The role of seafood in global food security

Executive Summary

Food security has persistently been recognized in the global fora as one of the world's main challenges. While progress has been made, a total of about 842 million people are estimated to suffer from chronic hunger. Growing demand for food has put additional pressure on natural resources. Mitigation through more inclusive approaches is needed to enhance food security, rural employment, gender equity, and promote the sustainable management of natural resources, with fisheries and aquaculture playing an important role.

In 2012, fish production amounted to about 157 million tonnes. Production from marine capture fisheries has remained stable. Increasing demand has been met by a robust growth in aquaculture production. Fisheries contribute to livelihoods, employment and income with particular importance in coastal communities in developing countries. Around 56 million people are directly employed in fisheries and aquaculture and some 200 along the value chain.

The legal framework relevant for fisheries consists of a suite of instruments that provide the legal basis for sustainably managing and conserving living marine resources. They support responsible fisheries, addressing a range of particular operational issues, furthering the uptake of an ecosystem approach to fisheries. A suite of legal instruments address particular challenges, such as Illegal, unreported and unregulated (IUU) fishing. A number of human rights instruments play a particular instruments, especially in relation to small communities and vulnerable groups.

A number of pressing challenges persist including overfishing, destructive fishing practices, IUU fishing, marine pollution, invasive species, climate change, and ocean acidification have led to ecosystem degradation, habitat and biodiversity loss. These challenges undermine efforts to manage fisheries sustainably and conserve marine biodiversity. While in some regions responsible fisheries management has led to restored fish stocks, a more holistic approach, for example by applying the Ecosystem Approach to Fisheries (EAF), is required.

More opportunities to address these challenges exist, including: improved implementation of legal instruments through appropriate incentives and support; strengthening institutions; more effective cooperation among States; further introduction of market instruments; more effectively addressing IUU fishing; furthering exploring the potential of aquaculture's contribution to human development. Applying human rights, acknowledging the role of women and supporting small scale actors are also instrumental. FAO is involved in a number of related global initiatives: the Global Partnership on Oceans; Fishing for the Future; and the FAO Global Initiative for Blue Growth in support of food security, poverty alleviation and sustainable management of aquatic resources. The latter aims to intensify partnerships among industry, governments at all levels, civil society organizations and communities.

1- Background

Food security is considered achieved *"when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference for an active healthy life".* Since 1990, world leaders have committed themselves to fight food insecurity and malnutrition. More than 13 years ago, the Millennium Development Goals (MDGs) were set to be met by 2015 through a global partnership. Under MDG 1, which aims to eradicate extreme poverty and hunger, the world sought to halve, between 1990 and 2015, the proportion of undernourished people. The Rio + 20 Declaration reaffirmed the commitments regarding the right of everyone to have access to safe, sufficient and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger. It acknowledged that food security and nutrition has become a pressing global challenge and, in this regard, further reaffirmed the commitment of all to enhancing food security and access to adequate, safe and nutritious food for present and future generations in line with the Five Rome Principles for Sustainable Global Food Security adopted in 2009, including for children under two, and through, as appropriate, national, regional and global food security and nutrition strategies.

Overall progress has been made in hunger reduction, albeit at a much slower rate than required to meet the set targets and at the expense of the environment and of the poorest. A total of 842 million people in 2011–13, or around one in eight persons in the world, were estimated to be suffering from chronic hunger, regularly not getting enough food to conduct an active life. The affected people face daily food shortages that prevent them from working, stunt the growth of their children, expose them to illness and lead to premature death. The health of another 2 billion people is compromised by nutrient deficiencies. At the other end of the spectrum, another 1.5 billion are overweight or obese, exposing themselves to a greater threat of diabetes, heart problems and other diseases.

Also, significant differences persist across regions, with many countries left far behind. The vast majority of undernourished people live in developing countries. Sub-Saharan Africa has made modest progress in recent years, but remains the region with the highest prevalence of undernourishment (almost 25 percent).

Furthermore, the growth in food output has placed great stresses on natural resources. It has degraded soils, polluted and exhausted fresh water supplies, encroached on forests, depleted wild fish stocks, and narrowed biodiversity, leaving these resources with a diminished capacity to meet the food needs of future generations. Intensive farming systems, combined with food wastage on a massive scale, have also become a big source of the greenhouse gas emissions that help to drive the processes of climate change that, in turn, are expected to create new adaptation challenges for farmers.

To ensure adequate food and nutrition security for a global population that is projected to exceed 9 billion by 2050, much of it in developing countries prone to hunger, is a daunting challenge. Governments, international organizations and community leaders should make economic growth more inclusive through policies that target food security and foster rural employment, strengthen social protection, scale up nutrition-enhancing interventions to improve dietary diversity and the health of the environment, especially for women and youth, and promote the sustainable management of natural resources and food systems. Fisheries and aquaculture can play a significant role in this regard.

2- Seafood production and utilization

From ancient times, fisheries and aquaculture have been an important source of food and a provider of livelihoods and economic benefits to millions of people engaged in harvesting, culturing, processing and trading it along the world's seashores and waterways.

