Production update – marine finfish aquaculture in the Asia-Pacific region

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Introduction

The Food and Agriculture Organisation of the United Nations (FAO) updates its statistics on global aquaculture production and value annually (www.fao.org). This article summarises recent changes in production trends for marine finfish aquaculture in the Asia-Pacific region based on these FAO data, which now cover the period up to 2006. Although the FAO data sets go back to 1950 (production) and 1984 (value), only the last 10 years' data are presented here.

Note: the data compiled by FAO are provided by the producer countries. In many cases the classification of aquaculture production is not reliable, particularly at species level (see the FAO web site for comment on the accuracy of the data sets). To reduce potential inaccuracies I have confined this analysis to fairly broad search criteria, or to well-known species. However, there are undoubtedly inaccuracies in the data sets; for example, Australian production of barramundi is classified as 'brackishwater' although most barramundi produced in Australia are farmed in freshwater ponds. Unless otherwise noted, data were sorted for: Countries: Continent = Asia & Oceania; Environments: Brackishwater and Mariculture.

Marine finfish

Production of marine finfish in the Asia-Pacific region increased 4.7% between 2005 and 2006, from 1,148,892 to 1,203,165 tonnes (Table 1). Overall value increased by 3.1%, from USD 4.09 billion to 4.22 billion from 2005 to 2006 (Table 2). The largest producer remains China, with 715,000 tonnes of production in 2006 valued at USD 734 million. Based on these data, China produces nearly 60% of total regional production, but this represents only 17% of total value, suggesting that much of Chinese production is of low-value species.

Figure 1. Value in USD millions (line) and production by country (columns) of milkfish (*Chanos chanos*) in the Asia-Pacific region, 1997 – 2006.

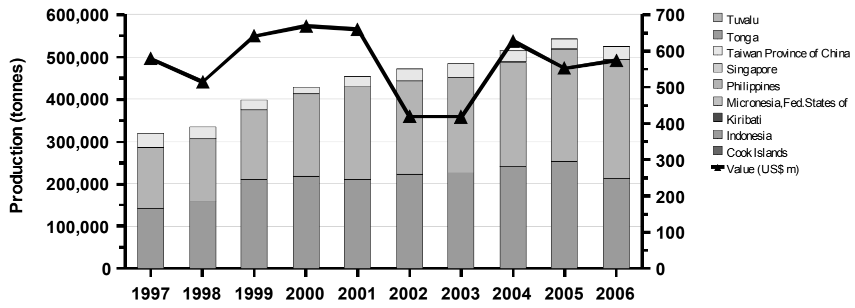


Figure 2. Value in USD millions (line) and production by country (columns) of barramundi (*Lates calcarifer*) in the Asia-Pacific region, 1997 – 2006.

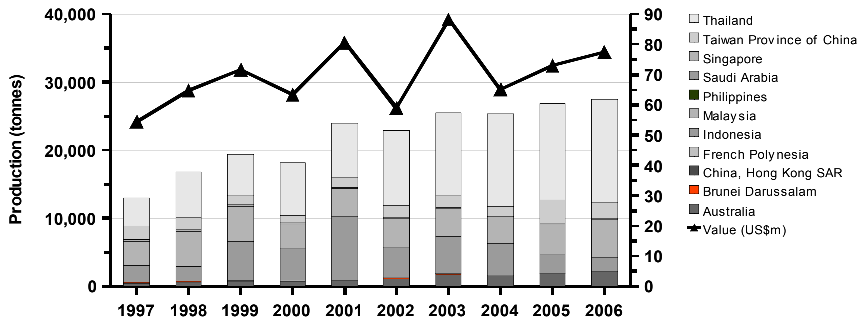
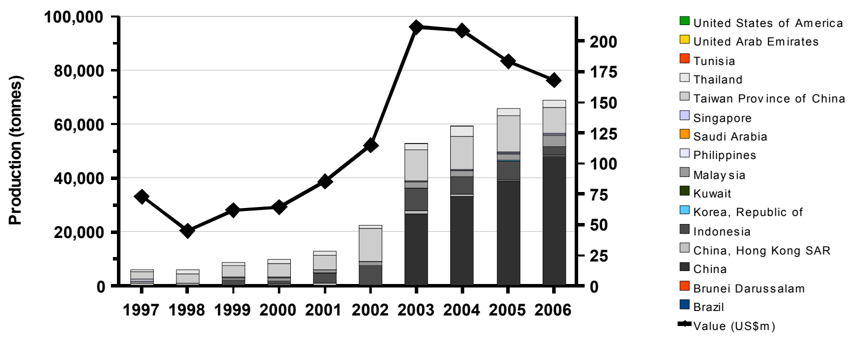


