

## Fishing for Tomorrow: Managing fisheries for sustainable development

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### Abstract

The fishery sector contributes to development and growth in many countries, playing an important role for food security and nutrition, poverty reduction, employment and trade. Fisheries and aquaculture provided livelihoods and income for an estimated 54.8 million people engaged in the primary sector of fish production in 2010. Asia accounts for more than 87 percent of the world total, with China alone having almost 14 million people engaged as fishers or fish farmers. Asia is followed by Africa, and Latin America and the Caribbean. Apart from the primary production sector, fisheries and aquaculture provide numerous jobs in ancillary activities such as processing, packaging, marketing and distribution, manufacturing of fish-processing equipment, net and gear making, boat construction and maintenance, research and administration. All of this employment, together with dependants, is estimated to support the livelihoods of hundreds of millions of people. This Coherence for Development (CODE) report explores the role of fisheries and aquaculture for sustainable development, economic growth and global food security. It also examines how policies related to trade, governance and regulatory regimes impact on the fisheries sector and can contribute to maximise benefits for development in a sustainable manner. ■

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### What is policy coherence for development?

Policy coherence for development (PCD) is a process for taking into consideration the economic, social, environmental, and governance dimensions of sustainable development at all stages of policy making. Its main objectives are to:

- Exploit positive synergies across policies to support sustainable development, pursuing win-win situations and mutual benefits;
- Increase governments' capacities to balance divergent policy objectives, and help them to reconcile domestic policy objectives with international objectives; and
- Avoid or minimise the negative side-effects and impacts of policies on sustainable development.

## What is at stake? Overview of policy coherence challenges and development impacts

Fisheries and aquaculture provided livelihoods and income for an estimated 54.8 million people engaged in the primary sector of fish production in 2010. Asia accounts for more than 87 percent of the world total, with China alone having almost 14 million people engaged as fishers or fish farmers. Asia is followed by Africa (more than 7 percent), and Latin America and the Caribbean (3.6 percent). Apart from the primary production sector, fisheries and aquaculture provide numerous jobs in ancillary activities such as processing, packaging, marketing and distribution, manufacturing of fish-processing equipment, net and gear making, boat construction and maintenance, research and administration. All of this employment, together with dependants, is estimated to support the livelihoods of 660-820 million people, or about 10-12 percent of the world's population (FAO, 2012). The importance of fisheries is also emphasised in the Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda (2013). The illustrative goal to 'Ensure food security and good nutrition' calls for adopting sustainable agricultural, ocean and freshwater fishery practices and rebuild designated fish stocks to sustainable levels. Similarly, the resolution adopted by Rio+20, the United Nations Conference on Sustainable Development, stresses the crucial role of healthy marine ecosystems, sustainable fisheries and sustainable aquaculture for food security

and nutrition and in providing for the livelihoods of millions of people.

### The role of fisheries in development

According to FAO estimates, capture fisheries and aquaculture supplied the world with about 148 million tonnes of fish in 2010 (with a total value of US\$ 217.5 billion), of which about 128 million tonnes was utilised as food for people. Developing countries are already the most important producers of wild capture and aquaculture fish, and will be the source of most future growth in fish production (Figure 1).

The sector's economic output provides important contributions to poverty reduction and food security through four main, interlinked pathways (Allison, 2011):

(i) *Nutritional benefits from the consumption of fish.* Fish and fishery products represent an important source of protein and essential micronutrients for balanced nutrition and good health. In developing countries the relative contribution of fish to animal protein supply is usually higher than for developed countries, making fish a relatively important source of macro- and micro nutrients. In particular, there will be important sub-populations who are highly fish-dependent in their diets. These may include the landless poor, indigenous

### Key observations

- Fisheries and aquaculture provide livelihoods for hundreds of millions of people. Sustaining the capacity of world fisheries to provide food and jobs requires sensible and effective management.
- The sector generates important contributions to poverty reduction and food security through four main channels: nutritional benefits; household income; multiplier and spillover effects; and generation of government revenues.
- Future growth of fish production is expected to come from aquaculture and not capture fisheries, with developing countries producing the majority of new output.
- The conservation of global fish resources can only be achieved through developing and developed countries working together through strong partnerships that define reciprocal obligations.
- OECD countries must balance the need to provide fishing opportunities for their fleets, and to meet growing demand for fish with the need to promote sustainable development. They can do this by helping to establish enabling conditions for good management of global fisheries resources, in particular by preventing unsustainable or IUU fishing on the part of their own distant-water fleets.
- Developing countries must invest in capacity to manage stocks and control fishing if they are to realise the long-term growth potential of the fisheries sector.
- Achieving the potential of aquaculture for developing countries requires careful attention to sustainability concerns, in particular with respect to disease control and environmental protection. "Grow first, clean up later" is not an effective strategy for development.

hunter-gatherers in forests (e.g. in Amazonia and Congo, consumption of fish is higher than meat among these groups) and people living on wetlands and near coasts. Moreover, the harvest, sale and processing of fish contribute indirectly to food security by increasing purchasing power at individual or household level, as well as regionally and nationally.

