

FISHERIES REGULATION AND ENFORCEMENT IN INDONESIA, MALAYSIA AND THE PHILIPPINES

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Description	Indonesia	Malaysia	Philippines
Coverage	3.1 million km ²	329,580 km ²	1.9 million km ²
- Territorial sea	1,919,317 km ²	4,055 km ²	300,000 km ²
- Total area	3,038,637 km ²		
- Coastline	17,800 km		
ABSTRACT			
<p><i>Non compliance incidence in the fisheries of Indonesia, Malaysia and the Philippines were found relatively high. The fisheries management is effectively applied when compliance is attained. In order to secure the compliance enforcement and surveillance are needed. In fact, enforcement is costly. This paper suggests to adopt the 'cheap' enforcement and surveillance strategy using co-management approach.</i></p>			
Annual growth rate of fish production (1991)	5.8%	(1992)	(1991)
Employment opportunity in fisheries	4.0 million	1.24% of total employment (1993)	1 million (1993)
<p>I. INTRODUCTION</p> <p>Zone (EEZ) (Anon, 1983). Indonesia has large marine resources with various stocks of fish and other marine animals (Costa, 1988).</p>		<p>Malaysia is situated in Southeast Asia and consists of Peninsular and East Malaysia (Sabah and Sarawak) which lies between Singapore in the south and Thailand in the north and covers a total area of 329,580 sq.km. Malaysia has a coastline of about 4,055 km, of which 1,640 km is in Peninsular Malaysia and 2,415 km is in West Malaysia. The Philippines is an archipelagic country, comprising of 7,100 islands and is endowed with vast aquatic resources. It covers 300,000 sq.km of land area with 18.46 million hectares of continental shelf area and 26.6 million hectares of coastal area. The total marine resource of coral reefs,</p>	
<p>Indonesia, Malaysia and the Philippines are important fishing countries in Southeast Asia. The three countries bridge Asia and Australia and have significant marine resources. Some common features of their fisheries are the heterogenous fish producers, variabilities in gears, common fish species and similar capture systems.</p> <p>Indonesia covers a vast archipelagic area consisting of more than 17,000 islands stretching about 5,000 km from east to west and about 2,000 km from north to south with a coastline of 80,000 km. The Indonesian archipelago and territorial sea covers an area of about 3.1 million sq.km, excluding 2.7 million sq.km area of marine waters which is under the Exclusive Economic</p>			

mangroves and fish stock consists of 220 million hectares including the Exclusive Economic Zone (EEZ) jurisdiction. The Philippines archipelago is bordered by the South China sea in the west, on the east by the Pacific ocean

and to the South by the Sulu and Celebes seas, while in the north by the Bashi channel. Table 1 shows the selected indicator of the significance of fisheries resources in the three countries.

Table 1
Fisheries in Indonesia, Malaysia and the Philippines

Description	Indonesia	Malaysia	Philippines
Coverage:			
- Territorial sea	3.1 million km ²		1.9million km ²
- Total area	1,919,317 km ²	329,580 km ²	300,000 km ²
- Coastline	80,000 km	4,055 km	
Fish production	4.01 million tons (1991) 2% of GDP ^{c/} (1992)	1.18 million tons (1994) 1.7% of GDP (1995)	2.6 million MT (1993) 4.4% of GDP (1992)
Annual growth rate of fish production	5.8% (1991)	11.7% ^{e/} (1995)	3.6% (1991)
Employment opportunity in fisheries	4.0 million ^{d/}	1.24% of total employment ^{f/}	1 million (1993)
Fish consumption per capita	19.14 kg/ year ^{a/} (1993)	37.5 kg/ year ^{b/} (1990)	41 kg/ year ^{d/}
Total population	192.2 million (1994)	20.7 million (1995)	60.1 million (1990)

Note:

a/ Widyakarya Nasional Pangan dan Gizi 1993 (Kompas, 13 October 1996)

b/ Department of Veterinary Service (DVS) (1992). Livestock Statistics. Ministry of Agriculture, Malaysia.

c/ Putro (1995)

d/ BFAR (1987)

e/ Seventh Malaysian Plan

f/ Annual Fisheries Statistics 1995

II. INSTITUTIONAL FRAMEWORK AND ENFORCEMENT PROGRAMME

Fisheries is regulated in the three countries by designation of zoned

areas. These zoning regulation restricts fishing activity in the specified zones. Indonesian waters are divided into four zones: (1) 0-3 miles from the coast; (2) >3-7 miles from the coast; (3) >7-12 miles from the coast; (4) over 12 miles

from the coast. In Malaysia the four zones are: (A) 0-5 miles; (B) >5-12 miles; (C) >12-30 miles; (D) >40 miles. While in the Philippines it is divided into two zones: (1) 0-15 km from shoreline as municipal waters; and (2) >15km as national waters. Fishing in the first zone from the shore in the three countries is prohibited for large-scale boats. The main purpose of the zoning regulation among others are for resource conservation and protection of the small-scale fisheries. The zoning regulation is expected to ensure the sustainability of inshore waters which serve as breeding and nursery ground for fish.

