Tyre: a case Study

Sociology, Technology & Economics of a Community (2004-2005)

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Message from Ricerca e Cooperazione

It is of a common knowledge that, in the ample historical field of the International Cooperation, Fishery, and in particular Artisanal Fishery, is one of the most difficult sectors and amidst the most sparing with satisfactions for all those who operate in the implementation of activities. This is most probably due to four main reasons.

The first factor is the peculiar complexity of the fishing activity where very different techniques, often a result of a sort of mixing of times, are combined. In fact, some of these seem to have crossed centuries, not to say millennia, almost without the minimal variation, whereas others represent advanced applications of very sophisticated technologies. The same materials used are of many different kinds (steel, plastic, wood, etc.) as the dimensions of instruments and equipments in use vary from those important but measurable of the vessels to those almost without limit of the fishing nets, mysterious spider nets that may be appreciated in all their grandeur only in the open sea. And then the engines, usually reliable, that may play risky tricks too.

The second factor consists of the complexity of the human component. Wherever, in the world, at every latitude, artisanal fishermen are real entrepreneurs on their own. Everyone has his peculiar way of fishing, everyone knows “special” places, and everyone follows his preferred time schedule. The business usually involves his own family, either in the narrow or broad sense, with forms and intensity of participation that may vary from a family to another. Such a capacity is a big potential but needs to be adequately directed whenever ways of possible associative work or phases are identified. And this is the variable that, if not considered carefully, has often limited or reduced the effects of development projects, if not even caused their failure.

The third element is represented by the complexity of the artisanal fish product line, which includes also all what is before and after the actual catching activity. The supply of fishing gears/materials, their fragility, the effective risk to loose part of them while in the sea, the perishability of the production (source of myths, traditions and proverbs all over the world), presume a high level of capability to organize, an intense exchange with communities sometimes geographically far, the understanding and management of very heterogeneous interests and mentalities.

Finally, the fourth factor is becoming more and more predominant: the water pollution and the sustainability of the fish resources. While during the recent years ways of mitigation of the pollution have been outlined and implemented with a fairly good success, and the ecological awareness of the fishermen and, in general, of the coastal communities is growing, the reduction of the fish resources is dramatic and seems to be a process that cannot be stopped on the international scale. Practically a number of species became

extinct, shoals that until the ’70 seemed inexhaustible literally disappeared. High impact fishing techniques, selective catching on species valuable for the market, non-respect for the seasons of reproduction, have impoverished the planet stocks.

The consolidation and the development of the activity for the artisanal fishing community of Tyre represent a challenge that has therefore to consider important moments of meditation. The studies introduced by this short note witness the importance that the Project has given to the analysis of the context, from the social, technical, biological, and economic points of view, as it is an essential condition for the auspicated success of the intervention.

Arturo Parolini, RC President

Message de Caritas Liban

Après trente et un ans de sa fondation, Caritas Liban poursuit sa mission humanitaire sans aucune discrimination ethnique ou religieuse, en vue de promouvoir le développement humain et de répandre la justice sociale.

Cette fois ci son travail se focalise sur le concept de développement local durable et participatif.

Ce concept vise d'une part à réconcilier le développement économique et social, la protection de l'environnement et la conservation des ressources naturelles et d'autre part à renforcer les capacités et le changement structurel et institutionnel, à définir les besoins réels et à réaliser les objectifs, afin de favoriser le progrès socio-économique et culturel, et d'améliorer le niveau de vie des communautés défavorisées.

Cette nouvelle orientation nécessite une démarche à long terme avec un long souffle et beaucoup de sacrifices, de patience et d'amour.

Le projet de développement de la communauté des pêcheurs à Tyr, en est un bon exemple.

Ce projet met à la disposition de cette communauté les clés pour devenir acteur de changement pour la construction d'une société durable, et n'offre pas des services aux pêcheurs, d'une manière assistée.

La politique stratégique adoptée dans l'exécution de ce projet se base sur les principes suivants:

- l'activité d'animation qui est le noyau autour duquel tout le travail est constitué, a commencé depuis 7 ans (en partenariat avec Caritas Espagne) et on est à mi chemin, bien qu'elle soit une excellente dynamique de développement.
- L'information, la sensibilisation, et la formation (éléments essentiels de tout projet oeuvrant au développement durable) mobilisent les pêcheurs à participer à la vie publique et économique et les impliquent dans leur propre développement, en suscitant chez eux l'initiative et la capacitation et la disposition mentale et culturelle à ne plus être des personnes assistées, afin d'atteindre l'indépendance et l'autonomie économique.
- La recherche continue: Méthode primordiale pour faire avancer la mise en place de solutions innovantes.
- Créer un processus de prise de conscience et d'organisation au sein de la communauté des pêcheurs (dimension indispensable)

- Eviter le modèle de paternalisme/dépendance, en insistant sur l'exigence de mettre en marche seulement des initiatives qui soient l'expression de la volonté et des intérêts des pêcheurs
- Privilégier l'approche de genre comme technique de lecture des problèmes étudiés et des solutions envisagées
- Mener les activités en étroit partenariat avec le plus grand nombre d'acteurs possibles
- Promouvoir un nouveau développement humain intégrant la protection de l'environnement puisque l'amélioration durable des conditions de vie de cette communauté défavorisée est indissociable de la protection de la mer (leur seule richesse naturelle)
- Impliquer davantage les acteurs dudit projet dans les choix stratégiques et dans la conception de la méthodologie pour renforcer leur motivation et leur esprit autocritique
- Favoriser la promotion ou la constitution d'associations communautaires parmi les pêcheurs et encourager un dialogue actif entre eux et les différentes parties prenantes (populations locales et d'autres organisations partenaires potentielles, publiques ou privées).

Depuis le début de son action à Tyr, Caritas continue à évoluer en fonction des aspirations et des besoins exprimés par les pêcheurs, et dans le cadre de cette nouvelle stratégie à travers ce projet soutenu par l'Italie, Caritas joue un rôle de catalyseur de nouvelles formes de développement, intégrant réellement la dimension environnementale.

Puisque ce projet a pour vocation le développement des ressources humaines et naturelles il aide ses acteurs à acquérir les connaissances et les capacités nécessaires à l'amélioration de leur niveau de vie.

En d'autres termes, le développement des capacités existantes, la participation locale et le partenariat sont au coeur de l'action de ce projet.

Ce projet donne aux associations des pêcheurs accès à un fonds de micro-crédits inaccessible par ailleurs, avec un support technique et économique, de conseils en gestion et en comptabilité et d'informations sur le marketing et les opportunités de marché.

Et les sessions de formation envisagées tentent de combler le manque de structures de formation professionnelle dans cette communauté afin de permettre la réinsertion socio-économique et culturelle des jeunes ayant abandonnés très tôt le système scolaire sans

avoir obtenu de qualifications et de toute une partie de la population qui n'a pas reçu de formation adéquate et efficace.

Ce qu'on a fait jusqu'à l'heure actuelle à Tyr est important, comme un début, mais ce qui reste à faire est plus important en temps et action. Ce projet n'est qu'une phase d'un long processus de développement constituant un défi pour Caritas et pour d'autres organisations locales, nationales et internationales parce qu'il s'agit d'analyser en profondeur les causes du sous développement de cette communauté marginalisée.

Père Louis Samaha, Président Caritas Liban

Presentation of the work

This paper is the collection of Preliminary Reports of three different profiles of Expert that the Project AID 7461/RC/LBN recruited to build up a comprehensive picture of the status of the Fishing Community of Tyre at the start of the project.

Silvia Cubadda (Sociologist) studied the Community of the Fishermen concentrating on the composition of the fishing families, the dynamics of the groups and exploring the economical problems of the activity as felt by the operators along with their inclination to group. We report here a comprehensive *résumé* of her work (in French).

Drs. Francesco Colloca and Paolo Carpentieri (Marine Biologists) studied the technical aspect of Fishery in Tyre and put the base for launching a continue campaign of data collection that will give an instruments to better manage the Sector even to the political level.

Laura Cicinelli (Economist) concentrated on the market and the credit schemes available to the fishermen comparing the situation of Tyre to the one of other Lebanese ports.

All the reports gave to the Project Management Committee a stronger base over which schedule or re-schedule the project activities in order to better meet the objective of the project itself and the needs of the said Community.

The main instrument used to collect information was the interview. Fishermen, fish mongers, women, entire families, managers of syndicates and fishermen cooperatives and other stakeholders were met. Bibliographic data, when available, were used to provide basic information.

There is not very much written on the Fishing Communities of Lebanon. This document, although with all the limits imposed by the restricted timing of the Project and because of the events[1], is most probably the first comprehensive study on the subject and the first attempt to draw a picture of the Fishing Community of Tyre which is one of the poorest communities in Lebanon.

It is a document preliminary to all specific actions of the Project and we wish it will be a reference for all those who will to work to develop the sector.

We tried to make the document as much homogeneous as possible for style and graphics, working on the basic material (the Experts' mission reports) reducing the cuts to

[1] *For part of the 2004 project expatriate personnel adopted a lower profile due to the events occurred in Iraq (kidnapping of two Italian and one Iraqi social workers of a project implemented by an Italian NGO) and their effects in Lebanon (attempted bombing at the Italian Embassy in Beirut).*
The events of February 2005 (killing of Rafiq Hariri) occurred while the joint mission of the Experts for Fishery was still ongoing. For a few days it was considered unsafe to drive through Saida (which is on the way that connect Tyre to Beirut) and security reasons suggested to reduce the activities on the field while the national mourning was still effective.

the minimum in order to leave each contribution independent from the others. Hence, some of arguments are analyzed or reported more than once in the whole document.

Original papers were in the Experts working language (Italian and English) and we report in French and English. The Project Staff does not include any “mother tongue” for translation. We apologize if sometime the language might sound “strange” or too much “Italian”.

Reproduction is free with the only commitment of a quotation in your works. The Project keeps the database created by the Experts. Hence, in case of need, you may ask for more information contacting us at our addresses[1].

Ciro D’Acunzo, Project Manager AID 7461/RC/LBN

Beirut, November 2005

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Enquête Socioculturelle sur la Communauté des Pêcheurs de Tyr, Liban
(résumé)

par
Silvia Cubadda, Sociologue

Introduction

L'enquête fait partie du projet "Développement socio-économique de la Communauté des Pêcheurs de Tyr", projet cofinancé par le Ministère Italien des Affaires Etrangères, par l'ONG Ricerca e Cooperazione et par Caritas Liban. Les bénéficiaires du projet sont les familles de la communauté des pêcheurs de la ville de Tyr. Dans les quartiers des pêcheurs habitent environ 5 000 personnes dont 50% vivent de la pêche.

L'objectif du projet est d'augmenter les revenus des familles des pêcheurs. La stratégie qui a été identifiée pour atteindre cet objectif est caractérisée par une composante fondamentale de participation communautaire, qui se concrétise par la création d'un groupe de pêcheurs réglementé en forme de coopérative ou association.

L'enquête est un instrument pour l'identification des contenus et surtout des modalités des activités communautaires. Elle comporte:

1. la connaissance générale du conteste d'intervention;
2. la vérification et/ou la mise à jour du cadre des problèmes et des conditions existantes;
3. la connaissance des processus d'appartenance et/ou de participation communautaire.

Ce résumé est divisé en quatre parties:

- la première est une description de la méthodologie utilisée pour l'enquête;
- la deuxième réunit les données et les informations qui concernent le cadre d'intervention;
- la troisième est une présentation des résultats de l'enquête. Ce chapitre décrit la communauté des pêcheurs selon ses composantes principales: la famille, l'activité de pêche et les dynamiques communautaires.

- Enfin, pour compléter, des notes de conclusion sont destinées au Comité de Gestion du Projet avec des commentaires sur le cadre des activités prévues par le document de projet.

1 Méthodologie

L'enquête a été réalisée (fin printemps 2004) avec la méthodologie suivante:

Révision des données existantes:

Au niveau du Sud Liban et de la ville de Tyr, les informations ont été collectées parmi:

- les études du Ministère Libanais des Affaires Sociales (MoSA, 1996), de l'Administration Centrale pour les Statistiques[1], du Ministère Libanais de l'Environnement[2].
- la base de données du Ministère Libanais de l'Agriculture[3]
- la documentation utilisée dans la rédaction du projet (enquête sociale de Caritas, rapports de mission)

Interviews à "témoins privilégiés":

Des interviews semi structurés ont été réalisés avec des "témoins privilégiés", c'est à dire des personnes qui à cause de leur rôle ou profession peuvent donner des informations profitables afin de connaître la communauté et mieux identifier les lignes pour les interviews avec questionnaire. On a interviewés les agents du terrain de Caritas Liban (Secteur Tyr), le Président du Syndicat des Pêcheurs du Sud et du personnel d'une ONG locale (ADR[4]).

Interviews avec questionnaire

Le questionnaire (voir Annexe) a été administré à un échantillon de cinquante pêcheurs tiré de la liste des registrations du Syndicat et divisés par groupes selon l'âge. Durant cette sélection, on a remarqué que plusieurs personnes inscrites dans cette liste ne pêchent pas pour des raisons diverses.

Le questionnaire a été traduit en arabe et testé avant d'être utilisé.

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[1] *Etudes CAS 1996-98*

[2] *Rapport sur l'Etat de l'Environnement 2003*

[3] *Ce Ministère a la compétence pour le Secteur de la Pêche*

[4] *Association pour le Développement Rural*

Les interviews ont été réalisées par les agents du Secteur de Caritas à Tyr (Ndr : Lucie Ghafari[1] et Bechara Fakhoury[2]).

Le logiciel statistique SPSS fut utilisé pour l'analyse des données.

[1] *Assistante Sociale*

[2] *Animateur Social à la tache. M. Fakhoury avait été impliqué soit pour un étude de la communauté des pêcheurs de Tyr conduit par Caritas Liban que durant la phase d'identification du projet.*

2 Contexte

Dans la ville de Tyr il y a approximativement 400 pêcheurs et 200 bateaux; la majorité des pêcheurs sont Libanais, mais il y a aussi une centaine de Palestiniens, quelques Syriens et une famille d'Iraquiens. La propriété du bateau est souvent commune dans la même famille (entre pères, frères, cousins).

Le revenu moyen par mois d'une famille de pêcheurs est d'environ 200 USD; toutefois, personne (même pas les pêcheurs) ne sait exactement combien les pêcheurs gagnent; les estimations obtenues pendant l'enquête varient entre 100 et 600 US$ par mois.

Plus de 85% des pêcheurs demandent de l'argent en crédit aux commerçants de poissons du marché de Tyr pour couvrir les coûts d'entretien reliés á l'activité de pêche, mais d'autre côté ils sont forcés à vendre le poisson aux mêmes commerçants à un prix plus bas, avec une perte estimée à 20-30% du revenu environ[1].

Les trois problèmes principaux qui déterminent cette situation sont:

- la diminution de la capacité de pêche
- la difficulté de commercialiser le poisson à un prix adéquat
- les coûts élevés d'entretien liés à l'activité de la pêche

Ces problèmes sont croisés transversalement avec les difficultés provenant du niveau insuffisant de conscientisation sur les problématiques communautaires (manque de cohésion) et l'environnement (pêche illégale).

Au niveau des services sociaux, la situation sanitaire est particulièrement difficile, à cause de l'absence de la sécurité sociale et des coûts trop élevés des services privés.

[1] *Ndr: en effet la différence entre le prix au marché libre et celui payé par les commerçants aux pêcheurs endettés est le montant de restitution du prêt économique qui doit être considéré consistant d'une partie du capital et les intérêts pour l'utilisation. Voire le rapport de M.me Cicinelli (Economiste) pour le fonctionnement des systèmes de crédit existants.*

En ce qui concerne l'éducation, beaucoup de familles ne peuvent pas payer la scolarité des enfants; l'abandon des études est estimé à 15% chez les garçons âgés de 11 à 12 ans et chez les filles âgées de 13 à14 ans.

Les quartiers des pêcheurs sont divisés par religion: les chrétiens habitent prés du port, les musulmans un peu plus loin. Dans beaucoup des maisons l'électricité et l'eau manquent.

3 Présentation des résultats

La population des pêcheurs étudiée est d'environ 364 personnes (inscrits au syndicat, et donc titulaires d'une licence de pêche). L'âge pour l'inscription au syndicat est de 18 ans, donc les pêcheurs de moins de 18 ans ont été exclus de l'enquête. Le nombre de ces jeunes est entre 35 à 40, pour la plupart ce sont des fils des pêcheurs, mais ils ne travaillent pas tous régulièrement. Il y a aussi un petit groupe de pêcheurs non inscrits au syndicat, ils sont donc irréguliers (selon les représentants du syndicat ils sont au nombre de 7).

L'échantillon a été stratifié par groupe d'âge. Toutefois, on a trouvé des discordances entre le nombre prévu dans les groupes et celui qui est effectivement remarqué au cours des interviews (Figure 1). En particulier, le dernier groupe (≥ 66 ans) est surestimé en comparaison aux prévisions, lorsque le 3ème (44 -55 ans) a été sous-estimé.

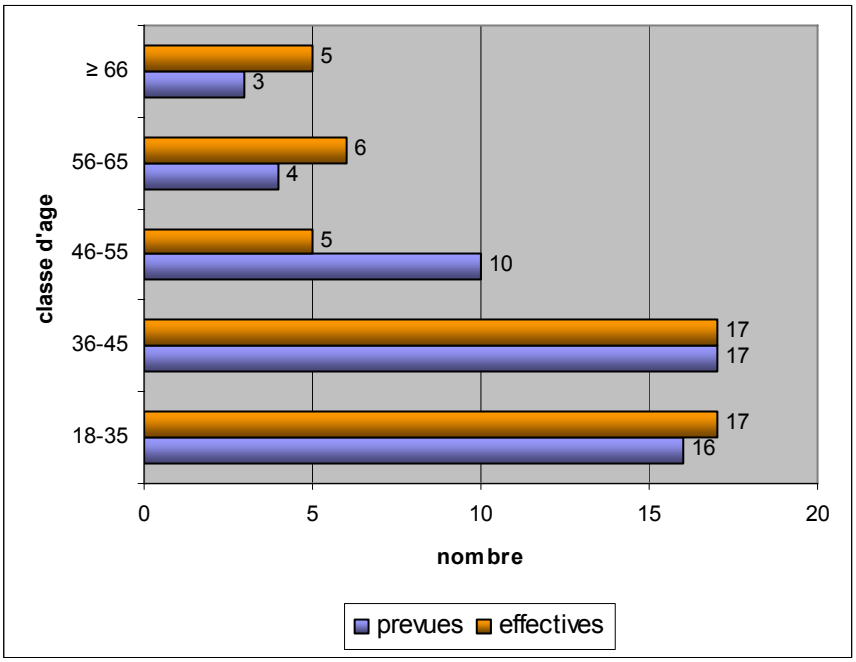

Figure 1: Nombre d'observations prévues et effectives par groupe d'âge

La population des pêcheurs est jeune; les deux premiers groupes (18-35 ans) et (36-45ans), représentent ensemble 68% des interviewés. Les autres groupes varient tous entre 6% et 15%.

3.1 La famille

La plupart des pêcheurs sont mariés (78%). Les familles sont composées dans 48% des cas de 3 à 5 personnes (Figure 2); cette information, si combinée avec les données relatives au nombre des enfants (Figure 3), porte à définir la structure familiale comme ‹‹étroite››, composée seulement par les parents et les enfants. Evidemment, le nombre des enfants augmente à l'augmenter de l'age (Tableau 1).

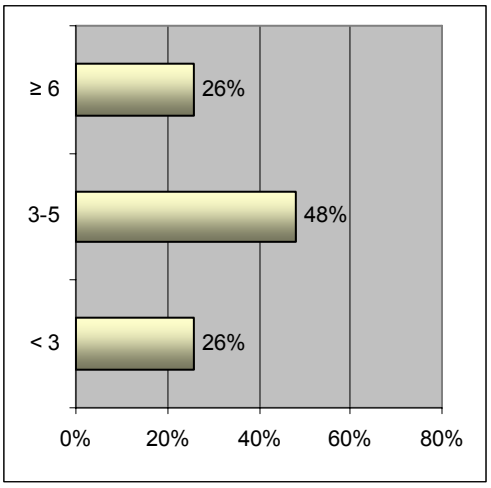

Figure 2: Nombre de personnes composant la famille

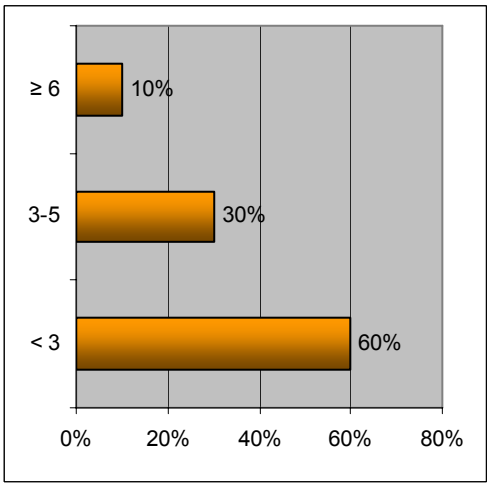

Figure 3: Présence d'enfants dans la famille

Tableau 1 : Nombre d'enfants par famille et par groupe d'âge

		age			
		18-35	36-45	46 et plus	Total
n. d'enfants	moins de 3	88,2%	64,7%	25,0%	60,0%
	de 3 à 5	11,8%	35,3%	43,8%	30,0%
	plus de 6			31,3%	10,0%
Total		17	17	16	50
		100,0%	100,0%	100,0%	100,0%

Les pêcheurs les plus jeunes ont moins de trois enfants dans 88% des cas, mais aussi les cas dans le 2ème groupe d'âge (36-45ans) sont concentrés dans cette modalité, lorsque seulement une partie des pêcheurs âgés de plus de 46 ans (31%) a plus de 6 enfants (Tableau 1).

Cette information est confirmée aussi quand on considère les personnes à la charge du pêcheur (Tableau 3). Toutefois dans ce cas, il y a un déplacement des valeurs de la première à la dernière modalité découvrant un 12% en plus

de pêcheurs qui ont à leur charge des personnes en-dehors de la famille étroite (Tableau 2). Ces personnes sont distribuées sur tous les groupes d'âge, mais particulièrement sur la première: moins de la moitié des jeunes qui ont une famille de moins de 3 personnes travaillent effectivement pour soutenir seulement leur famille.

Tableau 2: Nombre de personnes par famille par groupe d'âge

		age			
		18-35	36-45	46 et plus	Total
personnes dans la famille	moins de 3	47,1%	17,6%	12,5%	26,0%
	de 3 à 5	47,1%	64,7%	31,3%	48,0%
	plus de 6	5,9%	17,6%	56,3%	26,0%
Total		17	17	16	50
		100,0%	100,0%	100,0%	100,0%

Tableau 3 : Personnes à charge par groupe d'âge des pêcheurs

		age			
		18-35	36-45	46 et plus	Total
personnes à charge	moins de 3	17,6%	11,8%	12,5%	14,0%
	de 3 à 5	58,8%	58,8%	25,0%	48,0%
	plus de 6	23,5%	29,4%	62,5%	38,0%
Total		100,0%	100,0%	100,0%	100,0%

La pêche est dans 78% des cas la seule source de revenu pour ces familles (Figure 4). Dans 12% des cas, le chef de famille a un autre travail, lorsque seulement 2 interviewés ont une femme qui travaille. Les pêcheurs qui cherchent un autre travail sont les adultes, probablement parce que ils sont plus pressés par l'exigence de soutenir une famille plus nombreuse.

66% des pêcheurs habitent dans des maisons en location; 22% sont propriétaires de leur maison. 12% vivent avec leurs parents ou sont bénéficiaires d'un *waqf*[1] (Figure 5).

[1] *Ndr : Pour la loi musulmane le waqf est une fondation ou la tutelle d'un bien-fonds dont les revenus sont dépensés pour les motivations désignées par le bienfaiteur. Normalement il est destiné à la charité (*Library of the Congress, Glossary Saudi Arabia *à http://lcweb2.loc.gov /frd/cs/saudi_arabia/sa_glos.html). Le mot est utilisé aussi dans les communautés chrétiennes et, dans le cas spécifique, il s'agit d'un bail à pris très bas*

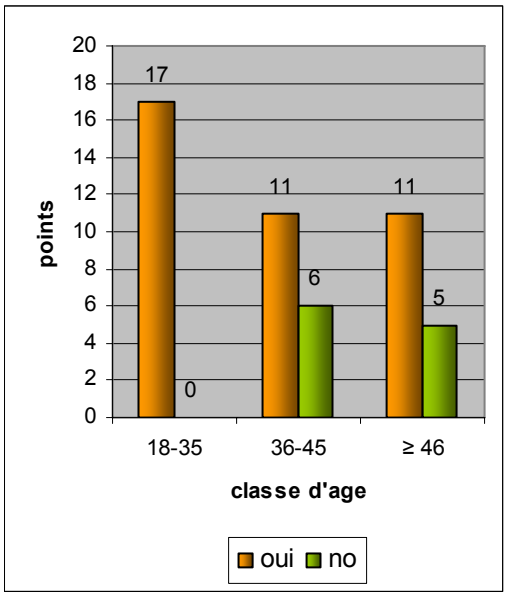

Figure 4: Présence d'autres sources de revenu par groupe d'âge

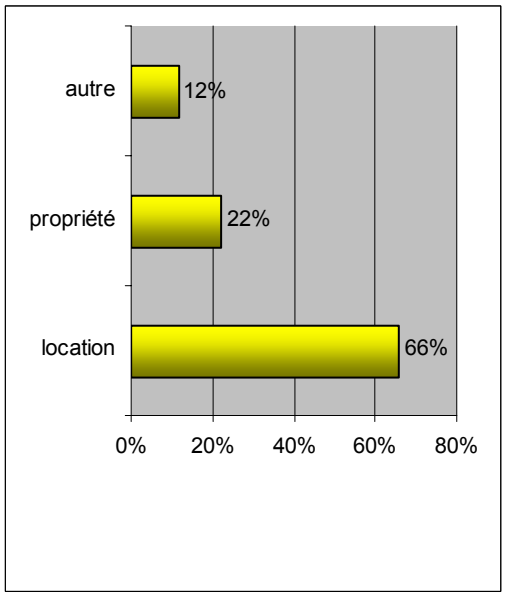

Figure 5: Titre de possession du logement

En ce qui concerne la religion, la majorité des pêcheurs est musulmane (66%). La religion ne semble pas conditionner la situation des pêcheurs; en effet, les différences sont au niveau de la composition du ménage: les familles musulmanes sont plus nombreuses (Figure 6) par conséquent les pêcheurs musulmans ont plus de personnes à charge (Figure 7).

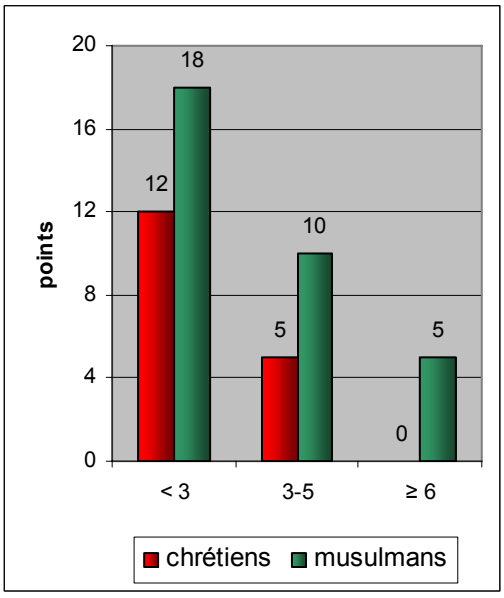

Figure 6: Nombre d'enfants par famille

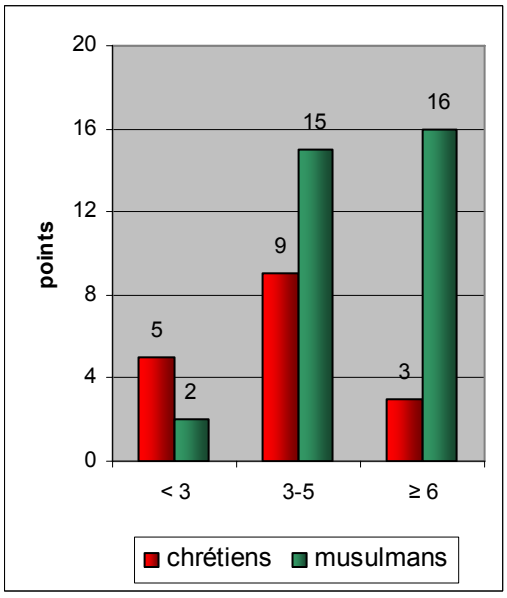

Figure 7: Nombre de personnes à charge

Les musulmans tendent à avoir plus de personnes à charge même s'ils sont jeunes (Tableau 4); la modalité «moins de 3 personnes à charge» va en effet disparaître après le 1er groupe, lorsque pour les chrétiens elle reste présente.

