Fishery and Aquaculture Country Profiles

The Republic of Indonesia

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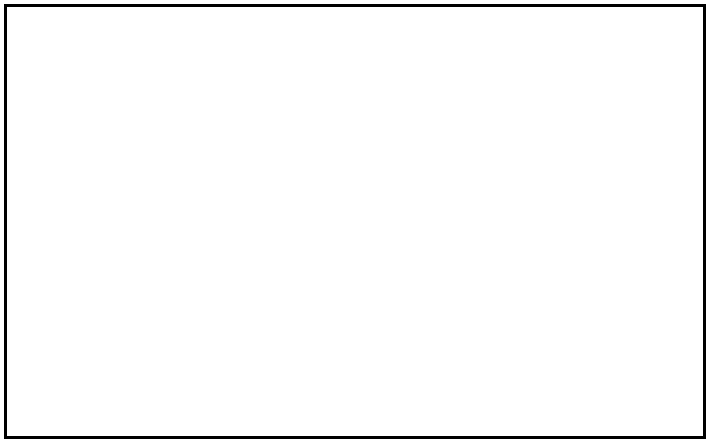


Source of information

- United Nations Geospatial Information Section http://www.un.org/Depts/Cartographic/english/htmain.htm
- Imagery for continents and oceans reproduced from GEBCO, www.gebco.net

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

Prepared: July 2014

Indonesia is the world's largest archipelagic State with some 17 508 islands (of which 6 000 are inhabited), and 54 716 km of coastline, and the world's fourth most populous nation (247.5 million).

In 2012, Indonesia's fishery production reached approximately 8.9 million tonnes, of which inland and marine catch accounted for about 5.8 million tonnes and aquaculture 3.1 million tonnes in addition to 6.5 million tonnes of seaweeds. About 95 percent of fishery production comes from artisanal fishermen. In 2012, around 6.4 million people were engaged in inland and marine fishing and fish farming. The marine fishing fleet comprised 620 830 vessels in 2012, with 28 percent of non-powered boats and 39 percent of out-board engine. An additional 184 900 vessels (of which 23 percent had engine) composed the fleet operating in inland waters.

An important proportion of the catch is consumed in dried, salted, smoked, boiled or fermented form, while 46 percent is consumed fresh. About 54 percent of the animal protein supply comes from fish and seafood. Per caput annual consumption has risen from an average of 10.6 kg in the 1970s to the current 28.9 kg (2011). In 2013, the total value of exported fishery commodities was USD 3.8 billion, while imports to the country amounted to USD 0.4 billion. The fishing industry accounted for 21 percent of Indonesia's agricultural economy and 3 percent of national GDP in 2012.

The following constraints affect fisheries management and aquaculture development: overfishing in both marine and inland fisheries waters; low income and standard of living for fishers and fish farmers; lack of financial support in terms of credit schemes; weak fisheries management, particularly concerning monitoring, surveillance and enforcement (MCS). Illegal, unreported and unregulated (IUU) fishing is a major problem in the country.

To address these issues the National Mid Term Priority Framework (2010-2014) has set the following priorities: community development and empowerment through programmes for small-scale fishers and fish farmers in coastal and small island areas; mitigation and adaptation strategies to climate change for the marine and fisheries sector; improvement of the quality and profitability of fish products for small-scale fishers; improvement of fishery-related infrastructure; strengthened MCS systems to improve management and combat IUU fishing; strengthening human resource capacity.

Membership in Regional Fishery Bodies

- Asia-Pacific Fishery Commission (APFIC)
- Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- Indian Ocean Tuna Commission (IOTC)
- Inter-American Tropical Tuna Commission (IATTC)
- 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 - Indonesia - General Geographic and Economic Data

Area:	5 455 675.22 km²
Water area:	3 544 743.90 million km²
Shelf area:	n.a.
Length of coastline:	104 000.00 km
Population (2013):	242.43 million (based on National Statistical Bureau)
GDP at purchaser's value (2007):	USD 432.06 billion
GDP per head (2006):	USD 1 640.84
Agricultural GDP (2006):	USD 45.6 billion
Fisheries GDP (2006):	USD 7.8

		Source
Country area	1 910 930 km^2	FAOSTAT. 2013
Land area	1 811 570 km^2	FAOSTAT. 2013
Inland water area	99 360 km^2	Computed. 2013
Population - Est. & Proj.	258.464 millions	FAOSTAT. 2018
Exclusive Economic Zone (EEZ) area	6 051 529 km^2	VLIZ
GDP (current US$)	1 042 173 millions	World Bank. 2018
GDP per capita (current US$)	3 894 US$	World Bank. 2018
Agriculture, forestry, and fishing, value added	12.81 % of GDP	World Bank. 2018

FAO Fisheries statistics

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

Indonesia is one of the main fish producers in Southeast Asia. Capture fisheries and aquaculture occur in marine, brackish and freshwater. The slow growth of capture fisheries has been compensated by the faster growth of aquaculture in the last decades.