(ii) *Income to those employed in the sector.* Employment in fisheries and aquaculture has grown substantially in the last thirty years, with close to 55 million people engaged in the primary sector of fish production in 2010. In the period 2005-2010, employment in the fisheries sector continued to grow faster than the world's population, with most of the increase accounted for by growing opportunities in aquaculture (Box 1). It is estimated that women account for at least 15 percent of all people directly engaged in the fisheries primary sector in 2010, and for 90 percent of all people engaged in secondary activities, such as processing.

(iii) *Multiplier and spillover effects in fishery dependent regions.* Where fisheries or aquaculture are significant activities, contributions to poverty reduction are in the form of economic multipliers. For example, many of those employed in fisheries are landless and spend their daily cash incomes in areas sometimes remote from markets. This in turn helps sustain markets for agricultural produce, consumption goods and various services and ensures that the income from fishing supports the development of the local economy.

(iv) *Through generation of government revenues from exports, taxation, license fees and from payment for access to resources by foreign fleets or foreign investment in aquaculture.* While fish production generally contributes 0.5–2.5 percent of GDP globally, the fishery and aquaculture sector contributes more than 10 percent of GDP in some major fish-producing countries such as Mauritania and Vietnam. If processing, trade and services are added, the overall contribution of fisheries can be much higher.

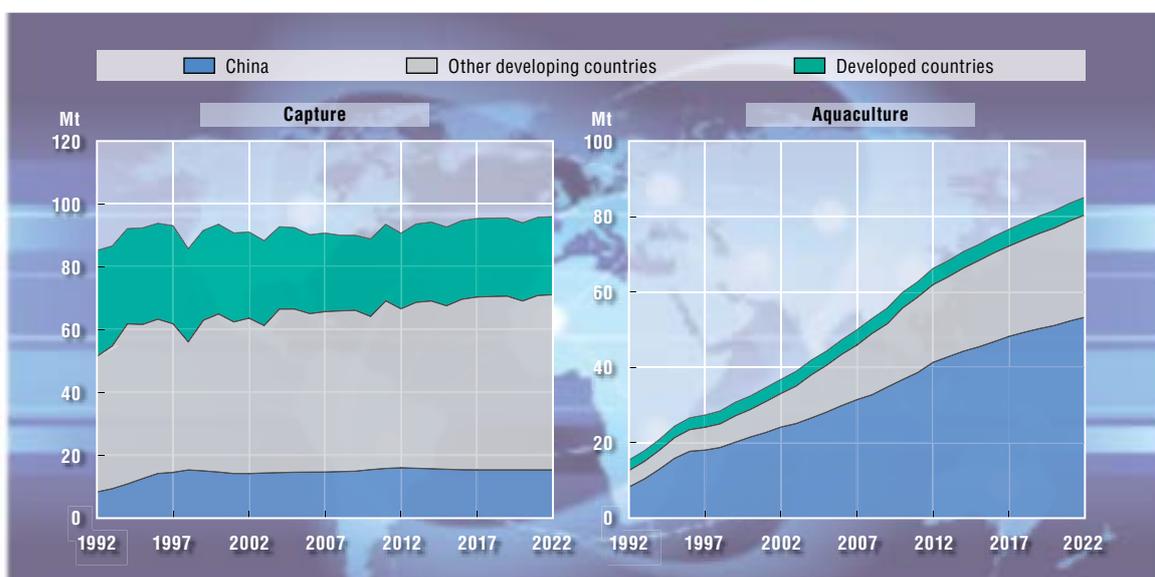
Fish is one of the most traded of food commodities, second only to fruit and vegetables in value. At the same time, fisheries serve an important role for the local food supply in many coastal developing nations. This means governments may be forced to choose between export-led economic growth and local food security. However, improved management can make room for additional growth in fisheries by increasing the size of potential harvest (Box 2).

Growth in aquaculture has transformed production and trade of fish products. To ensure that this transition in fisheries sustainably improves food and nutrition security, policies that recognise and safeguard the diversity and complementarity of roles played by capture fisheries and aquaculture are needed (Belton, B. et al, 2013).

