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REDUCING POVERTY FOR ARTISANAL FISHERMEN IN MOROCCO

By Charlotte de Fontaubert, Ph.D. and Peter Zara

ABSTRACT

The small-scale Artisanal Fisheries Project, a significant part of the $697.5 million MCC compact signed between the governments of the United States and Morocco, is a $120 million effort to reduce poverty among some of the poorest Moroccans: small-scale artisanal fishermen. This investment aims to increase profitability for these fishermen and improve food safety through concerted actions along the fish value chain from landing sites on undeveloped beach fronts to mobile vendors who sell door-to-door to modern market platforms that maintain a variety of quality fish to consumers' plates. The Artisanal Fisheries Project emphasizes two important and complementary considerations: (1) removing intermediaries between targeted beneficiaries and the final market and (2) ensuring sustainability of fish stocks upon which they depend for their livelihood. A number of critical lessons have emerged from the project, including the importance of leveraging the Moroccan government's existing expertise, strong and consistent engagement with local stakeholders to avoid land disputes, the need to communicate project benefits in light of competing development demands (e.g., fishing versus tourism), and the added time and costs of enforcing international standards for construction that are outside the typical norm and standards.

Context of the Project: Fisheries in Morocco

With access to both the Mediterranean Sea and the Atlantic Ocean, Morocco is blessed with over 3,500 kilometers of coastline, giving it access to some of the world's most productive fishing grounds, including the rich waters off the Canary Current upwelling. Helping small-scale fisheries take advantage of the wealth of marine living resources to further their economic and social development is one of Morocco's key development objectives, as set forth in a new and ambitious fisheries strategy enacted in 2009, the so-called "Halieutis" strategy.[1]

Today, the fishing sector in Morocco employs around 500,000 people, and fish exports earn close to $1 billion in foreign exchange annually, which represents an essential component of Morocco's monetary stability (FAO 2013).

Broadly speaking, Moroccan fisheries are divided into three separate sets of operators: artisanal near-shore fisheries, coastal fisheries (e.g., sardine vessels and trawlers) and "industrialized" fisheries that operate much further off-shore. Unlike most of its neighbors and competitors, Morocco has historically taken a proactive approach to fisheries management as highlighted by the establishment of a comprehensive and well-respected National Institute for Fisheries Research (INRH). The Halieutis strategy restricts access to its waters through the granting of international access agreements, and Morocco has developed a coastal fishing fleet of its own, mostly targeting sardines, anchovies and small pelagics through joint ventures with European boat owners and operators.

Direct monetary benefits from the fisheries sector are concentrated mainly in urban zones equipped with ports. The majority of profits derive from the well-organized industrial and coastal fishing industries that receive strong state supervision and guidance. The artisanal fishing community, on the other hand, is a minority economic activity in port cities and is dwarfed by the number and size of much larger coastal vessels, such as trawlers. Even when small-scale fishermen have access to basic infrastructure, their production remains marginal due to inadequate infrastructure, training and organization. Most fishermen are not well-educated and simply follow in their father's footsteps without the ability to achieve more lucrative livelihood options.

Outside of high-density urban zones and a handful of larger ports, fishing remains a traditional industry along the coastline, relying on beaches and natural ports for loading and unloading. These sites lack basic infrastructure, making fishing from them difficult and often dangerous. Every year several artisanal fishermen perish at sea because they are not supported by rescue-at-sea vessels from the Moroccan Royal Navy. The equipment they use is very basic: a simple wooden boat with an outboard engine and manual gearshift. The heavy, wooden boats from which the fishermen operate are hauled up the beach by hand and all gear and engines are carried by them over long distances and uneven terrain.

The lack of basic facilities, including water and often electricity, means that fishermen are completely dependent on intermediaries to supply essential services, such as petrol, at prices much greater than in the regulated marketplace. These same intermediaries also act as the buyers, setting the price of catches artificially low. Fishermen are so dependent on these

Opposite: Construction of a landing site for small-scale artisanal fishermen in Salé, outside Rabat.

