



Improving Development and Management of Somalia's Marine Fisheries and Controlling Illegal, Unreported and Unregulated (IUU) Fishing

POLICY PAPER

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Summary: This policy paper discusses the current situation of the fisheries and impacts of illegal, unreported and unregulated (IUU) fishing in Somalia. The fisheries sector has been neglected for over two decades, destroyed by civil war, its fishing communities dispersed and badly impacted by illegal fishing. This paper contributes to the debate on policy options for rehabilitating the sector and aims to draw attention of policy-makers with recommendations on planning a strategy for development and sustainable management of the fisheries and elimination of illegal fishing.

Factors that seem to negatively influence the sustainable development of the fisheries sector in Somalia are common in many African countries. These are open-access fisheries, inadequate governance capacity at national and local levels, poor management of offshore resources, and insufficient financial investment in infrastructure. In Somalia and Somaliland these factors have led to an uncontrolled surge in fishing pressure, increased risk of overfishing, rampant illegal, unreported and unregulated (IUU) fishing, and scarce benefits obtained from trade in fish (AUC-NEPAD, 2014). When the security situation is resolved Somalis will be able to exploit the full potential of fisheries to improve their economic wellbeing.

Somalia and Somaliland have a long coastline. The northeastern coastal waters are one of the most productive regions due to upwelling (Hitchcock and Olson, 1992). However, the potential of fisheries resources have yet to be realized. Many years of political instability has destroyed progress started in the years following independence and later distracted development in fisheries. With peace and stability gradually being restored the fisheries sector could contribute in food security, provision of nutritious food, employment and foreign exchange earnings.

1. THE POTENTIAL OF SOMALIA'S FISHERIES

Fisheries played a minor role in Somalia's economy before the civil war. It accounted for only one percent of the Gross Domestic Products (GDP). Annual estimated fish catch was 32,600 metric tons

valued at US \$ 36 million¹ in 2006. The potential of Somalia's fisheries is much higher than that. The exclusive economic zone (EEZ), 830,400 km² in area, has productivity² of about 882 mg C per m².per day. Despite high productivity, annual fish catch is low compared, for instance, to US West Coast with similar EEZ area and ocean productivity. In 2006 US West Coast catch was about eighteen times and over eleven times in value than Somalia's. This demonstrates that Somalia's fisheries have potential to grow up to 600,000mt/year valued \$ 350 - 940 million/year. Development of fisheries to its full potential could improve the national economy to a great extent in terms of food security, employment and foreign exchange earnings.

1.1. Food security and poverty alleviation:

Livestock are source of foreign exchange³ for Somalia but are vulnerable to drought. Domestic price of meat is dependent on weather conditions and export demand. Fisheries could be an alternative source of livelihood and seafood alternative to meat. Diversifying livelihoods, exports and local food supply through fisheries can make communities and households more resilient to local shocks and disasters aggravated by climate change and civil war. Conflict, economic disruption and displacement have exacerbated the situation in Somalia and Somaliland. Nearly one million Somalis live in exile in the region as refugees⁴. Another one million are living in internally displaced camps⁵ (IDPs). Fisheries can provide employment; food security and nutritious food for these vulnerable populations.

Meat is popular in Somalia but has high saturated fats. Fish is low in saturated fats and is an excellent source of omega-3 fats that are especially good for the health⁶. Survey showed that among fishermen 84 percent view fish as major food, therefore, source of protein in their households.

The nutritional value of seafood contributes to alleviating malnutrition and hunger in a region where food insecurity is a chronic problem due to inconsistency of rainfall, draught and famine, which Somalia experienced in 2011-2012⁷. Coastal areas tend to be more food insecure than inland areas. This is a terrible irony since Somalia's waters are highly productive with fisheries and can be good source of food to combat food insecurity.