Aquaculture production is concentrated in developing countries, in particular in Southeast Asia, and has been

**Figure 1. Developing countries will continue to dominate fish production**

Fishery production in live weight equivalent



Source: OECD and FAO Secretariats.

an important source of economic growth, especially in rural areas (Figure 2). The full potential of aquaculture as a driver of economic growth and development is yet to be realised. Doing so will require improved governance to ensure that local environments are protected and that risks, in particular from diseases, are managed effectively. This will help ensure that aquaculture is sustainable in the long-term.

Given the importance of fisheries in developing countries and the prominent role of fisheries policy in determining

production and trade, policy coherence for development (PCD) in fisheries and aquaculture is an important part of unlocking further growth potential. By identifying and exploiting positive synergies across policy areas and sectors in the economic, social and environmental domains, policy coherence for development (PCD) can help create enabling environments that support countries on their pathways towards inclusive, sustainable growth and development. ■

### Box 1. The increasing role of aquaculture

Over the last 50 years, aquaculture has expanded from being almost negligible to fully comparable with capture fisheries in terms of feeding people in the world. It is projected to surpass capture fisheries as the main source for human consumption by 2015. Aquaculture has also evolved in terms of technological innovation and adaptation to meet changing requirements.

Since the mid-1990s, aquaculture has been the engine driving growth in total fish production as global capture production has levelled off. Its contribution to world total fish production climbed steadily from 20.9 percent in 1995 to 32.4 percent in 2005 and 40.3 percent in 2010. Its contribution to world fish production for human consumption was 47 percent in 2010 compared with only 9 percent in 1980.

Experiences in Asia provide important lessons, which, if suitably adapted to local contexts, can help catalyse aquaculture in Sub-Saharan Africa and in parts of Latin America. They show that success in pro-poor aquaculture requires an enabling environment, which includes the following elements:

- *Land use and incentive policies.* In China and Vietnam, liberalising land use policies, in particular the re-zoning of rice land for aquaculture, allowed substantial increases in incomes.
- *Access to knowledge and technology.* Dissemination of knowledge on proven technologies and combined with credit has fostered huge growth in productivity. For example, pond productivity in China increased some 640 percent between 1980 and 2000 (from 765 kg/ha to 4 900 kg/ha) thanks to adaptive research and extension of improved technologies.
- *Integrated farming systems and plans.* Adapting polyculture technology, Chinese, Vietnamese and Bangladesh rice farmers have extended aquaculture into their rice paddies, increasing fish production by fourfold in less than a decade and earning a net income of about USD 1 800 per ha per year in China.
- *Community-based aquaculture.* Successful community participation in the allocation of leases over public waters requires equitable distribution of benefits and strong leadership. For example, in Bangladesh, a combination of group leasing of ponds and microcredit empowered women in 175 groups by providing income and increased household food productivity.
- *Organising producer groups.* Working together offers several benefits to smallholders. In India's Tamil Nadu, a shrimp farmers' association has a voluntary code of conduct; it controls the quality of inputs; monitors ponds on a 24-hour basis; and uses collective bargaining to market their products.
- *Innovative institutional arrangements.* Coordination of policies and institutions helps remove bureaucratic constraints, for example by streamlining food safety and export procedures.

Sources: FAO, 2012 and the World Bank, 2006.

## Box 2. The economic benefits of good stock management

The contribution of the fisheries sector to the global economy is smaller than it could be. The lost economic benefits are estimated to be in the order of USD 50 billion annually, equal to USD 2 trillion over the past three decades. This loss is even greater when taking into account losses to recreational fishing or tourism. Improved governance and comprehensive reform can capture a large part of this loss, making the fisheries sector a basis for economic growth.

A reduction in fishing effort that lets the stock recover to a healthier level can rapidly increase productivity, profitability and net economic benefits from fishery. This is because abundant stocks support higher long-run harvest at a lower cost. Some fish stocks can rebuild rapidly, but the uncertain dynamics of marine ecosystems mean that certain stocks may not be readily rebuilt.

The crisis in the world's marine fisheries is not only a fisheries problem, but one of political economy of reform. The transition to economically healthy fisheries will require political will to implement reforms that incur political, social and economic costs. Once recovered, many ocean fisheries can generate substantial economic surplus and turn net economic loss to society into a significant driver of economic growth and a basis for alternative livelihood opportunities. However, the costs of this transition must be financed. The allocation of this cost burden between public and private sectors presents challenges both to fiscal policy and management practice.