En même temps, les cas dans la modalité «plus de 6 personnes à charge» augmentent progressivement à l'augmenter de l'âge pour les musulmans, lorsque pour les chrétiens la majorité des cas est autour « de 3 à 5 personnes à charge». En ce qui concerne le 1er et le 2ème groupe d'âge, pour aller ensuite se concentrer dans la modalité « moins de 3 personnes à charge » pour le 3ème groupe.

Tableau 4: Personnes à charge selon la religion et le groupe d'âge

age			religion		Total
			chrétien	musulman	
18-35	***personnes à charge***	moins de 3	5,9%	11,8%	**17,6%**
		de 3 à 5	11,8%	47,1%	**58,8%**
		plus de 6	5,9%	17,6%	**23,5%**
	Total		**23,5%**	**76,5%**	**100,0%**
36-45	***personnes à charge***	moins de 3	11,8%		**11,8%**
		de 3 à 5	35,3%	23,5%	**58,8%**
		plus de 6	5,9%	23,5%	**29,4%**
	Total		**52,9%**	**47,1%**	**100,0%**
46 et plus	***personnes à charge***	moins de 3	12,5%		**12,5%**
		de 3 à 5	6,3%	18,8%	**25,0%**
		plus de 6	6,3%	56,3%	**62,5%**
	Total		**25,0%**	**75,0%**	**100,0%**

3.2 La pêche

66% des pêcheurs interviewés sont propriétaires d'un bateau. Le pourcentage des propriétaires augmente avec l'augmentation de l'âge, par conséquent la majorité des non - propriétaires sont les pêcheurs jeunes.

Tableau 5: Propriété du bateau par groupe d'âge

		age			
		18-35	36-45	46 et plus	Total
propriétaire de bateau	oui	47,1%	70,6%	81,3%	66,0%
	non	52,9%	29,4%	18,8%	34,0%
Total		17	17	16	50
		100,0%	100,0%	100,0%	100,0%

Selon le Syndicat, le nombre des bateaux enregistrés est de 190; une dizaine de pêcheurs possèdent 2 ou 3 bateaux. La propriété d'un bateau est souvent commune avec des autres membres de la famille.

La pêche par groupes de bateaux n'est pas très répandue (91% des pêcheurs disent que leur bateau ne pêche pas avec d'autres bateaux).

Tableau 6 : Pêche par groupes de bateaux

		age			
		18-35	36-45	46 et plus	Total
peche avec autres bateaux	oui		21,4%	6,7%	9,1%
	no	100,0%	78,6%	93,3%	90,9%
Total		15 100,0%	14 100,0%	15 100,0%	44 100,0%

En ce qui concerne les problèmes de l'activité de pêche, l'enquête a confirmé la priorité de la commercialisation: les deux problèmes "monopole de la commercialisation" et "difficultés de vente" sont à la 1ère et 4ème place.

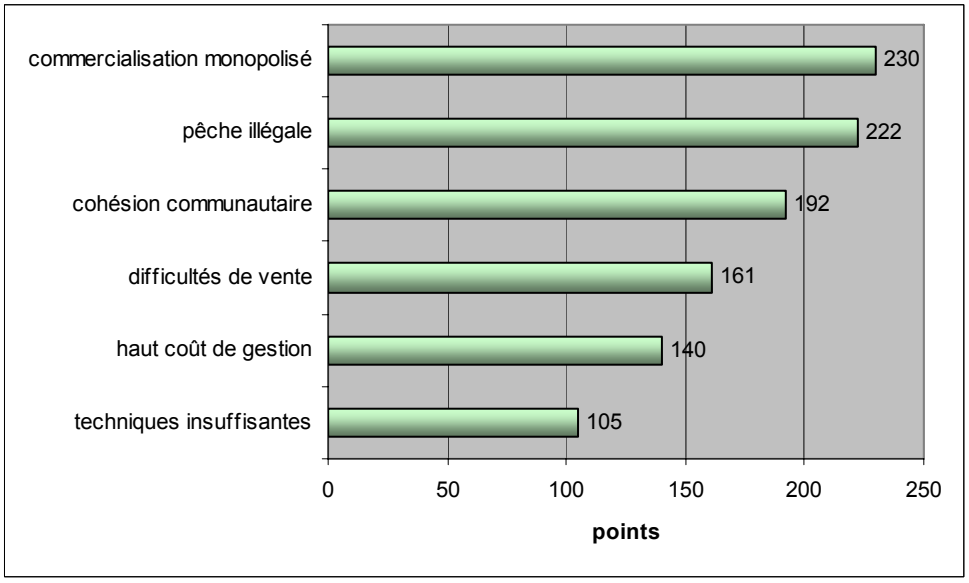

Figure 8: Sensation de la priorité des problèmes à résoudre pour relancer le secteur

La pêche illégale est à la 2ème place, suivie par l'absence de cohésion communautaire. Aux dernières places, les hauts coûts de gestion de la pêche et les techniques insuffisantes. Ces données confirment la nécessité d'une intervention sur la commercialisation et la formation sur le respect de la « ressource mer », en particulier pour les plus jeunes.

La dernière place des techniques de pêche porte à faire 2 hypothèses: la 1ère est que les pêcheurs sont inconscients ou pas informés relativement des

méthodes anciennes de pêche qu'ils utilisent et de la disponibilité de nouvelles techniques ; la 2ème est qu'en effet les techniques utilisées par les pêcheurs sont adaptées aux types de pêche effectués. L'étude du projet et les opinions d'un expert local de pêche portent à confirmer la 1ère hypothèse.

Tableau 7: Perception des problèmes par groupe d'âge

problèmes prioritaires (points)	age en classes		
	18-35	36-45	≥ 46
monopole de la commercialisation	71	80	80
pêche illégale	85	76	61
cohésion communautaire	68	64	60
difficultés de vente	58	44	58
haut coût de gestion de la pêche	46	51	43
techniques insuffisantes	29	42	34

L'analyse par groupe d'âge ne présente pas des différences pertinentes ; les deux priorités (commercialisation et pêche illégale) sont les mêmes, sauf une inversion dans la 1ère classe ; les techniques de pêche sont tenues toujours à la dernière place et la cohésion communautaire à la 3ème ; les difficultés de vente et les hauts coûts de gestion sont respectivement à la 4ème et à la 5ème place, avec l'exception de la dernière classe, où ils sont invertis.

Les revenus irréguliers de l'activité de pêche et l'absence de capacités de planification financière pour la plupart des pêcheurs, engendrent de graves difficultés financières dans les cas d'interruption de l'activité ou dans la basse saison. En effet, 96% des pêcheurs interviewés déclarent d'avoir des problèmes financiers (Figure 9) ; parmi eux 66% déclarent d'en avoir « beaucoup » et le 30% «quelques

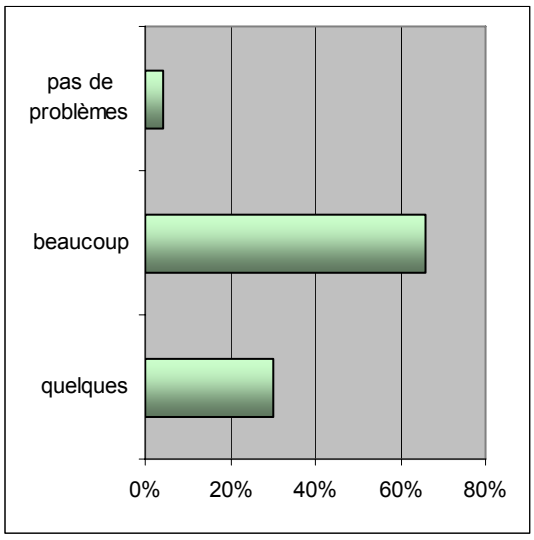

Figure 9: Difficultés financières

un». Pour la plupart, ces problèmes arrivent pendant l'hiver, car à cause du mauvais temps sortir en mer est difficile et le poisson est plus rare. De toute façon, pour 38% des pêcheurs, les difficultés financières sont régulières pendant toute l'année.

Analysant l'occurrence des problèmes financiers avec la propriété de bateau, on peut noter que les pêcheurs propriétaires tendent à avoir des problèmes financiers pendant la basse saison, lorsque plus de la moitié des non propriétaires les ont pendant toute l'année.

Tableau 8: Récurrence de problèmes financiers

		Propriétaire de bateau		Total
		Oui	Non	
Occurrence des problèmes financiers	Sporadiquement	18.8%	13.3%	17.0%
	Pendant la basse saison	46.9%	33.3%	42.6%
	Réguliers toute l'année	34.4%	53.3%	40.4%
	Nombre total des réponses	*32*	*15*	*47*
Total		100.0%	100.0%	100.0%

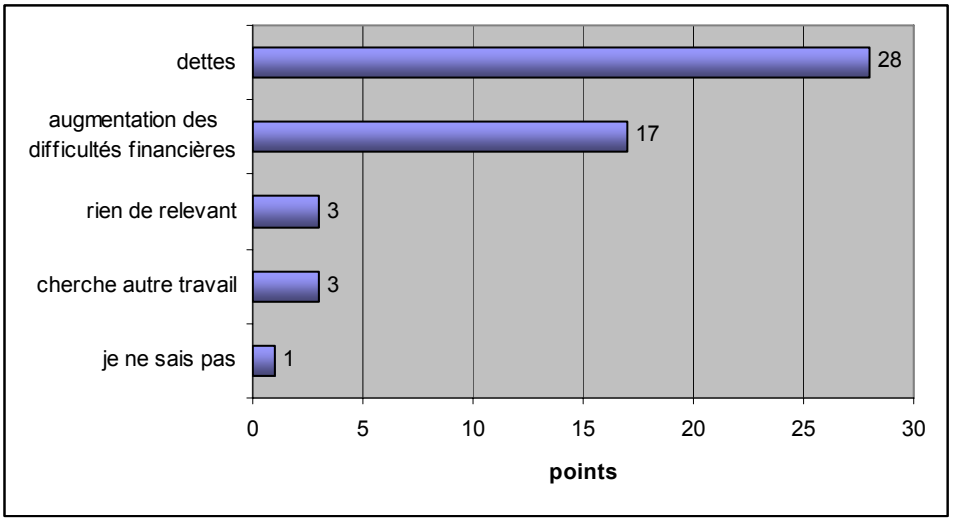

Figure 10: Conséquences en cas d'interruption du travail pendant une semaine

Dans le cas de perte de journées de travail les problèmes financiers augmentent chez 86% des interviewés, et le recours aux dettes est très répandu. La modalité «augmentation des difficultés financières» n'exclue pas le recours aux dettes, parce qu'elle implique aussi les autres réponses ou le

recours aux dettes n'est pas explicitement mentionné, (exemple: réponses comme « la ruine financière » ou « la mort pour famine » ou encore « le désastre… »).

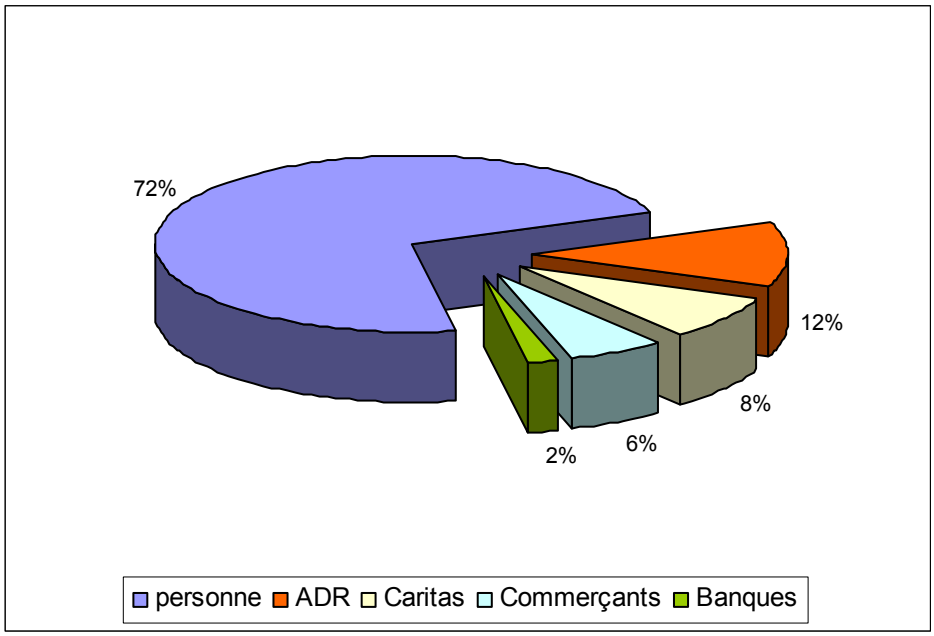

Figure 11: Recours au crédit et opérateurs du crédit contactés

Toutefois, si on considère le recours au crédit "formel" (banques, associations), les données ne coïncident pas (Figure 11). Ici l'hypothèse est que les dettes soient, pour la plupart, de petits montants d'argent pour faire face aux difficultés immédiates ; demandés aux membres de la famille ou aux amis, et que soient ici compris les crédits demandés aux commerçants.

Le recours au crédit formel est beaucoup plus rare, et il est demandé surtout pour activités productives (achat d'équipements ou d'un bateau), même à cause des critères pour l'affectation de ce genre de crédits.

L'importance de mettre à la disposition des pêcheurs un fond de crédit est confirmée par la majorité absolue de la réponse « amélioration des équipements pour la pêche » obtenue à la question « qu'est-ce que vous allez faire avec un peu plus d'argent? » (Figure 12). L'amélioration des bateaux, l'achat de filets et l'achat d'un bateau sont inclus dans cette modalité.

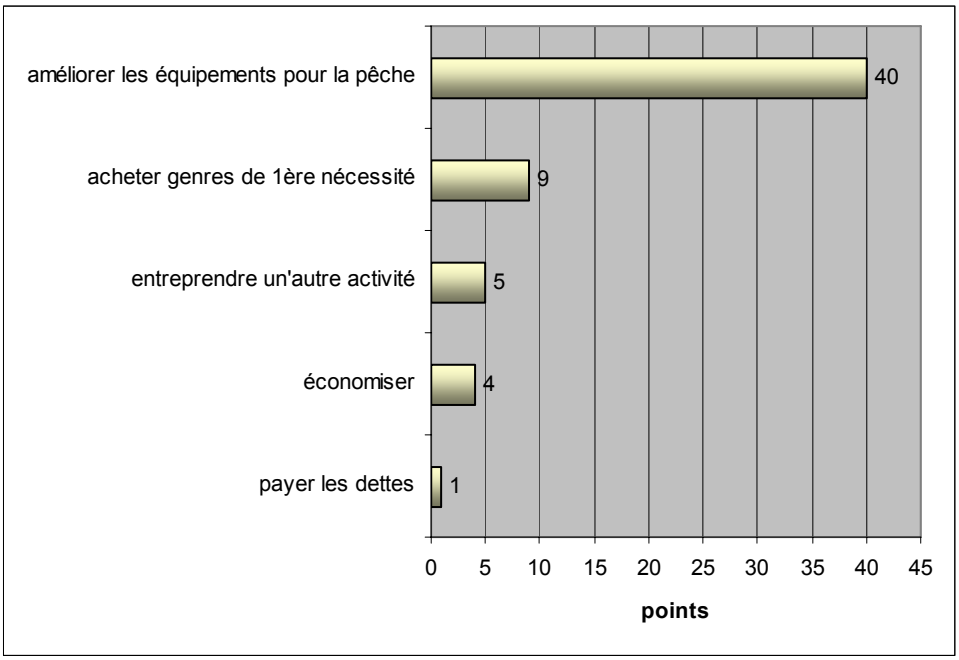

Figure 12: Utilisation d'un éventuel montant supplémentaire disponible aux pécheurs

3.3 Les dynamiques communautaires

L'enquête ne confirme pas l'existence de réseaux de solidarité communautaire, au moins en ce qui concerne l'aide réciproque quand des difficultés surviennent. Ici (Figure 13 et Figure 14) le sujet le plus important est la famille, qui aide dans 34% des cas et qui est aidée dans 64% des cas. Il y a un haut pourcentage de cas qui répondent « aucun » pour les deux questions (58% et 30%) ; sûrement ceux sont des indicateurs de la condition d'isolement perçue par les pêcheurs.

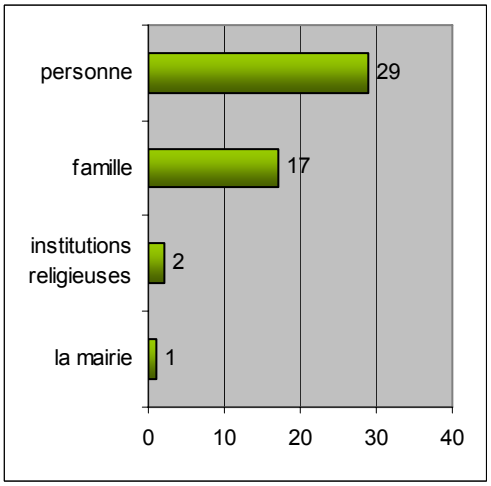

Figure 13: Qui aide financièrement les pêcheurs

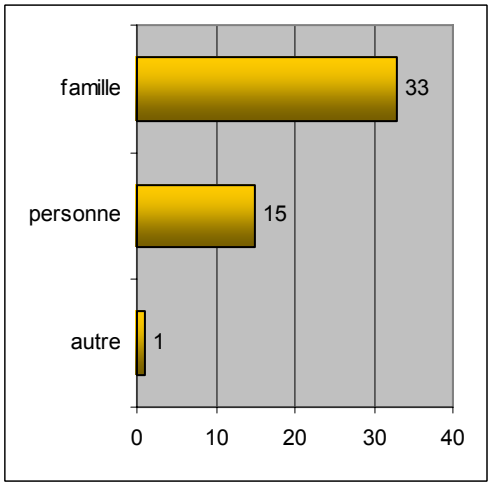

Figure 14: A qui les pêcheurs donnent de l'aide

En ce qui concerne les institutions et les associations retenues importantes (Figure 15) pour le soutien aux pêcheurs, Caritas Liban, l'ONG ADR et le Syndicat des Pêcheurs, sont aux 3 premières places. La 1ère place obtenue par Caritas peut être expliquée par les activités du dispensaire et par la visibilité obtenue pendant les interviews mêmes, qui ont aussi représenté une occasion pour informer les pêcheurs de l'imminente ouverture du projet.

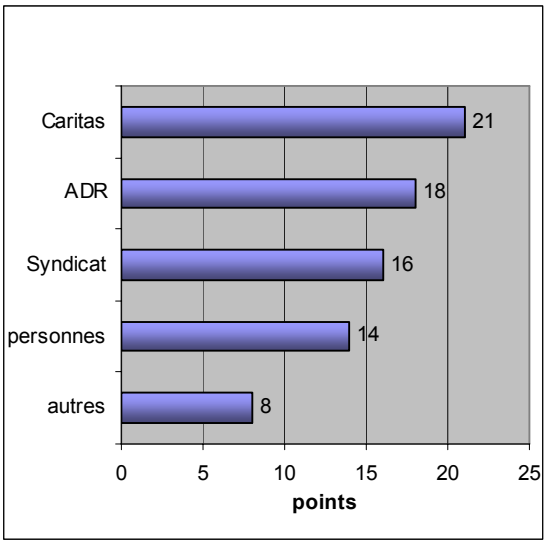

Figure 15: Associations retenues importantes pour le soutien aux pêcheurs

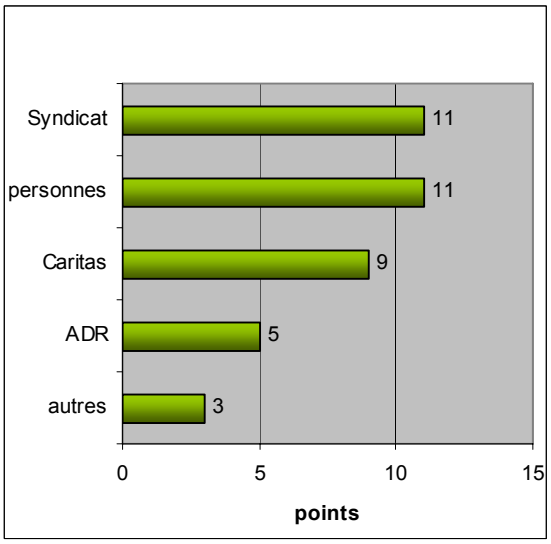

Figure 16: Perception de la qualité du travail des associations

Le Syndicat, l'organisme institutionnel pour les pêcheurs, n'est pas considéré convenable pour tous (3ème place). La 4ème place de la modalité « aucun » suggère plusieurs explications: l'absence d'informations sur les initiatives des associations, l'absence d'implication dans ces initiatives, le jugement négatif sur leur efficacité. À la question « qui travaille mieux et pourquoi ? », la 1ère place est obtenue par « le Syndicat » et « aucun entre eux ». À suivre, Caritas, ADR et autres (Figure 16). Les motivations pour ce choix sont référées, pour Caritas et le Syndicat, au travail social, en particulier pour les aspects sanitaires.

La modalité "autre" comprend plusieurs sujets: la municipalité, la Banque Libano Canadienne et quelques privés. C'est intéressant de voir que, lorsque les pêcheurs ont nommé des privés (les bienfaiteurs comme M. Nassif Seiklawi ou l'Évêque), personne n'a cité la coopérative d'achat des filets, ce qui confirme les informations reçues à l'égard de son inutilité pour les pêcheurs.

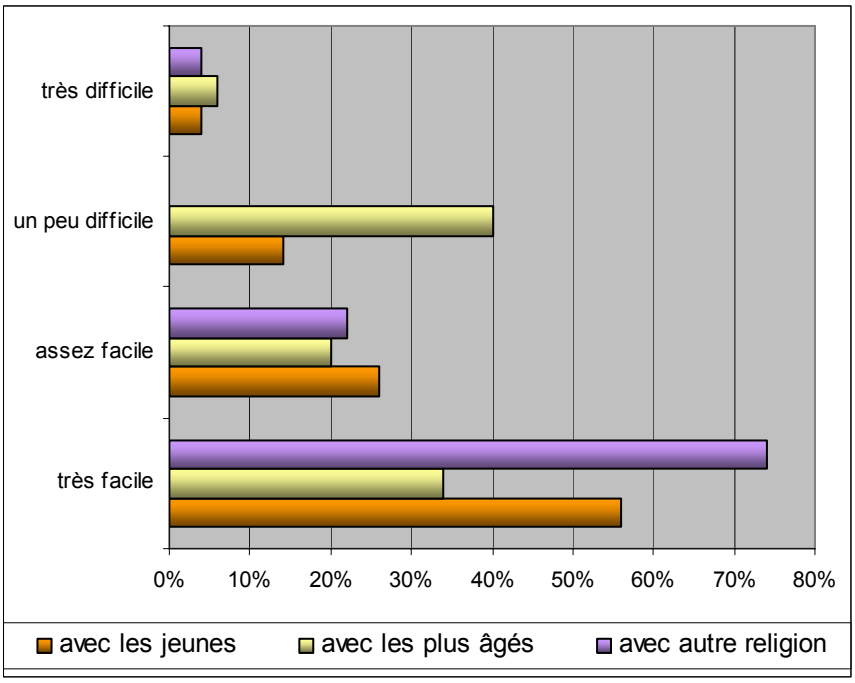

Figure 17: Difficulté du travail avec les autres (jeunes, âgés, membres d'un autre groupe religieux)

Les attitudes des pêcheurs ne sont pas en conflit avec la possibilité d'organiser un travail en groupe; en général, pour l'échantillon interviewé, travailler avec les pêcheurs plus jeunes est facile, avec les pêcheurs plus âgés un peu difficile (Figure 17), et avec les pêcheurs d'une autre religion très facile.

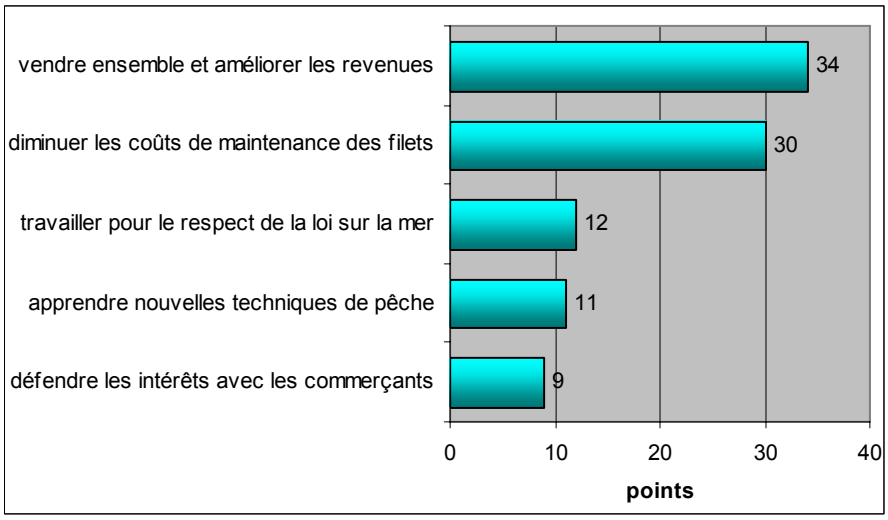

Figure 18: Les raisons du travail en association

Avec les causes pour travailler en association (Figure 18) on revoit le problème de la commercialisation. La cause la plus choisie pour travailler ensemble est

« vendre ensemble et améliorer les revenus », suivie par « diminuer les coûts de maintenance des filets ». Les autres possibilités sont très décalées, et la défense des intérêts avec les commerçants est à la dernière place.

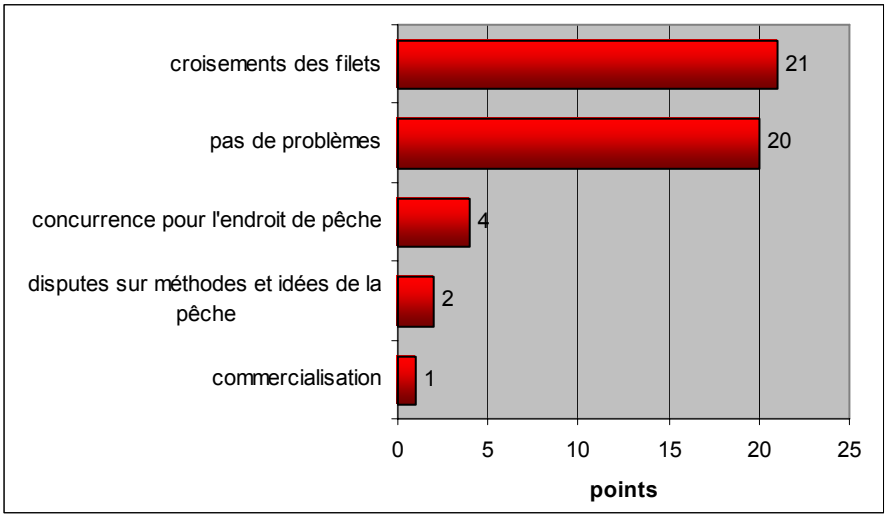

Figure 19: Causes de querelle entre les pêcheurs

Pour ce qui concerne les rapports entre les pêcheurs (Figure 19), il n'y a pas des conflits très importantes. Les motivations principales de querelle sont les croisements des filets (40%), suivis par la concurrence pour l'endroit de pêche (8%). Le 40% des pêcheurs déclare de n'avoir pas des problèmes avec les autres pêcheurs.

