to sustain economically. In terms of net profits, only 21 boats have

stated positive economical results (only 10% of the fishermen reach net profits). This ratio is 22% for Bozburun where fishing power and sustenance from fishing are highest. When only variable costs (i.e. difference between total landing value-fishing income and variable costs) are considered; 143 of 211 boats have positive economic results. In fact, it is an important economic indicator that 68 boats fail to even meet their operational costs. This situation may at first be taken as a sign of how difficult their conditions are, however, one can reach a more rational conclusion when considered that 47 of these fishermen have other incomes. Consequently, it is obvious that the majority (69%) of the fishermen failing to meet their operational costs that pushes them to do fishing as a part time job. Current economic status of small-scale fisheries is signaling against sustainable fisheries. We observe that traditional management measures in the area are insufficient in terms of protecting resources and the fishermen. It is suggested that the buy-back program recently implemented by the Turkish authority for fishing vessels larger than 12 meters should also cover the small-scale fishing fleets (boats less than 12 meters). This management tool might be helpful to decrease fishing effort and fishing pressure in small-scale fishery and result in efficiency in fisheries by increasing profitability and fishing incomes. However, more comprehensive management alternatives (Ecosystem Approach to Fisheries, Territorial Use Rights) which observe biological, ecological, social and economical dimensions of fisheries should be adopted in order to ensure long term sustainability in fisheries. It is imperative that socio-economic results obtained in the study will assist managers and form the basis of information required to prepare management plans and establish sustainable fisheries.

N. IVO.7

Title: **FISHINMED: Cross-border cooperation to promote the sustainability of the small-scale fishing communities in the Mediterranean area**

Author(s): ZUCCARO Massimo, RUSSO Gennaro, PETRUZZELLA Damiano, ROCCHITTA Massimo, MISSAOUI Hechmi, ZEINAB Nagdi, MOKDAD Dahej, BONANNO Felice, TSERPES George

Abstract: FISHINMED project (Mediterranean Network of sustainable small-scale fishing communities, 2011-2014) is a cross-border cooperation project funded by ENPI CBCMED Program and implemented by public administrations

and research institutions of Puglia, Sicily and Sardinia (Italy), Greece, Tunisa, Egypt and Lebanon. FISHINMED project aims to favour the social and economic development of small fisheries communities by promoting the diversification of economic activities and the integrated enhancement of coastal territories. In the framework of the project, a "Mediterranean Network" (Euro-Mediterranean Observatory) has been established as an instrument of dialogue between public and private institutions at the Mediterranean level. It defines common strategies for the social and economic development of small fishing communities and set up a local technical support system aimed at favouring the multi-activity of the fishermen and increasing their income. At the territorial level, the action of the Observatory is guaranteed by working groups (composed of the fisheries sector stakeholders: fishermen associations and cooperatives, Fisheries Local Action Groups, Protected Marine Areas, etc.) which are a key factor as well as an instrument of participation to involve the principal local actors and guarantee the local application of the development strategy. In order to address the course of the research, the Euro-Mediterranean Observatory is to share and apply a common methodology to assess the socio-economic features of the Mediterranean small scale fisheries communities. It is based on the application of a statistical methodology (Principal Component Analysis) which classifies the communities into homogeneous areas with the same characteristics and oriented to the diversification of economic activities. The purpose is to characterize the multi-activity demand, expressed by the enterprises of small-scale fishing communities and the existing income-integrating opportunities for fishing enterprises in the same areas, with special reference to the fisheries communities with a high index of suitability for multi-activity. Currently, the working groups are working to highlight the critical aspects of the national and regional regulation, which hinder the development of the multi-activity among the fisheries communities. The purpose is to draw up the regulatory proposals to improve the enforcement of the diversification of economic activities in the target territories. The regulatory proposals will be formulated on the basis of the best practices on integrated development of the coastal territories found at the international level and selected in a database available as a result of the project. FISHINMED project will also foresee the establishment of a local technical support system, reppresented by a network of “Local Desk”, which will directly assist fishing operators with direct assistance (front-office principle) to appropriately orient them towards alternative choices that are complementary to their primary activity. The assistance services will be aimed at addressing all

technical, administrative, legal and other problems that the operators might encounter in the planning of their own entrepreneurial multi-activities.