Table 3 - Indonesia – Trend in fish production 2005-2009 (tonnes)

SECTOR	Y E A R					Aver. Annual Rate of Increase (%)
	2005	2006	2007	2008	2009	
TOTAL CAPTURE FISHERIES	4 705 869	4 806 112	5 044 737	5 003 115	5 107 971	2.09
Marine capture fisheries	4 408 499	4 512 191	4 734 280	4 701 933	4 812 235	2.23
Freshwater capture fisheries	297 370	293 921	310 457	301 182	295 736	-0.08
TOTAL AQUACULTURE	2 163 674	2 682 596	3 193 565	3 855 200	4 708 563	21.47
Marine aquaculture	890 074	1 365 918	1 509 528	1 966 002	2 820 083	34.41
Brackish water aquaculture	643 975	629 610	933 833	959 509	907 123	10.84
Freshwater: Pond culture	331 962	381 946	410 373	479 167	554 067	13.72
Freshwater: Bamboo cage	67 889	56 200	63 929	75 769	101 771	12.34
Freshwater Net cage	109 421	143 251	190 893	263 169	238 606	23.18
Paddy field	120 353	105 671	85 009	111 584	86 913	-5.65
TOTAL Fish production	6 869 543	7 488 708	8 238 302	8 858 315	9 816 534	9.34

Source: MMAF, 2009

Marine sub-sector

In Indonesia marine fisheries can be grouped into two main segments, small-scale and large-scale. Further,

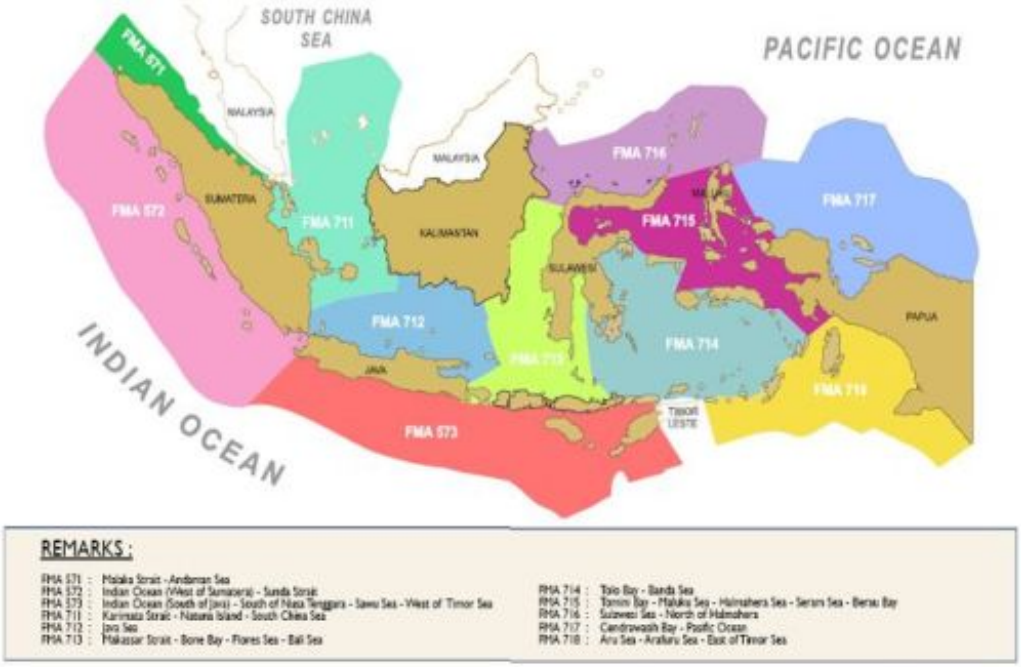
small-scale fisheries consist of two major segments, artisanal and commercial, while large-scale fisheries are basically the so-called industrial fisheries. Commercial fisheries are characterized by large vessels that employ medium-size purse seines, Danish seines and gillnets.