1 In 2009, the Government of Morocco adopted a new, comprehensive strategy for fisheries management, also known as the Halieutis strategy, with the specific goal of investing in and developing the sustainability of the sector. The Halieutis strategy combines a broad objective of increasing production to more than 2.3 billion dirham by 2020 with a specific goal of ensuring that 95 percent of the species are managed sustainably. The three main axes of the strategy are sustainability, performance (increased catch quality) and competitiveness (exports of fish products are expected to almost double to $3.1 billion). The development of sustainable aquaculture is also a major pillar of Halieutis.

intermediaries that they have no alternative but to accept conditions that place them among Morocco's bottom earners (Gouvernment du Maroc 1999, World Bank 2004).

Traditional fishing employs close to 100,000 Moroccans; however, due to the lack of sorely needed infrastructure, it still provides a strictly seasonal and subsistence-focused livelihood (FAO 2013). The marginalized coastal populations who depend on fishing remain in a precarious economic situation despite their proximity to the coastline's abundant resources. Even though most of the stocks are exploited at or near full capacity, the revenue generated by fishing is far below what it could be with better access to an organized market (FAO 2013). Despite these limitations, the small-scale fisheries sector in Morocco meets a large share of domestic market demand and provides a source of national exports but is nowhere near as efficient or profitable as it could be.[2]

The Artisanal Fisheries Project

The Artisanal Fisheries Project aims to break the current cycle of poverty entrapping traditional Moroccan fishermen by creating an industry marked by sustainable growth and rational exploitation of Morocco's marine living resources. The goal of this investment is to transform the small-scale fisheries sector by modernizing the means of catching, storing and marketing fish. This will improve the quality of the catch, develop the value chain, increase fishers' access to both local and export markets, and improve incomes.

The three main components of the project include:

1. **Improved infrastructure:** This involves constructing ports, landing sites and wholesale markets—constructing 11 new landing sites for isolated fishing communities (commonly referred to as PDAs, the French acronym for Points de Débarquement Aménagés); developing and upgrading access for small-scale fishermen in 11 ports; and constructing five, brand new state-of-the-art wholesale markets in urban areas. 4,368 boats are expected to benefit from the creation of ports and PDAs (MCA-M 2013).[3]

2. **Innovations in the cold chain:** This involves providing technical assistance, training and partially funding the acquisition of fresh-fish transportation equipment by mobile fish vendors.[4] (Note: these are typically mopeds equipped with oversized, insulated ice chests.)

3. **Maintaining the sustainability of the resource**. This involves establishing a network of Marine Protected Areas and increasing monitoring efforts to ensure the sustainable catch of fish resources.

For all three of these components, a very strong and sustained training program was developed and adapted to the targeted beneficiaries, designed to ensure that all beneficiaries become stewards of the new infrastructure and equipment after the end of the compact. The training modules ranged from practical safety training for the fishermen to road safety for the mobile vendors.

2 The share of the small-scale fisheries catches that are landed "officially" in government-sanctioned sites (PDAs and ports) amounts to 37,000 tons annually, valued at approximately $100 million a year. In addition, 20,000 tons are landed at unofficial sites, for which the total value is not available (ONP 2007).

3 To date, 437 boats are already benefiting from this infrastructure.

4 A cold chain is a temperature-controlled supply chain. Strengthening the cold chain increases the value of fish products by establishing a chain of regulated temperature storage from the artisanal and coastal fisheries to the final point of sale. The chain begins on-board small-scale vessels, continues to PDAs and reaches consumers through properly-managed, hygienic wholesale fish markets and modern mobile fish vendors.

Photo: © C. de Fontaubert

The old fish market in Meknés, where hygiene was far below standards, will be replaced by a new, state-of-the-art facility.

Most of the targeted trainees had not received education beyond the primary school level. The Agency of Partnership for Progress (Agence de Partenariat pour le Progrès or APP), the local Moroccan entity responsible for implementing Morocco's MCC compact, is responding to this issue more broadly in the sector by providing over 16,000 artisanal fishers in 16 port towns with Arabic literacy, numeracy, job-specific, and entrepreneurial skills to build their business. Over 400 of the fishermen participated in both the artisanal fisheries training and APP's functional literacy program.

