

FISHCODE MANAGEMENT

REPORT OF A WORKSHOP ON THE FISHERY AND MANAGEMENT OF SHORT MACKEREL (*RASTRELLIGER* spp.) ON THE WEST COAST OF PENINSULAR MALAYSIA



FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

ROME, OCTOBER 1999

**FISHCODE
MANAGEMENT**

**FAO/NORWAY PROGRAMME OF ASSISTANCE TO DEVELOPING
COUNTRIES FOR THE IMPLEMENTATION OF THE CODE OF CONDUCT FOR
RESPONSIBLE FISHERIES**

***SUB-PROGRAMME F: PROVISION OF SCIENTIFIC ADVICE TO
FISHERIES MANAGEMENT***

**REPORT OF
A WORKSHOP ON THE FISHERY AND THE MANAGEMENT OF
SHORT MACKEREL (*Rastrelliger spp.*) ON THE WEST COAST OF
PENINSULAR MALAYSIA**

**Penang, Malaysia
4 – 6 May 1999**

Workshop Proceedings and Recommendations

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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OPENING OF THE WORKSHOP

(1) The Workshop on the Status of the Fisheries and Management of the short mackerels (*Rastrelliger* spp.) on the west coast of Peninsular Malaysia took place in the Sheraton Hotel, Penang, Malaysia, from 4 to 6 May 1999. It was funded by the FAO/Norway Inter-regional Programme of Assistance to Developing Countries for the Implementation of the Code of Conduct for Responsible Fisheries (in short FISHCODE, Sub-programme F: Assistance to Developing Countries for Strengthening the Provision of Scientific Advice to Fisheries Management). The Workshop was attended by 35 participants representing public and private institutions, among others: research (FRI), planning and management (DOF, State Fisheries of Perlis, Kedah, Pinang, Perak and Selangor), university (University Putra Malaysia), fishermen and the processing industry from the five states. A full list of participants is given as Appendix B.

(2) A welcome address was delivered by the Director-General of Fisheries, Ministry of Agriculture, Malaysia, Dato Mazlan Yusoh (see Appendix A). He appreciated FAO for its assistance in organizing the workshop as an important step in the process of implementation of the Code of Conduct for Responsible Fisheries. He was happy to note the relatively high number of representatives of fishermen in the workshop and hoped for their active participation. On behalf of FAO, Dr Martosubroto, Fishery Resources Officer of the FAO Fisheries Department, thanked the government of Malaysia for providing excellent services to the workshop. He also extended best wishes of Mr Diouf, the DG of FAO for the success of the workshop.

OBJECTIVES AND PROCEEDINGS OF THE WORKSHOP

(3) Objectives of the workshop were: (a) to review the status of fisheries and management of short mackerels (*Rastrelliger* spp.) on the west coast of Peninsular Malaysia; (b) based on information generated in (a), to develop a draft management plan for the fishery.

(4) To facilitate a full and frank participation of fishermen as much as possible in the workshop's discussions, the workshop was run in the Malay language. Translation to English was made by Malaysian participants whenever necessary for the benefit of non-Malay speaking participants. The agenda of the workshop appears in Appendix C.

SUMMARY OF PRESENTATIONS

Tuesday, 4 May 1999

Overview of the Code of Conduct for Responsible Fisheries

(5) The historical background of the Code of Conduct for Responsible Fisheries (CCRF) was presented by Dr Martosubroto. In his presentation he also highlighted the strong support of developed and developing countries for the implementation of the CCRF as an important response against the continued dwindling global fisheries resources. The process of formulation of the CCRF itself took about four years since the issue was first raised in an international forum (COFI session in 1991), the CCRF was finally endorsed in 1995.

(6) The need of the developing countries for assistance in implementing the CCRF was clearly spelled out in Article 5 of the CCRF. Norway, as one of the donors, responded positively to the inter-regional programme developed by FAO with particular focus on the strengthening of MCS (Sub-programme C) and the provision of scientific advice to fisheries management (Sub-programme F) under which the current workshop is being organized.

(7) Three countries in Southeast Asia are participating in the Sub-programme F. While Malaysia has chosen the short mackerel fishery as the reference fisheries in this project, Indonesia selected the sardine (*Sardinella lemuru*) fishery of Bali Strait and Thailand dealt with the anchovy fisheries of the Gulf of Thailand.

Status of the short mackerel resources, socio-economic aspects and their management

(a) Presentation by Ms. Chee Phaik-Ean, FRI, on the status of the resources

(8) Short mackerels (*Rastrelliger* spp.) form the dominant component of the small pelagic catch on the west coast of Malaysia, they constitute an average of between 22% to 68% of the total catch of small pelagics. Four species constitute this genus, including “pelaling” (*R. brachysoma*) and kembung (*R. faughni* and *R. kanagurta*). Pelaling is normally found in inshore waters. Purse seines, trawls and driftnets are common gears used in the fishery. Driftnets are operated mostly in the coastal and inshore area, while trawls and purse seines are operated more offshore. Catches by the three gears show about equal shares since 1994.