Catch profile

Being in the tropics, catches are multispecies in nature comprising demersal and pelagic species, such as: snappers, groupers, sweetlips, mackerels, scads, anchovies, tunas (mostly skipjack, yellowfin, bigeye), penaeid shrimp, squids, and others.

The Indonesian fisheries administration records the annual catch by commodities and by fishing gear. Statistics showing the number of fishing vessels and fishing gear are also available. For the last five years the annual catch is also presented for eleven statistical areas (also called "management areas"). These are shown in Figure 13.

Figure 13 – Indonesia - Eleven statistical areas, also called" fisheries management area" or FMA



Landing sites

Most catches are landed in fishing ports. Only a small share of the catch is landed in public commercial ports that do not have facilities for fishing vessels. There are six large fishing ports, 14 located in Java (Jakarta and Cilacap), two in Sumatra (Belawan and Bungus), one in North Sulawesi (Bitung) and the other in Southeast Sulawesi (Kendari). In addition there are 13 medium-sized fishing ports, while the remaining two fishing ports are small.

Fishing practices/systems

On motorized vessels fishermen use various fishing gears ranging from the traditional ones employed aboard sail boats to mechanized gears such as trawls, purse seines and longlines. The increased use of modern fishing gears is reflected by the growing number of fishing vessels, in particular the number of motorized vessel. Nonetheless, the number of non-motorized vessels is still high.

Other developments in Indonesian fisheries are the growing number of fish aggregating devices (FAD) used in pelagic fishing, and the increasing popularity of hand line fishing, purse seining and longline fishing for tuna.

Table 4 – Indonesia – Fishing vessels

Category and Size of Boat			
			2009
Total			**590 352**
Non Powered Boat			193 798
Outboard Motor			236 632
Inboard Motor			159 922
	< 5	GT	105 121
	5 – 10	GT	32 214
	10 – 20	GT	8 842
Size of Boat	20 – 30	GT	7 403
	30 – 50	GT	2 407
	50 – 100	GT	2 270
	100 -200	GT	1 317
	> 200	GT	348

Main resources

The catch of demersal and small-pelagic species as well as shrimps comes largely from fishing on the continental shelf, in the Malacca Strait, the southern part of South China Sea, the Java Sea and in the Arafura Sea. Most of the large pelagic species, amongst which tuna species (skipjack, bigeye and yellowfin tuna), are caught in the archipelagic waters in the mid and eastern part of the country as well as in the Indonesian EEZ and on the high seas. Indonesia is one of the main producers of tuna in the world.

Table 5 – Indonesia - Marine Capture Fisheries Production (metric tonnes)

Commodity	2005	2006	2007	2008	2009
Sardines	274 296	333 651	346 488	313 706	371 325
Scads	290 609	304 739	305 485	327 367	330 687
Mackerels	222 032	254 960	259 458	249 438	260 833
Hairtail	38 793	40 824	47 414	73 707	73 848
Snapper	97 044	109 312	116 994	109 299	115 523
Grouper	45 856	50 189	61 763	57 913	74 040
Tuna	183 144	159 404	191 558	194 173	203 269
Other fish	794 377	602 117	503 988	430 635	410 904
Crustaceans	249 561	279 140	316 587	304 872	302 601
Mollusks	144 634	159 101	171 592	166 390	168 713
Others	7 601	7 427	6 453	5 497	10 106
TOTAL	**2 347 947**	**2 300 864**	**2 327 780**	**2 232 997**	**2 321 849**

Source: Directorate General of Capture Fisheries (DGCF), 2010

Management applied to main fisheries

One of the objectives of fisheries development, as stated in the Strategic Plan of the Ministry of Marine Affairs and Fisheries 2010-2014, is to manage the fisheries in a sustainable manner. Input control has been practised since the early 1970s and has been implemented through a licensing system in which the Central Government (through the Ministry of Marine Affairs and Fisheries ”MOMAF”) grants fishing licences for vessels larger

than 30 GT, the Provincial Governments for vessels of 20-30 GT and the Regency Governments for vessels of 5-20 GT. An open access regime still applies for vessels of less than 30 GT fishing under the jurisdiction of provincial and regency governments.

