

The comparative analysis of Mediterranean coastal communities: six case studies

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Jel classification, O18, Q57, O13

1. Introduction

Specific territorial conditions at social, economic and productive level, characterized by homogeneous organization patterns and strong relations among economic stakeholders, which are historically based on links of common tradition and culture, represent the roots of an integrated local development system. In this context, an industrial district, or industrial cluster may be defined as a socioeconomic institution, within a territory, characterized by a community of people and enterprises with traditional links (Becattini, 1989) and where, from a productive perspective, the mass of resources and competences has reached a critical threshold to provide a key position in a given economic branch of activity (Porter, 1998).

This paper provides an empirical application of the concepts introduced by Malorgio *et al.* (2017), which consider coastal communities as a specific case of industri-

Abstract

The aim of this study is to promote cooperation and actions for the benefit of coastal communities on the Southern and Eastern shores of the Mediterranean region by adopting an approach that integrates environmental, economic and social dimensions. These areas are traditionally based on Fisheries, especially small-scale fisheries (SSFs), which contribute to strengthen social cohesion, in that the seafood value chains still represent the backbone of the coastal economy. The six coastal communities analysed in this paper are located in Algiers port - Casbah (Algeria), Marsa Matrouh (Egypt), Tricase (Italy), Tyre (Lebanon), Nador Lagoon (Morocco), Zarzis (Tunisia). Conclusions emphasise the need to develop a comprehensive reference system for dialogue, cooperation and capacity building both at national and regional level. The cluster approach can help create a favourable cooperation and competition environment, generating income and employment opportunities for local communities.

Keywords: coastal communities, seafood value chains, industrial cluster, integrated development.

Résumé

Le but de cette étude est de promouvoir la coopération et des actions en faveur des communautés côtières sur les rives Sud et Est de la Méditerranée, en adoptant une approche qui intègre les dimensions environnementale, économique et sociale. Cette région est traditionnellement axée sur la pêche, et notamment la petite pêche, qui contribue à renforcer la cohésion sociale, car les chaînes de valeur des produits de la mer constituent encore la colonne vertébrale de l'économie côtière. Les six communautés côtières examinées dans ce travail sont situées à la Casbah-port d'Alger (Algérie), à Marsa Matrouh (Égypte), à Tricase (Italie), Tyre (Liban), dans la lagune de Nador (Maroc) et à Zarzis (Tunisie). Dans les conclusions, l'accent est mis sur l'importance de structurer un système de référence global pour encourager le dialogue, la coopération et le développement des capacités à l'échelle nationale et régionale. Le modèle du cluster pourrait contribuer à créer un environnement de coopération et de compétition favorable, générant des revenus et des emplois au niveau des communautés locales.

Mots-clés: communautés locales, chaînes de valeur des produits de la mer, cluster industriel, développement intégré.

al clusters, and propose a methodological approach to define their competitive characteristics, potentials and the current state of play. Furthermore, these areas are traditionally based on Fisheries, especially small-scale fisheries (SSFs), which contribute to strengthen social cohesion, in that the seafood value chains may still represent the backbone of the coastal economy.

The Mediterranean region (naturally and culturally inclined towards fishery) includes a multitude of fishery-related industrial clusters scattered along the whole Mediterranean coast (i.e. micro-clusters or coastal communities) characterized by:

- A defined spatial boundary, with specificities and interactions at biological and productive level.
- A homogeneity of enterprises (in particular SS-

Fs) from several perspectives: structure, technology, strategies, human capital, etc.

- Synergies consequent to well developed horizontal and vertical relations between the different local activities.
- An important role of institutions in fisheries management to provide support to enterprises.
- A traditional role of social relations with strong historic and cultural links.

Hence, SSFs certainly play an important role in the Mediterranean region (FAO, 2015; FAO and GFCM, 2016) even if statistical information is sparse and many small boats are not registered (Farrugio, 2015). A synthetic appraisal of the situation based on various sources (Sacchi,

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2011) has led to the conclusion that, in 2008, around 68,000 artisanal vessels (83% of the total fleet) were active. The country with the largest artisanal fleet is Greece (around 16,000 vessels), followed by Tunisia (10,000), Italy (9,000) and Turkey (7,000) (Sacchi, 2011). At present, small-scale fishers represent the largest part of the population involved in the fishery sector and businesses are family-based as the boat owner goes at sea with other members of the family (Farrugio, 2015). More than half (55%) of the Mediterranean fishers (approximately 250,000 people) are employed in the small-scale fisheries sector (Sacchi, 2011), but official statistics are likely to be underestimated, above all in the case of fishers without a boat and not motorized (Farrugio, 2015). The highest number of artisanal fishers is found in Tunisia (around 36,000 people), followed by Greece, Italy and Algeria (Sacchi, 2011).

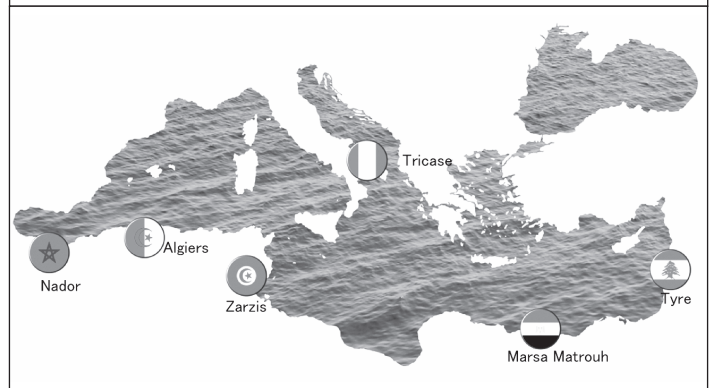
Within the context of SSFs clusters development in Mediterranean coastal communities, the present study reports some of the results of NEMO project, (Cross-border rural coastal communities development in Libya and neighbouring countries) funded by the Italian Ministry of Foreign Affairs and International Cooperation (MAECI/DGCS) and the Italian Agency for Development Cooperation (AICS), and carried out by CIHEAM Bari. The project is aimed at promoting cooperation and actions for the benefit of coastal communities on the Southern and Eastern shores of the Mediterranean region, by adopting an approach that integrates environmental, economic and social dimensions. In fact, the vital role of coastal communities as territorial civil outposts to cope with poverty, environmental impacts and migration cannot be underestimated. The Mediterranean region has to face all of these challenges which have become some of the most important development priorities. NEMO project is specially focussed on the following development goals: enhance fish products, restore traditional fishing good practices, promote short or direct distribution channels, empower fishers as local development drivers.