1.2. Domestic fish consumption

The per capita fish consumption in Somalia is about 2.4-3.3 kg/year. This is low compared to global per capita of 19 kg/year. Domestic fish consumption is limited to main towns and coastal villages due to poor infrastructure limiting fish delivery to markets, seasonality of supply, and meat-eating tradition among the population. Despite low fish production and consumption, the food preferences of the population have been changing. Diaspora Somalis have played a role in increasing demand for seafood

¹ *Sea Around Us Project*; fisheries, ecosystem and biodiversity for the year 2011. Accessed on 10 20 2014. The *Sea Around Us Project* is collaboration between the University of British Columbia and the Environmental Group of the Pew Charitable Trusts.

² Primary production is measured in Milligrams Carbon per square meter per day (mg C per m².per day).

³ Somalia exported 4.2 million livestock in 2010, the highest export ever recorded, through Berbera and Boosaaso. http://www.somaliareport.com/index.php/post/370/Livestock_Exports_Drop_Dramatically_in_2011.

⁴ This includes: 427,812 Somali refugees in Kenya, 244,340 in Ethiopia, 233,723 in Yemen, 19,799 in Djibouti and 18,534 in Uganda. UNHCR Global Initiative for Somali Refugees (GISR), 20 August 2014, Addis Ababa.

⁵ <http://www.unhcr.org/pages/49e483ad6.html>

⁶ <http://www.hsph.harvard.edu/nutritionsource/>

⁷ <http://www.fsnau.org/ipc/ipc-map>

by educating the public the nutritious value of fish. People might find fish a cheaper and healthier alternative source of protein⁸.

With the political situation improving gradually there is room for growth in annual catches providing continuous supply of seafood to local markets. The rural population could also adjust to eating fish if made available. Fish consumption campaigns, promoting it as nutritious and healthy and affordable food could help popularize fish.

Small pelagic fisheries are most critical for food security. They represent around 80 percent of the total fish catch by the artisanal fleet (CGIAR, 2012). From the perspective of poverty reduction, a focus on the small-scale fisheries sector and the abundant pelagic resources in the marine waters of Somalia account for a much larger share of employment in fisheries in addition to increase food supply. FAO has carried out a fish promotion and consumption campaign in Puntland, where it appeared to be well received. Similarly, FAO and WFP have in October 2103 jointly carried out a fish consumption campaign in the Gedo region of South Somalia. Promotional activities could help increase domestic consumption by introducing fish as a locally available product, affordable and healthy food, especially for children and lactating mothers.

1.3. Employment and livelihood

The fisheries sector of Somalia could be a dependable source of employment and livelihood. In 2005 there were about 4,300 fishing boats and 20,500 active fishermen with about a fourth of these temporarily engaged in the fisheries sector (Teutcher, 2005). The increase in demand for domestic consumption and export will increase production creating more opportunities for fishermen. With increase in fish production incomes of fishing communities and private sector will grow. Government will generate more revenue and will have the financial means to invest in fisheries infrastructure.

Employment in small-scale artisanal fisheries is mainly in near shore waters and industrial scale fisheries in offshore waters. Post-harvest handling - processing, ice production, fish storage, marketing and distribution - are sources of employment mainly for women. Associated activities such as boat building, engine repair, import of fishing gear and spare parts are potential employers for small businesses. The government also employs professionals in fish inspection and quality control, fishing officers, and licensing administration. Overall, Somalia's fisheries have significant potential for job creation and could open new source of livelihood for locally displaced citizens and returning expatriate Somalis.

1.4. Foreign exchange earnings

Some fisheries products are ideal sources of export earnings while other products are consumed locally (export substitution). Exports of value-added products generate higher earnings while at the same time help create new ventures thus creating new jobs for unemployed youth and women. Development of a fisheries export segment of high value species such as lobster and tuna could create new sources of foreign exchange. Fish export to Europe, USA and Japan generate high revenues, but the requirements could be demanding and time consuming. Somalia can market fish products in the region. The Middle East and next door Ethiopia with 90 million people and growing urban centers is potential market for Somalia's fish products.

⁸ Credit of Dr. Bashir Hussein in his comments of November 07, 2014.