3.4 Leaders communautaires

Les résultats de l'enquête montrent qu'il n'y a pas de vrais leaders communautaires. Chaque pêcheur compte sur soi même, sa famille, et ses amis. Les pêcheurs les plus âgés sont très appréciés pour leur expérience, mais ils ne peuvent pas être considérés comme leaders. Le Syndicat non plus n'est pas perçu comme représentant de la communauté.

4 Conclusions

L'étude a permis une connaissance plus profonde de la communauté bénéficiaire du projet, et une confirmation de la nécessité de l'intervention dans les domaines identifiés.

L'enquête ne montre pas l'existence de réseaux de solidarité communautaire, au moins en ce qui concerne l'aide réciproque durant les moments difficiles. A ce niveau, et au niveau des associations pertinentes à la communauté, la perception de la condition d'isolation et l'absence d'aide extérieure pour les pêcheurs sont assez visibles.

Les attitudes des pêcheurs ne sont pas en conflit avec la possibilité d'organiser un travail de groupe; selon cette donnée qui confirme les informations obtenues par les interviews précédents, organiser un travail communautaire ou des sessions de formation avec la participation de groupes de pêcheurs de différentes religions (et différente appartenance politique) ne serait pas un problème. Les problèmes, par contre, débuteraient avec les intérêts économiques. Toutefois, la plupart des pêcheurs se déclarent disponibles à travailler ensemble pour améliorer leurs revenus.

ANNEXES

Développement socio-économique
de la Communauté des Pêcheurs de Tyr

Enquête socioculturelle
Questionnaire

ID. ……

D 1 - REL
Cr □ 01
Mus □ 02

D2 - PROP
oui □ 01
non □ 02

D 3 - AGE
18 –35 □ 01
36 – 45 □ 02
46 – 55 □ 03
56 – 65 □ 04
66 et outre □ 05

Date de l'interview ……

S'il vous plait rempliez les espaces correspondent à la réponse choisi

Q1. Est-ce que vous êtes marié ?		هل انت متزوج؟
Oui	01 □	نعم
Non	02 □	كلا

Q2. Combien d'enfants avez vous?		كم عدد الاولاد؟
Moins de 3	01 □	اقل من 3
De 3 à 5	02 □	بين 3 الى 5
Plus de 6	03 □	اكثر من 6

Q3. Combien de personnes il y a dans votre famille?		كم عدد أفراد عائلتك؟
Moins de 3	01 □	اقل من 3
De 3 à 5	02 □	بين 3 الى 5
Plus de 6	03 □	اكثر من 6

Q4. Combien de personnes vous avez à votre charge?		كم شخص تعيل؟
Moins de 3	01 □	اقل من 3
De 3 à 5	02 □	بين 3 الى 5
Plus de 6	03 □	اكثر من 6

Q5. Est –ce que votre famille a d'autres sources de revenu ?		هل لعائلتك مصدر رزق اخر؟
No	01 □	لا
Oui, femme qui travaille	02 □	أجل ، زوجتي تعمل
Oui, fils pêcheur	03 □	أجل ، ولدي صياد سمك
Oui, fils autre travail	04 □	أجل ، ولدي يشغل وظيفة اخرى
Outre (spécifier)	05 □	غير ذلك(حّدد)
Pas de réponse	99 □	لا اجابة

Q6.Dans quel type de logement vous habitez ?		ما هو نوع سكنك؟
Maison de propriété	01 □	بيت ملك
Maison louée	02 □	بيت مأجور
Wakf	03 □	وقف
Outre (spécifier)	04 □	غير ذلك(حّدد)
Pas de réponse	99 □	لا اجابة

Q7. Mettez en ordre de priorité les problèmes suivants :		رتّب بحسبالاولوّية المشاكل التالية
Les hauts coûts de gestion de l'activité de pêche :	01 □	الكلفة العلية لمهنة الصيد
Le monopole de la commercialisation du poisson:	02 □	احتكار تجارة السمك
La pêche illégale :	03 □	الصيد غير المشروع
Techniques pour la pêche insuffisantes :	04 □	عدم توّفر تقنيات الصيد اللازمة
Les difficultés de vente du poisson	05 □	صعوبات بيع السمك
Absence de cohésion communautaire pour résoudre les problèmes:	06 □	عدم وجود تكافل اجتماعي لحلّ المشاكل

Q8. Est-ce que vous avez des problèmes financiers pendant l'année?		أتواجه مشاكل مالية خلال السنة ؟
Oui, quelqu'un	01 □	أجل ، أحياناً
Oui, beaucoup	02 □	اجل ، غالباً
No, pas du tout	03 □	لا ، مطلقاً
Pas de réponse	99 □	لا اجابة

Q9. Est-ce que ces problèmes occurrent :		هل تحدث تلك المشاكل المادية :
Régulièrement, pendant toute l'année	01 □	يشكل مستمر على مدار السنة
Pendant la saison où le poisson est peu	02 □	خلال موسم شحّ الصيد
Sporadiquement	03 □	يشكل متقطع
Pas de réponse	99 □	لا اجابة

Q10. Si vous perdez une semaine de travail, qu'est ce que va avenir ?	إن انقطعت عن العمل مدة اسبوع ، ماذا يحصل؟
_____ _____ _____ _____	_____ _____ _____ _____

Q11. Qu est-ce que vous allez faire avec un peu plus d'argent ?	ماذا يمكن ان تفعل بالقليل من المال؟
_____ _____ _____ _____ _____	_____ _____ _____ _____ _____

Q12. Par qui vous étés aidé avec les problèmes financières?		من يساعدك إن واجهت مشاكل مالية ؟
personne	01 □	لا أحد
par la famille	02 □	العائلة
par les amis	03 □	الاصدقاء
par le syndicat	04 □	النقابة
par institutions religieuses	05 □	المؤسسات الدينية
autre (spécifier)	06 □	عير ذلك (حدد)
pas de réponse	99 □	لا اجابة

Q13. Est-ce que vous demandez des crédits pour faire face à ces difficultés ?		هل طليت قروض لمواجهة هذة الصعوبات؟
no	01 □	لا
oui, aux banques	02 □	نعم ، من البنك
oui, aux commerçants du poisson	03 □	نعم ، من التجار السمك
oui, autre (spécifier)	04 □	نعم ، غير ذلك (حدد)
pas de réponse	99 □	لا اجابة

Q14. Est-ce que vous aidez quelqu'un avec ces problèmes?		أتساعد أحداً على مشاكله المالية؟
oui, la famille	01 □	أجل ، العائلة
oui, les amis	02 □	أجل ، الاصدقاء
oui, autre (spécifier)	03 □	أجل ، غير ذلك (حدّد)
no	04 □	لا
pas de réponse	99 □	لا اجابة

Q15. Si vous devrez choisir deux pêcheurs, ayant votre confiance, pour représenter vos intérêts, qui vous allez choisir ?	إذا كان عليك اختيار صيّادين تثق بهمافي تولي مصالحك، من تختار ولماذا؟
_____ _____ _____	_____ _____ _____

Q16. Vous devez faire un travaille très absorbant en peu de temps. Qui vous allez choisir pour le faire ?	عليك اتمام عمل منهك في وقت قصير فمن تختار للقيام به ولماذا؟
_____ _____ _____	_____ _____ _____

Q17. Quels sont les associations et les groups relevant pour les pêcheurs à Tyr ?	ما هي الجمعيات والمجموعات التي تتعاطى بأمور الصيادين؟
_____ _____ _____ _____ _____	_____ _____ _____ _____ _____

Q18. Entre ces associations, qui travaille mieux ? Et pourquoi ?	أيّ هذه الؤسسلت تعمل بشكل افضل ولماذا؟
_____ _____ _____ _____ _____	_____ _____ _____ _____ _____

Q19. Est-ce que votre bateau pêche avec d'autres bateaux?		هل مركبك يذهب للصيد مع مركب آخر؟
oui, de la famille	01 □	نعم ، مع شخص من العائلة
oui, des amis	02 □	نعم ، مع الاصدقاء
oui, autre (spécifier)	03 □	نعم ، غير ذلك (حدد)
no	04 □	لا
pas de réponse	99 □	لا اجابة

Q20. Donnez votre opinion sur la facilité de travailler avec les groups suivants :		أعط رايك في سهولة العمل مع المجموعات التالية :
Travailler avec les pêcheurs plus jeunes est : très faciles assez facile un peu difficile très difficile	 01 □ 02 □ 03 □ 04 □	العمل مع الصيادين الشبان: سهل جداً مقبول صعب بعض الشيء صعب جداً
Travailler avec les pêcheurs plus âgés est : très faciles assez facile un peu difficile très difficile	 01 □ 02 □ 03 □ 04 □	العمل مع الصيادين الاكبر سناً: سهل جداً مقبول صعب بعض الشيء صعب جداً
Travailler avec les pêcheurs propriétaires de bateau est : très faciles assez facile un peu difficile très difficile	 01 □ 02 □ 03 □ 04 □	العمل مع صيادين يملكونالمركب: سهل جداً مقبول صعب بعض الشيء صعب جداً
Travailler avec les pêcheurs pas propriétaires de bateau est : très faciles assez facile un peu difficile très difficile	 01 □ 02 □ 03 □ 04 □	العمل مع صادين لا يملكون مركبا: سهل جداً مقبول صعب بعض الشيء صعب جداً
Travailler avec les pêcheurs d'une autre religion est : très faciles assez facile un peu difficile très difficile	 01 □ 02 □ 03 □ 04 □	العمل مع صيادين من غير طائفة : سهل جداً مقبول صعب بعض الشيء صعب جداً

Q21. Choissez 2 raisons pour lesquelles vous alliez travailler en association avec autres pêcheurs :		اعط سببين قد يدفاعاك للعمل مع صيادين آخرين
Pour vendre ensemble et améliorer mes revenues	01 □	البيع المشترك وتحسيت الدخل
Pour défendre mes intérêts avec les commerçants	02 □	الدفاع عن الحق مع التجار
Pour apprendre nouvelles techniques de pêche	03 □	تعلم تقنيات صيد جديدة
Pour diminuer les coûts des maintenance des filets	04 □	تقليص كلفة صيانة الشباك
Pour travailler pour le respect de la loi sur la mer	05 □	التعاون في احترام قانون البحر
Autres (spécifier)	06 □	غير ذلك (حدد)
Pas de réponse	99 □	لا اجابة

Q22. Racontez un épisode dans lequel vous avez eu un problème relevant avec un autre pêcheur de Tyr. (quel problème, avec qui, quand, comment et par qui a été résolu)	اسر حادثة واجهت فيها مسكلة مع صياد آخر في صور. ما المشكلة ومع من ومتى وكيف تمّ حلّهاومن طف من؟
_____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____

Notes	ملاحظات:
_____ _____ _____ _____ _____	_____ _____ _____ _____ _____

Preliminary Biological and Technical Analyses of the Fishing Sector of Tyre

by
Dr. PhD. Paolo Carpentieri, Marine Biologist
Dr. PhD. Francesco Colloca, Marine Biologist

April 2005

Introduction

The present report has been produced in the framework of the project: "Socio-economic development of the Fishing Community of Tyre, Lebanon" [*Sviluppo Socioeconomico della Comunità dei Pescatori di Tiro, Libano*], promoted and implemented by the Italian NGO "Ricerca e Cooperazione" in collaboration with Caritas Lebanon, and co-financed by the Italian Government (Ministry of Foreign Affairs, Directorate General of the Cooperation for Development[1]).

A field survey at the port of Tyre was carried out in the period 6-18 February 2005 to gather quantitative data on artisanal fishing activities (*e.g.*: features of the fishing gear, landings and catch composition, fish prices) with the main objective to obtain a general description of Tyre fishing sector.

General information on the main issues affecting the community of fishermen of Tyre has been obtained through interviews with local stakeholders (president and vice-president of the local Fishermen Syndicate, local fishermen).

The expected results of the field survey were the following:

a. to assess dimensions and characteristics of fishing activities/metiers (fleet, fishing gears, target species, fishing areas and periods, catch composition, landings and CPUEs) during winter period;

b. to define a sampling strategy and a procedure for data collection in order to gather quantitative information on fishing metiers during the year;

c. to evaluate the main factors constraining the sustainable development of fishing sector.

[1] *Project AID 7461/RC/LBN*

1 Fishery: general and local framework of the sector

1.1 Mediterranean artisanal fishery

Artisanal fishery[1] is the most important fishing sector in the Mediterranean basin as number of vessels and fishermen involved. Difference from country to country can be related not only to the geographical and ecological heterogeneity of the Mediterranean basin, but also to the general technological and economic level of the country, its historical background and ethnic factors. The volume and value of fish marketed varies significantly from one country to another, playing a more important role in the southern Mediterranean.

By "artisanal fishery" is intended any small capital investment fishery as opposed to "industrial fishing" which implies significant investments by companies or financial groups. It is often associated with the notion of "coastal fishing", *i.e.* essentially fisheries located on the continental shelf (0-200 m depth), exploited areas which can be reached in a few hours from the ports or beaches where the fishermen are based. The fleets are generally made up of a large number of boats, mostly of low tonnage, based in a multitude of ports and shelters. Fishing gears and areas are extremely diversified, changing during the year, according to local traditions and fluctuations in the abundance of species. The catch is highly multispecific, composed of numerous different species of fish and macro-invertebrates (cephalopods and crustaceans).

The term “metier”, that is a combination of gear, target species and fishing geographic zone, has been used in previous studies to describe artisanal fisheries in the Mediterranean Sea. It is a pragmatic definition that allows classifying artisanal fishing activities for management aims.

[1] *Also referred as «small-scale fishery»*

1.2 Artisanal fishery in Lebanon

The Lebanese fleet is entirely made up by artisanal vessels using fixed gear *(i.e.* trammel nets, gillnets, longlines, traps) and purse seiners for small pelagic fishes.

From 3 000 to 4 000 fishermen, mainly based in the ports of Tripoli, Beirut and Tyre and to a lesser extent in Jbail, Jounieh, Saida and Sarafand (in addition to a few fishermen in Naqoura), are involved in fishing activities.
The fishermen of Tyre, Naqoura and Sarafand are grouped under one union[1] composed by more than 520 people and 250 small boats (the number of which has a tendency to increase every year). Of those, Tyre has about 300 fishermen and 224 small boats. Production has been estimated to be of about 275 tons of fish per year. The main fishing gears are fixed nets (⅔ of the fleet) and longlines (⅓ of the fleet).
The Lebanese fisheries have suffered considerably during the war: explosives, poisons, and other illegal systems have been thoroughly used for a number of years.

Until now, no direct methods adopted by the Government have been enforced to preserve marine living resources; however, since the end of the war, the use of explosives has diminished significantly due to the controls of the Lebanese Army. In addition, fishermen in the South cannot venture out at the sea for security reasons, a matter that helped indirectly in replenishing fishing stocks[2].

Notwithstanding the importance of the fishing sector in the area, no quantitative studies and surveys are or have been carried out to evaluate the status of resources and improve management.

The Country's annual fish production was at 3970 tons in 2001[3], of which around 3100 tons from marine fisheries and the rest from freshwater aquaculture (Table 9). Aquaculture is relatively less developed in Lebanon compared to neighbouring countries: 375 tons/year in Lebanon (rainbow trout),

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[1] *Syndicate of the Fishermen of the South*

[2] *Note of the Editor : The port of Tyre is close to the territorial waters of Israel. Hence, fishing is not safe (because of security reasons claimed by Israel) in the southern waters of Lebanon.*

[3] *Source: FAO*

7290 tons/year in Syria (mainly carp) and 17568 tons/year in Israel (mainly carp and tilapia).

Marine fishery production ranged between 3 000 and 6 000 tons from 1995 to 2001, with few differences in the catch composition along the entire coast of Lebanon (from Abdeh to Naqoura). Main changes are related to the season: catch composition change according to the different periods of the year (*i.e.* Sparids, *Mullidae* and *Clupeidae* are more abundant during summer and autumn).

Table 9: Annual fish production (t x 1 000) in Lebanon (source: FAO)

year	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	
catch	0,19	0,2	0,22	0,2	0,23	0,25	0,18	0,25	0,3	0,23	
year	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
catch	0,2	0,18	0,24	0,31	0,2405	0,171	0,162	0,174	0,1675	0,174	
year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	
catch	0,157	0,152	0,15	0,15	0,17	0,1875	0,19	0,18	0,18	0,15	
year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
catch	0,18	0,185	0,22	0,2425	0,4385	0,4485	0,3955	0,392	0,386	0,4066	0,397

The lack of quantitative sampling programmes for the sea of Lebanon, aimed to establish distribution, abundance and biological features of species, does not allow evaluating the status of the exploitation of fish resources. However, the lack of industrial or semi-industrial fisheries (*e.g.*: trawlers) allows reducing the risk of overexploitation for many commercial species targeted by the artisanal vessels.

1.3 Lebanese Fishery legislation

The main Lebanese Laws concerning conservation and management of marine living resources are the following:

- The Law published by statutory order No 1104, 14/11/1921, modified by Council of Ministers Decision No 138, 16/9/1983, which forbids fishing in ports, the use of products that anaesthetise or poison fish or pollute the

water, and the use of explosives in fishing. It also forbids factories to let their waste flow into the sea.

- The Law No 1/84, 13/6/1984 and Law No 14/50, 20/8/1990, which regulated sponge fishing. Statutory Order No 63/11, 16/3/1993 forbade sponge fishing for five years.
- Statutory Order No 95, 9/5/1939 and the Law dated 19/11/1947, modified by Law No 1490, 20/8/1990 and by Decree No 11882, 3/6/1948, regulated river and freshwater fishing.

1.4 Main ecological features of the Levantine basin and Lebanese coasts

The Levantine Sea is a sub-basin located in the south-eastern corner of the Mediterranean, covering the area bordered by Crete, south of Turkey, Syria, Lebanon, Israel, Egypt and part of Libya, and including Cyprus. In front of the Nile Delta (off Port Said at the entrance of the Suez Canal), the shelf widens to 130 kilometres. This area is characterized by very low production and oligotrophic conditions. The high temperatures prevailing in the eastern Mediterranean, especially compared to its western basin, give to this region a tropical character with regard to planktonic biota.

Within the Mediterranean Sea there is a gradient of increasing species diversity from east to west. The number of species, among all major groups of plants and animals, is much lower in the eastern Mediterranean than in the western and central parts of the sea. The southeast corner is the most impoverished area.

Such a poor biodiversity of the Levantine basin (and consequently of the Lebanese sea) begun to increase dating from the opening of the Suez Canal in 1869. During the last decades at least three hundred Indo-Pacific species, known as Lessepsian migrants, have entered the basin giving to its communities a mixed Mediterranean-Red Sea species composition

Concerning fishes, about sixty Red Sea species have colonized successfully the concerned waters, some of them replacing native ones, thus becoming important components of commercial fisheries.

Lebanon has about 250 km long coasts. Urban areas stretch over 50 km of the coastline (21%), whereas beaches and dunes cover a total of about 49 km (20%) and bare rocky outcrops about 11 km (4.7%).

Limestone base rock headlands dominate a series of gravely and sandy bays. The continental shelf is narrow (rarely exceeding 8 km) and is cut by submarine canyons which depth may range from 1500 meters or more to gently slope at the margins of the basin. Such canyons are in front of the coasts of Beirut, Damour and Tyre.

The littoral has a typical Mediterranean climate having relatively cool rainy winters and hot dry summers. Water salinity is about 39‰. Water temperature ranges from a maximum of 32°C in August down to 17°C in February.

One of the most urgent management issues for the Lebanese coastal area is related to the uncontrolled and increasing pollution of the marine environment. The primary sources of land-based pollution may be summarized as follows:

- industrial plants (tannery, steel, cement, fertilizers, food processing, etc.);
- tourism settlements;
- agricultural effluents;
- municipal waste sewage;
- oil shipping.

Industries are considered as the major source of sea pollution in Lebanon. During the war some industries were established without any permit; others obtained permits to locate in non-industrial areas. The scattered distribution of a large number of industries (cement, electroplating, fertilizers, food processing, tanneries, textiles, etc.) all over the coast resulted in degradation in land use, water, soil and air.

Another important source of habitat degradation is due to sediment extraction on beaches for the supply of sand to the increasing construction industry. Tourism settlements have led to the privatization of public domains and huge constructions are built all along the shore.

The movement of oil tankers along the Lebanese coast as well as docking, unloading and storage represents a potential oil spill hazard, with the risk of a serious impact on marine and coastal ecosystems. As part of the Mediterranean Action Plan, Lebanon has obligations to prepare emergency response to accidental spills at sea. But until now, oil spills response facilities do not exist in the Country. No major negative impact has occurred, fortunately, till now, apart from some very minor accident on the coast deriving from the traffic of a high number of tankers.

A programme for the protection of marine water from land-based sources is currently under way to be formulated within the framework of activities of the REMPEC/MAP[1].

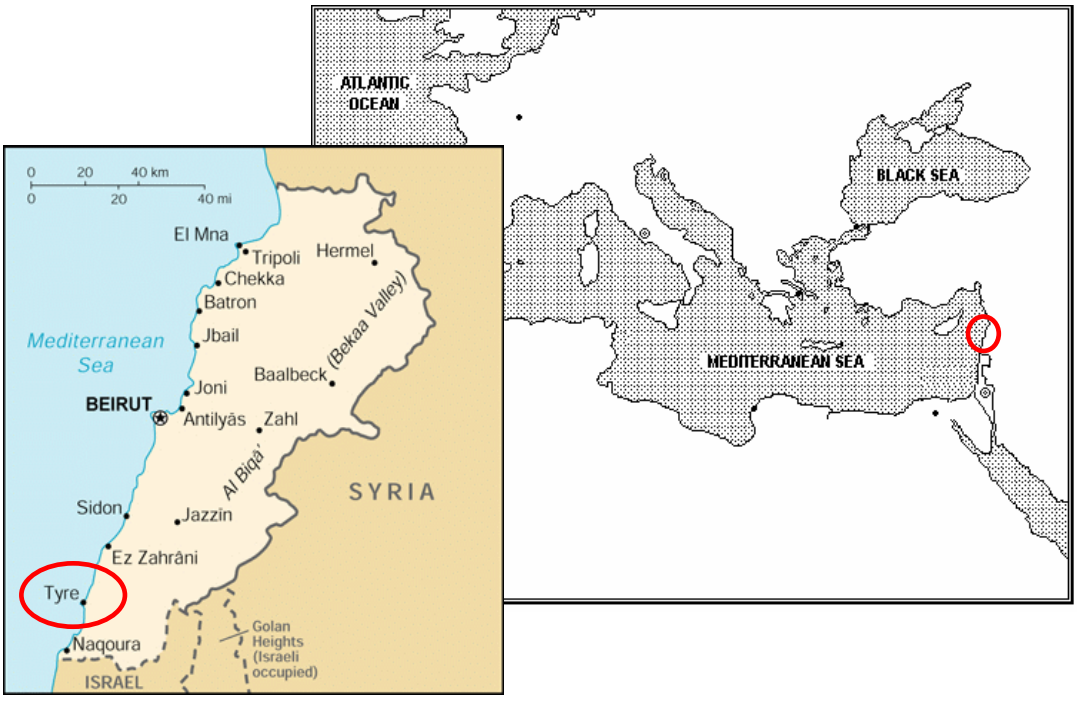

Figure 20: Geographical position of Lebanon and Tyre

[1] *Further information at: http://www.moe.gov.lb; http://www.agriculture.gov.lb; http://www.adr.org.lb/ENG/libansud_constat4_an.htm.*

2 Methodology adopted for data collection

During February 2005 a total of 9 day by day surveys (Annex 1) have been carried out at the Tyre harbour (Fig. 1) mainly during morning hours (8:00-11:00), when vessels returned from fishing. During four of these days vessels did not go fishing due to the bad conditions of the sea and to the national mourning that followed Mr. Hariri's[1] death.

During every single sampling day the following data have been collected on a sub-sample of the active boat:

- landing by species (kg/vessel);
- gear characteristics (type, length, mesh size);
- fishing areas (depth, sea bottom).

Fleet official data concerning boat registration number, its characteristics (tonnage, length, engine power), material used, year of construction, year of registration, and type of fishing license, were obtained from the Ministry of Agriculture, Department of Fisheries & Wildlife.

Local stakeholders (fishermen, managers of the Syndicate) have been interviewed to gather information on the main issues affecting the fishing sector in Tyre[2].

Data on gross fish prices, fishing periods, fishing gears and areas have been collected through interviews with local fishermen and fishmongers.

Two day missions have been carried out at Tripoli-Mina (northern Lebanon) and Naqoura (southern Lebanon) respectively, to compare the fishing sector of Tyre with the one of other Lebanese ports.

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[1] *Note of the Editor: Rafiq Hariri was the former Prime Minister of Lebanon. His assassination occurred during the mission (14 February 2005)and put serious limitation to the movements of both Experts and Project Expatriate personnel*

[2] *Note of the Editor: Experts were supported by Project staff (namely : Dr. Chadi Mohanna, local fishery expert, Ms Marta Petagna, RC expert for participation, M. Nasser Ajami, social mobilizer)*

3 Results

3.1 Tyre's fleet composition

The port of Tyre (Figure 21) is the third in Lebanon (after Beirut and Tripoli) as number of fishing vessels.

Figure 21: Boats at the port of Tyre

According to official statistics the fishing fleet is composed of about 224 vessels with total length ranging from 2 to 14 m. The bulk of the fleet (70%) consists of vessels 7-10 m long (Figure 22) and powered with 20-50 hp (Figure 23). The average gross tonnage and average horse power is 4.24 mT and 22.68 hp respectively. The fleet is (on the average) 19 years old.

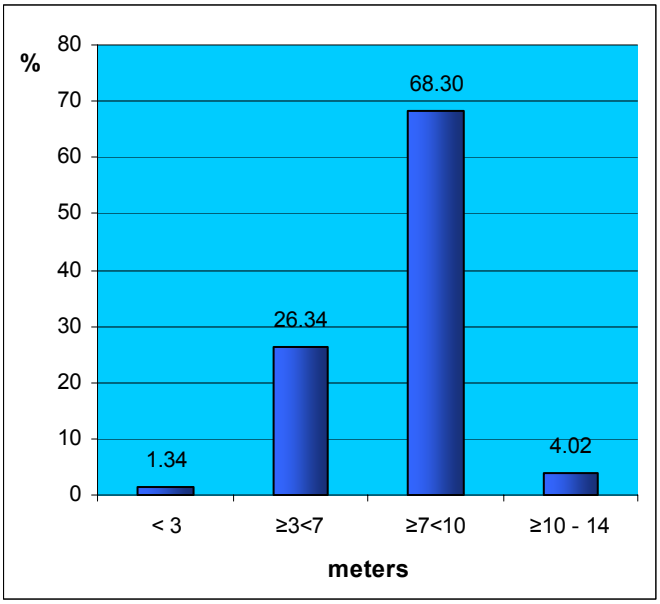

Figure 22: Composition of the fleet in Tyre by length

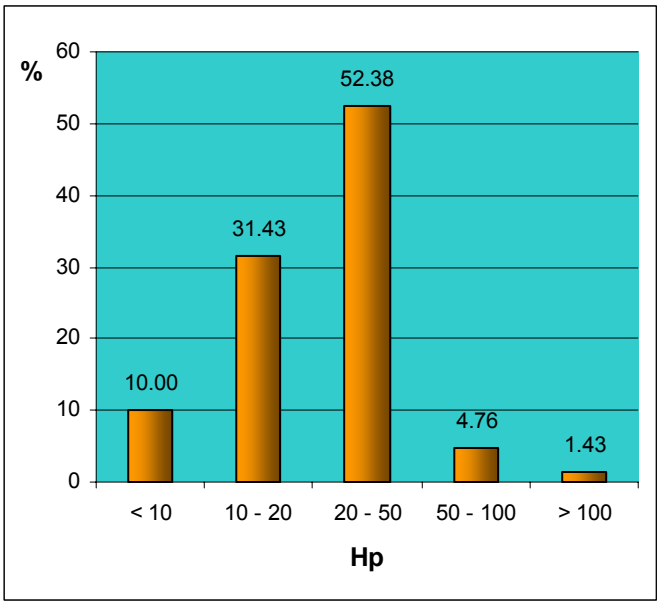

Figure 23: Horsepower composition of fishing fleet in Tyre

Vessels are typical wood boats (99%), powered with old engines and usually not equipped with winches (Figure 24) to pull on board the nets (only 22% of the vessels have a mechanical winch on the deck). The crew on board is composed of 2-4 fishermen.