The aim of the present paper is to analyse a number of fishery-related coastal communities, located in six Mediterranean countries, following the approach described by Malorgio *et al.* (2017), which includes different steps and proposes a well-structured framework to monitor coastal communities and define development strategies.

2. The Coastal Communities

The six coastal communities investigated in this paper are located in Algiers port - Casbah (Algeria), Marsa Matrouh (Egypt), Tricase (Italy), Tyre (Lebanon), Nador Lagoon (Morocco), Zarzis (Tunisia). These Coastal Communities well represent the contexts found across the Mediterranean and hence, this study provides an insight into common problems and possible solutions which might be applied in similar conditions. The general features of coastal communities are listed below.

Figure 1 - The Coastal Communities.



2.1. Algiers port - Casbah (Algeria)

The fisheries port of Algiers is placed beside the commercial port, and is part of the municipality of Casbah, wilayah (province) of Algiers. The wilayah of Algiers is characterized by high urbanization and it almost lacks natural zones. A total of 3154791 people live in the wilayah, of which 38,825 in the Casbah municipality on a surface of 1,08 km² (35,949 people/Km²). Algiers is developing a plan to improve the urban infrastructure next to the sea coast, transforming this belt into a residential and touristic area. The capital of Algeria is an active industrial city (the agro-food sector in particular, with 720 firms), which has the most important commercial port of the country (about 15-18 million tonnes of goods pass through the port each year, showing a growing trend). Cohabitation of fishery activities and other maritime activities is not always easy. Fishing vessels, in particular, suffer from the effects of the commercial ports such as pollution and navigation congestion.

The fishery fleet of the port of Algiers counts 175 vessels (1,265 fishers), namely: 30 trawlers, 44 purse seiners and 101 boats of artisanal fisheries. Catches amount to about 3,500 tonnes per year, 91% of which consist of small pelagic, 5% of demersal fish, and the remaining of molluscs, crustaceans and large pelagic.

Processing mainly concerns pelagic fish (sardines, anchovies and tuna). Close to the port, there are two fish processing firms; four other firms are located in the wilayah of Algiers. The main destination of fish products is the local market while a small part is exported, especially to African countries. Exports include canned pelagic fish and, to a lower extent, fresh octopus, shrimps and flathead grey mullet.

2.2. Marsa Matrouh (Egypt)

Matrouh governorate is located on the north-western coast of Egypt, with a population of 447,846 people and a population density of only 1.6 people/Km². The city of Marsa Matrouh has an extension of almost 50 km along the coast. Pastoral farming has long been the main source of income for local Bedouins (representing 90% of the population), but with time agriculture (mainly fig and olive) has

become an important source of income. Tourism is one of the most crucial sectors for development in Matrouh, and the key element to boost this activity is the integration with the surrounding climate, culture and natural assets, which may offer tourists the opportunity of enjoying an environment-based experience. Thanks to this favourable environment, thirty-three hotels have been established in the governorate, of which about 25 in Marsa Matrouh. Hotels employ around 7,000 workers, and tourist arrivals annually reach a total of 450,000.

The fishing activity in Matrouh port is practiced by 60 feluca boats (without engine), 6 feluca boats with outboard motor and 17 boats with inboard motor (using trammel nets and longlines). Official landings are 272 tonnes per year. Approximately 80% of production is realized by larger boats and 20% by small boats. The main species caught are bogue, red porgy and red mullet. About 80-90% of the fishery products of the bigger boats are sold to the Alexandria wholesalers. In contrast, small boats mainly serve the local market. During the tourist season, restaurants and hotels in Matrouh prefer to buy their products from wholesalers in Alexandria, considering that (unlike local fishers) they can offer the quality and the quantity needed by hotels and restaurants every day.

2.3. Tricase (Italy)

The municipality of Tricase is located in the southern part of Lecce province, stretching over a surface of 43.3 km². The total population is 17,619 inhabitants with a density of 406.6 people/Km². Agriculture is developed on 2,204 ha by 1,869 farms, which means a very low average size (1.17 ha). Olive trees are widespread on 58% of lands, and cereals on 17%. The port is used only by artisanal fishing vessels and recreational crafts (maximum capacity is 211 vessels). The tourist sector is very important for this municipality. Employment provided by hotel and restaurants represents 2.7% of total employment. Since 2001, the number of tourist facilities has increased, and the quality (i.e. hotel stars) has improved. Arrivals are around 5,500 per year.

The fleet of Tricase consists of 11 boats, all small-sized (1.5 of average GT), using static gears. This artisanal fishery is highly multispecific. Local production is almost completely sold by fishers directly to local fishmongers, consumers or restaurants. In some cases, fishers or their family run a restaurant.

2.4. Tyre (Lebanon)

Located on the southern coast of Lebanon, 83 km south of Beirut, the town of Tyre has approximately 117,000 inhabitants (2003). Population density in this area is around 50,000 people/Km². The fishing harbour surrounded by fishing installations and traditional residential quarters constitute the heart of the ancient city. With the exception of few restaurants and coffee shops, no entertainment or leisure activities exist in the historic centre of the ancient city. Tourism (like other economic activities) is affected by the creeping political paralysis that has rendered the three

government branches either vacant or ineffective. However, since Tyre is one of the fewest places in the Country where public beaches are easily accessible, it still represents a common summer destination for domestic tourism. In the last years, only 2-3 vessels call at Tyre per month, mainly smaller RORO's discharging passenger cars from Europe.

In Tyre, we find 223 vessels, most of them polyvalent, and the average crew employed on board is 2.8 people per vessel. Thirty vessels are shorter than 6 meters; 166 are between 6 and 12 meters; 27 are classified as purse seiners. Yearly production is approximately 400 to 500 tonnes. Fisheries are highly multi-specific. The whole landing is merchandised by some local selling points that act as both wholesalers and retailers. When the supply is not enough to meet the demand, retailers sell imported products. The incapability to fulfil the demand can be both qualitative and quantitative due to small catches, low quality fish, no valuable or easily marketable species etc. Buyers in the souq mainly look for better prices regardless of the fish origin.