Figure 3. Global production value in USD millions (line) and production by country (columns) of groupers (Family Serranidae), 1997 – 2006.



Japan has the highest value of marine finfish production, with 246,000 tonnes of production valued at USD 1.97 billion. Japan's focus on producing high-value marine finfish is demonstrated by the fact that Japan produces around 20% of regional production, but the value of Japanese production forms 47% of the regional total. The bulk of Japanese production of marine finfish (~155,000 tonnes) remains the Japanese amberjack (*Seriola quinqueradiata*).

Production trends in some selected species

Milkfish

Milkfish (*Chanos chanos*) remains a popular commodity in Asia and the Pacific. Although production of milkfish decreased slightly from 542,842 tonnes in 2005 to 524,010 tonnes in 2006, value of production increased from USD 552 million to USD 574 million over the same period (Figure 1). Indonesia and the Philippines are consistently the largest producers of milkfish, with 94% of production in 2006. Milkfish is also cultured in the Pacific Islands (Cook Islands, Federated States of Micronesia, Kiribati, Tonga, Tuvalu) but total production from the Pacific is only about 13 tonnes.

Barramundi

Barramundi (*Lates calcarifer*) production stayed relatively steady at 27,522 tonnes, up slightly from 26,915 tonnes in 2005 (Figure 2) (note that these figures exclude production listed as from freshwater, which is a relatively minor component of total production). Thailand remains the largest producer of farmed barramundi with 55% of production. Total value of production increased slightly from USD 73.1 million to USD 77.5 million (Figure 2).

Grouper

Global production of groupers (Family Serranidae) increased from 65,714 to 69,074 tonnes from 2005 to 2006, an

Figure 4. Value in USD millions (line) and production by country (columns) of Japanese amberjack (*Seriola quinqueradiata*) in the Asia-Pacific region, 1997 – 2006.

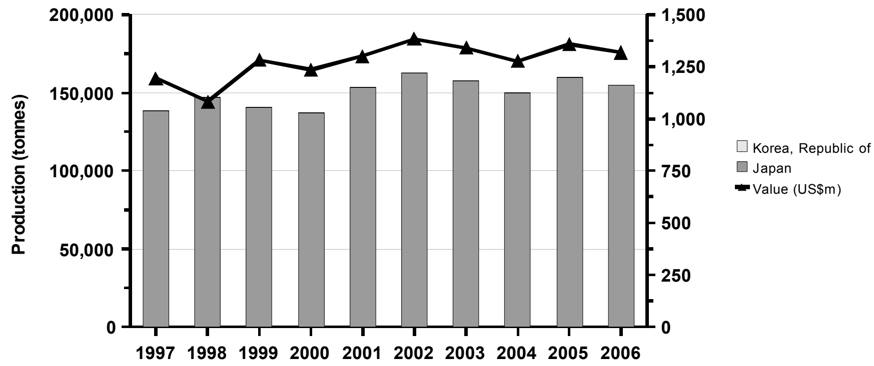


Figure 5. Value in USD millions (line) and production by country (columns) of cobia (*Rachycentron canadum*) in the Asia-Pacific region, 1997 – 2006.