Figure 24: Winch to pull nets on board

According to data collected by the Ministry of Agriculture, about 70% of the fleet uses mainly fixed nets whereas longlines and purse seiners are used to a lesser extent (Figure 25).

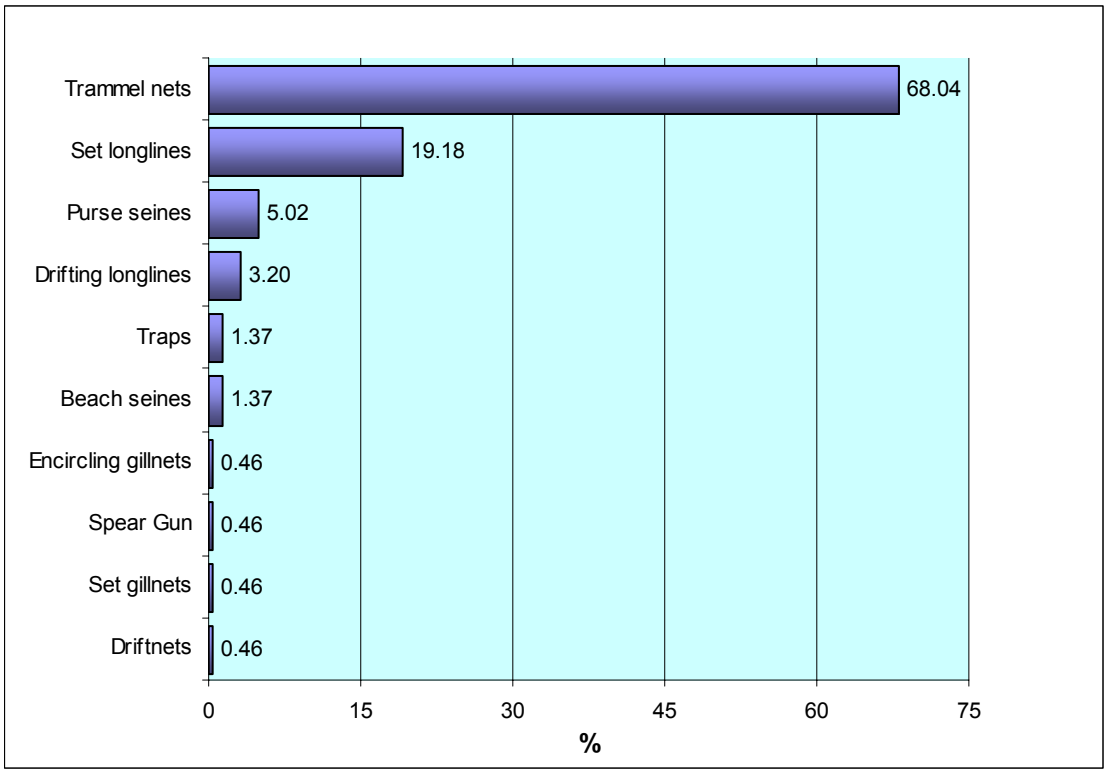

Figure 25: Composition of the Tyre's fleet by fishing method

Fishing area is normally limited to 6 nautical miles far from the coast. Only about 7% of the boats operates between 6 and 12 miles from the coastline (Figure 26).

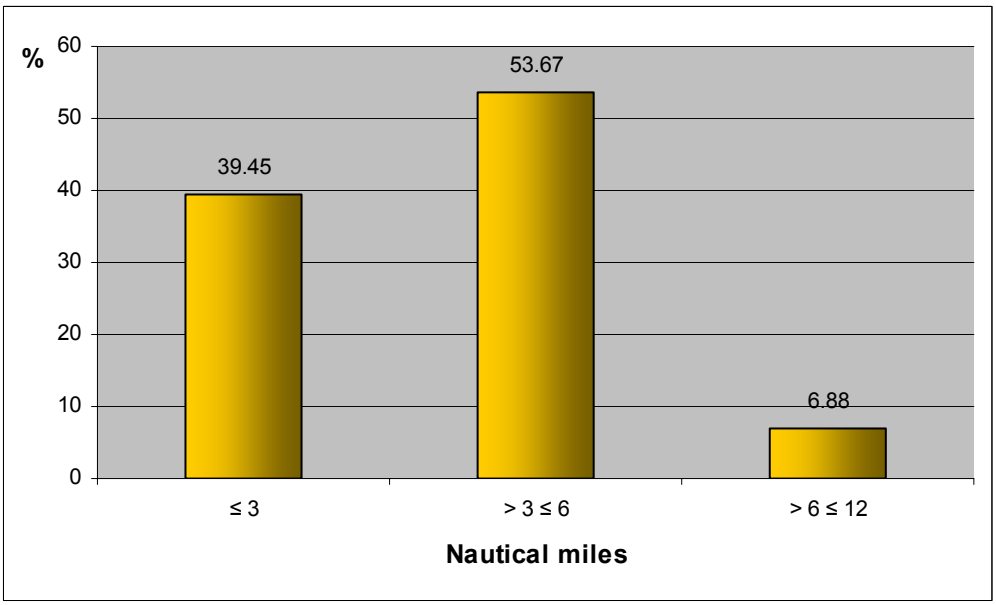

Figure 26: Operative area for the Tyre's fishing boats

3.2 Fishing metiers and catch data

The active fleet in port (boats showing gear either on board or on the dock), observed during the survey period, consisted of 175 vessels operating with different fishing gears (Figure 27).

In the nine day by day surveys landing data of 44 fishing vessels and 7 different fishing metiers (Table 10 at page 53) were collected.

Figure 27: Gears present on board and on the dock in the port of Tyre

As already above described [1], the term "fishing metier" is intended as the combination of fishing gear, target species and fishing area.

Figure 28 shows the main fishing gears used by the active fleet. Most of the vessels were equipped with trammel nets (31%) and gillnets, both with fine mesh size (28%) and medium mesh size (21%). Vessels showed often on board the presence of more than one gear (*i.e.* trammel nets and gillnets) that were employed in the same day. The proportion of vessels using longlines (*sharak*) has been probably underestimated because this gear is generally landed as soon as the vessel returns to the port and moved away from the dock. It is possible to see fishermen working daily to settle up, baiting and repairing longlines at the Syndicate's building.

At least a total of 60 different species of fish, crustaceans and cephalopods were identified in the catch composition at the port of Tyre during the survey (Table 11 at page 55).

[1] *Compare: INTRODUCTION (page 33)*

The general characteristics of the gears and related fishing metiers sampled at port are described in the following paragraphs.

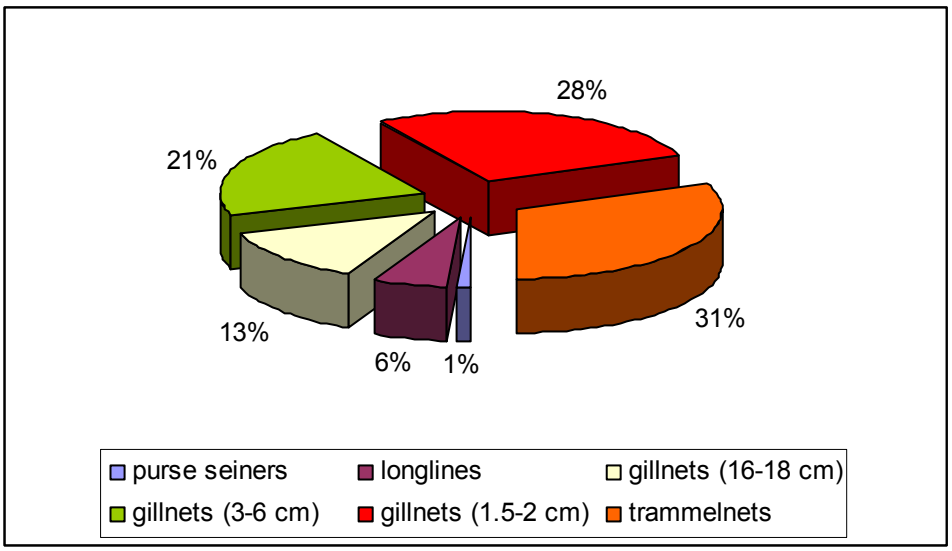

Figure 28: Fishing gears observed in the port of Tyre

3.2.1 Fine mesh size gillnets (*mbattan*) for small nektobenthic species

A gillnet typically consists of a single wall of netting fixed at the top to a headline carrying floats and at the bottom to a weighted footrope (Figure 29). In this type of net, most fishes are caught when they are entrapped within a single mesh of the net. There are different positions in which fish is caught. Wedging occurs when the opening of the net is larger than the size of the fish's head but smaller than the maximum girth of the body. Fish is said to be «gilled» when the mesh catches under the gill-cover. Fish is entangled when some part of its body snag against the net material.

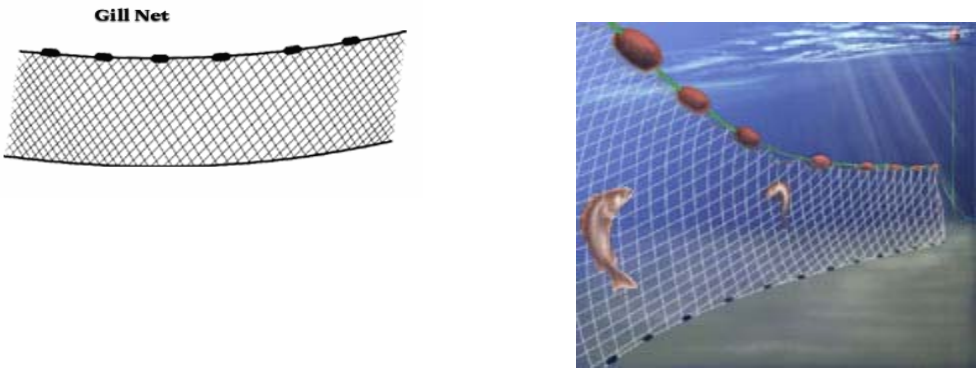

Figure 29: Example of gillnet

Fine mesh gillnets (*mbattan*) consist of a single wall of monofilament net with 1.5-2 cm mesh size (Figure 30). The length and height of these nets can reach 2 km and 3 m respectively. The fishing is located between 10 and 50 m depth.

Figure 30: Gillnet (1.2-2 cm mesh size) operating in the port of Tyre

A fleet of 29 vessels (28%) managed this metier to target small nektobenthic species like picarel (*Spicara smaris*) (Figure 31), and bogue (*Boops boops*) (Figure 32) and 11 were sampled. The landing (Figure 33) of these vessels ranged between 2 and 20 kg/vessel/day (mean value 8 kg/vessel per day).

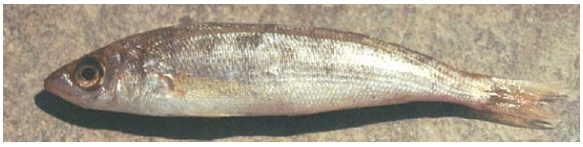

Figure 31: *Spicara smaris*

Figure 32: *Boops boops*

Figure 33: Landings of *Boops boops* and *Spicara smaris* (*ghobbos*) at the port of Tyre

3.2.2 Medium mesh size gillnets (mbattan) for nektobenthic species

Monofilament gillnets with a 3-6 cm mesh (stretched size) were used to target mainly medium size nektobenthic species (Figure 34) such as grey mullet (*Liza spp*.), sparids (*Diplodus vulgaris*, *D. annularis*) and siganids (*Siganus rivulatus*, *S. luridus*) on shallow bottoms (sandy and mixed sandy-rocky bottoms).

Figure 34: Mixed species targeted by gillnet with large mesh size

The length of the nets varied from few hundred meters to more than 1 km, whereas their height was up to 3 m.

During summer gillnets with very similar features are used offshore (100-300 m depth) to catch hake (*Merluccius merluccius*) and *Mullus spp*.

Figure 35: Gillnets (3-6 cm mesh size) operating in the port of Tyre

3.2.3 Large size gillnets (*addì ghazel*) for Spanish mackerel

Gillnets with large mesh size (16 to 18 cm), locally called *addì ghazel* (Figure 36), have been used to catch pelagic species by 12-15 vessels. The main target species were the little tunny[1] (Figure 37) and the narrow-barred spanish mackerel[2] (Figure 38). By-catch was made up by high-priced *Sparidae* fishes (10 dollar/kg), such as the common dentex (*Dentex dentex*) and red banded sea bream[3] (Figure 39). The daily yield may fluctuate largely according to sea conditions, fluctuation in local abundance of fish shoals, etc. The 11 vessels sampled during the survey at the port showed a catch ranging between 2.5 and 25 kg/boat with a mean value of 7 kg/boat.

Figure 36: **Gillnets (16-18 cm mesh size) operating in the port of Tyre**

Figure 37: ***Euthynnus alletteratus (balamida)***

Figure 38: ***Scomberomorus commerson (ghazel)***

These gears, generally less than 1 km long and up to 13 m high, can either consist of multifilament or monofilament rope. The fishing period is limited at the winter months (January-March).

[1] *Euthynnus alletteratus*

[2] *Scomberomorus commerson*

[3] *Pagrus caeruleostictus*

a)   (b

Figure 39: ***Pagrus caeruleostictus (farridy)*** **- a) juvenile; b) adult**

3.2.4 Trammel net (*mbattan*) for rocky demersal species

The trammel net consists of three walls of net, the two outer walls being of a larger mesh size than the loosely hung smaller-meshed inner netting panel (Figure 40). Slack netting is ensured both by setting the net loosely on the head and foot ropes and also by having the inner net 1.5 to 2 times the depth of the outer walls. In this way there is always sufficient slack net in which fish can become entangled. In the trammel nets the fish are generally held within a pocket of netting formed by the small-meshed inner net pushed through the large–meshed outer net.

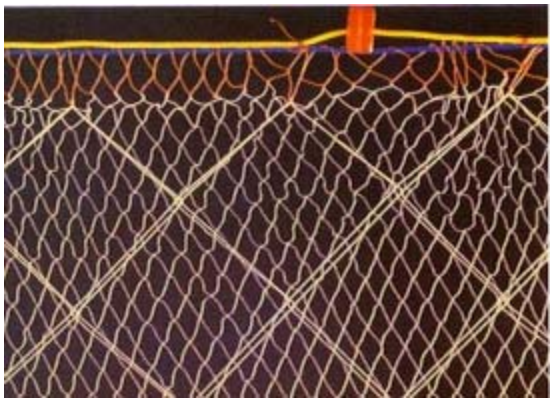 

Figure 40: Trammel nets operating in the port of Tyre

About 30 vessels of the fishing fleet (31%) used trammel nets 150-1 000 m long and 1.2-2 m high at depth between 5 to 50 m to target bottom dwelling species such as red mullets (*Mullus barbatus*, *M. surmuletus)* and *Upeneus spp*. (Figure 41 and Figure 42). Red mullet can be considered as two of the most important commercial species in Tyre for their value (about 20 dollar/kg) and local abundance. The landing of the 17 sampled vessels at the Tyre port ranged from 1.5 and 11 kg/boat (average value: 4 kg/boat).

Figure 41: *Upeneus moluccensis (soultân yahoudy)*

Figure 42: *Upeneus pori (soultân sharqy)*

The catch was composed by many species both of sandy and rocky bottoms such as *Siganidae* (Figure 43), *Diplodus spp.* (*sarghoûs*), *Lithognathus mormyrus* (*marmoûr*), grey mullets (*boûry*), *and Sciaena umbra*.

a)   (b

Figure 43: *Siganus rivulatus* (a) and *Siganus luridus* (b) *(mouasta)*

3.2.5 Bottom set longlines (sharak) for Sparidae

The local name of longlines is *sharak*. A *sharak* (Figure 44) consists of a mainline to which hooks, attached at regular intervals (around 5-6 m), are placed at the end of the snoods which are 0.5-1 m long. The size of the hooks and bait (mainly cephalopods and sardine) used is one of the important features which determines the species caught and size selectivity.

Sharak were used by 6% of the fleet to catch mainly Sparids[1] (Figure 45) and *Serranidae*[2] (Figure 46).

[1] *Pagrus spp., D. dentex*, *Diplodus spp.*

[2] *Epinephelus marginatus*

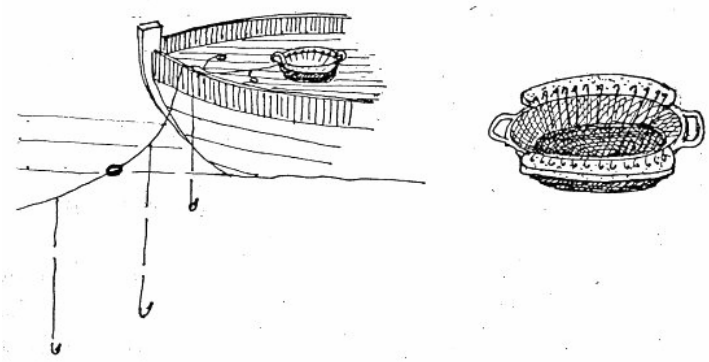

Figure 44: **Longline design (above) and fishermen working on it at the port of Tyre**

The boats sampled during the survey used more than one *sharak* (2-3 per craft), each of 100-200 hooks, in the same day. Each *sharak* is settled with hooks of the same dimension to target a well defined species or group of species. The use in the same day of more than one *sharak*, each characterised by hooks of a given dimension, helps the fishermen to exploit a wide range of bottom type and fishes.

Figure 45: ***Diplodus cervinus (h'addâd dboûlyeh)***

Figure 46: ***Epinephelus marginatus (hafash)***

Fishing is carried out either during night – early morning or at evening.

During the survey it has been recorded the landing of four vessels which showed a catch ranging between 4 and 12 kg/boat (mean value around 7 kg/boat).

By-catch landed was composed by crepuscular or nocturnal species such as the squirrelfish (*Sargocentrum rubrum*) (Figure 47) of low commercial value (less than one dollar/kg)

Figure 47: ***Sargocentrum rubrum (naylon)***

3.2.6 Purse seines for small pelagics

Purse seiners are the most important and most effective vessels to catch aggregating species near the surface. The vessel surrounds the shoal with a deep curtain of netting and then the bottom of the net is pursed (closed) underneath the shoal by hauling a wire which runs from the vessel through rings on the bottom of the net and back to the vessel (Figure 48).

Figure 48: **Purse seine design (left) and a gear (right) operating in the port of Tyre**

Few vessels in the port of Tyre were equipped with purse seines (*addí sardin*) and we observed only the landing of one boat using this gear. The catch of this boat was composed by small-sized individuals of sardine.

Table 10: Daily surveys: landings (kg/vessel) and main target species by gear

Date 09/02/2005		**Type of gears**								
Boat	**Catch (kg)**	**trammel net** *mbattan*	**gillnet (fine)** *mbattan*	**gillnet (medium)** *mbattan*	**gillnet (large)** *addi ghazel*	**long line** *sharak*	**purse seiner**	**traps** *kafas*	**other**	**Main species**
1	4				X					Pagrus spp., Scomberomorus commerson
2	5			X						Diplodus spp., Mugilidae
3	25				X					Euthynnus alleteratus
4	4	X								Lithognathus mormyrus, Diplodus spp.
5	5				X					Pagrus auriga, S. commerson
6	5	X								Mullus surmuletus, Portunus pelagicus, Diplodus sp.
7	7					X				Diplodus sargus, D. vulgaris, P. auriga, P. pagrus, Serranus scriba

Date 10/02/2005		**Type of gears**								
Boat	**Catch (kg)**	**trammel net** *mbattan*	**gillnet (fine)** *mbattan*	**gillnet (medium)** *mbattan*	**gillnet (large)** *addi ghazel*	**long line** *sharak*	**purse seiner**	**traps** *kafas*	**other**	**Main species**
1	13			X						Pempheris vanicolensis, S. rivulatus, S. luridus, Sargocentrum rubrum
2	4	X								S. luridus, S. rivulatus, Diplodus spp., S. rubrum
3	3	X								L. mormyrus, Diplodus sp., Octopus vulgaris, O. macropus
4	6	X								S. luridus, S. rivulatus, Upeneus pori
5	5	X								D. sargus, D. vulgaris, Sepia officinalis, Upeneus moluccensis, Mullus barbatus
6	5					X				Epinephelus marginatus, Diplodus cervinus, Diplodus spp., Pagrus spp., Spondilyosoma cantharus
7	4	X								S. rivulatus, S. luridus
8	11	X								Penaeus sp., M. surmuletus, Sciaena umbra, S. rubrum, Sphyraena sp., Diplodus vulgaris, S. officinalis, P. pelagicus, Siganus spp.
9	8		X							Boops boops, Spicara smaris
	4	X								Siganus sp., D. vulgaris, D. sargus, U. pori
10	5.5		X							U. moluccensis, Trachurus trachurus, Scomber spp., Pagellus spp., S. officinalis
11	5		X							U. moluccensis, Trachurus trachurus, Scomber spp., Pagellus spp., S. officinalis
12	40				X					E. alletteratus, Sarda sarda

(continued)

Date 11/02/2005										
		Type of gears								
Boat	**Catch (kg)**	**trammel net** *mbattan*	**gillnet (fine)** *mbattan*	**gillnet (medium)** *mbattan*	**gillnet (large)** *addi ghazel*	**long line** *sharak*	**purse seiner**	**traps** *kafas*	**other**	**Main species**
1	20		X							B. boops, S. smaris
2	8	X								M. barbatus, M. surmuletus, U. pori, Sardinella sp., S. pilchardus
3	7.5				X					Pagrus caeruleostictus , Scarus ghobban
4	3				X					Balistes sp.
5	3	X								S. flexuosa, S. smaris, S. pilchardus
6	4					X				S. rubrum
7	6				X					S. commerson, Sciaena umbra
8	9				X					E. guaza, E. alexandrina, Dentex dentex, S. commerson, Rhinobatos spp.

Date 13/02/2005										
		Type of gears								
Boat	**Catch (kg)**	**trammel net** *mbattan*	**gillnet (fine)** *mbattan*	**gillnet (medium)** *mbattan*	**gillnet (large)** *addi ghazel*	**long line** *sharak*	**purse seiner**	**traps** *kafas*	**other**	**Main species**
1	6		X							B. boops, S. smaris. S flexuosa
2	3		X							B. boops
	1.5	X								Pagellus sp., Diplodus spp., Mullus spp.
3	3	X								Pagellus erythrinus, Diplodus spp., S. rubrum
4	2.5	X								P. erythrinus, Sphyraenidi
5	12				X					E. alletteratus
6	2		X							S. pilchardus, S. smaris
	2	X								Diplodus sp., M. surmuletus, Pagrus sp.
7	6		X							S. smaris, B. boops, M. surmuletus
8	2		X							Spicara spp.
9	3		X							Spicara spp., Sphyraenidi, Clupeidi
	2	X								Siganus spp., Diplodus vulgaris
10	5				X					E. alletteratus, S. commerson
11	12					X				S. rubrum, D. dentex, Pagrus spp., Diplodus sp.
12	5				X					E. alletteratus, Loligo sp.
13	8		X							S. smaris, B. boops
	7			X						S. rivulatus, S. luridus

Date 17/02/2005										
		Type of gears								
Boat	**Catch (kg)**	**trammel net** *mbattan*	**gillnet (fine)** *mbattan*	**gillnet (medium)** *mbattan*	**gillnet (large)** *addi ghazel*	**long line** *sharak*	**purse seiner**	**traps** *kafas*	**other**	**Main species**
1	1.5	X								Scorpaena sp.
2	150						X			Sardina pilchardus
3	20								X	E. alletteratus

Table 11: List of the different species identified at the port of Tyre

Family	Scientific name	English name	Local name
Balistidae	*Balistes carolinensis*	Grey triggerfish	Khanzir
Blenniidae	*Blennius ocellaris*	Butterfly blenny	
Bothidae	*Bothus podas*	Wide-eyed flounder	
Centracanthidae	*Spicara smaris*	Picarel	
Clupeidae	*Sardina pilchardus*	European pilchard	Sardyn Mabroûm
	Sardinella aurita	Round sardinella	Lâtshyou
	Sardinella maderensis	Madeiran sardinella	Lâtshyou Kebir
Engraulidae	*Engraulis encrasicolus*	European anchovy	Bh'aytyrah
Gobiidae	*Gobius niger*	Black goby	Kabboûsh
Holocentridae	*Sargocentron rubrum*	Redcoat	Nayloûn
Labridae	*Symphodus sp.*	Wrasse	Zilleyq, Shfâf
Loliginidae	*Loligo vulgaris*	European squid	Sabidij
Merlucciidae	*Merluccius merluccius*	European hake	Harmoût Abyad
Mugilidae	*Liza spp.*	Mullet	Boûry
	Mugil cephalus	Flathead mullet	Gharyb
Mullidae	*Mullus barbatus barbatus*	Red mullet	Soultân Ibrahym Ramly
	Mullus surmuletus	Striped red mullet	Soultân Ibrahym Sakhry
	Upeneus moluccensis	Goldband goatfish	Soultân Yahoudy
	Upeneus pori	Goatfish	Soultân Sharqy
Octopodidae	*Octopus macropus*	White spotted octopus	
	Octopus vulgaris	Common octopus	
Penaeidae	*Penaeus japonicus*	Kuruma prawn	Kraydis
	Portunus pelagicus	Blue swimming crab	
Rhinobatidae	*Rhinobatos rhinobatos*	Common guitarfish	Mourr
Scaridae	*Scarus ghobban*	Blue-barred parrotfish	
Sciaenidae	*Sciaena umbra*	Brown meagre	Ghourâb
	Umbrina cirrosa	Shi drum	Misqâr Mlawwan
Scombridae	*Euthynnus alletteratus*	Little tunny	Balamydah
	Sarda sarda	Atlantic bonito	Ghazâl
	Scomberomorus commerson	Narrow-barred Spanish mackerel	
Scorpaenidae	*Scorpaena porcus*	Black scorpionfish	Asht 'aroûb
Scyllaridae	*Scyllarides latus*	Mediterranean slipper lobster	Karakand
Sepiidae	*Sepia officinalis*	Common cuttlefish	Sabbidij
Serranidae	*Epinephelus costae*		
	Epinephelus marginatus	Dusky grouper	Louqous Wâwy
	Serranus cabrilla	Comber	Kazâz Shibr
	Serranus scriba	Painted comber	Kazâz Shibr
Siganidae	*Siganus luridus*	Dusky spinefoot	Mouasta
	Siganus rivulatus	Marbled spinefoot	Mouasta
Sparidae	*Boops boops*	Bogue	Ghobbos
	Dentex dentex	Common dentex	Samaket Rayyis
	Diplodus annularis	Annular seabream	Saqlyny
	Diplodus cervinus cervinus	Zebra seabream	H'addâd Dboûlyeh
	Diplodus sargus sargus	White seabream	Sarghoûs
	Diplodus vulgaris	Common two-banded seabream	Kharqoûn
	Lithognathus mormyrus	Striped seabream	Marmoûr
	Oblada melanura	Saddled seabream	Mannoûry
	Pagellus acarne	Axillary seabream	Dakar Jarbydy
	Pagellus erythrinus	Common pandora	Jarbdy
	Pagrus caeruleostictus	Bluespotted seabream	Farridy
	Pagrus pagrus	Common seabream	Jarbidi Mkayyal
	Sparus aurata	Gilthead seabream	Ajâj
	Spondyliosoma cantharus	Black seabream	Rayyis
Sphyraenidae	*Sphyraena chrysotaenia*	Yellowstripe barracuda	Mallyqa
	Sphyraena obtusata	Obtuse barracuda	
	Sphyraena sphyraena	European barracuda	Sfirneh
	Sphyraena viridensis	Yellowmouth barracuda	Mallyfa
Synodontidae	*Synodus saurus*	Atlantic lizardfish	H'irdaoun
Tetraodontidae	*Lagocephalus spadiceus*	Half-smooth golden pufferfish	Niffakha or Bâloûn
Triglidae	*Lepidotrigla cavillone*	Large-scaled gurnard	
Uranoscopidae	*Uranoscopus scaber*	Atlantic stargazer	Boûmâly

3.3 The ports of Tripoli and Naqoura

During the mission a visit was paid at the ports of both Tripoli and Naqoura.

