

**QUALITY OF CAPTURE FISHERY AND
AQUACULTURE PRODUCTION STATISTICS
FOR ASIA AND THE PACIFIC**

by

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1. INTRODUCTION

Fishery statistics play an important role in the formulation of policies, sectoral development plans and fishery management, and much effort has been expended in trying to improve national fishery statistical collection and processing systems. The purpose of this paper is to review the FISHSTAT NS1 total production statistics and the FISHSTAT AQ aquaculture production statistics for the Asia and the Pacific, reported to FAO; and to comment on the quality of these statistics, to identify some of the problems and recommend possible remedies.

2. FAO FISHERY STATISTICS

The Fishery Information, Data and Statistics Unit (FIDI) of FAO collates statistics on total fish and shellfish production using the FISHSTAT NS1 questionnaire and disseminates them through the FAO Yearbook of Fishery Statistics: Catches and Landings in computerized form as FISHSTAT PC. The statistics are for total production from wild and farmed stocks in terms of weight (value data are not at present collated by FIDI) and thus include aquaculture production. For the years from 1984 onwards, these statistics have been disaggregated into capture fishery production and aquaculture components. The statistics considered here are for all aquatic organisms with the exception of mammals, crocodiles, pearls, sponges and plants. Aquaculture production statistics in terms of weight and value have been collated separately by FIDI since 1984 using the FISHSTAT AQ questionnaire and are published as FAO Fisheries Circular No. 815 which is revised annually, but are not considered further here.

In cases where data are not reported or are considered unreliable, FIDI makes estimates using the best available information which in the worst situation can be a repeated value from an earlier year. Such estimated values are identified as such with footnotes ("F" or "R") in the FAO publications. Thus, the proportion of the total production which is accounted for by estimated data provides a general indicator of the quality of the statistical data compiled by national agencies. It must be stressed that this is not a definitive measure of the quality of the statistics (undoubtedly some reported statistics which are adopted by FIDI are erroneous), but it is one useful indicator of the general quality of the data, at least in terms of the completeness of reporting.

Figures 1-4 show the trends in Asia and the Pacific inland and marine production from capture fisheries and aquaculture since 1984, with the components based on the reported data and estimated data identified. For example in 1995, out of a total marine capture fishery production of 39.4 mt, estimated catches accounted for 2.9 million mt, or about 8% of the total (Figure 1). Whereas for marine capture fishery statistics, the proportion based on estimates has increased somewhat since 1984, for inland capture fisheries (Figure 2), the estimated component has more than doubled, indicating a marked deterioration. In contrast, aquaculture statistics have not been deteriorating (Figures 3 and 4). Tables 1-4 show the main countries for which production statistics are estimated and these are the Democratic People's Republic of Korea, Vietnam, China, Taiwan and Myanmar for capture fisheries. The main species for which data are estimated for capture fisheries are grouped categories such as marine fishes *nei* and freshwater fishers *nei*, as well as skipjack and yellowfin tunas (Tables 5 and 6).

A major problem for the Asian region is the very high proportion of production which is reported as grouped species items. Whereas for aquaculture, most production is reported for individual species (Figures 7 and 8), this is far from the case for capture fishery production. Only 48% of marine capture production in 1995 was described in terms of individual species compared to 59% in 1984 (Figure 5). For inland capture fisheries the situation is appalling, with virtually no species definition available at all and over 80% of production not even defined to the family level (Figure 6).

3. ACTION REQUIRED

The Workshop was asked to comment on why the quality of capture fishery production statistics from Asia and the Pacific has deteriorated in recent years, and why the species detail for capture fisheries production is also lacking for Asia. Understanding the reasons for these problems is essential, in order to determine how the data can be improved.

