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COMMITTEE ON FISHERIES
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ISSUES OF INTERNATIONAL TRADE, ENVIRONMENT AND SUSTAINABLE FISHERIES DEVELOPMENT: TRADE IN FISHERIES SERVICES

INTRODUCTION

1. International fish trade consists of more than trade in fish products and includes fisheries services as well. These services may be purchased outright or bartered against products, services or rights of access. International trade in fisheries services has in the last decade become of major importance to many coastal developing countries with inadequate capacity for the exploitation of local fish resources. Likewise, developed countries with diminished access to fishery resources or own declining resources, have increasingly been forced to rely upon fisheries services in order to utilize the capacity of distant water fleets or supply local demand. Despite the growing importance of fisheries services, the subject has been little studied and there are, at best, only approximate evaluations of the extent of services, of the parties involved and of the value of trade effected.

2. For the purpose of this paper, fisheries services are defined as to include a range of activities: managerial expertise, harvesting, processing, policing and vessel monitoring services; the use of ports and port related services; and training, research, stock assessment and data analysis services. In general, trade in services is cumbersome to

measure, and trade in fisheries services is no exception. Only the harvesting exercise with the access fees often paid by the public purse (e.g. the EU fishing operations in African waters) has been given attention, whereas the other services traded have hardly been noticed.

3. In terms of harvesting services and access agreements, the origins of trade lie with the provisions of the United Nations Convention on the Law of the Sea (UNCLOS) (1982), which entered into force in November 1994. Under the provisions of the Convention the coastal State has sovereign rights to exploit resources within their Exclusive Economic Zone (EEZ), but where the coastal State's harvesting capacity falls short of the Total Allowable Catch (TAC) set for the resource, the coastal State is obliged to give access to the surplus to other States with the access being granted on appropriate terms. The other services traded often arise as bi-products of or are integral to the harvesting service but have lately increasingly been traded on their own merit. This is especially the case of vessel monitoring, stock assessment and data analysis services.

ECONOMIC RATIONALE FOR TRADE IN SERVICES

4. Historically, access to fisheries resources was open to all with no differentiation between nations except in the narrow band of the territorial sea. However, gradually, over-capacity, over-capitalization and over-exploitation of resources with very damaging economic results to the fishing industry as well as to government accounts became apparent. Extended fisheries jurisdiction up to 200 miles from the coast was introduced in the 1970s and 1980s and this had two important effects: it gave the coastal States the exclusive jurisdiction over, and responsibility to manage, all the resources in their coastal waters; and it improved management of resources, as it no longer was possible for distant water fishing fleets to turn freely from the fishery of one resource to the next on a continuous basis with little regard for sustainable catch levels.

5. The allocation of extended resource jurisdiction to coastal States is important as it sets the premise for the participation of foreign States and thus lays the basis for services traded. As foreigners must be allowed to exploit the surplus it has led to a rise in international fisheries agreements as shown by FARISIS, the FAO Fisheries Agreements Register (Appendix I).

6. Regarding the domestic allocation of the fishery resource, many countries have adopted the system whereby it belongs to the State and should therefore be exploited so as to provide the maximum benefit to the community at large. In practice, the fishers are the ones most affected by resource management and thus often influence decisions through the forming of political interest groups. Nonetheless, the mere act of exploitation does not necessarily confer ownership; in this way fisheries are treated as other industries involved in the extraction of natural resources.

7. From the point of view of maximizing the economic benefits from a resource, it matters less who is the owner than that the ownership issue be clearly defined. Different ownership solutions lead to different wealth distributions and from this point of view they are of great importance. In any case, the owner of the resource is expected to have an

interest in the quality of management and the degree of exploitation as they both influence the economic value of his resource.

8. In some countries, ownership of the resource has been passed from the State to the individual vessel owner. In the case of Individual Transferable Quotas (ITQ), the quota owner may decide to sell or lease the quota to other operators, including foreigners if the law allows. Some countries have passed on the ownership without charging fees or payments from domestic operators; in other cases the quotas are auctioned off to the highest bidder in perpetuum; in yet other cases the resource reverts to the State after a certain period. The quota ceded may be a specific amount of catch or a percentage of the TAC in the period in question. Whatever the solution found, it has implications for the involvement of foreigners and the amount and nature of fisheries services traded.

