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**Article**

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ifo DICE Report

**Provided in Cooperation with:**

Ifo Institute – Leibniz Institute for Economic Research at the University of Munich

Suggested Citation: Thi, Hoang Ha Nguyen; Nikolka, Till (2017) : Marine Capture Fishery Policies, ifo DICE Report, ISSN 2511-7823, ifo Institut - Leibniz-Institut für Wirtschaftsforschung an der Universität München, München, Vol. 15, Iss. 1, pp. 60-63

This Version is available at:

<http://hdl.handle.net/10419/167309>

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## Marine Capture Fishery Policies

Fish products are a crucial element of food supply. This is why the sustainability of fishing and aquaculture has become a major goal on many countries' policy agendas. Key challenges such as rebuilding fisheries, the potential for green growth in aquaculture, and combating illegal, unreported and unregulated fishing are increasingly pressing. This article examines the development of marine fishing and aquaculture and assesses recent developments in both national and international fishing policies.

### RECENT TRENDS AND CHALLENGES

In order to understand the challenges faced by policy makers, it is crucial to examine recent trends in marine capture production and aquaculture. Global marine capture production peaked in 1996 at 86.4 million tons, and has been relatively flat since then. The share of OECD countries in total world catch has decreased from 40 percent in the late 1980s to 30 percent today with the most important producers being the US, Japan, Chile, Norway, Korea, Mexico and Iceland. As shown by Table 1, these OECD countries amount to 75 percent of total OECD marine capture production. On the other hand, the volume of Asian countries as a share of total world catch has increased. Today, ten of the top 18 producers are from Asia, with China and Indonesia at the top.

As substitutes for some marine capture products, aquaculture products have grown steadily important in global fish production. Aquaculture has consistently been the fastest growing of all food commodities, with an overall annual growth rate of 8.6 percent between 1983 and 2012. OECD countries have increased aquaculture production by over 50 percent in terms of value and by 25 percent by volume in the last ten years. However, as can be seen from Table 2, world aquaculture production today is mostly centered in Asian countries such as China, India, Vietnam, Indonesia and Bangladesh, which make up 80 percent of global aquaculture production. This is predominantly lower-value freshwater species aquaculture production (FAO 2014).

In the face of growing demand for fish products, many countries are struggling with several challenges related to fisheries and aquaculture. One of the major challenges concerning marine capture production is to rebuild fisheries in a way that takes economic, social and environmental dimensions into account (FAO 2015). Unregulated fishing operations often come with economic losses, since fish are common goods that are non-excludable, but at the same time rivaling in con-

sumption. Thus, without regulation and policy coordination, the economic efficiency and sustainability of fishing is at risk. The problems associated with rebuilding fisheries include the tensions between developing and developed countries as well as the administration of high sea fisheries. The development of long-term alternative employment and livelihood opportunities for fishing communities is essential in order to sustainably rebuild fisheries. Sustainable fisheries and the protection of fish stocks are a highly international issue and policy makers increasingly recognize the need for policies beyond the national level.

### MULTILATERAL AGREEMENTS ON FISHERY POLICIES

At the international level, fishery policies are mostly bilateral and multilateral agreements providing regulation subject to two or more countries. As can be seen from "Selected Multilateral Agreements, Protection of Fish" (DICE Database 2011), there has been a steadfast pace in multilateral agreements that cover topics ranging from the "Convention concerning fishing in the high sea" (Varna in 1959) to the "Convention for the conservation of southern bluefin tuna" (Canberra in 1993). The largest agreement, the "Agreement for the implementation of the law of the sea convention relating to the conservation and management of straddling fish stocks and highly migratory fish stocks", has 79 members as of 2011. The number of amendments in many multilateral agreements shows that fisheries have been a continuing subject of discussion and renegotiations. The "International Convention for the high seas fisheries of the North Pacific Ocean" (Tokyo in 1952) has seen seven amendments between 1959 and 1991 and the "Treaty on fisheries between the governments of certain Pacific Island states and the government of the United States of America" (Port Moresby in 1987) has seen four amendments.

Beyond the development and coordination of policies, another key challenge for the sustainability of fisheries is monitoring and combating illegal, unreported and unregulated (IUU) fishing. IUU fishing harms the environment and threatens biodiversity by diminishing policy effects aimed at creating sustainability. In addition, IUU fishing harms the market for legally caught fish and thus reduces the prospects for economic growth and food security typically associated with fishing. It also undermines labour standards. IUU typically results from a lack of management and enforcement capacities in many developing countries, a lack of control over the activities of developing and developed countries in third countries and at high sea, as well as overcapacity and redundant assets, which provide incentives for IUU fishing. IUU fishing then results in foregone government revenues, depressed prices for legally caught fish and suboptimal resource use. The "Convention on the high seas" from 1958 aims at addressing the issue of IUU fishing at high sea (DICE Database 2011).

