



## Fishery and Aquaculture Country Profiles The Republic of the Philippines



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#### Source of information

- United Nations Geospatial Information Section <http://www.un.org/Depts/Cartographic/english/htmain.htm>
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# Part I Overview and main indicators

*Part I of the Fishery and Aquaculture Country Profile is compiled using the most up-to-date information available from the FAO Country briefs and Statistics programmes at the time of publication. The Country Brief and the FAO Fisheries Statistics provided in Part I may, however, have been prepared at different times, which would explain any inconsistencies.*

## Country brief

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The Philippines, with an island-dwelling population of more than 93 million and more than 7 100 islands, is a major fishing nation and the world's second largest archipelagic State.

In 2012, the Philippines ranked among the major fish producing countries in the world with a total production of 3.1 million tonnes of fish, crustaceans, mollusks and other aquatic animals. Aquaculture contributed 790 900 tonnes, or 25.4 percent, to the total fish production. Much of its production is consumed locally with per caput fish consumption amounting to 32.7 kg in 2011. In addition, the Philippines is the world's third largest producer of farmed seaweeds with a production of 1.8 million tonnes in 2012.

The fisheries and aquaculture industry employed an estimated 1.5 million people in 2010 nationwide; with fisheries accounting for more than 1 million. The fishing industry contributes an estimated 1.8 percent (valued at 196 billion pesos) to the country's Gross Domestic Product (GDP) at current prices, respectively in 2012. In 2013, exports of fish and fishery products were valued at USD 1.2 billion. Tuna was the top export commodity, followed by shrimp and prawns. In the same year, imports were worth USD 264 million.

Located in the typhoon belt, the country is usually affected by 15 and struck by five to six cyclonic storms per year with other natural hazards such as landslides, active volcanoes, destructive earthquakes and tsunamis. Major environmental issues include uncontrolled deforestation especially in watershed areas, soil erosion, air and water pollution in major urban centers, coral reef degradation, and increasing pollution of coastal mangrove swamps that are important fish breeding grounds. The country is also on constant alert for red tides and fish kills.

The Philippines is one of six countries (including Indonesia, Malaysia, Papua New Guinea, Solomon Islands and Timor-Leste) comprising the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF) centered on the six government's high-level political commitment and pro-active implementation of the issues in the Coral Triangle area concerning the management, conservation and adaptation to climate change of the tuna fisheries and coral ecosystems in this region.

The latest issue concerns the strict implementation of a 3-month (December 2011-February 2012) closed season for the fishing of tamban (*Sardinella*), a species used for processing sardines. While such a move means saving 190 million pesos worth of sardines, the ban will affect thousands of workers in sardine factories and fishing fleets.

### Membership in Regional Fishery Bodies

- Asia-Pacific Fishery Commission (APFIC)
- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)

- Indian Ocean Tuna Commission (IOTC)
- International Commission for the Conservation of Atlantic Tunas (ICCAT)
- Network of Aquaculture Centers in Asia-Pacific (NACA)
- Southeast Asian Fisheries Development Center (SEAFDEC)
- Western and Central Pacific Fisheries Commission (WCPFC)

## General geographic and economic indicators

**Table 1 – Philippines - General Geographic and Economic Data**

|   |                           | Source   |
|---|---------------------------|--|
| Marine water area, including the EEZ (km <sup>2</sup> ) | 2 200 000                 | <a href="http://www.bfar.da.gov.ph">http://www.bfar.da.gov.ph</a>  |
| Shelf area, to depth 200 m(km <sup>2</sup> )            | 184 600                   | <a href="http://www.bfar.da.gov.ph">http://www.bfar.da.gov.ph</a>  |
| Length of continental coastline (km)                    | 36 289                    | <a href="https://www.cia.gov/library/publications/the-world-factbook/geos/rp.html">https://www.cia.gov/library/publications/the-world-factbook/geos/rp.html</a>      |
| GDP at current prices (2013)(billion USD, and PHP)      | *USD 273.1<br>PHP 11 548  | <a href="http://www.nscb.gov.ph/sna/DataCharts.asp">http://www.nscb.gov.ph/sna/DataCharts.asp</a>  |
| GDP per capita (2013)                                   | **USD 2 795<br>PHP 118198 | <a href="http://www.nscb.gov.ph/sna/DataCharts.asp">http://www.nscb.gov.ph/sna/DataCharts.asp</a><br><a href="http://www.popcom.gov.ph">http://www.popcom.gov.ph</a> |
| Agricultural GDP (2013)(billion USD, and PHP)           | *USD 30 672<br>PHP 1 297  | <a href="http://www.nscb.gov.ph/sna/DataCharts.asp">http://www.nscb.gov.ph/sna/DataCharts.asp</a>  |
| Fisheries GDP (2013)(billion USD, and PHP)              | *USD 4 714<br>PHP 199 320 | <a href="http://www.nscb.gov.ph/sna/DataCharts.asp">http://www.nscb.gov.ph/sna/DataCharts.asp</a>  |

\*Value converted by FAO as per UN currency exchange rate\*\*Per capita calculated by FAO and converted as per UN currency exchange rate

|   |                           | Source           |
|---|---------------------------|------------------|
| Country area                                    | 300 000 km <sup>2</sup>   | FAOSTAT. 2013    |
| Land area                                       | 298 170 km <sup>2</sup>   | FAOSTAT. 2013    |
| Inland water area                               | 1 830 km <sup>2</sup>     | Computed. 2013   |
| Population - Est. & Proj.                       | 106.404 millions          | FAOSTAT. 2018    |
| Exclusive Economic Zone (EEZ) area              | 1 978 551 km <sup>2</sup> | VLIZ             |
| GDP (current US\$)                              | 330 910 millions          | World Bank. 2018 |
| GDP per capita (current US\$)                   | 3 103 US\$                | World Bank. 2018 |
| Agriculture, forestry, and fishing, value added | 9.28 % of GDP             | World Bank. 2018 |

## FAO Fisheries statistics

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*Part II of the Fishery and Aquaculture Country Profile provides supplementary information that is based on national and other sources and that is valid at the time of compilation (see update year above). References to these sources are provided as far as possible.*

## Production sector

As an archipelagic state with over 2.2 million km<sup>2</sup> of highly productive seas, the Philippines has vast fishery resources at its disposal. However, all of the country's main fish species and marine organisms are showing signs of overfishing and coastal habitats are showing signs of degradation because of multiple human activities taking place in coastal areas.