(9) The catch of short mackerel came from the fleets in the States along the northern part of Malacca Strait, mainly the States of Perlis, Kedah, Pinang, Perak and Selangor. Before the 1970s the catch was mainly by driftnets and purse seines, the latter equipped with lures made of coconut leaves. With the introduction of high opening trawl gear in the 1970s followed by the use of spotlights in the purse seine fishery in the 1980s, the catch increased tremendously. The driftnet fleet had been decreasing, while the number of bigger and more powerful boats increased, in particular trawlers and purse seiners. However, the trend of the catch has shown fluctuations, a typical feature of small pelagic fisheries. The highest peak so far has been reported in 1995 with a total catch of 101,000 t. With the increased use of spotlights in purse seine fisheries, bycatches have also increased. A total of 2,845 trawlers, 221 purse seiners and 5,420 driftnetters are currently registered with an estimated number of fishermen of 7,908, 3,741 and 8,498 respectively.

(10) Several estimates of the potential yield derived from analyses using surplus production models are available. A potential of 25,000 t was indicated in 1976 during the early phase of the fisheries. A later estimate was made in 1987 with a potential yield of 60,000 to 70,000 t, which was later confirmed in 1997 by an analysis of FRI. However, landings had already reached 101,000 t in 1995. Fluctuations in the catch is a common feature in small pelagic fisheries, and this is also the case for this short mackerel fisheries, which questions the use of a constant catchability in static models such as in the case of surplus production models. Acoustic surveys are worthy of being considered as a means to reinforce the assessments in small pelagic fisheries.

(b) Presentation by Mr. Kamaruzzaman on socio-economic aspects of small pelagic fisheries

(11) A socio-economic profile of the fisheries was obtained from the results of a survey conducted by the Fisheries Development Authority in 1995. It was found that the majority of the fishermen were aged between 31 to 50 years. About 57% of commercial fishermen were in this age group while for the traditional fishermen, this age group accounted for 53% of the total traditional fishermen surveyed. The percentage of fishermen above 50 years of age was higher in the traditional fishery (27%) than in the commercial fishery (17%).

(12) The average monthly income of commercial fishermen (RM 1,081)¹ was about 63% higher than that of traditional fishermen (RM 662). Skippers of commercial fishing vessels received an average monthly income of RM 1,181, while those in the traditional fishery received only about half of that amount at RM 625. Crew members of both categories of fishermen received almost the same monthly income, i.e. RM 591 for commercial fishing and RM 504 for traditional fishing.

(13) It was found that the average cost of a trawler and a purse seiner of between 25 to 69.9 GT was about the same, i.e. around RM 100,000. However, the actual cost varies from vessel to vessel depending on the level of sophistication of equipment on board. The average investment cost for a driftnetter was about RM 12,000. Cost of fuel was the main operational cost for trawlers and purse seiners. About 58% of the total operational cost of a trawler of size 25-39.9 GT was fuel, while for purse seiners of the same category it was 37%. Meanwhile, in the case of driftnetter, the bulk of the operational cost (29%) was for wages.

(14) The average annual operational cost of purse seiners of size 40-69.9 GT was the highest at RM 330,592 which was followed by trawlers of the same size category with RM 160,229, while for the driftnetters the annual cost was the lowest at RM 13,100. In terms of earning, purse seiners of size 40-69.9 GT gave the highest returns among the types of vessels surveyed with an average annual net earning of RM 63,562. Trawlers of size 40-69.9 GRT were the second highest with an average annual income of RM 43,601, while the average annual earning of driftnetters was RM 6,636.

(c) Presentation of Raja Noordin Raja Hasan, DOF on management of the fisheries

(15) The Fisheries Act of 1963, amended in 1985, contains various provisions relating to fisheries management. Although each State has a fisheries jurisdiction up to 12 miles offshore, fisheries management is under the responsibility of Federal Government, through the Department of Fisheries. In addition to the licensing policy of fishing vessels, various management measures have been applied to fisheries on the west coast of Malaysia. Those measures also apply to short mackerel fisheries. Those include delineation of fishing zones which is categorized by size of vessel and gear used, namely: (a) Zone A extends 5 miles off the coast is strictly for traditional fisheries; (b) Zone B, 5 - 12 miles, for commercial fisheries, e.g. trawlers and purse seiners below 40 GT; (c) Zone C, 12 – 30 miles, for commercial fisheries of vessels above 40 GT; (d) Zone C2, from 30 miles and beyond for commercial fisheries of vessels of 70 GT and above. Conditions of a licence stipulate that the fishing vessels must comply with the standard identification schemes. The vessels must be painted with the specified colours allocated to the State where the vessels are based.

(16) Apart from a licensing scheme, DOF also introduced a registration of fishermen in 1986 as a means to limit the number of fishers. No additional registration has been made after

¹ US\$ 1 = about 3.8 Malaysian Ringgit in 1999

1986 and registration cards issued are not transferable. In support of management, Monitoring, Control and Surveillance (MCS), has been strengthened through computerized and enhanced facilities that link the entire MCS unit with all State Fisheries Departments. Patrol boats are available in each MCS centre and the latest surveillance technique employing Vessel Tracking and Management System (VMS) has also been adopted.

(17) Four islands off the west coast of Malaysia have been gazetted as Marine Parks and Protected Areas. Those are Pulau Payar, Pulau Lembu, Pulau Kaca and Pulau Segantang, all located in the waters of Kedah State. Development of artificial reefs (tyre reefs, boat reefs and concrete reefs) has also been advocated since 1987.

(18) An *Ad-hoc* Management Committee has been established in DOF since the 1990s comprising staff of various divisions, i.e. Resource Management and Protection Division, Corporate Planning Division and the Research Division including FRI² and SEAFDEC³. The Committee assesses the fisheries and status of the stocks as a basis for recommendations to DOF in updating the licensing policy and other management measures.