Table 1. Countries for which FAO marine capture fishery production statistics for Asia and the Pacific are based at least partly on estimated rather than reported data

Country	Estimated	Reported	Grand Total
	Average 1990-95 - t		
Korea D P Rp	1,606,508	0	1,606,508
Viet Nam	649,033	118,947	767,980
China Taiwan	481,567	410,413	891,980
Myanmar	204,011	403,111	607,122
Australia	59,420	152,817	212,237
Kiribati	24,111	886	24,997
Solomon Is	15,657	34,295	49,951
Papua N Guin	12,153	0	12,153
Micronesia	4,583	10,832	15,415
Fiji	4,571	24,218	28,789
Vanuatu	2,790	0	2,790
Palau	967	479	1,446
New Caledonia	417	3,104	3,521
Marshall Is	142	96	237
Nauru	105	261	366
Pitcairn	4	2	7
Guam	3	411	414

Table 2. Countries for which FAO inland capture fishery production statistics for Asia and the Pacific are based at least partly on estimated rather than reported data

Country	Estimated	Reported	Grand Total
	Average 1990-95 - t		
Viet Nam	110,983	20,600	131,583
Korea D P Rp	99,217	0	99,217
Myanmar	47,046	97,315	144,360
Laos	16,758	3,167	19,925
Bhutan	308	0	308
Mongolia	84	37	122

Table 3. Countries for which FAO marine aquaculture production statistics for Asia and the Pacific are based at least partly on estimated rather than reported data

Country	Estimated	Reported	Grand Total
	Average 1990-95 - t		
Korea D P Rp	50,242	16,667	66,908
Viet Nam	39,517	0	39,517
China Main	5,500	2,198,129	2,203,629
Sri Lanka	1,633	555	2,188
Thailand	343	274,569	274,912
New Zealand	107	49,425	49,531
Kiribati	43	0	43
Australia	11	15,314	15,325
Solomon Is	5	2	7
Guam	4	9	14
Fiji	4	6	10
Papua N Guin	2	0	2
Myanmar	1	1	2
Philippines	1	32,710	32,711

Table 4. Countries for which FAO inland aquaculture production statistics for Asia and the Pacific are based at least partly on estimated rather than reported data

Country	Estimated	Reported	Grand Total
	Average 1990-95 - t		
Viet Nam	143,967	2,000	145,967
India	50,000	1,253,239	1,303,239
Korea D P Rp	12,833	0	12,833
Myanmar	12,411	37,250	49,661
Laos	12,200	0	12,200
Cambodia	7,578	0	7,578
Sri Lanka	3,417	0	3,417
Thailand	471	133,203	133,674
Philippines	88	350,114	350,202
Bhutan	27	5	32
Pakistan	16	13,052	13,068

Table 5. Main species items for which FAO marine capture fishery production statistics for Asia and the Pacific are based at least partly on estimated rather than reported data

Country	Estimated	Reported	Grand Total
	Average 1990-95 - t		
Marine fishes nei	2,349,989	6,578,966	8,928,955
Marine crabs nei	154,261	182,462	336,723
Skipjack tuna	116,976	1,019,846	1,136,821
Sharks, rays, skates, etc.	60,870	181,018	241,889
Yellowfin tuna	60,869	461,082	521,951
Natantian decapods nei	59,234	434,452	493,686
Albacore	46,327	84,681	131,008
Common squids	35,578	159,388	194,966

Table 6. Main species items for which FAO inland capture fishery production statistics for Asia and the Pacific are based at least partly on estimated rather than reported data

Country	Estimated	Reported	Grand Total
	Average 1990-95 - t		
Freshwater fishes nei	272,321	2,053,621	2,325,942
Cyprinids nei	1,842	39,278	41,120
Freshwater crustaceans nei	233	197,516	197,750

Figure 1: Capture fishery production in marine waters for Asia and the Pacific showing reported and estimated components

