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# LAW OF THE SEA

## Problems of Conflict and Management of Fisheries in Southeast Asia

Francis T. Christy, Jr., Editor



INTERNATIONAL CENTER FOR LIVING AQUATIC RESOURCES MANAGEMENT



INSTITUTE OF SOUTHEAST ASIAN STUDIES

# **LAW OF THE SEA**

## **Problems of Conflict and Management of Fisheries in Southeast Asia**

**Proceedings of the ICLARM/ISEAS Workshop on the Law  
of the Sea, held in Manila, Philippines  
on November 26-29, 1978**

**Edited by**

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# Opening Remarks

## Why a Law of the Sea Workshop?

JOHN C. MARR

*Director General*

*International Center for Living Aquatic  
Resources Management*

When the oceans beyond three-mile territorial seas were "high-seas," the fishery resources of the high seas were common property resources. In the absence of any legal basis for management measures, the high seas fisheries offered unlimited access or unlimited entry. They were open to all. The history of such fisheries all over the world has made it abundantly, even redundantly, clear that they are soon overcapitalized and overfished. The consequences of unlimited entry are economic and biological disaster.

In recent years law of the sea matters have been dynamically evolving, both within the Third United Nations Conference on the Law of the Sea and without. Regardless of the outcome of the UN Conference, it is clear that most, if not all, coastal states will claim a 200-mile zone of extended economic jurisdiction. One very exciting aspect of the extended economic zones with respect to fisheries is that with jurisdiction comes the possibility of management, of avoiding the previously inevitable economic and biological disasters. This prospect is particularly exciting in the South China Sea where the extended zones will meet in the center; there will be no more "high seas" in the South China Sea.

Because of such important changes in the law of the sea, in 1977 ICLARM began a study of the law of the sea developments and their probable effects on fishery development and management, with particular reference to Southeast Asia and the Southwest Pacific. This study was undertaken by Dr. Francis T. Christy, Jr., of Re-

sources for the Future, who joined ICLARM for 9 mo, during which period he travelled extensively within these two regions, contacted individuals concerned with these problems, and obtained information on the specific problems facing each country.

One result of Dr. Christy's odyssey was a comprehensive report which will be published by ICLARM. Another result was the decision to arrange this workshop itself. Early in the conceptual planning of the workshop, Dr. Christy and I had the good fortune to meet with Prof. Kernal Sandhu, Director of the Institute of Southeast Asian Studies (ISEAS). Arising from that meeting were more specific plans for the workshop, including joint sponsorship by ISEAS and ICLARM.

Two of the major problems in connection with the extended economic zone are allocation and implementation. Some fishes are migratory and move freely from the waters of one country to the waters of another without respect to political boundaries. How should such resources be allocated among the countries concerned? The best of fishery management plans is of no value if it cannot be effectively implemented. Two-hundred-mile zones can encompass vast areas and impose special problems of ensuring integrity in the use of the resources. These two general problems—allocation and implementation—were chosen for special consideration by the workshop. Background papers were prepared by five experts from the region and presented by them at the workshop. These are contained in the present report

of the workshop proceedings.

The participants in the workshop were drawn from the region, largely from foreign ministries, departments of fisheries, universities, and the private sector. However, and I would emphasize this, all were invited in their personal capacities. After the Opening Session, the workshop was closed. Thus, each participant was free to speak in his or her personal capacity without the constraints of formal institutional positions.

There were two major objectives of the workshop, first, to bring individuals together to stimulate interest in the subject matter of the workshop and, especially, to facilitate communication between these individuals and, through them, between and within governments, and among governments, the academic community, and the private sector. We hope that lines of communication strengthened or established at the workshop will be kept open in the future. Second, the workshop sought to identify specific problems, the alternatives open in the solution of such problems, and the consequences of following the various alternatives. While attainment of this objective was useful in the context of the workshop, we hope that the publication and distribution of the report of the workshop proceedings in Southeast Asia and elsewhere will make it of much wider use.

It should be made clear that the workshop was not an exercise to design an ISEAS/ICLARM program relating

to law of the sea matters. While the participants pointed out some ways in which ISEAS/ICLARM could continue to perform useful functions in this general area, program design was not an objective of the workshop.

A final word about the workshop. ISEAS and ICLARM only provided a forum in which the participants could meet informally and discuss problems of mutual concern. ISEAS and ICLARM were in no sense proposing solutions to such problems. Nor, indeed, could they have done so. Clearly, solutions to law of the sea problems are a matter of national concern and must be sought within and by each individual country.

As indicated, I believe that the changing law of the sea offers both challenges and opportunities in the development and management of marine fishery resources and marine fisheries, which account for 86% of the total world fishery production. These changes will also affect the quantity and distribution of fishery production. Thus, considerable attention will continue to be devoted to these matters by ICLARM. Future workshops may deal with regional problems or with subject matter problems. And, judging from past experience, requests for specific undertakings will continue to arise from individual governments and from regional bodies. Clearly, there are useful functions to be performed in these areas by international, nongovernmental organizations such as ICLARM.