Wednesday, 5 May 1999

(d) Presentation by fishermen and representative of the industry from various States:

≠ Presentation of Mr. Mohd. Yusof Ahmad, Fishermen Association of Kedah State

(19) Landings of kembung in Kedah State were around 10,000-13,000 t between 1990 to 1997. The current storage capacity is insufficient, especially during seasons of glut. He emphasized the need to know the spawning grounds and season as a basis for regulations relating to conservation.

(20) He would like to see more artificial reefs to be deployed to protect spawning grounds. The current licensing system needs to be simplified and delegation of authority to the State Government on licensing for deep-sea fishing is requested.

≠ Presentation of Mr. Beh Wong King, purse seine fisherman from P. Pangkor, Perak

(21) The landings by purse seines in Manjung District increased from 4,900 t in 1997 to 8,778 t in 1998, following the increase of boats from 28 units to 40 units. Forty percent of the landings of purse seines are kembung, the rest are made up of tuna, hardtail trevally, round scads and sardines.

(22) He hoped that the Government would deploy more boat reefs in Zone A as a means to prevent trawling and to enhance breeding grounds. He proposed the establishment of Pulau Sembilan as a protected area to replace Pulau Jarak.

≠ Presentation by Mr. Lee Yen Leong, Fish Traders and Fishing Boat Operators Association of Kuala Perlis

² FRI = Fisheries Research Institute in Penang

³ SEAFDEC = South East Asian Fisheries Development Centre in Kuala Terengganu

(23) Currently there are about 180 vessels fishing for kembung, trawlers and purse seiners. The main problems for this category are the limited fishing grounds, therefore construction of artificial reefs and the establishment of protected areas should be minimized.

(24) A large part of the catches is marketed fresh and only about 30% is frozen. The potential for canning needs to be explored. A large number of foreign crews are working in Perlis.

∅ Presentation by Tuan Hj. Saidin b. Hussain, Penang Inshore Fishermen's Welfare Association

(25) Recently the kembung catch of inshore fishermen declined. Threats to inshore fishermen include overexploitation by trawlers and purse seiners operating in inshore waters as well as pollution caused by shrimp culture discharges. He advocated the banning of fishing gears other than driftnets.

(26) It was proposed that for any deployment of artificial reefs, fishermen need to be consulted. Artificial reefs made of concrete should be avoided and all artificial reefs need to be marked by buoys.

(e) Presentation by Dr Barry Pollock on the concept and development process of fisheries management plan

(27) Dr Pollock emphasized the need to have a management plan for any fisheries to be managed. A fisheries management plan depends on the fisheries and the stakeholders concerned. A good fishery management plan is normally developed by representatives of stakeholders (see Appendix D).

(28) He further emphasized that no fisheries management plan in the world is perfect as formulation of fisheries management plan is a dynamic process and plans have to be improved from time to time following the continuous improvement principle. In the formulation of a management plan, issues confronting the fisheries should be identified and prioritized. Responsibilities for undertaking the required follow-up actions should be given to the relevant parties concerned.

Thursday, 6 May 1999

(f) Working Group Discussions to develop a fisheries management plan

(29) Owing to the fact that the kembung fishery is not an exclusive fishery but rather a part of a small pelagic fishery, it was agreed that the management plan to be developed should be one for the small pelagic fisheries as a whole. Three working groups were established based on States representation; however the imbalanced representation of stakeholders by States resulted in combining States as follows: (1) Kedah/Perlis Working Group; (2) Pulau Pinang Working Group and (3) Perak/Selangor Working Group. The working groups were tasked to discuss issues relevant to the elements of management plan as described by Dr Pollock: (a) Description of the fishery; (b) Jurisdiction; (c) Objectives of management; (d) Operational management; (e) Research and stock assessment; (f) Monitoring, control and surveillance (MCS); (g) Consultation with stakeholders and extension; (h) Post-harvest sector; (i) Review of the plan. A summary of the proceedings of group discussions was reported by Dr Pollock and is given in Appendix D.

(30) After undergoing several sessions of the working group discussions, the meeting continued with the presentation of the results of individual working groups in a plenary session, focusing on identification of issues relevant to the respective components of the draft management plan. The status of the small pelagic fisheries off the west coast of peninsular Malaysia, from the point of view of the respective States, is summarized in Table 1. The ensuing discussion was devoted to the prioritization of issues, which was facilitated by a voting procedure in which each individual was given ten votes to come up with a ranking on the issues listed. The outcome indicates the ten main priorities among the total twenty-two issues as given in Table 2.

(31) The final part of the plenary session was devoted to the discussion on the follow-up actions needed to address the ten agreed main priorities. The proposed actions respective to the issues identified were finalized and a summary is presented in Table 3.

