

# Sustainable Management of the Fisheries Sector in Oman

## A Vision for Shared Prosperity

World Bank Advisory Assignment

December 2015



World Bank Group  
Washington D.C.



Ministry of Agriculture and Fisheries Wealth  
Sultanate of Oman



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We would like to thank all the stakeholders in the Sultanate of Oman's fisheries sector who we met and worked with during this engagement.

Banu Setlur  
Michael Arbuckle







# Foreword



Minister of Agriculture and Fisheries Wealth  
Sultanate of Oman

The Ministry of Agriculture and Fisheries Wealth collaborated with the World Bank over a two-year period in the development of a Fisheries and Aquaculture Vision 2040 (the Vision), a programme of work that involved extensive stakeholder engagement.



The Sultanate of Oman's fisheries and aquaculture resources are a source of considerable prosperity for all Omanis. The need to focus on this renewable resource is even more crucial at the present time, and this is also in line with the ongoing efforts towards economic diversification in the Sultanate. Importantly, the upcoming five-year development plan includes fisheries as an important sector in the diversification process.

The Fisheries and Aquaculture Vision 2040 is therefore an important and timely contribution to the Oman fisheries sector, with a goal to create a *"profitable world class sector that is ecologically sustainable and a net contributor to Oman's economy"*. In achieving this goal, we will need to build the sector in a way that will ensure income levels from the fisheries and aquaculture sector are attractive and competitive with other sectors of the economy. The Ministry can achieve this by putting in place



policies that will encourage private interests to identify and capture the sustainable economic potential of our fisheries and aquaculture.

The Vision and accompanying Implementation Plan set the stage for that future where over the next five years, the Ministry will redesign the way it operates to ensure that stakeholders have a voice in the management of the fisheries. In pursuing this change, the Ministry will embark on a programme of work each year to identify the environmental and economic risks facing our fisheries, and the opportunities for improvement. The aim will be to achieve a change to programme of excellence across the sector.

Looking forward, Oman will seize this valuable opportunity to diversify its economy through the fisheries sector by following steps, processes and procedures, during the implementation process of the Vision 2040.

We pray to Almighty Allah to guide our efforts and grant us success to fulfill our vision under the prudent leadership of His Majesty Sultan Qaboos bin Said, Sultan of Oman.

Dr. Fuad Jaffer Al Sajwani



# Introduction

Under the leadership of His Majesty Sultan Qaboos Said bin Said, the Sultanate of Oman has in the past four decades experienced major improvements in health and education, while growing into a middle-income country. Development initiatives have flourished, and the Sultanate was ranked first of 130 countries surveyed by the United Nations Development Program (UNDP) in its 2010 Human Development Report.

Oman is putting new energy into efforts to diversify its economy, and robust job creation is essential for the country's ambitious and well-educated young people.

Fishery and aquaculture are among the most ancient and important sectors to Oman, with deep cultural and social significance. Before oil was discovered there in the 1960s, 80 percent of the population lived from agriculture and fishing.

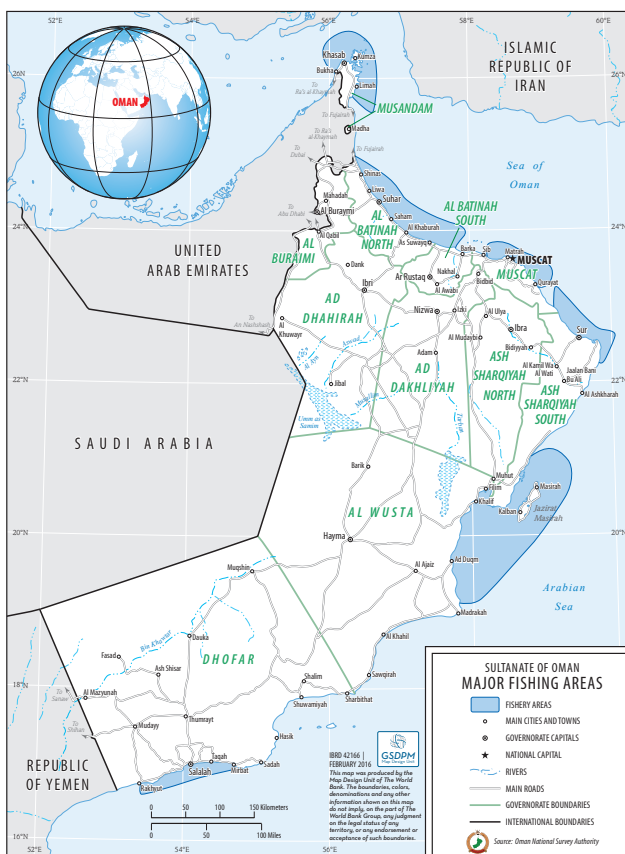
Omani identity is inextricably linked with fisheries, and there is strong attachment to the sector. But fishing is not economically productive and aquaculture in Oman is in its infancy. It is conservatively estimated that Oman is forgoing 2.4 billion Omani Rial (OMR) from fisheries under current management of the sector. Many fishers are not involved full time in fishing, and despite significant subsidies, remuneration is often low. There is a need to improve economic management of the fisheries sector and create viable and sustainable employment opportunities.

