

# REVIEW OF NATIONAL FISHERIES IN MYANMAR

U Win Aung

*Director*

*Government of the Union of Myanmar  
Ministry for Livestock Breeding and Fisheries  
Department of Fisheries*

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## INTRODUCTION

The Union of Myanmar is situated on the mainland of Southeast Asia and has a total land area of 676,577 sq. km. It has a long coastline which stretches approximately 3000 km, and shares maritime boundaries with Bangladesh and India in the Bay of Bengal and India and Thailand in the Andaman Sea.

Myanmar's continental shelf is between 0 and 200 m deep, covers an area of approximately 230,000 sq. km, and is relatively wider in the central and southern parts. The Exclusive Economic Zone (EEZ) covers about 486,000 sq. km.

Myanmar's coastline can be divided into three regions: the Rakhine region (about 740 km), the Ayeyarwaddy and Gulf of Mottama region (about 460 km), and the Tanintharyi region (about 1,200 km). There are a large number of estuaries and islands along these coastal regions.

The oceanographic conditions in Myanmar marine waters are governed by the monsoons, and the influence of the Ayeyarwaddy River extends far out to sea.

Coral reefs are found mostly in the southern part of the coastline, principally around the islands of the Meik (Mergui) Archipelago, while mangroves inhabit the estuarine central part. The mangroves are relatively pristine compared to those in neighbouring countries such as Thailand, Malaysia and Indonesia.

Fishery resources in Myanmar's waters are typical of southeast Asia. There are large quantities of fish and shrimp in the EEZ. The unpolluted sea along the Rakhine and Tanintharyi coasts is ideal for pearl culture. Myanmar pearls are internationally known for their quality.

## MYANMAR'S MARINE RESOURCES

The fisheries sector is of major importance to Myanmar, since most of the protein in the diet of the population comes from fish. It is also the fifth-largest earner of foreign currency for the country.

According to surveys and research, the annual Maximum Sustainable Yield (MSY) of the marine fisheries is estimated at about 1.05 million metric tons (t). In 1993 the

amount taken was only 0.59 million t, well below the MSY.

In conformity with the provisions of the United Nations Convention on the Law of the Sea regarding the sharing of surplus fishery resources with neighboring states, since 1989 the Department of Fisheries has granted fishing rights to foreign vessels, initiated some joint fishery development programmes and the formation of joint-venture companies. A total of 1,035 foreign vessels were granted fishing rights during 1989-1994.

In order to cope with the increasing fishing activities in Myanmar, and in addition to the existing Fisheries Manual of 1905, laws such as those relating to the fishing rights of foreign vessels (Law No. 11/89), aquaculture (Law No. 24/89), marine fisheries (Law No. 9/90) and freshwater fisheries (Law No. 1/90) have been enacted, and regulations established. Anyone wishing to fish in a joint-venture enterprise under the Foreign Investment Law of November 1988 has to apply for a license from the Department of Fisheries.

## MYANMAR'S MARITIME ZONES LAW

As international law has always recognized that the sovereignty of a state extends to a belt of sea adjacent to its coast, on 15 November 1968 Myanmar declared the territorial sea of the Union of Myanmar to a distance of 12 nautical miles. Due to the geographical conditions prevailing on its coasts, and for the purpose of safeguarding the vital economic interests of the inhabitants of the coastal regions, Myanmar also established a system of straight base lines drawn between fixed points on the mainland and on the outermost islands or rocks (see Figure 1).

In 1977 Myanmar, for the purpose of safeguarding its national interests, enacted the Territorial Sea and Maritime Zones Law, which establishes a 12-mile territorial sea, a 24-mile contiguous zone, a continental margin and a 200-mile EEZ, and sets out the nature and extent of the rights and jurisdictions of Myanmar in these zones.

In drafting this law the fullest possible account was taken of the new ocean regime and the developing trends emerging at the Third U. N. Conference on the Law of the Sea, as well as customary international law and state practice. The provisions of Myanmar's Maritime Zones

**Table 1. Area of fish ponds (acres), number of leasable fisheries, and production (000 t)**

<b>Particulars</b>	<b>1990-91</b>	<b>1991-92</b>	<b>1992-93</b>	<b>1993-94</b>	<b>1994-95</b>
Area of fish ponds	7,570	42,523	56,790	63,389	69,404
Production	6.4	25.9	51.7	64.5	73.6
Total No. of leased fisheries	3,506	3,625	3,604	3,594	3,474
Production of leased fisheries	52.5	55.9	56.1	56.1	67.9

\* Provisional

Law are therefore in large measure in accord with the provisions of the 1982 U.N. Convention on the Law of the Sea.