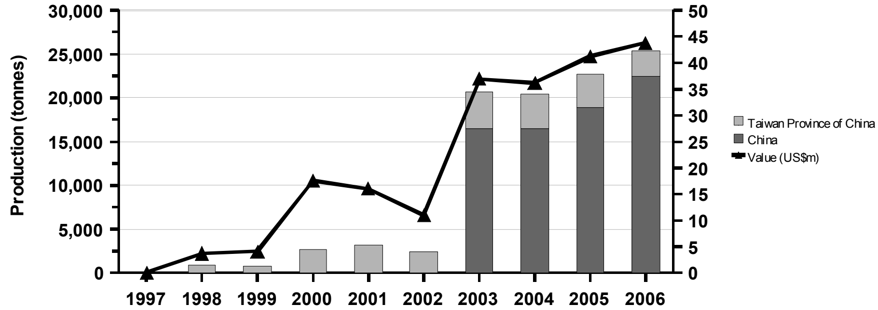


Table 1. Aquaculture production of marine finfish (tonnes) in the Asia-Pacific 1997 – 2006. FAO data by ISSCAAP Division: Marine Finfish; Countries: Continents = Asia & Oceania; Environments: Brackishwater & Mariculture.

Country (tonnes)	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Australia	2,184	1,699	1,602	2,731	4,075	4,009	2,414	4,558	2,240	3,638
Bahrain	<0.5	1	3	12	<0.5	3	4	8	3	2
Brunei Darussalam	<0.5	<0.5	36	53	30	16	18	42	42	30
China	254,979	306,697	338,805	426,957	494,725	560,404	519,158	582,566	658,928	715,275
China, Hong Kong SAR	2,960	1,200	1,250	1,769	2,468	1,211	1,486	1,541	1,539	1,488
Cyprus	842	1,053	1,313	1,735	1,725	1,705	1,654	2,069	2,452	2,560
Fiji Islands	-	-	-	-	-	-	-	-	-	-
French Polynesia	.	2	<0.5	1	4	1	2	3	9	9
Guam	5	5	7	7	7	7	.	.	.	.
India	1,429	1,740	.	.	.	.	2,644	8,000	17,000	18,510
Indonesia	12,264	8,386	14,879	12,623	15,020	23,007	22,810	19,884	18,783	15,558
Israel	1,430	1,817	2,359	2,874	3,404	3,202	3,349	3,850	3,864	3,378
Japan	245,847	255,297	253,289	245,566	252,173	260,382	264,710	252,674	256,192	246,336
Korea, Republic of	39,121	37,323	34,382	27,052	29,297	48,073	72,393	64,195	80,861	88,604
Kuwait	154	150	176	346	179	179	164	100	142	11
Malaysia	2,706	2,266	3,092	5,645	5,165	5,570	7,369	7,704	8,451	12,081
Oman	-	13	-	-	-	-	352	503	168	89
Philippines	726	144	188	266	376	305	732	591	724	951
Qatar	2	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5
Saudi Arabia	<0.5	31	30	42	62	45	49	41	97	165
Singapore	205	210	295	421	259	181	226	396	579	689
Taiwan Province of China	13,511	15,373	14,558	15,518	17,450	26,715	29,553	26,925	25,192	20,964
Thailand	1,243	1,682	1,175	1,358	1,463	1,179	2,349	3,597	2,602	3,056
Turkey	13,800	18,810	23,000	33,337	28,485	26,020	37,717	47,442	68,454	69,201
United Arab Emirates	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2,300	570	570	570
Total	**593,408**	**653,899**	**690,439**	**778,313**	**856,368**	**962,214**	**971,453**	**1,027,259**	**1,148,892**	**1,203,165**

Table 2. Value of marine finfish production (USD millions) in the Asia-Pacific region 1997 – 2006. FAO data sorted for ISSCAAP Division: Marine Finfish; Countries: Asia, Oceania; Environments: Brackishwater, Mariculture.