As a starting point, the Sultanate engaged the World Bank to assist in its effort to overhaul the fisheries sector, and has asked the Bank to help devise a plan for increasing the contribution that fisheries make to Oman's economy and its people. This review

**The Goal of Vision 2040 is to create a profitable world-class sector that is ecologically sustainable and a net contributor to Oman's economy.**



## Sultanate of Oman



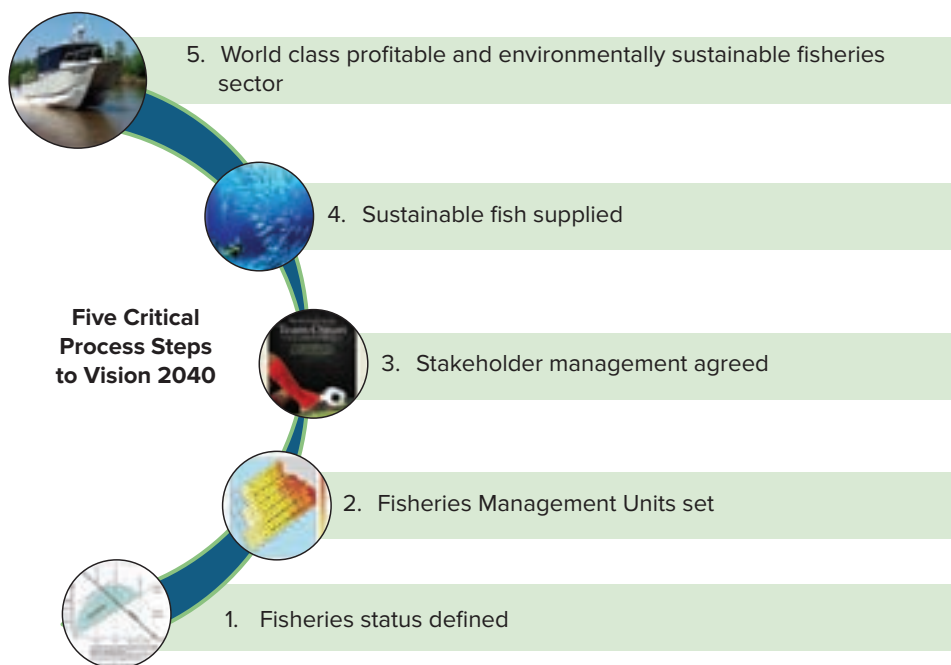
offers a summary of the collaborative efforts involving the Ministry of Agriculture and Fisheries Wealth (MAFW), the World Bank (WB), and fishery stakeholders.

Over the past two years under a Phase I engagement, the World Bank team worked with the government and stakeholders to lay rigorous groundwork for the development and implementation of the Fisheries and Aquaculture Vision 2040: “To create a profitable world-class sector that is ecologically sustainable and a net contributor to Oman’s economy.” Vision 2040 and an accompanying Implementation Plan establishes a framework and processes to achieve these goals.

The World Bank convening power backed by the Ministry’s technical and logistical support has proven crucial in developing Vision 2040 and the associated implementation programs. We explore the results of the work program which is described in further detail in the following reports:



**Figure 1: Vision 2040 Diagram**



1. The Program Concept Note describing the agreed purpose and objectives of the collaboration between the WB and the Sultanate of Oman
2. An agreed Approach Paper describing the way the program of work will be carried out in developing a Vision to 2040 for the fisheries sector in Oman
3. A comprehensive review of scientific literature available on the fisheries sector in Oman outlining gaps in research
4. A series of 13 stakeholder reports detailing results of workshops held with fisheries stakeholders throughout the Sultanate of Oman, reviewing the importance of stakeholder engagement and highlighting key issues relevant to future engagement strategies
5. A series of policy papers discussing major policy issues to be confronted during implementation of Vision 2040 addressing issues such as the indicators for measuring the performance of the sector, funding for future management of fisheries, stakeholder engagement policy and international shared fishery policy
6. An analysis of policy scenarios which estimates economic losses being incurred under current management of the sector, and opportunities available from improved management



7. A Fisheries Stock Status Report to 2015 providing an agreed, peer reviewed, view of the biological status of Oman's fisheries relative to globally accepted sustainability benchmarks
8. A Fisheries and Aquaculture Vision 2040 document setting goals and a pathway for achieving Vision 2040 over a period of 25 years
9. A detailed Fisheries and Aquaculture Implementation Plan for the first five years of Vision 2040 detailing the manner in which the Ministry and sector will work together in the future
10. A comprehensive project plan and two project concept notes describing specific pilot investment programs in four types of fisheries in Oman; (i) the large tuna international shared fishery; (ii) the economically and culturally important kingfish regional shared fishery; (iii) the high value national cuttlefish shared fishery; and (iv) the locally important discrete abalone fishery

During a series of workshops undertaken during 2014, everyone from ministers to fishers to tribal elders came together with technical trainers from the World Bank

### Drying of Abalone



and the Ministry who conducted detailed analyses on the state of Oman's fisheries. Together, they mapped out how the sector works and laid the foundation for the future under Vision 2040, as well as a means for its implementation.

The preparatory work has produced the Sultanate of Oman Fisheries and Aquaculture Vision 2040; the Implementation Plan of the Fisheries and Aquaculture Vision; and a proposed investment project document. The next stage includes implementation of the pilot investment project and technical support, as well as stakeholder co-management of four pilot fisheries. This strategy points to a better future in fishing higher-value species.