## Keynote Address

JOSE D. INGLES

*Acting Foreign Minister  
Republic of the Philippines*

At the outset, allow me to congratulate the Institute of Southeast Asian Studies (ISEAS) and the International Center for Living Aquatic Resources Management (ICLARM) and their officials for organizing and sponsoring the workshop on "The Law of the Sea: Problems of Conflict and Management of Fisheries in Southeast Asia."

I share the view of the organizers that the workshop should focus on two of the many issues which the topic entails, namely: the necessity to reach agreements on the sharing and management of fishery stocks that swim through the waters of neighboring coastal states; and the problems of implementing and enforcing regulations and agreements which may be evolved by the states in the region.

There are a number of factors which may give rise to problems of conflict and management of fisheries and fishing activities in Southeast Asia. The most important problem appears to be biological, that is, the fact that pelagic fishes, which move from one area to another, abound in this part of the world.

The Southwest Pacific which merges into Southeast Asia, appears to be one of the few places in the world where tunas are not yet fully exploited. Since tunas provide the most important canned fish consumed in developed countries and at the same time constitute one of the most important exports of many developing countries of the region, their conservation and wise utilization can not be overemphasized.

Because migratory fish resources form part of the

patrimony of the States of Southeast Asia, any action by one state, for example, to deplete the stock, must of necessity affect the other states.

Even within the confines of each coastal state there are potential problems such as overfishing, the sophistication of fishing gear and equipment, the increase in the number of fishermen and fishing vessels, as well as conflicts between inshore and trawl fishermen, between offshore and deep sea fishermen, and between local and foreign fishermen.

Illegal fishing through the use of dynamite, poison, prohibited nets and constructions, and poaching by foreign fishermen pose problems of implementation of local laws and international agreements.

The widely-believed outcome of the fisheries question in the on-going Third UN Conference on the Law of the Sea—the establishment of a 200-mi economic zone providing coastal states with jurisdiction over its fish life—can be another source of conflict. The establishment of such zone will affect to a considerable degree the regime of exploitation and management of living resources of the sea. Even though the 200-mi zone would cover only some 35% of the oceans, they would include about 90% of the resources presently under commercial exploitation.

It has been pointed out that the drawing of boundaries in the South China Sea would give rise to controversy because of conflicting territorial claims to the Paracel and Spratly island groups. Possible overlapping economic zones between adjoining or opposite coastal



states, and questions of traditional as well as treaty fishing rights, will also be sources of conflict. Add to this the fact that there are semienclosed seas in Southeast Asia, for which special solutions to the problem of exploitation and conservation of living resources have to be found.

A fourth possible source of friction among member states of the Southeast Asian region insofar as management of fish resources is concerned will be the attitude which these states will take towards neighboring or distant fishing nations. Faced with the constriction of the high seas fishing areas and the drastic reduction of their catch, the leading deep sea fishing states have to make arrangements with the states which have assumed, or will assume, jurisdiction over their customary fishing grounds. The interest of those nations are now focused on Southeast Asia among other regions, trying either to sell their surplus vessels or to negotiate joint venture or bilateral arrangements with several countries in the region.

If one state in the region adopts more liberal regulations than other states, there might be little incentive for the other states to maintain their controls: there could be a mutually destructive competitive race to capture what could only be considered as intermediate benefits.

On the other hand a state in the region which might feel hemmed in by the exclusive economic zones may seek accommodation either with other states in the region or even outside the region.

Paradoxically, the provisions of the ICNT of the current Third United Nations Conference on the Law of the Sea may also give rise to conflict of fisheries management in Southeast Asia. For example, one of the hard core issues in the on-going conference on the Law of the Sea is the right of access of land-locked and geographically disadvantaged states to the exclusive economic zones of coastal states.

Article 61 grants coastal states the right to determine the allowable catch of the living resources in its economic zone. Article 62 obligates the coastal states to promote the objective of optimum utilization of living resources in the exclusive economic zone.

The determination of allowable catch, the capacity of coastal states to harvest the allowable catch, the question of access to be granted to other states in the exclusive economic zone, and other matters of conservation and management will give rise to problems needing regional arrangements.

The role of regional arrangements in this matter has already been recognized in Article 63 of the ICNT which provides that "where the same stock or stocks of associated species occur within the exclusive economic zones

of two or more coastal states, these states shall seek either directly or through subregional or regional organizations to agree upon the measures necessary to coordinate and ensure the conservation and development of such stocks" and "where the same stock or stocks of associated species occur both within the exclusive economic zone and in an area beyond and adjacent to the zone, the coastal state and the states fishing for such stocks in the adjacent area shall seek either directly or through appropriate subregional or regional organizations to agree upon the measures necessary for the conservation of these stocks in the adjacent area."