Source : World Bank, 2009

## Figure 2. Major role of China and other Asian countries in fishery exports

Exports of fish for human consumption in live weight equivalent, 2010-2012



Source: OECD and FAO Secretariats.

StatLink  <http://dx.doi.org/10.1787/888932860275>

## What has been done and what is to do? Key policy areas for action

Competing policy interests combined with governance failures, administrative capacity constraints and changing global fish production and consumption patterns have led to mismanagement, degradation and overexploitation of fisheries in many cases. In order to reverse these trends, short-term questions of employment and profits of fishers must be carefully balanced against longer term sustainability. Involving a wide range of stakeholders at global, regional, national and local levels – such as governments, multilateral institutions, the private sector, regional fisheries organisations and regional banks – has to be seen as a key factor in ensuring that policies are effective, coherent and sustainable.

### The role of OECD countries

For OECD countries, the coherence challenge is to balance divergent policy objectives and build synergies across key sectors to generate enabling conditions for long-term sustainable management of natural fisheries resources. This entails aligning development and sustainability objectives with policies related to trade, access agreements, capacity building provisions, joint management of fish resources and development assistance directed at aquaculture and fisheries. The following section explores this challenge in more detail and advises on possible ways forward.

### Using government financial transfers more effectively

All OECD countries provide some form of financial support to their fisheries sectors. The type and level of support varies significantly between countries and takes the form of management, research and enforcement services or more targeted direct support such as payments for vessel construction and modernisation, income support, tax exemptions and loan guarantees.

While such support is intended to help the fishing industry to develop, they often encourage the persistence of excess capacity, which in turn puts pressure on the management system and fish stocks. Excess capacity can also lead to increased illegal fishing, higher pressure on fish stocks outside of EEZs, and pressure to use fisheries agreements to provide fishing opportunities. Support that lowers fuel costs can encourage more active techniques such as trawling and dredging, which can be more environmentally damaging and can make distant-water fishing in competition with developing countries' fleets more attractive.

The impacts of subsidies depend critically on the state of fish stocks, the type of management regime and how well rules are enforced. A truly competitive economic

sector requires market competition. Support such as fuel tax concessions and subsidies for vessel construction or modernisation can delay beneficial adjustment, and their side-effects make them unsustainable. Temporary support to aid adjustment or disaster response mechanisms is a better use of government funds. Most importantly, financial support for the sector towards social and regional development objectives should be de-coupled from fishing effort.

### Fostering a well-functioning trading system

Net exports of fish and fish products surpass exports of several other agricultural commodities from developing countries, such as rice, meat, sugar, coffee and tobacco (Figure 3). Fishing is like other globalised industries in that it is bound by the rules of international trade. But it is unique in depending on a resource that the success of the industry is endangering.

Tariffs for fish are much lower compared to other food products: OECD countries collect around a billion dollars a year from tariffs on fish and fish products (OECD, 2010b). But low average tariff rates do not reflect tariff peaks, or tariff escalation, where the tariffs rise as the degree of processing in an item increases, making it more difficult to export fish paste or tinned fillets than fresh fish. In practice, this means that while developing countries could benefit from fish processing, they are often penalised by higher tariffs when attempting to add value to the raw material for export. At the same time, a number of non-tariff measures (NTMs), including labelling, packaging and inspection requirements, sanitary standards and eco-labelling initiatives, also make it difficult for developing countries to fully exploit their export potential. Preferential access agreements can to some extent support developing countries' efforts to move up the value chain and benefit more from trade.

Increasing trade opportunities has important impacts on sustainability and nutrition. Poor local fisheries governance, however, can render these impacts negative on development. When increased export demand leads to higher exploitation rates, long term damage to the fish stock can occur. For example, increased export-orientation in West African fisheries has led to intensified targeting of species for export and a resulting reduction in catch per unit effort and biomass for certain species. A growing number of fishermen turned to demersal coastal fishing (bottom trawling) and away from catches intended for domestic market. This disrupted local processing and contributed to a reduction of availability of fish per capita where fresh or traditionally processed fish is the principal source of

proteins, in particular for the urban population (OECD 2006).

This doesn't mean that reduced trade is an appropriate response to an underdeveloped fisheries governance system, but rather that increased trade opportunities must come in the context of improved capacity to sustainably supply new markets. Trade promotion efforts must be part of an overall plan for sustainable fisheries development.