A Social and Creative Approach to Reducing Poverty: Construction of the Landing Sites

The construction of landing sites and the development of infrastructure in ports aim squarely to end the precarious nature of the Moroccan artisanal fisheries sector and place it on a path toward sustainable growth. As such, one of the aims of the project is to "formalize" the activities of these fishermen, who operate mostly through an informal circuit, do not report their catches and do not benefit from any of Morocco's social safety nets.

A cornerstone of the project is the transformation and development of 11 informal landing sites already in use by the traditional fishing sector, but where the lack of infrastructure severely impedes their potential for revenue generation. These new landing sites will serve as micro-centers for development through improved infrastructure, access to marketing and technical services and training in a wide range of skills and activities. To date, 6,862 artisan fisherman have received training certificates out of a planned target of 15,000 (MCA-M 2013). These focal points will link the entire coastal population by creating a network of fishing communities and breaking the isolation in which fishermen have operated. Experience in past landing sites, funded by the Government of Morocco, has shown that once the necessary infrastructure is built, and water and electricity are provided, economic activity develops beyond the fishing activity, with the construction of restaurants, stores and homes.

Moreover, the project aims to increase access to the domestic market by integrating modes of distribution and professionalizing the industry's management capacity (see box following page). The project is advancing transparency in the marketplace, and the National Fisheries Office will continue to handle marketing within an open and free framework. The program also aims to make fishing a year-round activity for small-scale fishermen to stabilize and increase revenues.

The development of PDAs includes the landing site and off-site infrastructure (access roads, drinking water supply, sanitation, electricity, and telephone) as well as the development of major infrastructure related to marketing (open and controlled auction room, ice factory, storage areas, infirmary, meeting room) and local administrative training and resource monitoring. Upon completion of construction, the ownership of each PDA is transferred to a cooperative of fishermen, who then become fully responsible for its management and upkeep. The National Fisheries Office remains involved through management of the first sale of the catches just as they are landed, collects a small tax on these landings and pays the wages of the personnel who manage the sales and collect all relevant data.

Completing the infrastructure will facilitate better utilization of landing sites by establishing a continuous cold value chain and participation in open and transparent fish markets. Indeed, the professional management of fish markets by the National Fisheries Office enhances market transparency and leads to improved prices at auctions. In the past, catches were landed in a haphazard manner and collected by intermediaries who arbitrarily set the prices and took no specific measures to ensure food safety and product quality. Now, much stricter standards are set up in the PDAs, and the National Fisheries Office inspectors monitor daily catches.

This project will also create fishing cooperatives, allowing them to reduce the costs of inputs and transport. By simply gaining access to water and electricity, and thus ice, artisanal fishermen can increase revenues as the price per kilo of fish improves due to its increased

FROM BEACH LANDINGS TO CONSUMERS' PLATE, STRENGTHENING THE COLD CHAIN

While the project focuses first and foremost on small-scale artisanal fishermen, it also follows the catch throughout its journey to final consumers. During due diligence, the Government of Morocco presented two pilot projects in Casablanca and Oujda, where experience showed that a well-designed market, strategically located and drawing on the latest in cold technology, can boost the distribution of fish products throughout Morocco. With MCC funding, these activities where scaled up to include markets close to dense urban areas in Rabat, Marrakech, Meknes, Taza, and Beni Mellal, where demand for fish has gone largely unmet.