2.5. Nador Lagoon (Morocco)

Nador lagoon (115 km²) is a Ramsar site located on the eastern Moroccan coast. The lagoon is administratively part of the Nador province, including four municipalities. The population totals 274,535 inhabitants with a density of 500 people/Km², one of the highest in the country. Agriculture covers an area of 22,420 ha, with a prevalence of olive trees, vineyards, cereals and horticulture. Natural pastures stretch over 7,500 ha. Tourism potential is quite high, thanks to the wide range of beaches, biodiversity and landscape of the lagoon and the proximity of Gourougou mountain for mountain lovers. In the region, there are 23 hotels, with a capacity of 784 rooms and 1287 beds. Yearly tourist arrivals reach a total of 65,000 (80% are national), allowing direct employment of 870 workers, besides 1,450 indirect employees. The port of Béni Ensar also plays an important role for passenger transport between Europe and Morocco.

The fisheries fleet of the area is composed of two segments: around 100 boats (including seiners, trawlers and other gears) involved in coastal fisheries, all established in Béni Ensar port, and 515 boats involved in artisanal fisheries with static gears (average length of 5.3 m), established in 23 different landing sites, mostly inside the lagoon. Coastal fisheries realize, on average, a production of 9,860 tonnes. Artisanal fisheries land 1,140 tonnes. Both are multispecific. Profits and wages are considered quite high compared with other sectors.

The whole production of coastal fisheries is sold to wholesalers at Béni Ensar market. Other wholesalers (approximately 30) are involved in collecting fish from different sites all around the Nador lagoon. Fish is placed on rural markets (souqs), urban markets, restaurants, processing factories, or exported (molluscs, crustaceans and high value demersal fishes, especially to Spain). Almost the totality of octopuses, from both artisanal and coastal fisheries are bought by local processors.

2.6. Zarzis (Tunisia)

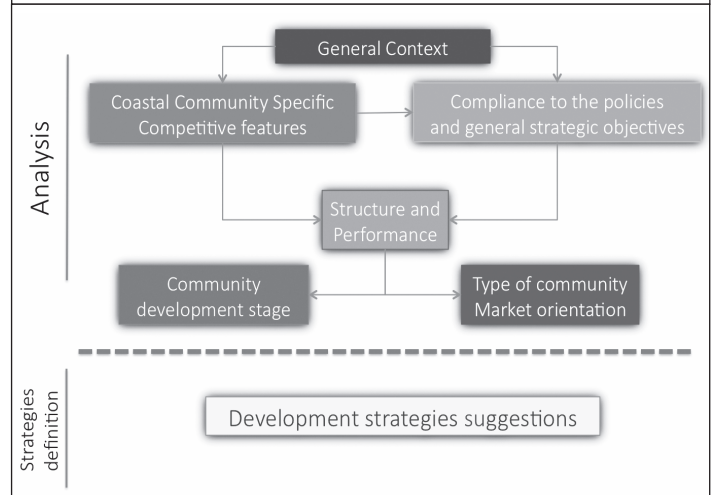
Zarzis is located on the southern shore of the Mediterranean. It is a delegation of the governorate of Medenine, with a population density of 50 people/Km², considerably lower than the national average. On the other hand, the urbanization rate is 78%, which is higher than the national average (66%). In Zarzis, cropland represents 85% of the total area. The main crop is the olive. While most agricultural products are mainly marketed and consumed locally, olives are processed by local oil mills (4,500 tonnes of olive oil per year) and partially sold to exporters. The industrial structure is underdeveloped. However, among small industrial units with less than 10 employees, in Medenine there are almost 150 olive mills 65 of which are located in Zarzis. There are also some important plants for canning sardines and freezing shrimp, octopus and cuttlefish. Zarzis is often considered as a logistic centre to visit Djerba or to arrange guided tours in the desert. Together, Djerba-Zarzis are among the major tourist areas in Tunisia (1,244,924 arrivals estimated in 2010), with 107 hotels and a capacity of 50,000 beds. Tourism generates 15,000 direct jobs in Medenine including 2,500 in Zarzis. The situation has significantly worsen over the past two years following the terrorist attacks which have forced many hotels to shut down.

The Medenine governorate has 5 fishing ports, among which Zarzis is the most important and accounts for 75% of the governorate production. Medenine has about 2,500 boats, 99% of which are used for coastal fishing (80% without engines). In Zarzis, there are 632 vessels, 90 with engines, and this is the only port where we find boats for high sea fisheries (2 vessels), tuna fisheries (1 boat) or using specific gears such as gillnets (6 boats) and lamparas (18 boats). Most coastal vessels use trammel nets, for a multi-specific fishery with at least 14 target species. Catches are mainly sold directly to wholesalers (62%) or sold in port markets (17%). The fish processing industry in the region has two main activities: the production of canned fish (sardines and imported tuna) intended mainly for the national market, and seafood freezing (octopus, cuttlefish and shrimp) intended almost exclusively for export.

3. Method

According to the methodology described by Malorgio *et al.* (2017), several steps shall be considered in order to implement a multi-dimensional analysis of the coastal community development, to provide an effective set of *development strategies suggestions*. The logic framework, linking the different steps (see Figure 2), is the following: the analysis of community context (*general context*) that provides a background of the *coastal community specif-*

Figure 2 - The Analytical Framework.



ic competitive features, and the analysis of *compliance with policies and of general objectives*. By integrating these three analytical steps, a *Coastal Community Structure and Performance* assessment can be implemented.

The results of the integrated *Coastal Community Structure and Performance* analysis provide a set of information, which support the assessment of the *Coastal Community Development Stage* and of the *Type of Community Market Orientation*. A more detailed description of the analytical framework and the assessment methods is provided in the following paragraphs.

Table 1 - Categories of information related to the coastal communities' context analysis.

• Geography and Natural resources
○ <i>Morphology (lagoons, beaches, hills, humid areas...)</i>
○ <i>Biodiversity (state, specific attractions...)</i>
○ <i>Land</i>
○ <i>Sea</i>
○ <i>Historical or tourist attractions (protected areas, historical sites, beaches...)</i>
• Governance
○ <i>Fisheries management</i>
○ <i>Land and water management</i>
○ <i>Stakeholder analysis</i>
○ <i>Cooperation system</i>
• Infrastructure and services
○ <i>Transports (roads, railways, ports...)</i>
○ <i>Energy infrastructure (problems...)</i>
○ <i>Markets (wholesale)</i>
○ <i>Credit system (private-public sources)</i>
○ <i>Government services (extension service, information-education, innovation, research)</i>
• Population
○ <i>Structure (age, density..)</i>
○ <i>Education</i>
○ <i>Occupation (income, specialization, gender, part time)</i>
○ <i>Urbanization</i>
• Economy
○ <i>Fisheries and aquaculture (number, employees, income...)</i>
○ <i>Agriculture (number of farms, employees, farm size, income)</i>
○ <i>Tourism</i>
○ <i>Trade (import-export of local products)</i>
○ <i>Processing activities (number, employees, etc...)</i>

3.1. Community context analysis

Information related to the context analysis were collected by local collaborators selected on the basis of their professional skills, which should cover the different dimensions of local integrated development (technical, economic, social and environmental), as well as on the basis of their third party or neutral perspective with respect to the community development. The information collected is integrated into the second step of the analysis carried out in the present study.