Table 1. Summary status of the small pelagic fisheries off the west coast of Peninsular Malaysia

<i>No.</i>	<i>ITEMS</i>	<i>KEDAH/PERLIS</i>	<i>PENANG</i>	<i>PERAK / SELANGOR</i>
1.	Description of the fishery			
	€ Area	Muddy area from Kuala Perlis to Yan From border with Penang to Thai border	Penang State waters	From Sabak Bernam (north Selangor) – north Perak waters For fish purse seines (Zone C, C2) – >12 nautical miles, north to Penang and Perak waters
	€ Species	Kembong (<i>Rastrelliger</i>), sardine (<i>Sardinella</i>), tuna	Small pelagics - Kembong (<i>Rastrelliger</i>), pomfrets (<i>Pampus</i> , <i>Formio</i>), threadfins (<i>Eleutheronema</i> , <i>Polydactylus</i>)	Pelagic fish like kembung (<i>Rastrelliger</i>), selar (<i>Atule</i> , <i>Selar</i>), Spanish mackerel (<i>Scomberomorus</i>) etc., not including anchovies
	€ Fishing methods	Coconut leaf luring purse seine Night fish purse seine Trawl Drift net	Fish purse seine. Trawl Drift net	Fish purse seine with spotlights Trawl (> 25 GRT for fishing kembong) Drift net
	€ Socio-economic information	Monthly income: Driftnetter–RM750 Trawler (owner) RM4,800 (worker) RM1,200 Purse seiner (owner)–RM10,000 (worker)-RM500.	Majority are inshore fishermen Many part-time fishermen on the island, many full-time fishermen on the mainland Monthly family income >RM600 Fishermen are old	LKIM Universiti Putra Malaysia Fisheries Management Information Unit (FMIS) of DOF: Analysis on production, analysis on income by fishing gear
2.	Jurisdiction			
	€ Governments and their agencies with roles in the fishery	Dept. of Fisheries (DOF) Fisheries Development Authority (LKIM) Marine Police Fishermen’s Association. Royal Malaysian Navy (TLDM) Customs	DOF LKIM Marine Dept., Marine Police & Navy Local Councils Financial institutions	Ministry of Agriculture, DOF. LKIM State Governments Bank Pertanian (Agriculture Bank) Non-Government Organisations (NGOs)
	€ Formal or informal agreements between governments on fishery management	No formal agreements		

<i>No.</i>	<i>ITEMS</i>	<i>KEDAH/PERLIS</i>	<i>PENANG</i>	<i>PERAK / SELANGOR</i>
	€ Roles of all responsible agencies	DOF: Management, Monitoring & control of fisheries resources DOF, Marine Police & TLDM: Enforcement of Fisheries Act LKIM: Advisory, marketing & community development of fishermen	DOF: Management & conservation of resources Fisheries extension & training Research LKIM: Socio-economic development Marketing infrastructure Marine Dept., Marine Police & Navy: enforcement Local Councils Financial institutions	Ministry of Agriculture, DOF: Management and development of Fisheries LKIM: Fishermen's Associations, Fishermen's Cooperatives, Socio-economics and marketing. State government: Planning for development. Bank Pertanian: Credit facilities
3.	Objectives of fisheries management			
	€ Biological	Ensure sustainability of fisheries resources	Ensure sustainability Reduce catch of immature fish	Provide basic scientific information for the formulation of fisheries management plans
	€ Social		Improve living standard. Reduce conflicts among fishermen	Socio-economic: Manage fisheries sustainably and to improve the socio-economics of fishermen
	€ Economic	Fishermen and families get satisfactory income	Reduce bycatch Increase income	
4.	Operational management			
	€ Access arrangements including licensing and non-licensed access	All fishing vessels & gear should be licensed except handlines with 2 hooks and cast net	Licensing of vessel and gear. Registration of fishermen. Impose owner-operator condition	All fishermen to have fishing gear and vessel licences Quota to be established basing on available resources Abide licensing regulations
	€ Input/output controls	Fisheries Regulations. Conditions attached to licence Fishing zones Prohibited fishing areas Control of vessel tonnage. Control of hp. Marine parks / Marine reserves. No output controls	Cod-end mesh size control. Limit on hp. Replacement of boat hull and engine Change of home port (area and State) Transfer of ownership	
	€ Pricing policy/licence costs	No price control. Fishing gear and fishing vessel licensed under Fisheries Act with fixed licence fees	Payment for licence Bank guarantee	

5.	Research and stock assessment	KEDAH/PERLIS	PENANG	PERAK / SELANGOR
	€ Current research and stock assessment programme	Existing Research and stock assessment programme for pelagic fish stocks	Biology of selected species Current pelagic fish resource survey	Current stock assessment programme: Monitoring of pelagic fish resources at Pulau Pangkor; Biology of pelagic fish, Acoustic survey in the EEZ of the west coast of Peninsular Malaysia
	€ On-going data collection	Existing on-going data collection	Landing statistics by type (gear, vessel size and area).	FMIS of DOF: National data collection for Annual Fisheries Statistics Fisheries Research Institute (FRI): measurement of fish, determination of species composition and fishing season
	€ Socio-economic studies	Socio-economic studies conducted in general	SENDI by LKIM, 1995	LKIM: Once in 10 years. FMIS of DOF: Fishing effort data
	€ Environmental issues	Pollution. Clearing of coastal areas Destruction of mangroves Sand-mining	None (minimal)	FRI, Aquatic Ecology Branch: monitoring of water quality on an <i>ad hoc</i> basis Dept. of Environment (DOE): Monitoring of selected river estuaries up to Pulau Pangkor, Perak
	€ Implications for management	Need for continuous monitoring Research results to be used as basis for management	Direct	Management plan guided by information received
6.	Monitoring, control and surveillance			
	€ Regulations/rules to be enforced	Fisheries Act 1985 11 Fisheries Regulations	Fisheries Act LKIM Act Merchant Shipping Ordinance (MSO) Pulau Pinang Town Act Environmental Quality Act	Fisheries Act and Rules & Regulations made thereunder Monitoring and control by DOF with cooperation of Marine Police, Navy and Air Force Enforcement by DOF with the cooperation of Marine Police and Navy
	€ Description of existing capacity	Has capacity to collect data, formulate regulations and enforcement. At Kuala Kedah: 3 PL patrol boats At Pulau Langkawi: 1 PL, 1 PA, 1 PX class patrol boats Personnel: 15 at Kuala Kedah, 30 at Pulau Langkawi	Very good	DOF acts when information and complaints on infringement received from fishermen. Limited patrols (constrained by funds, area <i>etc.</i>)