The Philippine fishing industry comprises marine capture fisheries, inland capture fisheries, and aquaculture. Marine capture fisheries can be further divided into municipal fisheries and commercial fisheries. Recreational fisheries are not significant.

Municipal marine capture fisheries operate in coastal waters within 15 km from the coastline ("municipal marine waters"), using vessels up to 3 GT or without the use of vessels. Commercial fisheries operate outside municipal waters, using vessels 3 GT or larger. Small-scale commercial fishing is undertaken by fishers utilizing vessels between 3.1 GT and 20 GT. Medium-scale commercial fishing is undertaken by using vessels of 20.1 GT to 150 GT, and large-scale commercial fishing by vessels of more than 150 GT (The Philippine Fisheries Code of 1998).

Municipal inland capture fisheries operate in enclosed freshwaters in inland areas such as lakes and reservoirs using vessels of 3 GT or less. Inland capture fisheries embrace not only fisheries in lakes, reservoirs and rivers but also fisheries in estuaries as well as in brackish water fishponds (not intentionally cultured). Aquaculture includes fishery operation involving all different forms of raising and culturing fish and other aquatic species in fresh, brackish and marine waters (The Philippine Fisheries Code of 1998).

## Marine sub-sector

### Catch profile

In 2012, 51 percent of reported marine fisheries production was from municipal fisheries and 49 percent from commercial fisheries (Table 2 and Table 3).

**Table 3 – Philippines - Catches of major species in municipal marine capture fisheries sub-sector in 2012**

| Major Species  | Volume (tonnes) | As % of total |
|----------------|-----------------|---------------|
| Big-eyed scad  | 72 058.85       | 6.6           |
| Indian sardine | 70 898.40       | 6.5           |
| Round scad     | 66 328.55       | 6.1           |

|                     |              |       |
|---------------------|--------------|-------|
| Frigate tuna        | 59 118.78    | 5.4   |
| Fimbriated sardines | 47 088.01    | 4.3   |
| Yellowfin tuna      | 45 757.33    | 4.2   |
| Anchovies           | 44 014.82    | 4.1   |
| Indian mackerel     | 42 530.25    | 3.9   |
| Squid               | 41 388.69    | 3.8   |
| Skipjack            | 41 355.02    | 3.8   |
| Slipmouth           | 39 286.37    | 3.6   |
| Others              | 513 601.48   | 47.4  |
| Total               | 1 083 426.55 | 100.0 |

Source: Bureau of Agricultural Statistics. 2013. Fisheries Statistics of the Philippines, 2010-2012

**Table 4 – Philippines - Catches of major species in commercial marine capture fisheries sub-sector in 2012**

| Major Species      | Volume (tonnes) | As % of total |
|--------------------|-----------------|---------------|
| Indian sardine     | 175 159.54      | 16.8          |
| Round scad         | 167 152.72      | 16.0          |
| Skipjack           | 165 105.27      | 15.8          |
| Yellowfin tuna     | 79 508.70       | 7.6           |
| Frigate tuna       | 72 572.61       | 7.0           |
| Fimbriated sardine | 48 440.75       | 4.6           |
| Big-eyed scad      | 42 795.50       | 4.1           |
| Indian mackerel    | 36 268.87       | 3.5           |
| Anchovies          | 27 150.09       | 2.6           |

|                     |              |       |
|---------------------|--------------|-------|
| Eastern little tuna | 21 650.28    | 2.1   |
| Slipmouth           | 17 672.82    | 1.7   |
| Others              | 18 8840.00   | 18.1  |
| Total               | 1 042 317.88 | 100.0 |

Source: Bureau of Agricultural Statistics. 2013. Fisheries Statistics of the Philippines, 2010-2012.

Of the ten top species caught by both municipal and commercial capture fisheries, 61.2 percent were harvested by commercial fishers compared with 38.8 percent caught by municipal fishers. This suggests that, although the commercial and the municipal fisheries are sometimes made out to be distinct sectors of the Philippine fishing industry, they are in fact direct competitors.

The Philippines reached the maximum economic yield from its demersal fish stocks as early as the late 1960s, except in the offshore hard bottoms around Palawan, Southern Sulu Sea and the central part of the country's Pacific coast. Studies on pelagic fisheries also indicated overfishing and declining catch per unit effort (CPUE). At present exceptions are found in lightly fished areas in the waters off Palawan, parts of the country's Pacific coast and some parts of Mindanao. Such findings are supported by an observed change in species composition, i.e. anchovies have partially replaced sardines, scads and mackerels in the catch, an indication of the gradual stock collapse of the larger, commercially exploited species.

## Landing sites

Fish catches all over the Philippines are typically landed in private, traditional or government-owned landing centers. The government-owned landing centers are fish ports managed either by the Philippine Fisheries Development Authority (PFDA) or by Local Government Units (LGUs) or jointly managed by both.

Table 4 shows the fish ports managed by PFDA and their landings in 2012. The General Santos Fish Port Complex had 13.4 percent of total landings from commercial fisheries.

**Table 5 – Philippines - Fish ports managed by the Philippine Fisheries Development Authority (PFDA) and their landings in 2012**

| Fishing port                    | Location              | Landings (tonnes) |
|---------------------------------|-----------------------|-------------------|
| General Santos FishPort Complex | General Santos City   | 139613            |
| Navotas Fish Port Complex       | Navotas, Metro Manila | 137650            |
| Iloilo Fish Port Complex        | Iloilo City           | 25033             |
| Lucena Fish Port Complex        | Lucena City           | 20600             |
| Zamboanga Fish Port Complex     | Zamboanga City        | 5213              |
| Davao Fish Port Complex         | Davao City            | 3287              |
| Sual Fish Port Complex          | Sual, Pangasinan      | 748               |

Source: Philippine Fisheries Development Authority

The tendency to unload most catches in traditional landing sites, where the handling practices cannot be efficiently controlled, is partly because there are only seven major fish port complexes in the country – General Santos, Navotas, Iloilo, Lucena, Zamboanga, Davao and Sual. Only 16% of the total marine catch was landed in PFDA-operated fish ports in 2012.

These government-owned major fish port complexes provide landing quays and market halls for fish traders and handlers. The capacities of the harbor and market facilities of the eight major fish port complexes considerably vary.

The Navotas Fish Port Complex has the most number of piers and market halls, followed by the General Santos City Fish Port Complex. These major fish ports basically cater to the commercial fisheries subsector. The major fish port complexes provide landing quays mainly to local fishing vessels, although the Davao and the General Santos Fish Port Complexes report arrivals of foreign fishing vessels.