Phase II, the first five years of implementing Vision 2040, will establish the policy and capacity for executing global best practices in the fisheries through organizational development, business development and management training, as well as planning for new institutions built around key players. Support for abalone fishery development, for instance, is planned through engagement with stakeholders, improving regulation of the fishery and scaling up of enhancement and compliance related activities.

### **Consultation with Stakeholders, Salalah, Dhofar Governorate**

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### **BOX 1: Five Big Steps towards Realizing Vision 2040**

Vision 2040 describes five big steps that are required, to put in place the delicate mix of key policies, organizational structures, systems and processes necessary to realize the Vision 2040 goal. The five steps are as follows, and as depicted in diagram below:

1. Defining the status of the fisheries resource to a level understood and accepted by all stakeholders - the basic information required to manage Oman's marine resource must be generated, reviewed and agreed.
2. Defining fisheries management units that will become the foundation of future management activities - information to help define appropriate units for management of fisheries needs to be collated and evaluated and actual management units determined.
3. Agreeing and establishing effective stakeholder based management regimes around defined management units - stakeholder-led management necessarily requires the identification of stakeholders, and their individual and collective legal rights and responsibilities for harvesting and management of fisheries.
4. Developing and maintaining sustainable management systems through stakeholder engaged management - ensuring that the supply of fish remains sustainable requires the establishment and adept operation of fisheries management arrangements customized to the needs of each fishery.
5. Developing sustainable and profitable value chain - a world-class profitable fisheries sector is economically sustainable with the internal capacity to detect and respond to opportunities for, and threats to, the creation and preservation of wealth from the use of Oman's fisheries and aquaculture resources.





# A Brief History of the Significance of Fisheries in Oman

Oman has 3,165 km of pristine coastline that spills into the Arabian Sea, the Indian Ocean, the Sea of Oman and the entrance to the Arabian Gulf. Fishing is among the oldest professions and activities on the peninsula.

In their early history, fisheries were small-scale and locally oriented, using a low level of technology (wooden and sailing vessels) to supply fish for household consumption and markets close by.

When there was a large catch, salting and drying were the main methods for preservation. Camels and donkeys were used as transport. The “local council of the sea” (or Sunnat-al-bahar), comprised of prominent people and experienced fishermen, was the central institution for coordinating activities.

The establishment of the modern state of Oman in 1970 brought rapid transformation. The Ministry of Agriculture and Fisheries Wealth was established along with the National Development Bank. New initiatives included the building of new ports, roads and fishing harbors, increased access to electricity, along with facilities such as boat yards, fish factories and ice factories. Fishing operations changed with the introduction of marine engineers onshore and the use of cars and trucks, which encouraged fish trade across Oman with other Gulf countries.

At this time, foreign workers, mostly recruited in Bangladesh and India, entered the fisheries sector in some remote villages. The involvement of women in the sector had started to decline. Finally, the role of the Sunnat-al-bahar changed and its influence began to wane.

The history and current challenges of fisheries in Oman were discussed and analyzed in a series of Stakeholder Workshops conducted with the World Bank, the MAFW and contemporary fishery stakeholders. This part of the collaboration program was based on the premise that to understand the future of fisheries management and health, we have to understand the past.



## Port Dibba, Musandam Governorate



Workshop findings, from 1990 to the present day, show that the expansion and development of the fisheries sector has continued apace with more new ports and harbors being established throughout Oman. There is also evidence of commercialization with companies involved in fishing, processing and trading being established and made operational. Government has also been active in developing new rules for the sector covering both the catching, marketing and trading of fish.

**But with rapid transformation come new challenges that future engagement is poised to address.**

Significant conclusions came out of the historical analysis, as well as implications for the future engagement strategy. The fisheries sector has changed very rapidly over the past few decades through a process of modernization and expansion. This development has been mostly welcomed. But with rapid transformation come new challenges that future engagement is poised to address. Some emerging issues caused concern, including the decline of local level institutions for fisheries management, the uncontrolled expansion of fishing effort, the changing make-up of



## Central Fish Market, Barka, South Al Batinah Governorate



The new stakeholder engagement strategy needs to revitalize these institutions, employ more young Omanis, and build new and relevant institutions for the future.

labor—including more legal as well as illegal workers from Asia.

Two main implications arose out of this work: First, consideration will have to be given to ensuring that all stakeholders have the opportunity for future engagement in activities at an appropriate level; and, second, stakeholders should be increasingly involved in decision-making affecting the future of the sector. The results of the analysis indicate that certain stakeholders are becoming marginalized. There is also strong evidence that there has been a decline in the role and effectiveness of local level institutions relevant to fisheries management. In that case, the new stakeholder engagement strategy needs to revitalize these institutions, employ more young Omanis, and build new and relevant institutions for the future.



# Policy Support for an Ecologically Sustainable and Profitable Sector

**T**here is a substantial amount of background information and preparatory work that shaped the approach of the overall project thus far. These include the Oman Vision 2020 and the Five-Year Development Program.

The overarching framework for development policy in Oman has been the Long-Term Strategy 1995–2020. The pillars of this strategy are to make Oman a diversified, dynamic and globalized economy; create well-developed human resources; and promote efficient private sector and sustainable development within a stable macro-economic framework.

To replace oil as a source of growth, Vision 2020 anticipated the emergence of natural gas production and downstream industry, along with a rapid and successful expansion in construction, real estate, trade, fisheries and tourism.

The volume of fish exports has also been steadily increasing over the past ten years—ranging from 62.3 thousand mt in 2002 to 132.5 thousand mt in 2014, according to official statistics. In 2011, half of exports were to the United Arab Emirates, where there is strong demand. The ratio of fish exports to fish landings has also been steadily increasing.