2. CHALLENGES TO SOMALIA'S FISHERIES

The fisheries sector of Somalia has been constrained for a long time by a number of problems, including: absence of central fisheries governance, legislation and enforcement mechanism; impacts of IUU fishing; absence of organized fisheries data; lack of fisheries infrastructure; need for a national fisheries development strategy, inadequate marketing network and poor organization of fishing communities.

2.1. Fisheries governance, laws and enforcement

Artisanal fishery management before the civil war was centralized. It was ruled by presidential decrees with no room for stakeholder participation. Industrial fishery was carried out in joint venture initially with Soviet and later on with Italian companies. The absence of central government during the civil war encouraged illegal fishing to propagate. Therefore, some artisanal fishermen took actions to protect their fishing grounds. They stood up to the illegal vessels until their idea was stolen and twisted towards maritime piracy (Bawumia and Sumaila, 2010).

The ambiguity on Somalia's declaration of 200 nm EEZ in 1989 also allowed foreign fishing companies to legitimize their illegal fishing activities. The ambiguity was clarified when Somalia declared 200 nm EEZ⁹. Regardless of the problems of jurisdiction this declaration may present in some maritime areas, it demonstrates that Somalia is controlling its maritime boundary. Similarly, after twenty years of lawlessness the FGS issued¹⁰ fisheries law. Puntland¹¹ state and Somaliland¹² had enacted fisheries laws. These fisheries laws need to be harmonized and a common enforcement system planned in Somalia and Somaliland to enable effective control of IUU fishing. To deny foreign entities ways to violate the country's territorial waters Somalia and Somaliland should jointly enact¹³ a new legislation.

In 2014 FGS, Member States and Somaliland signed an agreement in Seychelles and Addis Ababa¹⁴. They agreed to form a Federal Somali Fishing Authority (FSFA) to administer offshore highly migratory stocks and on sharing of revenues. This is a positive step that should lead to a common fisheries management policy in Somalia and Somaliland. On enforcement the European Union Maritime Capacity Building (EUCAP Nestor) has trained 150 coast guards¹⁵. Nonetheless, FGS should train its own 'Fishing Officers'.

2.2. IUU fishing and its impacts

Illegal fishing started around the time the government collapsed in 1991. It is considered another form of piracy and is believed to be the root cause of Somali piracy (Bawumia & Sumaila, 2010). It is a serious problem posing challenges to national economy, sustainability of fisheries and health of their habitats. IUU fishing is a global problem and a major threat to marine ecosystems (FAO, 2014). There are many nations striving to implement the IPOA¹⁶. Foreign IUU fishing vessels cause significant damage to marine habitat. About 800 illegal foreign fishing vessels were reported in Somalia in 2005 (HSTF, 2006). There is

⁹ Proclamation by the President of the Federal Republic of Somalia, June 30, 2014.

¹⁰ Revised Fisheries Law of 1985 submitted by Minister of Natural Resources to Prime Minister of FGS, dated 05/06/2013.

¹¹ Puntland fisheries regulation from Somali Republic Fisheries Law n. 23.

¹² Somaliland fisheries law posted on a website dedicated only to its laws <http://www.somalilandlaw.com/>

¹³ As part of this study, a Framework for Fisheries Legislative Process for Somalia is drafted and submitted along with sample legislation. It is a guide for stakeholder participatory process to draft national fisheries legislation for Somalia and Somaliland.

¹⁴ Seychelles Communique of April 6, 2014 and Addis Ababa Communique of May 3, 2014.

¹⁵ Personal communication - Marco Hekkens of EU CAP Nestor, Nairobi, August 16, 2014.

¹⁶ FAO's International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing

a high perception of illegal fishing among Somali fishing communities. Based on survey results 86% of fishermen interviewed reported sighting foreign fishing vessels near one's village in the past year.

The presence of anti-piracy task force (APTF) in Somali waters has controlled piracy but fishers said it encouraged illegal fishing to thrive by removing threat from pirates. 74% of fishermen strongly agreed that APTF patrols negatively affected their livelihood. A study¹⁷ on impacts of IUU fishing in 10 countries including Somalia showed that in 2003 Somalia lost close to \$100 million. Others estimate this value to be about \$300 million (HSTF, 2006), \$450 mil. (Waldo). Lost opportunities include income from lost jobs, taxes and revenue associated with exported fish. Not only is the revenue lost but data are lost as well.