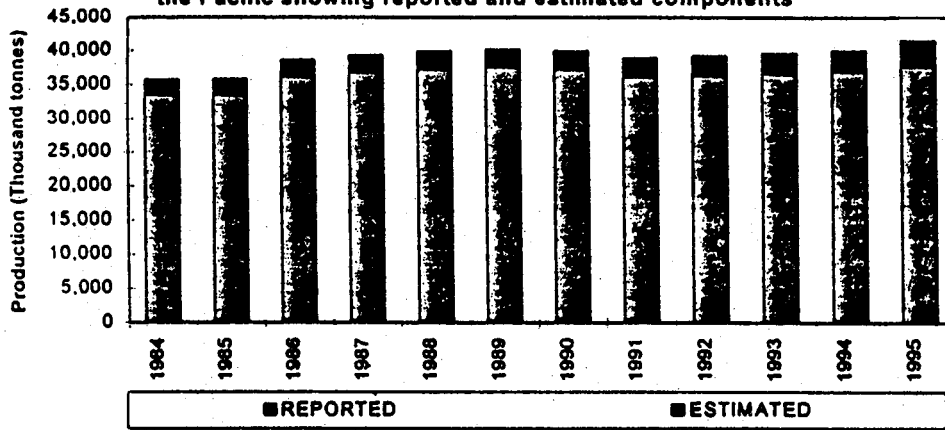


Figure 2: Capture fishery production in inland waters for Asia and the Pacific showing reported and estimated components

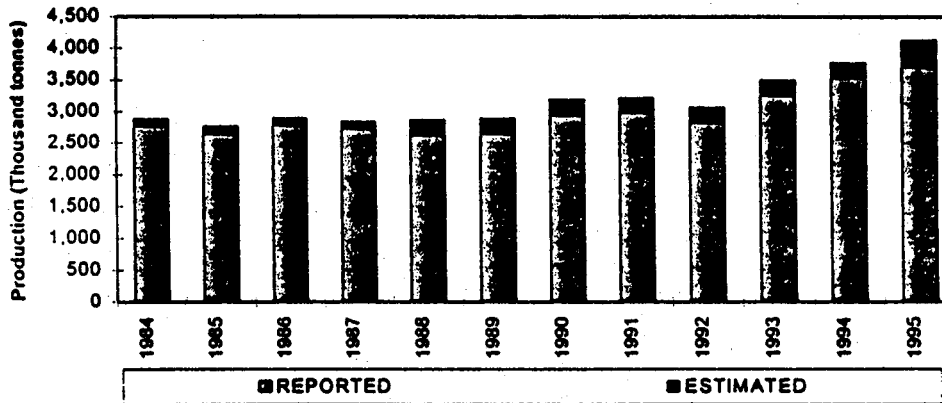


Figure 3: Aquaculture production in marine waters for Asia and the Pacific showing reported and estimated components

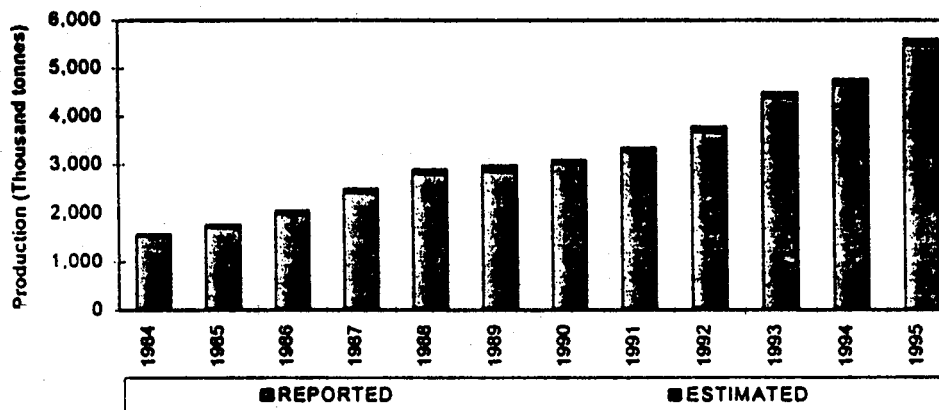


Figure 4: Aquaculture production in inland waters for Asia and the Pacific showing reported and estimated components