Bringing fish products closer and faster to consumers is furthered through the help of **mobile fish vendors**, who are spread out throughout Morocco. Before the project, mobile fish vendors operated on bicycles or mopeds and stored fish in old, wooden and extremely unsanitary chests. 1,300 beneficiaries are receiving brand new equipment, including insulated plastic chests, and training in a variety of modules, including road safety, basic hygiene and the importance of saving to amortize and eventually replace the equipment. With a view to sustainability, very strict criteria were adopted to select these beneficiaries, which were reduced from 2,000 to 1,300. Among the criteria were how long they had operated as vendors and an estimation of their ability to save to amortize the equipment through time. Another very important requirement, which was imposed by MCC in spite of early reluctance by Moroccan counterparts, was that the beneficiaries themselves had to contribute to the cost of the equipment, thus ensuring that they had an interest in keeping, operating and maintaining the mopeds.

quality. A comprehensive study commissioned through the MCC compact on the value chain showed that the greatest benefit for the fishermen is to break the relationship of dependency that has bound them to intermediaries. As far as the increase in value per species, its measuring has also just begun in the only PDA site that is now operational in the town of Tifnit. An independent evaluation will be conducted in 2014 after compact completion in 2013 that will measure the increase in values over at least one full year (reflecting the reality of biological cycles for most species).[5]

In addition, by becoming part of the PDA system, the fishermen are grouped in a critical mass that allows economies of scale, particularly as related stores and businesses are set up in the periphery of the PDA. Perhaps most significantly, the fishermen benefit from an open market system where the price of their catches is no longer set arbitrarily by an intermediary but rather as the result of supply and demand in the marketplace.

Keeping Moroccan Fisheries on a Sustainable Path: Resource Monitoring and Marine Protected Areas

The environmental sustainability of the Artisanal Fisheries Project is reflected in the fact that MCC investments are targeted to increase the *value* of fish moving through marketing channels, as opposed to increasing the *quantity* of catches.

While increased value may stimulate demand, the fisheries sector is comparatively well-managed in Morocco and the government exercises a remarkably high degree of control over fishing and landing activities. The National Fisheries Office, in partnership with INRH, is responsible for monitoring fishing activities and strictly controls access to fisheries.

The MCC program is designed to help ensure environmental and social sustainability by strengthening fish stock assessments and monitoring systems at the landing sites. In fact, one of the significant side benefits of the project is the "formalization" of fishing activities by 12,000 or so targeted artisanal fishermen, whose catch will be recorded and documented when they land their catches in the new landing sites.[6]

Not only will fishermen switch from the informal sector to a recognized, monitored and state-sanctioned activity, all their catches, which previously were sold at unfair prices to off-the-book intermediaries will henceforth be registered, and to a small degree, taxed by the National Fisheries Office as it operates the auction halls in the PDAs. Catch reporting is at the heart of stock assessments, which are key to setting precautionary levels of catch, quota and thus the control of fishing efforts.

Marine Protected Areas

The sustainability of the project is also greatly strengthened by the development of a network of marine protected areas (MPAs) along the Mediterranean and Atlantic coasts. Here, the rationale is that when local fishing communities benefit from the new PDAs, their revenues will increase and, as a *quid pro quo*, they will be expected to participate in the establishment of the MPAs and comply with their management measures. As a result, overfishing will be reduced and the sustainability of fish resources will be improved even if other collapses can

5 M. Naji, *Analyse des chaines de valeur dans le secteur de la pêche artisanale au Maroc*, Report prepared for the Millennium Challenge Corporation

6 Office National des Pêches, Strategic document prepared for the Millennium Challenge Corporation during due diligence.

occur for other, mainly environmental reasons (e.g., an El Nino event, changes in seawater temperature or salinity, ocean acidification). Setting up a network of MPAs along the coast of Morocco represents a form of insurance against such phenomena, where even if a stock is affected by other factors, its fundamental integrity is ensured by protecting the critical ecosystems upon which it depends.

Furthermore, the project's approach to the establishment of MPAs is unique for a number of very important considerations. First and foremost, the project does not merely set-up pilot projects but fundamentally changes fisheries management by introducing MPAs as a tool, which can be used along more traditional measures (total allowable catch, quotas, licenses, size limits, etc.). To that end, the first year of the project was devoted solely to political outreach and education, to explain how MPAs function, in a genuine attempt to introduce them and have them accepted in the Moroccan landscape. This effort will continue throughout the duration of the project and will include study trips where fishermen and MPA managers visit other successful MPAs in the Mediterranean context.