N. IVO.8

Title: **FLAGs and small scale fisheries value chains in the Mediterranean**

Author(s): VAN DE WALLE Gilles

Abstract: The 4th Axis of the European Fisheries Funds presents a new approach in the way the European Union supports its fisheries sector. This Axis is devoted to the sustainable development of fisheries areas through a territorial approach. It dwells very much on the experience of the LEADER initiative which has successfully been used under the EARDF to support diversification of rural areas over the past 20 years. By shifting the focus of the support on the territory and the community away from the traditional sectoral approach, this method paves the way for the integration of the fisheries sector into the wider economic context and helps reducing the socio economic dependency of the area from a single activity. At the heart of Axis 4 are the Fisheries Local Action Groups (or FLAGs in short). These are partnerships, made up of both private and public actors which are set up at local level to assist in the sustainable development of fisheries areas. Small scale fishermen (SFF) are natural partners of FLAGs due to the local nature and the small size of most supported projects. FLAGs have been very active over the years to support SSF find their place within the value chain through building capacity, creating linkages with other actors of local development, providing financial and technical support but as well by empowering SSF in local or wider governance processes.

Posters

N. IVP.1

Title: **Seminar on the Canning Technology to the Fishermen's Wives in the Island of Kalymnos (Greece)**

Author(s): STAMATIS Nikos and RIGA Constantina

Abstract: The island of Kalymnos is located on the eastern side of the Aegean Sea with 1600 inhabitants. Kalymnos is known and billed as the "Sponge-divers" island. Sponge diving has long been a common occupation on Kalymnos and sponges were the main source of income of local people, bringing wealth to the island and making it famous throughout the Mediterranean. A disease at the mid-80s hit the eastern Mediterranean destroying a great number of sponges and damaging the sponge-fishing industry as a result. Although a recovery seems to appear on the sponge population, the production is still low. However due to the high mountain, the only sources for the local economy are coming from fishery and tourism. Nowadays the fishing vessels count around 1000 and the fishermen are considered as the most efficient among the Greek fishermen. Although species like *Thunnus alalunga* or *Boop boops* are abundant, they don't have big market demand. Considering the high nutritional value of the species, it has been a request from the local community to the EastMed project to provide support in training fishermen wives on process methods in order to improve the welfare not only of the family but also the community. The courses included lectures related with fishes' conservation on ice and freezing, the processing (marinating, drying, smoking, salting) and canning of the fishes, the preparation of surimi products, quality control based on chemical, microbiological and organoleptic criteria, traditional and new techniques on packaging and canning, as well as the marketing of the fishes including EC regulations. The trainees were also practiced on the field in sterilizing, drying, salting and smoking techniques. Needed apparatus for the processing were submitted through the Project. The trainees processed *Thunnus alalunga* which is caught in big quantities by the local fishermen, while they used only local ingredients. The activity was very welcome by the local community and became public through the local media. As a follow up of the activity, was that the fishermen wives established a cooperative which 1) acquired a VAT number from the Ministry of Finance which will enable fish products marketing and 2) has submitted a proposal to be supported by the Ministry of Agriculture concerning the further development of the infrastructure

of the processing laboratory with the aim to improve product quality, while enhance the different production lines. At the same time the fishermen wives at any opportunity like local fiesta or festival prepare ad=hoc their products for direct consumption at an effort to make it more widely public.

N. IVP.2

Title: **The Model of Yakakent Local Fisheries Under the Risk of Sustainability**

Author(s): YILMAZ Meltem and ÇAKIR Sümer

Abstract: The aim of this study was to find out the way of sustainability of Fisheries in Yakakent, a small town in the Middle Black Sea. The Fishery Sector is mostly dependent on seasonal fish production rate which is a risk for the sectoral stakeholders such as the port fisheries, the Yakakent Fish Cooperative and their members, the small-scale Fish Industry and the Fishery Families. All the stakeholders are going to face with seasonal fishing scales which are effecting directly the economic and social development of Yakakent as a small local Fish Suburb. In this study the main problem of the local fisheries has been studied and the solutions have been produced. Small scale fisheries should work with Yakakent Fishery cooperative to find out the way of sustainability of their economic status. On the other hand the Cooperative should develop a Non Governmental Organisation for the local fishery stakeholders to benefit in the global market competition. The cooperative should improve its organizational structure for the development of strategies in order to survive and sustain the fishery sector in Yakakent.

Thematic session V – FAO Fisheries Department

Setting up a regional platform to promote the implementation of the voluntary Guidelines for Securing Sustainable Small-Scale Fisheries

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Oral presentations

N. VO.1

Title: **FAO-ArtFiMed: an experience based on EAF to promote the sustainability of the resources that combines small scale fisheries management and social development**

Author(s): CAMIÑAS J. A., BERNARDON M., MALOULI M. and ELAIBA H.