9. For shared stocks within the EEZs of two or more States, agreement among the States concerned on their management is called for by UNCLOS. The involvement of several States may lead to multilateral regional agreements and a further expansion of fisheries services traded.

10. The potential benefits to the coastal State arising from extended EEZ derive from two main sources. Firstly, expanded oceanic dominion has increased the production possibilities open to coastal States through greater access to valuable natural resources. Secondly, by annexing a significant area of ocean space and claiming *de facto* proprietary rights, such States have greatly increased the prospects for more effective resource management.

11. Benefits identified with *de facto* ownership include foreign currency earned from access fees, income and employment generation in coastal communities, and the nutritional and consumer benefits enjoyed from increased food supplies. Indirect benefits include aid and technical assistance, scientific advice on the state of fish stocks or specific trade concessions and rights of market access given in return for access to the EEZ of the coastal State.

12. The nature of calculation of economic benefits from EEZ is important as quantification of benefits is necessary for correctly evaluating the costing of services traded and the net economic value of alternative policy decisions. In the calculation, most States undertake a social welfare analysis or an economic impact analysis.

CALCULATION OF BENEFITS

13. Social welfare analysis involves estimating the net economic value of goods and services produced by the fishery as a sector, including forward and backward links. Underlying the analysis are important concepts such as consumer surplus and economic rent, the former being defined as the difference between what consumers would be willing to pay for fisheries products and what they actually are paying, and the latter being defined as the payments to producers in excess of that required to maintain resources in their current allocation. Economic rent is further divided into two components: the resource rent which would accrue to the owner of the natural resource and the rent which

accrues to suppliers of input factors such as capital and labour. Alternative uses of scarce resources are valued, as society must take into account both gains from the ownership of a resource and the sacrifices or costs undertaken to achieve these gains.

14. Economic impact analysis involves estimating the economic activity generated in the economy from the use of the resource and is preferred by many countries. The method may aid policy makers since it quantifies output in tangible units such as jobs, income, sales, etc., but demands tremendous amounts of detailed data for any correct application. The analysis includes the direct effects caused by the expenditure undertaken by the operators as well as the indirect effects that occur when the suppliers turn to other sectors for inputs. Lastly, induced effects that occur when households change their consumption patterns in response to changes in income are studied. Economic impact analysis is a much used tool also for studying regional multiplier effects of resource development.

15. In calculating the economic benefit of the fishery, the time dimension is important. Fish stocks are renewable resources and the benefits accruing from the resource can be taken in perpetuity. Different exploitation rates will result in different time paths for the flow of rent. Heavy exploitation in the early development of the fishery may generate a large amount of rent, but because of stock depletion the rent which can be earned on a sustainable basis will be below its maximum. To pursue such a strategy however will not be irrational if the coastal State applied a very high discounting rate. This would be the case for example if the social opportunity cost was high and the funds urgently needed for development projects. If the coastal State did not have a domestic fleet available with capacity to utilize fully the TAC, then a distant water presence might be warranted if the coastal State is able to appropriate a significant share of the rent.

16. Although resource rent is measured in monetary units it is more than a monetary concept. It is true that trade in fisheries services through a policy of rent maximization may be extremely lucrative to the coastal State which may reap rewards in a number of ways; access fees, export taxes on catch caught by foreign fleets, etc. However, the resource rent should be understood in real rather than monetary terms as it should be taken to represent a flow of goods and services of a certain value that can be traded or exchanged. Seen in this perspective, it is clear that a policy which fails to maximize resource rent either because some other objective is sought or because the management system is ineffective is actually reducing the stream of goods and services which are potentially available to the citizens of the State.

17. There are many examples of States in which fishing production has been expanded by allocating more resources to harvesting and processing without proper calculation of the opportunity costs of these resources represented by output foregone if allocated to other sectors of the economy. Thus, if benefits are calculated only as visible outputs in terms of jobs, production, port development, etc. the real value of a fishery may be misleading. The divergence between the actual and the potential resource rent from a fishery provides a measure of the economic loss which should be treated as a sacrifice to the coastal State in real as well as financial terms.

18. From this it is clear that the agricultural model often applied to fisheries is misleading, as in fisheries, production is naturally given and more inputs imply increased cost of

production but generally not increased output, at least not on a sustainable basis in the long run. Most of the economic benefits from fishing are therefore to be obtained from input reduction.