3.2. Coastal community competitiveness and performance

In a second step, the coastal communities performance has been assessed following the Porter's Diamond approach. A questionnaire was prepared to this end (see table 2). Six smart criteria were adopted to select the indicator numbers and related items: simplicity, sensitivity, reliability, trend/target and accessibility of data (Mitchell *et al.*, 1995). The smart criteria consider the necessity to maximize the analysis effectiveness given the existing constraints on data collection (financial and time resources, interviewer's skill and, above all, the respondent's acceptance of the questions in terms of clarity, availability of information requested, and cultural acceptability of the question). The six dimensions influencing the development of the local economies, as indicated by Michael Porter (Porter, 1998) and integrated by the analytical frameworks of flexible specialization and collective efficiency, largely adopted in the study of local economies applied to developing countries by other authors (Neven and Dröge, 2000), have been considered. The data collected through interviews to local stakeholders are measured based on a Likert scale from 1 to 5. For each dimension an aggregated score was calculated as an average of each dimension indicator. In particular, eight stakeholders' categories involving fishermen cooperatives and trade unions' representatives, government and public agencies representatives, traders, researchers, ship owners and non-governmental agencies have been interviewed for each Community. The respondents represent influential and informed stakeholders within the different communities, covering a wide range of different

perspectives and interests related to the Coastal Community development. The reliability of the information gathered was first evaluated through the following actions: i) interviewees were contacted and asked to evaluate the reasons explaining the substantial difference, if any, of the scores provided and, where appropriate, to provide their motivated choice of a "reliable" Likert scale score; ii) the interviewees' evaluation was integrated by the context analysis findings; iii) a final decision on divergent indicators' scores was taken by the team responsible for the report implementation based on *i* and *ii*.

A similar operationalization of Porter's Diamond Approach, adopting Likert scales to assess the local systems of production competitiveness, was performed by Bakan and Doğan (2012) in an application to the Turkish food sector. The present study is the first application of a similar approach to a fishers' coastal community. A descriptive and qualitative description of the dynamics characterizing the different clusters and the Porters' dimensions relation was performed. The latter provides useful insights into the dynamics of clusters of activities, while the former allows for the assessment of a score. For each dimension, an aggregated score was calculated as an average of each dimension indicators. As a consequence, the different categories of competitive performance scores are: i) extremely low (1-6), ii) low (7-12), iii) low-average (13-18), iv) average-high (19-24), v) high (25-30).

3.3. Compliance with policies and general objectives

In a third step, compliance with the specific objectives of NEMO project was assessed based on the results of the Porter's model and context analysis. The different indicators and quantitative data resulting from the context analysis were aggregated and specific scores were assigned for compliance with each objective; the scores were assigned by the project team and discussed with local experts (local collaborators) in each community. Based on a Likert Scale ranging from 1 to 5, the aggregated coastal communities compliance with NEMO 12 specific goals (Malorgio *et al.*, 2017) was scored as follows: i) extremely low (1-12); ii) low (13-24); low-average (25-36); average-high (37-48); high (49-60).

3.4. The coastal community development stage

The fourth step involves the assessment of the coastal community development stage. The context analysis and the comments to Porter's Diamond questionnaire provide the necessary information to define the development stages. The aggregated scores assigned to each dimensions included in the community development stage description are attributed by the project team and verified through the feedback provided by the local experts (local collaborators) in each community. The score, based on the adoption of a Likert Scale, is

Table 2 - The Coastal communities competitive performance dimensions and indicators.

1. Context for fishermen strategy & rivalry	<i>Level of catches, Fish price and cost levels, Safety at work, Quality of life Performance of fishing technique, Marketing strategy, N. of people involved in fishery who entertain personal relations and discussion on their activity</i>
2. Factors' condition	<i>Availability of resources (fish at sea), Sustainability of practices, Quality of fish and fish handling, Accessibility of technical inputs (fuel, gears, nets), Obsolescence of equipment (boat, engine), Attractiveness of labour, Availability of labour, Quality of fish and fish handling</i>
3. Related and supporting industries and services	<i>Presence of related processing activities, Access to Credit, Presence of market infrastructures, Extension service, Relationship with buyers (power relations), School - education availability and quality, Interaction with tourism activities, Interaction with other maritime activities</i>
4. Demand conditions	<i>Importance of local demand, Importance of tourists' demand</i>
5. Government	<i>Financial support, Market policy/regulation, Other government actions, Infrastructure policy, Environmental legislation, Social legislation, Participation and collaboration between private and public institutions</i>
6. History and Chance	<i>How much did tradition shape your fishing management and products' characteristics?, How much did Chance (events out of the community control) shape the community peculiar characteristics (if any)</i>

the following: i) unstructured (1-6); ii) infant (7-12); iii) initial (13-18); iv) take-off (19-24); v) maturity (25-30).

3.5. Market orientation

The last step of this analysis provides an indication about market orientation for integrated territorial development strategies. This is of paramount importance in order to understand the best strategies for an integrated development of coastal communities because market orientation affects every dimension of the coastal communities. Among others these dimensions include economic and technical aspects like fish production, processing and distribution model, and consequently the development of structures and infrastructure; social aspects like the coastal community food sovereignty; the social relations within and outside the community, environmental aspects related, for example, to tourism development model and the subsequent impact new residential areas).

The variables adopted for the classification of the different communities' present and desirable market orientations have been selected considering the need to evaluate how much the coastal communities: maximise the local demand satisfaction (food sovereignty) while maintaining an appropriate economic size for food production to support the social and environmental dimension of sustainable local development. A further important aspect to be considered is the role of local tourism as a source of financial support to the development of sustainability in the coastal community.

As reported in the description of the theoretical approach (Malorgio *et al.*, 2017), the different market orientations (present and potential) combine the following basic categories: i) orientation to local markets (coastal community resident population, tourists); ii) orientation to external markets (regional, national or international)

4. Results

4.1. Community context analysis

The characteristics of the six coastal communities analysed in this study differ from an environmental, social and economic point of view. This leads to various types of communities and development performance and, therefore, to different strategies for future interventions. In particular, SSFs display different levels of integration in the economy of coastal communities and with a different relevance degree.