The Maritime Zones Law empowers the government to establish regulations, by means of such laws, orders, directives and procedures as may be necessary, for the purpose of implementing its provisions.

## **FISHERIES IN MYANMAR**

Fisheries in Myanmar can be classified into inland fisheries and marine fisheries. The inland fisheries are mainly flood fisheries made possible by the vast river systems and heavy rainfall. There are also leasable fisheries, which cover a large area. Fish culturing operations are undertaken extensively in ponds, lakes and reservoirs.

Marine fisheries are classified into onshore, inshore and offshore fisheries. The first two have been exploited for a long time by local fishermen using mostly primitive indigenous fishing implements. Progress in mechanisation of fishing craft and modernisation of fishing gear has also been made. The least exploited fishing grounds are those offshore, which offer the best prospects, especially for pelagic and demersal fishes.

Fishing methods are officially classified in the Myanmar Fisheries Manual into 57 categories, the majority of which are primitive in character. Among the main methods employed in the inland fisheries are refuge devices, lances, hooks and lines, longlines, barriers, stake fences with sloping platform, floating prawn traps, fish pots, shuttle traps, jumping traps, scoop nets, cast nets, drop nets, drift nets, fillet nets, and drag nets. In the marine fisheries the common fishing gears include lances, harpoons, hooks and lines, stakes, set pouch nets, swing nets, cost nets, drift gill-nets, set gill-nets, drag seines, beach seines: gill seines, trawl nets, troll lines purse seines, and ring nets.

### **Capture Fisheries**

Capture fisheries are divided into two sectors, inland and marine fisheries.

### **(a) Inland Fisheries**

For the purposes of administration, management and resources conservation, the inland fisheries are classified into three types: leasable, reserved, and open fisheries.

#### **i. Leasable Fisheries**

Leasable fisheries operate in streams, lakes and ponds during the monsoon. A fishery is leased through a bidding process, and winning bidder is granted the right to harvest the fishery resources in demarcated "inns" from September to April. Revenue from the lease is collected by the Department of Fisheries. There are 4005 leasable fisheries listed throughout the country, of which about 3800 are being operated at present. Details of these fisheries are given in Table 1.

#### **ii. Reserved Fisheries**

Reserved fisheries are those in which fishing is prohibited from time to time or in which fishing rights are granted subject to stipulations by the Department of Fisheries in order to prevent the extinction of fish and/or to propagate them.

#### **iii. Open Fisheries**

In open fisheries the right to fish is granted by the issue of fishing licenses or by floating tenders after specifying the fishing ground or in any other manner, but excludes waters specified by the Department of Fisheries.

### **(b) Marine Fisheries**

Marine fisheries are also classified into three categories, namely onshore, inshore and offshore fisheries.

#### **i. Onshore Fisheries**

These fisheries operate in the mud flats and swamps caused by the ebb and flow of the tides. They are exploited by small-scale fishermen using indigenous fishing gear.

Table 2. Total production of fish and prawns (000 t), by type of fishery, 1990-1995

Type of fishery	1990-91	1991-92	1992-93	1993-94	1994-95
INLAND FISHERIES	142.9	167.2	193.7	210.9	224.4
Fish culture	6.4	25.9	51.7	64.6	73.6
Leasable	52.6	55.9	56.1	56.1	67.9
Flood fisheries	41.1	41.5	41.7	43.7	-
Open fisheries	42.8	43.9	44.2	46.5	82.9
MARINE FISHERIES	588	590.3	597.6	599.9	600.1
Onshore	206.1	207.9	207.8	209.2	-
Inshore	310.1	311.5	311.3	315.9	214.2
Offshore	71.8	70.9	78.5	74.8	385.9
TOTAL	730.9	757.5	791.3	810.8	824.5

\* Provisional

Table 3. Capacities of privately-owned cold-storage plants in Myanmar

Name of Plant	Ice plant (t/day)		Freezer (t/day)		Cold storage (t)	Cooler storage (t)	Remarks
	Flake	Block	Contact	Blast			
Htay Myanmar Co.,	15		4	6	160		
Great Eastern Myanmar	12		4	7.5	160	12	
K. T. K	12		4	7.5	160	12	
JV (6) (Myeik)			4		100		
JV (6) (Yangon)	12		4	6	300		
JV (6) Sittway)	5		4		200		Under construction
Landpeace (Taung Goke)		10	4		100		
Pilonechanthar Co. (Yangon)		10	8		100		Surumi 10 t/day
Mawlamyine Holding Co.,			4	2	160		
Myanmar Sea Foods Ltd		50	2t/1.5 hr	975 kg/hr	1000	150	
International Fisheries Tanintharyi Ltd.,	10	50	8	10	200		Under construction
International Fisheries Tanintharyi Ltd.,	8	20	4	2	100		Under construction
Min Zar NI					120		
K. N. (Yangon)					100		

### ii. Inshore Fisheries

These fisheries operate in the shallow waters within 12 miles of the shore or within sight of shore, and fishing

trips last less than one day. They are exploited mainly by artisanal and small-scale fishermen using simple fishing gears in small, locally-built vessels, powered or unpowered.