	€ On-going data collection	Continuous data collection	NIDBMS (National Integrated Database Management System), VTMS (Vessel Tracking & Monitoring System) DOF Wide Area Network	NIDBMS: National database for management and licensing Fishing grounds Log book system for Zone C2 boats
7.	Consultation with stakeholders and extension	KEDAH/PERLIS	PENANG	PERAK/SELANGOR
	€ Stakeholders	Consultation to be held monthly Regular exchange of information Constant communication between DOF and Fishermen's Associations Ensure safety of fishermen at sea Fishermen to act as the eyes and ears of DOF Important that fishermen understand policies implemented	Fishermen's contacts – DOF KuKenal – LKIM 2L - DOF	DOF State Governments Fishermen operating trawls, purse seines and drift nets
	€ Consultation process	Consultation whenever the Fisheries Act 1985 is amended Will improve cooperation with fishermen for formulation of policies	Dialogues Workshops/ Seminars Meetings	Fisheries extension agents of DOF through Fishermen's Contacts Dialogue and information dissemination sessions Courses and workshops organised by DOF Invitation by fishermen
	€ Provision of information	Extension agents of DOF have "fishermen's contacts" to relay problems to the DOF	Unsatisfactory	Local media Berita Perikanan and Fisheries Information papers Exhibitions Study tours

8.	Post-harvest sector	KEDAH/PERLIS	PENANG	PERAK / SELANGOR
	€ Description of post-harvest sector	Handling onboard boat: RSW and ice At Kuala Kedah & Kuala Perlis, only ice is used onboard fish purse seiners At Kuala Perlis, RSW and ice are used onboard trawlers Shortage of fish storage capacity especially at Kuala Kedah At Kuala Perlis, there are 7 companies freezing fish (180 tonnes/day) Need to improve quality of fish Need to increase 'value-added' products	Cottage industry Dried fish, boiled fish	Value-added products
	€ Management implications	No management implications	Glut of fish	
9.	Review of the plan			
	€ How and when will the plan be reviewed?	Biological and socio-economic information should be updated from time to time	Through consultation every 5 years	Need to review current policy
	€ Who has the responsibility for the plan and its review?	Review of management to involve stakeholders Proposals for amendments to plan to be presented to the management (Planning Committee of DOF) for approval DOF and stakeholders are responsible for reviewing management plan	All stakeholders	

Table 2. Issues determined by the workshop and results of the vote

No.	SUBJECT AREA	ISSUES	SCORE	%	RANK
1	Jurisdiction	€ Lack of ICZM	44.5	14.4	1
		€ Safety of fishermen (shipping, tourist activities)	3.0	1.0	18a)
2	Habitat	€ Artificial reefs (hazards)	10.0	3.2	11
		€ Mangrove clearing	8.5	2.7	12
		€ Pollution (oil, factory discharges, waste)	7.0	2.3	14
		€ Land reclamation	5.5	1.8	15
		€ Erosion/sedimentation	2.0	0.6	19
3	Research and stock assessment	€ Declining fisheries resources	41.0	13.2	2
		€ Insufficient scientific information	27.0	8.7	3
4	Operational management	€ Review of protected area (P. Sembilan, P. Kendi, P. Rimau)	16.0	5.2	6
		€ Catching small fish	15.0	4.8	7
		€ Gillnet fishing (increased HP)	3.0	1.0	18b)
5	Consultation with stakeholders & extension	€ Lack of awareness of fisheries management	24.0	7.7	5
		€ Insufficient of consultation	11.5	3.7	10
6	Monitoring, control and surveillance	€ Foreign vessel encroachment	14.0	4.5	8a)
		€ Piracy	13.0	4.2	9
		€ Encroachment of fishing vessels (intra & inter states)	8.0	2.6	13a)
		€ Unlicensed fishing	8.0	2.6	13b)
		€ Shortage of funds for enforcement	4.0	1.3	17
7	Post-harvest sector	€ Insufficient post-harvest/handling technology	14.0	4.5	8b)
		€ Insufficient infrastructure facilities (landing, transport)	5.0	1.6	16
8	Review of management plan	€ Responsibility of management plan	26.0	8.4	4
T O T A L			310.0	100.0	

Table 3. Proposed actions for the main ten prioritized issues of the draft management plan for the small pelagic fisheries of the west coast of peninsular Malaysia