Nador (Morocco) is the coastal community which proves to be more fishery-oriented. It has a large fleet, including both industrial and artisanal fisheries. Processing industries, mainly involved in products for export, are also well developed and local population is interested in fish quality aspects. This makes it possible to differentiate the marketing channels and support relatively high prices. Furthermore, the area has several environmental assets (the Nador lagoon is a Ramsar site) and the Government is strongly interested in fully developing the tourist potential of the lagoon. This development process may represent an opportunity for artisanal fisheries if involving the different actors in the coastal communities are taken into consideration.

Three coastal communities, Marsa Matrouh (Egypt), Zarzis (Tunisia) and Tricase (Italy), are strongly tourism-related communities, featuring attractive environmental and cultural characteristics. In all these cases tourism certainly represents the driving activity of development. Integration between fishery and tourism is noticeable in Tricase, where fisheries and local fish products, despite the low number of vessels and the proportional low fish production, can be seen as one of the attraction of the territory. Diversification (pesca-tourism), and direct sale strategies are implemented.

Conversely, in Zarzis and Marsa Matrouh, tourism infrastructures are oriented to low cost products, and non-local fishery products (imported, frozen or from aquaculture) are preferred when they are cheaper than local products. The situation seems more critical in Marsa Matrouh, where local fishers are probably not able to provide a stable supply and the local population is less interested in quality and originality of fish products. However, in Zarzis the local population appreciates local fish and the presence of processing plants increases the development of fishery by adding value to the primary production.

Finally, two coastal communities, Tyre (Lebanon) and Algiers (Algeria), correspond to fully developed urban areas. These cities are both interesting places for local tourists and foreign visitors. This would permit, at least from a theoretical perspective, to count on a large demand from local consumers, good infrastructures and good potential synergies with other Blue Growth activities, such as ship-building and repairing, ports, shipping, tourism, recreational activities, and fish processing. At present, these potentials are much better developed in Algiers. The situation in Tyre is critical from an institutional point of view, due to structural political instability; the port infrastructure is not well developed, and processing activities are completely missing. In contrast, Algiers exhibits positive development perspectives, supported by current and future projects for multifunctional development of the port areas. However, also in this case, artisanal fisheries are poorly integrated with processing firms and tourist activities.

Social and governance relationships inside the coastal community are well-developed in Algiers, Zarzis and Nador, especially from the public perspectives. In these three cases, in fact, governmental bodies and research centres seem to be deeply involved in the management and development of coastal activities and fisheries.

Public bodies and research centres are, on the contrary, poorly involved in Marsa Matrouh and Tyre. In Tyre, the lack of local authority is partially compensated by the role of international institutions. In Zarzis too, foreign cooperation agencies play an important role. The case of Tricase is very different because of the positive contribution to the local development (e.g., policies, funding opportunities) provided by the EU. Furthermore, in Tricase, a close collaboration exists between between fishers and other local institutions (civil society, research).

Finally, the analysis showed that in most cases, fishers are organized in groups such as associations (Zarzis, Nador,

Marsa Matrouh, Algiers), cooperatives (Nador) or syndicates (Tyre, where the local cooperative is not active anymore), that can represent the initial driver for future development projects. Tricase is the only place where a similar formal structure does not exist.

When comparing the coastal communities performance dimensions it must be remembered that their influence on the community development can be very different according to the dynamics that their integration created. A simple sum of the various dimensions' score can thus be misleading.

The clearest example concerns environmental, historical and cultural assets, which are a common characteristic of all the case studies, and of most Mediterranean coastal areas. However, many other elements are necessary in order to transform this opportunity into a true development driver. Where these elements have been efficiently developed, coastal communities can count on a high number of hotels, restaurants and tourist arrivals. Here again, this element may represent a true strength for SSFs, or just an opportunity, if fishers have not been able to build an integrated supply chain with hotels and restaurants, a direct sale strategy or a diversification strategy.

In most cases (Marsa Matrouh is an exception) local consumers appreciate traditional products and appreciate more local fish. Processing industries are important opportunities to diversify supply chains but, with a few exceptions (the octopus in Nador which is processed and exported), links with SSFs are not very developed.

Weaknesses that are quite common to all case studies deal with the fishers' poor knowledge of sanitary rules and quality standards, the unsafe job conditions and the obsolescence of the artisanal fleet. A widespread condition is also the difficult access to credit, which is often provided by fish wholesalers and retailers, thus weakening the fishers' marketing relationships compared to the other players of the supply chain. On the other hand, availability (and price) of technical inputs such as fuel, ice, gears, is directly related to the distance of marginal communities from the main ports. Actually, marginality and fragmentation of landing places also create problems to marketing, and lead to a proliferation of supply chain intermediaries. Problems of coexistence between SSFs and other activities are observed only in the large port of Algiers, where shipping causes problems linked to navigation and pollution. Threats for the future include the poor knowledge of fish stocks' health (catches are decreasing in several areas) and the increasing competition with other fishery segments, including both industrial and recreational fisheries. Finally, threats can also come from unexpected events: in several Mediterranean countries, for example, political instability and terrorist attacks (affecting in particular tourism) are factors which deserve further consideration.

¹ The scores reported in this section reflect the need to provide synthetic indicators to better locate the hot spots and bottlenecks influencing the communities' development. They are not meant to be used as a tool for comparing the different communities performance since the score relevance depends on the context characteristics in the six coastal communities analysed, which are very different from an environmental, social and economic point of view.

4.2. Coastal communities competitiveness and performance¹ (Porters' analysis)

Using the scores of competitive performance developed in the Porters' analysis, the six coastal communities are classified in the following order: Tricase 20, Nador 19.5, Algiers 16, Zarzis 16, Tyre 15, Marsa Matrouh 13. (see table 3 and Figure 3). However, as previously stated, taking into account the different dimensions involved in the competitive performance, these differences can become more or less relevant, according to the relative weight of the different dimensions in terms of their contribution to the overall competitiveness performance.

In this study, weighing has not been considered since it would introduce an excessive level of complexity into the analysis. Anyway these results can provide an organized a broad knowledge base for local stakeholders' and other experts able to better evaluate the dynamics relating the different dimensions to the overall local development.

The *Firm strategy, structure and rivalry* do not show significant differences in the six case studies: in fact, all areas exhibit a score between 2 and 3 out of 5 (see Figure 4).