The catch from the municipal fisheries subsector is typically unloaded in the traditional landing sites or in municipal fish ports. The aquaculture subsector primarily uses the seven major fish ports in the country for the auctioning of aquaculture produce in the domestic market.

Figure 13 – Philippines – PFDA regional fish port complexes



## Fishing practices/systems

### Municipal fishing vessels

A majority of boats are double-outrigger craft, consisting of a narrow main hull with two attached bamboo outriggers, commonly called banca.

The non-motorized municipal fishing boats use either paddle or sail as means of propulsion, and carry one or more crew, depending on the fishing gear used. During the favourable monsoon weather, the popular fishing gear used by sail-powered craft includes trolling, handlines and gillnets. It is also typical for fishers to sail topayao (bamboo rafts, a fish aggregating device), moor their boats to these and fish using handlines.

The motorized municipal fishing boats are equipped with 3–12 hp gasoline or diesel engines. Gillnets, handlines, traps, small ringnets and other small gear are usually operated from these boats.

### Commercial fishing vessels

The small commercial fishing boats are outrigger boats above 3 GT and use trawls, push nets, ringnets, liftnets and Danish seines. Currently, many operate within municipal waters, depending on the municipality's regulations.



## Fishing gear

Medium sized commercial boats are mostly outriggered boats, which include the basnig or liftnet boats; the large Danish seiners or super hulbot; the medium trawlers and old monohulls fitted with outriggers. The monohulls (both wooden and steel) are mostly engaged in ringnet or baby purse seine operations. Those vessels are affected the most by the ban on commercial fishing in the area stretching from shore 15-km out at sea (in terms of both numbers of vessels affected and increased cost of operations). Large commercial fishing boats mainly engage in purse seining, with most catchers targeting tuna or seasonal small pelagic fishes such as mackerels and round scad. The mode of operation is mostly fleet-type, where a carrier boat is dispatched to several catcher boats located on the fishing grounds. The carrier boat loads fish from the catchers and brings it to a port or processing facility. Large commercial vessels fish in the entire Philippine archipelago.

## Gear used in tuna fisheries

A variety of fishing gear is used to catch tunas. Purse seines, ringnets and handlines usually accounts for over 75 percent of the annual tuna catch, with nearly half of the commercial tuna catch in 2011 taken by purse seine. The payao has been singled out as the most important factor triggering the phenomenal development of the tuna fishing industry. The effectiveness and efficiency of payao in attracting tuna (especially yellowfin and skipjack) greatly reduced the time spent in searching and fishing for commercial volumes. The extensive use of payao, however, may be rapidly removing undersized juveniles from the stocks and altering migration and feeding patterns of tunas in Philippine waters (Zaragoza et al., 2004b).

**Destructive fishing practices** Fishers, getting little or no catch, and believing they have little choice left, use illegal and destructive fishing gear to improve their catch. In the Philippines, illegal and destructive fishing practices include compressor fishing, spear fishing and blast fishing.

## Main resources

The principal stocks exploited in the Philippines are small pelagics, tuna and other large pelagic fishes, demersal fishes and invertebrates. Species caught in marine fisheries comprise Indian sardines, round scad, skipjack tuna, yellowfin tuna, frigate tuna, fimbriated sardines, big eyed scad, Indian mackerel, anchovies, slipmouth and squid.

The small pelagic fisheries comprise an important segment of the country's fisheries industry. Small pelagics are considered the main source of inexpensive animal protein for lower-income groups in the Philippines.

The large pelagic fishes consist of tunas and tuna-like species, such as billfish, swordfish and marlin. The tuna fisheries became the largest and most valuable fisheries in the Philippines during the mid-1970s, when payao was introduced. The country became the number one producer of tunas in Southeast Asia in the 1980s. When the catch rate of tunas in the Philippines started declining in the late 1980s, Filipino fishing companies started to fish in international waters. This made the Philippines one of the distant-water fishing nations in the Pacific.

Twenty-one species of tuna have been recorded in Philippine waters but only six are caught in commercial quantity and form the basis of the tuna fishing industry. Of the six species, only four form the bulk of catches and are listed in the Philippine fisheries catch statistics, namely yellowfin (*Thunnus albacares*), skipjack (*Katsuwonus pelamis*), eastern little tuna or kawakawa (*Euthynnus affinis*) and frigate tuna (*Auxis thazard*).

The oceanic large pelagics, such as marlin, swordfish and sailfish, are not fully exploited in the Philippine EEZ. Demersal (bottom-dwelling) fishes include slipmouths, spadefishes, groupers and catfishes. In 2012, slipmouth was the only demersal species included in the top ten species caught, in either municipal or commercial fisheries.

The state of demersal stocks in the Philippines is clearly shown by the decline in trawlable biomass during the past five decades. The need to manage exploitation of the demersal fishery resources was recognized as early as the 1960s, and echoed for several decades afterwards. It will take a long time to re-build the stock of demersal species that have been practically eliminated.

A so-called live reef food fish trade (LRFFT) in the Philippines developed in response to a demand for live food fish, initially from Hong Kong and Taiwan, and later on from mainland China. Live food fish is conventionally caught using hook-and-line fishing gear. However, LRFFT has been closely associated with the problem of cyanide fishing, which was first detected in the aquarium trade. Major species exploited for the trade include the leopard coral grouper (*Plectropomus leopardus*) and other species of groupers.

Among the invertebrates, crabs are one of the most important resources taken, and contribute significantly to global food supply. There are 51 species of swimming crabs reported in the country, but only about 7 are considered marketable. The blue crab (*Portunuspelagicus*) is the main species exploited, comprising over 90 percent of crab landings. Crab fisheries in the country have shown a boom and bust history (Ingles, 2004a). Other important invertebrates are squid and Acetes shrimp.

The marine aquarium or ornamental fish trade in the country involves harvesting selected coral reef fish and invertebrate species that are valued for their aesthetic appeal. The prospects of better resource management in this subsector are considerably brighter than they are for many other fisheries. There is now a relatively high level of environmental awareness in the ornamental trade market (Ochavilloet al., 2004).

The deep-sea fisheries resources in the country are in many cases uncharted and unknown, and are believed to be relatively underexploited. The only deep-water fisheries resource that has a documented history of large-scale exploitation is the dogfish shark (family Squalidae). The fishery for dogfish shark is another case of boom and bust. There is an urgent need to manage the deep-water fisheries resources because they are the country's very last marine frontier (Flores, 2004).