RANK	ISSUES	ACTIONS
1	LACK OF ICZM	<ul style="list-style-type: none"> ∓ Increase awareness among stakeholders on ICZM ∓ Active participation of DoF and stakeholders especially fisheries sector ∓ Establish committee for ICZM ∓ Political will
2	DECLINING FISHERIES RESOURCES	<ul style="list-style-type: none"> ∓ Research towards the establishment of closed season and closed areas
3	INSUFFICIENT SCIENTIFIC INFORMATION	<ul style="list-style-type: none"> ∓ Improve extension of research results ∓ Intensify research
4	RESPONSIBILITY OF MANAGEMENT PLAN	<ul style="list-style-type: none"> ∓ Formation of task force consisting of stakeholders & coordinated by DoF
5	LACK OF AWARENESS OF FISHERIES MANAGEMENT	<ul style="list-style-type: none"> ∓ Increase extension on Fisheries Management ∓ Promotion of guideline in CCRF
6	REVIEW OF PROTECTED AREAS (P. SEMBILAN, P. KENDI & P. RIMAU)	<ul style="list-style-type: none"> ∓ Further review, consultation
7	CATCHING OF SMALL FISH	<ul style="list-style-type: none"> ∓ Increase awareness.
8	FOREIGN VESSEL ENCROACHMENT	<ul style="list-style-type: none"> ∓ Increase enforcement resources
9	INSUFFICIENT POST-HARVEST/HANDLING TECHNOLOGY	<ul style="list-style-type: none"> ∓ More extension and R & D ∓ Financing
10	PIRACY	<ul style="list-style-type: none"> ∓ Increase enforcement ∓ Improve communication among fishermen

**WELCOME ADDRESS
BY DATO' MOHD. MAZLAN B. JUSOH
DIRECTOR GENERAL OF FISHERIES**

Bimillahir Rahman Nirrahim,
Assalamualaikum Warahmatullahi Wabarakatuh and Good Morning

First of all I should like to extend my thanks to the Organizing Committee of the Workshop, especially to the Chairman, Mr Ismail Awang Kecik, the Director of the Fisheries Research Institute, and also to our guests from FAO, Dr Purwito Martosubroto and Dr Barry Pollock.

Ladies and gentlemen,

Let us be thankful to God for his mercy allowing us to be here in this gathering with a good spirit. On this occasion I would like to say "welcome to Penang" to our friends from FAO. My gratitude also goes to all participants attending this workshop including our friends from the industry, NGOs, scientists of the research institutions and others. Your presence reflects your commitment in taking part in a common responsibility for sustainable exploitation of the resources.

Ladies and gentlemen,

As all of you are aware, we have suffered a difficult situation in the current economic crisis since 1997. A large number of economic sectors have been affected, the stock market has declined and so has the value of the local currency against US dollar. Malaysia, being a net importer of food, has suffered from price increases of imported food. On the other hand, the current economic crisis has brought awareness among high ranking officials on how important the agriculture sector, including fisheries, is to the economy of the country. Due to lack of appreciation of the sector in past years, the Government had to spend a large amount of dollars on food imports to meet local demand. The import burden has been aggravated due to the devalued ringgit against the dollar. The value of imports has increased from RM3.5 billion in 1985 to RM7.7 billion in 1995 and it continued to rise and reached RM10.0 billion in 1997. On this basis, the Government has recently paid more attention to the agriculture sector, including fisheries, in an effort to boost domestic production and reduce imports.

Ladies and gentlemen,

The seriousness of the Government with respect to the development of the agriculture sector is reflected in the change of the basic principle of development in response to the current needs. The new basic principle of development, known as National Agricultural Policy 3 (NAP3), has been discussed and agreed by the Cabinet at the end of 1998 to replace NAP1 and NAP2. NAP3 provides a basic principle of development for the agriculture and the forestry sector until 2010. The main message from NAP3 is to maximise revenue through

sustainable exploitation of agriculture resources. NAP3 also emphasises the new objectives for increased productivity and competitiveness, strengthening linkage between the agriculture and other sectors, exploring new things for added value and finally exploiting the resources in a sustainable manner. Various foundations and strategies have been developed in the agriculture sector to increase its role in supporting the country's economy. The job is not as easy as we thought. Land and labour are presently limited; therefore, the strategy for the extension of labour intensive agriculture sector is no longer appropriate. To increase the contribution of the agriculture sector it is important to direct the strategy to increasing productivity and producing items that have competitive value for local and export markets.

Ladies and gentlemen,

Under NAP3, the Government recognises the important role played by the fisheries sector in providing a contribution to Government revenue. The Government has a strong reliance in the fisheries sector based on its potentials. Malaysia, although a small country, has a potential of aquaculture production as high as 25% of that produced by China. Resources for the deep-sea fisheries in Sarawak and Sabah waters are still under exploited. Thus, there is still a good potential for the development of deep-sea fisheries. Coastal fisheries play an important role and are still in good shape, as we have developed a good system supported by everyone. Our concept of responsible fisheries development is to ensure sustainable exploitation on the part of present and future generations. For the fisheries sector, the Government has aimed at a target for annual production of 1.93 million tonnes starting in 2010. To reach this target, the marine fisheries sector should be managed in a sustainable manner to produce 1.33 million tonnes a year. The Government has also put emphasis on the processing sector that has a good potential for generating added value to products.

Ladies and gentlemen,

Malaysia produced 1,352,400 tonnes with a value of RM4.5 billion in 1998 of which 1,087,600 tonnes come from coastal fisheries, 131,700 tonnes from deep-sea fisheries and 133,100 tonnes from aquaculture. Marine capture fisheries are still the most important subsector contribution at 90% of the total fisheries production. The subsector provides employment for 79,000 people out of the 99,000 work force in fisheries sector.

Ladies and gentlemen,

As a tropical country Malaysia exploits multispecies resources and because the gears used in the fisheries are also of various kinds, the fisheries are commonly known as multi-species and multi-gear fisheries. The resources comprise of various groups of fishes (demersal and pelagic fish), crustacean and different kinds of molluscs. The present FAO-assisted workshop to address the small pelagic fishery in the west coast of peninsular Malaysia is timely.