Country (USD millions)	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Australia	30	18	24	87	107	103	53	85	32	48
Bahrain	0	0	0	0	0	0	0	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0	0	0	0
China	178	184	203	256	322	560	474	536	662	734
Hong Kong SAR	35	11	9	15	23	9	13	13	11	11
Cyprus	7	8	8	9	8	9	10	14	20	18
Fiji Islands	0	0	0	0	0	0	0	0	0	0
French Polynesia	0	0	0	0	0	0	0	0	0	0
Guam	0	0	0	0	0	0	0	0	0	0
India	1	1	0	0	0	0	3	7	18	20
Indonesia	21	14	28	26	34	58	99	61	23	15
Israel	20	21	28	21	22	17	18	21	21	28
Japan	2,141	1,878	2,082	2,020	2,058	2,102	2,103	2,001	2,044	1,968
Korea, Republic of	435	267	326	276	227	298	537	531	702	824
Kuwait	1	1	1	2	1	1	1	1	1	0
Malaysia	23	11	12	22	19	20	39	35	44	67
Oman	0	0	0	0	0	0	2	2	1	1
Philippines	7	1	1	1	2	1	2	3	3	5
Qatar	0	0	0	0	0	0	0	0	0	0
Saudi Arabia	0	0	0	0	0	0	0	0	0	1
Singapore	2	2	2	3	2	1	2	3	4	4
Taiwan Province of China	73	79	84	91	97	107	144	142	137	107
Thailand	9	9	8	9	9	6	12	22	14	17
Turkey	114	153	169	131	85	78	176	245	349	348
United Arab Emirates	0	0	0	0	0	0	7	4	4	4
TOTAL	**3,097**	**2,658**	**2,988**	**2,969**	**3,016**	**3,373**	**3,696**	**3,727**	**4,091**	**4,219**

increase of 5% (Figure 3). (Note that this analysis includes countries outside the Asia-Pacific region, however the bulk of production is from Asia-Pacific countries). China remains the largest producer of farmed grouper, contributing 70% of total production. The next largest producer is Taiwan Province of China, with 14% of production. Despite this increase in reported production, total value of production decreased by 9%, from USD 184 million to USD 168 million over the same period (Figure 3). Value for farmed grouper has been trending downward since 2003, possibly due to increasing supply of lower-valued cultured species.

Japanese amberjack

Although there is some production of Japanese amberjack from the Republic of Korea, the bulk of production is from Japan (Figure 4). Production has been relatively steady over the past 10 years, and decreased slightly from 159,741 tonnes in 2005 to 155,004 tonnes in 2006. Value also decreased slightly from USD 1.36 billion to USD 1.32 billion in 2005 – 2006 (Figure 4). The price of Japanese amberjack has remained steady at USD 8.50 per kilogram since 2001.

Cobia

Cobia (*Rachycentron canadum*) is an emerging species of considerable interest to farmers in the Asia-Pacific region. Presently, China and Taiwan Province of China are the only two countries in the Asia-Pacific region to report production of cobia. The apparent dramatic increase in cobia production in 2003 (Figure 5) is likely due to China beginning to report disaggregated production which had previously been reported as ‘marine finfish’ production. In 2005 – 2006, cobia production increased from 22,745 to 25,367 tonnes (Figure 5). Outside of the Asia-Pacific region, only Mayotte and Réunion reported production of cobia with a provisional figure of about 26 tonnes. Total value of production increased from USD 41.2 million to USD 43.8 million (Figure 5).

Conclusion

While marine finfish aquaculture continues to expand in the Asia-Pacific region, these data suggest that the rate of growth is beginning to slow. The growth in production (4.7%) was substantially below the 10-year average of 9.6% p.a. In contrast, the growth in value (3.1%) was closer to the 10-year average of 4.2% p.a. These data suggest that, overall, markets for marine finfish remain relatively buoyant despite increasing production.