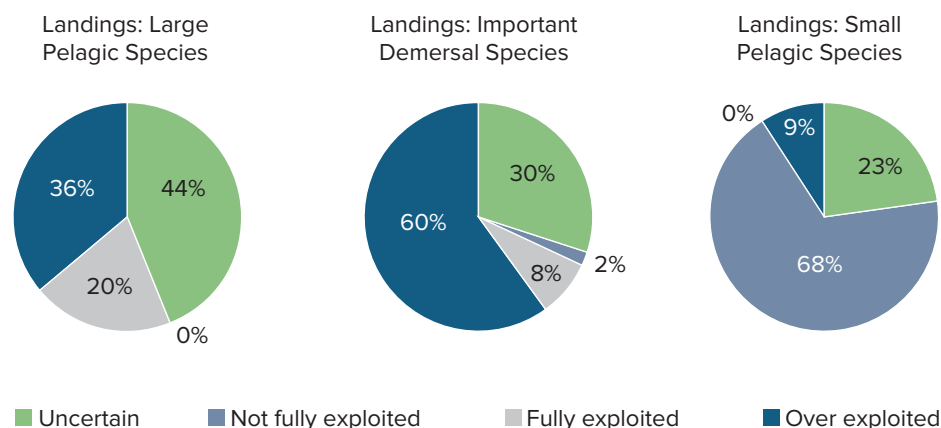
Oman has been lauded by environmental and fishery specialists for its ban on trawl fishing in 2011. The current growth, therefore, is entirely from artisanal fishing, a sub-sector that has grown in importance since the ban.

The growth, however, has been somewhat chaotic and uncontrolled. Catch has expanded rapidly to exceed catch levels experienced before the trawl ban. The status of fisheries is now reaching critical levels in

Over half (56%) of Oman's large pelagic fish and 68% of Oman's important demersal species are known to be fully to over exploited.



**Figure 2: Current Status of Key Fish Stocks in Oman**



Source: Stock Status Report 2014, MAFW.

most of Oman’s key fisheries where economic development potential is at its highest. Over half (56%) of Oman’s large pelagic fish and 68% of Oman’s important demersal species are known to be fully to over exploited. Further research is needed to fully understand the status of remaining fisheries. What is certain however, is that economic development in these fisheries in the future will need to focus on improving the use of current catch rather than through increasing production. Production increases in small pelagic fisheries are feasible, but economic development of these fisheries will take time.

Despite a plethora of new ports, fishermen still prefer to land their catch on beaches in proximity to where they live and make their own arrangements for the sale of fish which limits opportunity for quality improvement and value addition. Ports are considered mismatched for potential demand; they are too dispersed for commercial boats, but also often lack a cluster of services that would attract the artisanal sector.

Policy makers in the sector have moved away from licensing industrial scale vessels for fishing high-value stocks in favor of medium-scale, offshore boats. This strategy offers the potential for job creation using the Oman brand, but also faces some challenges if the country is to develop a world-class fishing industry in the long term. Foremost among these challenges will be the process of restructuring the fleet in a way that ensures catches are sustainable and provides viable and competitive units to form a basis for private sector investment and development in the value chain.



## BOX 2: Fifty Years of Fisheries Development Policy

The general experience of fisheries development policy over the past 50 years reveals that the interaction between stakeholders is a critically important factor, which greatly affects the success of projects. In many countries, fishery development programs before 1970 were dominated by government-led, top-down approaches, which focused on increased fish production—new harvesting technology and preservation methods, along with modern infrastructure, allowed the catch to increase very rapidly.

Unfortunately, under these production led policies, many fisheries have become over-exploited, both economically and biologically, with severe social impacts.

This approach is now being re-examined globally, along with the realization that policy formulation cannot focus only on expanding catch when so many species are depleted. In the case of Oman, the first priority is to identify all stakeholders and determine how best to involve them in reform and change. In that way, economic objectives emerge from collaboration and become shared and sustainable goals that concern the catch, the community and the environment.

## Bluefish



## Kingfish



The fisheries sector still accounts for only a small share of GDP. Government revenues from the fishery sector are minimal and reported to be US\$2.4 million per annum. In contrast, current government expenditures on fisheries for infrastructure, monitoring and other services are estimated to be on the order of 50% of gross ex-vessel revenues.

Fisheries, however, is one of the few renewable natural resource sectors in Oman that offers a long-term economic contribution to the economy. It is estimated that the sector could contribute an additional 2.4 billion OMR to the sector from improved management of current catches alone.

**The large international tuna fisheries in particular offer the single biggest immediate opportunity for economic development in fisheries in Oman.**

Further potential development is also possible from expanding Oman's interest in international and unexploited stocks. The large international tuna fisheries in particular, offer the single biggest immediate opportunity for economic development in fisheries in Oman. The fisheries sector is also seen as integral to the viability of communities along the country's coastline, and it offers promising linkages to the tourism sector and export promotion, in which Oman could become a quality brand.





# Sustainable Management of Fisheries, Starting with Stakeholder Engagement

It is impossible to overemphasize the importance of the stakeholder engagement process. The fishery sector in Oman, in common with many others worldwide, has a wide variety of different stakeholders: government, fishermen traders, consumers who purchase and eat fish, and citizens who benefit from national development investments—for example, roads and hospitals funded in part by the development of a sector.