There are some specialized fisheries in the Philippines targeting post larvae or early juveniles of certain fish species that are very marketable since they are considered delicacies including goby fry, post larvae or early juveniles of anchovies of the genus *Stolephorus*, and early juveniles of rabbitfish (*Siganidae*). Other species are targeted as seed stock for aquaculture production (e.g. milkfish (*Chanoschanos*) fry). The by-catch of these fry collection activities is usually abandoned on the shore (Hermes, 2004). The Philippines is located in the most biologically diverse marine area in the world in terms of coral and tropical reef diversity. An integrative assessment of the critical fisheries habitats in the country, in particular of coral reefs, seagrasses and mangroves was carried out in 2004 (Aliño et al. 2004). At about the same time the status of vulnerable or endangered marine species in the country, such as sea turtles, dugongs, cetaceans, whale sharks, mantas and seahorses was reviewed (Alava and Cantos, 2004). These assessments show the combined effects of intense exploitation and habitat degradation.

## **Management applied to main fisheries**

### **Management objectives**

In February 1998, the Philippine Fisheries Code (Republic Act 8550) was signed into law. The Code consolidates all laws pertaining to the fisheries sector and repeals or modifies previous statutes that are inconsistent with it. It declares as a state policy that achieving food security is the main consideration in the development, management, and conservation of fisheries and aquatic resources. Its provisions reflect a strong adherence to long-term sustainability, fully recognizing its multiple dimensions and complex elements in the fisheries context through several prohibitive and regulatory measures seeking to balance protection with

reasonable and responsible use (Ingles, 2004b).

Earlier, in 1991, the Local Government Code (LGC) devolved authority over the management of municipal waters to Local Government Units (LGUs) within the parameters set by national fisheries legislation and policies.

## Management measures and institutional arrangements

Fisheries Administrative Order (FAO) No. 196, s. of 2000 provides the guidelines on the creation and implementation of Fisheries and Aquatic Resources Management Councils (FARMCs). FAO 196-1 amends Section 4 (c,d,e, and f) of FAO 196. On Section 3, the creation of FARMCs aims to institutionalize the major role of fisherfolk and other resource users in the planning and formulation of policies and programs for the management, conservation, protection and sustainable development of fisheries and aquatic resources. The establishment of Fisheries and Aquatic Resources Management Councils (FARMCs) at the national, provincial and municipal levels has established a legal commitment by the government to involve stakeholders in the development and management of the fisheries industry.

The Government of the Philippines' most significant policy shift in the past decade has been the introduction of joint management mechanisms of the fisheries sector, involving the central government, the municipalities, and the fishers (through the FARMCs). The Philippine Community-Based Coastal Resource Management (CB-CRM) programme has been very successful at awareness building, with notable pockets of success in implementation. The Philippines has been a leader in devolution of authority for coastal resource management through the LGC and has thus become an example for such actions. However, the challenges of managing fisheries resources in a sustainable manner still remain in most areas.

The principal fisheries management measures in the Philippines are discussed below.

### Limited entry and effort reduction

Licensing in the Philippines is still generally viewed as a statistical and revenue generating exercise rather than as a tool to limit entry and control fishing effort. However, improved frameworks for municipal and commercial fisheries registration and licensing have now been prepared and efforts have already commenced to put them in place.

### Gear, area and temporal restrictions

Some Philippine fisheries are managed in terms of species and size, and, to a certain extent, of sex and maturity stage. Management measures include: (1) technological controls or limitations, e.g. gear restrictions, including mesh regulations, hook size control and trawl bans; (2) spatial restrictions, e.g. marine sanctuaries and area closures; and (3) temporal restrictions, e.g. seasonal closures. Examples of regulatory instruments influencing selectivity of fishing operations in the Philippines include mesh size regulation, gear ban, restriction on closure of area and temporal restriction. Fisheries administrative orders are being formulated as a basis for fisheries policy.

**Table 6 – Philippines - Examples of regulatory instruments influencing selectivity of fishing operations in the Philippines**

| <b>Regulatory Instrument</b> | <b>Legislation</b> | <b>Specifications</b> |
|------------------------------|--------------------|-----------------------|
|                              |                    |                       |

|                                       |   |  |
|---------------------------------------|---|--|
| Technical controls<br>Mesh regulation | Sec. 89 Philippine Fisheries Code of 1998 | Prohibition on the use of nets with mesh smaller than that which may be fixed by the Department of Agriculture (DA). |
| Gear Ban                              | Sec. 90 Philippine Fisheries Code of 1998 | Prohibition of fishing in municipal waters and in all bays using “active” fishing gear.                              |
|                                       | Sec. 92 Philippine Fisheries Code of 1998 | Prohibition on the use of muro-ami, other methods and gear destructive to coral reefs and other marine habitats.     |
|                                       | Sec. 93 Philippine Fisheries Code of 1998 | Prohibition on the use of superlights in fishing   |
| Spatial restrictions                  | Sec. 95 Philippine Fisheries Code of 1998 | Prohibition of fishing in overfished area  |
|                                       | Sec. 96 Philippine Fisheries Code of 1998 | Prohibition of fishing in areas declared by the DA as reserves, refuge, and sanctuaries                              |
| Temporal restrictions                 | Sec. 95 Philippine Fisheries Code of 1998 | Prohibition of fishing during the closed season  |
|                                       | Sec. 98 Philippine Fisheries Code of 1998 | Prohibition on the capture of sabalo (full-grown milkfish) and other breeders and spawners                           |

Source: Philippine Fisheries Code of 1998

### **Enhancement of awareness and participation of stakeholders**

The legislation on fisherfolk empowerment in the country can be considered adequate. And there are some pockets of success in sustainable coastal resource management (e.g. Apo Island, Cebu, and San Vicente Bay, Palawan).

### **Reduction of environmental impacts**

Laws on the protection of the marine environment are in place and there is growing environmental awareness in the country.

### **Fishing communities**

Fishermen are still the poorest in the nine basic sectors in the Philippines with a poverty incidence of 41.4 percent according to the 2009 Poverty Incidence for Basic Sectors report of the National Statistical

Coordination Board.