Fish production was estimated at 157 million tonnes in 2012 of which some 100 million tonnes of marine seafood (Table 1). For the same year, the apparent per capita fish consumption was 19.1 kg. Fish products provide about 17% of global animal proteins and essential micronutrients (omega 3 fatty acids, vitamins A, B and D, zinc, iodine, selenium, calcium and iron). Populations in Low Income Food Deficit Countries (LIFDCs), Africa and Asia rely even more on fish for their intake of animal proteins, 24.7%, 18.2% and 23.2% of their intake respectively. This contribution can reach 40% or more of total animal proteins in some small island developing states as well as in Bangladesh, Cambodia, Côte d'Ivoire, Equatorial Guinea, the Gambia, Ghana, Indonesia, Myanmar, Philippines, Sao Tome and Principe, Senegal, Sierra Leone and Sri Lanka.

While fish production from marine capture fisheries has been fairly stable in recent years (around 80 million tonnes in 2006-2012), the demand for fish and fishery products has continued to rise. Consumption has more than doubled since 1960s. The increasing demand has been steadily met by a robust increase in aquaculture production, estimated at an average 8.1% yearly growth during the period 1970 – 2012, while the world population grew at an average of 1.6% per year. As a result, the average annual contribution of food fish from aquaculture for human consumption has increased sevenfold, from 6% in 1970 to 49% in 2012.

Likewise, livelihoods, employment and income can be generated from culturing, harvesting, processing and marketing fish. These activities attain great significance along the coastal areas of many developing countries where large sections of the population have limited opportunities for employment. Access to harvesting fishery resources, their processing and trade is often important, or sometimes the only option open for earning a livelihood, improving earnings and the quality of lives. Around 56 million people are directly employed in fisheries and aquaculture and some 200 million direct and indirect employment opportunities occur along the value chain from harvesting to distribution, making the livelihoods of some 660 to 820 million people (9 to 12% of the global population) dependent on the sector. Employment in the fisheries and aquaculture sectors has grown faster than the world's population and faster than employment in traditional agriculture.

Fish and seafood are amongst the most traded food commodities. About 38% of the global production enters international trade in various forms and shapes, generating a value of about US$129 billion in 2012 and preliminary data for 2013 point to a further growth at US$136 billion in 2013. Over 53% of this trade originates in developing countries whose net trade income (export – import), valued at US$35 billion in 2012, is greater than the net trade income of the other agricultural commodities combined.

Table 1. World fisheries and aquaculture production and utilization (FAO, 2014)

	2007	**2008**	**2009**	**2010**	**2011**	**2012***
PRODUCTION (in million tonnes)						
Capture fisheries						
Inland	10.1	10.2	10.4	11.2	11.1	11.5
Marine	80.7	79.9	79.6	77.7	82.4	79.5
Total capture fisheries	***90.7***	***90.1***	***90.0***	***89.0***	***93.5***	**91.0**
Aquaculture						
Inland	33.4	36.0	38.1	40.9	43.9	46.4
Marine	16.6	16.9	17.6	18.1	18.8	20.1
Total aquaculture	***49.9***	***52.9***	***55.7***	***59.0***	***62.7***	***66.5***
Total fish production	**140.7**	**143.0**	**145.7**	**148.0**	**156.2**	**157.5**
UTILIZATION (in million tonnes)						
Human consumption	**117.4**	**120.8**	**123.8**	**128.1**	**132.3**	**135.4**
Non-food uses	23.3	22.3	21.9	19.9	23.9	22.1
Population (billions)	6.7	6.8	6.8	6.9	7.0	7.1
Per capita food fish supply (Kg)	**17.6**	**17.9**	**18.1**	**18.5**	**18.9**	**19.1**

**Estimate*

3- Legal and policy context[1]

a) UNCLOS, UNFSA and fisheries instruments

United Nations Convention on the Law of the Sea (UNCLOS)

UNCLOS was adopted in 1982 and came into force on 16 November 1994. UNCLOS establishes a comprehensive legal regime for the world's oceans. Among others, the Convention provides for the division of the oceans in marine areas in different zones that fall both within national sovereignty or jurisdiction and beyond national jurisdiction. For each of these zones, the Convention lays down specific rights and responsibilities for the usage of the marine space and environment and the resources present in them. Of particular importance for the international governance of fisheries, are the provisions related to management and conservation of straddling and highly migratory fish stocks (articles 62 and 63) and the provisions relating to the management and conservation of living resources in the high seas (article 118). In respect of these marine living resources, UNCLOS requires that States cooperate with each other, either directly or through appropriate regional organizations.

The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (the Fish Stocks Agreement)

The Fish Stocks Agreement was adopted in 1995 and entered into force on 21 December 2001. The Agreement facilitates the implementation of certain provisions of UNCLOS concerning the conservation and management of straddling fish stocks and highly migratory fish stocks (articles 63 and 64 of UNCLOS). It introduces a number of principles that address the management and conservation of straddling and highly migratory fish stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks, based on the best scientific evidence and precaution. The Fish Stocks Agreement addresses the compatibility of conservation and management measures in high seas areas and areas under national jurisdiction. It reinforces the obligation of States to cooperate in the management and conservation of these resources through RFMO/As and denies access to the resources to non-cooperating States. Where no RFMO/A exists, States are to establish them.

Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement)

The Compliance Agreement was adopted on 24 November 1993 and entered into force on 24 April 2003. It aims at improving governance of fisheries on the high seas, in particular by reinforcing flag State enforcement and control. The Compliance Agreement lays down basic responsibilities of flag States for fishing vessels used or intended for fishing on the high seas. The Compliance Agreement reiterates certain provisions of UNCLOS and provides measures that flag States need to take to ensure that vessels flying their flag comply with international conservation and management measures on the high seas. States may exempt fishing vesssels of less than 24 meters from the application of the Agreement.