2.3. Fish stock assessment and data collection and analysis

Fisheries statistics on Somalia date back to 1985 in FAO database (2004) and to 2010 in Sea Around Us Project (2011). For over twenty years no fish data was collected and no fish stock assessment carried out. In the absence of data it is difficult to determine the number of licenses issued annually and to set landing quotas for local artisanal and industrial fisheries and foreign fishing licenses.

2.4. Fisheries development plan and marketing strategy

To get the full benefit of fisheries requires improved infrastructure facilities and effective administrative and technical support to the fishing communities. The entire fish supply chain, including harvesting, post-harvest handling, processing, transport and marketing need to be integrated. While transformational change depends on local initiatives and government priorities international development assistance is essential towards rehabilitating the fisheries sector, as well as, building the capacity of the fishing communities.

Delivery of fish products to the market in a timely fashion and in good quality fetches good prices and encourages consumers to buy more. Efficient transport and communication system is required for fast fish delivery from landing sites to local markets and airports or seaports for export. In addition, fish marketed with added value brings higher income, creates new jobs and more revenues to the state. Currently, fish landing towns and villages are not easily accessible for efficient and timely delivery of fish products to domestic markets. As a result fishermen are not getting reasonable prices for their harvests.

2.5. Organization of Fishing Communities

The fishing communities in Somalia have been affected by the civil war, IUU fishing and lack of government support. The country could benefit more from fisheries resources if the fishing communities are empowered to exercise their fishing efforts and are provided with basic landing facilities. They should be fully supported and organized according to their professional groups (fishermen, fish women, processors and traders, boat builders etc.). The creation of a fishermen cooperative system and a revolving fund program in the major fishing regions of the country could provide the fishing communities with a startup support that could eventually lead to their self-sufficiency.

¹⁷ The study is made by Marine Resources Assessment Group (MRAG) for the Government of the UK

3. RECOMMENDATIONS

Below are recommendations for fisheries authorities on sustainable development and viable management of fisheries sector and elimination of illegal fishing. They are based on results of study of the sector and survey of fishermen in selected fishing towns and villages in Somalia and Somaliland as well as experience of other countries in fisheries management.

3.1. Measures to curb IUU fishing

Illegal fishing is eliminated by Somali efforts in close collaboration with APTF, neighboring states¹⁸, and relevant UN agencies. Nationwide, IUU fishing is controlled by legislating fisheries law and strictly enforcing it. At the same time, Somalia has to accede to international agreements and conventions, including IPOA, Agreement on Port State Measures to Prevent, Deter, and Eliminate IUU fishing, UNCLOS, IMO, as well as, active participation in regional organizations [Indian Ocean Tuna Commission (IOTC), South West Indian Ocean Fisheries Commission (SWIOFC) etc.].

a. Update legislation with stakeholder participation

The process to update fisheries legislation requires stakeholder participation, as described in a separate report¹⁹. The process also requires serious coordination within the Federal Government of Somalia and with Somaliland for fair, transparent and seamless enforcement of fisheries legislation.

b. Improve enforcement and judiciary capacity

The country needs fishing officers to enforce fisheries legislation. To efficiently enforce the law this unit requires communications, patrol and tracking equipment. The Unit must have branches in the major fish landing centers along the coasts and needs close coordination with the judiciary that prosecutes and sanctions offenders. The judiciary will handle complex local and international issues. This requires significant institutional development with external assistance. Some donors might hesitate to support such a unit, but the country needs a strong fisheries enforcement system. In the long-run, expenses related to enforcement should be covered by revenues from fisheries.

c. Introduce community-based enforcement

The coastal communities can serve as the eyes and ears of the fisheries authorities complementing government enforcement measures. In Southeast Asia, community-based enforcement is commonly practiced in fisheries management (Pomeroy, 1995). Given the length of the coastal areas in Somalia, it is essential to consider citizens enforcement mechanism just for surveillance and reporting purposes. Based on reports by citizen enforcement groups authorities can then take legal measures against intruder vessels. Surveyed fishermen consider themselves as enforcers on par with fisheries officers. Delegation of some authority to the fishing communities to enforce rules on surveillance might be appropriate. Any co-management approach in Somalia and Somaliland should consider such options. This way Somali community traditional knowledge could be utilized in fisheries management.