Technical measures are applied in the form of (i) minimum mesh sizes for the cod-end of trawl nets (1 inch for shrimp trawls and 5 cm for fish trawls), (ii) minimum mesh sizes for purse seines, (iii) maximum length of gillnets (10 km), and (iv) imposition of a minimum distance between FADs of at least 10 nautical miles.No output control has been practised in Indonesia. The exception is the management of Southern Bluefin tuna fisheries for which Indonesia as a member of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) has accepted output controls.Economic incentives have been given, such as fuel subsidies for vessels of less than 30 GT and credit programmes for small-scale fisheries.

Inland sub-sector

Inland capture fisheries take place in lakes, reservoirs and rivers. Fishermen use traditional gears such as hand line, cast net, trap and gillnet. Unlike in marine capture fisheries, no industrial activity has developed in inland capture fisheries. The majority of fishermen, active in inland capture fisheries, are not full-time fishermen. Most of them have part-time jobs in agriculture. The difficulties faced by inland fishermen are largely caused by human activities such as pollution by agricultural pesticides and human wastes from large urban areas.Aquaculture in lakes and reservoirs is important. In the course of the last decade cage culture, in particular, has become popular. However, during the rainy season cage culture has caused recurring fish kills, as the surface layer of cold water then sinks and the deep water - with less oxygen – rises to the surface.

Aquaculture sub-sector

In Indonesia aquaculture has a long history. The country has enjoyed rapid growth in various aquaculture sectors in recent years. In 2009 it was the fourth largest aquaculture producer in the world. Aquaculture in freshwater bodies has occurred for ages, especially in Java where the culture of carp (*Cyprinus carpio*), tilapia (*Tilapia nilotica*) and gouramy (*Osphronemus goramy*) is common. In brackish water, culture of milk fish (*Chanos chanos*) is popular on the north coast of Java, in particular in the north coast of east Java. Culture of Tiger shrimps (*Penaeus monodon*) was initiated at the end of the 1980s and that of white-legged shrimps (*Litopenaeus vannamei*) was initiated a decade later. Shrimp culture has expanded not only in Java, but also in Sumatra, Sulawesi and West Nusa Tenggara. With widespread international support the shrimp and milkfish industry have rapidly implemented Best Management Practices (BMPs).

Aquaculture activities in the marine environment started with culture of groupers in the early 1990s as the demand for this species grew. Currently Indonesia is the leading country in terms of grouper seed production using artificial propagation. This seed has not only ensured development of grouper culture in Indonesia but seeds have also supported grouper culture in countries of the region. In recent years the culture of seaweeds (mainly *Eucheuma* and *Graciliaria*) has also become popular, especially in the middle and eastern part of the country. Pearl culture takes place primarily in the vicinity of the islands in Nusa Tenggara, and plays an important role as a source of pearls for export.
With the increased pressure of fishing in the marine environment, capture fisheries landings are stagnating and a growing share of fish originates in aquaculture.

More information at: **National Aquaculture Sector Overview (NASO)**

Recreational sub-sector

Recreational fishing is not common. However, in recent years a small number of hobbyists have been fishing for pelagic fish, using trolling and hand lines, in the vicinities of big cities (Jakarta, Surabaya and Bali).

Post-harvest sector

Fish utilization

Fish is consumed fresh, frozen, smoked and canned. Post-harvest activities range from traditional drying, salting, and smoking, to canning and more modern forms of processing (e.g. production of fish loins).

In the country most fish are consumed as food. About 55 % of fish production is consumed fresh. There are severe limits to the supply of ice and availability of refrigerated storage and transport facilities, so the balance is processed and consumed as dried and salted, smoked or fermented fish. There are about 10 000 small fish processing operations, generally using traditional methods. Less than 2 % of the catch is canned. The canneries utilize pelagic species, mostly oil sardines and skipjack. Some fish, mostly shrimp and tuna, are frozen and exported.Only a small proportion is converted into fish oil, fishmeal and silage, that is into products for animal feed or other usages. Production of fishmeal takes place mostly in conjunction with canning of fish.

Fish markets

Fish markets are concentrated in Java reflecting the fact that most of the Indonesian population reside on this island (more than 60 %). The largest domestic markets are found in big cities, where restaurants and hotels are significant buyers.

Socio-economic contribution of the fishery sector

Fisheries play an important role in the economy of the country. A relatively large number of people (more than 6 million) are involved directly and indirectly in the sector (Table 9). The sector also provides cheap protein for the human diet and also ingredients for animal feeds.

Role of fisheries in the national economy

Fisheries have an important role in providing employment and generating foreign exchange earnings. In terms of GDP the contribution is around 20% to the agricultural GDP and about 2.5 % to the Indonesian GDP (Tables 6a and 6b).