[1] Additional information in relation to legal instruments is provided in the Annex.

FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (Port State Measures Agreement)

The FAO Port State Measures Agreement (PSMA) was approved by the FAO Conference on 22 November 2009 but has not yet entered into force[2]. The objective of the PSMA is to ensure the long-term conservation and sustainable use of living marine resources by enhancing port State measures to combat IUU fishing. The PSMA lays down a minimum set of standard measures to be applied by port States when foreign vessels seek entry into ports or while they are in port. Through the implementation of defined procedures to verify that such vessels have not engaged in IUU fishing, and other provisions relating to the denial of access to ports, port inspections, prohibition of landing, detention and sanction, fish caught through IUU fishing activities can be blocked from reaching national and international markets.

b) Human rights law

The right to adequate food and the fundamental rights to be free from hunger are the most relevant human rights to seafood. These rights are recognized in the International Covenant on Economic, Social and Cultural Rights, article 11. Key elements of the right to food in article 11 are the availability of safe, nutritious and culturally acceptable food, the physical and economic access to that food, and the sustainability of the food production.

States Parties are obliged under article 2 of the Covenant to take steps, individually and through international cooperation, to the maximum of available resources, to progressively achieve the full realization of the rights contained in the Covenant, including the right to food. The principles of non-discrimination and equality of men and women is also among the obligations. Specifically with regard to the fundamental right to be free from hunger, States Parties are required to establish programmes and take other measures to improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources, and to ensure an equitable distribution of world food supplies in relation to need, taking into account the problems of both food-importing and food-exporting countries (article 11:2).

According to the Treaty Body for the Covenant, the Committee on Economic, Social and Cultural Rights, the right to food, like all human rights, entails three types of obligations, to respect, protect and fulfil the right. States parties themselves must thus respect the right by refraining from taking any action that could impede the enjoyment of the right, protect rights holders from interference by third parties, in particular by having an adequate legal framework in place, and to fulfil the right by facilitating its enjoyment and, as a last resort to provide for those who are unable to feed themselves (CESCR, General Comment 12, 1999).

[2] The Port State Measures Agreement will enter into force after the deposit of the 25th instrument of ratification, acceptance, approval or accession (article 29).

c) Non-binding instruments

The Code of Conduct for Responsible Fisheries

The Code of Conduct for Responsible Fisheries was adopted by the FAO Conference during its Twenty-Eight Session, held from 20 to 31 October 1995[3]. The Code of Conduct is a voluntary instrument that is global in scope and applies to all fisheries activities, irrespective of where they take place[4]. The Code, consisting of a collection of principles, goals and elements for action, aims at guiding countries and groups of countries in the development or improvement of their fishery and aquaculture sectors, whilst ensuring the long-term sustainable use of fisheries resources and habitat conservation, guaranteeing food security, and alleviating poverty in fishing communities.

Under the framework of the Code, FAO has initiated the drafting, promotion and implementation of a series of negotiated soft law instruments in the form of International Plans of Action, Strategies and International Guidelines. Moreover, a series of technical guidelines on the implementation of specific parts of the Code have been developed by FAO.

The International Plans of Action (IPOA) relate to the management of fishing capacity, to reducing incidental catch of seabirds in longline fisheries, to the conservation and management of sharks, and to preventing, deterring and eliminating IUU fishing. Strategies for the improvement of information on status and trends of capture fisheries and of aquaculture have also been developed and are being implemented worldwide.

The International Guidelines developed relate to various issues, including: ecolabelling of fish and fishery products from marine capture fisheries; the management of deep-sea fisheries in the high seas; reduction of sea turtle mortality in fishing operations; by-catch management and reduction of discards. In February 2013, an FAO Technical Consultation also adopted the Voluntary Guidelines for Flag State Performance[5], which aim to prevent, deter and eliminate IUU fishing through the effective implementation of flag State responsibilities. Furthermore, FAO, through another technical consultation, is currently drawing up Voluntary Guidelines on Securing Sustainable Small-Scale Fisheries (SSF Guidelines), which focus on the needs of developing countries, and will be relevant to small-scale fisheries in marine and inland waters, covering fishing as well as related post-harvest and upstream activities.

Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security

The Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security were adopted by the Committee on World Food Security and the Council of FAO in 2004, in the follow up to the World Food Summit: five years later decision (2002).

[3] FAO Conference Resolution 4/1995, adopted during the Twenty-Eighth Session of the FAO Conference, C 1995/REP, paragraph 81.

[4] Article 1.1, 1.2 and 1.3 Code of Conduct.

[5] To be endorsed by the FAO Committee on Fisheries in June 2014

Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)

The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security were officially endorsed by the Committee on World Food Security in 2012. The VGGT build on the Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security mentioned above.

d) National laws and regulations

FAO supports its Member Countries in developing and reviewing their national legal frameworks in all fields related to food and agriculture, including fisheries, aquaculture and the right to food. In this context, continuing legislative support is provided. In addition, FAO maintains a number of legal databases: FAOLEX, containing national legislation related to the field of food and agriculture,[6] as well as a number of specific fisheries and aquaculture related databases, which contain legal texts applying to foreign fishing vessels in coastal waters (Fishlex),[7] legal provisions applying to fishing vessels while in port (Portlex),[8] and legal frameworks related to aquaculture (NALOS)[9] .