In the year 2000, households whose heads were fishers had a significantly higher poverty incidence than households in general. Their daily income was roughly the retail value of 2 kg of fish. Low incomes can be attributed to declining fish catch, estimated to be about 2 kg per day, down from the 20 kg per day that was the average catch during the 1970s. Households in the fishing industry had lower education levels than households in general. In addition, fishers' households had less access to basic necessities like safe water, sanitary toilets and electricity than other households, and were more likely to live in makeshift houses or were squatting. Also, the average size of households of fishers and of those in the fishing industry was greater than the national average (Israel, 2004).

The vast majority of municipal fishing operations were individual operations and the rest are involved in commercial fishing. Women have a role in fisheries and helping in the livelihood of the family (Siason, 2004). Their roles include: (1) fish marketing, (2) fish processing, (3) fry gathering, (4) gear preparation, (5) fishing, (6) net mending, and (7) fishing boat ownership and operation.

## Inland sub-sector

### Catch profile

Finfish, mollusks, and crustaceans constitute 62 percent, 33 percent and 5 percent of the inland capture fisheries total catch, respectively.

Table 7. Catches of the major finfish species in inland fisheries subsector in 2012

| Major Species      | Volume (tonnes) | As % of total |
|--------------------|-----------------|---------------|
| Freshwater tilapia | 47 439.27       | 38.8          |
| Carp               | 26 807.82       | 21.9          |
| Mudfish            | 10 703.17       | 8.7           |
| Gourami            | 6 608.42        | 5.4           |
| Freshwater catfish | 5 768.40        | 4.7           |
| Freshwater goby    | 5 412.21        | 4.4           |
| Milkfish           | 4 601.09        | 3.8           |
| Silver perch       | 2 196.90        | 1.8           |
| Manila sea catfish | 1 874.69        | 1.5           |
| Freshwater eel     | 1 149.18        | 0.9           |
| Others             | 9 901.20        | 8.1           |
| Total              | 122 236.59      | 100.0         |

Source: Bureau of Agricultural Statistics. Fisheries Statistics of the Philippines, 2010-2012

**Fishing grounds** The country has almost 500 000 ha of inland bodies of water, comprising 246 000 ha of swamplands, 200 000 ha of lakes, 31 000 ha of rivers and 19 000 ha of reservoirs. The bulk of the catch comes from the major lakes – Laguna de Bay (90 000 ha) in Laguna and Rizal provinces; Lake Lanao (34 304 ha) in Marawi City, Lanao del Sur; and Taal Lake (24 400 ha) in Batangas province. Together these three lakes account for 74 percent of the country's total area of lakes.

### Fishing practices/systems

The fishing methods used in inland waters are usually simple types. Gear includes cover pot, fish trap, lift net, fish trap, pole-and-line, push net, skimming net, cover net, gillnet, dredge, beach seine, cast net and ring net.

## Main resources

Finfish such as tilapias and carps, mollusks (e.g. snails) and crustaceans (e.g. freshwater shrimps and prawn) are the main inland fisheries resources. No data is available for mollusks and crustaceans. The Philippines has many fish species that are unique to the country. Foremost of these species are the small freshwater gobies. The smallest fish in the world, *Pandakapygmaea* or pygmy goby, was found in an estuary, the Dagat-dagatan Lagoon in Navotas, Rizal, which has subsequently been converted and developed into a housing project. The pygmy goby is believed to be extinct.

Lake Buhi is the home of the “smallest commercial fish in the world”, the sinarapan (*Mistichthys luzonensis*). This species is now threatened with extinction. Another small goby, *Mirogobius lacustris*, is found in Laguna de Bay, but its population is on the brink of local extinction. In the Philippines, 59 freshwater fishes have been introduced from 1905 to 2013. An evaluation of these introductions shows that 80 percent are beneficial or non-harmful, 13 percent are invasive and 7 percent are considered “potential invasive” fishes. In terms of economic benefits, the gains derived from the introduction of beneficial fishes have been much more compared to the economic losses due to the negative impacts of introduced fishes that have become invasive (Guerrero, 2013).

## Management applied to main fisheries

The National Wetlands Action Plan for the Philippines (2011-2016) identifies the following challenges of priority inland wetlands:

- Presence of settlement with resulting problems in sanitation and disposal
- Deforestation of upland and mangrove forests
- Lack of soil conservation appropriate for wetlands
- Chemical pollution from industry and domestic sources
- Biological pollution (introduction of exotic species)
- Prevalent practice of drainage for agriculture
- Increasing saltwater intrusion;
- contamination of freshwater sources

As a program, the NWAPP (2011-2016) employs a localized approach to management and community-based participation, even as it is premised on the larger framework of sustainable development, the prevention of harm, and the continuity of a healthful ecology for the subsequent generation. It is a commitment to take responsibility for the continued enjoyment of the country’s wetland resources. Laguna de Bay, the largest lake in the country, is the most impacted lake in terms of pressure from large local populations and rapid industrialization. The problems in the lake are probably the most complicated among the inland waters and will be the hardest to resolve in order to provide maximum sustainable yields from resources while minimizing conflicts among the complex, multiple uses of the lake.

## Aquaculture sub-sector

### Production profile

Seaweed, milkfish, tilapia and giant tiger prawn were the main aquaculture species in 2012.

Seaweeds farming contributed almost 70 percent to the total production from aquaculture and aquatic plants, while the rest were culture animals coming from freshwater (12.5 percent), brackish water (12.5 percent) and marine (5 percent). The total production from aquaculture was valued at PHP92.3 billion.

### Practices and systems of culture

The farming methods for the seaweed *Eucheuma* take two forms: farming in shallow waters and farming in deep waters. The stake or bottom method is used in shallow waters, while monoline, raft and spider web methods are employed in deep waters.

Most of the milkfish production comes from brackish water fish ponds using various culture methods including extensive, shallow-water, straight-run (traditional and improved); modified extensive (deep water, plankton; multi-size stocking; modular or progression); semi-intensive; and intensive.

Most tilapia production comes from freshwater ponds and cages.

## **Cultured species**

The major aquaculture species in the Philippines are:

### **Freshwater aquaculture**

- tilapia (mainly Nile tilapia, *Oreochromis niloticus*)
- milkfish (*Chanoschanos*)
- carp (mainly bighead carp, *Aristichthys nobilis*)
- catfish (*Clarias* sp., *Pangasius* sp.)