### Improving regulation and avoiding unnecessary obstacles to trade

Fisheries products are subject to regulations relating to food safety and quality, food hygiene, packaging, traceability, labelling requirements and intellectual property protection. While these regulations serve an important purpose, they can also become a barrier to trade for developing countries that lack the resources to conform to them. Private certification and labelling initiatives can put additional requirements on developing country exporters on top of public regulations. Eco-labelling and other types of sustainability, food quality or legality certification are increasingly required by major buyers in OECD markets. Due to high costs or lack of data availability, compliance with these schemes may be prohibitive for producers in developing countries.

These policies are likely to have trade effects and indirectly affect local production, exports, employment

and food security in developing countries by limiting the market for fish products from developing countries, and/or increasing production costs. The WTO Agreement on Technical Barriers to Trade helps ensure that regulatory measures, including regulations, standards, testing and certification procedures, do not create unnecessary obstacles to trade. Policy coherence initiatives must go the extra mile by considering and mitigating the impact on developing countries of non-tariff measures in OECD countries (OECD, 2012a).

### Designing more efficient fisheries access agreements

Fisheries access agreements provide opportunities for distant water fleets (fishing vessels that fish outside their own countries' waters) and also important revenue to developing coastal states. They originated with the introduction of the 200-mile extended (or exclusive) economic zones (EEZs), which became commonplace after 1977 and prevented many long-distance fleets from accessing fisheries where they traditionally operated. For many developing countries, fisheries access agreements were a way to gain control of illegal, unreported and unregulated fishing already occurring by long-distance fleets by introducing enforcement requirements for those vessels' flag countries.

Decades later, fisheries access agreements are still in place, but now seem driven by excess fleet capacity on the part of the countries seeking access. The main concern with fisheries access agreements is that they

Figure 3. Net exports of selected commodities from developing countries



Source: FAO, 2012.

potentially crowd out local fishing and undermine livelihoods. Often, they also comprise a large part of the host country's budget, making reform difficult, and can lead to corruption when the funds are diverted.

Fisheries access agreements can be useful in specific circumstances if they are designed properly. Market-based instruments can ensure that market forces play a role in valuing access, for example, when the authorities can auction fishing licences or rights to fleets, and ensure a fair return for the host.

### **Addressing illegal, unreported and unregulated fishing**

Global estimates suggest a minimum of 20 percent of seafood worldwide is caught illegally, representing economic losses between USD 10 to 23 million and 11-26 million tonnes (Agnew *et al*, 2009). Developing country fisheries are the most at risk from overfishing caused by illegal, unreported or unregulated (IUU) fishing. Unfortunately, distant-water fleets originating from developed countries are a major contributor to this problem. States must do more to ensure that their nationals respect local regulations and fish responsibly. They can do this by supporting enforcement capacity in countries where their vessels operate, and by ensuring that their own control efforts include catches in other countries' waters.

The UN conference on sustainable development, Rio+20, held in June 2012, reiterated the commitment of the parties to eliminate IUU fishing, which not only damages the environment and threaten biodiversity, but also has an impact on human rights by undermining labour standards, harming markets for legally harvested fish, destabilising the economy in developing coastal nations and encouraging corruption (UNODC, 2011).

One way to reduce IUU fishing is for countries to engage in Regional Management Fisheries Organizations (RMFOs), as regulating their fishing operations will lead to better governance of the high seas.

One of the main objectives for RMFOs is to effectively control shared fisheries. Their success in doing so is mixed, leading to IUU vessels searching for and operating in areas of least enforcement. Coherent and practical implementation of harmonized measures such as port state measures, white and black listing of vessels, and better high seas governance on the part of RMFOs could be widely beneficial. Moreover, RMFOs that have a commitment to all stakeholders could also serve to improve information sharing between countries. In this sense, it is of great importance that horizontal co-operation among RMFOs is strengthened, including linking and integrating their data on IUU fishing activities.

Port state measures (e.g. requiring vessel identification numbers and the right to refuse entry to blacklisted boats) are increasingly recognised as an efficient and cost-effective instrument in the fight against IUU fishing. They can enhance the effectiveness of other monitoring, control and surveillance (MCS) tools, such as vessel-monitoring systems (VMS) and regional licensing. They can also provide an effective deterrent to the transshipment of IUU-caught fish on the high seas ([www.pewenvironment.org](http://www.pewenvironment.org)). In recent years, regional, national and international initiatives have focused on increasingly stringent port state measures to curb IUU fishing. After agreeing to a voluntary approach to port state measures to combat IUU fishing in 2004, the FAO adopted the legally binding 'Port State Measures Agreement (PSMA) to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing' in November 2009 (Doulman, 2012).