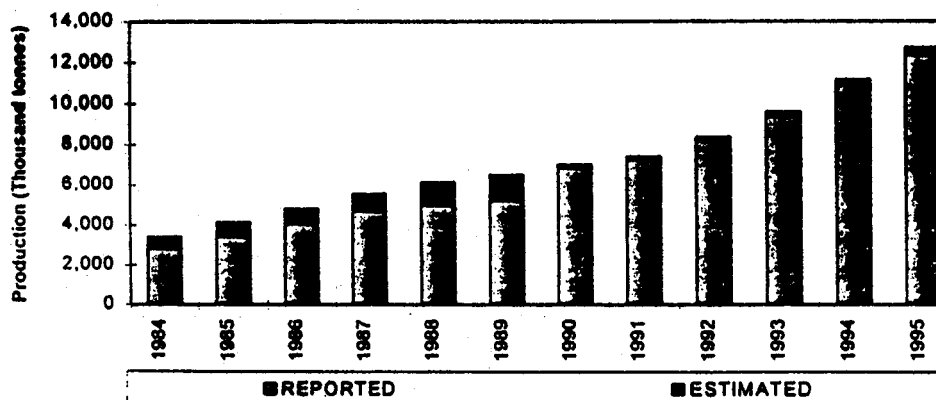


Figure 5: Capture fishery production in marine waters for Asia and the Pacific by level of taxonomic detail

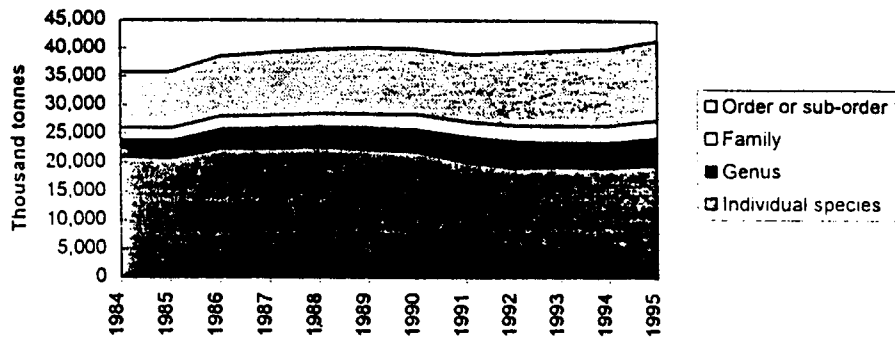


Figure 6: Capture fishery production in inland waters for Asia and the Pacific by level of taxonomic detail

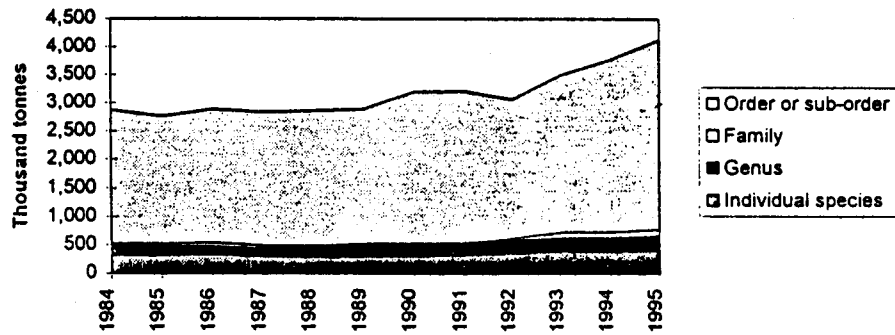


Figure 7: Aquaculture production in marine waters for Asia and the Pacific by level of taxonomic detail

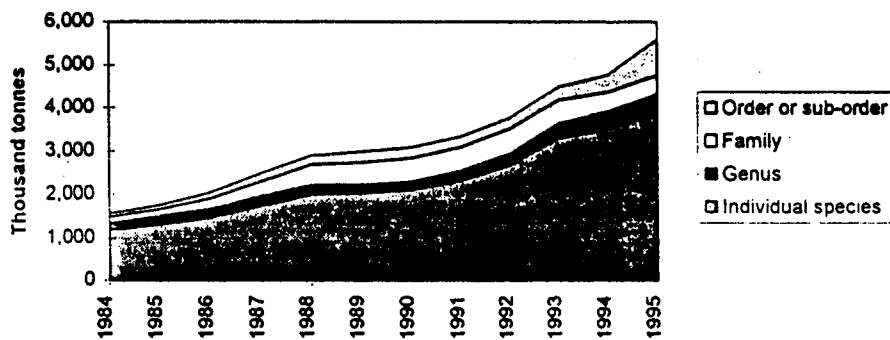


Figure 8: Aquaculture production in inland waters for Asia and the Pacific by level of taxonomic detail