Table 6a – Indonesia - Gross domestic products in the fisheries sector (in million USD)

Gross Domestic Product	2005	2006	2007	2008
GDP in Fisheries	6 626.6	8 259.5	10 855.3	15 159.5
GDP in Agriculture	40 463.3	48 135.9	60 176.9	79 254.6
GDP in Total	308 253.5	371 024.1	438 813.5	550 447.7
% GDP Fish. to Agric.	16.4	17.2	18.0	19.1
% GDP Fish. to Total	2.1	2.2	2.5	2.8

(Source: Statistics Indonesia (BPS) website)

Table 6b – Indonesia - Gross domestic products in the fisheries sector (in billion rupiahs)

Gross Domestic Product at current	2005	2006	2007	2008*)

prices	2005	2006	2007	2008*)
GDP in Fisheries	59 639.30	74 335.30	97 697.30	137 249.50
GDP without oil & gas	2 458 234.30	2 967 040.30	3 534 406.50	4 427 193.30
GDP in Total	2 774 281.10	3 339 216.80	3 950 893.20	4 951 356.70
% GDP Fish. to without oil & gas	2.43	2.51	2.76	3.10
% GDP Fish. to Total	2.15	2.23	2.47	2.77

(Source: BPS website)*preliminary figures

Trade

Demand

During the first decade of the 21st century Indonesia's economic growth was rapid and it outpaced population growth. This led to an increase in the disposable income per person which in turn led to a growing per caput demand for fish and fish products. The market is centered in Java, not only for fish as food but, given that the island is a centre also for aquaculture, demand for fishmeal is also high in this island. A slight decline of catch from marine capture fisheries in recent years has resulted in the increase of fish import from unconventional countries in Asia, especially from India and Vietnam, in particular the import of small pelagic species. The import is not only for human consumption but also for bait required in the tuna long line fisheries.

Supply

Production of fish has increased during the last decade with the fastest rate of increase shown by the aquaculture sector. This has led to an increase in the overall supply of fish and fish products and a growing consumption (Table 7).

Table 7 – Indonesia - Trend of fish supply

Item	Y E A R					Average rate of increase (%)
	2004	2005	2006	2007	2008*	
Fish supplied (1000 tons)	4 901.13	5 250.00	5 759.20	6 381.00	7 071.93	7.19
Per capita supply (kg)	22.58	23.95	25.94	28.28	30.95	6.13

(MMAF, 2009)

In face of a growing population and stagnating capture fisheries the growing demand for fish and fish products most likely will be met through a mixture of imports and a growing aquaculture output.

Trade

Fisheries exports are important. They contribute to foreign exchange earnings. Exports reached all five continents (Table 8) with the main markets being: Japan, EU, USA, China, Singapore, Hong Kong, Taiwan (Province of China), Vietnam and the Republic of Korea. Tuna, especially fresh tuna, is exported mostly to Japan and the USA where it is consumed as sashimi. A recent development is the growing exports to countries

in the Middle East.

Table 8 – Indonesia - Distribution of fish export destination (2007)

Destination	Value in million USD
Asia	1 089.3
Africa	42.6
Australia	26.9
America	804.1
Europe	296.1
Destination	**Value in 1000 USD**
Japan	590 434
America	762 264
Europe	287 647
Other countries	618 575

(MMAF, 2007)Indonesia also imports fish and fish products, especially from East Asian countries. In 2007 the value of fishmeal imported for use in aquaculture was almost USD 143 million. Almost half the fishmeal imports came from Peru.

Food security

Although in Indonesia fish can fetch a very high price, like in the case of southern bluefin tuna, in general fish is a cheap animal protein. Poor people can afford to buy dried salted tropical fish such as salted pony fish and anchovy. In addition, the fishery sector provides employment to many. In remote areas the fishery sector may not receive any government support, but it does provide livelihood opportunities to local people. That is why, during the crisis that occurred in the country's economy in 1998, the fishery sector withstood the crisis well and recovered faster than, for example, the manufacturing sector. In this sense the fishery sector provides a significant contribution to the food security of the country.

Employment

Fisheries provide employment in fishing, aquaculture, post-harvest and other related activities (Table 9).