### **Brackish water aquaculture**

- milkfish (*Chanoschanos*)
- giant tiger prawn (*Penaeus monodon*)
- Indo-Pacific swamp crab (*Scylla serrata*)
- white leg shrimp (*Penaeus vannamei*)
- banana shrimp (*Penaeus merguensis*)
- other marine finfish including groupers and siganid

### **Mariculture**

- seaweeds (*Kappaphycus alvarezii*, *Eucheuma denticulatum*,
- *Caulerpa* spp. and *Gracilaria* spp.)
- milkfish (*Chanoschanos*)
- green mussels (*Perna viridis*)
- slipper cupped oysters (*Crassostrea iredalei*)
- other marine finfish including groupers and siganid

### **Management**

Aquaculture regulations are covered in the Philippine Fisheries Code of 1998 and the Local Government Code of 1991. Some of the Fisheries Administrative Orders issued by the Bureau of Fisheries and Aquatic Resources (BFAR) concern the granting of Fishpond Lease Agreements for public lands; importation and exportation of aquatic organisms; and food safety. The Fisheries Code and Local Government Code transferred to LGUs government supervision and the licensing for the construction and operation of fish pens, fish cages, fish traps and other structures for aquaculture.

For more details on Philippine aquaculture, you may want to check the National Aquaculture Sector Overview (Philippines) at [http://www.fao.org/fishery/countrysector/naso\\_philippines/en](http://www.fao.org/fishery/countrysector/naso_philippines/en).

## Post-harvest sector

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### Fish utilization

Fish is consumed as fresh, fermented, dried, smoked or canned. However, data on the disposition of catch in the Philippines are incomplete. Around 70 percent of the total catch is consumed fresh or chilled, while 30 percent is processed into cured, canned, or frozen products, or disposed of live. The bulk of cured fish and fishery products are consumed locally, while only a small quantity is exported as ethnic products. Canned products, particularly tuna, are consumed locally in small quantities, and most of the frozen products are for export.

There is a growing trend towards increased mechanization in operations in the fish processing industry, brought about by the need to reduce cost and to manufacture products of consistent quality. Most of the processing plants manufacture traditional products, such as dried and smoked fish for both foreign and domestic markets. Several plants are engaged in processing of frozen and canned products, mainly tuna for export purposes.

Old ways of handling the catch are still prevalent in many fishing communities. However, in areas where the demand for good quality fresh fish, particularly for export, is high improved methods of handling (proper icing and use of insulated containers) are widely practiced. In general, aquaculture produce are better handled than fish and shrimp caught in municipal fisheries.

There is a growing demand for modern freezing equipment in processing plants that cater to the export market. Contact plate freezers are commonly used for processing shrimps, while air blast and brine freezers are usually employed for tuna. The main frozen products for export are tuna loins, cephalopods and shrimps.

The majority of the canneries in the country meet international standards in terms of product quality, styles of pack and packaging. New equipment is being used in production lines to improve canned products. Variations for canned fish, particularly tuna, that suits the local taste have been made to attract local consumers and to maximize use. By-products from the canning industry find their way into flavoring, pet food and fishmeal industry.

Value-added products in the form of fillets, comminuted and surimi-based products and ready-to-eat main fish dishes are growing in demand. Locally, comminuted or minced products, such as fish balls, fish sausages, squid balls and fish nuggets, are becoming common in many supermarkets.

The industry absorbs by-catch and market surpluses, including farmed species. A number of processors of de-boned milkfish are also converting their by-products to value-added products, such as fish rolls and dumplings, to minimize waste. In general, the value-added-product industry needs to upgrade its technology and quality standards, including in-plant hygiene and sanitation.

Traditional products, such as salted, dried, smoked and fermented fish, are common. These products are mainly manufactured where there is a guaranteed supply of raw material. The processors are generally small-scale, family establishments that have limited capital. The processing methods they employ vary considerably, resulting in inconsistent quality and limited shelf-life of finished products. There are very few local processing plants that use modern technology (mechanized smokehouses and dryers) needed to improve quality standards. Only those that export their products have improved processing practices, equipment, hygiene and sanitation in the plants.



The primary problem in the industry is shortage of raw material. Other problems of the fish processing industry include poor quality of raw material, inconsistent quality of products, lack of appropriate safety standards for traditional products (e.g. inappropriate use of additives), insufficient capital to improve the enterprise, and lack of appropriate infrastructure (e.g. chilling or cold storage facilities) for product storage. The extent of losses in the post-harvest phase of fisheries is difficult to quantify. Locally, there is an estimated loss of 25–30 percent of the total catch due to improper handling.

## **Fish markets**

The majority of catches from the municipal fisheries subsector is marketed, mostly in retail quantities, directly in traditional landing sites. There are middlepersons who buy fish from fishers. It is mostly women who vend fish caught in small volumes that are sold house-to-house in the village or surrounding communities. They then either sell these products in the local wet market or process them into dried, smoked or fermented products.

Most commercial catches are landed and traded in wholesale quantities at traditional landing centers. In some cases, catches that have been landed in private and traditional landing sites are transported to major fish ports for auctioning. Some fishing corporations have their own fish canneries and therefore transport their catches directly to these canneries.

In the aquaculture subsector, most of the products are either auctioned on site or transported to major fish ports for auctioning. On-site bidding is done by middlepersons and fish exporters. Bidding in fish ports is typically done by middlepersons, fish vendors in the local wet markets and small fish processors. Some aquaculture farms have their own processing facilities. Hence, most of their aquaculture products directly go to their processing plants.

Traditional processed fish products (e.g. smoked, dried, salted, fermented and marinated/pickled) are sold in wet markets throughout the country. Some products are sold in supermarkets, including canned/bottled fish, deboned milkfish, and specialty products (e.g. pasteurized fish paste, crab fat). In terms of export, Japan and USA are the traditional export markets for Philippine fish and fishery products.

## **Socio-economic contribution of the fishery sector**

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### **Role of fisheries in the national economy**

The Philippines ranked among the top fish producing countries in the world. It is the world's third largest producer of farmed seaweeds with a production of 1.75 million tonnes in 2012. However, globally in the last 20 years, in terms of aquaculture the Philippines' ranking in the world has fallen. Comparing with a historical position of providing 5 percent of global farmed fish supply, the Philippines contributed about 1.2 percent (volume) in 2011.

### **Trade**

The Philippines is an exporter as well as importer of fish and fishery products. In 2012, the foreign trade performance of the sector registered a trade surplus of PHP30.07 billion.

Exports consisted mainly of fresh and processed fish, crustaceans and mollusks. Leading products were tuna, shrimp and seaweed. The major export destinations of tuna were Japan, United States of America and Germany. The major export destinations of shrimps were Japan and the United States of America. The major export destinations for dried seaweed were China, United States of America and France, while the major

export destinations for carageenan were the United States of America, Denmark and Belgium.