Second, the MPAs set up by the project target relatively healthy fisheries, where each MPA is designed to support sustainable fishing practices rather than put an end to overfishing or destructive fishing practices. The wide body of literature on the subject shows that MPAs work best when they are adopted preventively and after exhaustive consultations with stakeholders and political buy-in (Roberts et al. 2001; Halpem and Wagner 2002). This is in contrast to the vast majority of MPAs, many of which are mere "paper parks," enacted but never enforced.

MPAs can extend over large areas (e.g., the Great Barrier Reef Marine Park in Australia is larger than the State of Texas) and in practice enforcement is almost impossible. It is very difficult to monitor a large number of small boats over a huge expense of sea. Instead, voluntary compliance is the preferred approach where stakeholders voluntarily agree to abide by the conservation measures set up inside the MPA because they understand that such measures will provide the targeted stocks with a chance to recover from previous fishing efforts. Thus, the best MPA is one that has been set up at the request of fishermen themselves. Accordingly, the Artisanal Fisheries Project included a series of extensive outreach meetings with beneficiaries to discuss the rationale and location of future MPAs to create strong ownership from the fishing community. The location of the MPAs was based on exhaustive data collected over the years by INRH and was verified through underwater surveys. At the end of this process, fishermen buy-in was such that the demand for MPAs was greater than what the pilot projects could cover and the National Fisheries Office is well aware of the request by fishermen for more MPAs. Therefore, the MPA component is consistent with two fundamental pillars of a successful MPA: (1) acceptance by the stakeholders/beneficiaries and (2) using the best scientific information available to locate and delimit the MPA.[7]

Lessons Learned and Recommendations

Building on the Government's Historical Strengths

An important element that favored MCC's selection of a fisheries component in Morocco was the fact that the Moroccan government had already accrued a wealth of knowledge and

7 Two of the most respected and followed guiding documents on how to establish MPAs are published by IUCN: (1) *Marine Protected Areas, A guide for Planners and Managers* (IUCN, 2000), and (2) *World Commission on Protected Areas, Guidelines for Marine Protected Areas* (IUCN, 1999). Both contain detailed recommendations on using best scientific information available and consulting impacted stakeholders exhaustively.

Photo: © C. de Fontaubert

New wholesale fish markets were based on the success of the Casablanca market (pictured).

experience in starting PDA sites and building a major wholesale market in Casablanca. The MCC project was thus conceived as a way of doing more of what was already working with the addition of some targeted improvements. This approach was beneficial from two different standpoints. On the one hand, the project built on approaches that had been field-tested by the government in its own time, incorporating some of the lessons that had been learned through trial and error. For instance, the project decided to focus on PDAs rather than so-called Villages de Pêcheurs, which had previously been funded by another donor and proved exceedingly difficult to implement because they required the construction of marine infrastructure, namely jetties and other devices, which proved to be too technically difficult to implement. On the other hand, building on the past experiences of the Government of Morocco was an excellent way to build trust with our partners and to show the extent to which their existing knowledge and "know-how" were appreciated and valued. The first lesson, then, is to try to identify and recognize past successes by the partner country and build on existing strengths.

Close and Continual Engagement with the Local Authorities

In retrospect, one can note that the number of sites to be built, both ports and PDAs, was cut drastically from the original target of 39 to 22. The 17 sites that were discarded mostly failed because the Government of Morocco and local authorities failed to secure the land on which they were to be built. From the early days of compact negotiations, it had been agreed that the land would represent the contribution of the receiving government. However, in spite of considerable support from project stakeholders, some local authorities simply chose not to welcome the project and prevented the construction of a landing site because they wanted to keep land available for hypothetical tourism development. One lesson learned is the need to maintain close and continual communication with local authorities, especially with respect to land issues, and to be able to demonstrate that large tourism development is not necessarily preferable to a smaller, lower impact landing site. Where the potential for tourism exists, it will more often than not supersede any other priorities in the eyes of local authorities. This is probably true for most, if not all, marine fisheries projects in countries with beach tourism potential and should be actively addressed as part of the planning process for a fisheries project. In many cases, an integrated fisheries-eco-tourism approach is possible, where smaller tourism infrastructures are planned and integrated with existing fishing activities. This option is currently the subject of a World Bank/Global Environment Facility project along the Mediterranean coast, hopefully paving the way for a more integrated approach to the development of the coastal zone.