¹⁸ Some neighboring nations are flag states of vessels fishing illegally in Somali waters; therefore, their participation is crucial.

¹⁹ See Report on Fisheries Legislative Framework Process for Somalia.

d. Develop cooperation with Anti-Piracy Task Force (APTF)

Somalia and Somaliland need the immediate cooperation of the international community, especially, the Anti-Piracy Task Force operating in their waters to deter illegal fishing. Ongoing process by anti-piracy patrols of the foreign navies²⁰ to this effect is encouraging, but needs to go further in taking measures on IUU vessels in a real time manner to help authorities apprehend offenders in action.

3.2. Develop national fisheries management strategy

Somali fisheries should be economically viable and environmentally sustainable delivering high quality seafood to consumers, social and economic benefits to the fishing communities, alternative employment to the population, especially youth and women while generating revenues to the nation. To achieve these and other goals the sector ought to follow these management measures.

a. Decentralize fisheries management - devolution of authority to States

Devolution of fisheries jurisdiction is more relevant to nations with long coastal areas, in which case, near-shore waters are managed by states or municipalities and offshore waters by federal agency. Examples are the USA, where states control fisheries out to three miles; and the Philippines, where municipalities have authority out to 15 km. Decentralizations are typically mandated in legislations.

Somalia could decentralize fisheries management with states managing out to 12 nm and federal agency managing beyond that to the outer edge of the EEZ (200 nm). In such a legal system, enforcement of fisheries laws is carried out by federal agency. An agreement to this effect made between the FGS, Member States and Somaliland in May & April 2014 must be advanced and enacted into law.

b. Fisheries co-management– Establish Regional Fisheries Management Committees (RFMC)

Creation of co-management system in fisheries will be in line with the evolving federal administrative system in Somalia. Co-management in fisheries is achieved by dividing the coastal areas into domains of regional management units. An example is the USA which divides the management of coastal fisheries into eight regional fisheries management councils²¹ under a federal agency within a federal Ministry.

Six regional committees are proposed for Somalia and Somaliland as provided for in the report *-Fisheries Legislative Framework for Somalia*. A combination of factors including administrative jurisdictions, maritime geography, ecological boundaries and fish stock units typically defines a management unit. These units are expected to manage areas under their authority. Membership in these units represents federal and State levels, federal agencies, fishing communities, NGOs, university and traditional leaders. These Committees as part of the national fisheries strategy are mandated in the fisheries law.

c. Promote increased local fish consumption

Somalia, occasionally, faces chronic food shortages. Increased fish consumption is partly a solution and should be encouraged. For fish to be embraced as a common food on par with the traditionally common meat, it is essential to introduce and familiarize it as healthy and as alternative to meat. First, fish has to be easily accessible and qualitatively attractive. It has to be promoted as a domestic product and a source of food security because it is available in large quantities in Somalia's vast waters.

²⁰ Personal communication - Marco Hekkens of the EUCAP Nestor office in Nairobi. August 16, 2014.