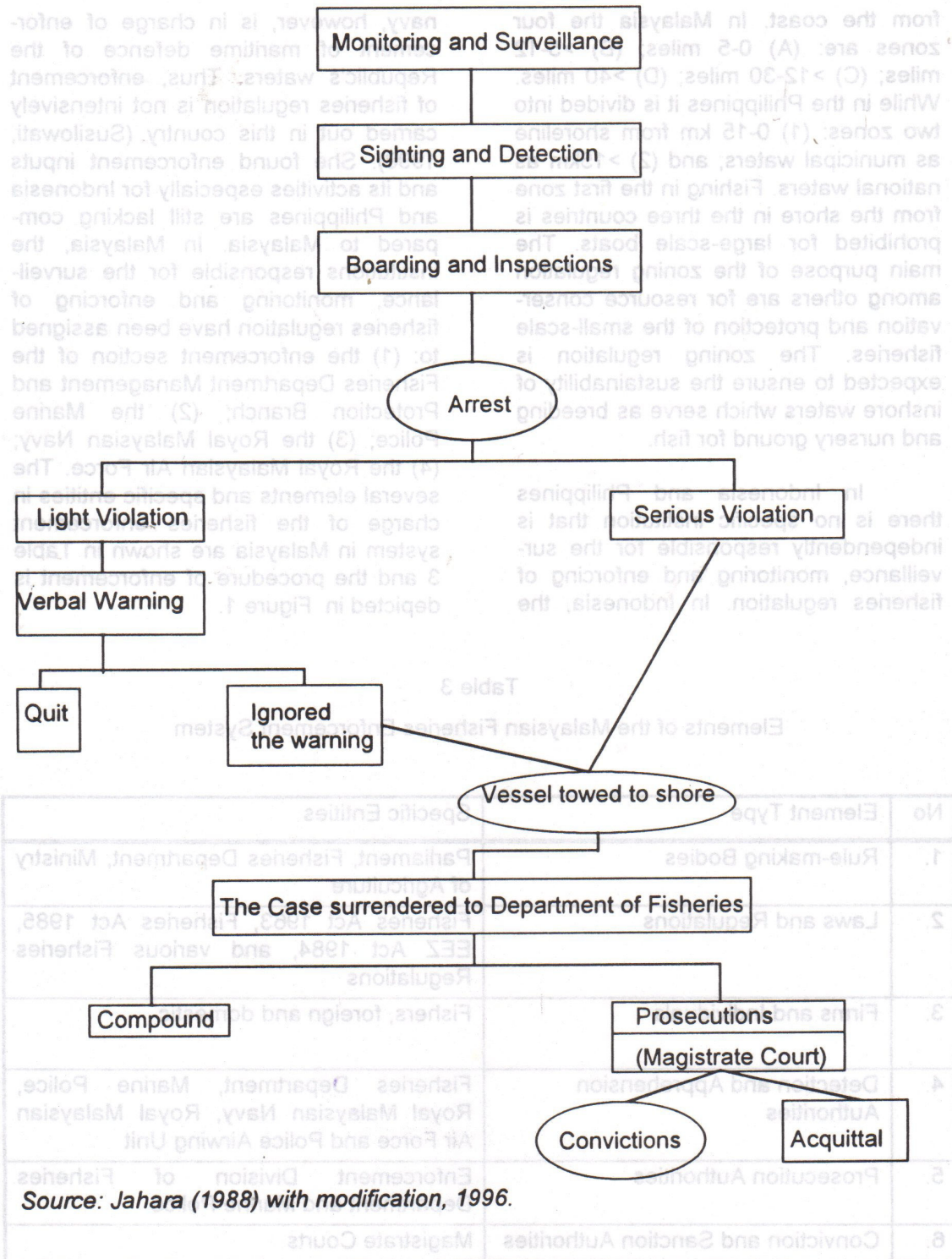
In Indonesia and Philippines there is no specific institution that is independently responsible for the surveillance, monitoring and enforcing of fisheries regulation. In Indonesia, the

navy, however, is in charge of enforcement of maritime defence of the Republic's waters. Thus, enforcement of fisheries regulation is not intensively carried out in this country (Susilowati, 1998). She found enforcement inputs and its activities especially for Indonesia and Philippines are still lacking compared to Malaysia. In Malaysia, the institutions responsible for the surveillance, monitoring and enforcing of fisheries regulation have been assigned to: (1) the enforcement section of the Fisheries Department Management and Protection Branch; (2) the Marine Police; (3) the Royal Malaysian Navy; (4) the Royal Malaysian Air Force. The several elements and specific entities in charge of the fisheries enforcement system in Malaysia are shown in Table 3 and the procedure of enforcement is depicted in Figure 1.