The former is the second Lebanese port as fleet dimension. The visit did not allow gathering much information from the local fishermen on the local situation of fishing sector due to the large dimension of the port and the bad status of infrastructure at the moment. The impression was that of an artisanal fishing community suffering, more than in Tyre, of poor catch and bad gear equipment.

The port of Naqoura port shelters a small fleet (18 boats) of vessels less than 8 m in length. The fishing activities were the same as in Tyre. The differences between these two fishing ports are mainly related to the market organization. At Naqoura the local co-operative hold together 16 vessels that sell their products directly at the co-operative selling point (a new construction over the port built with U.N. funds). The fee for the co-operative was about 7% on the fish sold out. In this way the reduced length of commercial chain improve the income of fishermen per each kilogram of fish landed.

3.4 Socio-economic and environmental situation

Through interviews with local stakeholders it was possible to build up a general picture of the fishing sector in Tyre aimed at outlining the main constraints to its possible development. The issues are summarized here below:

- Risk of over-exploitation of the resources: the number of boats increases due to the lack of restrictions in the licence system and the zone of fishing is narrow. Moreover, some sedentary species like the grouper are becoming rare, and fishing at shallow depths is increasing;
- Lack of security on board and the limitation of the fishing zone to 3 km south of Tyre;
- Lack of direct selling at the port due to the occurrence of a sort of local monopole on fish: three wholesale fishmongers monopolize the purchase of the products brought by the fishermen. They have imposed exclusive

rights of purchase, at prices lower than those of the market, through providing credit to fishermen for reparations or for investment purposes;

- Absence of any type of social security for the fishermen;
- Pollution of the marine environment.

The way of paying for the crew follows a traditional profit sharing system. The net revenue of the catch is divided into parts and distributed as follows:

- two parts for the boat owner (one for the boat and one for the fishing gears),
- one part for each component of the crew (captain + fishermen).

In such a way the annual revenue of the crew depends on the total value of the fish landed by the vessel during the year.

4 Discussion

The fishing activities in Tyre appeared to be fairly diversified and designed to exploit a wide range of species in the coastal area. The proportion of vessels going fishing every day on the total fleet was very high showing that artisanal fishing is still a primary economic activity, the contrary of what is happening in many European Mediterranean countries during the last 30 years where artisanal fishery has reduced its economic importance for coastal communities.

The fleet is composed by old wood crafts, with old and not very powerful engines, generally under 8 m length and in not very good conditions, in large part not equipped with winches to pull up the gear on board and lacking of equipment to improve security during navigation.

Vessels usually make daily trips, often using more than one gear in the same day. Fishing metiers change during the year according either to local tradition or the fluctuation of the abundance of species following a quite well defined fishing calendar.

Both technical characteristics of gear used and number of gears per vessel are comparable to those of other small-scale fishing communities of the Mediterranean. Fishing gears in Tyre appeared generally in fairly good conditions, with the exception of small fixed nets used by a part of the fleet that appeared generally deteriorated.

The landing is characterized by a great number of species, many of which are lessepsian migrants (species entered in Mediterranean from the Suez Canal), giving at the fish community of the southern Lebanese coasts a mixed Mediterranean – Red Sea composition.

The abundance of Red Sea species increased in the last years, as referred by many fishermen of Tyre. Tropical migrants such as the Spanish mackerel (*gazhel*) became abundant and economically exploited in recent years. During the survey we observed two adult males of a large parrotfish (*Scarus ghoban*) (Figure 49), a species recorded for the first time in the Mediterranean in 2002 in Israel.

Figure 49: ***Scarus ghoban*** **observed in Tyre**

Such changes in composition of fish communities in the Lebanese seawaters imply the fishermen to adapt continuously their gear and fishing practise either to follows change in abundance of target species or to exploit new one that can have a commercial importance.

The main fishing metiers performed by the Tyre fleet during the survey were the following:

- large mesh gillnets (*addì ghazel*) for medium pelagic fishes, first of all spanish mackerel (*ghazel*) *Scomberomorus commerson* and *Euthynnus alletteratus* (*balamida*);
- fine mesh monofilament gillnets (*mbattan*) for small pelagic species, such as *Spicara smaris* and *Boops boops* (*ghobbos*);
- medium monofilament mesh size gillnets (*mbattan*) for *Siganus rivulatus* and *S. luridus* (both called *mouasta*);
- trammel nets for demersal species.

Also bottom set longlines (*sharak*) are widely used to target high value Sparids such as *Pagrus pagrus* (*jarbidi*), *P. caeruleostictus* (*farridy*), *Dentex dentex* (*marrish*), *Diplodus spp.* (*sarghoûs*) and Serranids like *Epinephelus marginatus* (*hafash*).

The quantity of fish landed[1] showed large day by day fluctuations also in relation to gear used. The highest variability was observed for large mesh gillnets whose catch is much more unforeseeable than that of other gears. The lowest landings, often composed by fish belonging to the second or third commercial categories (*Siganus sp*., *B. boops* and *Spicara sp.*), were observed for those small vessels using trammel nets.

[1] *Expressed as kg of fish/boat per day*

5 Conclusion and recommendations

Results of our field survey on artisanal fishery of Tyre allow us to define some preliminary recommendations concerning two main aspects:

1. monitoring of fishing activities to build a basic knowledge on artisanal fisheries in Tyre;
2. implementing urgent measures to improve in a short/medium term basis the management of the Tyre artisanal fishing sector (see the tree problems, Figure 50).

For the development of a strategy for the management of the fishing sector in Tyre it is of paramount importance to implement a follow-up programme to regularly monitor artisanal fishing activities. The activity of the fleet may change during the year according to several different factors, such as abundance of target species, local fluctuations in fish prices and market conditions, weather conditions, etc...

In many cases fishermen modify their fishing activity according to a sort of fishing calendar.

Such temporal changes in fishing activities need to be properly addressed and quantified through the establishment of a well calibrated stratified sampling design.

We suggest continuing (*i.e*. on a weekly basis) the data collection started by February 2005, even of a simplified set of data, using local personnel involved in the project. For this purpose we defined a sampling strategy to collect fishing data during daily survey at the port of Tyre (see Annex 2).

The expected result at the end of the survey period (1 year: January 2006) should be the quantitative description of the main artisanal fishing metiers (target species, gear, fishing areas, fishing periods, fishing effort).

For this purpose the following data should be collected on a regular temporal basis:

a) landings (total amount of species or group of species landed by gear);
b) number of vessels involved in each metier;
c) number of fishermen involved in each metier;
d) gross value of fish landed;
e) fixed costs (vessel and gear maintenance) and variable costs (fuel, crew wages) of fishing activities.

On a short/medium term the more urgent actions that the local fishing sector needs to improve sustainability are related either to the organization of the local market or to the pattern of exploitation of the marine resources.

These two aspects are strictly linked, particularly in the case of Tyre where the local market does not offer appropriate incomes to fishermen. In similar situations fishermen are generally forced to increase the exploitation rate on local fish in order increase their landings, thus overcoming the low selling prices. At the same time the abundance of local fish, and therefore the catch per unit of effort, will decrease as effect of the increase fishing effort. This dynamic of fishery generate a negative feedback between fishing effort and abundance of the resource that may produce conditions of overexploitation which in turn can be followed by a collapse of fisheries.

It is therefore important to establish a fishing market and trade system aimed to maximize the incomes of fishermen and, at the same time, lowering the risks of an uncontrolled increase of fishing effort. The improved condition of fishing market and trade system should be considered as the first management priority for the Tyre artisanal fishery. Naqoura fishing community offers a positive example of a different organization of the trade system, based on direct selling at the local co-operative, which is much more profitable for local fishermen than the market system of Tyre.

Concerning the exploitation of the resources in the coastal area of Tyre, the data collected during our mission cannot be used to evaluate the status of fish species exploited.

Data on yield or catch per unit of effort of the vessels (kg landed daily/boat) show a very heterogeneous situation with strong daily and from boat to boat fluctuations of the quantity/quality of the fish landed. The fishing effort concentrates in the coastal area for the exploitation of littoral species with fixed nets and longlines. The lowest yields are those of smaller vessels using scarce amount of fixed nets (trammel nets and gillnets) in very shallow fishing grounds. The dimensions of boats (less than 8 m length) and probably the lack of funds to invest in gear maintenance and in the renewal of fishing equipments reduce the potential for a diversification of fishing activities.

The dimension of the fleet is remarkable when compared to the dimension of the fishing area, suggesting that rules of management for the fleet are needed to reduce the risk of an unbalanced exploitation of resources.

A diversification of fishing activities on deeper bottoms and offshore to target pelagic species can be recommended in view to reduce the fishing mortality on coastal nektobenthic species, thus contributing to rationalize the exploitation pattern on fish resources.

For this goal we suggest to make actions aimed to:

1. improve knowledge of fishermen on fishing techniques to exploits species or areas currently underexploited off the Tyre coasts;
2. improve the status of that part of the fleet suffering of bad vessels and equipment conditions;
3. improve security on board;
4. train local personnel on fishery management and conservation of marine living resources.

Figure 50: Problems tree of the fishermen of Tyre

ANNEXES

Annex 1: Template of the Daily sheet to investigate catch composition

Date ..... **Name** .....

Boat	**Catch (kg)**	**Catch value** (dollar)	**trammel net** *mbattan*	**gillnet (fine)** *mbattan*	**gillnet (medium)** *mbattan*	**gillnet (large)** *addì ghazel*	**long line** *sharak*	**purse seiner**	**traps** *kafas*	**other**	**Main species**
1											
2											
3											
4											
5											
6											
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…											

Annex 2: Template of Daily sheet to investigate fish price

Date ---------- **Name** ----------

Species	Scientific name	price* (US $/kg)	market price** (US $/kg)
kraydis	Aristeidae		
ghobbos	*Boops boops*		
marrish	*Dentex dentex*		
sarghoûs	*Diplodus sp.*		
hafash	*Epinephelus sp.*		
balamita	*Euthynnus alleterratus*		
marmoûr	*Lithognathus mormyrus*		
harmoût	*Merluccius merluccius*		
boûry	*Mugil sp.*		
sultan ibrahim sandy	*Mullus barbatus*		
sultan ibrahim rocky	*Mullus surmuletus*		
sabidij	*Octopus sp.*		
jarbidi	*Pagellus sp.*		
farridy	*Pagrus sp.*		
sardine	*Sardina pilchardus*		
naylon	*Sargocentrum rubrum*		
skembari	*Scomber sp.*		
ghazel	*Scomberomorus commerson*		
sabidij	*Sepia officinalis*		
entias	*Seriola dumerilii*		
mouasta	*Siganus sp.*		
melika	*Sphyraena sp.*		
safarni	*Sphyraena sphyraena*		
saltaon	*Portunus pelagicus*		
……			
……			
……			

price* from the fisherman to the market
market price** from the market to the consumer

Annex 3: Template of Daily sheet to investigate fishing effort

Tyre				
Average number of boats working per day	**period**			
	day		**month**	**year**
	from	to		

Preliminary Analysis of the Fish Market and Credit Schemes in Tyre, Lebanon

by
Laura Cicinelli, Economist

July-August 2005

Introduction

This work is in the framework of the Project AID 7461/RC/LBN[1] implemented by Ricerca e Cooperazione and Caritas Lebanon.

Objectives of the project are:

- **Overall objective:** To improve of the life standard of the Fishing Community of Tyre. This objective fits in a broader development strategy aimed at the territorial, social and economic upgrading of South of Lebanon.
- **Project goal:** to increase the average income of the fishing activity[2] .

This last objective is to be achieved through the achievement of two main results:

a) improved marketing conditions for the fishing products and

b) reduced management costs of the fishing activities.

Within the number of actions devised to successfully achieve the project goals, this research aims at providing the Project Management Committee (PMC) with a clearer framework on the general and specific situation of the fish market in Lebanon and Tyre, and of the functions and impact of the Union and the Cooperatives on the production and marketing activities of the fishing communities throughout the Country.

Moreover it aims at bringing in some features of the formal and informal credit facilities/schemes actually available to the operators of the fishing sectors in order to build on that and develop a sustainable and effective alternative (micro)credit tool to widen the financial resources available to the target community for the development of the fishing activities.

The outcome of the research will take into account the specific issues/constraints directly observed on site, and will include the views of the PMC.

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[1] *Socioeconomic Development of the Fishing Community of Tyr, Lebanon*

[2] *+20% by the end of the project*

The outline of the report is drafted according to the guidelines provided by the project document, and further specified according to the suggestions of the PMC.

The PMC intends to use this as a support document to fine-tune and re-orient the training activities planned by the project and as a rough guide (to be deepened and completed by the local personnel in charge and by the next mission of the expatriate expert economist) to assess the feasibility and the effective advantages of the activities related to the selling point, the credit facility and the revamping of the cooperative to the scope of the project.

The subjects of the inquiry have been the fishermen themselves, both as operators and as representatives of the institutions involved directly in supporting the sector (Syndicates and Cooperatives).

For the part of the report that depicts the general production and marketing condition of the fishing sector in Lebanon there have been used official Customs and FAO data, being the statistic capacity of the Ministry of Agriculture (MoA) rather limited and hence it does not provide the necessary support in terms of figures. For the part related to the specific situation of the fish sector in Tyre, there have been used data collected by the project personnel during the passed semester.

Given the high seasonality character of the fishing activity and due to the difficulties in collecting the required data on a regular basis, the reliability of this report might be limited on quantitative terms and so its value as a policy planning tool.

The present report is articulated as follows:

1. Short description of the methodology adopted.
2. General background of the fishing sector in Lebanon, on a quantitative/qualitative perspective. This part includes:
    a. Regulatory environment in support of the sector and the related institutions.

b. Brief analysis of the main fish market of the coast, mainly covering the marketing structure and the actors involved, plus the informal credit facilities that are apparently strictly connected to the fish marketing system and institutions. Here will be listed the main sector constraints as they are perceived by the stakeholders and as they are observed and judged relevant by the PMC and the author.

3. Specific background of Tyre and of its fishing community
   a. The local fish market characteristics, and
   b. The communities credit needs and facilities. Here it will be provided an insight on the impact of the current credit/marketing system on the fisherman income and on the sectors development.
4. Discussion about the findings and recommendation.

1 Methodology

In order to develop a better understanding of both the fish market and the credit needs of the project's target community, meetings were held with several institutional and private-sector stakeholders (Syndicates, Cooperatives, fish sellers, fishermen and their relatives, other NGOs providing loan services), knowledgeable about the sector. In addition, field visits were paid to other ports where locals were interviewed[1].

The primary sources of quantitative information were FAO and Customs data, plus data collected by PMC, and specific questionnaires filled out during the mission[2].

Specific sector-based (fisheries and micro-credit) relevant documents were consulted (see the dedicated paragraphs), though the interviews with the stakeholders have provided the core of the information used to draft these pages.

The interviews with institutional stakeholders (representatives of the Fishing Cooperatives and Fishermen Syndicates) concentrated on knowing more about governmental policies in support of the sector, perceived constraints, and informal credit facilities.

Interviews with fishermen and fish sellers were very informal. Direct and indirect questions were asked on produced and traded quantities, loans offered or received, and production costs. For the households, women have been targeted, especially to find out more about quantitative and qualitative credit needs and about their availability to contribute to increase the household income through income generating activities.

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[1] *Note of the Editor: Ms Cicinelli has been supported in her work by Dr. Chadi Mohanna, local expert for fishery, M. Nasser Ajami, social mobilizer, Ms May Assaad, Economist, and M. Michel Ghafari, interpreter*

[2] *See Annex I*

2 General Background

2.1 The economics of fisheries

The coastal nations of the Near East can generally rely on important fisheries sectors and for some of them (*e.g.*: Oman, UAE and Yemen) the fish and shrimps exports are significant.

As open access regimes, fisheries are susceptible to irreversible stock depletions, particularly when subsidies are provided to the industry and/or demand for fish increases (due to the increased trade and/or domestic population growth). Therefore economic instruments and harmonized subsidy reform play a key role in fishery management.

Here below are few notes exemplifying the components of the fishery economics and the effects of different policy scenarios under a bio-economic perspective[1] [2].

The management of fisheries is a big subject area so it is not possible to go into much detail in the short time available. The intention is to go through the basic and then focus on some of the problems and possible extensions to these models, and in particular on the wider environmental aspects of fishing. The question should be approached from a bio-economics' perspective, that is: trying to take into consideration both the biology/ecology of a fish stock[3] and the economic behaviour of the humans exploiting it. This way can give quite different results from the alternative approach that omits economic considerations and focuses purely on the biomass yield of fish.

In fishery management the age of first capture (which cannot often be controlled very precisely) is of a key importance. A lot depends on the behaviour of the fish, but if large and small fishes live in the same area techniques such as mesh

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[1] *Robert Hamway (UNCTAD), 2002 - Trade Liberalisation, Subsidies and Fishery, Workshop on Trade and Environment and International Competitiveness, Beirut 23-23 October 2002*

[2] *Note of the editor: it has to be signaled here to the reader that, to simplify the understanding to the ''not Expert'', the model here reported applies to the monospecific fishery (e.g.: industrial fishing) whereas the artisanal fishery refers usually to multispecific fishery.*

[3] *i.e.: the total population or biomass*

size restrictions tend to be only partially successful in reducing catches of small one.

Either how much of the stock to catch or, similarly, how much fishing effort[1] should be used in a given period are basic decisions in Fishery management. From the stock some flow[2] of harvest may be extracted while the remaining grows and reproduces. This decision is often represented in policies such as harvest quotas or restrictions on effort (for example closed seasons or limits on number of effective fishing days).

Surplus yield models[3] (which will be visualized hereafter) attempt to shape the overall “biomass regeneration process" of a fish stock, in order to determine the surplus production that is necessary to replace the existing stock. Such a production is the surplus which may be harvested without reducing the stock size .

2.1.1 The Maximum Sustainable Yield

The Maximum Sustainable Yield (MSY), on which the model is based, has to be found at the stock level. It is not the maximum stock size; it is rather **the stock size at which the most surplus growth is produced each period**.

The traditional biologists' perspective aims to take the MSY from the stock. There are many problems with it, but despite these deficiencies, it is important to include MSY in our context because: a) the history of management which aimed purely at MSY provided useful and objective lessons about both the inadequacy of the classical fishery models, and the misleading ways in which mathematical advice can be presented to decision makers; b) MSY must be included as one factor in any management plan. At the very least, it sets a limit to the size of the industry.

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[1] *Fishing effort might be expressed as the number of actually fishing units (fishermen or boats)*

[2] *Flow here is intended then as a “feasible production”*

[3] *Surplus yield models can often be solved analytically, but could involve quite restrictive assumptions and over-simplifications. The advantage of this analytical solution is that it applies to all cases of the model. This means that it can give general insights/rules and, for specific cases, it is just needed to insert the numbers for that case into the solution. But analytical models/solutions can be hard to find.*

The MSYconcept allows us to select the stock which produces the maximum surplus each period. But it ignores all the non-biological side of management. So here follows some attempts to build in some economics.

Box 1: A definition of MSY (FAO)[1]

The Maximum Sustainable Yield is:

The highest theoretical equilibrium yield that can be continuously taken (on average) from a stock under existing (average) environmental conditions without affecting significantly the reproduction process. When relating total revenues from fishing to total fishing effort in a surplus production model, MSY is attained at a level of fishing effort where marginal costs of fishing are equal to marginal fishing revenues. At this level of fishing effort, the difference between total revenues and total costs of fishing, including the cost of labour and capital with all inputs valued at their opportunity costs, is maximized.

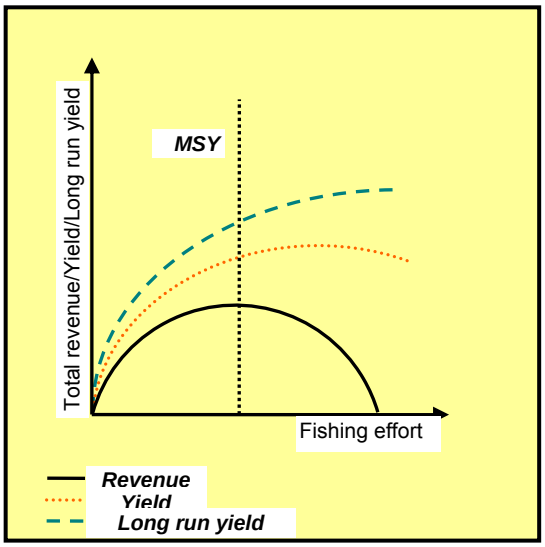

Figure 51: Yield, long run yield (L) and revenue are function of the fishing effort.

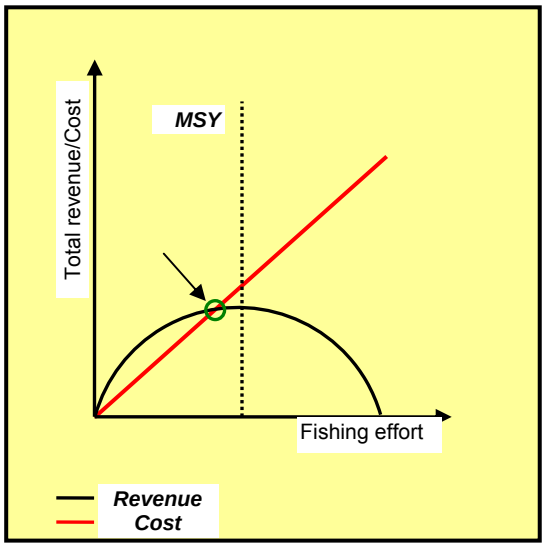

Figure 52: Cost is directly proportional to fishing effort. If the intersection is at a level lower than that of MSY then the catch level is sustainable

To give an example we may imagine a single stock of fish that is harvested spending a certain fishing effort. For any given effort level, there will be an equilibrium stock level and an equilibrium harvest level. By considering

increasing levels of effort, it is possible to derive a graph of equilibrium of the harvest against fishing effort[1].

Based on the above mentioned model[2] here follows a few hypothesis on the effects of different policy scenarios[3]: namely trade liberalization and/or increase in domestic consumption (Figure 53 and Figure 54), and subsidies (Figure 55)

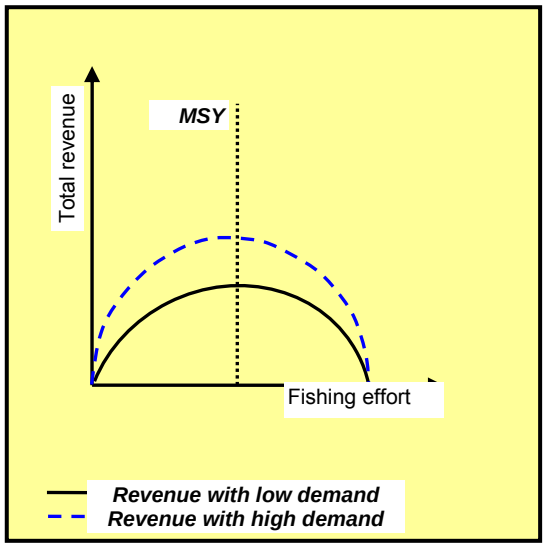

Figure 53: Trade liberalization: curves of revenue with different levels of demand

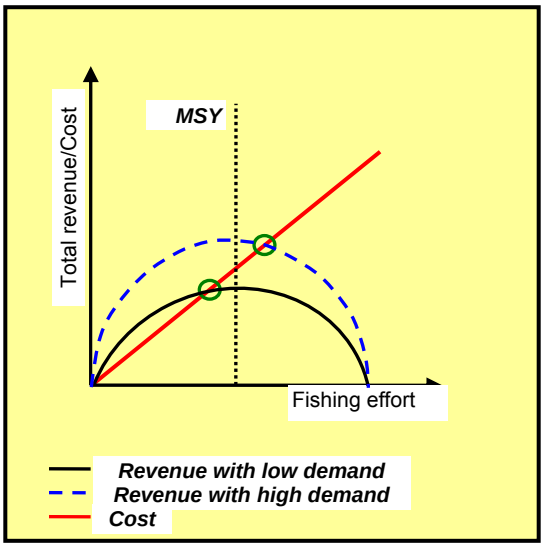

Figure 54: Trade liberalization: both MSY and cost are not affected by the level of demand

It is well known that under uncontrolled market regime the price is formed by meeting the demand with the offer. Demand of a commodity may increase due to increased population or other. An higher demand of fish has the effect of increased prices and consequently increased revenue of the fishermen (Figure 53) but has effect neither on costs per unit effort nor on MSY (Figure 54).

The increased demand may push the fishermen to produce more with an increased fishing effort. This may lead to unsustainibility.

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[1] *Cost of harvesting effort:* ***TC=wE*** *(where* ***w*** *is the cost per unit effort); Revenues for harvesting:* ***TR=pH(E)**** *(where* ***p*** *is the price per unit harvest,* ***H*** *is harvest);* ***H(E)*** *is the solution yield*

[2] *Pearce/Turner – Economics of natural resources and environment; Colin Clark – Mathematical Bio-Economics*

[3] *All charts are redrawn from Robert Hamway (UNCTAD), 2002 - Trade Liberalisation, Subsidies and Fishery (quoted).*

Under subsidized regimes a sustainable balance could be broken by politically reduced costs (Figure 55) that may push the fishermen to increase their effort with the risk of overexploitation of the natural resource.

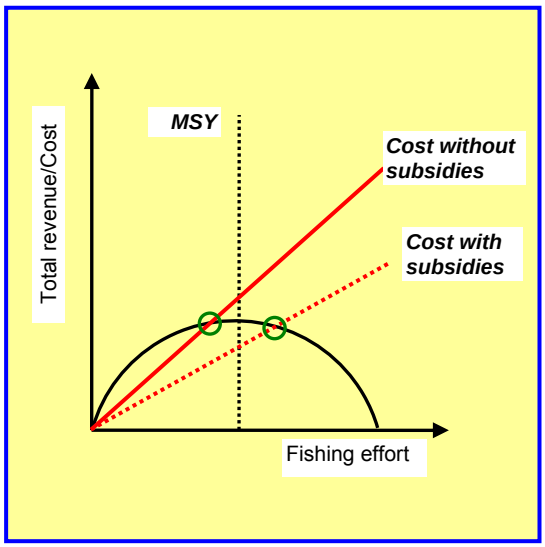

Figure 55: The level of the catch might become unsustainable with the introduction of subsidies to fishermen

From all this it comes clear that to better manage Fishery at national level a greater use of economic instruments (such as permits, catch quotas, escalating fees etc.) is needed as much as the knowledge of the MSY for the species of economic interest.