The government of course may design and attempt to implement certain policies while at the same time non-government stakeholders can influence the outcome of these actions—either by supporting or resisting.

The Fisheries Stakeholder Analysis was a pillar of the preparatory phase (September 2013 to February 2015) of the World Bank Program – Sultanate of Oman Sustainable Management of the Fisheries Sector, which was undertaken at the request of, and led by the MAFW.

Over the course of two years, the World Bank provided a sound baseline and footprint for the stakeholders in Oman in key locations along the entire coast. The methodology was developed, finalized and implemented with the World Bank team and the MAFW.

Preparatory steps and pilot surveys were completed between April and June 2014 to inform and refine the resulting stakeholder analysis methodology. A series of meetings, workshops and familiarization visits were undertaken in locations from the capital of Muscat to Musandum in the North, and Salalah in the South, to observe coastal conditions and fishing activity, hold stakeholder meetings as well as road-test methods.

The first pilot stakeholder workshop was organized within the MAFW in Muscat during April 2014. A range of people attended these workshops, from fishers, to secondary fish sellers, government officials and others.



**Table 1: Classification of Key Stakeholders in the Fisheries Sector**

CATEGORY	KEY STAKEHOLDERS	COMMENT
1. Ministry for fisheries sector (and link to Citizens)	MAFW	Identified prominently by stakeholder analysis; recorded as ‘most powerful’; Responsible for sector, and link to other government ministries and citizens.
2. Primary stakeholders	Fishermen	Identified prominently by stakeholder analysis; recorded as ‘most dependent’ on sector.
3. Service providers	Traders, Fish factories, Repair workshops, Transporters	Identified as key stakeholders within the ‘Institutional Mapping’ analysis.
4. Government and regulators (and link to Citizens)	National Government, Municipal Council, <i>Wali</i> , <i>Sunnat-al-bahar</i> [and Citizens in turn]	Identified as key stakeholders within the ‘Institutional Mapping’ analysis; National government has overall responsibility for link to Citizens.
5. Political	<i>Shura</i> Council members (elected members of the lower house of the Council of Oman)	Identified in specific Governorate Workshops.
6. Government partners	Government agencies, Oman Development Bank	Identified as key stakeholders within the ‘Institutional Mapping’ analysis.
7. Local communities	Fishermen’s Associations	Identified as key stakeholders within the ‘Institutional Mapping’ analysis.
8. Academic	University, Colleges	Identified as key stakeholders within the ‘Institutional Mapping’ analysis.
9. Media	Newspapers, TV, Internet-based media	Omitted from the identification of key stakeholders, but evidently engaged with sector (through regular reports on issues and news in Oman)
10. Industry and Trade Associations	[a future development option]	None at present in Oman, but may emerge in time, two Fishermen’s Associations are planned, and broader Associations may follow.

Core concerns emerged from the workshops: Young people are reluctant to take up a career in fishing. The power of traders and merchants has increased while *Sunnat-al-bahar* influence has declined. And need for greater involvement of women in the sector.

Information collected during stakeholder consultations suggests that the pool of uneducated Omanis, who traditionally provide the core of the small-scale inshore fishing sector, has shrunk dramatically in recent years, and this decline is expected to continue.



## Stakeholder Consultations



**Table 2: SWOT Analysis from Stakeholder Engagement (October 2014)**

<b>Al Wusta Governorate - Fisheries Sector – SWOT Analysis - Women</b>	
<b>Strengths</b>	<b>Weaknesses</b>
1) abundance of marine wealth	1) fishermen do not comply with rules for fishing seasons
2) very long coast along Arabian Sea	2) inadequate observation team on the coast
3) biological marine ecosystem	3) use of forbidden fishing gears
4) presence of government support for laborers working in the sector	4) presence of foreign labor
5) presence of several fish factories like ice, drying and salting factories	5) coastal pollution from several companies/factories
6) importance of coastal women project (proposed)	6) absence of fish market (for public sales)
	7) no opportunity for women to work in the sector because of stoppage of 'coastal women project
<b>Opportunities</b>	<b>Threats</b>
1) presence of projects that serve the region	1) increase in number of cyclones and incidence of high waves
2) coastal women project	2) presence of companies/factories resulting in coastal pollution and reduction in fisheries wealth
3) many job opportunities are provided in contrast to other regions	3) increase in foreign laborers
4) lectures and seminars to educate fishermen and increase awareness	4) misuse of certain fishing gear resulting in decrease in fish stock
<b>Ash Sharqiyah Governorate - Fisheries Sector – SWOT Analysis - Men</b>	
<b>Strengths</b>	<b>Weaknesses</b>
1) diversity of fishing seasons	1) overfishing
2) long coastline in the region	2) pollution and lack of observers
3) increase in number of fishermen/workers	3) dependence on foreign laborers/fishermen
4) presence of turtle sanctuary	4) absence of fishermen institute/training school
5) presence of fishing harbors	5) non-compliance by most fishermen with fishing regulations and rules
<b>Opportunities</b>	<b>Threats</b>
1) form fishermen association	1) low demand for fish products
2) educate fishermen and increase awareness	2) marine pollution
3) availability of space for aquaculture	3) weak interaction between fishermen and ministry in ongoing projects
4) design projects for private sector involvement/investors in the fisheries sector	4) absence of direct support from government to fishermen
	5) increase in foreign laborers/fishermen



Although detailed employment data is lacking, one clear fact is that fewer young Omanis wish to enter the traditional skiff sector as full-time fishers. This is not surprising when remuneration for skiff crew can be as low as 200 to 300 OMR per month. While some may be prepared to engage in part-time fishing, perhaps supporting family traditions, many have alternative employment opportunities and aspirations for a lifestyle with greater economic reward.