Table 9. Employment in the fisheries sector individuals)

Subsector	2005	2006	2007	2008	2009	Aver. Rate of increase
Capture fisheries	2 590 364	2 700 174	2 755 794	2 736 566	2 641 967	0.54
Aquaculture	2 506 614	2 275 307	2 277 735	2 346 052	2 493 193	0.04
Processing & Marketing	526 931	553 278	594 774	649 382	1 171 981	25.54
Other related activities	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TOTAL	5 623 909	5 528 759	5 628 303	5 732 000	6 307 141	3.00

(MMAF, 2009)*estimate

Rural development

Aquaculture has an important role in rural development, particularly where the level of technology used is relatively low and so many communities can afford to engage in such aquaculture. West Java is famous for communities that culture common carp, Central Java for goramy (*Osphronemus goramy*) and cat fish (*Clarias* sp.) culture, the north coast of East Java for milkfish (*Chanos chanos*) and South Sulawesi for rabbit fish culture.

Trends, issues and development

Development of fisheries in the country is to a large extent market-driven. During the beginning of the 21st century capture fisheries grew only slowly but this was compensated by the fast growth of aquaculture.

Constraints and opportunities

Development of fisheries in the western part of the country has occurred faster than in the eastern part. This is related to the fact that in the Eastern part there is a lack of infrastructure such as port facilities, electricity, transport facilities and fuel supply for vessels. Moreover, the western part is closer to markets, especially to Java. A shortage of markets may be the main constraint for the development of fisheries in the eastern part. When the Eastern part will be better provided for in terms of fisheries infrastructures, including those that facilitate market access, it is likely that fisheries production of the country will increase appreciably.

Government and non-government sector policies and development strategies

Lately the Government has encouraged the private sector to form fisheries associations. In support of such developments the Government has established semi-government organizations where Government staff and stakeholders are full members. Examples are the Tuna Committee, the Shrimp Committee and the Seaweed Committee all created in 2004. Relevant fisheries associations have become members of these committees.

Research, education and training

Research

The Agency for Research and Development of Marine Affairs and Fisheries is the research organization under the Ministry of Marine Affairs and Fisheries that is responsible for the conduct of research. Various research institutions are under this agency. Under the capture fisheries umbrella are the Marine Fisheries Research Institute (in Jakarta), the Inland Fisheries Research Institute (in Palembang) and the Freshwater Research Institute (in Bogor), while aquaculture research is handled by the Research Institute for Freshwater Aquaculture, Brackishwater Aquaculture and Mariculture. In addition to these institutes, special institutes have been established such as the “Research Institute for Post Harvest Technology” and the “Research Institute for Socio-economics”.

Education and training

Under the Ministry of Marine Affairs and Fisheries, there is the Agency for Human Resources Development that is responsible for fisheries education, training and extension. Education is available in high schools and

colleges, located throughout the country under the coordination of this Agency. In addition, there are some universities offering an academic education in fisheries subjects.

Foreign aid

Indonesia does not receive much foreign aid for fisheries development. At the time of writing three sizeable projects are being implemented. The first is the ”Coral Reef Management and Rehabilitation Project” (COREMAP) supported by Global Environment Facility (GEF), Asian Development Bank (ADB), and the World Bank. The second large project – the Coral Triangle Initiative - is regional in character. It is undertaken in Indonesia, Malaysia, Philippines, Papua New Guinea, Solomon Islands and Timor Leste. Some national donors (ADB, USAID, AUSAID, GEF) supported the project, by allocating funds to participating NGOs. Lastly, Indonesia has participated in a recent regional project, the ”Bay of Bengal Large Marine Ecosystem”, financially supported by the GEF. FAO assisted the country in post-tsunami projects, especially in Aceh and Nias.