[6] http://faolex.fao.org/
[7] http://faolex.fao.org/fishery/
[8] http://www.fao.org/fishery/psm/collection/en
[9] http://www.fao.org/fishery/nalo/search/en

4- Challenges

To contribute effectively to the global food security challenges of the coming decades, fisheries and aquaculture would need to overcome various obstacles. Economic growth in Fisheries and Aquaculture in recent decades has been accomplished in several parts of the world through unsustainable exploitation of many aquatic resources. Such growth has commonly not allowed fish stocks or habitats to regenerate, resulting in overfishing, ecosystem degradation and habitat and biodiversity loss. Consequently, the share of marine fish stocks that are over-exploited has increased during the last decades, from 10% in 1970 to nearly one third in 2009. A further 52% of the fish stocks are fully exploited.

Illegal, unreported and unregulated (IUU) fishing remains one of the greatest threats to marine ecosystems, undermining national and regional efforts to manage fisheries sustainably and conserve marine biodiversity. IUU fishing, estimated at 11 to 26 million tonnes a year, is found in all types and dimensions of fisheries, occurs both on the high seas and in areas under national jurisdiction, concerns all aspects and stages of the exploitation and utilization of fish, and may sometimes be associated with organized crime. Fisheries resources are poached in a ruthless manner by IUU fishing, often leading to the collapse of local fisheries, with small-scale fisheries in developing countries being particularly vulnerable. Moreover, IUU fishing-derived products illegally find their way into local or overseas trade markets, thus undermining the local fisheries economy and depriving local communities from guaranteed food supplies. As a result, the livelihoods of fishers and other fishery-sector stakeholders are threatened, and poverty and food insecurity are exacerbated.

Fishing continues to be one, if not the most hazardous occupation in the world, resulting in over 24,000 deaths annually, mainly on board small fishing vessels. Disease outbreaks have cost the global aquaculture industry tens of billions of dollars over the last 20 years. The tsunami of December 2004 in the Indian Ocean caused massive loss of life (over 230,000 deaths), severe damage to the physical infrastructure of many Asian countries estimated at over US $ 10 billion and another US $ 11 billion for its reconstruction and left over 1.7 million people homeless.

The good news is that in some regions, the introduction of proper fisheries management schemes has restored fish stocks. In fact, FAO and the World Bank estimate that the potential economic gain from restoring fish stocks and reducing fishing capacity to an optimal level is in the order of US $ 50 billion per year.

Nevertheless, the degradation of marine ecosystems by marine pollution, invasive species, climate change, ocean acidification, and other habitat or ecosystem impacts from human activities, is a major concern for sustainable seafood production. There are apprehensions about the capacity of an ecosystem to withstand the impact of human activities in order to continue to support and maintain a balanced, integrated, and adaptive biological community, which has a species composition, diversity and functional organisation comparable to that of similar natural habitats in the region. This has given rise to a societal demand for a more holistic management system for fisheries – e.g. an Ecosystem Approach to Fisheries (EAF) - which involves the conservation of ecosystem structures, processes and interactions as well as a viable human community through sustainable use practices. Much of the world's marine

production originates from coastal ecosystems, such as estuaries, marshes, shallow bays and wetlands, mangroves, coral reefs and sea-grass beds. These play a major role in the life cycle of many marine organisms, including economically important fish species, by providing breeding, nursery and feeding grounds. Degradation of coastal ecosystems can occur for a variety of reasons such as competing uses of resources, such as land reclamation, drainage, coastal construction, pollution or destructive fishing practices.

Destructive fishing, which usually refers to the use of fishing gears in ways or in places such that one or more key components of an ecosystem are obliterated, devastated or ceases to be able to provide essential ecosystem functions also has an impact on sustainable fisheries and thus food security. While a few fishing practices are inherently destructive such as use of explosives and toxins, there is the potential for negative impacts associated with commonly used fishing gears such as trawls, dredges, gill nets, pots, traps, hooks and lines. The magnitude and extent of such impacts on ecosystems varies widely and to a large extent depends on: the physical characteristics of the gear (trawl, dredge, gillnet, hooks, pots); the mechanics of its operation; where, when and how the gear is used; and the extent of its use. For example, the use of bottom trawls or dredges in areas containing fragile and vulnerable marine habitats can quickly result in extensive damage to benthic flora and fauna. However, such impacts might not occur in high sediment flux estuaries, muddy or sandy substrates. Towed fishing gears which include trawls and dredges are also particularly energy hungry and often result in high consumption of fossil fuels and large carbon footprints. Synthetic pots, traps, gillnets and Fish Aggregating Devices (FADs) lost or discarded at sea can continue to catch and kill fish and other animals (including endangered, threatened and protected species including seabirds, sharks, turles and marine mammals) through a process known as ghost fishing. FAOs last global assessment of discards reports that 7.3 million tonnes of fish and other animals captured and thrown away at sea annually. Much of the discarding is associated with the use of poorly selective fishing gears and often includes large quantities of juveniles of food fish species. And while Low Impact Fuel Efficient (LIFE) technologies and practices have been developed in some regions / fisheries to mitigate negative impacts of fishing, their widespread use and adoption requires capacity building to support technology transfer to adapt proven technologies from one fishery to the specific conditions found in others. Rapid and widespread “on the water change” will occur when awareness is raised at local and national levels and when fishers are full partners in the process of impact mitigation.