The items defining this score show a relatively higher performance as far as fishery structure, cooperation and knowledge exchange and external contacts in Lebanon, Morocco and Tunisia are concerned; the same communities, in turn, show a very low score as regards their marketing strategy. Based on these findings, the above-mentioned communities are socially coherent and open to communication but they have a low marketing strategy capability.

A potential for developing a socially coherent community is not supported by an economic strategy able to generate an integrated local development. In the other communities of Algeria, Egypt and Italy, the situation is totally different because a better marketing management is not supported by a coherent social structure. Differences between the communities are not so clear as far as the contractual relations with buyers are concerned, which in general seem quite unfavourable to fishers, confirming the usual patterns where primary producers are the lowest link in the value chain.

All of the *Factors' Conditions* (Figure 5) show similar low-average scores between 2,5 and 3,5 out of 5.

The different items defining this dimension of the Coastal Community competitiveness are heterogeneous. In particular, the quality of the environment is much higher in the tourism-oriented communities, as one should expect, while in Lebanon and Algeria the values are much lower. Clear patterns differentiating the coastal communities do not emerge, but a relevant homogenous result is related to the fish quality, which, with the exception of Nador, never shows high levels. It is therefore important to understand how to improve, where possible, the fish availability and quality. Another not unexpected result relates to the gender issue, where women do not seem involved in the coastal community activity, with the only exception of Nador. While the availability of financial inputs seems in line with the average score, the fixed investments generally show low-average scores. This results from

Table 3 - Coastal Communities performance.

Results	Algiers port - Casbah Algeria	Marsa Matrouh Egypt	Tricase Italy	Tyre Lebanon	Nador Lagoon - Morocco	Zarzis - Tunisia
Coastal Community Competitive Performance	Low-Average: 16/30	Low-Average 13/30	Average-High: 20/30	Low-average: 15/30	Low-Average close to Average-High: 19.5/30	Low-Average: 16/30
Community Development Stage	Initial, close to take-off 18/30	Infant: 11/30	Take-off: 21/30	Initial 13,5/30	Initial: 16/30	Initial: 14.5/30

the relatively small scale of the artisanal fishing activity, which requires low financial inputs (the perception of availability is in fact not so bad) and at the same time does not encourage fixed investments. Considering the artisanal nature of the investigated fishing activity, it comes as no surprise that labour quality and availability is generally low-average, while the labour flexibility is higher in the most performing communities of Tricase and Nador, as regards the factors' conditions.

When considering the presence of *Related And Supporting Industries-Tourism* (Figure 6), the scores are quite good for Algiers, Tricase followed by Nador, Marsa Matrouh and

for Tyre, even if strictly related to an urban settlement, the community suffers from extreme political instability affecting the functioning of the whole economic, social and political system; this is also true, although to a lesser extent, for Zarzis. In Marsa Matrouh the main reason for a lower presence of related and supporting activities can be explained by its main orientation towards tourism and the marginal role of artisanal fishing activity.

The performance related to the *Government* role (Figure 7) in supporting the coastal Communities is clearly influenced by the EU policy in the case of Tricase (Italy); Algiers and Nador also show average-high scores due to fact that they belong to the Country Capital (Algier) and have a fairly developed and relevant sector for the country economy (Nador); in Tyre and Zarzis, on the other hand, the presence of political instability heavily influences the government role in supporting the fishing coastal communities. In Marsa Matrouh, in Egypt, the fishing activity is regulated very well (thanks to the National policy in force), but local community empowerment and public-private collaboration still remain limited due to the marginal role played by the artisanal fishing activity when compared to the tourist sector.

Even more pronounced are the differences in demand conditions (Figure 8). As explained earlier, *Demand Conditions* are particularly poor in the case of Marsa Matrouh and good in the case of Tricase and Nador. They are also good in the case of Tyre where demand is much higher than supply and where fish have an important role in local gastronomy.

Last but not least, *History* and *Chance* (Figure 8) play a particularly prominent role in the case of Tyre and Zarzis in relation to wars and political instability. The positive values related to chance in Tricase and Morocco can be explained by different causes: the return of qualified human resources in Tricase, and the infrastructural works in the Nador Lagoon; the historical legacy of Tricase, Algiers and Zarzis support the competitiveness of the communities in terms of fishing tradition and tourist attraction; the latter could also be a positive development factor for Tyre, in Lebanon where, as already reported, the long term political instability and wars strongly reduced the historical heritage in terms of cultural attractiveness and positive gastronomic tradition.

Figure 3 - Coastal Communities Competitive Performance (Porters' Diamond approach).

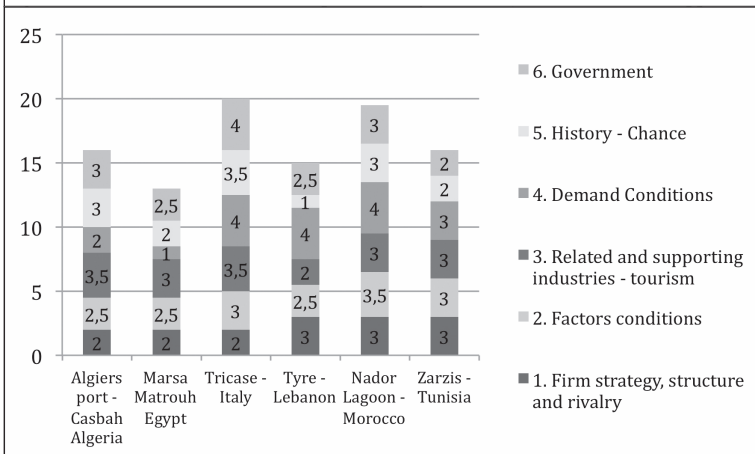


Figure 4 - Firm strategy structure and rivalry comparison.