However, inadequate penalties for IUU fishing can undermine control and monitoring efforts. Even if a vessel that fishes illegally is intercepted and sentenced, if penalty fines are minor compared to the value of stolen fish, IUU fishing can still pay (High Sea Task Force, 2006). Penalties paid within the European Community averaged between 1.0 and 2.5 percent of the value of IUU landings, effectively a cost of doing business rather than a deterrent. Underreporting by individual vessels of up to 36 percent is accepted in the European Union with no penalty, suggesting that some amount of poaching is the norm rather than the exception (Tinch & al 2008). A review of cases of IUU fishing by Sumaila & al. (2006) showed that fines must be increased by a factor of 24 to deter illegal fishing.

### **Supporting developing country efforts**

Development co-operation can help developing countries to build capacity for policy development and implementation in a way that will help them formulate and achieve their objectives. The Johannesburg Plan of Implementation (adopted by the WSSD meeting in September 2002) states that:

"To achieve sustainable fisheries, the following actions are required at all levels: ...strengthen donor co-ordination and partnerships between international financial institutions, bilateral agencies and other relevant stakeholders to enable developing countries, in particular the least developed countries and small island developing states and countries with economies in transition, to develop their national, regional, and sub-regional capacities for infrastructure and integrated management and the sustainable use of fisheries".

Fisheries management is evolving as countries try to come to grips with overfishing and overcapacity. In

the case of aquaculture, regulatory frameworks are struggling to keep up with growth, leading to delayed growth, pollution or other unanticipated outcomes. As some countries solve their management problems, they can share this learning with other countries. In this fashion, it may be possible to avoid repeating mistakes. The *OECD Handbook for Fisheries Managers* (OECD 2013a) is designed in part to share lessons learned by OECD countries on how to develop and implement fisheries policy.

### Efforts by developing countries

A prerequisite for a sustainable fisheries sector in developing countries is creating favourable conditions to improve the legal, regulatory and administrative environment. Reducing corruption, developing institutional capacity and creating an environment supportive of responsible investment are all means by which countries can lay the foundations for development of their fisheries sector.

One way to improve institutional capacity is by participating in regional management agreements. Regional co-operation and sharing of information can offer practical benefits, such as combating IUU fishing through regional registration and authorisation of boats. Regional approaches can also help drive improvements over time by focussing attention on broader management issues rather than short-term national interests. Regional fisheries organisations such as the Commission Sous-Régionale des Pêches (CSRP) can co-ordinate and monitor coherence, for example through negotiations on agreements. They can help ensure the implementation of good management principles by defining minimum conditions for access to fishery resources (OECD 2008).

Aquaculture is a sector with great potential for developing countries. As with fisheries, taking advantage of the opportunities provided by aquaculture requires a balance between promoting growth and preserving the long-term capacity of the resource. In Thailand, shrimp aquaculture expanded rapidly, supported through national budget expenditures, private investment, and development assistance. Much of this growth ultimately ended in degraded coastal habitats, mangrove forests in particular, that permanently reduced the productive capacity of the area for both fisheries and aquaculture (OECD 2006).

On the other hand, Sri Lanka was able to revive its shrimp farming industry after the emergence of white spot disease. They accomplished this through measures including separating shrimp farming area into zones and sub-zones with a rotational crop calendar and formation of a farmer organisation for each sub-zone. Best

management practices were identified and introduced with the active involvement of farmer organisations for decision-making and for the implementation of management measures. These included avoiding high stocking densities, monitoring shrimp hatcheries and quality of post-larvae and screening brood stock and post-larvae for white spot disease. The adopted measures resulted in production volume rebounding to around 3 500-4 500 tonnes and the percentage occurrence of white spot disease decreasing from 9.2% in 2005 to 2.9% in 2010 (OECD 2013b).

While it is not possible to anticipate every consequence, taking a pro-active approach to regulation and management can save costs. Drawing on other national experiences and drawing up development plans can help prevent “growing now, cleaning up later”. Rapid development of aquaculture in Turkey led to problems with pollution as well as conflicts with tourism due to its appearance and smell. New regulations in 2007 restricted locations, leading to all near-shore farms being relocated to areas where aquaculture was common or that were identified as potential aquaculture areas. These improvements to regulation and zoning resolved most problems, but the cost of the transition resulted in many farms without sufficient capital being taken over by larger companies (OECD 2013b).