An additional challenge is the build-up of carbon dioxide and other greenhouse gases in our atmosphere which is changing several of the features of the earth’s climate, oceans, coasts and freshwater ecosystems that affect fisheries and aquaculture. Air and sea surface temperatures, rainfall, sea level, acidity of the ocean, wind patterns, and the intensity of tropical cyclones are all changing. Climate change is modifying the distribution and productivity of marine and freshwater species and is already affecting biological processes and altering food webs. The consequences for sustainability of aquatic ecosystems for fisheries and aquaculture, and for the people that depend on them, are uncertain. It is clear that fishers, fish farmers and coastal inhabitants will bear the full force of these impacts through less stable livelihoods, changes in the availability and quality of fish for food, and rising risks to their health, safety and homes. Many fisheries-dependent communities already live a precarious and vulnerable existence because of poverty and their lack of social services and essential infrastructure. The well-being of these communities is further undermined by overexploited fishery resources and degraded ecosystems. The implications of climate change for food security and livelihoods in small island states and many developing countries are profound. Investments are urgently needed to mitigate these growing threats, to adapt to their impacts and to build our knowledge of complex ocean and aquatic processes. The overarching requirement is to reduce global emissions of greenhouse gasses -- the

primary human driver of climate change. Fisheries and aquaculture need specific adaptation and mitigation measures that:

- improve the management of fisheries and aquaculture and the integrity and resilience of the oceans and other aquatic ecosystems;
- respond to the opportunities for and threats to food and livelihood security due to climate change impacts; and
- help the fisheries and aquaculture sector reduce its own greenhouse gas emissions and support the ocean's natural carbon sequestration and storage capabilities

5- Opportunities for enhancing the role of seafood in global food security

Although asserted at high levels meetings, such as the United Nations Conference on Sustainable Development (Rio +20), the important contribution of fisheries and aquaculture to food security and nutrition has not always received the attention it deserves, and most strategies aiming at improving food security neglect fisheries and aquaculture or make only passing reference to it. It is important to map the real contribution fisheries and aquaculture make, or can make to food security and nutrition, and recommend policies to ensure that food security strategies incorporate the fisheries and aquaculture sectors.

Restoring and maintaining the health of oceans is vital. The institutional weaknesses that have led to overfishing and overexploitation, habitat degradation and pollution have been debated in various fora (Rio 1992, WSSD 2002, Rio +20) which led to key commitments by world leaders and Governments. Based on the international agreements, treaties, and targets, a vast array of programs and initiatives, often sector specific or region specific, have been launched but have not achieved the expected results to reverse the trend of overfishing and habitat degradation, although some successful stories have been reported. A coordination of these initiatives is needed with the view to develop a coordinated action to increase cooperation and investment around proven solutions.

As described before, there is a strong international legislative and policy framework for fisheries already in place with UNCLOS, UNCA, UNFSA, the FAO Code of Conduct for Responsible Fisheries and its related international agreements, guidelines and plans of action. The challenge is to provide incentives and adequate resources to adapt and implement this framework at the local, national and regional level to secure political commitment and governance reform, including by building effective institutions that lead to the adoption of ecosystem approaches to fisheries and aquaculture with fair and responsible tenure systems.

Special attention needs to be directed to small scale fisheries and the actors, who are often economically, socially and politically marginalized, need to be encouraged to fully contribute to food security and poverty reduction. Adopting a human rights-based approach to development is one way to create that enabling environment to reduce current vulnerabilities and allow the small-scale fisheries sector to unfold its full potential.

FAO is currently facilitating the development of International Guidelines for Securing Sustainable Small-Scale Fisheries Development which go beyond the traditional realm of fisheries management and address crucial socio-economic issues.

Women are engaged in all aspects of the fisheries value chain. Unfortunately, they often lack the means to access the policies that allocate rights to the land and to harvest natural resources. There needs to be a better understanding of the dependence of poor women on common property resources, the threats to their livelihoods and constraints to sustainability. The documentation and sharing of experiences and good practices from countries which have addressed these issues is crucial in the identification and analysis of policy options.

Fisheries organizations and collective action provide a pathway by which men and women can have a voice in decision-making and the strength to claim their rights to common property resources. The status, strengths and weaknesses of these organizations have to be understood and the capacity development needs identified so they can be effective in providing that voice and collective strength.

The strengthening of bilateral and multilateral cooperation among States, including through the support of Regional Fisheries Bodies (RFBs) and FAO, significantly contributes to the success of regional management and governance of sustainable fisheries and aquaculture.

RFBs are the primary organizational mechanism through which States work together to ensure the long-term sustainability of shared fishery resources. The term RFB also includes Regional Fisheries Management Organizations (RFMOs) which are those RFBs with a mandate to establish binding conservation and management measures.

On-going liaison with regional fishery bodies and monitoring of their activities has revealed that most RFBs are struggling to fulfil their mandates. RFBs deserve greater recognition and support from the international community of States. They are an important example of strength through unity. They demonstrate collaboration and cooperation between developed and developing States working together to restore sustainable fish stocks.