There are other peripheral issues which might give rise to conflict. For example, unless the archipelagic principle is approved at the Law of the Sea Conference, two archipelagic states in the region—Indonesia and the Philippines—might find it difficult to adhere to the final Convention. Despite differing approaches to the problem, the two states agree that the right of passage does not confer any right to fish in archipelagic waters.

Technical assistance, advisory services and scholarships granted by government institutions and nongovernmental organizations will go a long way towards the conservation of marine life and modernization of the fishing industry in Southeast Asia.

Regional seminars and symposiums are also important instruments for the exchange of experience as well as the dissemination of knowledge and techniques to insure scientific and progressive development of the fishing industry and the harmonization of national policies in the region.

A regional agreement setting forth principles for the management of fisheries in the Southeast Asian region may merit consideration. The fundamental objective of any agreement which may be established, I believe, should be the creation of adequate jurisdictional bases for the efficient and effective management of the fishing stocks in the region. This workshop could recommend ways by which adequate jurisdictional bases for management could be developed. It could, for example, set into proper perspective what areas are suitable for regional standards and what matters are better left to the national management entities.

A necessary corollary to this regional agreement on management of fisheries would be a regional specialized agency which may be established independently or developed from an existing organization. This workshop could suggest guidelines on the establishment of the agency: its functions, authority, and other related matters.

It should not be overlooked that any regional agreement for fishing management, or the establishment of a regional agency for that matter, can only be achieved

through a spirit of accommodation and compromise because of differing national interests and policies.

Obviously, each country will have its own view of the political, economic, or social benefits which will be derived from the institution of a fishery regime in the region, depending more upon national priorities than upon international considerations.

Perhaps the ASEAN member countries could take the lead in the establishment of a fishery regime since it is the only cohesive group so far in the region. ASEAN has the advantage of an existing framework and announced objectives of cooperation among others in the economic development field.

To my mind, an effective management system is one that meets several criteria. Firstly, the system must make all parties capable of significantly influencing the system. States must feel that they are better off by maintaining the management system than by doing without it.

Secondly, the management system should be flexible enough to accommodate changing conditions.

Thirdly, the system must be simple. It must not be so complex that the difficulties in establishing and negotiating arrangements, in acquiring information and adopting and enforcing regulations, far outweigh the benefits that can be obtained from the system.

Fourthly, it may be advisable that whatever regional management agreement is established in the region, it should incorporate provisions for dispute avoidance and dispute settlement.

The recommendations and suggestions from this work-

shop should prove of immense value to the policy making sectors of the governments in Southeast Asia. It may be a worthy objective of this workshop to attempt to find some congruence between those recommendations and suggestions and the individual national goals of the states in the region.

In arriving at your conclusions and recommendations you will necessarily have to distinguish between the ideal and the possible, between the theoretical and the practical. It may even be said that sometimes the best is the enemy of the good. So that a more modest approach at regional management might provide common ground for a consensus.

There is an urgent need for coordinated national and international action which can not await the conclusion of a new International Convention on the Law of the Sea. Indeed, such need will continue even after the adoption of such treaty.

The race to exploit the living resources of the world oceans to supplement land based agriculture in order to satisfy the food requirements of a burgeoning world must be rationalized and kept within bounds.

Conservation measures are necessary to renew dwindling stocks and to save valuable species from extinction. Needless to say, management and control are central to conservation.

I wish this workshop all success. Your pioneering efforts are a valuable contribution not only to the improvement of the human condition but also to the survival of man in this planet.



## ISEAS and the Law of the Sea

KERNIAL SANDHU

*Director*

*Institute of Southeast Asian Studies*

As some of you already know, the Institute of Southeast Asian Studies is an autonomous, nonprofit research center for scholars and other specialists concerned with modern Southeast Asia, particularly the multifaceted problems of development and modernization, and political and social change. The Institute is supported by annual grants from Singapore and other governments, as well as donations from international and other private organizations and individuals. It has neither students nor teaching functions, being purely a research body. In addition to support staff, the Institute has 20 to 25 academicians and other specialists working at the Institute at any one time. About half of these are Southeast Asians, including Burmese, Indonesians, Malaysians, Filipinos, Singaporeans, Thais, and Vietnamese, and others come from as far afield as Europe, Japan, and North America. Though from different disciplinary and national backgrounds, all these scholars share a common concern, that is, an interest in the problems of Southeast Asia. They function as a community of scholars and interact among themselves and with the public at large through a series of seminars and professional meetings. Their research findings are published through various outlets of the Institute and distributed all over the world. In other words, the Institute is no proverbial ivory tower. Its involvement in regional and international affairs is both direct and contemporary. In this light it was quite natural that we should get involved in a workshop focused on the Law of the Sea and problems of conflict and manage-

ment of fisheries in the region. Then, too, quite apart from its intrinsic merits, the topic falls within the Institute's ongoing research interests in the general area of the Law of the Sea and Maritime Resources.