At the international level the application of the conventions on Fishery, which have been already signed and ratified, would be enough to ensure a sustainable resource management.

As a result of these developments, the **Code of Conduct for Responsible Fisheries**[1], adopted in October 1995 by the FAO Conference, provided a necessary framework for national and international efforts to ensure sustainable exploitation of aquatic living resources in harmony with environmental management activities. It has also brought about a significant change in the conditions under which fisheries are carried out on a world wide basis.

The fact remains that none of the devised instruments can achieve the desired result if not based on a solid database on the evolution of both catch and stock levels for the different species over the passed recent years. And this is the only way to effectively define the maximum sustainable yield for the species of economic interest.

[1] *The integral text can be consulted in: Internet Guide to International Fishery Law, The Rome Consensus on World Fishery (http://www.oceanlaw.net/texts/rome.htm)*

Moreover, recognizing the socio-economic, environmental, and nutritional importance of fishery and the growing demand for fish products, additional actions are urgently required to:

- eliminate over fishing
- rebuild and enhance fish stocks
- minimize wasteful fisheries practices
- develop sustainable aquaculture
- rehabilitate fish habitats
- develop fisheries for new and/or alternative species based on principles of scientific sustainability and responsible management.

A relevant policy framework aimed at resource conservation, marine protection and development of the sector should mainly:

- reduce fishing to sustainable levels in areas and on stocks currently heavily exploited or over fished;
- adopt policies, apply measures, and develop techniques to reduce by-catches, fish discards and post-harvest losses;
- review the capacity of fishing fleets in relation to sustainable yields and, where necessary, reduce them;
- strengthen and support the national, regional and local, fishery organizations and arrangements to implement measures of conservation and management and sector's development;
- keep under review the effectiveness of the above mentioned measures of conservation and management to ensure long-term sustainability of fishery and aquatic ecosystems;
- continue and, when possible, improve technical, financial, and other assistance to support the efforts in conservation and management, and in aquaculture development;
- encourage further development of ecologically sound aquaculture as an important contributor to overall food security and sector development;

- strengthen fishery research also by increased cooperation among research institutions;
- increase consultation on fishery with the private sector and non-governmental organizations;
- effectively implement the relevant rules of international law on fishery and related matters which are reflected in the provisions of the UN Convention on the Law of the Sea.

2.2 Fisheries in Lebanon at a glance

Despite the fact of Lebanon has a significant proportion of seashores that extends along 294.2[1] Km, the economic-policy scenario depicted above (§2.1) cannot be fully applied to the country's fisheries sector, as Lebanon relies on massive imports (mainly from the Arabic Gulf Countries, Morocco and Turkey) to satisfy the internal demand. On the other hand the above mentioned issues regarding the water resource management urgently need to be tackled in Lebanon too, as, despite the small scale of production, they are fully applicable to the current state of affairs of Lebanese fishing practices.

Notwithstanding the large accessibility to marine water[2], the Lebanese coastal area is generally considered medium to poor for fish productivity, the catch consisting mainly of poorer quality fish caught by boats much smaller than those of the central and western Mediterranean Sea[3].

Therefore the fish industry does not perform as such, and gives a relatively insignificant contribution to the economy of the Country. The Lebanese market can bear up to 24 000 mT, with an average market value of 26 million $ (nominal value) or 39 billion LBP[4].

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[1] *World Resources Institute (http://earthtrends.wri.org/searchable_db/index.cfm?step=countries&cID=104&theme=1&variable_id=61&action=select_years)*

[2] *Exclusive Economic zone (EEZ) for Lebanon is 19516 km^2. Reference: Sea Around Us Project (http://www.seaaroundus.org/eez/summaryInfo.aspx?EEZ=422#)*

[3] *The comparison is made with the countries included in the Area 37 - according to the classification of the EEZ: namely Morocco, Algeria, Tunisia, Libya, Egypt, Gaza (Palestine), Lebanon, and Syria. Reference: FAO – Fisheries Development in the Arab World*

[4] *Sea Around Us Project (www.seaaroundus.org/eez/EEZsummaryValueNP.aspx?EEZ=442&FAO=…)*

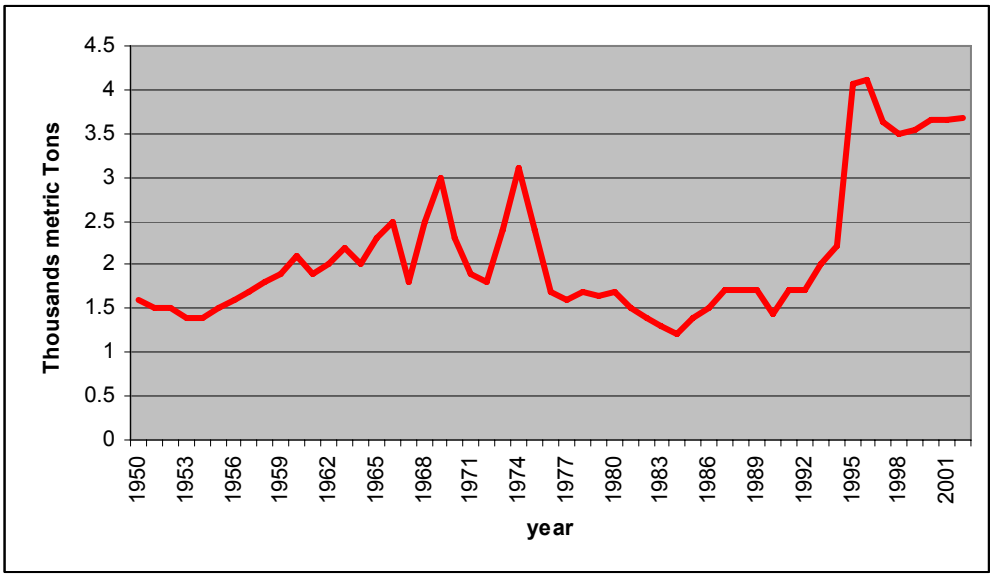

Figure 56: Estimated annual catch of marine fish in Lebanon (FAO)

The annual tonnage of fish caught in the sea of Lebanon is equivalent to those of the neighbouring countries (Syria, Israel, Ghaza), the absolute numbers being different only due to the coastline length. Conversely, fish production in aquatic farms is relatively less developed. Therefore, Lebanon remains, along with its neighbouring countries, far behind Turkey and Egypt for volume of production.

Table 12: Fish captures in Lebanon (year 1995)[1]

Description	Quantities (Metric Tonnes)	Total Market Value (USD)
Marine Water fishes		
I – Non-exotic		
Sardine	1 000	5 000 000
Palamida	1 000	5 000 000
Others	1 000	5 000 000
Sub-total (a)	**3 000**	**15 000 000**
II – Exotic		
Mullets	200	3 000 000
Sea Breams	400	6 000 000
Sea Daces	200	3 000 0000
Other	200	3 000 000
Sub-total (b)	**1 000**	**15 000 000**
TOTAL	**4 000**	**30 000 000**
Fresh water fishes		
Trout (c)	300	2 000 000
GRAND TOTAL (a+b+c)	**4 300**	**32 100 000**

[1] *Figures from MoA 1995. The market value were estimated at 5 US$/kg for the non exotic species, 15 US$/kg for the exotic ones and 7US$/kg for trouts.*

As already stated, Lebanese fish production does not meet the demand, relying on massive imports to fulfil the domestic needs. Here follows a more updated table with the average data on imports/exports, production/consumption for Lebanon in 2001.

Table 13: Production and imports of fish in Lebanon and its destination for the year 2001 with estimation of values[45] Lebanese Pounds (LBP)

Origin				Destination				TOTAL[46]	
Production		Imports		Consumption		Export			
Tons[47]	*LBP*10*^{6}	*Tons*[4]	*LBP*10*^{6}	*Tons*	*LBP*10*^{6}	*Tons*[48]	*LBP*10*^{6}	*Tons*	*LBP*10*^{6}
3 970	29 775	22 829	83 002	26 749	151 660	50	167	**26 799**	**151 827**
14.81%	*19.71%*	*85.19%*	*54.68%*	*99.81%*	*99.89%*	*0.19%*	*0.11%*	***100.00%***	***100.00%***

Those figures, that sum up fresh, frozen and refrigerated, preserved fish, shellfish and some by-products, are particularly relevant, especially considering that the average consumption in Lebanon is not very high, as their traditional diet does not include many fish meals (*pro capita* consumption: about 6 kg compared to the 8 kg for North Africa and the Middle East and 16 kg world average).

The evidence of such a limited capacity requires explanations that go beyond the purposes of these pages, as they are inherent to many different aspects, from the historical, to the political, to the economic/regulatory one.

Lebanese fishery is characterised by a fleet of small motorized boats, 7–8 m in length, of small catching capacities equipped with various kinds of traditional fishing gear. Fishermen composing this group are scattered all along the coastlines of Lebanon. Their number is high and much of their fishing is subsistence fishing for local markets, families and clans. The official statistics of their catches are not recorded systematically and therefore they lack in reliability. The species they target are mostly demersal, near shore species, and crustaceans (mainly shrimps) where they exist.

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[45] *Quantity times an average price estimated at 7500 LBP (5 US $) per kg.*

[46] *Total value in LBP is the one to the consumer (column Destination). The difference (Origin – Destination) equals 39 050*10^6 LBP and it is a rough estimation of the added value.*

[47] *FAO 2001*

[48] *Ministry of Finance, Custom Statistics 2004*

Beside what has already been highlighted by the fishery experts report[49], from the market point of view the physiological shortage of dependable information on demand and supply, prices and price fluctuations, as well as buyers and sellers in most of the ports, has been a major factor adversely affecting the growth of national trade in fish and fishery products. Coupled with this is the lack of technical know-how and trained manpower, along with inadequate infrastructure. Attempts at product development, product and market diversification and value addition have been absent.

Moreover the general pattern of trade, linking producers to buyers, is based exclusively on a few traditional products, depending on a few traditional buyers and sellers.

This causes a general lack of competitive practices in the marketing structure of the fishing ports that combined with the lack of government commitment on the sector's development and the chronic lack of investments in the upgrading of equipment and techniques seriously jeopardize the chances of the sector to come out of a relatively stagnant condition.

Listed below are the causes of the low income capacity of the fishing sector as they are perceived by the operators:

- small boats with limited power engines,
- limited fishing space,
- lack of enforcement of regulation and illegal fishing,
- too many fishermen,
- very strong competition from the imported fish.

The relevance of these elements is not under discussion, though there are few more issues that should be taken into consideration at a higher (governmental) level before being positively able to tackle those matters and effectively enhance the performance of the sector.

In 1992[50], the total number of professional fishermen in Lebanon was of 4 000 individuals, out of which 2 000 were part-timers. Those 4 000 fishermen

[49] *P. Carpentieri and F. Colloca's report (page 33)*

[50] *Ministry of Agriculture of the Republic of Lebanon (MoA)*

financially supported about 16 000 persons. Another 2 000 individuals worked in related fishing industries (boat construction and maintenance, maintenance of fishing nets, etc.) and supported approximately 8 000 persons. The 30 000 persons who were living on the income from fisheries represented 0,8% of the total Lebanese population (estimated at 3.7 millions). This low percentage indicates the current limited capacity of this industry.

The total number of fishermen in 1995[51] reached 4 000 full timers in addition to the 2 000 part timers. The number of boats has also increased to 1981 boats. It was estimated that the annual average income of a fisherman in Lebanon reaches US $750. This average was about 50% of the average Lebanese income for 1995 which was US $1.500. Again that reflects the poor status of the Lebanese fishermen and thus might shed the light on the insignificant number that is working in this industry. Even with this doubling in the number of fishermen and consequently their dependents, the total number still represents 1,6% of the total population.

In 2001[52], people involved in fisheries and aquaculture were 9825, this confirming the increasing trend. Job unavailability in cities was among the main reasons that were mentioned by the fishermen explaining why their number has increased despite their hard living conditions. Though reliable statistical data concerning the numbers of boats, fishermen, catchments species, and volumes were hardly available.

2.3 Regulatory environment in support of the sector and the related institutions

Due also to the limited weight of the fishing sector on the GDP, the relevant regulatory framework and the policies are generally deficient and inadequate. Moreover the rules, when in place, suffer from e general lack of control and enforcement, this way contributing to further depress the sector.

[51] *MoA*

[52] *FAO: http://earthtrends.wri.org/pdf_library/country_profiles/Coa_cou_422.pdf*

The main Lebanese Laws concerning the conservation and management of the marine living resources are the following:

- Law published by statutory order No 1104, 14/11/1921, modified by Council of Ministers Decision No 138, 16/9/1983, which forbids fishing in ports, the use of products that anaesthetise or poison the fish or pollute the water, and the use of explosives in fishing. It also forbids factories to let their waste flow into the sea.
- Law No 1/84, 13/6/1984 and Law No 14/50, 20/8/1990, which regulated sponge fishing.
- Statutory Order No 63/11, 16/3/1993 that forbade sponge fishing for five years.
- Statutory Order No 95, 9/5/1939 and the Law dated 19/11/1947, modified by Law No 1490, 20/8/1990 and by Decree No 11882, 3/6/1948, regulated river and freshwater fishing .

The Decree of the Minister of Agriculture nr. 15/01 (21 January 2004), that gives legal measures for fishing, transporting, buying, selling and importing fisheries products, states that:

- It is not allowed to anybody to fish on his or others behalf, to salt, to buy, to sell, to transport, to import or to use in any way the fish that does not fit to the legal measurements as shown in the table annexed to the text of the law (to be measured from the tail to the eye).
- It is not allowed, to catch or to import the kind of fish that is not mentioned in the relevant tables unless it measures 15 cm and longer, or the fish by its kind does not reach the 15 cm.
- Fishermen must return immediately to the sea all kind of fish that does not fit with these recommendations.
- Any text in contradiction with this decision is considered as cancelled.
- All applicable laws will be used on those who do not respect these recommendations.

The above mentioned Decree has taken effect on 1st April 2004.

Another regulation potentially very relevant for the development of the sector is the one on the *functioning of the cooperatives*, being the cooperatives potentially the best tool to gather the fisherman into groups of operators actually able to act as a Small Enterprise (SE), to enhance fishery production, and to improve marketing.

The law on cooperatives suffers from many limitations, mainly due to the fact that it is common to all the productive sectors, not leaving room for adaptation to specificities of the sector. It is also quite outdated regarding the administrative issues therein envisaged, and it provides a hierarchical decisional framework that potentially limits the free hand for the operators to actually apply peculiar corporative schemes for the development of the sector.

Regarding the social security issue, there is no specific law for the fishermen; as all the other "professionals" – meaning with professionals those that are not working for an employer[53] - they cannot rely on any kind of social security scheme, unless they can get a private medical insurance, which generally only covers the hospitalisation and not the expenses for drugs and ambulatory health care. In case they could not afford the private insurance (and this is the normal case), they have to rely on charity institution and/or complex procedures to access the public health care system (but again, only for hospitalisation for urgent matters).

As far as the retirement scheme is concerned, there is none available to the category. This means that in the specific case of the fisherman, they have to rely on the family when old and to charity, benefactors or dedicated non-governmental institutions for health care.

[53] *Note of the Editor: Government employees benefit of a social security scheme that grants them medical assistance during both working life and when retired. Furthermore they are entitled to a pension. Workers employed by the private sector have coverage for medical assistance. At the end of their career they are entitled to an allowance equal to one month salary for every year of service. They are not entitled to pension and to medical coverage when not working (unless the case of basic hospitalization). Those who are self employed and do an activity on their own (including fishermen and farmers) have neither medical assistance (unless they are able to pay an insurance) nor a pension. Like all, they are only entitled to hospitalisation for urgent cases.*

2.4 The Fishing Cooperatives and Syndicates

The Lebanese territory is under the jurisdiction of five Fishermen Syndicates[54], each one operating in a different area of the country. The activities that they are supposed to carry on are those generally ascribed to their role, which in this case would mean lobbying by the government to push for intervention for the development of the sector, working on getting the rights of their affiliated recognized (in terms of social security), pushing for specific integrated policies for sustainable economic development of the community etc. This is what most of the representatives of the local the Syndicates claim they do. In reality the sphere of their activities is very limited, and consequently their impact on governmental policy planning. This is due to the above mentioned low impact of fisheries on the country's GDP, but also to peculiar socio-political features.

As far as cooperatives are concerned, each port has usually its own. It is not allowed to form more than one cooperative for commodity or category in each municipality.

Lebanese Fishing Cooperatives rarely comply with the applicable rules and regulations, generally operating according to the specificity of each port and its fishing community. Many of the cooperatives visited are not really active, neither they are relevant institutions involved in the sector's development. At most they are sort of empty bodies following patronage logics with limited impact on, and recognition from, the community. Of course there are exceptions, and there are few cooperatives that hold proactive roles within the community (see Dowra/Beirut and Naqoura), but still they do build on the involvement of few individuals not being structured to work and function, as bodies, independently from the will and the vision of their most active figures. The practice of meeting and of participating decision is rather absent. The degree of cooperation with the local syndicates varies according to political issues, to the extent that where they go together there is no separation between functions, responsibilities, and/or in the perception of the community on their different role. Where they do not act in agreement there are duplications of efforts (at most inane anyways) or

[54] *North, Beirut, Ouzai, Saida, South*

conflicts, or just mutual non-recognition, often resulting in exacerbation of local disputes.

Rarely cooperatives are seen as associations of proactive individuals gathering to share knowledge and resources, and to develop production and marketing through consolidated efforts. Even where the cooperatives actually manage common selling points or work as informal credit facility, this generally follows corporative logics and does not have an entrepreneurial approach.

2.5 The main fish markets in Lebanon

In this paragraph we report highlights on the main features of the Lebanese fishing ports, mainly focusing on marketing structures, level of institutional involvement, and credit need and facilities. The situation in Tyre is not reported here. It will be analysed in the following chapter 3 (page 100).

This choice is justified by the fact the main aim of the research is to find out whether there is any "best practice" for fish marketing and credit schemes on which to model the Project's intervention in order to develop Tyre's fish marketing structure and, consequently, to improve the revenues for the fishermen.

The fishing ports/fish markets (other than Tyre) that have been visited are (from north to south): Tripoli, Batroun, Beirut (Dowra), Saida, Naqoura.

2.5.1 Tripoli

The situation of the fish sector in Tripoli seems to be critical as both the catch and the means of marketing do not seem to guarantee an adequate income for fishermen.

The main source of information for this brief has been an interview with the head of the *Fishermen Syndicate of the North*, who is also the head of the local *Fishing Cooperative*.

The Syndicate gathers six seaports of the north of Lebanon and few villages which carry on fishing activities but harbour the boats in small rivers nearby.

The Syndicate carries on ordinary activities, mainly lobbying to the government to gain funding and to provide services to improve the infrastructures and the general status of the sector.

The Cooperative gathers 404 boats (2-3 fishermen per boat); it does not seem to be particularly active, mainly because of lack of funding (as they claim). They do not receive any governmental support and do not have any source of takings, except from the fees that each boat owner has to give when associating (around 10 000 LBP). The Cooperative manages, in association with the Syndicate, a gasoline selling point located on the port; it redistributes the funding coming from benefactors and, sporadically by the government or by other international institutions (*e.g.* FAO) occasionally involved in programmes/projects for the revamping of the local fishing sector.

According to the Head of the Syndicate/Cooperative the main problems of the fishermen are:

1. the relatively small catches;
2. the lack of social security scheme for the fisherman;
3. the lack of regulation of the fishing activities and the lack of enforcement of the existing laws;
4. the marketing structure;
5. the competition of the imported fish.

Regarding the first issue (the relatively small catches), it seems to be a common run all over Lebanon, just like the problem of lack of enforcement of the laws, and the absence of a social security scheme for the operators of the fishing sector.

Marketing wise, the problems are various and rather complex; the cost of production of the local fish is very high, due to the high costs to operate the boats (fuel, maintenance, fishing gears) compared to the small catches per boat, this not allowing to take advantage of scale economics.

This inevitably raises the price of the locally produced fish which ends up suffering from the competition of the imported fish that is sensibly cheaper. Moreover, the stock of fish imported seems to exceed the demand, causing a

further fall of the prices of the local product on the local market.

In Tripoli there are several selling points. Most of them are located in the city's *souq* and they sell mainly imported fish. In addition there are two other selling points, located right on the port, being *obliged* by the local institutions (Syndicate and Cooperative) to sell only local fish.

The two traders managing the selling points purchase the catch of boats of the port of Tripoli and the fish coming from other northern Lebanese ports.

They charge the fishermen with a 7.5% commission per stock purchased, which they subtract directly from the amount paid.

Apparently the fishermen do not have alternative traders to deal with, claiming that the price that they could get from other local selling point would be lower (because of the competition of the imported fish); basically they are bonded to the traders for credit related issues.

The fish sellers on the port seem to be the only formal and/or informal institutions giving credits to the fisherman (moneylenders), as other institutions generally ask for collaterals that the fishermen can seldom offer. The credit scheme, which is frequently perceived as a sort of small grant, seems to be working like this: the seller provides a certain amount of money yearly (whose average total was not possible to determine), the fisherman do not have to repay, but they are obliged to trade only with the seller who provided them with the "grant". This way paying the 7.5% commission for each stock sold. Even in the case of regular lending (which imply the repayment of the total borrowed) they do not apply any interest rate, putting only the obligation to sell to them until the full repayment. This way the fish sellers have fresh fish assured every day, and a generous daily allowance too. On the other side, the fishermen cannot go to other (potentially more remunerative) markets to sell their fish at better prices.

The two sellers, on their part, do not really compete to have the daily stock secured; this further diminishing the amount paid to the fishermen. Moreover they often indulge in collusive practices, to undermine potential initiatives of the sector to increase the revenues of the fishermen, this way managing a sort of

oligopolic market on the supply side.

Neither the Syndicate nor the Cooperative (though the difference, between the two, functions-wise and in the general perception of the community is very vague) manage to counteract this vicious circle with concrete actions aimed at breaking this bond. This is due mainly to political reasons.

There was an attempt in the past to set up a sort of wholesale market managed by the Syndicate/Cooperative through some private funding received, but the attempt was opposed by the local authorities and by the sellers themselves and, then, abandoned.

2.5.2 Batroun

The situation in Batroun is quite different compared to the one observed in other ports. Most of the fishermen have other (more remunerative) jobs, the port is relatively small, and the composition of the community is rather homogeneous. Even though they suffer form the same problems and constraints as the other fishing communities of the country (namely small catches, water pollution, lack of proactive government intervention in support of the sector, etc.), the community does not seem to suffer as much as others.

The local fish is sold in the local selling points. As in Tripoli, the fish sellers provide the fisherman with a certain amount of money at the beginning of the year; the fishermen do not have to pay the money back, but they are obliged to sell their fish only to them.

The local Fishing Syndicate[55] does not seem to have such an active role within the community, while the local Cooperative is quite lively. Its main source of income is the funds provided by the chemical plant located nearby. The support of the Government is more or less absent and the fee for the affiliated to the cooperative is symbolic. The money of the cooperative is mainly spent for the maintenance of the port, and to provide the fishermen with small credit when needed. It seems that they do not pay any interest on the amount and that there is no rigid repayment scheme to follow. The community is small, homogeneous,

[55] *Batroun is under the jurisdiction of the Syndicate of the North with headquarters in Tripoli.*

and united enough so that they managed to find a sound equilibrium within this framework. This equilibrium, though working so far, is pretty much unsustainable and builds on elements that are, by definition unstable.

2.5.3 Beirut (Dowra)

The port of Beirut, along with its fish market, is the biggest and the most important of Lebanon in terms of volumes of goods exchanged. In the port there are two main markets:

- the wholesale market, that gathers the big quantities of fish locally caught, all the imported fish, and the fish from the other Lebanese ports unsold at the end of the day. The wholesale market sells *à la crié*, but generally do not sell to individuals.
- The market managed by the local Cooperative which functioning will be described later on.

Beyond the quantitative data on catches, prices and traded volumes, which seem to be rather impossible to collect without being present on the spot on a regular basis, the major findings from the visits to the port and fish market of Dowra dealt with the functioning of the local Cooperative and, consequently, of the local fish market and the informal credit facility.

That of Dowra is a good example of a well managed (still very fragile) Cooperative, covering different roles and being actually actively involved with the members of the community.

The Cooperative gathers approximately 300 boats and 400 fishermen (about the 90% of the fishermen of the local port). It manages a selling point through which about 100 fishermen market their catches. The biggest quantities are sent to be sold in the nearby wholesale market, whereas the small catches are sold here, *à la crié*.

The main sources of income for the cooperative are:

a) the entry fees that the fishermen pay to join (25 000 LBP for one quota, or 50 000 LBP for two quotas - which is the maximum permitted by the internal statute of the Cooperative);

b) the commission on the fish sold in the market;

c) the rental of two properties located on the port (which the Cooperative owns);

d) possible private donations or governmental contributions.

The revenues are used to manage the selling point and to finance the Cooperative's activities. What is left at the end of the year is redistributed among the fishermen (according to the number of quotas owned). The amounts deriving from government's or privates' funding are redistributed between all the adherents; those coming from the management of the cooperative's activities (market, real estate rentals) are redistributed among the fishermen actually participating in the daily activities of the Cooperative. The money coming for the entry fees is saved in a bank account and it constitutes the social capital of the organization.

The Cooperative owns a warehouse, the marketplace and one office. The market was started 7 years ago apparently raising the revenues of the fishermen of an average 30% or more (especially during weekends). The Cooperative takes the 5% of the total amount sold by each fisherman, but only if the total is over a certain amount. So at the end of the day it collects roughly 3.5% of the total exchanged.

At the beginning, the market used to sell only to retailers, which were (and still are) allowed to buy on trust. Then it got to be known by the privates too. Now they are daily buyers.

Since the establishment of the Cooperative the price of the fish, and consequently the fishermen revenues, have slightly increased.

Each month, the Cooperative collects around 200 $ of net benefits, plus the revenues from the rental of the warehouse (200 $) and the cleaning of the fish (100 $).

The Cooperative works as an informal credit institution too, offering credit to the fisherman through the person heading of the Cooperative, who claims he covers it personally. He asks for no interest rate and there is no rigid repayment

scheme. Apparently all of the fishermen rely on this informal credit facility (at least those that sell through the common selling point).

The fishermen of the community of Dowra are still poor, but they can count on a more reliable community safety net, and at least they can get a relatively fair income for their product.

That of Dowra can be considered a good example of positive entrepreneurship attitude and good resource management, though it builds on a very fragile equilibrium, basically relying on the initiative and on the personality of an individual, with all the limitation and the possible consequences that this can generate.

Moreover, the Cooperative of Dowra, though very well structured and functioning, does not act according to the law on cooperatives, having adapted norms and regulations to the local community specificities.

2.5.4 Saida

The port of Saida is the biggest of the south and the local production is well reputed. There is, of course, a Fishing Cooperative there, which has the same role as in Beirut (Dowra) even if it does have very different features as the fishing community, on the other hand, has.

The Cooperative gathers 227 fishermen (140 boats); this means almost all the fishermen based in the port except the Palestinians who are about 85 (45 boats) and gather under their own association. The two groups though are told to be working together, at least as far as the fish marketing is concerned.

The Cooperative works in good harmony with the local Syndicate; it gets its incomes from the monthly fee all the adherent have to pay (1 000 LBP per month) to be affiliated. Its main role is to manage the selling point and to lobby to the government and other institutions on the behalf of fishermen. The Cooperative also acts as intermediates to redistribute financial support provided by charity institution (usually the Hariri Foundation). They occasionally purchase gears or other tools to distribute to the fishermen, but most of the time they have no funds to undertake these kinds of activities. They do not have any

organized, though informal, credit scheme. Apparently they give grants when needed and according to the cash availability.

The common selling point, located right on the port that markets the local catches, was donated to the Cooperative by privates (the Hariri Foundation). Apparently it greatly contributed to the reorganization of the sector activities after the post war decadence.