The contribution of the small pelagic fishery to total landings is significant. In 1998 more than 350,000 tonnes of small pelagic catch or about 30% of total catch were landed in Malaysia and more than 34% of the catch landed in the west coast of Peninsular Malaysia.

One of the most important groups of this species is the one belonging to *Rastrelliger* spp., commonly known as ikan kembung.

Ladies and gentlemen,

The holding of the present Workshop is also important because small pelagic resources are not only shared with our neighbours but also prone to over exploitation while our knowledge of the resources is still limited. Therefore, I hope more research is to be conducted to shed light on the resources in an effort to manage these important resources.

We learned from various global events on the collapse of fisheries. The outstanding example is the collapse of the Peru anchovy, which has a strong link with over-exploitation and the El Nino event. We do not know whether such event could happen to our fisheries. We should bring assurance that our small pelagic fisheries would be kept under the principle of sustainable development. This is certainly not an easy job, but if we work together I am sure we can achieve the goal faster.

I hope the workshop will generate new ideas on how best to manage the small pelagic fisheries and I also hope that such an undertaking should not stop here but rather be continued in the near future.

Finally, once again I would like to record my thanks to FAO, especially to Dr Purwito and Dr Pollock for the assistance rendered to the Workshop. My gratitude also goes to the Government of Norway, for the financial support and lastly I extend my thanks to all participants of the workshop. I wish you all the best in your discussions and deliberations. With Bismillahir Rahman Nirrahim, I declare the workshop open.

Wassalam mualaikum warahmatullahi wabarakatuh.

Dato' Mohd Mazlan Jusoh
Director General of Fisheries

List of participants

Workshop on the kembang fisheries (*Rastrelliger spp.*) and their management on the west coast of peninsular Malaysia

4-6 Mei 1999, Hotel Sheraton, Pulau Pinang, Malaysia

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**FAO/FISHCODE/DoF Profile Workshop on the Kembong (*Rastrelliger spp*)
Fishery on the West Coast of Peninsular Malaysia and its Management**

4-6 May 1999, Sheraton Hotel, Penang, Malaysia

WORKSHOP PROGRAMME¹

4th May 1999 (Tuesday)

OPENING SESSION

- 0800-0845 Arrival of guests
Registration of participants
- 0900-0930 Welcome Speech by Dr Purwito Martosubroto, FAO Technical Project
Coordinator
- 0930-1000 Opening Address by The Hon. Dato' Mohd. Mazlan bin Jusoh,
Director General of Fisheries Malaysia
- 1000-1030 Tea Break

MORNING SESSION -

Chairperson: Mr Ismail bin Awang Kechik
Rapporteur: Ms Hajjah Mahyam Mohd. Isa

- 1030-1130 Introduction of Project by the FAO Technical Project Coordinator,
Dr Purwito Martosubroto
- 1130-1200 Paper 1 (Status of the Kembong Fishery in the West Coast of Peninsular
Malaysia by Ms. Chee Phaik Ean, Fisheries Research Institute)
- 1200-1230 Discussion on Paper 1
- 1245-1400 Lunch

AFTERNOON SESSION - Chairperson: Dr Mansor bin Mat Isa

Rapporteur: Ms Tan Geik Hong

- 1400-1430 Paper 2 (Management of the Kembong Fishery in the West Coast of
Peninsular Malaysia by Mr Raja M. Noordin, DoF, Kuala Lumpur)
- 1430-1500 Discussion on Paper 2
- 1500-1530 Paper 3 (Socio-economic aspects of the Kembong Fishery in the West
Coast of Peninsular Malaysia by Dr Kamarulzaman Hj. Salim, DoF,
Kuala Lumpur)
- 1530-1600 Tea Break
- 1600-1630 Discussion on Paper 3
- 2000-2200 Welcome Dinner hosted by the Director General of Fisheries Malaysia

¹The Workshop will be conducted in Bahasa Melayu and English will be used whenever necessary

5th May 1999 (Wednesday)

MORNING SESSION - Chairperson: Pn. Hajjah Rabihah bte. Nik Mahmood
Rapporteur: Ms Lim Chai Fong

0900-1000 Panel Presentation of Fishers' Perspectives and Experiences in the
Kembong Fishing Industry by Representatives of the Sg. Besar, Pulau
Pangkor, Kuala Perlis and Kuala Kedah Fishermen's Associations,
Penang Inshore Fishers Associations and Fish Processing Association.

1000-1030 Discussion on the panel presentation

1030-1100 Tea Break

1100-1145 Paper 4 (Development of a Fisheries Management Plan by FAO
Consultant, Dr Barry Pollock)

1145-1230 Discussion on Paper 4

1245-1400 Lunch

AFTERNOON SESSION - Chairperson: Dr Purwito Martosubroto
Rapporteur: Ms Chee Phaik Ean

1400-1530 Discussion on Potential Activities to Strengthen the Management Plan

1530-1600 Tea Break

1600-1700 Discussion on Potential Activities to Strengthen the Management Plan
(continuation)

6th May 1999 (Thursday)

MORNING SESSION - Chairperson: Dr Purwito Martosubroto
Rapporteur: Ms Chee Phaik Ean

0730-1000 Visit to Fisheries Research Institute, Batu Maung

1000-1030 Tea Break at Hotel

1030-1200 Ranking of potential activities

CLOSING SESSION

1200-1230 Closure by Research Director, Fisheries Research Institute

1230-1400 Lunch

Small Pelagic Fish Fishery, West Coast of Peninsular Malaysia

**Workshop Notes – by Barry Pollock
7 May 1999**

The second phase of this workshop involved group activities. The workshop divided into three State-based groups to demonstrate how fishery management plans can be developed in an inclusive process involving all stakeholders. The outcomes of this process were a draft fishery management plan, covering all relevant aspects; a list of all problem issues presently facing the fishery; and an experience by all involved of “hands-on” fishery management planning in a working group of stakeholders. I believe that this procedure was one of the highlights of the workshop. All participants became actively involved and produced the outcomes expected. This would be a powerful experience about how fishery management planning could occur in a collective and positive framework. The involvement of fishermen from the various areas of the fishery was particularly important.