Likewise, that the Institute should join forces with ICLARM in cosponsoring this Workshop would also seem only logical as the Institute is already, and increasingly so, working closely with other organizations and institutions, both within and outside the region, in facilitating such activities. Moreover, in this particular case, there was a real meeting of minds between the Institute and ICLARM as the subject of this Workshop—The Law of the Sea: Problems of Conflict and Management of Fisheries in Southeast Asia—spans the research and professional interests of both ICLARM and the Institute. Hence, our joint presence here today.

With regard to the Workshop itself, what we at the Institute, like ICLARM, are hoping might emerge from it are not so much commitments by countries or binding recommendations to them, but rather more precise identification and definition of the problems involved, and thence examination and analysis of alternative means for dealing with them, bearing in mind the various budgetary, political, and manpower constraints involved. It is our hope that before the end of this Workshop we would have made progress towards such objectives. Needless to say, what we do achieve in fact will depend very much on all of us, individually and collectively.

Thank you.

# Workshop Summary Report

FRANCIS T. CHRISTY, JR.

## Introduction

The changes that are taking place in the law of the sea are of considerable importance to most coastal states, both in their effect on the distribution of the sea's wealth in fisheries and in the increase in coastal state's responsibility for the management of the resources. Very few, if any, nations are adequately prepared to deal with these effects, and all need to improve their competence to deal with emerging issues. It was with this objective in mind that ICLARM and ISEAS joined in convening the Workshop on the Law of the Sea for Southeast Asian states.

In seeking to reach this objective, the workshop focused in general on only two of the many issues being raised by the changes in the law of the sea. It did so partly because of the desirability of having a relatively narrow focus for discussion and, in part, because of the recognition of the fundamental importance of the two issues--allocation and implementation. The issue of allocation is that of determining "who gets what" from the sea's resources. It is an issue that must be resolved if nations are to avoid a mutually destructive race for the common resources of the oceans. Implementation is of equal importance in that the best management plans and the most beneficial arrangements with foreign countries will be of no value if they cannot satisfactorily be put into effect.

The workshop recognized that the problems of allocation could only be dealt with in terms of the process,

not the product. It was not appropriate for the workshop to determine who "should" get what from the sea's wealth in fisheries or where the boundaries between neighboring or opposite coastal states should be drawn. These are matters for negotiation among the concerned states. The workshop, therefore, adopted a basic working assumption that all states in the region would extend their jurisdictions over fishery resources and would reach agreements as to the location of their boundaries. This assumption was adopted to facilitate discussion and avoid the problems of boundary and territorial disputes.

It was recognized, however, that the extension of jurisdiction would have disparate effects and that some states would lose while others would gain. Means for the amelioration of these effects are currently being discussed at the 3rd United Nations Conference on the Law of the Sea and it seemed appropriate that this aspect be considered by the workshop as a separate problem.

Thus, the discussion of the three separate working groups focused on three separate issues: the allocation of living resources, the effects of extensions of jurisdiction, and the problems of enforcement. A "discussion guide" was prepared for the use of each of the working groups, so that each group would consider all of the issues. The guide is presented below:

## Discussion Guide

1. Problems in allocation of living resources
  - a. Are bilateral, multilateral, or regional agree-

- ments necessary for allocation, research, prevention of waste, and enforcement?
- b. What are the advantages and disadvantages of bilateral, multilateral, and regional arrangements?
- 2. What does extension of national jurisdiction entail for Southeast Asian countries? What are the advantages and disadvantages of such actions?
- 3. Problems of enforcement
  - a. How can enforcement capabilities of the states be strengthened?
  - b. What are the advantages and disadvantages of such measures?
  - c. What can be done to guarantee compliance by foreigners?
  - d. What are the advantages and disadvantages of such actions?

Throughout the discussions, the problems of information needs and research requirements were raised frequently. It is quite clear that knowledge of the fishery resources in the region is seriously deficient and that a considerable amount of research needs to be done. Even though research problems were not identified as an issue before the workshop, the discussion of the problems and their importance justifies separate treatment in the Summary. The Summary, therefore, is broken into four—one on information needs and the other three on the substantive issues raised in the “discussion guide.”

The Summary is drawn not only from the discussions, the background papers, and the working group reports, but also from the remarks presented by those participants who were asked to initiate the discussions. For each of the four subjects, there is a brief presentation of background information and a statement of the problems needing attention. This is followed by suggested approaches for resolution of some of the problems identified in the discussions. It should be emphasized that these are not recommendations for action, but suggestions as to the possible approaches that might be followed.

### Information Needs

It was generally agreed that there are major gaps in our knowledge about the fishery resources of the region. For the problems being considered by the workshop, information on three particular kinds of stocks needs to be greatly improved—(a) the scads and mackerels, (b) yellowfin and skipjack tunas, and (c) the demersal (bottom-living) stocks, particularly those occurring along present and likely future boundaries between the states. For each of these, more knowledge is needed about the status of the stocks, rates of growth, and the effects of fishing on the yields. In addition, for the first two kinds, information on migratory patterns is

crucial.