Abstract: FAO-ArtFiMed Project (Sustainable Development of Artisanal Mediterranean Fisheries in Morocco and Tunisia, 2008-2011) is a pilot project funded by Spain, implemented under CopeMed II and coordinated by FAO. ArtFiMed promote basic concepts of the EAF improving livelihoods and integration of SSF communities for their social and economic development. This project was carrying out in 3 different fishing sites in Morocco and Tunisia under EAF Guidelines of FAO, with the participation and the involvement of the fishing communities from the identification of the priorities to the assessment of the results. ArtFiMed developed a replicable methodology to address from local to national and regional level, the main issues concerning the SSF communities in the Mediterranean region. With an holistic approach to sustainability and development the project promoted co-management and participatory mechanisms, supporting the creation of alternative livelihoods, promoting social and gender equality and equity, based on training to develop expertise and human capacity. A community based monitoring system for the fisheries activity was developed as a first step of a co-management process. This approach contributed to reinforce the local organisation of the fishers and to initiate internal discussions on the participation of SSF communities in the national decision making process for fisheries management. The communities' involvement was also considered to raise the awareness at national and regional scale on the importance and role played by the artisanal sector in producing

social, economic and biological reference data for fisheries management. The support of ArtFiMed to the creation of artisanal fishworkers organizations contributed to reduce conflicts by facilitating dialogue and the participation in the co management process awarding right and responsibility for governance of coastal ecosystem of which they depend. The improvement of security and working conditions and alternatives livelihoods to small scale fishing activity contributed to address poverty and reduce vulnerability of the target communities.

N. VO.2

Title: **The Mediterranean Platform of Artisanal Fishers: a contribution of the artisanal fishing sector towards sustainability**

Author(s): DECUGIS C., PULIDO M., SACANELL M., TARRIDAS R., ZANNES D., CAZALET, B. and CAVALLÉ M.

Abstract: This article describes the creation and function of the Mediterranean Platform of Artisanal Fishers (Medartnet) as a novel example of organization and collective action of artisanal and small-scale fishers in the regional scope of the Mediterranean. We describe the motivations that led to its formation, its philosophy and objectives pursued, as well as the results and benefits obtained from its inception in 2011. With a vision of a reality where artisanal and small-scale fishers are involved in and co-responsible for building a fairer and more sustainable world, where they are valued and recognized by society as guardians of the Mediterranean Sea, Medartnet aims to contribute in making artisanal and small-scale fishing a dignified, sustainable and self-sufficient livelihood and with prospects for the future. Artisanal and small-scale fishers –owners of valuable Traditional Ecological Knowledge and a sense of responsibility that had been stolen so far– are positioned as agents of change towards sustainability and as essential actors in the co-management of resources and ecosystems in the Mediterranean Sea. Finally the article briefly analyses the faced difficulties and suggests the challenges that would strengthen their capabilities for the network consolidation, propitiating –at the end- a Mediterranean Sea where fishing would be more sustainable in all its dimensions, while contributing to ensure food security and poverty alleviation in this area. Overall, Medartnet could represent a basic tool for the implementation on the Mediterranean Sea of the "Voluntary Guidelines to ensure sustainable small-scale fisheries" led by FAO,

as it is a proactive network of fishermen that exemplifies, through the professional performance of its members, the commitment to sustainable fisheries.

N. VO.3

Title: **Supporting Fisherwomen in Small-Scale Fisheries in Turkey**

Author(s): GÖNCÜOĞLU Huriye, ÜNAL Vahdet and KIZILKAYA Zafer

Abstract: This study aims at assessing the social, economic and cultural circumstances affecting fisherwomen in the southern region of Turkey, their problems, expectations and shortcomings that prevent the continuity of their existence in the profession. In the scope of the study, information and findings were gathered from both personal in-depth conversations and interviews with shareholders and focus groups during fisherwomen-oriented nationwide projects run by NGOs along the Southern Aegean coasts, Gökova Bay in 2012 and Datca-Bozburun Peninsula in 2013. Collected quantitative and qualitative data were utilized to reveal the living conditions of fisherwomen and to evaluate and analyze how gender-driven proceedings influence the lives of women. Results of the study conveyed that no project aiming at fisherwomen had been conducted until 2012 and despite women do carry any and all duties before, during and after fishing, they've been neglected as well as disregarded in pertinent policies, resulting in their fading existence, reluctance to continue and disinclination to professional organization. This study proposes the collection of gender-based data and assuring the position of fisherwomen both in the fisheries industry and related policies.