²¹ There are eight regional fisheries management councils in the US. <http://safmc.net/about-us/about-safmc> and <http://www.nmfs.noaa.gov/sfa/management/councils/>

At present, fish could serve as a source of healthy food, especially among internally displaced populations (IDPs). Fish could be delivered in various forms that do not require cooling or refrigeration, such as dried, smoked, or powder form. Small and large pelagic species, which constitute a large portion of Somalia's fisheries, are convenient for preparation in dried and salted forms. This type of preparation is common in Egypt and Yemen. Fish preparation manuals, accompanied by audio-visual aids could be distributed so that people learn easy and healthy fish preparation incorporated into the local dish.

d. Improve Fish Supply Chain

There should be high standard of fish handling from harvest to consumption. Standardized fisheries facilities are required to deliver fish in accordance with these standards. Lack of these facilities forces fishermen to sell fish at sea to foreign fishing vessels. Roads, fish landing jetties, cold storage, ice plants, fish processing areas, fish market outlets, fish quality control laboratories and other facilities are vital to enable full utilization of fisheries resources and for fishing communities to get fair price for their fish.

e. Use ecosystem approach to fisheries management (EAFM)

Ecosystem-based fisheries management (EBFM) is a new direction for fishery management, so that management starts with the ecosystem rather than target species. It sustains healthy marine ecosystems and the fisheries they support (EPAP, 1999). A Somali national fisheries management strategy should promote an ecosystems based fisheries management. The strategy should address the sustainability of the entire marine environment and not only that of particular species or particular regions of the marine environment.

f. Advance integrated multi-sectoral approach

Fisheries development requires a multi-sectoral approach. The marine environment is used by different agencies. These sectoral agencies must be consulted when developing fisheries. All activities must be planned in an integrated manner to avoid conflicts and duplication of efforts.

At the community level, the coastal population must diversify their livelihoods. The majority of the population is engaged in livestock and crop production. Fish culture can be integrated with livestock husbandry and crop production, in which food production (livestock, plant and fish) could be integrated. For example, in integrated sea water farming fish is cultured in ponds using sea water (or rain water). Plants are then grown using effluent from the fish ponds. Excess water is used to irrigate gardens or to create a wetland. Such an integrated system saves energy, materials, and labor.

g. Develop international cooperation in fisheries

Somalia needs startup foreign assistance to rehabilitate its devastated fisheries sector. Development of basic facilities, as mentioned above, required at the main fish landing centers requires funding support. International partners of Somalia, including bilateral and multilateral agencies and NGOs should be petitioned to invest in these fisheries facilities for the peaceful and economically self-reliant Somalia.

3.3. Develop strong fisheries assessment systems

Lack of stock assessment surveys over the last decades and absence of information on the present status of the fisheries resources compounded by the impacts of illegal fishing is the main impediment for implementation of management measures. To assess available fisheries resources levels and

establish sustainable harvesting limits, authorities need to strengthen stock assessment and management systems. The following points are some of the measures to follow:

a. Information systems

In order to preserve, protect, manage, and sustainably utilize fisheries authorities must:

- study, monitor, and maintain the health of the marine ecosystem
- conduct fish stock assessment and establish sustainable levels of catches
- establish national and regional research centers and collect data of all fish landed
- create centers of learning to train fishing communities
- start a cooperative scheme with institutions of higher education for research in fisheries
- collaborate with neighboring littoral nations and regional and international organizations.

Currently, the capacity to carry out these functions may be limited. However, programs of implementation can be developed step by step with funding from international partners.

b. Introduce MCS and VMS systems

Fisheries monitoring, control and surveillance (MCS) is a tool that Somalia can employ to combat illegal fishing. It is the mechanism for implementation of agreed policies, plans, or strategies for fisheries management. MCS is a joint function of both fisheries agency and other law enforcement units of the state such as navy, coast guard or police. It requires efficient interagency coordination and linkage to the judiciary processes for offenders. Important tools for MCS, according to FAO (2014), include:

- participatory management plan developed with stakeholder input,
- enforceable legislation and control mechanisms,
- data collection systems - dockside monitoring, observers, sea and port inspections,
- communications systems; patrol vessels capable of extended operation to remain at sea,
- aircraft available for rapid deployment to efficiently search large areas,
- land-based monitoring and , if possible, use VMS (Vessel Monitoring System),
- support of the industry and fishers,
- bilateral, sub-regional and regional cooperation with other MCS components,
- professional staff development.