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Table 1

**Marine capture fisheries: Major producers (tonnes)**

2012 Ranking	Country	2003	2011	2012	Variation 2003-2012	Variation 2011-2012
1	China	12 212 188	13 536 409	13 869 604	13.60%	2.40%
2	Indonesia	4275 115	5 332 862	5 420 247	27.00%	1.70%
3	United States	4912 627	5 131 087	5 107 559	4.00%	-0.50%
4	Peru	6053 120	8 211 716	4 807 923	-20.60%	-41.50%
5	Russia	3090 798	4 005 737	4 068 850	31.60%	1.60%
6	Japan	4626 904	3 741 222	3 611 384	-21.90%	-3.50%
7	India	2954 796	3 250 099	3 402 405	15.10%	4.70%
8	Chile	3612 048	3 063 467	2 572 881	-28.80%	-16.00%
9	Vietnam	1647 133	2 308 200	2 418 700	46.80%	4.80%
10	Myanmar	1053 720	2 169 820	2 332 790	121.40%	7.50%
11	Norway	2548 353	2 281 856	2 149 802	-15.60%	-5.80%
12	Philippines	2033 325	2 171 327	2 127 046	4.60%	-2.00%
13	Korea	1649 061	1 737 870	1 660 165	0.70%	-4.50%
14	Thailand	2651 223	1 610 418	1 612 073	-39.20%	0.10%
15	Malaysia	1283 256	1 373 105	1 472 239	14.70%	7.20%
16	Mexico	1257 699	1 452 970	1 467 790	16.70%	1.00%
17	Iceland	1986 314	1 138 274	1 449 452	-27.00%	27.30%
18	Morocco	916 988	949 881	1 158 474	26.30%	22.00%
Total 18 countries		58 764 668	63 466 320	60 709 384	3.30%	-4.30%
OECD-top 7		20 593 006	18 546 746	18 019 033	-12.50%	-2.80%
OECD-7' share of world (OECD)		25.8% (72.6%)	22.5% (73.9%)	22.6% (74.7%)	-	-
OECD-34		28 346 747	25 098 495	24 113 070	-14.90%	-3.90%
OECD-34's share of world		35.60%	30.90%	30.30%	-	-
World total		79 674 875	82 609 926	79 705 910	0.00%	-3.50%

Source: FAO (2014).

**LOCAL AND REGIONAL FISHERY POLICIES**

In many cases, however, existing multilateral agreements are not sufficient to secure sustainable fisheries (FAO 2015). To this end, local and regional policies play an important role. The EU conducts a “Common Fisheries Policy”, which was first introduced in 1983 and subsequently revised every ten years (European Union 2016). This policy consists of a comprehensive set of regulations dealing with management, international relations, markets and trade as well as the financing of fisheries. Producer organizations have to set up and submit plans for the production and marketing of fish in order to be eligible for EU financial schemes. In addition, there are common marketing standards with uniform characteristics for certain fish products sold in the EU. On top of this, the Common Fisheries Policy sets principles regarding bilateral fisheries agreements (“Sustainable Fisheries Agreements”). Bilateral fisheries agreements in the EU have to include provisions limiting access to resources that are scientifically demonstrated to be surplus to the Coastal State’s own catch capacity. It also includes a clause on the protection of human rights and gradually increases ship owners’ contribution to access costs. The EU Sustainable Fisheries Agreements also aim to better promote sus-

tainable fisheries in partner countries by making EU sectorial support more targeted and subject to regular monitoring. In 2014, the new Common Fisheries Policy was introduced, emphasizing the need to ensure sustainable fishing. It requires quotas to be set in reference to Minimum Sustainable Yield (MSY) by 2015 in most cases. The new Common Fisheries Policy stops discarding through the introduction of a landing objective. The landing objective is to be gradually introduced from 2015 on; by 2019, it is to be implemented for all commercial fisheries in European waters. It requires all catch to be kept on board, thus driving greater selectivity in fishing and ensuring more reliable data on catches. In doing so, it aims to rebuild all fish stocks to MSY levels by 2015 or 2020 at the latest. In addition, the Council Regulation (EC) No. 1005/2008 introduced a system to prevent, deter and eliminate IUU fishing. Under this regulation, products can only be sold in EU markets if they are certified as legal by the flag state. The regulation includes specifications on the criteria for determining a fishing vessel as engaged in IUU fishing, port inspections, catch certificates, a list of non-cooperating third countries and sanctions.