It is known that several stocks of scads, mackerels, and tunas migrate across state boundaries. Common stocks of scads and mackerels are believed to occur along the margins of the Gulf of Thailand and the eastern margins of the South China Sea. The tunas that are found in Philippine and Indonesian waters are thought to be from the same stocks that swim through the waters of Micronesia, Papua New Guinea, and farther east. However, there is very little precise knowledge about the migratory paths or about the location of the spawning areas of the stocks. In some cases, as noted in the background papers, overexploitation may already have occurred.

For such shared stocks that swim through the waters of two or more coastal states, agreements on allocation and management measures are absolutely necessary if the benefits to be derived from the resources are not to be dissipated. If any one state attempts to maximize the catch without regard to the interests of the other states, the stock will become depleted (fished beyond the point of maximum sustainable yield) and produce little or no benefits for any of the sharing states. The problems of allocation and management are further complicated if the stock is especially vulnerable or occurs only in its immature form when it is in the waters of one of the states. In this situation, excessive fishing by that state may seriously diminish the total yields that could be made available to all states.

It is clear that information on these various aspects is important for the decisions that must be made. But it is equally clear that there are considerable problems involved in obtaining the information. Some of those pointed out at the workshop are the costs of undertaking research on marine resources, the difficulties of getting accurate reports of quantity and location of catches, the low value placed by some administrators on the need for the information, and the lack of uniformity among the states in the collection of statistics.

There is little need to elaborate on the costs of marine research. The mobility of the species, the fact that they lie in an opaque medium, the difficulties of developing controlled environments, the necessity for using vessels, and many other factors mean that the costs of developing knowledge are considerably higher than the costs of research on land resources.

One of the best tools for management research is the records of quantities of catch, size of individuals, and location of catches and the amount of effort spent by the fishermen. But it was frequently noted throughout the workshop that such records are very difficult to obtain. Many of the catches are made by artisanal fishermen using small craft, fishing from small and

isolated villages, and landing a wide variety of species. In the Philippines, for example, it was pointed out that tunas, frequently immature fish, are taken largely by fishermen using vessels under 3 t and that their catches are not included in the commercial fishery records. It was also stated that in some countries a large but unknown amount of vessels are not licensed, so that the total amount of effort spent is not known.

An additional difficulty is the low value placed on the collection of the relevant data. It appears that in certain countries, those responsible for setting budgets for fisheries are often more concerned about development prospects than about management needs and that they therefore place a low priority on collection of such important data as catch per unit of effort.

Also, although efforts are being made to improve the situation, there is still a considerable lack of uniformity among the countries in the kinds of statistics collected. This creates particular difficulties for evaluating shared stocks of fish.

A somewhat separate but still important problem raised at the workshop relates to the fact that information has value and that the potential for misuse of information may inhibit its production. One of the issues being raised at the UN Conference on the Law of the Sea is whether coastal states should have the sole responsibility for determining the optimum yields of the stocks in their zones or whether this should be done jointly with neighboring concerned states or by an international organization of recognized competence. Some states fear that if the coastal state has the sole responsibility, it may tend to underestimate the optimum yield so as to reduce or eliminate any surpluses that might be made available to foreign fishermen. Other states, however, are concerned that foreigners or international organizations may not fully take account of the economic, social, and ecological factors that are important in determining optimum yields and that foreign participation in such research would be an infringement on the coastal state's sovereignty.

Not all of these problems in the production of information are readily resolvable, but some suggestions were made for steps that might help to alleviate some of the difficulties. It was suggested that cooperation on research on shared stocks among concerned states would be desirable. For example, the migratory patterns of scads, mackerels, and tunas can be determined by tagging of individual animals and recording the location of their recapture. Since tagging will take place in the zone of one state and capture might occur in the zone of another, cooperation is essential. As another example, it was pointed out that although marine research might have low priority in any one state, the aggregate interest of all states would justify joint research undertakings and that

the costs to the individual states could be reduced. Costs could be reduced by cooperation in the use of research vessels, training of research personnel, the development of research methodologies particularly suited to the region, and in many other ways. Although cooperative research efforts already exist in the region, it was thought that these could be supplemented and complemented by other approaches.

Although cooperative undertakings are desirable, it was recognized that the primary responsibility for the production of information lies with the individual states. In this regard, it was pointed out that decisions on management of fisheries and on arrangements with foreigners are being made, and must be made, in the absence of full information on the resources. Information will never be full and uncertainty will always exist. The importance of this fact is that research should relate directly to the decisions that have to be made. As noted in the workshop, one of the first and most important tasks is the clarification of the objectives to be sought from the use of fishery resources. Objectives are not always clearly stated by governments, and several different objectives may be in conflict with each other. Decision makers need to resolve the conflicts and then determine as precisely as possible the various elements of the decisions required to reach the objectives. On this basis, they can then determine the information that they need to make the decisions. This will permit a more efficient direction of research efforts and reduce the costs of research programs.

Improved collaboration among those responsible for agreements with foreign states, those responsible for fisheries management, and researchers is necessary to maximize the benefits that can be derived from the changes in the law of the sea. Indeed, it was the essence of the workshop to help stimulate such collaboration.