Table 3
Elements of the Malaysian Fisheries Enforcement System

No	Element Type	Specific Entities
1.	Rule-making Bodies	Parliament, Fisheries Department, Ministry of Agriculture
2.	Laws and Regulations	Fisheries Act 1963, Fisheries Act 1985, EEZ Act 1984, and various Fisheries Regulations
3.	Firms and Individuals	Fishers, foreign and domestic
4.	Detection and Apprehension Authorities	Fisheries Department, Marine Police, Royal Malaysian Navy, Royal Malaysian Air Force and Police Airwing Unit
5.	Prosecution Authorities	Enforcement Division of Fisheries Department and Marine Police
6.	Conviction and Sanction Authorities	Magistrate Courts

Source: Jahara (1988).



Source: Jahara (1988) with modification, 1996.

Figure 1: Fisheries Enforcement Procedure

A survey on enforcement adequacy in the three countries found that mostly (68%) fishers were satisfied with the enforcement effort done by the respective authorities. To those fishers who had benefited from the existing enforcement scheme of course will express their satisfaction. However, those who had less benefit from such situation may suggest the improvement of the enforcement scheme. In general, fishers in Malaysia found that enforcement is more adequate than in Indonesia and the Philippines. This was confirmed by the greater number of Indonesian and Philippine fishers who have never seen enforcement personnel during fishing activities at sea compared to fishers in Malaysia. No Malaysian fishers claimed to have never

seen a patrol boat at sea but 87 Indonesian and 6 Philippine fishers have never seen it (Table 2). Moreover, the number of patrol boats seen by the fishers in Malaysian waters was greater than in the two other countries. This indicates that enforcement activities in Malaysia is more intensive. The survey showed that fishers in Malaysia tend to be more compliant; this is reflected in the number of fishers who never violate the zoning regulation (only 13.5%), while for Indonesian and the Philippine fishers the figures were about 54.5% and 59.9%, respectively. The estimated percentage of violation done by other fishers nearby their operation waters perceived by respondent in Malaysia was the highest (65%) followed by the Philippines (61%) and Indonesia (19%).

Table 2
Enforcement and Compliance Indicators

Description	Indonesia (n=187)	Malaysia (n=126)	Philippines (n=255)
Enforcement Indicator:			
(1) Never seen enforcement personnel during fishing	94 (50.1%)	1 (0.79%)	4 (1.57%)
(2) Never seen patrol boat on the sea	87	0	6
(3) Number of patrol boat seen (max)	10	102	5
Compliance Indicator:			
(1) Never fish in the prohibited zone	102 (54.5%)	17 (13.5%)	145 (56.9%)
(2) Average percentage of violation by the other fishers as estimated by respondent	19%	65%	61%
(3) Moral development level:			
- Preconventionalist	94 (50.3%)	112 (88.9%)	118 (46.3%)
- Conventionalist	93 (49.7%)	14 (11.1%)	117 (45.9%)
- Postconventionalist		-	20 (7.8%)

III. CO-MANAGEMENT SYSTEM : A WAY OUT FOR CONDUCTING ENFORCEMENT

Enforcement is costly and this is not only realised by developing countries but also applies to developed countries. The expenditure on enforcement in Malaysia comprise a large portion of the total federal expenditure in the fisheries sector. This expenditure is under the management of the Fisheries Department. The budget for enforcement expenditure for fisheries regulations in Indonesia and the Philippines are not clearly available as enforcement cost since it is aggregated with total expenditure in the fisheries sector. Although an enforcement system may have been established, this does not ensure that the fisheries is free from violation. Even in Malaysia, where the enforcement and surveillance system have been developed, it was found that the incidence of non compliance by the fishers is also relatively high (Susilowati, 1998). In theory the probability of violation will be higher in the fisheries where the intensity of enforcement is less or none existent like Indonesia and the Philippines. However, the compliance behaviour of fishers is not only influenced by enforcement alone but also by several factors as found by Kuperan et. al.(1996) and Susilowati (1998) such as: probability of detection and conviction, catch per unit effort, personal moral development, social environment influence, and legitimacy factors. Moreover, studies by Kuperan (1993) and Susilowati (1998) found that there are other factors often than enforcement which are important in determining compliance with regulation such as morality, norms and social environment influence. Moral belief will

guide someone to do the right things that they should (Tyler, 1990).

Blasi (1980) claimed that delinquents tend to be pre-conventional in their legal and moral reasoning. There is evidence to support that the more fishers see fisheries regulations in moral term the less likely they are to violate the regulation. Using the Kolberg's theory of moral development (Colby et al., 1987) which enables individuals to be classified as pre-conventionalist, conventionalist and post-conventionalist, as indicators of moral development, the pre-conventionalist are more likely to violate fisheries regulations in Indonesia, Philippines and Malaysia than conventionalist and post-conventionalist. This implies that the higher the moral development level attained by a fisher, the lower the chance of the fisher violating regulations. Based on this finding enforcement agencies need to relate or explain regulations in moral terms to fishers in an effort to secure compliance in the fisheries. Since enforcement is costly these alternative social capital become a mean of securing compliance may be more efficient. Co-management of the fisheries that emphasize greater stakeholder participation may be able to use the moral aspects of a regulation to secure a higher level of compliance rather than a centralised heavily government controlled system of fisheries management.

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