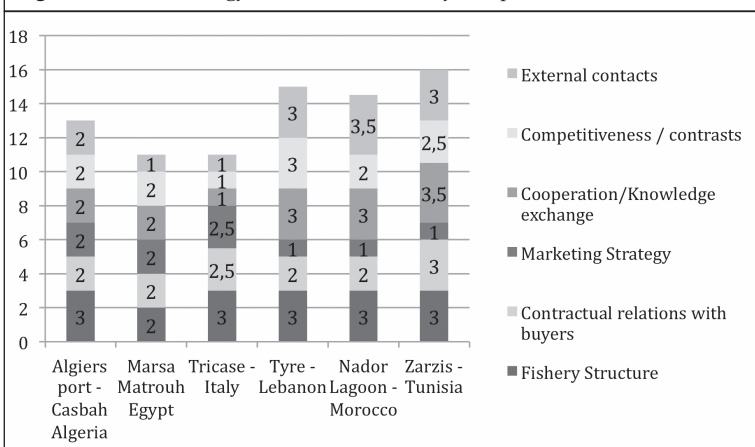
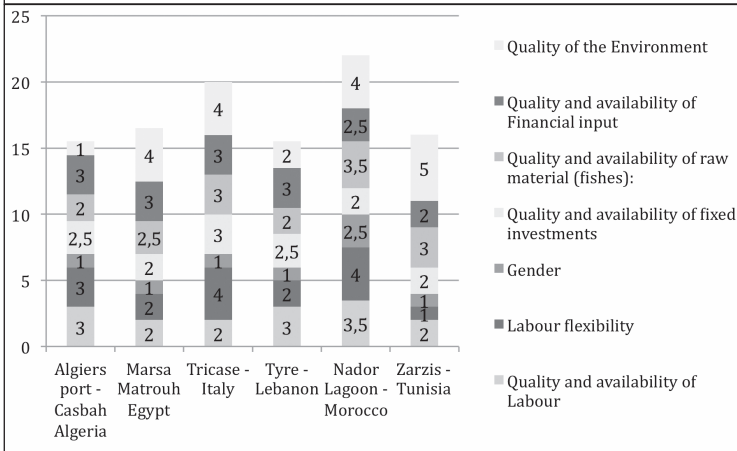


Figure 5 - Comparison of factors conditions.



4.4. Market Orientation

Among the different communities, only Tyre shows a correspondence between the present and potentially most efficient market orientation, even if in the case of Tyre the present external market accessibility is strongly constrained by political instability and the choice of supplying fish mainly to local population is not an option. In Tricase, Marsa Matrouh, Algiers and Zarzis, the potential market orientation for small scale fishery products is the tourist market, while the present market orientation is mostly related to local consumption (Marsa Matrouh, Tricase and Zarzis) or national external markets (Algiers). The possibility to strengthen a tourist-oriented market strategy seems more difficult in Zarzis at present, because the prevalent international tourism flow is dramatically reduced by security concerns. In Tricase, Marsa Matrouh and Algiers the tourism flow is mainly domestic (Marsa Matrouh) and less influenced by security concerns (Tricase, Algiers) (Table 4).

A different potential market orientation can be more appropriate in Nador, where a well-developed fishery sector, both in qualitative and quantitative terms, can provide economies of scale, leading to competitive access to export markets and fulfilment of local consumption demand.

5. Conclusions and recommendations

This study provides a well-structured analytical framework including different dimensions and factors which have to be considered for a coastal community analysis. It describes the coastal communities structure, investigates the relations between the different community stakeholders and evaluates the coastal communities economic, social and environmental performance.

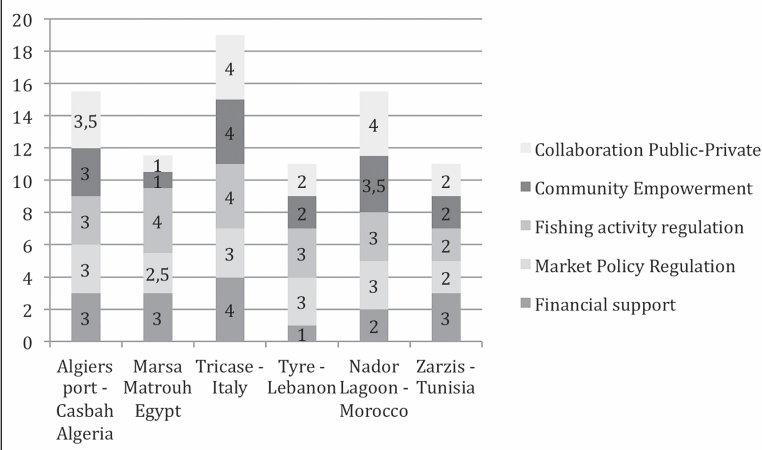
A general aspect, common to all the contexts examined, is the need to relate more closely the local artisanal fishing activity and the other tourist, cultural and rural activities in a comprehensive sustainable development model. Emphasis should be placed on integration of different economic, social and environmental characteristics of the coastal communities as a potential driver for their sustainable development. To this end, the opportunity of aggregating a series of activities that encompass all of these dimensions into one or a few relatively small pilot projects should be considered. This could represent a first step towards a progressive enhancement of community trust and commitment, which might strengthen their acceptance of relatively new and unfamiliar development strategies. The identification of local innovation leaders able to mediate between the different internal and external stakeholders in the community is also paramount in order to support a bottom-up development process. The analysis confirmed that some actions must be proposed to integrate activities and sectors, focussing more specifically on co-management, labelling, traceability, right to work and social protection, in line with the objectives of Blue Growth approach (FAO, 2014; Piante and Ody, 2015) and EU policy.

4.3. Compliance with NEMO specific goals and community development stage

The scores for NEMO specific goals and community development stage summarize and provide a different perspective of the results relating to context analysis and coastal communities competitive performance. Consequently, Tricase is the only case study where an average-high compliance with NEMO goals and a take-off development stage can be observed. Compliance is low-average in the case of Nador and Algiers, and low in the other cases.

Marsa Matrouh is the less developed case (infant stage). All the other situations are at an initial development stage (Figure 9). The most frequent items related to a low development level are the horizontal and vertical relations along the fish chain and the differentiation and typicality of products. The most frequent items related to a low level of compliance with NEMO objectives concern the lack of policies and initiatives to promote product differentiation and enhance the food chain, and its relations with the community context (territorial marketing).

Figure 7 - Comparison of Government role.



- advocacy campaigns
- products enhancement
- training
- establishment of an observatory of the Mediterranean Coastal Communities collecting relevant information to monitor and support their development.

Such initiatives, co-designed and implemented with the key actors identified in the study, could contribute to the enhancement of the productive, human, social and environmental capitals of the Mediterranean region. They can also foster inclusive, sustainable and integrated development of coastal areas and broaden individuals' and communities' prospects and aspirations. Knowledge, skills and product development, strengthening of existing links and creation of new functional linkages along the supply chains and between economic sectors, encouraging institutional cooperation, introduction and diffusion of good environmental management practices, would help capitalize on existing strengths, develop identified potential of the small-scale fishing sector and increase coastal communities' resilience to environmental disasters, massive migration flows, social conflicts and economic crisis.