The fish market works with the following schedule:

a) from 6 to 10 a.m. there is a wholesale market, *à la crié*; the auction is managed by a salesman who takes 5% commission on the fish sold, and pays a rental to the Syndicate/Cooperative (which owns the marketplace). The money of the rental is used to pay the daily cleaning of the venue and to pay the maintenance of the building

b) after 10 o'clock the market is open for the public to come and buy. It stays open till 5 o'clock in the afternoon.

Apparently they generally manage to sell the most of the daily catch. What is left unsold is frozen and sold as such the day after. They do not bring any fish to the wholesale market of Beirut as fishermen of other ports do, as they apparently do not need to.

The peculiarity of this port is that it undergoes to the strong political influence exerted by some local benefactors; neither the Syndicate nor the Cooperative are, therefore, really independent; they do not even seem to be willing to develop any sort of entrepreneurial structure for the development and the enhancement of the sector.

Again though, the model of the Cooperative-managed selling point seems to be working well, meeting the favour of the community.

2.5.5 Naqoura[56]

Naqoura is a very small port in the southern edge of Lebanon. Its relevance for our purposes relies more on the good functioning of the local Cooperative and of the common selling point, that on the capabilities of the community to

[56] *Naqoura is under the jurisdiction of the Syndicate of the South, with headquarters in Tyre*

organize the activities of the sector and to enhance its development. Moreover, under this regard, Naqoura has quite peculiar features, mainly due to its position and to its recent past history.

The *Fishing Cooperative* gathers 18 out of the 20 boats registered by the port authority (the owners of the two remaining boats have their own shops in the village). They all market their catches through the Cooperative selling point that was built through UNDP funds and the Cooperative has been set within the same framework of activities that led to the establishment of the market.

The fishermen bring the daily catches to the market were the head of the cooperative check the fish, weighs it and displays it on the counters and bargain with the buyers. A bookkeeper records the supply per each fisherman and the sales. The fish that is not sold to the local customers during the day is brought to the wholesale market in Beirut, to be sold the coming night. The Cooperative owns a van for the transportation, but they find more convenient to rent one and pay to the driver the ride to Dowra (Beirut). There their contact person sells the fish on their behalf, and sends the money back through the carrier.

The revenues are redistributed among the fishermen, minus a 10 %, that goes for the management of the Cooperative's activities. The 10% is divided in 4 parts. Three parts go for the salary of the head and of the accountant and of the third employee whose terms of reference were not clear. The remaining is used for the maintenance of the market hall, for the ice, for the various activities undertaken by the Cooperative (port maintenance, lobbying etc.); the credit issue was not mentioned.

The members of the Cooperative regularly meet to discuss on any relevant subject, and make potential proposal for the enhancement of their activities. Some fishermen we talked to were not happy about the Cooperative as apparently the due 10% has recently increased to 25% or more, and they are not sure of the final use of the money. The head of the Cooperative claims he uses the money for his frequent trips to Beirut for his various networking activities.

2.6 Conclusions

The general situation of fisheries in Lebanon is rather difficult, and it does not seem that the times are mature for a general reorganization of the sector and of the related institutions. However there are margins to enact good policies and encourage investments, though probably more on aquaculture that on marine fisheries.

What comes out important is that:

1. a common selling point to gather the products of many fishermen, marketing *à la crié*, can actually guarantee a higher income (see Beirut, Saida, Naqoura);
2. a flexible repayment scheme makes the credit affordable and actually returned;
3. a certain degree of social cohesion is necessary to the well functioning of such an initiative (see Batroun and Beirut).
4. purchasing the van might be not necessary (see Naqoura)
5. the transparency on the management resources is vital for the effectiveness of the Cooperative's activities (see Naqoura)
6. the head of the Cooperative might better be a fisherman himself (see Naqoura)
7. the Cooperative can successfully carry out other activities beyond the marketing of the fish.
8. Authorities must be implicated in the project of settling a selling point not to be opposed during the process of its installation and management. The authorities must guarantee authorization and might protect against actions of those who will be somehow deprived of "power" (fish sellers/moneylenders) (see Tripoli but also Saida)

3 Specific Background

3.1 Introduction

The port of Tyre gathers about 300 fishermen and 170 small boats. According to recent semi-official statistics the yearly production stood at 275 tons in 2001[57]. The primary instrument of fishing are the multi-filament nets (⅔ of catch), and the fishing line (*sharak* – ⅓ of the catch). 90% of the fishing is done at night and utilizes small boats for an average of 180 days per year.

The boats, generally between 7-10 meters long are relatively well (though basically) equipped to exploit the potentials offered by the actual fishing zone. The port well protects the boats from the current; though do not have a dock for unloading.

The average amount of catch was about 230 tons in 2004, this confirming a certain degree of decrement of the volumes that have been occurring in the recent years, mainly due to the stocks depletions. The species fished are vary[58] according to the season and are the same fished throughout the rest of Lebanon.

What seems to be slightly different from what observed in the other ports (except Tripoli) is the income of the fisherman. In fact here the fishing community leaves under very difficult economic conditions, and what is worse, there do not seem to be any locally owned initiatives to tackle this delicate issue, neither at the institutional level (cooperatives and Syndicate) nor at the government or development assistance level; this despite the implications that the worsening of the socio-economic conditions of the community brings to the overall general development of the town.

The project AID 7461/RC/LBN, along with some micro-credit programmes funded by international cooperation agencies, is the only, specifically targeting the fishermen community as such, that concretely tries to loosen the socio-

[57] *UNDP, ADR – South Lebanon, Report 2001*

[58] *Compare also Fishing Experts Report*

economic constrains through community development and capacity development activities.

The relevance of this approach is confirmed by the findings that will be thereafter mentioned.

Through some data collection and informal surveys carried daily in the port during 45 days, it has been tried to integrate the on-going data collection, started by the Project fishing experts in February, with some information dealing more strictly with the commercial aspects of fisheries; namely the local fish-market functioning, the price determination, and the means of exchange.

Through this it has been tried to determine whether or not acting on the market functioning, through some competition enhancing activities, might actually help to achieve the project goal (increase by at least 20% the revenues of the fishermen).

To the community credit needs and facilities will be dedicated a separated section, though the two issues are strictly interrelated.

The approach used to gather the information needed to formulate some recommendation to support and, if necessary, re-orient the PMC activities in the field was not very scientific, as the period for the quantitative surveying was rather limited; though the sample chosen seemed to be willing to provide consistent information and some of the results confirm the trends on which the project document is based on. In any case the aim of the surveying was more to actually understand the interrelation between the various actors of the community, and how they contribute in determining prices, incomes, and means/costs of production, rather that build a complete database.

3.2 Socioeconomic characteristics of Tyre

About the community's households composition it has been already largely written[59].

[59] *See Silvia Cubadda's report (page 1)*

Here follows some additional information that, though not adding much to the general knowledge on the community's features, is supposed to help focusing on the market constraints.

The data reported do not take into consideration seasonality and fish quality; despite this, they seem to match the other project's surveys findings and those carried on from other governmental and non governmental institutions.

The average production in 2004 has been about 230 tons[60] of fish and the price used to calculate the average annual and monthly income of the fishermen has been derived by interviews in the port. We have been asking daily for about 45 days how many kilograms they had fished, and how much they got for that. We asked also about the kind of fish caught, whether they were bonded to some sellers due to debts or not, and the average amount of daily and yearly expenses directly related to fishing (fuel, boat's maintenance, nets, bates etc). This way it has been tried to roughly estimate the production costs and, consequently the potential credit needs.

Table 14: Rough estimation of the average annual revenue at the port of Tyre (see text)

Description		LBP	US $
Tons fished	230		
Average price per Kg		6 000	4.0
Total value		1 380 000 000	920 000
Number of Fishermen	300		
Number of boats	175		
Yearly revenue per fisherman		4 600 000	3 067
Yearly revenue boat		7 885 714	5 257
Monthly revenue per fisherman		383 333	255
Monthly revenue per boat		657 142	438

These 230 tons have been merchandised by the local selling points. There are seven shops on the port and six in the *souq*. They all sell both local and imported fish. Their margin on the locally purchased fish is around 25%, but this figure does not really reflect the difference between their gain and the fishermen's.

[60] *MoA*

3.3 The local market

As already mentioned, in Tyre there is a very strong relationship between the fishermen and the fish sellers. The nature of this relationship, putting aside the potential sociologic aspects, builds on the grant that each year the fish sellers give to some of the fishermen.

In fact, apparently, at the beginning of each year, the owner of each boat (from now on called Unit) decides whether to ask/accept a grant from one of the local fish sellers or not. The grant might consist of cash or nets the total depending on the accountability of the fishermen and of their crew, on their capabilities, equipment etc. Its value ranges between 400 000 and 800 000 LBP, regardless if it is in kind (nets and/or baits) or cash.

The only obligation that the fishermen have against it is to deal only with them to market their product. The amount that they get from each kilogram of fish sold is lower than that of those who do not receive the initial grant though, by an average 20%. This is basically due to the fact that, through this mechanism, the bargaining power of the fisherman is weakened, not to say dissolved.

The margin[61] that the fish seller get from each *bonded Unit* becomes a sort of repayment of the initial grant, with the peculiarity that, once that the sellers has regained the full amount given, the Unit is not free from any obligation and keeps loosing the 20% on the daily income. From rough calculations, based on the data gathered, the fish sellers result to be earning from each of these Units between 700 000 and 800 000 LBP yearly.

Determining how many of the Units receive this grant was quite hard, as not all of the fishermen were keen to open up under this regard; still it has been calculated that at least 60% of the Units receive the grant from the seller, this figure being prone to be sensibly larger.

This situation causes a series of direct and indirect effects that altogether determine a situation of non-competition on the supply side that highly contributes to lower the market prices, and consequently to keep the fisherman revenues at the subsistence level (when not lower). Of course the disadvantage

[61] *Note of the Editor: Here it has been called margin the 20% for each kilogram of fish not corresponded to the Unit.*

is not only for the *bonded Units*, as this market rigidity casts its effects on all the community.

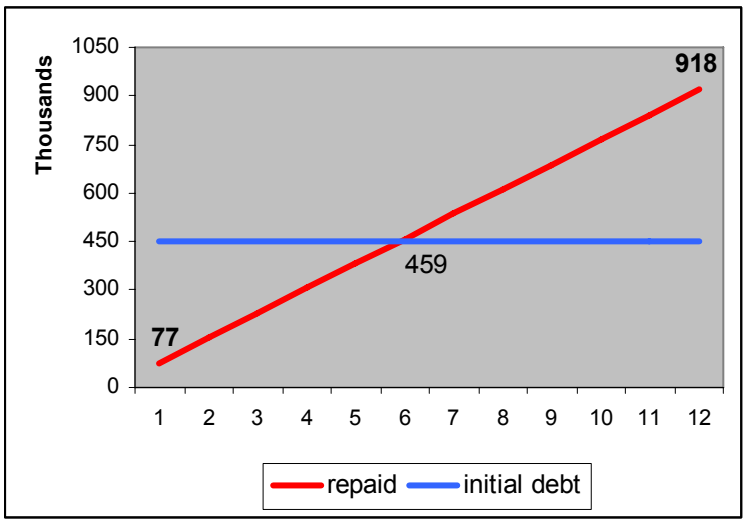

Figure 57: Accrued monthly reimbursements (supposed at 20% of the average production) compared to initial debt or loan (supposed at 300$=450 000 LBP)

It is not in the aim of this report to demonise the category of the fish sellers by claiming that they get a much too large portion of the revenues of fisheries, but it is quite obvious that these market dysfunctions, though being only one (and maybe not even the most prominent) of the causes of the community's economic problems, do not consent to margins for improvement.

A joint selling point managed by the fishermen themselves, where to sell the catch *à la crié*, to the retailers and/or directly to the public has been claimed many times as a possible solution to this delicate issue. Indeed best practices observed in other ports (*e.g.* Dowra/Beirut and Saida), seem to confirm the positive impact on the fishermen revenues. Though the social and political stand of the target community is very different, in terms of composition and, consequently, of social cohesion (the community is almost equally divided between Christians and Muslims). This means that even if their needs, problems and constraints are fairly similar, as their approach to them is, it seems to be hard for them to gather around common objectives and to undertake joint action in attempt to overcome them.

Again, it is not in the aim of this report to highlight the *socio-political* implications of the fisheries issue. Especially because it does not make a big difference at the market level; it does impact on the potential further stage though, as any

activity to be carried on trying to break the vicious bound between the fishermen and the sellers imply an involvement of he whole community, which seems to be a goal not easy to achieve. This issue will be more thoroughly analyzed within the next section (Results and Recommendations).

Box 2: Abstract of an interview with a fish seller

He has been a fishermen for 30 years, as the coming of the age made him unable to fish he decided to sell his boat (for 5 000 $) and to open a fish shop right on the port.

We interviewed him to have a better insight on the fishermen/fish sellers relationship and on the means of marketing of fish. The chat has been quite interesting, here follows the main points.

The household is made up of two people, and they are both working.

He gives grants to the fisherman in order to have an option on the purchase of their daily catch (500 000 to 750 000 LBP); the grant is in cash, and he doesn't question on the final use of it; the more loyal to him and productive they are the more they receive as a grant.

He corresponds to the bonded Units 20% less per kg of fish. But he says that, due to the fact that he is new in the business, he often charges them with a smaller percentage.

He also lends to the fisherman small amounts of money for their immediate needs, which they repay with no interest and upon availability.

He admits that the sellers, though claiming they pay not more that 20% less to the bonded Units, they actually trick the fishermen in many ways, virtually raising the percentage.

So far, nothing new. Though interesting was the discussion about the fisherman needs an attitudes credit-wise. He admitted a certain lack of planning attitude on the fishermen side, but agreed on the need for credit facilities available for the fishermen at low cost. Indeed he talked about in kind support as he (as the other informal moneylenders) does not consider them accountable.

He claims that it would be better to provide them with social services (advances for health care and or schooling), or with equipment, but not with cash. Moreover, in his opinion, there should be a committee made of members of the community itself to select the potential beneficiaries, to whom it should be applied a flexible repayment scheme.

He did not make any remarks on the potential damages for the community's well-being of the port's marketing structure; neither has he advanced any proposal or advices on how to lower the production costs.

It has to be remarked it was interviewed a fish seller from the Christian side of the port. Though the market dynamics are similar of those on the Muslim part, the attitude toward the credit issues is not.

Another relevant obstacle that keeps the community from taking concrete action to move away from the hegemony of the fish sellers is the need for capital advance that the fisherman do not seem to be able to get by any other means.

There are other components contributing to keep this situation going, which concerns the fact that may fisherman are afraid they would not be able to

market their catch themselves. Therefore they rather loose on the revenue than run the risk to deal with the unsold.

Box 3: Abstract of an inteview with the wife of a fisherman

She is the wife of a fisherman that works on the Christian side of the port, he owns his boat and works with 2 other mates; they have three kids aged between 5 and 10.

She claims that they do not borrow any money for the household management, as they manage to redistribute the yearly income to face the bad periods.

She claims that their main expenditures are for the kids schooling; apparently they can count on special fees and flexible payment schemes (accorded to the family of the fishermen due to their low incomes).

She declares that they get the bi-yearly grant from the fish sellers, in kind; every 7 months they get 40/60 nets for free (worth 10 $ each), that they virtually repay by selling the fish to the grantor for the whole year. She says that he gets 200 grams free per kg of fish.

She is a very young and very proactive woman. She was in the first raw for all the meetings that have been organized to involve the women of the community in the project activities. She is a very dignified lady and resolute to give her contribution to higher her family life standards. Unfortunately, under this regard, she is not representative for the rest of the community, as generally the other women are not so keen to be involved in those activities devised for them by the project document.

As already mentioned, the sellers are located both on the port and in the city *souq,* which is just beside the port. Those located on the port are more prone to sell only local fish, though, when the supply is not enough to meet the demand they also sell imported products. The incapability to fulfil the demand can be both qualitative and quantitative (small catches, low quality fish, no valuable or easily marketable species etc.). Although, it is not infrequent to see their counters empty or to find the shops closed early before noon, this meaning that they run out of stocks. Usually this does not happen because of peaks in demand, but for shortages of supply; as, if it is true that they can count on the imported fish, it is also true that their customers expect to buy local fish there. Therefore they rely only very partially on the imported good.

The situation in the *souq* is quite different. There the buyers are mainly individuals looking for better prices more than for quality, which is what imported fish guarantees. Indeed only two of the shops in the *souq* deal with the local fishermen on the grant basis. Apparently they are the biggest moneylenders though. They have the largest variety and quantities, to the extent that they send consistent amount of products to Dowra/Beirut (to the wholesale market)

every day to market the daily unsold, this way gaining the higher price per kilogram of local fish.

3.4 The cost of production

As mentioned above, one of the causes that keep the target community from undertaking any sector-upgrading activities (as much as others, indeed) is the need for investment capital.

Each fisherman spends averagely 750 000/1 000 000 LBP yearly for the gears, around 800 000/1 000 000 LBP for the fuel and about 600 000 for the boat maintenance (but the last figure is prone to be over-estimated, therefore will not be taken in great consideration to determine the capital and then the credit needs).

The largest investment is on the gears (nets or *sharak*), depending:

- on the type and on the quality of the nets (e.g. the silk ones being 3 times more expensive than those made out of nylon) ;
- on the frequency of the damages occurred.

Most of the fishermen are able to assembly the nets by themselves, but only few know how to repair them. Therefore they have to set aside a yearly budget for the net-repairing (it can cost up to 25 000 LBP per 3 hours).

The expenses for the fuel, again, depend on the type and on the place of purchase (the further from the port, the cheaper it is[62]); while the cost of the boat's ordinary maintenance is generally on the boat's owner.

The baits are in some cases provided by the fish sellers (in this case the Units are obliged to sell them the catch), but they are more likely to be provided by the fishermen themselves.

Lowering the production cost per fisherman does not seem to be an easy task, as there is not much room for action. A consistent reduction of the production costs, to have a relevant impact on the fishermen incomes would call for a more substantial reorganization of the means of production; including a reduction of

[62] *Note of the Editor: There is not a gasoline station on the port. Sellers do buy* mazout *elsewhere to sell it to the fishermen adding their commercial overhead (at the moment about 2 000 LBP each gallon)*

the workforce involved and an amelioration of the fishing fleet in order to create some sort of scale economics. This is not a feasible goal to be tackled in the short term, not even being in the scopes of the project.

Although a better management of the existing resources is something that the community (with the backstop of the PMC) could positively achieve.

The most obvious thing would be working on the nets repairing. Carrying on these activities in-house would lower the expenses, as it would place joint orders for the purchase of larger quantities of nets. Both these hints though do not seem to be welcomed by the community, for different reason (see next section).

Upgrading the fishing techniques might help to raise the quantities, without raising the costs. But this is a rather delicate issue, potentially leading to further stock depletions and jeopardizing their future gains, not to mention the marine ecosystem.

Considered all this, the most compelling actions to be possibly undertaken to help containing he production costs should build of the consensus of the whole community and on their joints efforts and actions (see next section).

3.5 The credit needs

Given the hardship under which the fishermen community lives, talking about credit needs means tackling a rather delicate issue, as their needs are not limited to capital advance for fisheries, or to extra amounts for unforeseen necessities. In many cases they are the daily essential needs of the households to remain unmet.

Therefore trying to quantify it would mean splitting the yearly income, virtually allocating it according to the household priorities, timely distributing it according to the maturity of the expenditures, and calculating an amount to be set aside for the emergencies or the extras (namely the savings).

Being the average yearly income form fishing about 4 600 000 LBP it is obvious how this can become a rather difficult exercise. In fact, if fisheries-wise, as long as they do not occur structural changes in the means and functioning of the

sector, the capital needs can be rather easily forecast (again, taking onto account the physiological uncertainty of the fishing activity) and then quantitatively distributed throughout the year, on the household side, the issue becomes more difficult to face.

The complexity being mainly due to the different composition of the households, of the different perception of the concept of basic needs, of the interrelations between each family unit and the rest of the clan/community and of the presence of charity institutions and/or patronage system within the target community.

Moreover, as it often happens within the very poor groups, the planning and forecasting capabilities are limited, as the immediate needs are a matter of mere survival and the future perspective a luxury they cannot really afford. Plus the priority, let aside the minimum which is spent for food and few other necessary items, is given to the expenditures related to the income generating activities (in this case nets, baits, etc). Schooling for instance becomes a purely pleonastic issues and health a burden that only few families can afford without any external support.

Rising by 20% the income of the households will be a big achievement and would surely relieve some burden, especially from the poorest ones. Though, by itself, it still would not help those, to meet the most basic needs (including, in this case, schooling and basic health services). A set of actions (wider than the project's devices) have to be implemented in order, at least, to stabilize the income of the poorest and to create the favourable conditions so that they can be able to help themselves out of extreme poverty.

Under this regard it might be useful to mention that a household consisting of 5 people, relying on two sources of income can relatively easily manage; a household with the same composition and only one source of income can still manage to get through even though facing severe difficulties and with the support of the existing institutions (*e.g*. Caritas for health care, special fees for the schools, etc). But even one more person within a household easily becomes an unbearable burden economically speaking, that pushes the family into extreme poverty, cuts off the chances to access credit, not leaving much room

for long term changes. Of course this issue is not clearly perceived by the most, and can be considered only as an external condition to deal with, rather than an issue to tackle, at least in the short term.

3.6 The existing credit facilities[63]

The most common credit facility serving the fisherman community is the one provided by the fish sellers. In fact, besides the yearly grant that some of them give to the fishermen, in kind or in cash, they are often available to lend them extra money during the year. The amount is, of course corresponded in cash with no question on the final destination of the loan. The amount is generally limited to 450 000-600 000 LBP and apparently no interest is charged. The repayment scheme is extremely flexible and somehow customized according to the borrower needs. They can repay in cash, giving small unsettled amounts throughout the year or they can repay in kind, through small amount of fish when the catch's amount allows to. According to some, if the debt is not repaid within one year or so, the moneylender cancels the debt, but obliges the fisherman to sell him the catch until he says so.

According to others it happens that, if the borrower fails to repay and owns the boat, the moneylender can take it. In this case the fisherman becomes an employee of the fish seller. The fishermen, not to mention the sellers, are not keen to open up in this regard, so it was not easy to determine the frequency of such occurrence, though the phenomenon seems to be widening.

Generally the moneylenders/fish sellers do not consider the fishermen accountable; therefore the repayment in kind is preferred. If the borrower is not bonded by a grant received at the beginning of the year, the moneylender evaluate the daily catch at market prices and that cuts a variable share as instalment.

In case the borrower is already bonded to them because of the initial grant, the share is cut on the lower price that they pay.

[63] *Here will be mentioned only those credit facilities that were explicitly mentioned by the members of the fishing community who had been members interviewed. Though there are few other micro credit institutions they might potentially rely on.*

The immediate outcomes of this mechanism are a further decrease of the fisherman's daily income and a further stiffening of the fish market on the producers' side.

Other credit facilities virtually available to the community are the banks. Few banks offer small credit and none does it without any collateral. Therefore only those owning a boat or some other valuable good can afford to ask for a loan. The interest rates vary between 25% and 30%, according to the length of the repayment period (averagely 16/18 months) and the amount of the instalments.

Only one out of the 15 families that we interviewed gets loans from the bank. The most of them prefer to rely on the fish-sellers as they are afraid the might not afford to pay some of the instalments in time, and consequently loose the collateral. Though, in the end, the bank loans do not seem to be more expensive than the amounts granted/lent by the fish-sellers (not even having the market-distortion effect).

There is one micro-credit programme funded by the EU and executed by ADR, a local NGO, operating right on the port (see Box 3). It targets the whole Caza of Tyre (not specifically the fishing community).

They are not a micro-credit institution, so the services that they provide and their approach is limited to the scope of the funding programme.

The officer responsible for the area of Tyre confirmed that the fishermen community is between the poorest of the area, and that the percentage of those asking for credit is very low, if compared to the assessed needs. This is apparently due to the fact that, even if no collaterals are requested to give the loans, the fishermen themselves are not confident in their capability to repay. For the time being, between 57 fishermen have a loan from the ADR, and they generally negotiate the loan for the longest possible period. There is not much more information on the characteristics of the borrower, besides the fact that they are probably not from the poorest households; apparently the failure rate is very low.

Other international cooperation agencies (*e.g.*: Institutions of the German and the Canadian Cooperation) offer loans to the fishermen. It was not possible to

determine whether the loans target specifically the fishermen community or not, as the information on the characteristics of these advances came directly from the fishermen.

Box 4: ADR/EU microcredit program

In partnership with the EU, and with the support of a Lebanese bank (the Audi bank), ADR launched a micro-credit programme in order to allow small investors to initiate project or develop existing ones giving the beneficiaries access to a loan they would not otherwise get. An active local team on the field selects and does the follow up on approved credits.

To ensure the projects' success, ADR offers technical, managerial, and accounting support.

The ADR micro-credit programme operates since 2001 and targets the Cazas of Tyre, Bint-Jbeil, Marjaioun and Hasbaya. At the moment it counts about 1 000 beneficiaries.

The amount of the loans ranges between 500$ and 3 000$, and the interest rate is 12% per year, flat (lower than that generally applied by micro-credit institutions). The repayment period varies between 12 and 30 months and the amount of the instalment varies accordingly.

The staff is made of individuals who come from the target communities. When someone asks for a loan the officers (one for each Caza) carry out the feasibility study and collect the financial data on the borrower and on the activity or purpose he is asking the loan for; then, according to the findings and thanks to their prior knowledge of the community, they draft a recommendation (whether negative or positive) to be submitted along with the application form, to the selection committee that will examine the request for the loan.

The borrower is not supposed to submit any collateral, though he must have a grantor, who has to be a public employee.

It does not usually take more than fifteen days between the request and the contribution.

In case of delays in the payment of an instalment the Programme procedure provides for 4 steps:

1. *After 10-15 days of delay, the regional officer (who prepared the application for the grant with the borrower) calls him to solicit the payment.*
2. *After further 10 days, the officer calls the grantor for him to push the borrower to repay.*
3. *After 1 month a warning letter is sent to both the borrower and the grantor.*
4. *If all this actions fail to get the borrower to repay, he is taken to the court.*

Apparently the failure rate is very low, and the step 5 is an extrema ratio *they never had to apply.*

Apparently the amounts were about 500$, with no interest rate and a very low instalment (15$ per month). In one case this loan has been granted upon the obligation to invest in fishing equipment, the only request made to the borrowers being the purchasing documents for gears or similar.

This solution was of course, the most appreciated by the community, both for the low cost and for the minimum instalments. Though, of course it cannot be considered a good example to build on for the project purposes, as it is not at all

sustainable, and does not encompass any community development and/or activity enhancing component.

Other two of Micro-Credit Institutions available to the community are: **Al Hasan** and **Al Majmoua**.

Al Hasan, is a credit facility working since 1983. It targets the poorest in society regardless of religion, race or nationality; it offers credit for services, trade, handicrafts and agriculture. No contribution from the applicant is requested; the maximum loan amount is 500$, and the maximum loan period is 1 year. There is no interest rate, but a 10/20$ application fee. Al Hasan gives credit upon a real guarantee (money or goods), which is deposited when the loan is granted and is given back once it is fully repaid. For example, 600$ are deposited by a relative or someone close to the applicant, who receive 500$ cash. The applicant has to give the money back in 12 months. At the end of the reimbursement period, the money is given back to the guarantor. If the amount initially deposited is in kind (*e.g.* gold) the sum accorded to the applicant is sensibly lower (*e.g.* 600$ in kind, 400$ loan). The credit scheme is rather efficient and the rate of failure very low (around 5% on a total of 30 000 standing loans).

The peculiarity of this credit scheme is that it is fully tailored on the societal structure, leveraging on the community's ties and on the family structure, and building on the typical cultural and social features. This is its strength and, at the same times its limit at least for our target community (and for our special aims). In fact due to the above mentioned characteristics, though Al Hasan targets anyone in need without distinction, the Christian part of the fishing community does not seem to take into consideration this credit option. This not for any sort of restrictions put by the Micro-Credit Institution management, rather for the claimed differences in attitudes and habits of the two communities regarding the credit issues and of the societal structure.