### Allocation of Shared Stocks

The fact that many valued stocks of fish freely swim across national boundaries calls for a high degree of cooperation among the concerned states in the distribution of benefits. Fundamentally, the achievement of effective cooperation depends upon whether the states perceive that the benefits of cooperation in allocation are greater than the losses they might experience by proceeding unilaterally. It is thus important to improve the perceptions of the individual states with regard to the nature of the cooperation required, the benefits to be derived, and the costs (including the apparent infringement on sovereign rights) that might be incurred. The workshop touched on several of these aspects.

Some of the participants pointed out that one of the

basic problems was the lack of appreciation by some of the decision makers of the need for reaching agreements on the allocation of fishery benefits. This is due in part to the lack of clear-cut information on the status of the stocks and their migratory patterns. The present or potential damages of unilateral approaches have not been sufficiently well demonstrated to those concerned to stimulate them to take action. In some cases, damages may not yet have occurred, but in others it may be that the proof is not sufficiently convincing or has not been brought to the attention of those responsible for the decisions. The lack of communication among different agencies within governments is an impediment to the initiation of negotiations on the allocation of benefits from shared stocks.

Another problem raised at the workshop is that of resolving the numerous technical difficulties in the development of allocation systems. Various systems have been suggested. One would be the distribution of national quotas, i.e., shares of the total allowable catch that can be taken within any zone. Under this arrangement the fishermen of any one state would be able to fish anywhere in the region until they reach their state's quota. Another system would be that of zonal quotas in which the share acquired by a particular state is taken only within the zone of that state. Quotas could be made transferable so that a state could sell or lease rights to take its share or a portion of its share. This would approximate a system in which the benefits from the resources, rather than the yield from the resources, are distributed among the concerned states. There are various advantages and disadvantages to these different systems and a large number of complexities involved in implementing any one of them. Indeed, the problems associated with the development of viable systems for allocation of shared stocks still have to be resolved in most regions of the world. This is notably true for the tunas of the eastern tropical Pacific and for a variety of species in the North-east Atlantic.

Another problem that was raised is that of the possibility or likelihood that a stock may be particularly vulnerable in a certain zone or area within a zone. If the fishermen from a state or area within a state have access to a stock only when it is immature, their catches may reduce the harvests of bigger individuals in the zones of other states and could eventually lead to depletion of the stock. If these fishermen restrained their catches, the total yields for all fishermen might be higher. But the restraint would mean a sacrifice on the part of one of the states, a sacrifice that would be difficult to make.

It was pointed out that in the Philippines a large amount of the tunas that are caught are immature tunas taken by artisanal fishermen. Although all states sharing

the tuna stocks may be better off by preventing the artisanal catch of the immature tuna, such a measure would be difficult to enforce and would work especial hardship on a particular group of fishermen. Such inequities make it difficult to resolve the problems of allocation.

An additional problem of considerable concern to the workshop was that of determining how to extract the maximum net benefits from foreign fishermen wishing to have access to the stocks in coastal state waters. It was noted particularly in Indonesia that the past arrangements with foreign fishermen, in particular those from Japan, had not been entirely satisfactory, and that the costs associated with implementing the agreements had been high and the returns had been low. Part of the problem may be due to the negotiating strength of Japan. This strength is due not only to the importance of Japan to the economies of the coastal states in general but also to the fact that its interests in tuna can be met by a large number of coastal states throughout the Southwest Pacific region. Currently the Japanese are the only distant-water fishermen with a strong capability for taking skipjack tuna in the western Pacific. Since the skipjack are not yet fully utilized, the Japanese can move their vessels to the waters of the coastal states which charge the lowest fees for access. In the absence of a coordinated approach by the states sharing the tuna stocks, the Japanese may be able to use their position to play off one state against another and drive down the fees for access.

A coordinated approach, however, means that the concerned states will have to reach an agreement on allocation of the resources or resource benefits. Furthermore, the determination of the appropriate fees to charge will not be easy. Finally, it should be noted that an approach which seeks to maximize the net economic returns that can be extracted from foreigners may mean that the developing countries within the region may not be able to compete. This, however, may change as labor costs in Japan continue to increase and as the developing states improve their ability to fish for tuna.

These problems associated with the allocation of shared stocks of fish are not easy to resolve. Many of them are essentially problems of wealth distribution and, like those of boundary agreements, have to be worked out by negotiation among the concerned states. The workshop noted that the process of negotiation could be greatly facilitated if the states were able to adopt some general principles for allocation. This in turn would be facilitated by efforts on the part of the individual states to develop a clear set of the values and objectives they seek from the use of fishery resources. Unless they know, as precisely as possible, what they want to gain

from the allocation of the resources — whether they want economic revenues, employment opportunities, sources of protein, or export earnings — they will not be able to negotiate easily nor know what they will be willing to trade off to reach mutually beneficial agreements.