The lesson for developing countries from these experiences is that prior planning for fisheries growth is needed to avoid unsustainable or undesirable results. Coastal zone management plans that identify areas for aquaculture or other coastal uses can prevent conflicts. Establishing practices to avoid disease or environmental degradation and protecting the resource base are good investments in future growth. In too many cases, best practices for fisheries and aquaculture are only implemented after a crisis. ■

## Where do we go from here?

For many people looking at the role of fisheries in development, the debate is between two possible paths: a robust and growing artisanal sector that is rooted in rural communities, and a modern industrial fishery that delivers maximum value from the resource. Alternatively, this choice can be seen as being between preserving a livelihood and food source benefitting the rural poor on the one hand, and on the other as economic growth. Rather than take sides in this debate, it is better to focus on the central role of good resource management as the fundamental basis for development in any form. Promoting growth in fisheries without first resolving weaknesses in fisheries governance is unlikely to lead to sustainable progress.

For example, in Mauritania, policies to develop the small-scale fishing sector led to a quadrupling of the number of boats from 3000 in 1991 to 12 000 by 2001. This rapid growth has likely resulted in overcapacity in the sector, put pressure on the resource, and resulted in a lack of control over fishing capacity (OECD 2006).

In the past, many efforts to speed development ignored the inherent constraints of a sector dependant on a limited renewable resource. Surges in capacity led to depleted stocks and damaged local environments. Infrastructure improvements and market liberalisation

removed barriers to growth that helped conserve fish stocks by limiting sales. While poor infrastructure is no substitute for good management, development efforts must do a better job of reflecting the unique features of fisheries that do not fit into a standard development model.

Stock management is the most important responsibility of developed and developing countries alike. If the fish stock is not maintained at a healthy and sustainable level, the fishery will be less able to contribute to public objectives. The FAO estimates that some 53 percent of the world's marine fishery resources are fully fished or fished to the maximum sustainable level. Another 32 percent are overfished, depleted or recovering from depletion. One way OECD countries can help developing countries is to ensure that their own fleets are not contributing to overfishing. They can also help improve institutional capacity at the domestic and regional level to measure stock levels, set sustainable harvest targets, and enforce management rules.

In all countries, irrespective of income level, an inclusive approach to sustainable management of natural fisheries resources will lead to broader and more sustainable benefits than one focused on the short-term interests of fishers. Policy coherence for

### Box 3. Strategic issues for developing countries

- What obstacles hinder consistency in policies and how should they be overcome in terms of access to resources by small-scale, industrial, national and foreign fishing?
- How to define management tools (quotas, TACs, permits, licences etc.) that are well adapted to the various types of fishing and enable the sustainable use of marine resources, whilst taking national, sub-regional and international market supply priorities into consideration?
- What are the needs of the local producers, the state, and trading partners in the fisheries regulation sector, in particular with regard to FAO's Code of Conduct for Responsible Fisheries Management and national fishing regulations? Have the various sectoral actors been adequately consulted to make it possible to identify the shortcomings or weaknesses in these regulations or in their application?
- How can priorities in terms of market access be defined? How can a surplus trade balance be maintained while ensuring domestic market supplies and safeguarding people's food security?
- How can sub-regional fisheries' co-operation be improved and on the basis of what criteria?
- How can different countries' conditions of access to fish resources be harmonised in order to develop an ecosystem-oriented fisheries' management approach? How could that help in improving sub-regional fish research for a better knowledge of fish stocks and their exploitation?
- How can coherence between investment and development co-operation policies in the fisheries sector be improved, including for: fleet and fishery production tools' modernisation; post-catch infrastructure and equipment (e.g. unloading docks, cold chains, roads); fish product hygiene and quality (standardisation and traceability issues); and the strengthening of technical and strategic skills of all involved in the sector?

Source: OECD, 2008.

development cuts across several policy domains and requires effective communication and coordination – not only among government bodies within a country, but also among countries. It involves both ensuring that objectives do not conflict and that policies in different domains are mutually supportive to create win-win situations.

Traditionally, for OECD countries, the issue of policy coherence for development in the area of fisheries has focused on the nexus between trade policy and domestic support on the one hand, and development policy and objectives on the other. Today, however, in an increasingly interconnected world, it is clear that policy coherence also requires paying due attention to other issues as well, notably good governance and the environment. Internationally, regional coalition-building can help establish institutions that deliver improved governance. Institutions like the Economic Community of West African States (ECOWAS) or the CSRP, for example, are appropriate structures for the political and technical dialogue needed for sustainable fisheries management (OECD, 2008).

Developing countries must have a clear understanding of their own fisheries policies in terms of priorities, strategies, objectives and planning. National and regional priorities should be developed in light of several key strategic issues for policy coherence (Box 3).