A wide range of important lessons emerged from the implementation of a stakeholder analysis study in Oman. All of the workshop participants undertook a “Strengths, Weaknesses,

Analysis of the stakeholder workshops revealed implications for future engagement strategy.

### Fishermen, Barka



Opportunities and Threats” (SWOT) analysis of the sector. There was a high level of coherence between the results produced in each governorate and also between male and female participants, albeit with some variation.

In terms of strengths, most stakeholders were optimistic about the future of the sector. Experienced fishers highlighted the abundance and diversity of fish stocks, including valuable tuna as well as abalone and cuttlefish. There is a large workforce of experienced fishermen; however, many of them expressed hope for more support from the government.

Other opportunities stakeholders identified included outreach to fishers, the desire for an increase in technical capacity, and interest in the development of aquaculture. Analysis of the stakeholder workshops revealed implications for future engagement strategy. Further development requires a new, more complementary relationship, including private sector involvement.

Efforts to bolster the attractiveness of traditional fishing have taken the form of subsidies, including for skiffs, outboard motors and fishing gear. Although generous, the subsidy schemes have not kept pace with claimed need for assistance in the fishing sector, nor have they raised remuneration within the sector to a level that is competitive with alternative employment.

The process also revealed that Oman appears to be heading in the direction of a classic fisheries policy track –developing fish production, where experience from other countries has already shown the limits to this approach.

Oman’s own experience from 2004–2014 also shows how such a model could end up overexploiting the most profitable species, which are then gradually replaced in importance by less profitable ones.



# Vision 2040: A World-Class Profitable Fisheries Sector

It bears repeating that the goal of the Fisheries and Aquaculture Vision 2040 is to create a “profitable world-class sector that is ecologically sustainable and a net contributor to Oman’s economy.”

Vision 2040 proposes an alternative development scenario in which the fisheries sector will be a net contributor to the wealth of Oman, rather than being dependent upon that wealth (mainly through subsidies) for its development as at present. In Oman, as everywhere else in the world, fisheries resources have the capacity to make an important contribution to economic growth through the investable surplus that they can generate.

“In achieving Vision 2040, we will need to build a sector in a way that will ensure income levels from the fisheries and aquaculture are attractive and competitive with other sectors of the economy,” wrote His Excellency Dr. Hamed Al-Oufi, Oman Undersecretary for Fisheries.

Vision 2040 looks ahead twenty five years but it does not set out numerical goals for tonnes of fish harvested, numbers of jobs, or revenues. Rather Vision 2040 sets out a framework and processes by which Omanis will determine these outcomes on a fishery by fishery or even community by community basis. This is not something the Ministry can achieve alone; it requires policies that encourage private partnerships that can capture economic potential.

“In achieving Vision 2040, we will need to build a sector in a way that will ensure income levels from the fisheries and aquaculture are attractive and competitive with other sectors of the economy,” wrote His Excellency Dr. Hamed Al-Oufi, Undersecretary for Fisheries, Sultanate of Oman.



Rather Vision 2040 sets out a framework and processes by which Omanis will determine these outcomes on a fishery by fishery or even community by community basis.

Oman has a rich mix of fisheries with differing management demands. These range from high value large pelagic fisheries shared amongst coastal states and foreign flagged nations, to low value straddling stocks such as lantern fish shared with neighboring countries, to a complex mix of inshore demersal and pelagic stocks fished domestically. It follows that the responsibilities for management of fisheries that might develop between the MAFW and stakeholders will differ depending on the biology of the fisheries and the social and economic characteristics of the fishing activities themselves.

Vision 2040 establishes a work program for the first five years; from 2020 onwards it is expected that the MAFW will have management and capacity in place to fulfill economic and sustainability goals of fisheries management.

In the first five years of implementation, four fisheries will be targeted as pilot projects to establish stakeholder-based management, with each of the four fisheries representing a distinct type of harvesting as outlined below:

1. *A local discrete shared fishery* – The abalone fishery is a high value, single stock with defined biological and geographic limits within a sub-area of the Exclusive Economic Zone of Oman (EEZ). It therefore represents a type of fishery that is ideally suited for a high level of engagement of stakeholders (or fishers) in management from an early stage.
2. *A national shared fishery* – The cuttlefish is also high value but the biological range is such that management decisions for the fishery will necessarily encompass the whole EEZ of Oman. The institutional arrangements for stakeholder engagement will therefore be more extensive and opportunities for devolving management will be fewer than in the abalone fishery. This implies a greater regulatory role for government in the short term. It is expected that the types of arrangements established for cuttlefish will be applicable to other inshore stocks, but further work would be needed to properly define management units in these complex, often multispecies, inshore fisheries.
3. *Regional shared fishery* – The kingfish is a regionally distributed fishery—largely within the EEZs of the Gulf Cooperation Council (GCC) states. Agreement





### BOX 3: Diving for Abalone

Diving for Abalone is a cherished tradition in Oman, which is unique to Dhofar Governorate. This has a very high unit value and has led to overexploitation, which in turn resulted in the MAFW to put in place a closed season. The loss of this valuable and sustainable fishery needs to be urgently addressed. The most significant landings data may in fact be for 2011 because they demonstrate the impact of rebuilding the stock. The 2012 data suggests that the benefits were lost very quickly. Under new management and enhancement arrangements, it may well be possible to replete the stock back to exceed harvest realized in 2011; the abalone fishery is a prime candidate for the development of a pilot fishery, moving towards a stakeholder-based regime.

among neighboring states is needed to establish effective management. The kingfish fishery also offers considerable opportunity for generating increased economic value through improved management not just to Oman, but to other GCC states that share the biological distribution of kingfish.