For the past several years, the Philippines has been importing large quantities of pelagic species such as chilled/frozen tuna (mainly from Papua New Guinea, Taiwan and China). Mackerel ranks 2<sup>nd</sup> amongst import and comes from China, Japan and Vietnam. Large quantities of fishmeal are also imported (mostly from Thailand and Peru) to be used as ingredients in aquaculture feed. Significant changes in international trade policy, quality and safety criteria have put pressure on the fish processing industry to improve the products that are being manufactured. Many countries, including the Philippines, have adopted the Hazard Analysis Critical Control Point (HACCP) system for food safety management. The Philippines continues to face challenges regarding access of its fishery products in international markets.

## **Food security**

There are clear indications that fisheries production (measured in volume) is approaching real limits to further growth. Much of its production is consumed locally with per caput fish consumption estimated at 32.7 kg in 2011.

## **Employment**

There are about 1 614 000 fishers involved in municipal waters extending up to 15 km offshore, while 16 500 fishers are involved in commercial fishing operations in waters beyond 15 km. In addition to those who are involved in fishing operations, there are 226 000 fish and shrimp farmers who are involved in various types of farming of fishes, mollusks, seaweeds and other aquatic organisms. Estimates of the employment generated from ancillary industries are not available, but it is accepted that they provide jobs for many people.

## **Rural development**

Various socio-economic data indicate that the ability of the sea to provide a cheap source of food and income for the Filipino population has been severely compromised. Although the Philippines is among the world's largest fish producing nations, hunger is still prevalent in the country (Asian Development Bank, 2012). With regard to aquaculture, its full potential for rural development has yet to be realized.

## **Trends, issues and development**

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### **Constraints and opportunities**

The Comprehensive National Fisheries Industry Development Plan (2006-2025) recognizes that, despite a long history of attempts, Philippine fisheries have yet to be sustainably managed. Unsustainable management results in greater poverty, more resource use conflicts, and reduced contributions of the fisheries sector to the economy. In specific terms, unsustainable management of fisheries means: (1) depleted fishery resources, (2) degraded fishery habitats, (3) intensified resource use competition and conflict, (4) unmet potential of aquaculture and commercial fishing grounds, (5) uncompetitive fishery products, and (6) constant post-harvest losses. The main cause of the above problems - or what prevents Philippines from resolving them - is the inadequate management systems and structures. Hence, all these problems can be traced to an institutional system that is not yet fully effective. While the challenges confronting fisheries are daunting, there are existing opportunities or positive conditions in the sector. These include the vast water resources for increasing production; the tropical condition, which allows year-round fish culture; increasing demand for fish and fish products from primary markets, such as USA and China; and the strong domestic market. There are opportunities to delineate property rights to gradually replace the open access regime; utilize EEZ; sustainably

expand aquaculture and mariculture; improve post-harvest practices and systems; tap export potentials; and extract substantive resource rents through policies based on natural resource pricing.

## **Government and non-government sector policies and development strategies**

The CNFIDP calls for strengthening of various types of partnerships. It may involve partnership between government and business sector, as well as between local fishing communities and civil society groups. A Fisheries Industry Consultative Forum is proposed to be established as part of this initiative. There has been limited coordination among concerned agencies/stakeholders. It is acknowledged that the government on its own cannot effectively manage the fisheries sector and must spur genuine participation of stakeholders. Thus, the commitment and active participation of all industry players is necessary.

## **Research, education and training**

### **Research**

The Philippine Fisheries Code of 1998 provides for the creation of a National Fisheries Research and Development Institute (NFRDI) to serve as the primary research arm of BFAR. The major project of the interim NFRDI is the National Stock Assessment Project, which has been designed to institutionalize stock assessment so that continuous and reliable time series data will be available for the development of sound fisheries management strategies.

State universities, such as the University of the Philippines in the Visayas (UPV) and the Marine Science Institute (MSI) of the University of the Philippines, Diliman, have active research programmes on marine science and fisheries.

For aquaculture, the presence of the Aquaculture Department of the Southeast Asian Fisheries Development Center (SEAFDEC AQD) in Iloilo has resulted in the filling of many gaps in Philippine aquaculture research. Through a system of consultation with the business sector and the local aquaculture R&D sector, SEAFDEC AQD prioritizes its research and avoids duplication of work with local institutions. SEAFDEC AQD research outputs are published mostly in international refereed journals.

Amongst the state universities engaged in aquaculture R&D are the Central Luzon State University (CLSU) and Mindanao State University (MSU).

The BFAR has several aquaculture centres and stations throughout the country, which provide aquaculture extension services. Some private companies (e.g. feed companies) also engage in aquaculture research and extension. Fisheries R&D is being coordinated (and funded to some extent) by the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) under the Department of Science and Technology and the Bureau of Agricultural Research under the Department of Agriculture.

### **Education and training**

Several state universities and colleges provide fisheries education. However, only a few have been recognized to have significantly contributed to fisheries education and R&D in the country e.g. Central Luzon State University (CLSU), University of the Philippines in the Visayas (UPV) and Mindanao State University (MSU).

## **Foreign aid**

Foreign assistance in the form of loans and grants shifted to conservation and resource management after the late 1980s.

In line with the United States-Philippines Partnership for Growth goal to achieve broad-based and inclusive growth, USAID/Philippines is implementing the five-year Ecosystems Improved for Sustainable Fisheries (ECOFISH) Project starting 2012. Building on the progress made under the Fisheries Improved for Sustainable Harvest (FISH) Project, ECOFISH is working on conserving biological diversity, enhancing ecosystem productivity and restoring the profitability of fisheries in eight marine key biodiversity areas (MKBAs), using ecosystem-based approach to fisheries management (EAFM).

The eight MKBAs are: (1)Lingayen Gulf, (2)Verde Island Passage, (3)Calamianes Island Group, (4)Ticao-San Bernardino-Lagonoy Gulf, (5)Danajon Reef, (6)South Negros Island, (7)Surigao del Sur and del Norte, and (8)Sulu Archipelago. Together with Indonesia, Malaysia, Papua New Guinea, Solomon Islands and Timor-Leste, the Philippines is an active member of the Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF). The partnership aims to sustain the extraordinary marine and coastal resources in the area called “Coral Triangle” by addressing crucial issues such as food security, climate change and marine biodiversity.