19. The ability of a State to extract rent in the form of traded fisheries services depends on its ability to enforce its title to ownership. It is estimated that in the early years of the new fisheries jurisdiction regime, in the case of high valued species such as tuna, only a few percent of the value of fisheries accrued to the coastal State. For other fisheries, especially in the case of low valued species such as horse mackerel caught by distant water fleets of Eastern Europe, access fees amounted to 30 or 40% of the actual catch.

20. Different fisheries require the use of different systems depending largely upon enforcement possibilities. Whatever the system used, the fisherman must be concerned about the value of the resource which in a system of private ownership is the property of the individual fisherman, vessel-owner or co-operative. In the case of taxation based systems, they tend in practice to apply only to foreign fishermen. If the goal is to exclude foreigners because of domestic political pressure, extracted rents decline and the State makes itself worse off in the long term. Likewise, if rights are auctioned off only to domestic fishermen, then the State loses through foregoing the higher rents resulting from increased competition in the bidding process.

21. Once an economic management system is put in place, the coastal State itself and probably the domestic fishermen (if the exploitation rights are cedable) would have an incentive to allow the participation of more efficient foreign fishermen. The failure of this outcome to emerge in most practical situations is most often attributed to the failure to implement economically oriented management. Reasons suggested in the above for this failure include a lack of recognised ownership, a lack of enforcement capabilities and a misunderstanding of the economic benefits deriving from the fisheries. As these issues seem to be increasingly resolved around the world, it is to be expected that the degree of trade in fisheries services represented by access to fishing grounds will increase.

NATURE OF SERVICES

22. Fisheries Services consist of a whole species of various services and may be supplied under a number of different organizational arrangements (Appendix 2) The first kind of service required in fishing is that of the harvesting activity itself. This service tends to be the one that attracts the most attention for the simple reason that it is in this area that the problem of market failure is to be found. The services of labour and capital might be provided locally or traded. One example is to be found in capital intensive tuna fisheries where Japanese vessels in particular are very active and gain access to fishing grounds by purchasing fishing licences but frequently use local suppliers for repair and other services. Other examples are fisheries organized with ITQs where the foreign vessels admitted (e.g. New Zealand) use local suppliers for maintenance services and operational supplies.

23. The services of processing and marketing functions are also important and increasingly being traded. In the case of on board production by foreign factory vessels of products destined for other markets, a combination of several services is traded. When

foreign patents are being used or licence fees paid for use of brand names, additional services are traded. Lately, we have seen examples of a combination of services traded, in which the first country (Germany) finances and builds the fishing vessels, and the second country (Russia) carries out the fishing operations and repays the vessels by sending the processed catch to German markets. Similar examples are found in Asia where Japanese and Republic of Korea's capital has financed salmon hatcheries and processing plants in Russia and in exchange has received fishing rights in Russian waters.

24. In all fishery management schemes, some sort of policing services are required. The need has increased in the last few years as environmental issues such as bycatch and seabirds have been added to the agenda. The service can be supplied by local experts or specialised companies but also imported from abroad. In the case of observer programmes paid for by distant water vessels we have in effect an export of surveillance services by the coastal State to the distant water country.

25. For straddling stocks or fisheries taking place in remote unpatrolled areas, satellite tracking systems have become an integral part of fisheries management. The UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks sets out measures to ensure conservation of fish stocks which explicitly include the development and implementation of vessel tracking systems. Several countries already operate vessel monitoring programmes (e.g. Portugal, United States, New Zealand, Australia, South Africa and Peru) and more will follow in the next few years (European Community (EC), Morocco, Argentina). The tracking of vessels is done by satellite from remote locations often in other countries but paid for by the coastal State. As such, the coastal State imports a fishery service even when the service is exchanged for access rights and license fees.

OBSTACLES TO TRADE

26. In principle, the coastal State maximizes benefits to itself if the provision of fishing services is undertaken by the country (or countries) with the comparative advantage. In practice, a number of features of fisheries management and trade may modify the applicability of this principle. Detailed rules and regulations govern the fisheries of many countries and the market mechanism is only sparingly used. Thus, the correct value of benefits and costs might be impossible to determine and the government finds itself with a severe information problem when trying to decide on a coherent and efficient fishery management policy.