4. *International shared fishery* – Large tuna fisheries offer a singular development opportunity for Oman. Fished within country waters and on the high seas, the

### Hatchery reared Abalone Ready for Seeding into the Wild Fishery



## Abalone shell



fishery attracts coastal state fishers as well as fishers from foreign flagged nations. Oman's current interests in these fisheries are modest given its important status as a coastal state and its commercial advantage as a potential fisheries hub for the wider GCC. A program of development of Oman's interest in these fisheries is proposed through a public private partnership arrangement.

Concept Notes for projects to develop Oman's interests in the regional kingfish fishery and large international tuna fisheries have been developed and detailed investment projects have also been documented to pilot the Vision 2040 framework in the abalone fishery (in Dhofar) and cuttlefish fishery (in Ash Sharqiyah).

The pilot studies build on an extensive body of global evidence concerning marine fisheries' management and reform. Lessons learned from several countries as far afield as New Zealand, Chile, Mexico, and Namibia clearly show that rather than being a net drain on a national economy, sustainable fisheries can create an economic surplus and be a driver of economic growth. The wealth generated may then be the basis for creating additional economic opportunities.

In the kingfish and tuna fisheries, investments will focus on defining and securing Oman's interests in these fisheries and engaging stakeholders in the process. For the kingfish fishery, this will involve defining Oman's share of the regional stock and es-



#### **BOX 4: Replenishing the Fish**

The status of fish stock and the ability to sustain fisheries is one of the most critical considerations for the futures of these investment projects. Responsible management requires effective and continuous monitoring of the state of populations of key fish stocks. In addition, effective management of Oman’s fisheries necessitates our sophisticated understanding of fish biology and ecosystems. The preliminary research underscored the need for ongoing research, monitoring and assessment of stocks—given that most of the fish stocks assessed are overexploited.

establishing robust regional and national management arrangements. For the large tuna fisheries, there is a significant economic opportunity for Oman in securing a share of the Indian Ocean fisheries that appropriately recognizes Oman’s coastal status.

#### **Indian Oil Sardine**



#### **Pharaoh Cuttlefish**



#### **Emperor fish**



#### **Lobster**



## High value fish including tuna, kingfish, abalone and others



# The Next Generation: Employment, Training and Development to Manage and Utilize Fisheries

The pillars of this project are young Omanis. Investment in a modern and world-class fisheries sector in Oman is centered on a highly skilled and professional labor force. While fishing will always play an important part in Omani life, it is expected that future employment opportunities in the fisheries sector will focus on building technical, management and business expertise. The overarching employment goal will be to create more opportunities for employment within sector at competitive rates of remuneration so that employment in the fisheries sector is a desirable career for young Omanis with a good education. The next generation of educated Omanis will be the science and management experts as well as the business and technical leaders in this sector.

Within the MAFW there will be a focus on re-designing core systems and enhancing the capacity of staff to deliver effective management and support stakeholder lead initiatives. An organizational capacity and capability improvement program will include recruitment and training. Stakeholders will need to build new skill and technical capacities in managing their fisheries. Improved profitability will mean building business capacity. The skills and development opportunities for young Omanis span all aspects of management from research to policy, as well as each link in the value chain at the professional and technical levels.

In the first year a Policy and Strategy Unit will report to the Undersecretary of Fisheries. This unit will develop and try out new policy positions. It will also build a

While fishing will always play an important part in Omani life, it is expected that future employment opportunities in the sector will focus on building technical, management and business expertise in the fisheries sector.



## University Graduates



Photo courtesy of Oman tours.

dedicated investment program for increasing Oman's interest in Indian Ocean large tuna fisheries. The engagement would take the form of a public-private partnership and may encompass investments in offshore harvesting and onshore processing at the Duqm fishing Port facility. Capacity development in fisheries research to ensure Oman has a solid baseline understanding of the scientific status of fisheries will also be made along with upgrading outdated licensing and monitoring systems.

MAFW has already embarked on a strategy to enable greater fisheries stakeholder participation in fisheries management. Improved communication and consultation with stakeholders are the first steps in this strategy, and this process has already begun. There is opportunity to expand this work to integrate with the responsibilities of

other line ministries using up-to-date digital technology; widespread access to digital technology allows for easy cost-effective communication with stakeholders, including conveying proposals for management reform and surveying stakeholders about issues and concerns.