## Institutional framework

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Fisheries management in the Philippines rests jointly on two authorities: BFAR, that has regional offices in each of the 16 Philippine regions, and the LGUs that operate under the Local Government Code of 1991.

Under the Fisheries Code, BFAR formulates and enforces rules and regulations governing the conservation and management of fishery resources, except in municipal waters. The legal instruments issued for this purpose are called Fisheries Administrative Orders (FAOs).

National legislation is further supported and amplified through the issuance of Municipal Fisheries Ordinance (under the Local Government Code) which are local management rules and regulations applied by municipalities within 15 km from their coastline. Provinces do not have responsibility for fisheries management in any part of the sea. Their role is to coordinate within the province the fisheries management undertaken at municipal level. This permits them to assist BFAR Regional Offices to maintain consistency in policies and implementation of management plans.

Other agencies that are directly involved in management or whose action influence fisheries management include:

- Department of Environment and Natural Resources (DENR) through its coastal environment programmes for the protection, rehabilitation and enhancement of coastal habitats;
- NFRDI, the legally mandated primary research arm of BFAR;
- PCAARRD under DOST, for fisheries research coordination;
- BAR under DA, for fisheries research coordination;
- SEAFDEC AQD;
- Department of Agriculture, of which BFAR is part, through the Agriculture and Fisheries Modernization Act of 1997 (R.A. 8435), which includes fisheries management and coastal development;
- National Mapping and Resource Information Authority (NAMRIA), responsible for establishing the limit of the EEZ, sea lanes and delineating municipal waters;
- Military organizations (Navy and Air Force) that provide support for Monitoring, Control and Surveillance (MCS) activities offshore when available;
- Philippine Coast Guard, Maritime Police and LGU Enforcement personnel responsible for assisting municipalities and the national agency in coastal and, where possible, offshore enforcement activities;
- Department of Finance and its Bureau of Customs for coordinated offshore management and

enforcement;

- Department of Transport and its Maritime Authority (MARINA) for maritime shipping and safety;
- Department of Foreign Affairs for international fisheries affairs;
- LGUs for coastal area management, including compliance monitoring;
- Fisheries and Aquatic Resource Management Councils (FARMCs); and,
- NGOs active on various issues in fisheries.

All legislative changes or new proposals for management interventions are subject to an extensive stakeholder review process that involves all levels of government (national, provincial and municipal), the BFAR regional offices and the FARMCs.

Registration and licensing of fishers, vessels and gear in both the municipal fisheries and commercial fisheries have yet to be strengthened.

National agencies such as the Navy, Air Force and the Coast Guard have the mandate for compliance monitoring outside municipal waters, and can be asked for assistance within municipal waters. The Maritime Police, Coast Guard and LGU-designated/BFAR trained “Deputy Fish Wardens” are mandated to carry out compliance monitoring and enforcement functions in municipal waters.

The following are some important Internet links to national administrative and research institutions:

- BFAR <[www.bfar.da.gov.ph](http://www.bfar.da.gov.ph)>
- PFDA <[www.pfda.da.gov.ph](http://www.pfda.da.gov.ph)>
- SEAFDEC AQD <[www.seafdec.org.ph](http://www.seafdec.org.ph)>
- PCAARRD <[www.pcaarrd.dost.gov.ph](http://www.pcaarrd.dost.gov.ph)>
- BAR <[www.bar.gov.ph](http://www.bar.gov.ph)>
- NFRDI <[www.nfrdi.da.gov.ph](http://www.nfrdi.da.gov.ph)>
- UPV <[www.upv.edu.ph](http://www.upv.edu.ph)>
- CLSU <[www.clsu.edu.ph](http://www.clsu.edu.ph)>
- MSU <[www.msumain.edu.ph](http://www.msumain.edu.ph)>
- DENR <[www.denr.gov.ph](http://www.denr.gov.ph)>
- Marine Science Institute, University of the Philippines
- [www.msi.upd.edu.ph](http://www.msi.upd.edu.ph)

## Legal framework

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Legal instruments applicable to the fisheries sector include:

- Acts of Parliament, e.g. the Philippine Fisheries Code of 1998 (R.A. 8550) for fisheries, and the Local Government Code of 1991.
- Executive Orders e.g. EO 240, establishing Fisheries and Aquatic Resource Management Councils (FARMCs).
- Fisheries Administrative Orders (FAOs) issued by BFAR pursuant to the Fisheries Code.

More information at: **National Aquaculture Legislation Overview (NALO)**

More information at: **FAOLEX legislative database**

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# Additional information

## FAO Thematic data bases

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- [FAO Country Profile](#)
- [Marine Resources reports \(FIRMS\)](#)
  - [Marine resources - Northwest Pacific](#)
  - [Marine resources - Western Central Pacific](#)
  - [Sharks - Global](#)
  - [Squid - Global](#)
  - [Tuna and tuna-like species - Global](#)
- [Fishery reports \(FIRMS\)](#)
  - [Northwest pacific : Bottom gillnet alfonsino and oreo fishery - high seas : 2009](#)
  - [Northwest pacific : Bottom longline fishery - high seas : 2009](#)
  - [Northwest pacific : Bottom trawl alfonsino and armourhead fishery - high seas : 2009](#)
  - [Northwest pacific : Pot deep-sea crabs fishery - high seas : 2009](#)
  - [Pacific islands region : Marine fisheries : 2009](#)
  - [World : Deep-sea fisheries : 2009](#)
  - [World : Global Tuna Fisheries : 2009](#)
- [National Aquaculture Sector Overview \(NASO\)](#)
- [National Aquaculture Legislation Overview \(NALO\)](#)
- [FAOLEX legislative database](#)
- [Database on Introductions of Aquatic Species](#)
- [Regional Fishery Bodies \(RFB\)](#)
  - [Asia-Pacific Fishery Commission \(APFIC\)](#)
  - [Commission for the Conservation of Southern Bluefin Tuna \(CCSBT\)](#)
  - [Indian Ocean Tuna Commission \(IOTC\)](#)
  - [International Commission for the Conservation of Atlantic Tunas \(ICCAT\)](#)
  - [Network of Aquaculture Centers in Asia-Pacific \(NACA\)](#)
  - [Southeast Asian Fisheries Development Center \(SEAFDEC\)](#)
  - [Western and Central Pacific Fisheries Commission \(WCPFC\)](#)
- [FAO Fishing Vessels Finder \(FVF\)](#)

### Publications

- [List of relevant FAO publications](#)

### Meetings & News archive

- [Meetings archive](#)
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