To control rampant illegal fishing by foreign fleets MCS is a high priority need for Somalia's fisheries.

c. Fisheries management planning

Fisheries management plan describes management direction of Somalia's Ministry of Fisheries in guiding implementation of fisheries activities at federal and state, levels. It directs the agency to preserve, protect, and sustainably manage fisheries resources. Plans project out objectives, priorities and targets over a five year period. The fisheries strategic plan can be modified whenever the Ministry deems it necessary. Part of a strategic plan should be development of management plans for key fisheries ecosystems and stocks, for example, large pelagic, small pelagic, reef fisheries, and lobster fishery. These management plans may be national in scope but are also linked to regional fisheries management committees (as proposed in Section 3.2).

d. Licensing and enforcement

As reported in survey, very little of fishing fleet seems to be registered and licensed, or awareness of such rules, if they are on the books, is at the very least, low. More education and outreach to fishermen is needed on why registration and licensing are necessary both to provide better information for regulatory decision making on adequate management measures to prevent overfishing, and ultimately to restrict access to the fishery as part of that process. As regards to enforcement, the Ministry of Fisheries must train its own enforcement unit of Fishing Officers to be assigned in all fish landing centers and to accompany licensed foreign fishing vessels and to conduct offshore patrol activities.

Conclusion

There is no shortage of fisheries development and assistance needed to build up the Somalia and Somaliland fisheries sector and the ability of government authorities to work with industry representatives at all levels to achieve improved sustainable fisheries development goals. This includes an elimination of rampant IUU fishing and ensuring more benefits of the rich fisheries resources off Somalia's shores are captured by local Somalis. A key message here is the need for a comprehensive approach to fisheries development and management in Somalia and Somaliland and as a path to address IUU fishing. This includes a need for legal reform, improved capacity and development of policies, regulations, information, licensing enforcement, management, and governance systems.

References

- AUC-NEPAD (2014). The Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa
Bawumia and Sumaila 2010_Fisheries Ecosystems and Piracy: A case study of Somalia.
- Berkes, F.; Mahon, R.; McConney, P.; Pollnac, R.; Pomeroy, R. 2001. Managing Small-scale Fisheries. Alternative Directions and Methods. International Development Research Centre. Canada.
- CGIAR Research Program on Aquatic Agricultural Systems (2012). Resilient livelihoods and food security in coastal aquatic agricultural systems: Investing in transformational change. CGIAR Research Program on Aquatic Agricultural Systems, Penang, Malaysia. Project Report: AAS-2012-28.
- EPAP (Ecosystem Principles Advisory Panel). 1999. Ecosystem-based fishery management. A report to the Congress by the EPAP. National Oceanic and Atmospheric Administration, National Marine Fisheries Service. Silver Spring, MD, USA
- FAO, 2014. The State of World Fisheries and Aquaculture 2014. Food and Agriculture Organization, UN.
- FAO, 2005. Somalia Country Report. Food and Agriculture Organization of the United Nations.
- FAO 2004. Somalia Towards A Livestock Sector Strategy. FAO, World Bank and EU.
- Garcia, S.M. 1994. The precautionary approach: its implications in capture fisheries management. *Ocean and Coastal Management*, 22, 99-125.
- Government Gazette, 2012. Policy for Small Scale Fisheries Sector in South Africa. February 2012.

High Seas Task Force (HSTF), 2006. Closing the net: Stopping illegal fishing on the high seas. Governments of Australia, Canada, Chile, Namibia, New Zealand, and the United Kingdom, WWF, IUCN and the Earth Institute at Columbia University.

Hitchcock, G.L.; Olson D.B. (1992). "NE and SW monsoon conditions along the Somali coast during 1987". *Oceanography of the India*: 583–593.

Pomeroy, R.S.; Pollnac, R.B.; Katon, B.M.; Predo, C.D. 1997. Evaluating factors to contributing to the success of community-based coastal resource management: the Central Visayas regional Project-1, Philippines. *Ocean and Coastal Management*, 36(1-3),97-120.

Teutcher F 2005. SOMALIA: Fisheries Sector Review – Identification Mission Report. Food and Agricultural Organization of the UN and World Bank.

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