N. VO.4

Title: **Renforcement de capacités de pêcheurs artisans, les femmes et les petits producteurs : Expérience de Mauritanie 2000**

Author(s): NECH MOCTAR Nedwa

Abstract:

N. VO.5

Title: **Présentation des principaux résultats de l'Atelier Sous Régional de Renforcement des Organisations Professionnelles de la Pêche Artisanale dans les pays de l'Afrique du Nord, Bizerte, Tunisie du 24-26 Septembre 2013**

Author(s): SKANDRANI Yassine

Abstract: Les résultats attendus de la rencontre sont les suivants : • Echanger sur les expériences de chaque pays dans l'organisation des pêcheurs artisans et comparer leurs participations dans la prise de décision ; • Faire un diagnostic actualisé des faiblesses des organisations de la pêche artisanales et les solutions adaptées ; • Informer et sensibiliser sur les efforts et les activités internationales de gestion des pêches artisanales notamment les directives des CCPR, de SSF et des autres instruments internationaux ; • Discuter et finaliser un plan d'action commun pour le renforcement des capacités des organisations et leur participation effective dans la bonne gouvernance des pêches artisanale ; • Elaborer des propositions concrètes pour créer une plateforme de pêche artisanale de l'Afrique du Nord ; • Démarrer un processus de mise en place de cette plateforme permettant d'accompagner le développement durable de la pêche artisanale et des pêcheurs eux même.

N. VO.6

Title: **Introduction to the SSF Guidelines**

Author(s): TOUEILIB Cherif

Abstract: La communication consisterait abordera la gestion et le développement des Pêches artisanales dans la sous région SNE dans le contextes des lignes directrices de la gouvernance responsable des pêches artisanales. Après un aperçu de la situation des pêches artisanale, la communication traite des principes et impacts positifs de l'application des lignes de conduites pour des pêches artisanales durables tant pour la gestion durable des ressources halieutiques et de leur environnement que pour les communautés des pêcheurs artisans en mettant l'accent sur les aspects suivants : La gouvernance et le respect des pratiques responsables dans les pêches. Les caractéristiques et l'application de la gouvernance responsable des pêches artisanales Un accent particulier sera mis sur l'approche des droits humains en matière d'aménagement des pêches artisanales.

N. VO.7

Title: **Human rights and legal empowerment in small-scale fisheries**

Author(s):

Abstract:

N. VO.8

Title: **Overview of Small-Scale Fisheries in the Mediterranean EU Countries**

Author(s): CAGGIANO Rosa

Abstract: The purpose of this speech is to identify first of all a definition of SSF beyond the official one (12 m overall vessel length excluding towed gear) and then taking into consideration all the various characteristics in the Mediterranean EU countries since this kind of fishery is prevalent in the European fishery fleets in the basin. SSF should be sustained by means of a "preferential channel" that would foster economic and political support for this sector. The problem, however, is that small-scale fishery activities are the most multifaceted. This sector therefore deserves careful assessment, calibrated policies, actions to be designed individually for each different area, having been penalized by the restrictive policies applied to EU fisheries in the past as a result of the lack of such specific consideration.

Posters

N. VP.1

Title: **Vers une pêche artisanale durable : Associer la pêche responsable au développement social**

Author(s): ArtFiMed/CopeMed

Abstract: Ce poster présente de manière synthétique, les objectifs, les approches, les bénéficiaires et les principaux résultats du projet ArtFiMed. Financé par l'Agence Espagnole de Coopération Internationale pour le Développement (AECID), le Projet régional 'Développement durable de la pêche artisanale méditerranéenne au Maroc et en Tunisie' (ArtFiMed) a éte exécuté entre Février 2008 et Juillet 2011, par le Département de Pêche et Aquaculture de l'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (FAO) et coordonné par le projet CopeMed.

Les sites de mise en œuvre du projet sont :

- Dikky dans la province de Tanger au Maroc, aux alentours du détroit de Gibraltar où plus de 300 pêcheurs utilisent uniquement des engins à hameçons et ciblent des espèces de haute valeur commerciale, dont le Thon rouge.
- Ghannouch, petit village proche de Gabès en Tunisie, où les pêcheurs utilisent différents types de filets et capturent une grande variété d'espèces dont la Seiche
- El Akarit, dans le Golfe de Gabès en Tunisie, où ce sont principalement des femmes qui à marée basse, pratiquent la pêche des palourdes sur la zone intertidale.