Prior to the commencement of the three working groups, the concepts of a fishery management plan were given, together with the advantages of such a plan. An overview of what the workshop expected to achieve in this phase was presented – see Table A.

Table A A list of expected outcomes and the process to be followed in the Workshop.

**OUTCOMES
Wednesday and Thursday**

- 1. Fishery Management Plan(s)*
- 2. Issues/Problems identified and ranked*
- 3. Actions proposed to improve fishery management*

PROCESS

Wednesday

- 1. Background and introduction (Dr Pollock)*
- 2. State groups draft Plan and list issues*
- 3. State groups present findings to whole workshop*

Thursday

- 4. Issues listed and ranked*
- 5. Actions suggested to improve fishery management*

A listing of the common questions about fishery management planning were raised and answered – see Table B.

Table B Some common questions about fishery management planning

QUESTIONS

Why prepare a Fisheries Management Plan?

**Integrates all aspects
Demonstrates organisation
Accountability and transparency**

Who should be involved in preparing the plan?

Stakeholder inclusion produces commitment and ownership

Should we start our plan now or later?

**Do we have enough information?
Is it too difficult?**

Is there a PERFECT fisheries management plan?

NO – the continuous improvement principle

Outstanding issues identified – priorities set – actions formulated – responsibilities assigned

What are the possible contents of a fishery management plan?

The contents of a Fishery Management Plan were also presented and discussed – see Table C.

Table C Fishery Management Plan - possible contents

TITLE: *Management Plan for Small Pelagic Fisheries off the West Coast of Peninsular Malaysia*

1. Description of the fishery
 - ∅ Area
 - ∅ Species
 - ∅ Fishing methods
 - ∅ Socio-economic information
2. Jurisdiction
 - ∅ Governments and their agencies with roles in the fishery
 - ∅ Formal or informal agreements between governments on fishery management
 - ∅ Roles of all responsible agencies
3. Objectives of fisheries management
 - ∅ Biological
 - ∅ Social
 - ∅ Economic
4. Operational management
 - ∅ Access arrangements including licensing and non-licensed access
 - ∅ Input/output controls
 - ∅ Pricing policy/licence costs
5. Research and stock assessment
 - ∅ Current research and stock assessment program
 - ∅ On-going data collection
 - ∅ Socio-economic studies
 - ∅ Environmental issues
 - ∅ Implications for management
6. Monitoring, control and surveillance
 - ∅ Regulations/rules to be enforced
 - ∅ Description of existing capacity
 - ∅ On-going data collection
7. Consultation with stakeholders and extension
 - ∅ Stakeholders
 - ∅ Consultation processes
 - ∅ Provision of information
8. Post-harvest sector
 - ∅ Description of post-harvest sector
 - ∅ Management implications
9. Review of the Plan
 - ∅ How and when will the plan be reviewed
 - ∅ Who has responsibility for the plan and its review

The initial tasks of the three working groups were also explained – see Table D.

Table D State Working Group guide

Information for the State Working Groups on the Management Plan and on Associated Issues

Each of the (4) State working groups are requested to meet separately and complete the following tasks:

Task 1.

- ∓ Prepare details of the **current** situation under all headings of the fishery management plan. This should be done briefly, using headlines or bullet points on OHP transparencies.
- ∓ Prepare separately on paper a list of any **issues** such as problems, deficiencies or unresolved matters presently associated with the management plan.

Task 2.

- ∓ Report back to the whole workshop on the results of the fishery management plan only. Whole workshop discusses these results and a consensus is obtained on the contents of the fishery management plan.
- ∓ The list of issues is provided to Dr Purwito Martosubroto for collation and further discussion on Thursday.

The application of the “Principle of Continuous Improvement” in fishery management planning was emphasised. This principle recognises that fishery management plans can be compiled immediately, based on current knowledge and the existing situation. Such plans are not perfect. At the same time all issues (problems) affecting the fishery management plan need to be identified and actions formulated for their resolution. It also recognises that all issues cannot be resolved in the short term and hence priorities need to be set and agreed to by all stakeholders.

All issues identified by the three working groups were recorded, prioritised by a total group process and action agreed as to how the priority issues might be addressed.

Another important outcome of the working group procedure was to demonstrate in a practical way that PROCESS (that is the involvement of stakeholders in an inclusive way to develop a fishery management plan and agree on issues) is equally, if not more important than the actual OUTPUT (that is the fishery management plan and priority issues).

**REPORT OF A WORKSHOP ON THE FISHERY AND THE MANAGEMENT OF
SHORT MACKEREL (*Rastrelliger spp.*) ON THE WEST COAST OF PENINSULAR
MALAYSIA**

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