Some Asian countries like Korea, China and India have introduced integrated ocean management (OECD 2015). Korea has one of the longest-running integrated

ocean management plans in the world. In the mid-1990s, the Korean Ministry of Maritime Affairs and Fisheries introduced a long-term development strategy for ocean-related matters in order to balance environmental and fisheries issues, to integrate coastal management and monitoring of fisheries and to provide a coherent policy for the shipping industry, port construction and maritime safety. In 2013, the Korean Ministry of Oceans and Fisheries was created, providing a fully integrated approach to all marine issues. China is also moving towards a unified marine governance approach. In 2013, the State Oceanic Authority (SOA) was formed, which deals with maritime boundaries, fisheries supervision, the control of smuggling at sea, illegal activities and environmental surveillance. In addition, the National Ocean Committee was formed, formulating China’s ocean development strategy. Similarly, in India the National Fisheries Development Board (NFDB) was set up in 2014. It promotes the fisheries sector and coordinates activities related to fisheries that were previously supervised by different ministries and departments.

In some regions, regional fisheries management organizations (RFMOs) also aim at improving the management of high seas fish stocks as well as developing co-operations between states that share fish stocks in several exclusive economic zones (FAO 2015). RFMOs

are organizations that bring together several countries with a common interest in managing particular fish stock (e.g., the Commission for the Conservation of Southern Bluefin Tuna) or fish resources (e.g., the Commission for the Conservation of Antarctic Marine Living Resources) in a particular region and agree to adopt binding management rules. However, it can be very difficult to prevent overfishing at high sea through RFMOs because they do not cover the complete fish stock affected and often do not include ecosystem management tools or precautionary approaches. In addition, some countries are not part of the relevant RFMOs or do not abide by their rules even if they are.

Aquacultures are often regarded as a way of increasing fish production without endangering the protection of fish stocks. The EU “Blue Growth” initiative, for example, stresses the potential for EU aquaculture to fill the gap between domestic production and consumption in the EU (EU Commission 2016). However, unsustainable aquaculture production can also harm local ecosystems and thus requires policy regulation. Many countries have developed policies to adequately support green growth in aquaculture. This is particularly important since aquaculture is the fastest-growing food-producing sector in the world, supplying 50 percent of all fish consumed globally. In order to ensure sustainability in aquaculture, countries have

Table 2  
**Asian countries extend their lead in aquaculture production**  
 Major producers including top five OECD countries (tonnes)

2012 Ranking	Country	2003	2011	2012	Variation 2003-2012	Variation 2011-2012
1	China	25 083 253	38 621 269	41 108 306	63.90%	6.40%
2	India	2315 771	3673 082	4 209 415	81.80%	14.60%
3	Vietnam	937 502	2845 600	3 085 500	229.10%	8.40%
4	Indonesia	996 659	2718 421	3 067 660	207.80%	12.80%
5	Bangladesh	856 956	1523 759	1 726 066	101.40%	13.30%
6	Norway	584 423	1143 820	1 321 119	126.10%	15.50%
7	Thailand	1064 407	1201 455	1 233 877	15.90%	2.70%
8	Chile	567 259	954 845	1 071 421	88.90%	12.20%
9	Egypt	445 181	9886 820	1 017 738	128.60%	3.10%
10	Myanmar	252 010	816 820	885 169	251.20%	8.40%
11	Philippines	459 615	767 287	790 894	72.10%	3.10%
12	Brazil	273 268	629 609	707 461	158.90%	12.40%
13	Japan	824 057	556 761	633 047	-23.20%	13.70%
14	Korea	387 791	507 052	484 404	24.90%	-4.50%
15	United States	545 971	397 292	420 024	-23.10%	5.70%
Total 15 countries		35 594 123	57 343 892	61 762 101	73.50%	7.70%
Top 15' share in world		91.40%	92.50%	92.70%	-	-
OECD-top 5		2 909 501	3 559 770	3 930 006	35.10%	10.40%
OECD-5' share in world (OECD)		7.5% (61.7%)	5.7% (64.6%)	5.9% (66.7%)	-	-
OECD-34		4 717 344	5 509 565	5 893 720	24.90%	7.00%
OECD-34's share in world		12.10%	8.90%	8.80%	-	-
World total		38 915 699	62 011 524	66 633 253	71.20%	7.50%

Source: FAO (2014).

developed institutional frameworks, including certification, spatial planning and public-private partnerships in order to improve the prospects of aquaculture and to decrease the costs associated with diseases, waste, escapees and energy use. In 2011, the OECD adopted its Green Growth Strategy (GGS), providing a conceptual and policy basis for countries' fishing and aquaculture activities. The idea was to achieve both economic growth and sustainability, which is particularly relevant for fisheries since they depend heavily on environmental resources. In addition, the OECD collects data on budgetary policies in participating countries in order to provide internationally comparable data to support evidence-based policy analysis.

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