Raising awareness about the multi-dimensional and big challenges faced by the small-scale fishery sector remains critical to attract well-tailored investments in the coastal communities and help them to consolidate their fundamental role as territorial outposts permanently open to gather the community's needs, equipped and trained to identify possible actions, empowered to envision local development strategies.

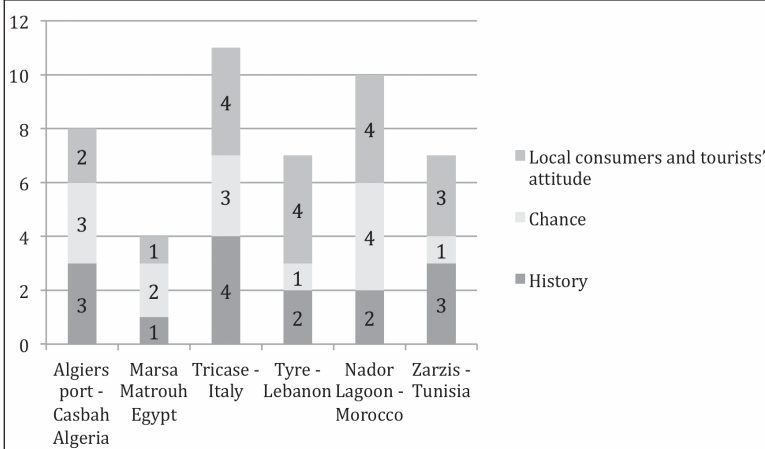
Exchange of experience and joint initiatives between coastal areas and territorial outposts across the Mediterranean is essential to facilitate multi-actor dialogue, build and strengthen networks of competence gathering local and national institutions, international bodies, scientific institutions, universities, companies, NGOs, associations.

The approach developed by this model can be applied to other Mediterranean coastal areas, where there is a need to relaunch a development process and where International Agencies, National Institutions and private sectors aim to improve the living conditions of the coastal communities (Morocco, Algeria, Tunisia, Egypt, Lebanon, Gaza Strip.)

In the framework of this project, CIHEAM Bari puts much effort on sharing and discussing the results related to the "Coastal Communities performance", in terms of social, economic and environmental aspects and started to identify common actions in each territory with relevant stakeholders, building on existing natural endowments and socio-economic opportunities, to enhance community development prospects and their capacity to provide ecosystem services and value-added products and services.

Governance is particularly important to determine access to resources, integrity of resources and distribution of ben-

Figure 8 - Comparison of History-chance and local demand attitude.



The conclusions of this study emphasise the need to develop a comprehensive reference system for dialogue, cooperation and capacity building both at national and regional level. The aim is to promote common understanding and effective practices through a consultation process which shall involve the Mediterranean Countries, while respecting their sovereignty in this sector, and other stakeholders. The district/cluster approach can support the definition of effective policies and strategies aimed at defining a favourable cooperation and competition environment, offering income and employment opportunities to the local communities.

The results suggest that further cooperation initiatives should be undertaken to stimulate the development of the Mediterranean coastal communities involved. Therefore, this study is the first step towards the preparation and implementation of more specific development plans that should be better defined and adjusted to the local contexts.

Possible common initiatives, involving a network among the Mediterranean Coastal Communities, should support:

- exchange of best practices
- joint management of activities such as research and/or technical economic development projects,

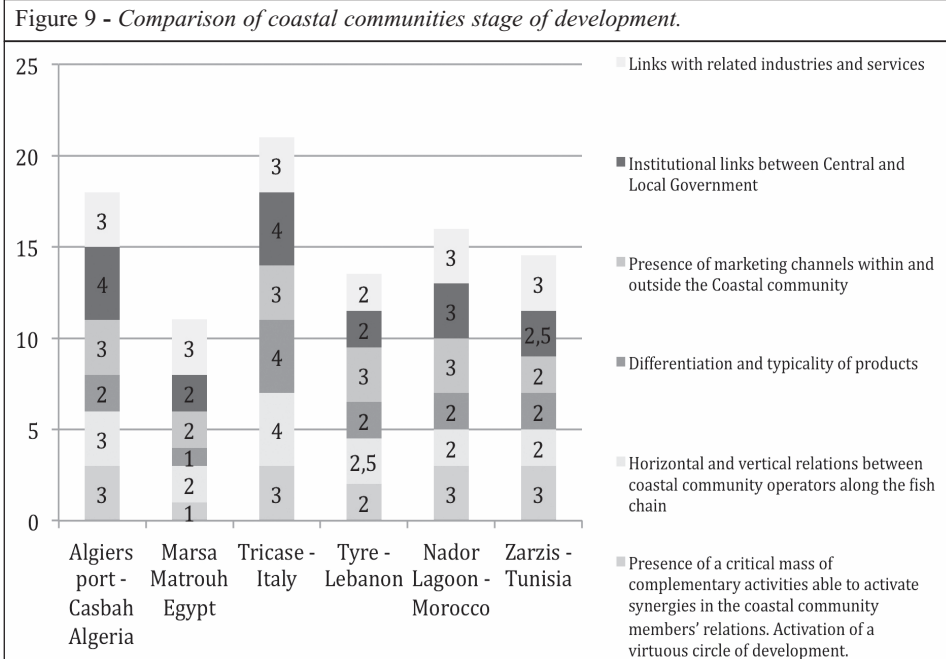


Table 4 - Coastal communities market orientation.

Results	Algiers port - Casbah Algeria	Marsa Matrouh Egypt	Tricase - Italy	Tyre - Lebanon	Nador Lagoon - Morocco	Zarzis - Tunisia
Market Orientation	Present orientation towards national and external markets. Potential for local urban residents and tourist demand for traditionally fished fish. (Niche production as opposed to Commodities)	Present orientation: local, mainly towards residential population. Potential for non-residential consumers (tourists)	Present orientation towards local residential population. Potential towards non residential population (tourists)	Present orientation: local, orientation mainly towards residential population, Potential orientation: local residential consumers	Present: local orientation mainly towards residential population, Potential for increasing export. Balanced internal/ external markets development	Present orientation: local, mainly towards resident population. Potential for non residential consumers (tourists)

efits. Human rights instruments are important effective tools to help ensure that governments fulfil their obligations in this respect, including those pertaining to the right to food. Too little attention is given worldwide to how different individuals and groups (including poorer and marginalized people) and poor consumers generally gain, lose, or are excluded from access to resources and to other productive supply chain assets.

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