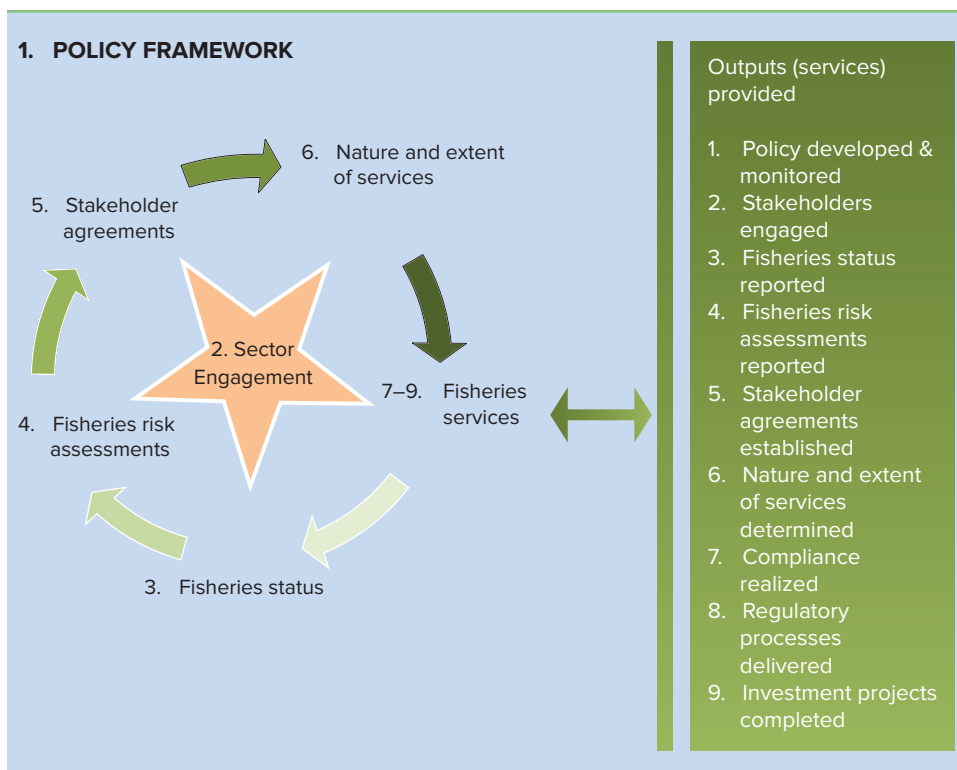
**An important area of investment will be the establishing of an integrated compliance program....**

An important area of investment will be the establishing of an integrated compliance program, which will be critical to the development of fisheries management. The commitment by Oman to increase stakeholder input and participation in the fisheries sector is an important step toward maximizing



### Figure 3: New Fisheries Management Cycle

(Showing 'Outputs' or Services that will be produced by the MAFW on an annual basis)



### Central Fish Market Women sorting and packaging fish



## Sultan Qaboos University Graduates



Photo courtesy of SQU.

voluntary compliance. The Sultanate will be making a corresponding commitment to invest in enforcement of rules agreed with stakeholders to ensure that management investments are effective and lasting. This will involve cross agency coordination through a “whole of government” approach.

Over time, increased levels of collaboration between government agencies will be expected along with improved role definition. Work will initially focus on how best to deliver frontline fisheries enforcement services in Oman. These services can be delivered by the fisheries management agency (MAFW) or other dedicated enforcement agencies such as the Omani Coast Guard. The Coast Guard already has the resources, infrastructure, enforcement powers, and trained personnel to deliver. There are strong cost-efficiency arguments for giving the Coast Guard responsibility to deliver fisheries law enforcement services--subject to MAFW specifying the nature and extent of those powers.





# Charting the Waters: Looking Forward a Quarter Century

The broad program of work over the 25-year horizon begins with a five-year 'set up' period to establish the policy and operational framework, develop capacity and effective management systems, and carry out (and learn from) four pilot studies. At the end of five years, a full plan for the development and management of all fish stocks in Oman will be established.

The Marine Science Center has already embarked on a new program of work aimed at completing an annual fisheries status report on all important or potentially important fisheries in Oman. National and international capacity will be added to the Center to carry out programs and the growing research team will provide technical support and use to update fisheries research. The Fisheries Status report will be reviewed annually with stakeholders.

Risk assessment analyses will be completed for all fisheries to underpin stakeholder based management decisions. Supporting systems will be designed and implemented and training and recruitment programs for staff and stakeholders will gradually be implemented over the five-year program.

Between 2020 and 2040, opportunities to increase sector profitability will be gradually realized as stakeholder management measures are implemented, and policies to reduce compliance costs and reliance on government financial support are realized.

Details of the fisheries management arrangements, and the risks and benefits that eventuate will depend on the biological and economic characteristics of individual fisheries and the aspirations, preferences and capabilities of the stakeholders in those individual fisheries. The outcome of the stakeholder engagement process will be the

...customized  
arrangements  
for individual  
fisheries in a  
way and at a  
pace that has  
the support of  
stakeholders.



## Proposed Duqm Fisheries Industrial Zone, Al Wusta Governorate



## Mirbat, Dhofar Governorate



establishment and maintenance of customized arrangements for individual fisheries in a way and at a pace that has the support of stakeholders.

By 2030, all stakeholder-based management will be in place where opportunities to improve economic sustainability performance are possible. By 2040, the sector will be internationally competitive and a net contributor to the economy of Oman.

The wooden Dhow is emblematic for tourists and locals alike, of the enduring beauty and natural capital of Oman's coastal communities, while new monumental ports have displayed the government's commitment to modernization and investing in hard infrastructure.

Looking forward, the World Bank supports stakeholders and government in renewing four high-value fisheries and creating the new management structure to guide, regulate and enforce fishery management. Vision 2040 is a framework for evolution, based on bottom-up development of fishery-specific management arrangements and institutions.





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