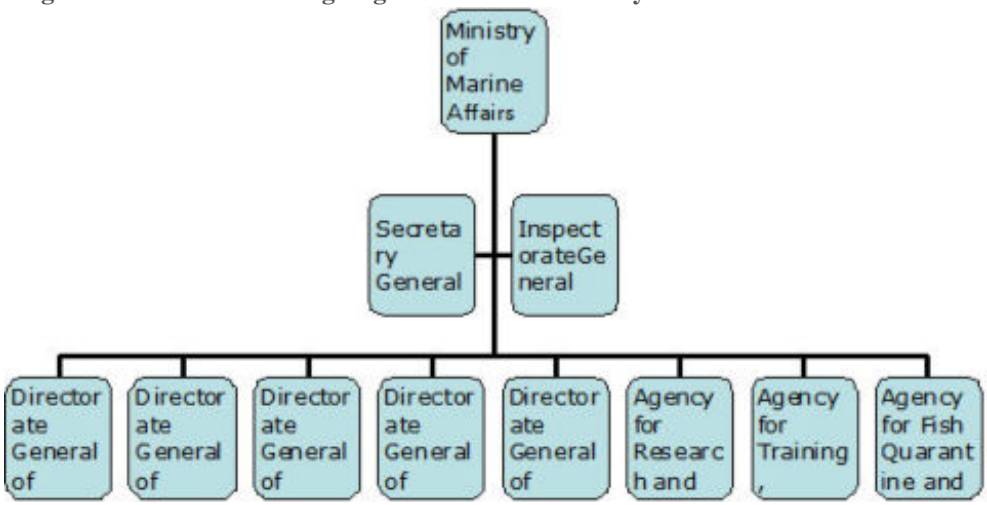
Institutional framework

The Ministry of Marine Affairs and Fisheries (MMAF) was established in 2000 as an expansion of the former Directorate General of Fisheries, which was part of the Ministry of Agriculture. The number of staff has increased appreciably as a result. However, MMAF has experienced a couple of structural changes since its establishment. The current structure of MMAF is given in Figure 14. The structure includes:

- Secretary General
- Directorate General of Capture Fisheries
- Directorate General of Control and Surveillance
- Directorate General of Aquaculture
- Directorate General of Product Processing and Marketing
- Directorate General of Coastal and Small Island Development
- Agency of Research and Development
- Agency of Fish Quarantine and Fish Quality Assurance
- Agency of Marine And Fisheries Human Resources Development
- Inspectorate General

The current website of the Ministry is www.kkp.go.id, (in Indonesian).

Figure 14 – Indonesia - Organigramme of the Ministry of Marine Affairs and Fisheries



Source:MMAF

The institutional responsibility for fisheries management rests with the Directorate General of Capture Fisheries

(the Directorate of Resources Management as the focal point but including also the Directorate of Fishing License) which has to work together with some units in the Directorate General of Control and Surveillance. In addition, they cooperate with the Marine Police and the Navy in enforcement operations.

The Central Government (MMAF) is responsible for the management of the fisheries sector in the country. MMAF is responsible for issuing fishing licences for vessels larger than 30 GT, while the Provincial Governments are responsible for issuing fishing licences for vessel of 10-30 GT, and Regency Governments for vessels of less than 10GT. In the execution of MCS activities, the MMAF is supported by the Navy and by the Marine Police.

The number of fishing vessels has increased almost in all size categories. In an effort to prevent further growth of fishing pressure the Government has developed a National Plan of Action to source the existing national resources to avoid for reducing fishing capacity as a contribution to the implementation of the International Plan of Action to reduce fishing capacity.

The MMAF also has a unit responsible for the conservation of fish stocks under the Directorate General of Coastal and Small Island Development. The Conservation Directorate has identified and designated a number of conservation areas as a means to protect important habitats and eliminate destructive fishing. So far the Directorate of Conservation has declared 4 million ha as marine parks. They are fishery conservation areas and are located throughout the country.

To support fisheries management the Agency for Research and Development is responsible for fisheries research activities. In addition, in the marine sector, a research establishment under another agency, namely the ”Central Research Institute for Oceanography” under the Indonesia Institute of Science, is also providing research support for marine life and oceanography, while its sister agency dealing with the freshwater environment is the ”Research Institute for Limnology”, which also supports the Fisheries Research Agency.The MMAF established a national committee for fish stock assessment in 2005. Its task is to assess the impact of fishing on marine resources. A marine resources status report has been produced in 2006. An updated version was being finalized by the Committee in late 2010.

Indonesia, though rich in fish resources, considering the vast area of its archipelagic waters, faces a big challenge in the form of IUU fishing. It has been estimated that annually fish for a value of more than USD 1 billion is illegally caught and transferred abroad. Indonesia together with Australia has worked to promote regional cooperation in an effort to combat and eliminate IUU fishing. As implementation of the International Plan of Action to eliminate IUU Fishing, Indonesia in 2005 developed a National Plan.

The European Community has recently enacted a regulation concerning the certification of fish to be imported into the EU to ensure that the fish has not been caught through IUU fishing. This regulation came into force in January 2010 and Indonesia has cooperated with the EU in its implementation. Meanwhile NGOs (WWF and SFP) are helping local exporters of tuna, snapper, grouper and blue swimming crab to obtain MSC certificates. This exercise provides lessons in how to identify both weaknesses in the current management of these fisheries and in how to improve the management process.