Despite national, regional and international mechanisms to improve the sustainability of fish stocks, the state of some of the world's fisheries remains fragile. Disappointment with progress on sustainability has led to the development of market instruments such as eco-labelling certification schemes to influence the purchasing decisions of consumers and the procurement policies of retailers and food services selling seafood products, as well as to reward fisheries and aquaculture operations engaging in responsible practices. A range of eco-labelling and certification schemes exists in the fisheries and aquaculture sector, each with its own criteria, assessment processes, levels of transparency and sponsors. What is covered by the schemes can vary considerably: by-catch issues, fishing methods and gear, sustainability of stocks, conservation of ecosystems and even social and economic development. The sponsors or developers of standards and certification schemes also vary – private companies, industry groups, non-governmental organizations (NGOs), and even some combinations of stakeholders. A relatively new development is government-sponsored national eco-labels (e.g. Alaska, France and Iceland). In the future, the procurement policies of seafood distribution firms with targets for eco-labelled fish are likely to drive demand and spread it to new markets. More fisheries and aquaculture operations will need to be certified to meet that demand.

The curbing of IUU fishing will contribute to strengthened fisheries management and governance at national, regional and international levels, in turn contributing to enhanced food security. The coming into force and the worldwide implementation of the 2009 FAO Port State Measures Agreement is expected to eradicate entry into ports of IUU fishing-derived fish and fishery products. In conjunction with other tools such as the global record of fishing vessels, catch documentation schemes and satellite monitoring, the PSMA is believed to be one of the most cost-effective and efficient means of combating IUU fishing. It is also hoped that the recently adopted Voluntary Guidelines on Flag State Performance would serve as a valuable tool for strengthening compliance by flag States with their international duties and obligations regarding the flagging and control of fishing vessels, ultimately contributing significantly to combating IUU fishing.

Aquaculture has made great contribution to people's livelihoods, food security, poverty alleviation, income generation, employment and trade; and the potential of aquaculture's contribution has not yet been fully realized across all continents. The potential of aquaculture's contribution to human development and social empowerment cannot be fully realized without consistent, responsible policies and goals, effective institutional arrangements and regulatory frameworks, and improving co-operation amongst stakeholders at national, regional and inter-regional levels.

In addition to being very active in regional and international undertakings such as the Global Partnership on Oceans (GPO) or Fishing for the Future, FAO has recently developed a Global Initiative for Blue Growth in support of food security, poverty alleviation and sustainable management of aquatic resources.

With the Blue Growth Initiative, FAO aims to enable the catalysis of policies, investment and innovation which would underpin sustained growth and give rise to new economic opportunities such as ecosystem services. It would integrate key aspects of food security, economic performance, such as poverty reduction, job creation and social inclusion, with those of environmental performance, such as mitigation of climate change, eco-systems and biodiversity loss. It would mobilize technical support and build local capacity for the design and implementation of Blue Growth Strategies and create action-oriented policy options and institutions tailored to the respective economic circumstances and constraints of Member Countries.

The initiative would aim to intensify partnerships among industry, governments at all levels, civil society organizations and communities. The recognition of the fundamental role the private sector, CSOs and public-private partnerships will play in changing current behaviors, practices and technologies, and accepting that short- term economic impact will be superseded by long-term economic gain, is essential.

Several countries have adopted national strategies for Blue Growth and are seeking and receiving technical support in implementing these strategies, including through provision of their own resources or through support from development organizations such as FAO. The Initiative would build on examples of successful reforms that can be customized to a wide range of countries and contexts, with the aim to scale up proven solutions for the benefit of further communities, countries and global well-being.

ANNEX - ADDITIONAL INFORMATION ON LEGAL INSTRUMENTS[10]

Legally-binding instruments

United Nations Convention on the Law of the Sea (UNCLOS)

The most relevant provisions for the sustainable management and conservation of living marine resources provided in UNLOS are set out below.

In its territorial sea, a coastal State exercises sovereignty, subject to UNCLOS and other rules of international law (article 2 UNCLOS). In its EEZ, a coastal State has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living. While other States have rights and duties in the EEZ of third States, these rights do not apply to fisheries (article 58 UNCLOS). A coastal State has rights and obligations in relation to the conservation of living resources in its EEZ. Among other duties, a coastal State must determine total allowable catches (article 61 UNCLOS). In addition, coastal States have the obligation to promote the objective of optimum utilization of the living resources in their EEZ. Where a coastal State does not have the capacity to harvest the living resources of the total allowable catch, it shall give other States access to the surplus (article 62 UNCLOS). Nationals of other States fishing in the EEZ must comply with the conservation measures and with other terms and conditions established in the laws and regulations of the coastal State, consistent with the provisions of UNCLOS (article 62 UNLCOS).

In relation to straddling stocks occurring in the EEZs of two or more coastal Sates, these States must seek to agree, either directly, or through appropriate subregional or regional organizations, on measures for the conservation and development of these stocks. Where stocks occur both within and beyond an EEZ, the coastal State and States fishing for such stocks in the adjacent areas must seek to agree, either directly or through appropriate subregional or regional organizations, on measures for the conservation of these stocks in the adjacent area (article 63 UNCLOS).

Article 64 UNCLOS relates to highly migratory species, as listed in Annex I. It provides that a coastal State and other States whose nationals fish in the region for listed highly migratory species must cooperate directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization, both within and beyond the EEZ. In regions for which no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region shall cooperate to establish such on organization and participate in its work.