Generally, the workshop participants recognized and accepted the necessity for cooperation among states. They believed that the allocation process would be most successful if it proceeded slowly. It was believed that an institutionalized infrastructure was not a prerequisite for cooperation on allocation. Agreements might begin through bilateral negotiations, moving towards the eventually necessary multilateral mechanisms.

It was also pointed out that the most important criterion for allocation was that of acceptability. All states which can influence or affect the decisions should believe that they are better off by abiding by the decisions than by breaking them. Here, a clear understanding and accurate perception of the benefits being traded off would be extremely helpful.

In situations where one state may be required to make a sacrifice to achieve greater benefits for all concerned states, it was suggested that some means for compensating the losers would be desirable. For example, if the total yield from a stock can be greatly increased when the fishermen of one state refrain from catching the immature fish, the other states might join in providing some compensation to the fishermen that refrain from fishing. Through such means, all participating states would be better off.

There was some discussion of the different systems of allocation and a suggestion that zonal quotas had sufficient advantages to deserve careful consideration. It was also suggested that cooperation among sharing states with regard to negotiations of agreements with extra-regional states could be helpful in strengthening the position of the sharing states and maximizing the net benefits that could be extracted.

In general, although the workshop participants recognized the technical, social, and political difficulties associated with the allocation of shared stocks of fish, they felt that cooperation among the states was both feasible and desirable.

### **The Effects of Extended Jurisdiction**

The workshop discussed, to some extent, the problems relating to the extensions of jurisdiction in the region. Only a few of the states in Southeast Asia have thus far asserted claims for exclusive economic zones. It was believed that all states would eventually assert such claims and that the present areas of high seas would

disappear and fall under the jurisdiction of the various coastal states. It was recognized that there would be considerable disparity among the states in terms of their gains and losses. In particular, the states of Singapore and Thailand would lose because a large amount of their present fishing effort is spent in waters that will fall under the jurisdiction of other states.

The UN Conference on the Law of the Sea is currently discussing measures that might be taken to alleviate the hardships that might be incurred by states that gain little from the extensions of jurisdiction. At the workshop, much of the discussion focused on the concept of "traditional fishing rights" and how this concept should be defined. One view was that "traditional" referred to the fishermen and their vessels, rather than to states. Under this view, it was held that the same fishermen who had fished in the area that would become the exclusive zone of another coastal state might be granted some form of preferential access but that they must use the same vessels. It was suggested that this preferential access could not be transferred to other fishermen or other vessels.

This view was contested by several of the participants who argued that the right accrued to the state as a whole and that preferential access should be available to other fishermen as well as those who had actually fished. It was argued that restricting the right only to those who had actually fished would severely limit the right, both in terms of time as the fishermen die, and in terms of precluding modernization of fishing effort. It was suggested that the coastal state's interests would be adequately protected by defining preferential access in terms of quantity of fish that could be taken rather than in terms of traditional fishermen and vessels.

The workshop did not attempt to suggest how this controversy should be resolved. It was believed that the issues should be more properly discussed at the UN Conference or in negotiations between the concerned states.

A separate point about extensions of jurisdiction was also briefly discussed at the workshop. It was noted that some agreements with foreign countries and cooperative arrangements among the states of the region may depend to a certain extent upon how the boundaries of the exclusive zones are finally drawn. The absence of a final determination of boundaries may impede the reaching of such agreements and arrangements. It was suggested that this uncertainty might be alleviated in certain cases by reaching tentative agreements for special purposes.

### **The Problem of Enforcement**

The problems of enforcement were generally agreed to be particularly important to resolve, not only with



regard to the changes taking place in the law of the sea but also in terms of the present condition of limited jurisdiction. It was recognized that the problems and difficulties of enforcement diminish the net benefits that states receive from use of fishery resources within their present zones of jurisdiction and that net benefits from extended zones will also be diminished if the problems of enforcement cannot be satisfactorily resolved. These problems apply both to domestic and foreign fishermen and to the implementation of regulations and agreements as well as to illegal fishing or poaching by foreign vessels.

The workshop participants identified a wide variety of causes for the present ineffectiveness of enforcement. One of these is clearly the high costs of patrol craft that can conduct surveillance and make arrests. For several of the states, the water area within present jurisdictions is vast and much of it is isolated and far from land. For these states, investments in adequate patrol forces will be heavy.

But in addition to the high costs, there are other problems reducing the efficiency of enforcement systems. It was pointed out that one of these is the lack of coordination between those responsible for decisions on agreements and regulations and those responsible for the various phases of enforcement systems. This leads to the adoption of regulations that may not be readily enforceable or to agreements with foreigners that place excessive burdens on patrol forces or on the courts.

It was noted that there are several phases to an enforcement system. These include not only surveillance and arrest, but also trial, punishment, and reporting. These phases are each of such importance that an enforcement system is only as strong as the weakest of the phases. For example, if the courts are not adequate to hold trials expeditiously, the whole system of enforcement is jeopardized. One of the difficulties is that the various phases fall under different arms of government and that coordination of their activities is thereby impeded.