27. When the administrative approach is used in a nation's fishery management policy, the government or competent management authority will be open to political pressure from local operators. Fishermen and vessel owners will lobby against foreign participation in fisheries and this can in many instances paralyse the entire fisheries management process.

28. An argument against using the comparative advantage principle in the provision of fisheries services is that many markets for fish products are protected. The coastal State may be able to offset this distortion through the granting of access rights to distant water

States. Such trade-offs are becoming less necessary when global fish markets are opening up. In any case, the coastal State and the distant water State would be better off by removing the distortions in all markets.

29. Another argument used against trade in fisheries services is that domestic infant industries should be protected. The well-known problem with this argument, at least when applied to other economic sectors, is that the industry fails ever to mature and protection is required indefinitely. The coastal State should look sceptically at the infant industry argument and where it is accepted to try to identify whatever distortions are preventing the private sector from identifying and funding the latent comparative advantage enjoyed by the domestic industry.

30. In many developing countries opportunity costs of labour are very low and governments may find it tempting to use the fishing industry as a means of implementing the country's macro-economic and development policies. In this case, the resources channelled to fisheries are mainly labour and labour-intensive fisheries may be preferred. However, only few resources might be exploited in this way in which artisanal and capital-intensive exploitation methods are interchangeable. In most cases, the replacement of the distant water fleet by a coastal State would require similar levels of capital investments and the low opportunity cost argument is less relevant.

31. A variant of the protective argument is used for regions in developed countries in which fishing is the major source of income. Management measures and investment grants are used to improve the employment prospects in the fishing industry in the region. A better policy would be to maximise rent by the use of traded fishery services and then invest the rent appropriately. Using it to subsidise employment represents a short-cut that seems almost guaranteed to lock fishing communities into low incomes indefinitely.

CONCLUSIONS

32. Potential economic benefits to be obtained by the coastal State from allowing access to its fisheries resources in the form of fisheries services may be substantial. Maximization of economic benefits require that the issue of who owns the resource must be clarified and firmly established. Benefits to be obtained are mainly limited to the resource rent that the fishery is capable of generating. Fishery management schemes should not confuse the economic benefits of management with its economic benefits, and opportunity costs of capital should be calculated as well as those of labour.

33. Given that the coastal State *de facto* owns the resource and that the principal benefit available is the rent, several management systems exist for the realization of these benefits. Resource rentals in form of taxes on output or the selling or leasing of exploitation rights are some options open to governments. The coastal State must possess management authority, otherwise few benefits will be realized.

34. In general, the coastal State will be better off if it allows the identity of providers of services to be determined by cost rather than nationality. Comparative advantage should be allowed to determine participation in fisheries and where distortions are identified,

these should be analyzed in order to determine the best long-term solution for the State

SUGGESTED ACTION BY THE SUB-COMMITTEE

35. As trade in fisheries services is potentially beneficial to all parties involved, a continued increase in the amount of services traded can be expected. A major obstacle in trying to analyze the effects of trade and the implication for countries' fisheries management policies has been the lack of hard data on services traded, including foreign currency earnings from these services. To overcome such obstacles and thus to improve the efficiency of coastal States fisheries management policies, the Sub-Committee may wish to recommend that FAO should undertake studies to assess and quantify current trade in fisheries services. The studies could cover (1) identification of services traded, (2) quantification of trade, (3) analysis of implications for national fisheries management policies and (4) recommendations for international exchange of experience and contacts.

APPENDIX 1

FAO FISHERIES AGREEMENTS REGISTER (FARISIS)

- a. The FAO Fisheries Agreement Register is a collection of information on bilateral and multilateral agreements on fisheries matters. It was created in the 1970s by the Fishery Policy and Planning Division, International Institutions and Liaison Service and, since 1990, the data bank has been computerized through a special software (FIPFAR) created by Fishery Information, Data and Statistic Unit). In 1996 the data base was transferred under the CDS/ISIS software of the United Nations Educational, Scientific and Cultural Organization (UNESCO), giving more opportunities for the retrieval of data (FARISIS).
- b. FARISIS contains, up to 1996, text and/or information about 1 838 bilateral or multilateral fisheries agreements concluded throughout the history of international relations. The first agreement registered in FARISIS dates back to 1 August 1351.
- c. The data bank consists of a filing-cabinet in which texts and information relating to each agreement are collected in separate paper-files, following an historical order based on the date of signature. An identification accession number is given to each agreement in order to identify it in the FARISIS data base.
- d. The information collected in FARISIS regards formal and substantial aspects of the agreements. The formal aspects regard: dates (conclusion, signature, entry into force, duration, termination), countries involved, description of the type of agreement (bilateral or multilateral signed by the Governments or by non-governmental bodies), indication of the publication (if the text is available) or of the information sources.
- e. Specific keywords are used to describe the content of the agreements in respect to:

general principles, regulation of fisheries (including the kind of fishing vessels and gear used), financial cooperation, technical cooperation, monitoring provisions, institutional arrangements, dispute resolution, geographic zones, species of fish involved.

f. FARISIS provides also, for many agreements, a brief summary (in particular when the text is not available) of the agreement and gives the opportunity to identify the relationship with other agreements collected in FARISIS. A specific field has been created to permit the connection with the FAO/LEG information services.

APPENDIX 2

SERVICES SUPPLIED UNDER DIFFERENT ORGANIZATIONAL ARRANGEMENTS

a. Fishing services are supplied by individuals or companies. A substantial flow of trade in services from individuals is through coastal State fishing companies which hire foreign crew and officers. Observer programs are also carried out mostly on an individual basis. Enforcement activities as well as stock assessments, data analysis etc. might be provided by individuals financed directly by the coastal State or through aid programmes.

b. Co-operative fishing arrangements (CFA) have been much used between coastal States and foreign partners. The nature of this co-operation has varied in form, ranging from straightforward fee fishing arrangements in which the coastal State charged the foreign distant water fishing fleet for access rights to more complex joint ventures often involving the creation of a commercial company.

c. The most common type of joint venture company is an equity-based company involving private or government interests from the local State and a foreign partner. The host partner provides access to resources, land for shore-based facilities, infrastructure support and willingness of government to underwrite or guarantee loans. The foreign partner is normally required to provide the major share of the capital and technology in the form of vessels or processing plants as well as the expertise necessary for commercial management and marketing. The agreement may specify that a certain part of the catch should be landed locally or that the foreign partner should agree to train the fishermen of the host country.

d. The most compelling argument in favour of joint ventures is that they provide unique opportunities for transfer of technology. Even if the joint venture is not permanent, the coastal state may eventually be able to take on many of the activities once the technology transfer is complete and personnel employed in the host country have acquired the skills necessary to set up and manage the fishing operation. In practice, many joint ventures fall short of expectations. In most cases, the difficulty stems more from conflicting objectives or poor judgement in choice of partner than inherent weaknesses in the economic rationale behind the venture.

e. In several cases, foreign companies may have cost advantages over domestic companies in the provision of fishing services that are not based on comparative

advantages. Foreign companies may receive subsidies from governments concerned with overcapacity in the fleet or service industries. As such the foreign country in reality exports unemployment and such imports are not necessarily in the long term interest of the coastal State. If the coastal State does not wish subsidised foreign fleets to replace domestic ones or prevent them from developing then it would have to investigate which difference in fishing costs between nations represent genuine cost differences rather than subsidies, either direct or implicit.

f. Foreign owned companies may also have better access to foreign markets either through preferential treatment such as tariff concessions but more importantly through market power represented by brand names, broader product ranges, developed distribution channels or lower costs through vertical integration. As such, the value of the fishing resource may be higher to the foreign company than to local operators and the foreign company will share some of this premium through the payment of higher access fees than what domestic operators can pay.

g. Maybe the most valuable advantage to the coastal State of using foreign companies is the flexibility implied. It is much easier to introduce and enforce rational economic management systems with foreign fleets than with domestic operators who might use legitimate political processes to block any unwanted measures. This argument is further enhanced by the increasing use of transferability of exploitation rights in which politically- sensitive allocative decisions are removed from the political arena to the market place. In fact, in almost all cases where the coastal state has succeeded in generating substantial economic rents from fisheries, it has been via foreign fleets. In fact, as a general principle it might be stated that the replacement of distant water fleets by coastal State fleets results in a worsening of the economic performance of the industry. This result comes about not from any inherent inefficiency in the coastal State fleet but because of a general failure to deal with the resource ownership and management issues.