Section 2 of Part VII of UNCLOS, related to the conservation and management of the living resources of the high seas, applies to high seas stocks. Article 116 provides that States have the right for their nationals to engage in fishing subject to a number of obligations. Article 117 specifies one of these obligations by providing that all States have a duty to take or to cooperate with other States in taking measures for their national necessary for the conservation of the living resources in the high seas. Article 118 provides more detail in relation to this obligation and determines that States must cooperate

[10] The information provided in this Annex is to be read in conjunction with the information provided in the body of the document and does not provide an exhaustive overview of the legal instruments.

with each other in the conservation and management of living resources in areas of the high seas. States whose nationals exploit identical living resources, or different living resources in the same area must enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned. These States must cooperate to establish subregional or regional fisheries organizations to this end.

The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (the Fish Stocks Agreement)

The Agreement facilitates the implementation of certain provisions of UNCLOS concerning the conservation and management of straddling fish stocks and highly migratory fish stocks (articles 63 and 64 of UNCLOS).

In addition to the measures set out in the body of this document, the Fish Stocks Agreement introduces detailed measures addressing the functioning of RFMO/As, compliance and enforcement, including by flag States and port States. Furthermore, the Agreement recognizes the special needs of developing States and calls for the establishment of a special fund to provide support in the implementation of the Agreement. FAO administers the assistance fund established under Part VII of the Agreement, in accordance with the Fund's Terms of Reference and FAO's Financial Regulations, as well as other applicable Rules. Information about the existence and purpose of the assistance fund is disseminated widely by the United Nations and FAO, including through electronic means, international meetings and contacts with relevant regional fisheries bodies.

Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement)

The Compliance Agreement lays down basic responsibilities of flag States for fishing vessels used or intended for fishing on the high seas and, among others, provides that flag States are to subject high seas fishing vessels to obtaining an authorization, which may not be granted in cases in which the fishing vessel has previously undermined international conservation and management measures. It requires flag States to cooperate in exchanging information. The Compliance Agreement also obliges States to set up a record of fishing vessels, an update of which is kept centrally at FAO in the form of the High Seas Vessel Register (HSVAR). Port States are to notify flag States if they have reason to believe the vessel has been used in breach of international conservation and management measures and may be involved in investigatory measures by the flag state. States may exempt fishing vesssels of less than 24 meters from the application of the Agreement.

FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing (Port State Measures Agreement)

In addition to the minimum set of measures to be applied by port States when foreign vessels seek entry into their ports or are in their ports, Port State Measures Agreement addresses a number of related issues. The Port State Measures Agreement requires that flag States take certain actions, at the request of the port State, or when vessels flying their flag are identified to have been involved in IUU fishing.

Furthermore, it seeks to prevent the occurrence of "ports of non-compliance", and calls for effective cooperation and information exchange among Parties to the agreement, as well as with relevant international and regional organizations, including RFBs. The Port State Measures Agreement places a particular responsibility on Regional Fisheries Management Organizations to foster regional cooperation among its Members to implement regionally agreed port State measures which are compatible with national and regional conditions, and compliant with the provisions of the Agreement.

The Port State Measures Agreement calls on Parties to provide assistance to developing States Parties, directly or through FAO and other international entities, to enhance their capacity to implement port State measures. Furthermore it provides for the establishment of funding mechanisms for this purpose, managed by an ad hoc working group to be established specifically to address the needs of developing States Parties, once the Port State Measures Agreement enters into force. In November 2011, FAO convened an informal open-ended technical meeting to review draft terms of reference for the ad hoc working group, which were endorsed by COFI at its thirtieth session, in 2012.

Meanwhile, FAO has embarked on the delivery of a global series of regional capacity-development workshops, in collaboration with relevant regional and international organizations, to prepare for and support the entry into force of the Port State Measures Agreement. The workshops also aim to contribute to the development of national capacity to maximize the benefits available through the effective use of the PSMA and promote bilateral, subregional and/or regional coordination. Workshops have been held in the Indian Ocean Region and the South-West Pacific Region, and preparations are ongoing for three additional workshops for Caribbean, South-American and West-African countries. Outcomes of the workshops, may also be followed up by specific support at national level, as appropriate, through supplementary tailor-made capacity development programmes, subject to the availability of funds.

Voluntary instruments

The Code of Conduct for Responsible Fisheries

The Code is directed to Members and non-Members of FAO, fishing entities, subregional, regional and global organizations, and all persons concerned with the conservation of fishery resources and management and development of fisheries (article 1.2). The Code provides principles and actions required for implementation of responsible fisheries and aquaculture, addressing general principles, fisheries management, fishing operations, aquaculture development, coastal area management and post-harvest practices and trade. Consideration of ecosystem and biodiversity conservation, as well as the nutritional, economic, social, environmental and cultural importance of fisheries, and the interests of all stakeholders, are addressed in the Code.

FAO supports the Code's implementation in a variety of ways including through regular and field programme activities. Moreover, FAO monitors the application and implementation of the Code and promotes its implementation in collaboration with States and international organizations.