In the management of highly migratory species, Indonesia works together with Regional Fisheries Management Organizations (RFMO). Indonesia became a full member of the Indian Ocean Tuna Commission (IOTC) in 2007 and of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) in 2008. At the beginning of 2011 Indonesia is a cooperating non-member of the Western and Central Pacific Fisheries Commission.

MMAF considers it essential to collaborate with stakeholders in fisheries management. This is possible through fishery associations, some of which had emerged by the early 1980s. They represent groups, such as the tuna fishing industry. They include: ASTUIN (the Association of Indonesian Tuna Fisheries), and ATLI (the Association of Indonesian Tuna Longliners). HPPI (the Association of Shrimp Trawlers in Indonesia)

represents the shrimp fishing industry, APIKI (the Indonesian Association of Canneries) represents the canning industry, and APCI (the Association of Cold Storage Owners) represents owners of cold storages. These associations coordinate their activities through an apex association called GAPPINDO (Federation of Indonesian Fisheries Associations).

Aquaculture associations also exist. They include the ”Shrimp Club” and ASBUMI (the Association for Indonesian Pearl Culture).
The Government encourages continuous communication with stakeholders. This occurs *inter alia* in national committees which have been established for the main commodities. Amongst the committees the National Tuna Committee (KTI), the National Shrimp Committee (KUI), the National Seaweed Committee (KRL) and the National Committee for Aquarium fish (KIHI). Each committee is headed by an independent chairman and has members representing both the Government and the private sector.

Legal framework

The legal framework for the fisheries sector is Fisheries Law No. 31/2004 (amended Law No. 45/2009). The autonomy Law (Law No. 22/199), amended by Law 32/2004, establishes that the fisheries sector in the provinces is under the responsibility of the Provincial Government (Governor). Currently there are 33 provinces in the country and each province consists of many regencies. Each Regency Government is subordinate to a Provincial Government. The Regency Government (headed by a Mayor, locally called Bupati) has some responsibilities for fisheries for which they are accountable to their respective Provincial Government.

In regard to fisheries surveillance, MMAF cooperates closely with the Navy and the Marine Police. The MMAF and the Navy are responsible for the surveillance in the EEZ, while the MMAF and the Police Department are responsible for surveillance in the territorial sea and the archipelagic waters. In addition, joint surveillance operations are a common practice. They are coordinated by the Coordinating Agency (BAKORKAMLA) which is headed by a representative of the Navy.

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

More information at: **FAOLEX legislative database**

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BPS. 2010. Produk Domestik Bruto. Central Agency for Statistics [online]. www.bps.go.id [accessed Dec. 2010.].

DGCF. 2010. Capture Fisheries Statistics of Indonesia 2009. Directorate General of Capture Fisheries, Ministry of Marine Affairs and Fisheries. pp. 134.

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MMAF. 2009. Fisheries in facts and figures (in Indonesian). Ministry of Marine Affairs and Fisheries, pp. 154.

MMAF. 2007. Export Statistics of Fishery Products. Ministry of Marine Affairs and Fisheries, pp. 561.

Additional information

FAO Thematic data bases

- FAO Country Profile
- Marine Resources reports (FIRMS)
  - Albacore - Indian Ocean
  - Bigeye tuna - Indian Ocean
  - Black Marlin - Indian Ocean
  - Blue marlin - Indian Ocean
  - Bullet tuna - Indian Ocean
  - Frigate tuna - Indian Ocean
  - Indo-Pacific king mackerel - Indian Ocean
  - Indo-Pacific sailfish - Indian Ocean
  - Kawakawa - Indian Ocean
  - Longtail tuna - Indian Ocean
  - Marine resources - Eastern Indian Ocean
  - Marine resources - Western Central Pacific
  - Narrow-barred Spanish mackerel - Indian Ocean
  - Sharks - Global
  - Skipjack tuna - Indian Ocean
  - Southern Bluefin tuna - Global
  - Squid - Global
  - Striped Marlin - Indian Ocean
  - Swordfish - Indian Ocean
  - Tuna and tuna-like species - Global
  - Yellowfin tuna - Indian Ocean
- Fishery reports (FIRMS)
  - Indonesia : Shark Fisheries : 2004
  - 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)
- Database on Port State Measures
- 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)
  - Inter-American Tropical Tuna Commission (IATTC)
  - 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
- News archive