### iii. Offshore Fisheries

These fisheries operate out of sight of land or beyond the 12-mile limit. The main species caught are pelagic and demersal. Exploitation of this fishery requires large mechanized vessels with advanced fishing gears.

The overall production of fish and prawns in the different fisheries in the 1990-91 to 1994-95 fishing seasons is given in Table 2.

## THE FISHING INDUSTRY

There are twenty state-owned and fourteen privately-owned refrigeration complexes in Myanmar (Tables 3 and 4), and these numbers will increase in the very near future. There are nearly seventy ice-making factories in Yangon and over two hundred around the country. The capacities of the state-owned canneries, fishmeal plant, dehydration plant and Surumi plant are shown in Table 5.

In 1981 the Department of Fisheries established a Microbiology Laboratory for quality control purposes to conform to the requirements of importing countries. Laboratory equipment and technology were received from the Overseas Development Administration of the United Kingdom in 1985. The Microbiology Laboratory monitors the quality of raw products, using the guidelines and specifications laid down by the International Commission on Microbiological Specification for Food (ICMSF). The

Table 4. Capacities of state-owned cold storage and ice making complexes

State & Division	Name and type of plant	Capacity of ice plant (t/day)		Capacity of ice storage	Capacity of freezer		Capacity of cold storage	Cooler storage	Refrigerant	Remarks
		flake	block	(t)	contact	blast	(t)	(t)		
RAKHINE	Ice making Plant (Kyauk Pyu)	50	-	200	5	20	600	100	NH3	DANIDA 1
	Ice making Plant (Sittway)	25	-	100	3	13	200	200	NH3	DANIDA 1
	Ice making Plant (Mayobay)	-	72	300	6	35 +	200	180	NH3	U. K.
		-	-	-	-	12 flow freezer	-	-	-	-
		-	-	-	-	-	-	-	-	-
	Ice making Plant (Ramree)	10	-	30	-	-	-	10	NH3	DANIDA 1
	Ice making Plant (Mye-Bon)	10	-	30	-	-	-	10	NH3	DANIDA 1
	Ice making Plant (Ann)	10	-	30	-	-	-	10	NH3	DANIDA 1
	Ice making Plant (Gwa)	10	-	30	-	-	-	10	NH3	DANIDA 1
	Cold Storage Factory (Lontha)	-	-	-	-	4	200	-	-	Departmental
	Sub-total	115	72	720	14	84	1200	520	-	-
MAGWE	Ice making Plant (Magwe)	-	10	30	-	-	50	100	NH3	DANIDA 2
		-	10	30	-	-	50	100	-	-
TANINTHA RYI	Ice making Plant (Pahtet)	-	50	250	6	10	200	150	NH3	A. D. B 11
	Ice making Plant (Kyauk Nimaw)	-	50	250	6	10	200	150	NH3	A. D. B.11
	Ice making Plant (Panloneawh)	-	-	25	100	-	-	100	NH3	A. D. B. 11
	Ice making Plant (Kaw Thaug)	-	25	100	2	3	50	100	NH3	A. D. B 11
	Ice making Plant (War Gyun)	-	25	100	-	-	-	100	NH3	A. D. B. 11
	Ice making Plant (Shwenga)	-	10	30	-	3	100	-	-	Departmental
		Sub-total	-	185	830	14	26	550	600	-
SHAN	Ice making Plant (Nyaung Shwe)	-	5	20	-	-	-	100	NH3	A. D. B. 11
	Sub-total	-	5	20	-	-	-	100	-	-
YANGON	Ice making Plant & C. S. No.(4)	20	-	100	--	-	-	-	NH3	Departmental
		UST/D AY								
	Ice making Plant & C. S. No.(5)	-	50	200	5	10	600	200	NH3	A. D. B. 1
	Ice making Plant & C. S. No.(6)	-	50	250	4	12	600	150	NH3	A. D. B. 11
	Ice making Plant & C. S. No.(7)	-	10	30	3	12	200	100	NH3	DANIDA 2
	Sub-total	20	110	580	12	34	1400	450	-	-
		UST/D AY								
	GRAND TOTAL	135	382	2180	40	144	3200	1770	-	-
REFRIGERATED CONTAINERS										
		Capacity	Qty	Temp (C°)	Refrigerant					
		½ t	20	0	R 12					
		2 t	21	0	R 12					
		5 t	25	-25/0	R 502/R12					
				5 t	5	-25	R 12			

Table 5. Capacities of state-owned plants.