Finally, another important lesson is drawn from the tremendous delays that resulted from a slow start and lengthy feasibility studies before construction could begin. The original work plan called for the completion of the first tranche of sites (almost 10 sites) at least two years before the end of the compact in September 2013. Yet, at the time of this article's writing, only two sites have been completed and become operational. As a result, 25 sites need to be completed or become operational between now and September 2013, which is sure to put inordinate pressure on all parties involved.[8] Without a doubt, the delays in the feasibility studies were in great part the result of differences in norms and standards, including environmental and social standards, between MCC and the beneficiary country.

GENDER INTEGRATION AND WOMEN'S PARTICIPATION IN THE FISHING SECTOR

By Patricia Thomas

Ask what women do in the fishing sector in Morocco, and the most common response will be: "They are not present." They do not go out in boats, do not fish, are not members of cooperatives, and do not engage in income-generating activities related to fishing. You will also most likely hear that it is impossible to integrate women into the fishing sector: (1) because they are not present in the sector and (2) because culture and traditions dictate that fishing is the domain of men, not women.

However, a gender analysis conducted in the context of the MCC-Morocco compact showed that though not present in large numbers, women do play a role in certain activities included in the value chain. For example, they collect, dry and commercialize marine algae and other products, such as mussels and sea urchins. They also work in great numbers as laborers in factories that process sea products. The gender analysis also showed that though traditions and customs often prohibit women's access to participation in the fishing sector, that this is not always the case.

The project's gender strategy thus focuses on innovative pilot actions that aim to open doors to a larger role for women in the fishing sector and to dispel myths about what women can and cannot do. Concretely, this means two things: identifying specific project services and benefits that can be made accessible to women (gender mainstreaming); and supporting specific projects for women that build on existing skills while increasing knowledge in areas where skills are lacking. Two women-specific projects are currently being envisioned: an algae drying facility for a women's cooperative in Sidi Abed and a processing plant for transforming sea products for women in Sidi Ifni.

Photo: © Agence du Partemariat pour le Progrès

- **Sidi Abed:** In Morocco, women are not often seen around docks or landing sites. This is the domain of men, who assume most activities related to the fishing sector. In fact, women are not allowed in some areas. In Sidi Abed, however, the newly-formed women's cooperative received permission to build inside the confines of the site. Up to 300 women engaged in the activity of collecting, drying and selling marine algae will pay their share of expenses in order to receive equipment and infrastructure adapted to their needs, as well as training in hygiene, improved techniques, cooperative enterprises, and marketing.

- **Sidi Ifni:** In the industrial zone of Sidi Ifni, construction will soon begin on a processing plant for marine products. The beneficiaries are 100 women members of a newly-formed cooperative who received a grant from Morocco's MCC compact. In addition to receiving appropriate infrastructure, the women will learn new ways to conserve their products (i.e., sardines and anchovies), allowing them to tap into local as well as export markets and increased profits. Interestingly, some of the women of the cooperative previously worked as paid laborers in fish processing plants. The difference now is that instead of working for others, they will become ***owners*** of the means of production.

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8 The 25 remaining sites include 10 ports, 10 PDAs and five wholesale markets.

Project beneficiaries target high-value fish species, as shown, which require prompt access to markets.

The original work plan was adopted based on a number of assumptions as to the capacity of the consultants and building firms to adopt MCC standards and criteria, which proved to be overly optimistic. These standards obviously cannot be lowered to respond to the abilities of local partners, so the most salient lesson here is the importance of focusing on outreach, training and support to these partners at the onset. The principle of country ownership is one of the fundamental pillars of the MCC approach, but it should also include an honest assessment of existing local capacities and a focus on investing heavily in training of the national drivers of the project as to MCC's methods, ways and standards. **KIN**

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