Another problem apparently common to many states in the region is the lack of coordination among the various agencies that have the authority for surveillance and arrest. In some cases, this authority is shared by police forces, customs agents, immigration agents, the coast guard, fisheries departments, navy, and other governmental departments. Even though there may be one central command for enforcement of fishery measures, there appear to be severe difficulties in getting the cooperation of the different departments and agencies. It was also mentioned that the authority for arrest was sometimes abused and that fishermen sometimes attempt to avoid regulations by bribing enforcement officials.

An additional difficulty expressed at the workshop

was the lack of awareness of the desirability of the measures being enforced. When the fishermen do not perceive that the regulation will work to their benefit, they will have little incentive to comply with the regulation. In situations where the regulation is designed to distribute benefits to one group of fishermen, such as artisanal fishermen, and away from another group, the latter group will experience losses and will be tempted to violate the regulation. But even if a regulation leads to greater benefits for all in the future, there may be some difficulty in convincing the fishermen of its desirability. This may be due to the imposition of a uniform regulation that may not be equally applicable in all areas or it may be due to a lack of credibility in the information demonstrating the need for the regulation. In any case, when fishermen do not benefit from or do not perceive the benefits from a regulatory measure, the costs and difficulties of enforcement become much greater.

In addition to the problems mentioned above which deal with enforcement within individual states, the workshop identified problems in achieving effective cooperation in enforcement among the states of the region. It was recognized that cooperation would be desirable for a number of reasons. When stocks are shared by several states, each state wants to be assured that other states are abiding by the allocation agreement. With extended zones of jurisdiction, cooperation in the surveillance of foreign fishing vessels that are in transit from one zone to another would clearly be beneficial.

Enforcement, however, is a highly sensitive area for all states and there are limits to the degree to which cooperation is feasible. States may find it difficult to permit other states to conduct surveillance operations within their zones, and yet some technique for ensuring credibility in reporting of catches appears to be necessary for effective agreements on the allocation of shared stocks.

The workshop participants suggested several ways to improve enforcement systems. One of these was the desirability for states to broaden their focus beyond the phases of surveillance and arrest and to include the phases of trial, punishment, and reporting. It was suggested that each phase should be improved commensurately with the others so that the whole system could be made more effective. Increased coordination among the various phases would also be desirable as well as increased coordination with those responsible for decisions on regulations and on agreements with foreigners. It was clear that states are already aware of the problems associated with diffused responsibilities for surveillance and arrest and of the need for better coordination among the various forces.

An important task that emerged from the workshop

discussions is increasing the awareness of the need for and value of enforcement systems. As noted above, the respect that fishermen have for enforcement is related directly to their understanding of the importance and value of the measures. It might also be mentioned that decision makers should also improve their awareness of the need for better enforcement systems. Enforcement is not an activity that is particularly rewarding to administrators. They would prefer to be known for the amount of resources they have developed or number of vessels they have built than for the number of arrests they have made. The fulfillment of their enforcement tasks would be made easier if there were greater understanding on the part of their superiors of the value of enforcement.

With regard to cooperation among states, it was suggested that uniformity in regulations and agreements with foreigners would be very helpful. For example, where it is desirable to have special lanes for the transit of foreign vessels, it is important that the lanes through one zone conform to the lanes through an adjacent zone. Uniformity in rules governing the stowage of fishing gear and in the kinds of gear or vessels that can be used would also mutually facilitate the tasks of enforcement by neighboring states.

For these and other reasons, it was suggested that increased contact among the enforcement officials of the different states in the region would be desirable. This might eventually lead to the adoption of joint surveillance techniques such as satellite systems and transponding devices. It could also do much to improve credibility in compliance with agreements on allocation of shared stocks.

### **Summary**

It is interesting to note that the three different work-

ing groups independently identified similar problems and suggestions for improvements. In particular, all groups emphasized the importance of fisheries management, believing that development prospects can be fully realized only if there is improved management of the resources and resource users. The stress on the need for dealing with the problems of depletion, waste, and conflict demonstrated a strong sense of responsibility for fisheries management and for the mutual regard of other states.

The participants agreed that this responsibility can best be exercised by improving the competence within their states to deal with the issues. They also agreed that many of the issues cannot be resolved except through multilateral agreements and that regional cooperation was both necessary and feasible. It was recognized that one impediment to cooperation was the present difficulty of communication between the centrally planned and market economies in the region. It was suggested that the ASEAN states should not proceed so rapidly that their actions become subject to misinterpretation, nor so slowly that the resources are wasted. It was considered possible for the ASEAN states to adopt tentative arrangements pending the resolution of the problems between the centrally planned and market economies.

It was stated that one of the values of the workshop was that it facilitated informal contacts between individuals from different countries and that such contacts were particularly helpful in furthering regional cooperation. Further efforts through additional workshops or other means were considered to be desirable in reaching the objective of mutually beneficial use of the fishery resources of the region.

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