International Plan of Action for the Management of Fishing Capacity (IPOA-capacity)

The IPOA-Capacity, adopted by the FAO Committee on Fisheries in 1999, is a voluntary instrument developed within the framework of the Code of Conduct to address excess fishing capacity. The IPOA's objective is to achieve an efficient, equitable and transparent management of fishing capacity globally. The IPOA calls, among others, on States to assess and monitor fishing capacity and preparation and implementation of national plans of action. Specific actions States are called on to take include the establishment of national records of fishing vessels and elimination of subsidies.

International Plan of Action for Reducing Incidental Catch of Seabirds in Longline fisheries (IPOA-Seabirds)

The IPOA-Seabirds, adopted by the FAO Committee on Fisheries in 1999, is a voluntary instrument developed in support of the implementation of the Code of Conduct. It applies to States in the waters of which longline fishing is being conducted and to States whose vessels conduct longline fishing. The IPOA-Seabirds calls on States to develop national plans of action and provides the elements for these, including the measures States should take to address the incidental catch of seabirds.

International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks)

The IPOA-Sharks, adopted by the FAO Committee on Fisheries in 1999, is a voluntary instrument developed in support of the implementation of the Code. It applies to all States in which shark fishing occurs and to States whose nationals are engaged in shark fishing, including both targeted and non-targeted fishing. The IPOA-Sharks provides elements for States to be included in a national plan of action, aiming to make shark fishing operations sustainable. States are to assess threats to sharks and facilitate identification, monitoring and reporting of shark catches.

International Plan of Action to prevent, deter and eliminate IUU fishing (IPOA-IUU)

The IPOA-IUU, adopted by the FAO Committee on Fisheries in 2001, is a voluntary instrument developed in support of the implementation of the Code. The IPOA-IUU provides possible actions that may be taken to address IUU fishing by States in their capacity as flag State, coastal State, port State and market State. States are called on to develop national plans of action and provides for a central role for RFBs in coordinating efforts. Certain provisions of the IPOA-IUU were further elaborated in subsequent binding and voluntary instruments, such as the FAO Port State Measures Agreement and the Voluntary Guidelines for Flag State Performance.

FAO Fisheries Guidelines

In 2005, COFI adopted **Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries** and these were revised in 2009. The Guidelines are of a voluntary nature and are applicable to ecolabelling schemes that are designed to certify and promote labels for products from well-managed marine capture fisheries. They focus on issues related to the sustainable use of fisheries resources. The guidelines refer to principles, general considerations, terms and definitions, minimum substantive requirements and criteria, and procedural and institutional aspects of ecolabelling of fish and fishery products from marine capture fisheries.

The **International Guidelines for the Management of Deep-sea Fisheries in the High Seas** were adopted in 2008 by an FAO Technical Consultation. The voluntary instrument aims at the long-term conservation and sustainable development of marine living resources in deep-sea areas and at preventing significant adverse impacts on vulnerable marine ecosystems (VMEs). The Guidelines require States to adopt measures in accordance with the precautionary approach and the ecosystem approach to fisheries, and in accordance with international law.

In 2009, FAO developed **Guidelines to reduce sea turtle mortality in fishing operations**. The Guidelines provide management options for reducing interactions between sea-turtles and fishing gear and for reducing the proportion of turtles caught that are killed as a result of interaction with marine capture fisheries. The guidelines are voluntary and apply to all areas of the ocean.

The **International Guidelines on Bycatch Management and Reduction of Discards** were adopted by an FAO Technical Conference in December 2010 and were developed in the context of the Code. This voluntary instrument aims at promoting the ecosystem approach to fisheries by addressing by-catch and proposes a suite of measures that States should take, including planning, governance, data collection, research and operational measures.

In February 2013, an FAO Technical Consultation adopted the **Voluntary Guidelines for Flag State Performance**, to be endorsed by the FAO Committee on Fisheries in June 2014. The Guidelines aim to prevent, deter and eliminate IUU fishing through the effective implementation of flag State responsibilities and thereby ensuring the long-term conservation and sustainable use of living marine resources and marine ecosystems. The Guidelines address their purpose and principles, the scope of application, performance assessment criteria, cooperation between flag States and coastal States, a procedure for carrying out a performance assessment, encouraging compliance and deterring non-compliance by flag States, cooperation with and assistance to developing States with a view to capacity development, as well as the role of FAO.

Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security

The objective of the Voluntary Guidelines is to provide practical guidance to States in their implementation of the progressive realization of the right to adequate food in the context of national food security, in order to achieve the goals of the World Food Summit Plan of Action. The Voluntary Guidelines represent the first attempt by governments to interpret the right to adequate food and to recommend actions to be undertaken for its realization. Moreover, they represent a step towards integrating human rights into the work of agencies dealing with food and agriculture. Issues of relevance to seafood include food safety, consumer protection and nutrition, as well as access to and management of fisheries.

Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)

The VGGT represent an unprecedented global consensus on responsible principles and practices for governing access to and tenure security of rights to land, fisheries and forests. FAO initiated the process

for the VGGT, led global and regional consultations on their content, and prepared the first draft that formed the base for negotiations. The VGGT were finalized through CFS-led intergovernmental negotiations with the participation of civil society and the private sector, and were endorsed by CFS in 2012. Implementation of the VGGT has been further encouraged at the Rio +20 meeting in June 2012 and by the UN General Assembly, *L'Assemblée parlementaire de la Francophonie*, the G20 and the G8 and the Ministers at the Berlin Agriculture Ministers' Summits.