Individual countries acting to put in place sound management policies is a necessary first step, but is not sufficient to secure the future of global fishing. Policy coherence for development requires international action and a commitment to multilateralism to create conditions for long-term sustainable management of natural fisheries resources that cross and span global borders. Acting on this recognition of shared interests and responsibilities requires concrete mechanisms such as international frameworks, treaties and agreements. Much progress has already been made to establish rules and best practices for fishing that apply to everyone, but more needs to be done to put the capacity in place to enforce those rules, adopt those practices and invest in understanding and measuring our shared global fishery resources.

Strong growth in aquaculture has already contributed to increased prosperity in developing countries, but its impact on local environments and communities continues to be a concern. Consumers in all countries can help by insisting on products that are responsibly produced and sustainable. Governments can help by aiding producers to meet the highest standards of quality and responsibility for their products. Governments and private industry are still finding the best technologies, practices, regulation and management to ensure that growth continues and is sustainable for the long term.

Sharing experience in this regard can help speed development of this still young sector.

For both fisheries and aquaculture, the fundamental message is the same: sustainable growth in these sectors depends on respecting natural limits. Temporary surges in growth often come at the cost of worsened future opportunities. These must be replaced by development efforts that focus on getting the most out of the resource with an emphasis on long-term planning and a well-supported and competent system of governance. Discussions on the Post-2015 Development Agenda recognises this, urging to correct current misuse of the oceans and to manage fish stocks in a more sustainable manner for the benefit of future generations.

Fisheries and aquaculture can contribute to growth and development, and can support rural communities and better nutrition. Policies to support fisheries and aquaculture's role in development can be effective, but coherence for development demands an inclusive approach encompassing all aspects of managing a sector based on a complex and renewable natural resource. ■

## Organisation for Economic Co-operation and Development

### References

- Agnew DJ, Pearce J, Pramod G, Peatman T, Watson R, et al. (2009), **Estimating the Worldwide Extent of Illegal Fishing**, PLoS ONE 4(2): e4570. doi:10.1371/journal.pone.0004570
- Allison, Edward (2011), **Aquaculture, Fisheries, Poverty and Food Security**, TAD/FI(2011)2, Consultant's report for the Trade and Agriculture Directorate, OECD, Paris.
- Belton, B., Thilsted, S.H. (2013), **Fisheries in Transition: Food and nutrition security implications for the global South**, Global Food Security.
- Doulman, D.J. and Swan, J. (2012), **A guide to the background and implementation of the 2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing**. FAO Fisheries and Aquaculture Circular No. 1074, FAO, Rome.
- FAO (2012), **The State of World Fisheries and Aquaculture**, FAO Fisheries and Aquaculture Department, Rome.
- High Seas Task Force, (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.
- OECD (2013a), **The OECD Handbook for Fisheries Managers: Principles and Practice for Policy Design**, OECD, Paris.
- OECD (2013b), **Green Growth and Aquaculture**, OECD, Paris.
- OECD (2012a), **The OECD Handbook for Fisheries Managers: Principles and Practice of Policy Design**, TAD/FI(2012)7/FINAL, Trade and Agriculture Directorate, OECD, Paris.
- OECD (2012b), **OECD Review of Fisheries 2011: Policies and Summary Statistics**, OECD, Paris.
- OECD (2010a), **Fisheries – While Stocks Last**, OECD Insights, ed. Patrick Love, OECD, Paris.
- OECD (2010b), **Globalisation in Fisheries and Aquaculture: Opportunities and Challenges**, OECD, Paris.
- OECD (2008), **Fishing for Coherence in West Africa**, OECD, Paris.
- OECD (2006), **Fishing for Coherence: Fisheries and Development Policies**, OECD, Paris.
- Sumaila, U. r., and J. Jacquet. (2008), **When bad gets worse: Corruption and fisheries**, Sea Around Us Project and Fisheries Economics Research Unit, Fisheries Centre, University of British Columbia.
- Tinch, R., I. Dickie, and B. Lanz. (2008), **Costs of illegal, unreported and unregulated (IUU) fishing in EU fisheries**, Economics for the Environment Consultancy, London.
- UNODC (2011), **Transnational organized crime in the fishing industry**, United Nations Office on Drug and Crime, Vienna.
- World Bank (2009), **The Sunken Billions. The Economic Justification for Fisheries Reform**, World Bank, Washington D.C.
- World Bank (2006), **Aquaculture: Changing the Face of the Waters. Meeting the Promise and Challenge of Sustainable Aquaculture**, World Bank, Washington D.C.

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