Al Majmoua is another Micro-Credit institution operating all over Lebanon since 1997. It targets poor women in groups, and covers the sectors of informal commerce and agriculture. The loans range between 250 and 1 000$, but it can reach up to 3 000$ if previous loans were appropriately repaid. The maximum

lending period is 4 months, with 2 weeks grace period and interest rate of 2% per month. They ask for a group guarantee and the repayment rate is around 99%. One peculiarity of the Al Majmoua credit scheme is that they ask for a contribution of the applicant to the total project cost that can be up to 50 %. This way, and also thank to the group guarantee, they can rely on a stronger commitment of the applicant to repayment.

3.7 The impact of the market structure on the fishermen livelihoods. Conclusions

Regarding the impact of the goods' marketing structure, and of the cash advance scheme the target community makes use of, it has already been told when outlining the market configuration and the fishermen credit needs.

Here it might be useful to sum it up by remarking that the biggest constraint that the fishermen seems to be facing is the loss of competitiveness deriving from the reduced bargaining power due to the cash advance provided by the sellers at the beginning of each year. This amount is, for many fishermen, essential.

The virtual repayment of what it has been called a grant so far, but is actually a loan, is sensibly more costly that those made available by other micro-finance institutions operating in the area.

Still the fishing community seems to prefer the fish-seller support for different reasons, among which:

- the apparent flexibility of the "repayment" scheme makes it more appealing;
- in many cases the debts incurred beyond the yearly cash advance to face unexpected harsh conditions or simply for the daily household management, bond to them regardless the initial grant/loan is provided or not.
- the chronic uncertainty the community lives under, push them to rely on the closest counterparts, regardless them being the most convenient option or not.

- They do not seem to be really aware of the real cost of the money they are virtually borrowing.

This causes a direct loss of income, and undercuts the chance for the fishermen to find other more suitable marketing options, this way causing a further indirect loss. Moreover this vicious circle tends to fragment the community, leveraging on the weaknesses on the producers' side.

On the sellers' side this situation diminishes the competition between them to acquire the best fish as their supply is more or less given.

All this brings about the already-mentioned market rigidity that, along with:

- deeply rooted social issues (analysed and broken down elsewhere within the project activities);
- fishing sector structural limits – common to all the ports of Lebanon;
- overall economic weaknesses of the country - in terms of performances, sound policies, and community involvement;

makes the target community's socio-economic development a rather delicate and complicated issue to tackle.

Within the next chapter there will be given few hints to act against this, through the integration and the enhancement of the devised project activities.

4 Results and recommendations

Fisheries management is a complex process which combines aspects of biology, economics, gear technology, laws and their enforcement. All of this has to be balanced against the social needs of fishermen, who often have little alternative employment opportunities. This requires a sophisticated administrative and political framework which is often beyond the capabilities of even well-developed countries.

In our case the components which the project can actually act upon are far less relevant to the overall picture of the sector. Though the tools that the PMC can provide to the community, in terms of capacity development and community building, training and financial support (trough a small micro-credit fund), might actually help to enhance the performances of local fisheries in terms of income available to the fishermen, at least to meet the project goal. Indeed, through a well managed composition of the interests of the community, and of the *Fishing Syndicate* and *Cooperative*; through the involvement of the municipality; and in better coordination with other development intervention acting on the port area (though not targeting the fishermen community), it might be possible to build up a sound entrepreneurial-alike hub, revamping to some extent the community a lot.

The results to be achieved through these actions being aimed at re-establishing equilibrium in the stakeholders bargaining power by:

1. pushing the syndicate and the cooperative to hold an active role in the promotions of the interests of the fishermen and in the up-grading of the activities of the sector;
2. opening a cooperative venue to market the product;
3. creating a cooperative micro-credit fund to provide the fishermen with enough support to allow them to redeem from the influence of the fish sellers.

To these purposes here follows some hypothesis on a suitable micro-credit scheme to adopt (§4.1), and some suggestions on how to actually implement it

within a broader framework of activities institution's strengthening and training (§4.2, 4.3, 4.4).

4.1 Proposals for a sustainable, accepted, and effective micro-credit scheme

The target community is quite homogeneous in terms of income and needs, though it is not as integrated in social terms. The port, as the community itself, is divided between the Christian and the Muslim side. Of course they trade and deal with each other in pretty amicable terms; although it is an indirect purpose of the project activities to push them to redefine their relationship and to drive them to meet on the common ground of their well-being. Therefore setting a credit scheme which is suitable to the habits and to the beliefs of all is as important as devising its technical features to make it viable and effective.

Between the many categories that the relevant literature mentions, only two will be taken in consideration here venue: namely the **Credit unions/lending and savings cooperatives** and the **Islamic financing arrangements**.

Moreover, due to the fact that will be Caritas Lebanon that will provide and manage the micro-credit fund that will be made available to the target community, it might be useful for our purposes to provide a quick overview of the **Caritas micro-enterprise lending scheme**.

4.1.1 Credit unions/lending and savings cooperatives

Credit unions are cooperative financial institutions that began operating in developing countries in the 1950s. They applied the methodologies and lending schemes developed in Europe at the end of the nineteenth century.

These institutions provide savings and loan facilities for individuals. They act as intermediaries in money transfers between urban and rural areas and between savers and lenders. Credit unions also guarantee the circulation of funds in the administered communities. At present, Lebanon does not have such lending schemes.

Though this option has proved successful and effective in many cases, and it represents a good tool to foster community strengthening and third part

involvement, the local socio-political situation might complicate its management. Moreover, those kind of cooperatives generally manage only lending and saving, not integrating other activities (fisheries in this case) within their assignment. Not being within the project covering to create *ex novo* any institution, and actually not having Lebanon a regulatory framework suitable to actually operate it[1], what can be done in this regard is to look at some of its features and possibly integrate it, as a loan service managed by Caritas, within the activities of the local Cooperative. Here follows a rough example:

Definition

The members contribute a specific sum of money every week or every month, with each member receiving the accumulated total on a consecutive or revolving basis.

Methodology

The member of the cooperative (those who want to participate), meet every week and save (for instance) $10 each. At the end of every meeting, the X $ amount saved is given to a member of the group. After Y weeks (which corresponds to the number of members), the group might decide to renew the activity with the same or new members, or might decide to stop the activity altogether.

The size of the savings group, the amount saved, the frequency of meetings and the method, and the order of loan distribution all vary. In general, the recipient order is determined through the creation of a list of the prospective beneficiaries, which includes the dates of lending agreed upon at the meetings or by ballot.

In Latin America, this lending scheme is used for the purchase of expensive consumer goods such as cars and machinery. In this specific case it might be used for the purchase of gears and other equipment.

[1] *See: Micro-finance development gateway – Country Profile/Colombia for a detailed example of operational lending and savings cooperatives*

Services

Savings are obligatory, fixed and synchronized. The amounts saved and the loans disbursed are equal. No interest is charged, so those members who receive the earlier loans have an advantage over those who collect their loans at a later stage. These associations play a vital role in society, and the order of beneficiaries is flexible so that those in need can collect earlier than the others. Moreover, many of these associations have special funds for aid provision.

Strengths

The organization of the group is quite strong, and through this process, social interaction is increased and organizational skills are developed. The guarantee system for participants is effective.

Weaknesses

The loan may not be available when the member needs it. Although members are not supposed to withdraw their participation before the end of a complete cycle, there is a risk that some will after they receive their loans. Typically, the lifespan of these associations is short.

Examples

Savings and lending associations have different names in different parts of the world; in Egypt, *gamiyya* (association). In Lebanon, it is believed that this type of lending scheme is often practiced by Egyptian labourers who come from the same area in their country.

4.1.2 Islamic financing arrangement[64]

An English translation of the *Qur'an*[65] indicates that *"those who live off the interest on loans will never stand up, except in the way those whom Satan knocks down with a fit rise up again*". Observant Muslims refuse to pay interest on small loans, therefore Islam has an alternative financial system that

[64] *Rahul Dhumale and Amela Sapcanin have written a comprehensive study on Islamic financing, entitled "An application of Islamic banking principles to micro-finance", and published by UNDP and the World Bank in December 1999.*

[65] *T. B. Irving (al-Hajj Ta'lim Ali), 1992 – The Qu'ran, (Chapter III, The cow, verses 275 and 276), Goodwords Pvt. Ltd, New Delhi*

incorporates four different types of arrangements, and here is a quick outlook on the various kinds of Islamic Financial Arrangements.

Definition

a) *Murabaha* (based on the Arabic word for profit). With *murabaha* the borrower receives the goods (gears or equipment) purchased with the loan instead of money. Two or three people (the borrower, a committee member, a loan officer) make the purchase. The borrower then repays the purchase price of the goods plus a service charge equal to a certain percentage of that price instead of interest. Payments are made monthly or quarterly. Charging a percentage for technical assistance, transport and other services is acceptable in Islam. The nearest to traditional banking, *murabaha* is used when the committee does not want to assume a high level of risk.

   Regardless of the outcome, the borrower must pay back the loan, including the added service change. Some charge fixed loan application fees. (Suitable for our purposes)

b) *Musharaka* (joint venture or equity participation). With *musharaka* a partnership is established between the borrower and lender. The borrower provides part of the capital needed (the share varies from one programme to another) and is responsible for managing the project. The financing programme provides the remaining capital, along with supervision and technical assistance. At the end of the project, usually two thirds of the profit goes to the borrower for his efforts. The remaining third is split between the borrower and the fund, according to the amount of capital each contributed. The exact profit shares are agreed upon by the parties ahead of time, at the signing of the *musharaka* agreement. With this arrangement, it is the feasibility of the project rather than the creditworthiness of the borrower that determines whether the project will be approved or not. (Suitable, but needs lots of tailoring)

c) *Mudaraba* (partnership). With *mudaraba* the loan fund finances the entire cost of the project. The borrower contributes only the management and must keep careful records of all expenses and income throughout the project. In the end, the net profit is shared between the loan fund and the borrower,

according to the percentages previously agreed upon. (Suitable if encompassing a smaller share for the loan fund)

d) *Al-Hasan*[66] (benevolent) loans are disbursed to borrowers at no interest. A fixed application or service fee may be charged, in which case the loan involves the payment of *jo'alah* (a fee or service charge).

Other types of Islamic lending arrangements include the following:

e) *Bai'mu'ajjal* and *bai'salam* (sales contracts). Both loans bring no returns. *Bai'mu'ajjal* involves deferred payments (in instalments or a lump sum); the lender is not allowed to accept any payments for service charges or interest. *Bai'salam* is similar to forward contracts, where the money is paid up front and a promise is made to deliver the product at a later date.

f) *Ijara wa iqtina'* (leasing). A specific product is leased for a specific sum of money, part of which is applied towards the purchase of the product. Ownership is transferred after the final payment is made.

Methodologies

The Community committee meets with the loan officer and identifies potential borrowers (if no committee is available, borrowers meet with the officer in charge). Applications are studied by the loan officer, approved and sent to the credit manager. The local community committee, when one exists, participates in the management of the loans.

Services

Borrowers receive help with financing (securing loans), savings and investment. The funding institutions also provide technical assistance, carry out feasibility studies and follow up on projects.

Success criteria

The following are crucial for the success of the schemes outlined above:

- The system must be in keeping with the beliefs of the participants;
- Community representatives must participate in decision-making;

[66] *See § . page 110*

- A simple managerial and credit system should be put in place;
- The programmes require experienced staff, preferably those familiar with the community;
- Payments should be collected by a member of the community going house to house;
- Payments should be scheduled on a monthly or seasonal basis or on a combination of both, according to the project cash flow.
- The major advantages of this type of programmes are that loan funds will be spent on the purposes for which they are intended and, with *murabaha*, borrowers are able to access the best quality products at the lowest prices.

Weaknesses

For the *musharaka* and *mudaraba* approaches, the feasibility study must be very accurate, or the project may incur losses that will have to be absorbed by the fund; further, there is a definite need for technical assistance with these two financing methods. The level of risk-sharing by the fund is high, and Al-Hasan loans, without any profits or interest, might deplete the fund. In many cases the funds are available through donors that have a strong belief in the lending institution and its mission.

4.1.3 Caritas micro-enterprise lending scheme

Caritas has several programmes; professional rehabilitation and rural banks are the two that provide loans for income-generating projects. The former is a micro-credit programme initiated in 1985, and the latter was established in 1996 in cooperation with Catholic Relief Services (CRS), with support from USAID.

The micro-credit programme:

Organizational structure

Caritas provides field staff (volunteers from local communities), a credit coordinator and a credit assistant; the organization's accounting department works part-time on credit provision and follow up.

Methodology

Caritas has several development and charity programmes around the country. Their daily interaction and contact with the public and their image as a prominent Christian charitable organization has made outreach easy. Community volunteers help Caritas managing the programme in the field. The Caritas credit coordinator visits the areas where people express an interest in the programme. They explain the services available, and applications are filled out individually. Feasibility studies are carried out, and the approval process takes place at the office. There are generally no complications. Peer pressure is relied upon to ensure repayment.

Services

Loan services are provided; technical assistance is offered when appropriate.

Programme profile

Objectives: provide loans to entrepreneurs affected by the war; provide credit services in the field directly to the borrower; provide loans to handicapped people at subsidized interest rates.

Capacity: professional staff; 3500 volunteers including the volunteers for the loan programme; good outreach, especially in areas dominated by Christians.

Strengths

Reached more than 6,400 borrowers; costs are kept low because of volunteers; an index is used to rank the profitability of most of the projects carried out in Lebanon, which helps fieldworkers in project feasibility assessment.

Weakness

- Does not conduct business as a financial institution owing to its long history of charitable work.
- Funds depleted owing to devaluation of Lebanese pound after 1985, and owing to delinquency in loan repayment by many borrowers

Other Features

Target group:	income-generating projects (many loans given to taxi drivers)
Outreach:	40 offices all around the country
Type of projects:	any
Average loan amount:	$2 000
Loan range:	$500-$3 000
Loan duration:	12-48 months
Share of risk:	100%
Interest rate:	12% compounded (on Lebanese pounds) and 4% for handicapped
Cost per loan:	12 % for Lebanese pounds
Collateral:	fixed assets, bank account, pledged salary

Rural Banks/Self-financing village banks (in partnership with CRS):

Definition

- *Rural Banks*: these are savings and lending institutions run by local community committees. Their objectives are to secure financial services for rural people, build group solidarity, empower people to help themselves, and facilitate savings activities for members.
- *Self-financing village banks*: the rural community manages the village bank. The difference between a village bank and a community bank is that the former serves the whole village, and not only the members. The village banks are run by their members.

However, Caritas/CRS continues to administer the lending programme, providing advisory services. In later stages, the village banks should be self-sustaining and depending completely on savings for re-lending.

Organizational structure

A programme manager, a field coordinator, four field officers and an accountant work with the scheme.

Methodology

People learn about the programme and contact Caritas/CRS. A meeting is arranged in the village, where a field officer explains programme criteria and principles to the prospective borrowers. *This initiative targets women*. Those who are interested in the programme meet together, and if they are interested in participating, they form what is called a village bank; groups usually range from 15 to 60 women. No loan applications are required, but contracts are signed for loan disbursement to the members. No collateral is required; peer pressure is the guarantee. Cash is disbursed individually to each borrower through the group leader. No promissory notes are needed. Caritas/CRS meets with the village banks biweekly.

Services

Loans are provided to individual women; 5% of the loan amount must be kept in a savings account at a local commercial bank for the community to use for lending. No physical collateral is required; the guarantee is provided by the village bank members.

Programme profile

Objectives: providing loans for poor women; forming sustainable village banks.

Capacity: professional staff; experience and cooperation from Caritas/CRS outside Lebanon. An advanced computer programme called CALYX will be used for MIS purposes

Strengths

Around 1 000 women reached and around 26 village banks set up;

The programme has promoted reconciliation and solidarity by starting banks comprising mixed-faith groups;

Impact evaluation is carried out every six months;

Village banks are run by a local management committee and advised by Caritas/CRS.

Weakness

It does not serve men.

Problems: high volume needed to cover costs.

Other features

Target groups:	poor women
Outreach:	40 offices all around the country
Type of projects:	any (food processing, commerce, services, restaurants, agriculture)
Average loan amount:	$400
Loan range:	$200-$800
Loan duration:	4-6 months
Share of risk:	100%
Interest rate:	24% (2% per month declining balance)
Repayment rate:	100%
Instalments:	bullet payments at the end of the four month loan period; plans to make payments due monthly
Cost per loan:	around 24% (needs investigation)
Collateral:	group guarantee

4.2 SWOT analysis

Here follows a very informal SWOT analysis of the prospect to actually set up a micro-credit scheme. It takes into consideration only the features of the project target area and community and is intended to bring in some more hints, which might be useful when actually setting up the micro-credit scheme.

Strengths:

a) the market is potentially diversified, including fishermen, but also women and other household members;

b) more in general, the Government is aware of the importance of making available to micro-enterprises appropriates sources of financing and is working to develop an appropriate legal framework.

Weaknesses:

a) There is no real needs assessment, being the quantitative data very hard to collect (though, through the data gathering the PMC is regularly carrying on – it should be easier after a relatively short period to come up with a more consistent needs/impact assessment);

b) the risk of default is very high, due to low productivity, bad management skills, and "socio-political" issues;

c) the possibly required collateral is beyond the reach of the most of potential borrowers;

d) in case of loan subsidization, sustainability might jeopardized;

e) the funds available (about 30 000 $) are insufficient to cover the market needs;

f) in general there are still no clear Government policies with respect to micro-credit institutions and related legalities.

Opportunities:

a) market demand is greater than the supply;

b) despite the recent history and local community fragmentation, fishermen tends to have a good tradition of cooperation, makes them a potentially good target;

c) local community committees (the cooperative and/or the syndicate) should be encouraged to participate in the lending programme;

d) efforts should (and actually are being) made to work along with public officials in developing an overall vision and formulate relevant policies;

e) it can be learned from few positive experience encountered in throughout Lebanon;

f) there should be regular meetings between micro-credit institutions targeting the area (*ADR, Al Hasan, Al Majmoua,*) to share names of borrowers, idea and other resources.

Threats:

a) Interest rates (or similar) below the market rate could create confusion and undermine the long term sustainability of the lending tool;

b) social problems might occur due to fragmentation of the target group;

c) a deep rooted welfare mentality exists;

d) mismanagement might cause failure of the initiative and affect the community well beyond the expectations;

e) borrowers might benefit from more that one micro-credit institution or programme.

4.3 Integrating the micro-credit scheme within a broader set of community development and sector enhancing activities

Micro-credit is only one of the project tools devised to achieve the project goal. The reduced amount that will be made available, the lack of entrepreneurial pro-activeness of the majority of the community, the physiological sector constraints would make it rather ineffective if not integrated within a broader set of action aimed at community and professional development, which is what the PMC is already working for.

It does not seem feasible to actually get a rather consistent part of the community to break the tacit rules that preside over the local marketing structure only by offering them some extra financial opportunities. And this because:

1. some already exist (but do not seem to have such an impact on the economic development of the community),
2. it would not help to start a (though minimal) structural change of the local economics of fisheries (it would not tackle the production costs issue, the marketing issue for example).

What might help in this particular case would be creating (or re-activating) a sort of *fishermen organization*, which is fully recognized in its role and mission by the target community, and is able to gather a consistent number of fishermen to

jointly harvest, market, and price their product (eventually acting as a *Marketing Cooperative with Quota*[67]*)*.

4.3.1 The Organization

The *fishermen organization* (which should be called a cooperative, though we will keep not naming it for reasons that will be hereafter mentioned) should in charge of:

a) running the common selling point - through the person of its leader (potentially chosen between the fishermen, and by fishermen themselves) and of one or two administrative officers in charge of keeping the accountancy.

b) Stimulating the participation of the fishermen at regular meetings aimed at gathering new ideas and proposals, monitoring on the functioning of the organization itself, collecting orders for goods and equipment to be purchased all together (so to keep down the costs), and in regard of the credit scheme eventually adopted, allocating the available funds and/or defining priorities.

c) After an initial period, if succeeding in empowering the participants and actually driving them to develop concrete ownership of the initiative, it might get the fishermen to agree on terms of sale and minimum prices to be accepted for products; it may limit production if market is limited (so to keep the minimum price at acceptable levels – this to be done in consideration of the pressure put to the local products by the imported ones): it may harvest with fewer vessels and share costs.

d) It might keep very simple accountancy notes on each fisherman, to keep record of their revenues and expenses and to be shared with them in the appropriate circumstances – so to provide them with a concrete planning tool.

e) It may promote and host training sessions on fisheries technical issues as on basic accountability and administration; these training sessions being

[67] *Andrew Kitts, 2003 - Cooperatives in Alaska and Japan, Proceedings of the Rights-Based Management Approaches Workshops, June 10-13*

potentially hosted by the *fisheries organization*, but being a service provided by the micro-credit institution supporting the community.

Succeeding in setting up such an organization might make the micro-credit tool much more effective against the relative little amount available. Moreover, it might prime a virtuous circle of self financed loans that would make the micro-credit tool sustainable in the medium term.

All this together might potentially represent a sort of in kind (in terms of reputation of well management) and real (in terms of funds) collateral to be offered in case of larger loans to be requested by the organization to official credit institutions (e.g. Banks).

Besides the relations with the credit issue, the *fisheries organization* might positively impact on lowering the production costs (e.g. by placing common orders for the gears and other fishing equipment – as already mentioned), and increasing the revenues through marketing fish in the common selling point. In fact the functioning of the *Organization* should encompass such an activity as its primary goal. This to keep it acting mainly on concrete commercial terms, letting aside, at least for the initial period any other socio-political feature (peculiar to other relevant institutions already existing, though not effectively working - namely the local fishing syndicate and the local fishermen cooperative).

4.3.2 The Selling Point

The creation of the common selling point seems to be crucial in this framework (a) as a basic tool to push the fishermen to actually gather and collaborate, (b) to grant them better revenues. In this particular case though, the difficulty (besides the logistic matters) it might be to get the fishermen to actually sell their product there. As elsewhere mentioned (§ 2.3) in fact, the tie that bonds them to the sellers might be so strong to keep them from running the risk to switch to a different marketing (and eventually credit) option they are not familiar with. This way the selling point would casts its positive effect only of those that virtually need it less, namely those not getting any yearly grant from the sellers and being, therefore, in a relatively better position (though still in need of technical, financial and marketing support). For this reason it might be

necessary to determine a transitional financial mechanism (through the credit fund/scheme) to make available to the fishermen the amounts initially received to give back to the fish sellers, eventually getting the funds back through a percentage of the fish sold in the common selling point. Once the fishermen will be completely free from previous obligations, they could be entitled to fully participate to the *Organization's* peculiar credit scheme.

The selling point management, might be modelled on that of the Beirut/Dowra[68], where all the product is brought to the market, is sold through an open bid, and the share of each fisherman is diminished by a percentage that will be used for the statutory purposes (namely: daily market management and other organization's activities). The unsold fish, if any, could be sent to Beirut/Dowra to be marketed at the local wholesale market, using the same means of transportation that the other local sellers use.

4.4 A sustainable credit scheme

Regarding the choice of the appropriate micro-credit scheme, it goes without saying that the hints proposed at the beginning of this section (§ 4.1pag. 117) are only indicative and meant to provide a support to eventually build on the most appropriate solution. Tailoring services means of repayment, instalments, charges, etc. on the specificities of the target community is a basic principle of micro-credit. Moreover, it has to be kept into good consideration that the small loans are meant to target the poorest of the community, this in order not to run the risk to use this tool as a simple alternative to those already in place (Banks etc.). Finally there should be in encompassed some of the hints that the analysis local market revealed, such as[69]:

a) the importance of a flexible repayment scheme;
b) the prospect of providing, the borrowers with services and goods rather that cash;
c) the importance of bookkeeping by the fishermen on their financial (at least of those strictly related to fisheries management).

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[68] *See § .. pag. 94*

[69] *All of these features being potentially positively encompassed within the schemes mentioned at § page 122*

4.5 Conclusions

The situation observed during the field visit, which lead to the draft of these pages, was rather complex. The quantitative data gathered, seem to confirm those the project document bases on; they also seem to confirm that, through appropriate action, the project goal (increasing by 20% the income of the fishermen households) could be actually achieved.

Though, the qualitative base to build the devised actions on seems to be far less encouraging. The local fishermen do not seem to be really aware of the real losses deriving from local market structure. Neither they seem to be able to quantify their real incomes, expenses and credit needs. This leading to a generalized lack of planning capabilities that, besides many side effects, do not allow them to have any sort of entrepreneurial attitude. Moreover the local institutions (Cooperative and Syndicate) which could potentially benefit from the Action, at the same time multiplying its effects and eventually ensuring sustainability, seem to be incapable to organize them in this regard, and to comprehensively involve a large part of the community. As far as the local fishermen cooperative is concerned, it is totally inactive and apparently dumb to all the efforts that have been done so far to stimulate its involvement in the community affairs.

The problem in this case is that a cooperative-alike organizational structure is necessary to operate the common selling point, to interact with the micro-credit institution and act as an intermediary with the beneficiaries, and to work on diminishing the production costs. Of course it is not possible to set a new cooperative pulling together those fishermen willing to participate (it would be against the law), neither seems to be feasible to entrust the local syndicate with this role, despite the fact that its Leader is much mere involved in the local fisheries.

But still, an organized structure with clear regulations is necessary to enact the proposed activities. It could be a “spontaneous” association of fishermen, adequately made aware of the benefits of partnering, and trained on statutory and operational issues, to be entrusted; but this would obviously create further community fragmentations and would certainly be opposed by the most; and the

fishermen do not really have the tools to counteract this. Moreover this would make it much harder to involve those is greater need.

Many consideration of sociologic relevance can be done in this regard, but this is not appropriate here, the general purpose of this pages being only giving a comprehensive overview of the fish market in Lebanon and, more specifically of Tyre, and providing the PMC with some hints to fine-tune the project activities.

The most suitable actions apparently being, for the moment:

a) keep pushing to actually find a venue for the selling point and to equip it;

b) reinforce the community development activities, leveraging on the prospect - in terms of augmented welfare - of the alternative marketing scheme and credit facility;

c) keep collecting data on quantities marketed and related revenues so to have a sufficient database to accurately choose the appropriate micro-credit scheme and to assess its feasibility and impact.

ANNEXES

Annex I – Samples of the questionnaires used to gather quantitative data

For the fish sellers

Name	How many Kg purchased	From how many fisherman	How much roughly paid	How many of them were obliged to sell to him	Do they offer credit	How are they repaid

For the fishermen

Composition of the catch	Quantity	Daily revenue	Were they obliged to deal with a seller?	Type of gear	Cost of fuel	Number of fishermen on the boat	Size of the boat

Acknowledgement

It could be too long to mention here the names of all those who contributed to this work making themselves available to undergo for interviews and/or to give information about the activity they were actually carrying out in relation to the target community.

We thank all the fishermen who filled questionnaires with the Project Social Workers, gave data on their fishing gears, on their production and its value to the Project Technical/Scientific Staff, talked to Project Consultants in Economics about their economical situation informing on the problems of the credit they may/may not have access to.

We are grateful to the fish mongers who gave their contribution to know more about the dynamics of the fish price and on the system of credit actually operating in connection to the local market.

We express our gratitude to the Syndicate of the Fishermen of the South for their support to all our staff working on the port of Tyre; to all the Managers of Fishermen Cooperatives of Lebanon who gave information on their peculiar ways of marketing and ensuring credit in order to know about the Lebanese models out of which the Fishing Community of Tyre may shape its own; to the Ministry of Agriculture for the possibility to consult their database on Fishery.

We appreciated the kindness of the local NGOs to meet our personnel to inform about their activity in the fields focused by the Project.

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