<i>State/Division</i>	<i>Name of Plant</i>	<i>Capacity</i>	<i>Required Raw Material</i>	<i>Remarks</i>
Yangon	Tarketa Dehydration Plant	2 t/30 hr	9.6 t/30 hr	-
Yangon	Fish Meal Plant	1 t/day	5.6 t/day	-
Yangon	Canning Plant	16000 cans/day	8.48 t/day	1 lb/can
Rakhine	Canning Plant (Thandwe)	4000 cans/day	2.08 t/day	1 lb/can
Tanintharyi	Surumi Plant	10 t/day	-	-

Table 6. Foreign companies licensed to fish in Myanmar EEZ, 1994-1995.

<i>Name of Company.</i>	<i>Vessel Types</i>	<i>Number of vessels</i>	
		<i>Allowed</i>	<i>Existing</i>
Myanmar American Fisheries Co., Ltd.	Trawlers	10	5
Lotus Fisheries Pty Ltd.,	Trap/Trawlers	20	2
Hansawaddy Fisheries J. V. Co. Ltd.	Trawlers	40	40
Narong Canning Co., Ltd	Purse-seiner/ Trawlers	20	12
Marissco (Pte.) Ltd	Trawlers	2	2
Beijing Fisheries Corp.	Trawlers	4	4
TOTAL		106	75

following procedures are carried out on daily samples from a critical point: Total Viable Count (TVC), which gives an idea of the degree of spoilage; to evaluate the safety of the product from harmful pathogens, we check for salmonella and v. cholera; for checking the standard of hygiene during processing and handling, coliform and faecal coliform are used as indicator organisms. With the present facilities about 600 samples are analyzed annually.

Access to well-equipped facilities and the availability of well-trained manpower are prerequisites to produce quality fish products which will meet the requirements of importing countries.

#### FOREIGN INVESTMENT IN THE FISHERY SECTOR

The economy of the Union of Myanmar is changing away from a centrally-planned economic system towards a market-oriented system. Restructuring of the economy is being carried out in line with major changes in economic and trade policies. In 1988 the Government of Myanmar, realizing the need for change, established major policy objectives for effective resource mobilization and exploration of the abundant natural resources of the country, in order to accelerate economic growth and expedite the pace of development. Such policy objectives are aimed at all-round development of the national

economy to improve the living standards of the people and alleviate poverty.

Achieving these objectives and implementing the liberalization measures depend on attracting capital and acquiring the right kind of technology. In this regard, the Foreign Investment Law was passed in November 1988, and the related regulations endorsed the following month. This law assures foreign investors of access to the country's endowed resources as well as a fair and equitable return on their investments.

The Foreign Investment Law has been effective in attracting foreign capital, and up to the end of December 1994 the Myanmar Investment Commission has issued permits to 117 enterprises from 17 countries (Table 6). Ten of these enterprises, from six countries, are related to fisheries, and the total foreign capital involved is estimated to be almost US\$ 91 million (Table 7).

*Table 7 Foreign investment in Myanmar as of  
December 31, 1994*

*By country of origin*

<i>Country of origin</i>	<i>Number</i>	<i>Investment (million US \$)</i>
Australia	2	27.20
Austria	1	71.50
Bangladesh	2	2.96
Canada	1	22.00
China	3	3.29
France	1	10.00
Hong Kong	16	63.44
Japan	5	101.14
Korea	9	60.59
Macao	1	2.40
Malaysia	7	69.57
Netherlands	2	83.00
Philippine	1	6.67
Singapore	23	293.35
Thailand	23	264.61
U.K.	10	55.51
U. S. A	10	203.19
TOTAL	117	1,340.42

*By sector*

<i>Sector</i>	<i>Number</i>	<i>Investment (million US \$)</i>
Agriculture	1	2.69
Fisheries	10	90.76
Mining	11	163.45
Manufacturing	45	135.49
Oil and Gas	20	381.09
Transport	2	2.00
Hotel and Tourism	28	564.94
TOTAL	117	1,340.42

## CONCLUSION

The Indo-Pacific Tuna Development and Management Programme (IPTP) should assist the member countries in the implementation of development programs through UNDP or FAO or other mechanisms with appropriate donor support. Myanmar is very pleased to know that several agencies have expressed support for project components and co-operative projects to be developed by the IPTP.

***Figure 1. Fishing grounds of Myanmar.***